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Transmitted by Overnight Mail

Mr. James W. Metz

April 21, 2008

Chief, Voluntary Cleanup Division Environmental Restoration and Redevelopment Program Maryland Department of the Environment 1800 Washington Blvd. Ste. 625 Baltimore, MD 21230

Re: Middle River Complex VCP – Soil Response Action Plan, Block F, MRC, Middle River, Maryland

Dear Mr. Metz:

Please find enclosed document for your review and approval.

Please let me know if you have any questions about this transmittal; I can be reached at (301) 214-9958.

Sincerely,

Thomas D. Blackman

Project Lead, Environmental Remediation

Attachment: Soil Response Action Plan, Block F, MRC, Middle River, Maryland

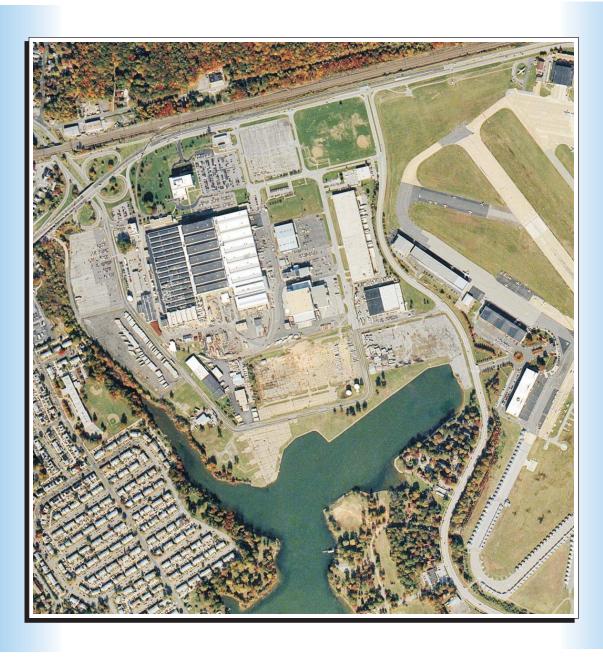
BET 129

cc: Via Email

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SOIL RESPONSE ACTION PLAN BLOCK F LOCKHEED MARTIN MIDDLE RIVER COMPLEX

2323 Eastern Boulevard Middle River, Maryland





Final Soil Response Action Plan Block F Lockheed Martin Middle River Complex 2323 Eastern Boulevard Middle River, Maryland

Prepared for:
Lockheed Martin Corporation
5
Prepared by:
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ACRONYMS

μg/kg micrograms per kilogram

API American Petroleum Institute

ARAR Applicable or Relevant and Appropriate Requirement

ASTM American Society for Testing and Materials International

ATC Average Typical Concentration

bgs below ground surface

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

CFR Code of Federal Regulations

COC chemical of concern

COMAR Code of Maryland Regulations
COPC chemical of potential concern

CSF Cancer Slope Factor

CSM Conceptual Site Model

cy cubic yards

DEPRM Department of Environmental Protection and Resource Management

DRO diesel range organics

EDD electronic data deliverable

EM electromagnetic

EPA United States Environmental Protection Agency

ESA Environmental Site Assessment

GLM Glenn L. Martin Company

GPR ground penetrating radar

GRA general response action

GRO gasoline range organics

HASP Health and Safety Plan

HHRA human health risk assessment

LDR Land Disposal Restriction

LUC land use control

MDE Maryland Department of the Environment

mg/kg milligrams per kilogram

MRAS Middle River Aircraft Systems

MRC Middle River Complex

MS2-LS&S Maritime Systems & Sensors – Littoral Ships & Systems

MSDS Material Safety Data Sheet

msl mean sea level

NCP National Oil and Hazardous Substances Pollution Contingency Plan

NEPA National Environmental Policy Act

NIOSH National Institute of Occupational Safety and Health

NPDES National Pollutant Discharge Elimination System

NPW net present worth

O&M operation and maintenance

OCP Oil Control Program

OSHA Occupational Safety and Health Administration

PAH polycyclic aromatic hydrocarbon

PCB polychlorinated biphenyl

PLS pure live seed

PPE personal protective equipment

RAO response action objective

RAP Response Action Plan

RCRA Resource Conservation and Recovery Act

REC Recognized Environmental Condition

RfD Reference Dose

sf square feet

SSO Site Safety Officer

STP Sewage Treatment Plant

SVOC semivolatile organic compound

TBC To Be Considered

TCLP Toxicity Characteristic Leaching Procedure

TPH total petroleum hydrocarbon

TSDF treatment, storage, and disposal facility

Tetra Tech, Inc.

UCL upper confidence limit

UECA Uniform Environmental Covenants Act

USC United States Code

USCS Unified Soil Classification System

UST underground storage tank

UTS Universal Treatment Standard

VCP Voluntary Cleanup Program

VOC volatile organic compound

Executive Summary

This Response Action Plan (RAP) is being submitted by Tetra Tech, Inc. (Tetra Tech) on behalf of Lockheed Martin Corporation (Lockheed Martin) for soil media at Block F of the Lockheed Martin Middle River Complex (MRC) located in Middle River, Maryland. The RAP was prepared in accordance with the requirements of the Maryland Department of the Environment's (MDE's) Voluntary Cleanup Program (VCP) (Section 7-508 of the Environment Article, Annotated Code of Maryland). The purpose of the RAP is to provide the information necessary to support the decision to remove contaminated soil in order to receive a Certificate of Completion from the MDE under a Tier 1A (Residential Unrestricted) future land use and restriction category based on potential future residential development. In addition, previously abandoned-in-place underground storage tanks (USTs), associated piping, and associated contaminated soil will be removed. A separate RAP is being prepared to address contaminated groundwater beneath the MRC, including the groundwater beneath Block F.

The MRC is located in Middle River, Maryland, approximately 11.5 miles northeast of downtown Baltimore and covers approximately 161 acres. Block F (11.94 acres) is located in the southern portion of the MRC. Four Recognized Environmental Conditions (RECs), REC #4 (Boat Launch Area), REC #5 (Former Aviation Fuel USTs), a portion of REC #6 (Waterfront Lot), and REC #13 (Former Boat Dock Area), are located in Block F.

REC #4 (Boat Launch Area) and REC #5 (Former Aviation Fuel USTs) are covered by a concrete tarmac which defines the boundary of REC #4. The seven USTs comprising REC #5 lie underneath the north-central portion of the concrete tarmac. No other structures are present onsite. The concrete tarmac is composed of smaller concrete slabs that are in relatively good condition with some minor cracking and pothole development in a few locations. A grass-covered strip of land is present along the southeastern edge of REC #4.

REC #6 (Waterfront Lot) is a well manicured, grass-covered strip of land lying between Chesapeake Park Plaza and Parking Lot No. 6 and Dark Head Cove. Several trees are present and the grass appears to be in good condition.

REC #13 (Former Boat Dock Area) is an open, relatively flat grass-covered parcel of land. REC #13 is covered with a well maintained grass lawn with shrubs and trees growing thickly along the Cow Pen Creek Shoreline. Several trees are present within the REC. Although no structures are currently present onsite, the severely degraded remnants of several walkways, parking areas, and a few foundations are still evident.

Investigations within Block F have been conducted since 2003 and have included record reviews, discussions with MRC personnel, geophysical surveys, and soil and groundwater sampling. The analytical results for the soil and groundwater samples were evaluated in a site-specific human health risk assessment (HHRA), which identified benzo(a)pyrene as a chemical of concern (COC) in soil. The greatest concentrations of benzo(a)pyrene were generally detected in shallow soils in REC #13 (Former Boat Dock Area) and in subsurface soils in REC #4 (Boat Launch Area). Mercury and PCBs were also identified as COCs in soils. Cleanup goals were developed to satisfy the requirements of the VCP and to be consistent with the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Part 400.430, as implemented through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Attainment of the cleanup goals at Block F will result in a cancer risk less than 1 x 10⁻⁵ and a hazard index less than 1.0.

An additional field investigation was conducted at Block F during the fall of 2007 to refine the horizontal and vertical limits of soil with COC concentrations greater than the cleanup goals. Based on the investigation, benzo(a)pyrene concentrations in soils ranged from non-detect to 19,000 μ g/kg at soil boring SB-383 (1 to 2 feet bgs). The benzo(a)pyrene concentration was below 1,000 μ g/kg in the majority of the samples. The 47 detections of benzo(a)pyrene were scattered sporadically at various boring locations. The cleanup goal for benzo(a)pyrene is 400 μ g/kg. Five samples that exceeded the cleanup goals are located in and around REC #13 and REC #4. PCB (Aroclor-1260) concentrations ranged from non-detect to a maximum of 34 μ g/kg at soil boring SB-383 (1 to 2 feet bgs) with no PCB concentration greater than the cleanup goal (320 μ g/kg). The Block F wide average mercury concentration, as represented by the UCL, must be less than 0.5 mg/kg.

As required by the VCP, selected technologies and land use controls (LUCs) were evaluated. The NCP served as a guide for the process used to arrive at the selected technology (i.e., selected alternative). This process included the identification, screening, and evaluation of potential technologies and process options; preliminary and detailed screening of technologies and process options; selection of representative process options; development and detailed analysis of alternatives; comparative analysis of alternatives; and description of the proposed alternative. The proposed response action selected was Excavation to Allow Unrestricted Residential Site Use and Off-Site Treatment and Disposal.

The proposed response action would remove soil with COC concentrations greater than the cleanup goals from four areas shown on Figure 8-1 (Areas A, B, C, and D) to the extent necessary to allow unrestricted residential use of Block F. In addition, seven previously abandoned-in-place USTs, associated piping, and associated contaminated soil with petroleum hydrocarbon diesel range organics (DRO) and gasoline range organics (GRO) with concentrations greater than the MDE soil cleanup standard of 230 mg/kg would be removed (Area 5 on Figure 8-1). A total of 5,200 cubic yards of soil would be removed. Site preparation would include the construction of temporary materials handling pad, decontamination zones, haul routes and clearing of the areas to be excavated. Shallow excavation of soil would be conducted using a bulldozer, front-end loader, hydraulic excavators, backhoe, or similar equipment. Post-removal/confirmation samples would be collected from the sidewalls and base of the excavation(s). Following excavation and confirmation sampling, the excavated areas would be backfilled with certified clean material, graded to original contours, and restored using vegetation. It is assumed that all excavated soil would be disposed at an off-site permitted Resource Conservation and Recovery Act (RCRA) Subtitle D landfill. Because the soil remaining on site would no longer contain concentrations of COCs that could be harmful to potential future residential receptors, soil-related LUCs would not be required.

Lockheed Martin will meet local, State, and federal permitting requirements for the response action. Based on a review of requirements of MDE and Baltimore County, permitting requirements for the response action are related to earth-moving activities and USTs.

As stipulated by MDE's VCP, administrative requirements, including a written agreement, zoning certification, performance bond or other form of security, and health and safety plan requirements

will be met. A written agreement stipulating that if the RAP is approved, the applicant agrees to comply with the provisions of the RAP is provided herein. A zoning certification, a certified written statement that the property meets all applicable county and municipal zoning requirements, is also provided with this RAP. A project-specific Health and Safety Plan (HASP) will be prepared and submitted to MDE prior to implementation of the MDE-approved RAP.

Section 1 Introduction

1.1 PURPOSE

On behalf of Lockheed Martin Corporation (Lockheed Martin), Tetra Tech, Inc. (Tetra Tech) has prepared this Response Action Plan (RAP) for soil media at Block F of the Lockheed Martin Middle River Complex (MRC) located in Middle River, Maryland. The location of the MRC is shown on Figure 1-1. This RAP has been prepared in accordance with the requirements of the Maryland Department of the Environment's (MDE's) Voluntary Cleanup Program (VCP) (Section 7-508 of the Environment Article, Annotated Code of Maryland).

The purpose of the RAP is to provide the background, support, and framework for remediation of soil with chemical of concern (COC) concentrations greater than the cleanup goals in order to receive a Certificate of Completion from the MDE under a Tier IA (Residential Unrestricted) future land use and restriction category based on potential future residential development. In addition, previously abandoned-in-place underground storage tanks (USTs), associated piping, and associated soil with petroleum hydrocarbon diesel range organic (DRO) and gasoline range organic (GRO) concentrations greater than MDE soil cleanup standards will be removed. Block F and physical features are shown on Figure 1-2.

A Certificate of Completion will be sought from the MDE following the satisfactory implementation and completion of the MDE-approved RAP.

1.2 SCOPE

The response action for Block F, which will address soil and groundwater with COC concentrations greater than the cleanup goals, is summarized as follows:

- The soil response action proposed in this RAP will include removal of soil with COC concentrations greater than the cleanup goals and removal of previously abandoned-in-place USTs, associated piping, and associated soil with DRO and GRO concentrations greater than MDE soil cleanup standards.
- The Groundwater Response Action Plan will address groundwater with COC concentrations greater than the cleanup goals in order to receive a Certificate of Completion from the MDE under a Tier IB (Residential Restricted) future land use and restriction category. The restriction category would consist of institutional controls designed to prevent potable use of groundwater. The restriction category consisting of institutional controls would remain in place until the groundwater cleanup goals are achieved through remediation. The proposed response action for groundwater associated with Block F is described in the Groundwater Response Action Plan provided under separate cover.

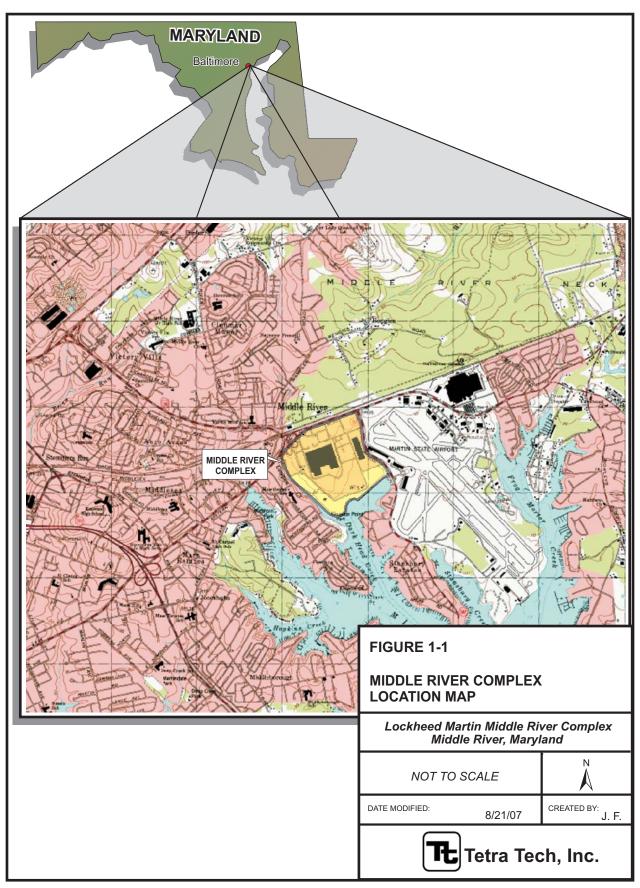
1.3 ORGANIZATION

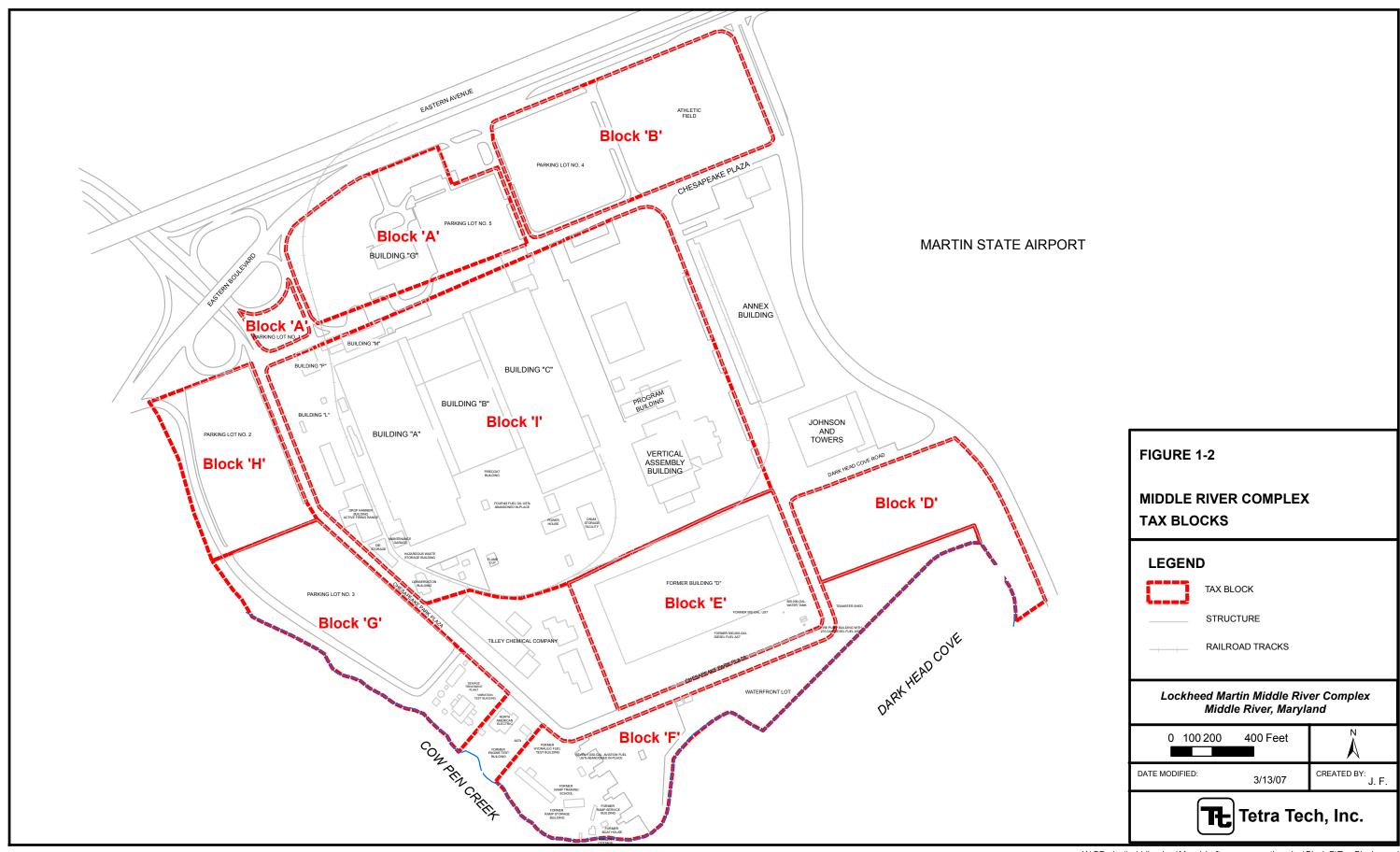
This RAP is organized as follows:

- Section 1 Introduction: Presents the purpose, scope, and organization of the RAP.
- <u>Section 2 Block F Overview</u>: Presents a brief description of MRC and Block F history, environmental investigations and results, nature and extent of contamination, and a summary of the proposed soil response action.
- <u>Section 3 Additional Investigatory Information</u>: Presents a summary of the additional investigation completed in support of the response action.
- <u>Section 4 Exposure Assessment</u>: Presents the current and proposed land use, media of concern, and Conceptual Site Model (CSM).
- <u>Section 5 Cleanup Criteria</u>: Presents cleanup criteria, a risk assessment summary, cleanup goals, and information associated with attainment of cleanup goals.
- <u>Section 6 Selected Technologies and Land Use Controls</u>: Presents the screening of technologies and process options, development and analysis of alternatives, comparative analysis of alternatives, and the selected alternative to achieve cleanup of Block F.
- <u>Section 7 Evaluation Criteria for the Selected Technology</u>: Presents the criteria required for a Certificate of Completion.
- <u>Section 8 Proposed Response Actions</u>: Presents the plan for all work necessary to perform the proposed response action.

- <u>Section 9 Permits, Notifications, and Contingencies</u>: Presents the local, State, and federal laws and regulations that prescribe the permits and approvals required to implement the MDE-approved RAP.
- <u>Section 10 Implementation Schedule</u>: Presents the detailed schedule for all work necessary to implement the MDE-approved RAP.
- <u>Section 11 Administrative Requirements</u>: Presents the administrative documents required to implement the MDE-approved RAP.
- Section 12 References: Lists references and citations used in compiling this RAP.

Appendix A includes a summary of soil analytical results. Appendix B includes a statistical summary of pre- and post-removal action data. Appendix C includes field documentation notes and boring logs. Appendix D includes data validation reports. Appendix E includes documentation required to comply with administrative requirements.





Section 2 Block F Overview

2.1 BLOCK F BACKGROUND

The MRC, which is part of the Chesapeake Industrial Park, is located at 2323 Eastern Boulevard in Middle River, Maryland, approximately 11.5 miles northeast of downtown Baltimore. The MRC covers approximately 161 acres and consists of 12 main buildings, an active industrial area and yard, perimeter parking lots, an athletic field, a concrete-covered vacant lot, a trailer and parts storage lot, and numerous grass-covered green spaces along its perimeter. The MRC is bounded by Eastern Boulevard (Route 150) to the north, Dark Head Cove to the south, Cow Pen Creek to the west, and Martin State Airport to the east. The location of the MRC is shown in Figure 1-1. A MRC layout map is presented as Figure 2-1.

The MRC is comprised of several tax blocks. Block F, consisting of 11.94 acres, is located in the southern portion of the MRC. Block F is bounded on the north by Parking Lot No. 6 (Block D), Former Building D (Block E), the Tilley Chemical Company, and North American Electric, to the east by Parking Lot No. 6 (Block D) and Dark Head Cove, to the south by Dark Head Cove, and to the west by Cow Pen Creek. The following Recognized Environmental Conditions (RECs) are located in Block F:

- Boat Launch Area (REC #4)
- Former Aviation Fuel Underground Storage Tanks (USTs) (REC #5)
- Waterfront Lot (portion of REC #6)
- Former Boat Dock Area (REC #13)

2.1.1 Block F Description

Currently, Lockheed Martin's MRC primary activities include facility and building management and maintenance. The MRC has two main tenants: Middle River Aircraft Systems (MRAS), a

subsidiary of General Electric that conducts design, manufacturing, fabrication, testing, overhaul, repair, and maintenance of aeronautical structures, parts, and components for military and commercial applications, and Maritime Systems & Sensors – Littoral Ships & Systems (MS2-LS&S), a subsidiary of Lockheed Martin that conducts fabrication, assembly, testing, and support of vertical launch systems. Lockheed Martin and tenant operations are primarily contained within Block I.

Block F consists of RECs #4, #5, #6 and #13. The Boat Launch Area (REC #4) and the Former Aviation Fuel USTs (REC #5) are primarily covered by a concrete tarmac which defines the boundary of REC #4. The seven USTs comprising REC #5 lie underneath the north-central portion of the concrete tarmac. No other structures are present onsite. A chain-link fence is present along the northern edge of REC #4, along Chesapeake Park Plaza, prohibiting unauthorized access to these two RECs. Vehicle and personal access is obtained through a locked gate in the fence.

The concrete tarmac is composed of smaller concrete slabs that are in relatively good condition with some minor cracking and pothole development in a few locations. Grass and soil were observed in many of the slab joints. A grass-covered strip of land is present along the southeastern edge of REC #4, separating the southeastern portion of the tarmac from a steel bulkhead that is present along Dark Head Cove.

The Waterfront Lot (REC #6) comprises only a portion of REC #6. Parking Lot No. 6 (Block D) is also a part of REC #6. The Waterfront Lot is a well manicured, grass-covered strip of land lying between Chesapeake Park Plaza and Dark Head Cove and Parking Lot No. 6 and Dark Head Cove. Several trees are present and the grass appears to be in good condition. A steel bulkhead bounds the unit along Dark Head Cove. Ground subsidence has occurred around the bulkhead in the eastern portion of the Waterfront Lot.

The Former Boat Dock Area (REC #13) is an open, relatively flat grass-covered parcel of land. A chain link fence is located along Chesapeake Park Plaza limiting unauthorized access to REC #13. A fence is not present along the boundary shared with North American Electric or with the Boat

Launch Area (REC #4). Vehicle and personnel access is obtained through a locked gate along Chesapeake Park Plaza at REC #4.

The Former Boat Dock Area is covered with a well maintained grass lawn with shrubs and trees growing thickly along the Cow Pen Creek Shoreline. Several trees are present within the REC. Although no structures are currently present onsite, the severely degraded remnants of several walkways, parking areas, and a few foundations are still evident.

2.1.2 Block F History

In 1929, Glenn L. Martin Company (GLM), a predecessor of Lockheed Martin, acquired a large parcel of land in Middle River, Maryland to conduct aircraft manufacturing for the United States government and for commercial clients. Prior to the property's first occupancy, the MRC was undeveloped land. In the early 1960s, GLM merged with American-Marietta Company, forming Martin Marietta Corporation. Around 1975, the adjacent eastern airport (Martin State Airport), totaling approximately 750 acres, was transferred to the State of Maryland. In the mid-1990s, Martin Marietta Corporation merged with Lockheed, forming Lockheed Martin Corporation, with its principal subsidiary specializing in construction and testing of new ordnance for the United States government and for commercial clients. Shortly following the merger, General Electric acquired the majority of Lockheed Martin's aeronautical business in Middle River, which began to function as MRAS.

The Boat Launch Area (REC #4) has been present since the initial construction of the MRC in the mid-1930s. Prior to World War II, the area was an unpaved ramp entering Dark Head Cove. During World War II, REC #4 was used for the staging, fueling, and launching of military seaplanes. After World War II, the area was used for the fueling, maintenance, testing, and prototype evaluation of Chase boats along with staging of vehicles and equipment. By 1957, the site had been improved with the addition of the concrete tarmac. By 1969, the area was abandoned and all onsite structures had been demolished. Currently, no structures other than the concrete tarmac exist on the site.

REC #5 is located underneath the north-central portion of REC #4. The Phase I Environmental Site Assessment (ESA) identified the Former Aviation Fuel USTs, including seven closed-in-place 1,000-gallon USTs beneath the Boat Launch Area's concrete tarmac, as REC #5. The tanks were reportedly last used in 1954 and closed in place in 1986-1987. During the Phase I ESA investigation, no closure records were available for these USTs, and MRC personnel interviewed did not know whether confirmatory sampling had been conducted as part of the tank closure.

REC #6 consists of the Waterfront Lot within Block F and Parking Lot No. 6 within Block D. Between 1938 and 1949, the Waterfront Lot was backfilled, raising the topography to the current elevation and extending the shoreline to the current position. During filling, a steel bulkhead was constructed, and a 100-foot-wide swath of the cove along the bulkhead was proposed for dredging. Dredging activities were planned to lower the creek bottom near the shoreline to 8 feet below sea level. The dredging and filling activities were conducted to facilitate possible use of the creek as an anchor basin. After the shoreline was reconstructed, from the 1950s through the 1970s, the Waterfront Lot south of Building D showed numerous service roads of unknown usage criss-crossing the waterfront area. An unknown structure was present in this area from the early 1950s to at least 1971. An aerial photograph taken of the MRC in the early 1970s shows a mound of unknown material in the waterfront area south of Building D. Since the early to mid 1970s, the Waterfront Lot appears to have been used solely for recreational activities.

Based on a review of available aerial photographs and MRC maps, the area informally identified as the Boat Dock Area (REC #13) was developed prior to 1949. In 1949, the area showed 11 small structures in the vicinity of the Boat Launch Area. Further development of the area included construction of a cottage, service building, storage building, training school, boat house, and two docks. The buildings were demolished before 1969. No additional information regarding chemical and material storage and waste handling practices was available.

2.1.3 Block F Characteristics

2.1.3.1 <u>Current and Surrounding Land Use</u>

The MRC is an industrial facility, and the area surrounding the MRC primarily consists of commercial, industrial, and residential establishments. Six facilities comprise the remaining portion of the Chesapeake Industrial Park including Tilley Chemical Company, Inc., a food and pharmaceutical chemical distributor for personal care and industries; North American Electric, Inc., an industrial and commercial electrical contractor; Johnson and Towers, a heavy duty automotive and boat repair and maintenance company; Poly-Seal Corp., a company that produces flexible packaging; Exxon, a gasoline fill station and convenience store; and the Middle River Post Office. Residential developments are present on the opposite shores of Cow Pen Creek, Dark Head Cove, and Dark Head Creek and north of Eastern Boulevard (Route 150).

2.1.3.2 Physiography

The MRC is located within the Western Shore of the Coastal Plain Physiographic Province, which is generally characterized by low relief. The topography of the MRC is gently sloping, ranging from sea level to 32 feet above mean sea level (msl) (Cassell, 1977). The topography slopes from Eastern Boulevard to the southwest and south towards Cow Pen Creek and Dark Head Cove.

The topography of Block F is relatively flat with a slight dip to the southeast and ranges from 16 feet above msl along Chesapeake Park Plaza to 2 feet above msl along Dark Head Cove (Cassell, 1977).

2.1.3.3 <u>Hydrology</u>

The MRC lies at the junction of Cow Pen Creek and Dark Head Cove. Both surface water bodies discharge into Dark Head Creek, a tributary to Middle River, which is a tributary to Chesapeake Bay. The MRC lies approximately 3.24 miles (17,100 feet) upstream of Chesapeake Bay.

No surface water bodies lie within or cross the MRC. Excluding areas immediately adjacent to Cow Pen Creek and Dark Head Creek, surface water runoff discharges from the MRC via storm drains. Lockheed Martin maintains a State of Maryland National Pollution Discharge Elimination System (NPDES) permit (State Discharge Permit No.: 00-DP-0298, NPDES No.: MD0002852), issued by MDE Industrial Discharge Permits Division, Water Management Administration. The permit covers stormwater discharge from the entire property rather than individual tenants. The NPDES permitted outfall locations are shown on Figure 2-1.

No surface water bodies cross or emanate from Block F. Due to the topography and the presence of the concrete tarmac at REC #4, surface water runoff in this area would most likely discharge directly to Dark Head Cove as overland sheet flow. Surface water runoff generated in the grass covered areas will generally infiltrate into the underlying soil or discharge to Dark Head Cove or Cow Pen Creek as overland sheet flow. Stormwater management features are located within Block D and are indicated on the MRC utility map included as Appendix J of the Site Characterization Report (Tetra Tech, May 2006). No wetlands have been identified in or around Block F, and Block F is not located within the 100-year floodplain.

2.1.3.4 Soils

Soils underlying MRC have been mapped as Mattapex-Urban Land Complex and Sassafras-Urban Land Complex by the United States Department of Agriculture Soil Conservation Service. Mattapex-Urban Land soils consist of deep, well-drained silty soils whose original texture has been disturbed, graded over, or otherwise altered. Sassafras-Urban Land soils consist of deep, well-drained sandy soils whose original texture has been disturbed, graded over, or otherwise altered. Site characterization studies indicate that a high degree of fine-grained (e.g., silt and clay) soils with low permeabilities are present at the MRC.

2.1.3.5 **Geology**

The surficial geology of Block F is summarized below. The geology of the MRC is described in the Site Characterization Report (Tetra Tech, May 2006).

Based on the lithologic logging of the soil borings installed within Block F, the subsurface soils at REC #4 are highly heterogeneous, consisting of sands, silts, and clays. The subsurface soils at the Waterfront Lot (REC #6) consisted primarily of silty clay underlain by sand. However, several borings contained sand at shallower depths. The Boat Dock Area (REC #13) is primarily underlain with a 2 to 4 foot thick silty sand unit which is then underlain with a silty clay to sandy clay unit.

2.1.3.6 Hydrogeology

A summary of groundwater measurements taken at Block F is presented in Table 2-1. The groundwater elevation contours using the shallow/intermediate surficial aquifer monitoring wells are presented on Figure 2-2. Groundwater flows in a radial fashion from the hydraulically upgradient northern portion of the MRC at Eastern Boulevard to the southeast, south, and southwest toward Dark Head Cove and Cow Pen Creek.

Groundwater was encountered at Block F at depths ranging from less than 1 foot to 13 feet below ground surface (bgs). Groundwater was generally encountered at shallower depths in areas known to have been filled in during the 1940s. Based on the locations of Cow Pen Creek and Dark Head Cove, groundwater flow is to the south.

2.2 SUMMARY OF BLOCK F INVESTIGATIONS

Investigations within Block F have been conducted since 2003 and have included record reviews, discussions with MRC personnel, geophysical surveys, and soil and groundwater sampling. Investigations¹ included the Phase I Environmental Site Assessment (2003) (Earth Tech, Inc., 2003), Phase II Investigation (Fall/Winter 2003) (Tetra Tech, February 2004), Historical Survey (2004) (Tetra Tech, August 2004), Site-Wide Phase II Investigation (2004) (Tetra Tech, April 2005), Phase II Soil Investigation (Summer 2005) (Tetra Tech, May 2006), Geophysical Survey/Soil Investigation (Fall 2005) (Tetra Tech, May 2006), and Groundwater Investigation (Fall 2005) (Tetra Tech, May

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¹ Investigations cited by investigation title, performance period, and reference.

2006). The summary of Block F investigations provided below is limited to soil, whereas a summary of groundwater investigations is provided in the Groundwater Response Action Plan.

2.2.1 Phase I Environmental Site Assessment (2003)

A Phase I ESA was conducted on the MRC in February 2003. The Phase I ESA (Earth Tech, Inc., 2003) consisted of a historical review of the MRC (i.e., a review of available MRC documents, aerial photographs, and city directories); a review of federal, state, and local agency databases; interviews with site personnel; and a site visit. The Phase I ESA identified 13 specific RECs associated with the MRC. The RECs are areas that indicate the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate potential for an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.

Three of the four RECs located in Block F were identified during the Phase I ESA (REC #4, REC #5, and REC #6). No information on former chemical handling processes, chemical storage, or waste stream disposal at the Boat Launch Area (REC #4) was documented in the Phase I ESA report. Based on a review of available MRC documents, the Phase I ESA documented the possible presence of fill material beneath the waterfront area (REC #6). No additional information regarding filling activities was obtained. In addition, information reviewed during the Phase I ESA did not indicate any chemical handling activities, chemical storage, or waste stream disposal occurring at the unit. Due to the unknown quality of the fill material, the Phase I ESA identified the Waterfront Lot as a REC.

During the review of available historic aerial photographs, multiple structures were observed at the Boat Dock Area (Earth Tech, February 2003). No additional information was collected during the Phase I investigation and the area was not recommended for classification as a REC.

In addition to the identification of the 13 RECs, the Phase I ESA also recommended further investigation into the MRC's historic site activities to identify other potential environmental concerns.

2.2.2 Phase II Investigation (Fall/Winter 2003)

During the fall of 2003, a Phase II investigation consisting of soil and groundwater sampling and analysis and a geophysical survey was conducted on 7 of the 13 Phase I RECs (Tetra Tech, February 2004). The objective of the Phase II investigation was to determine baseline conditions by identifying and evaluating contaminants of potential concern (COPC) present in the underlying media.

An electromagnetic (EM) geophysical survey was completed at the Waterfront Lot and Parking Lot No. 6 to detect any areas of waste disposal and buried drums or other metallic debris that may be present in the fill area of REC #6. A total of nine anomalies were identified during this survey. A follow-up ground penetrating radar (GPR) survey of the anomalies found that eight of the anomalies were associated with utilities (primarily storm drains), while the GPR survey did not indicate any definitive source for the final anomaly (located within Parking Lot No. 6). This anomaly was not considered consistent with any known potential subsurface metallic objects or utilities. The results of the geophysical survey are presented in Appendix A of the Final Report, Phase II Site Investigation of Exterior Areas (Tetra Tech, February 2004).

Four soil borings (SB-22 through SB-25) were installed within the concrete tarmac at the Boat Launch Area for general geographic coverage across REC #4. Two subsurface soil samples (5 and 10 feet bgs) were collected from each boring and were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals, gasoline range organics (GRO), and diesel range organics (DRO).

Four soil borings (SB-26 through SB-29) were installed on all four sides of the former tank farm (REC #5). One subsurface soil sample (6 or 10 feet bgs) was collected from each boring and analyzed for VOCs and GRO.

Two soil borings (SB-30 and SB-31) were installed within the grass covered areas of the Waterfront Lot. One subsurface soil sample (5 feet bgs) was collected from each boring and analyzed for VOCs, SVOCs, PCBs, metals, GRO, and DRO.

Sample locations are shown on Figure 2-3. Of the VOCS and metals that were detected in the soil samples collected at REC #4, REC #5, and REC #6, mercury was the only chemical that was detected at concentrations that exceeded MDE soil cleanup levels.

The results of this investigation are provided in the Final Data Report Site-Wide Phase II Investigation (Tetra Tech, April 2005). Tables AF-1 and AF-2 (Appendix A) provide a summary of detected concentrations in surface soil samples and subsurface soil samples, respectively.

2.2.3 Historical Survey (2004)

The historical survey consisted of review of available MRC maps (e.g., as-builts, proposed construction plans, and plot maps), interviews with Lockheed Martin and tenant personnel, and site visits. Based on the investigation findings, a total of 18 additional RECs located along the MRC's perimeter, within the active industrial yard, and within Buildings A, B, and C were identified. The additional RECs included a former sewage treatment plant (STP), an incinerator, several plating shops, a potential historical debris storage lot, abandoned USTs, and areas associated with several environmental investigations (i.e., lead removal at the Die Storage Unit and elevated chromium concentrations in groundwater adjacent to Building A).

A review of the available MRC documents identified a cottage, service building, storage building, training school, and boat house within the Boat Dock Area. Based on a review of other MRC maps and available data, multiple buildings were present from the 1940s to 1969 (Earth Tech, February 2003). No information regarding chemical and material storage and waste handling practices were obtained during the historical research survey. Due to the potential historic use of the buildings, the Boat Dock Area was identified as REC #13 and was included in the Site-Wide Phase II Investigation.

2.2.4 Site-Wide Phase II Investigation (2004)

During the Site-Wide Phase II Investigation, all 31 RECs were investigated and the investigation included geophysical surveys of five areas, and soil and groundwater sampling. The investigation

within Block F only included soil and groundwater sampling. Sample locations are shown on Figure 2-3.

Surface soil samples (SB-22A-SS through SB-25A-SS and SB-50-SS) were collected from the first foot of soil from soil borings installed adjacent to the 2003 soil borings installed within REC #4 (SB-22 and SB-25). The samples were analyzed for VOCs, SVOCs, PCBs, metals, GRO, and DRO. To verify the mercury concentrations detected in the earlier samples, an additional soil boring (SB-50) was installed and one surface soil and two subsurface soil (5 and 10 feet bgs) samples were collected from the boring. These samples were analyzed for metals.

At the Waterfront Lot, surface soil samples were collected from the 2003 soil boring locations (SB-30 and SB-31). In addition, four new soil borings (SB-55 through SB-58) were installed in areas associated with a former mound of unknown material, former service roads, and a dissecting storm sewer utility trench. Surface soil and subsurface soil (various depths) samples were collected from each of the borings. The samples were analyzed for VOCs, SVOCs, PCBs, metals, GRO, and DRO. The surface and 5 foot bgs subsurface samples from the four new soil borings (SB-55 through SB-58) were also analyzed for pesticides.

Four soil borings (SB-93 through SB-96) were installed in the Boat Dock Area. One surface soil sample and two subsurface soil samples (5 and 10 feet bgs) were collected from each boring. An additional subsurface soil sample (15 feet bgs) was collected from soil borings SB-93, SB-94, and SB-96. All of the samples were analyzed for VOCs, SVOCs, pesticides, PCBs, metals, GRO, and DRO.

Mercury again was the only compound that exceeded the MDE soil cleanup levels within REC #4. Metals such as arsenic and lead were detected in the soil samples from the Waterfront Lot at concentrations that exceeded the MDE soil cleanup levels. Four polycyclic aromatic hydrocarbons (PAHs), Aroclor-1260, cadmium, chromium, and mercury were detected at concentrations above the MDE soil cleanup levels in the soil samples collected in the Boat Dock Area (REC #13).

The results of this investigation are provided in the Final Data Report Site-Wide Phase II Investigation (Tetra Tech, April 2005). Tables AF-1 and AF-2 (Appendix A) provide a summary of detected concentrations in surface soil samples and subsurface soil samples, respectively.

Although no monitoring wells were installed at Block F during the Site-Wide Phase II Investigation, a total of 12 groundwater samples were collected from soil borings installed at the RECs within Block F during the Site-Wide Phase II Investigation. Soil boring locations are shown on Figure 2-3. A summary of groundwater investigations is provided in the Groundwater Response Action Plan.

2.2.5 Phase II Soil Investigation (Summer 2005)

To provide further delineation of the elevated detections of mercury in the Former Boat Launch Area, three additional soil borings (SB-236 through SB-238) were installed in 2005 and soil samples were collected from various depths (0 to 1, 1 to 2, and 4 to 5 feet bgs). The samples were analyzed for metals.

An elevated lead concentration detected in a surface soil sample collected in 2004 (SB-55) located along the waterfront, was further evaluated in 2005 by installing four additional soil borings (SB-250 through SB-253). Soil samples were collected from 0 to 1 and 1 to 2 feet bgs from each boring and analyzed for metals.

To evaluate PAHs, chromium, and PCBs that were detected in the surface soil samples collected in 2004 from soil borings SB-93 and SB-94, six additional soil borings (SB-265 through SB-270) were installed in the Former Boat Dock Area. Soil samples were collected from 0 to 1 and 1 to 2 feet bgs and were analyzed for SVOCs. The surface soil samples were also analyzed for PCBs and metals.

Several metals and DRO were found in the soil samples collected from the Former Boat Launch Area during this investigation at concentrations above the MDE soil cleanup levels. Several metals and PAHs were found in the soil samples from the Former Boat Dock Area at concentrations above the MDE soil cleanup levels. Sample locations are shown on Figure 2-3.

The results of this investigation are provided in the Site Characterization Report (Tetra Tech, May 2006). Tables AF-1 and AF-2 (Appendix A) provide a summary of the detected concentrations in the surface soil and subsurface soil samples, respectively.

2.2.6 Geophysical Survey/Soil Investigation (Fall 2005)

An EM survey was conducted in the fall of 2005 to screen the area of REC #13 within Block F. Identified anomalies were evaluated further with GPR. The results of the geophysical surveys are presented in the Site Characterization Report (Tetra Tech, May 2006). Based on the geophysical surveys, four anomalies that could not be resolved as being associated with known features (utilities) were investigated by installing five additional soil borings (SB-295 through SB-299). Subsurface soil samples were collected from two depths in each boring (4.5 and 9.5 feet bgs) and the samples were analyzed for VOCs, SVOCs, PCBs, metals, GRO, and DRO.

Several metals were detected in these soil samples at concentrations above the MDE soil cleanup levels. Sample locations are shown on Figure 2-3. The results of this investigation are provided in the Site Characterization Report (Tetra Tech, May 2006). Tables AF-1 and AF-2 (Appendix A) provide a summary of the detected concentrations in the surface soil and subsurface soil samples, respectively.

2.3 NATURE AND EXTENT OF CONTAMINATION

This section presents a summary of the nature and extent of contamination in soil and groundwater at Block F based on the results of all investigations conducted prior to the fall of 2007. Tables AF-1 and AF-2 (Appendix A) provide a summary of the detected concentrations in surface soil and subsurface soil samples, respectively.

2.3.1 Soil

The human health risk assessment (HHRA) prepared for the Site Characterization Report (Tetra Tech, May 2006) identified a number of COPCs by comparing maximum concentrations to MDE

soil cleanup standards. COPCs detected in soil samples collected within Block F included 11 metals (antimony, arsenic, cadmium, chromium, cobalt, lead, mercury, molybdenum, nickel, vanadium, and zinc), six PAHs [benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene], Aroclor-1254 and Aroclor-1260, DRO and GRO. Results of the site-specific HHRA were used to assist in determining which COPCs were the principal contributors to risk, also referred to as COCs. The COCs identified for Block F were carcinogenic PAHs, mercury, and PCBs in surface and subsurface soils.

The highest concentrations of benzo(a)pyrene and other PAHs were detected in surface and subsurface soil samples collected in the central portion of the Former Boat Dock Area (REC #13) (SB-93 through SB-95, SB-265, SB-266, SB-268, and SB-269). Elevated concentrations of PAHs were also detected in a subsurface soil sample (SB-238-05) collected in the Former Boat Launch Area (REC #4). Detected benzo(a)pyrene concentrations ranged from 63 micrograms per kilogram (μg/kg) (SB-24A-SS) to 25,600 μg/kg (SB-268-SS) in surface soil and from 62 μg/kg (SB-270-02) to 3,130 μg/kg (SB-268-02) in subsurface soil. The highest concentrations of these compounds were generally found in the surface soil samples. Figure 2-4 shows the concentrations of benzo(a)pyrene and PCBs in the soil samples that exceed the cleanup goal established in Section 5.3.

In addition to soil contaminated with PAHs, the previously abandoned-in-place USTs, associated piping, and soil associated with the USTs and piping contaminated with DRO or GRO greater than MDE soil cleanup standards [MDE Oil Control Program (OCP)] will be removed

2.3.2 Groundwater

The primary impacts to groundwater in Block F are chlorinated VOCs (primarily trichloroethene) downgradient of the eastern VOC plume which originates in Block I. These compounds may be of concern should future land use include construction of buildings over impacted groundwater. The area is currently served by public water and there are currently no wells (other than monitoring wells) anywhere on the MRC. Further discussions of impacts to groundwater are discussed in the Groundwater Response Action Plan.

2.4 RESPONSE ACTION SUMMARY

This RAP was developed in accordance with VCP guidance to support Lockheed Martin's application to the VCP for Block F at the MRC. This RAP was prepared to address elevated concentrations of PAHs, mercury, and PCBs in soils within Block F. A separate RAP is being prepared to address contaminated groundwater beneath the MRC.

In addition to soil contaminated with PAHs, mercury, and PCBs, previously abandoned-in-place USTs, associated piping, and associated contaminated soil with DRO and GRO concentrations greater than MDE soil cleanup standards will be removed to comply with MDE OCP requirements.

2.4.1 Proposed Response Actions

Soil at Block F with PAH, mercury, and PCBs concentrations greater than the cleanup goals and previously abandoned-in-place USTs, associated piping, and associated contaminated soil with DRO and GRO concentrations greater than MDE soil cleanup standards will be removed and disposed at a permitted off-site disposal facility. Development of the cleanup goals is presented in Section 5. The response action is described in Section 8.

2.4.2 Future Land Use Category

The MRC is currently an industrial facility and the area surrounding the property primarily consists of commercial and industrial establishments. Residential developments are present on the opposite shores of Cow Pen Creek, Dark Head Cove, Dark Head Creek and north of Eastern Boulevard (Route 150). The implementation of the proposed RAP will allow for unrestricted residential use of Block F.

2.4.3 Proposed Land Use Control

The proposed RAP for Block F includes the removal of soil with concentrations of PAHs, mercury, and PCBs greater than the cleanup goals and removal of previously abandoned-in-place USTs, associated piping, and associated contaminated soil with DRO and GRO concentrations greater than MDE soil cleanup standards. Consequently, Block F will be considered for unrestricted residential uses, and land use controls (LUCs) will not be required. LUCs for the groundwater beneath Block F may be required and are discussed in the Groundwater Response Action Plan provided under separate cover.

Table 2-1

Summary of Groundwater Level Measurements Block F

Soil Response Action Plan Lockheed Martin Middle River Complex, Middle River, Maryland

					Measurement Date					
Monitoring Well Number	Top of Riser Elevation (ft)	Ground Surface Elevation (ft)	Screened	Elevation of Bottom of Screened Interval (ft)	6/5/2005		10/13/2005		12/6/2005	
					Groundwater Elevation (ft)	Depth to Groundwater (ft bgs)	Groundwater Elevation (ft)	Depth to Groundwater (ft bgs)	Groundwater Elevation (ft)	Depth to Groundwater (ft bgs)
MW38A	9.70	9.99	10	-4.01	4.49	5.50	4.15	5.84	4.14	5.85
MW39A	6.60	6.93	10	-7.07	6.6	0.33	6.60	0.33	3.55	3.38
MW40A	6.24	6.53	10	-8.47	6.24	0.29	6.24	0.29	6.24	0.29
MW36A	11.46	11.86	10	-6.64	5.16	6.70	4.96	6.90	4.78	7.08
MW37A	12.23	12.67	10	-4.33	5.12	7.55	4.93	7.74	4.63	8.04
MW45A	6.44	6.77	10	-6.23	NA	NA	-3.31	10.08	-6.46	13.23
MW46A	7.98	8.32	10	-4.68	3.38	4.94	3.03	5.29	2.27	6.05
MW47A	12.30	12.64	10	-2.36	8.9	3.74	12.30	0.34	12.30	0.34
MW65A	16.42	16.79	10	-1.21	NA	NA	NA	NA	11.42	5.37
MW66A	16.65	16.90	10	-2.10	NA	NA	NA	NA	9.90	7.00

- 1 Monitoring well data for monitoring wells located within or near the Block F limits.
- 2 See Figure 2-2 for monitoring well locations.
- 3 Elevations reference National Geodetic Vertical Datum (NGVD), 1929.
- 4 Monitoring well information obtained from Site Characterization Report (Tetra Tech, May 2006).

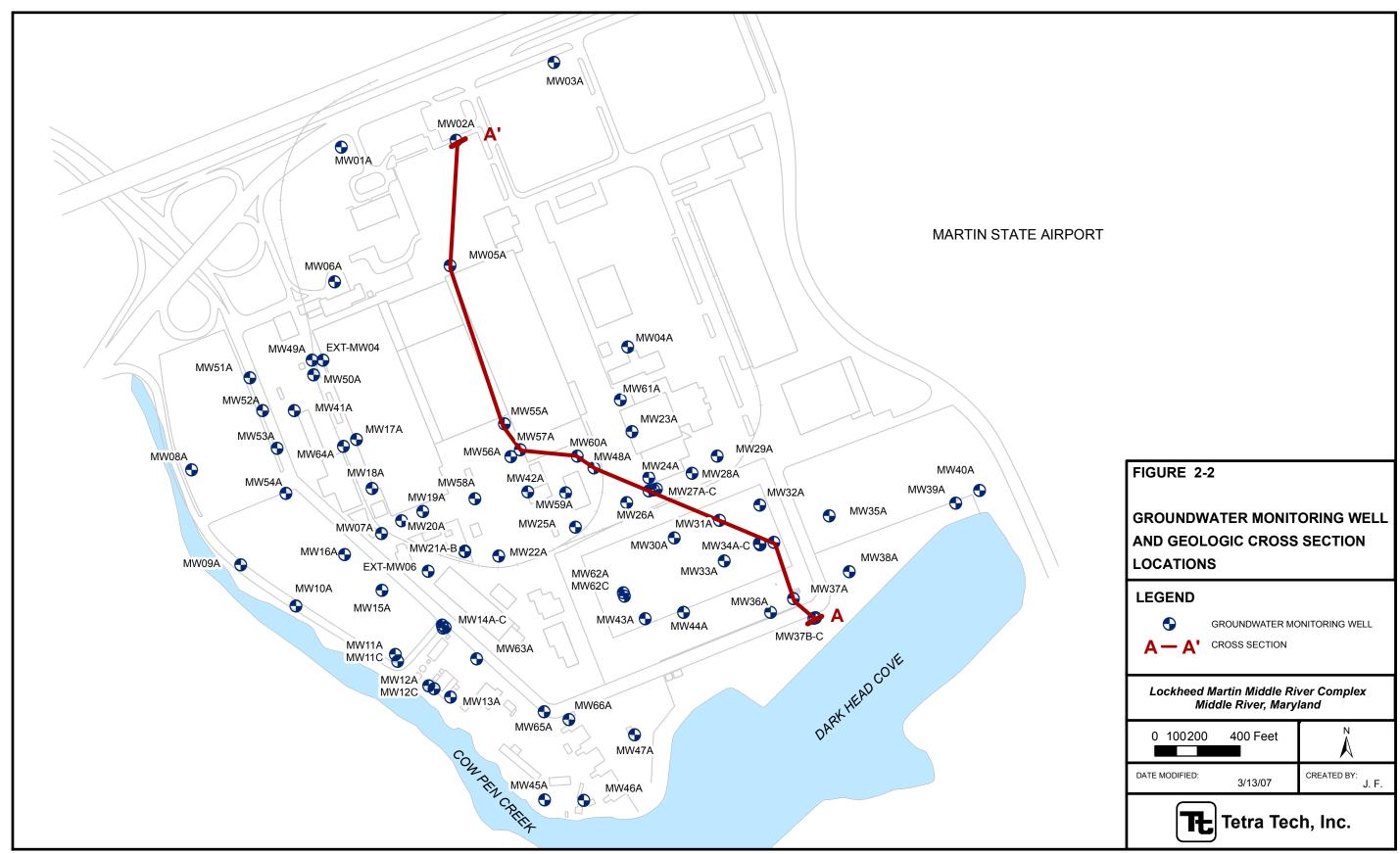
bgs - Below ground surface.

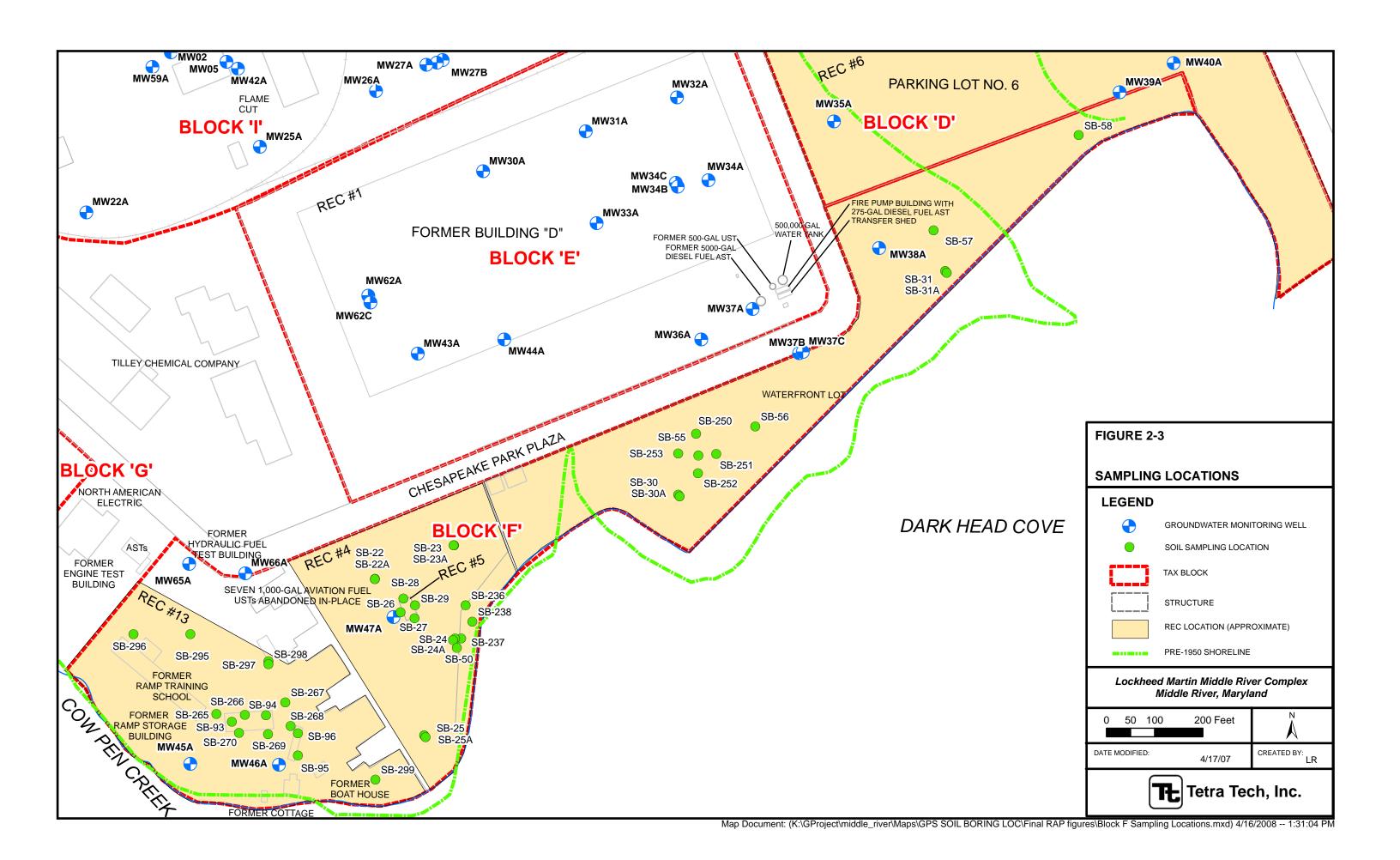
ft - Feet.

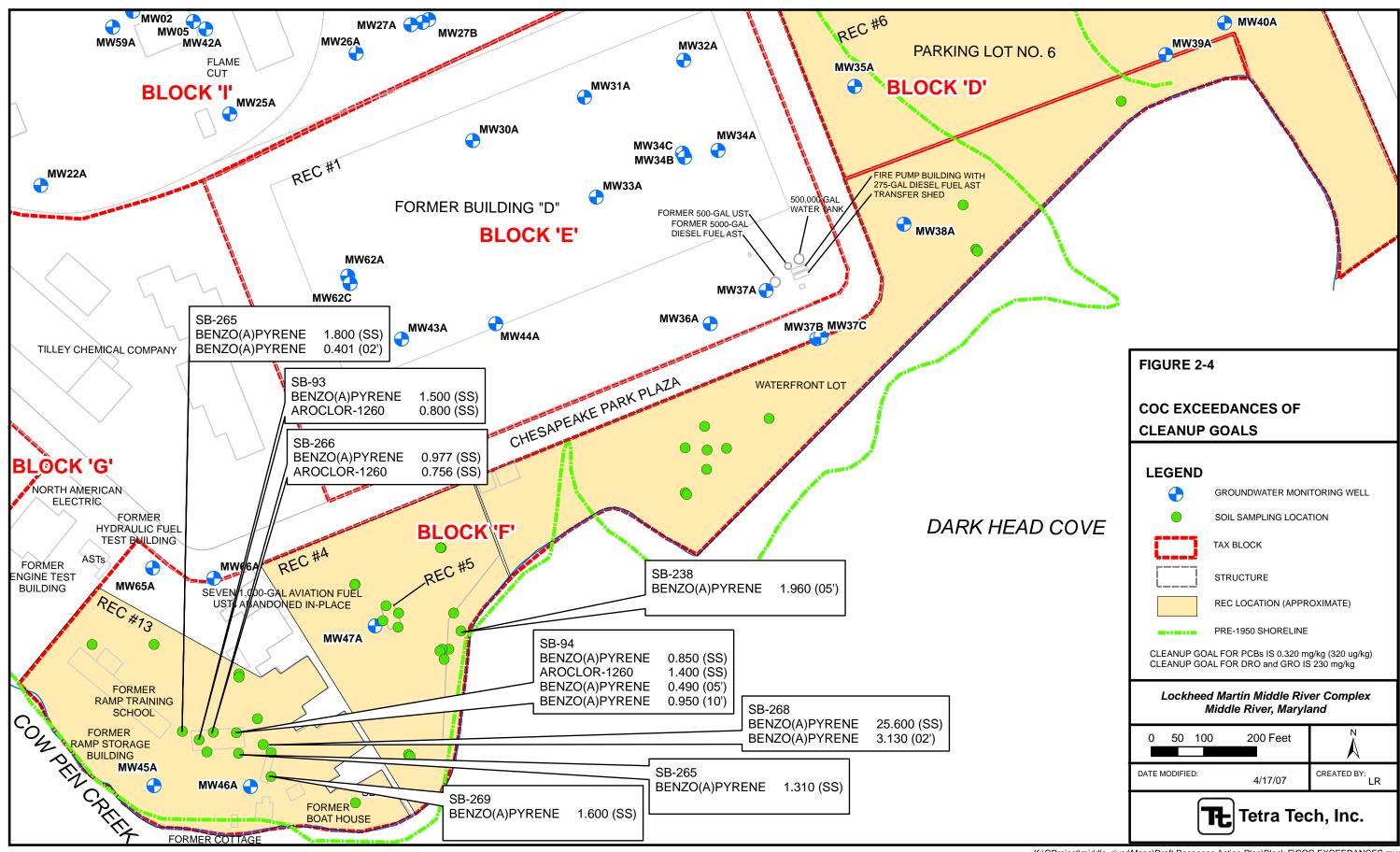
NA - Not available.

" - " - Denotes negative number.









Section 3 Additional Investigatory Information

3.1 ADDITIONAL SOIL INVESTIGATIONS

Tetra Tech performed an additional field investigation at Block F during the fall of 2007 to confirm previous results and refine the limits of COCs greater than the cleanup goals. The risk assessment included in the Site Characterization Report (Tetra Tech, May 2006) identified benzo(a)pyrene, and PCBs (Aroclor-1260) concentrations that require mitigation. Concentrations of benzo(a)pyrene and PCBs (Aroclor-1260) in excess of the cleanup goals were identified at previous soil boring locations (SB-93, SB-94, SB-95, SB-265, SB-265, SB-269) located in REC #13 (Former Boat Dock Area), soil boring SB-238 in REC #4 (Boat Launch Area), and previously abandoned-in-place USTs, associated piping, and associated total petroleum hydrocarbon (TPH) contaminated soil in REC #5 (Former Aviation Fuel USTs). The greatest concentration of benzo(a)pyrene (25,600 µg/kg) was detected at soil boring SB-268 in the surface soil. The greatest concentration of PCBs (Aroclor-1260) (1,400 µg/kg) was detected at soil boring SB-94 in surface soil. The benzo(a)pyrene and PCB (Aroclor-1260) concentrations exceeded their cleanup goals (400 µg/kg and 320 µg/kg, respectively). The extent of COCs in excess of cleanup goals in the vicinity of these soil borings was refined by installing additional soil borings. A work plan was prepared in November 2007 (Tetra Tech, 2007) documenting field investigation protocols, sampling procedures, and analytical requirements. The field investigation was performed in accordance with the work plan.

Thirty soil borings were installed in the vicinity of soil borings SB-93, SB-94, SB-95, SB-265, SB-265, SB-269 and SB-268 using a direct push technology (DPT). The borings were spaced on a grid pattern across the previously identified geophysical anomaly areas to cover significant horizontal and vertical areas for further delineation of COCs greater than the cleanup goals. Soil boring locations are shown on Figure 3-1. The soil borings were drilled to a maximum depth of 8 feet bgs. The soil samples were obtained continuously from the surface to the termination depth

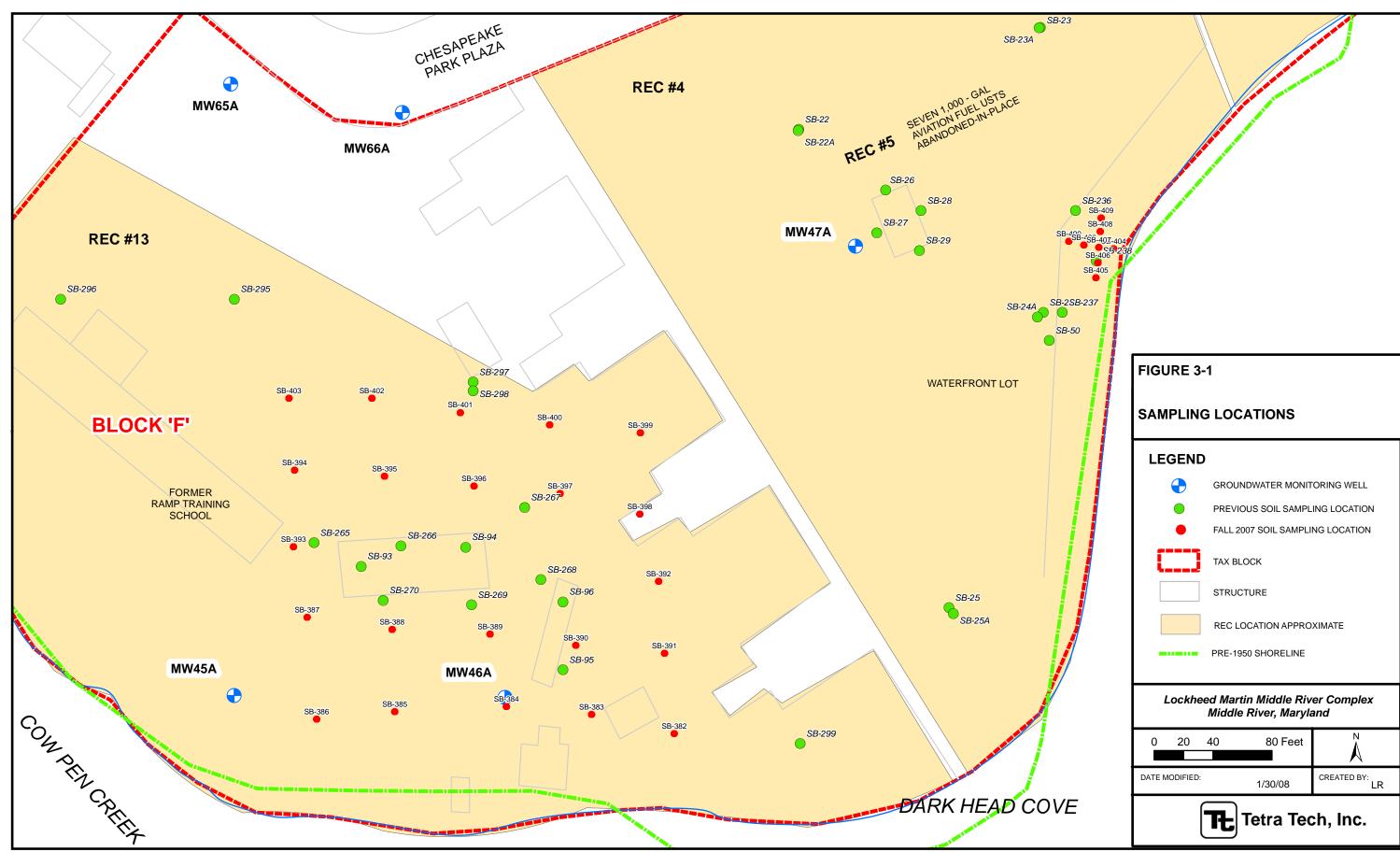
of the borehole with samples submitted for chemical analysis at 2 foot intervals (1 to 2, 2 to 3, 4 to 5 and 7 to 8 ft bgs). The samples were logged in the field to document geologic description of the lithology for USCS classification, moisture content, and the depth of the water table. The field documentation notes and geologic logs are provided in Appendix C. The lithology is consistent with presence of brown silty clay mixed with clayey sands and clay. The soils were generally moist with the water table present between 6 to 8 feet bgs. Most of the borings were terminated at 8 feet bgs. Soil samples were collected in precleaned sample containers, packed in coolers, sealed and sent to the contracted laboratory for benzo(a)pyrene (EPA Method 8270) and Aroclor-1260 (PCBs) (EPA Method 8082) analysis.

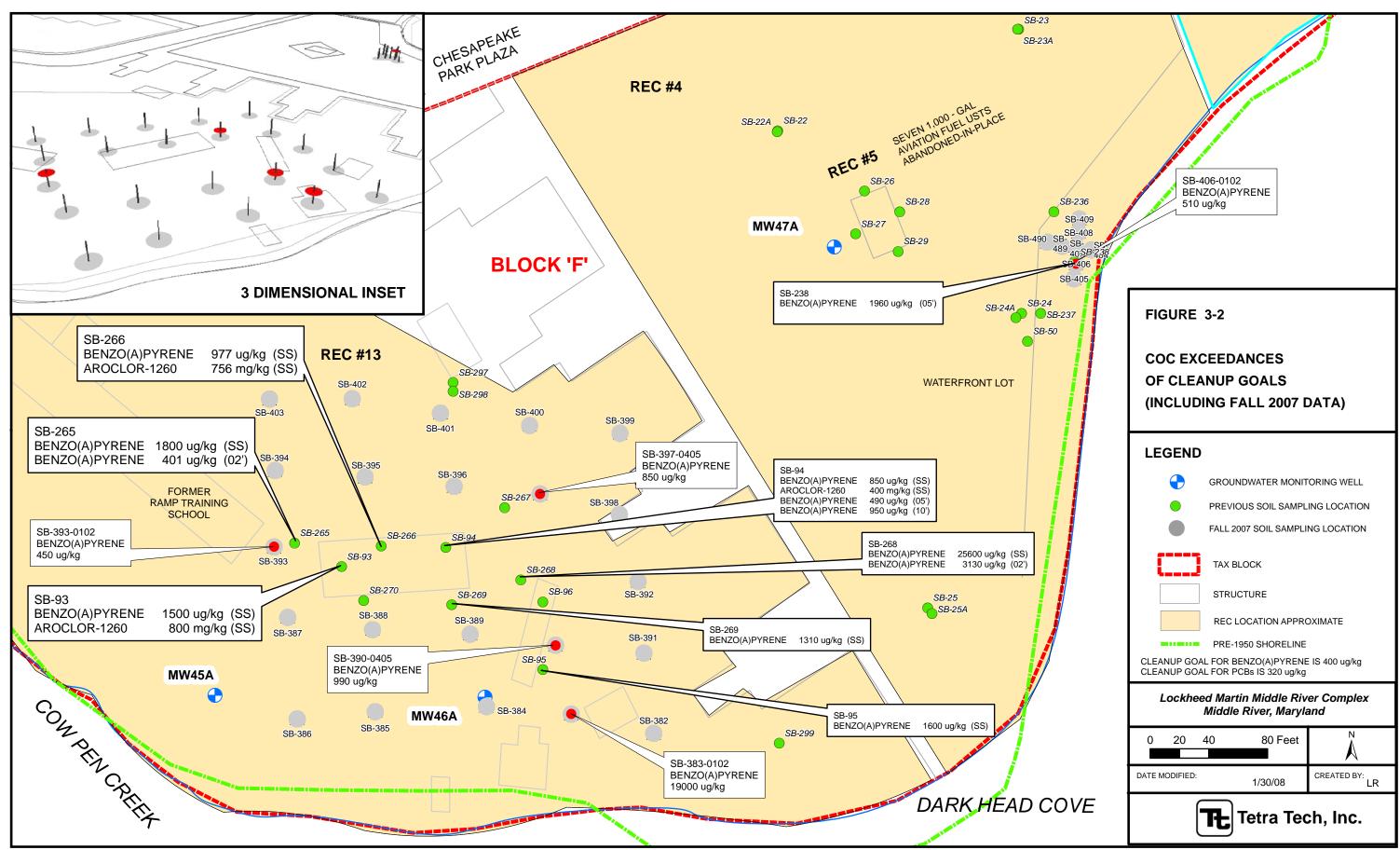
3.2 RESULTS

The laboratory data confirmed the presence of benzo(a)pyrene in forty seven soil samples. A total of 121 soil samples including duplicates were collected from the 30 soil borings and analyzed in the laboratory. A total of 121 soil samples were analyzed for benzo(a)pyrene and Aroclor-1260 (PCBs). These samples underwent Level IV data validation procedures in accordance with EPA Region III protocols to ensure that the generated laboratory data is valid and accurate. The summary of detected concentrations in subsurface soils is presented in Table AF-3 (Appendix A) and the validation reports are provided in Appendix D.

Benzo(a)pyrene concentrations in soils ranged from non-detect to 19,000 μ g/kg at soil boring SB-383 (1 to 2 feet bgs). The benzo(a)pyrene concentration was below 1,000 μ g/kg in the majority of the samples. The forty seven detections of benzo(a)pyrene were scattered sporadically at various boring locations. The cleanup goal for benzo(a)pyrene was established at 400 μ g/kg. Five samples that exceeded the cleanup goals are located in and around REC #13 and REC #4.

PCB (Aroclor-1260) concentrations ranged from non-detect to a maximum of 34 μ g/kg at soil boring SB-383 (1 to 2 feet bgs) with no PCB concentration greater than the cleanup goal (320 μ g/kg). The soil boring locations with COC exceedances of cleanup goals is presented in Figure 3-2.





Section 4

Exposure Assessment

4.1 INTRODUCTION

The exposure assessment presents the current and future land use as defined by the VCP land use definitions, media of concern, and CSM, which includes potentially exposed populations based on future land use and potential exposure pathways.

4.2 CURRENT AND FUTURE LAND USE

The VCP requires applicants to choose a land use and restriction category based on the planned future use of the property. A No Further Requirements Determination or Certificate of Completion issued for a property is contingent on future use of the property as defined by the VCP.

Currently Block F is used only for occasional recreational activities. It is considered to be "Tier 3 Industrial." The VCP defines this land use category as follows:

Industrial property to be used by workers over the age of 18, adult workers and construction workers, and other potential expected users. Industrial purposes allow access to the property at a frequency and duration consistent with a typical business day.

This RAP is evaluating Block F in terms of what would be required to achieve a "Tier 1 Residential Unrestricted" land use and restriction category. The VCP defines this land use and restriction category as follows:

Property usage that allows exposure and access by all populations including infant, children, elderly, and infirmed populations. The "A (Unrestricted)" classification indicates that no LUCs are imposed on the property. Tier 1A properties typically include single-family and multi-family dwellings.

The Tier 1A (Residential Unrestricted) future land use and restriction category is based on the results of the HHRA for Block F, which evaluated potential future residential development.

4.3 MEDIA OF CONCERN

The medium of concern at Block F is surface and subsurface soil. Groundwater was also investigated at Block F; however, groundwater is being addressed separately on a MRC-wide basis rather than on a tax block-specific basis.

4.4 CONCEPTUAL SITE MODEL

The CSM identifies the potential exposure populations at a site, based on current and future use. The CSM also identifies the potential exposure pathways and presents the rationale used to determine whether an exposure pathway is complete. The CSM is the framework for conducting the HHRA.

An HHRA for Block F was conducted as part of the Site Characterization Report (Tetra Tech, May 2006). The CSM in the HHRA postulates human activities that result in exposure to contaminants in soils. The CSM includes individuals who either live at Block F (residents), work at Block F (commercial or industrial workers), develop Block F (construction workers), or visit Block F (recreational users and commercial/industrial establishment visitors) and engage in activities that result in exposure via incidental ingestion of soil, skin contact resulting in dermal absorption of COPCs in soil, and inhalation of dusts and vapors from soil.

Section 5 Cleanup Criteria

5.1 CLEANUP CRITERIA

Development of cleanup goals must be conducted to satisfy the requirements of the VCP and be consistent with the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Part 400.430 as implemented through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The VCP defines a need for remedial action at sites with a cancer risk of 1 x 10⁻⁵ or a hazard index of 1.0.

The results of the risk assessment presented in the Site Characterization Report (Tetra Tech, May 2006) provide the information necessary to focus cleanup goal development. If the cancer risk for the current or future land use is greater than 1 x 10⁻⁵ or greater than a hazard index of 1.0, then cleanup goals must be developed for the intended future use of the site. Cleanup goals are only being developed for COCs, those chemicals that are the principal contributors to risk. A COC is defined as a chemical detected at a concentration that may result in a cancer risk greater than 1 x 10⁻⁵ or a hazard quotient greater than 1.0. Results of a site-specific risk assessment determine which COPCs are the COCs. This determination of COCs was based on a Block F-wide approach rather than evaluation of results from individual soil borings.

Soil sampling locations with COC concentrations greater than the remedial action levels to attain the residential cleanup standards for soil and greater than background would be identified for removal. Site-specific background concentrations are only applicable to metals. If the site-specific background concentration for a metal is greater than the MDE residential cleanup standard for soil, the site-specific metal background concentration is the applicable cleanup goal. Generally, soil remediation will be designed to attain cleanup criteria for the COCs as well as attain target risk levels for a site. Verification of post-removal conditions will be conducted to

demonstrate that post-response action risks are less than a cancer risk of 1×10^{-5} and a hazard index of 1.0.

5.2 RISK ASSESSMENT SUMMARY

The HHRA was conducted for a range of soil exposure scenarios including residential, commercial, and industrial usage. The assessment indicated that future residential exposures to surface and subsurface soil exceeded MDE's threshold level for cancer risk (1 x 10⁻⁵) and the target hazard index of 1.0. The assessment also indicated that exposure to surface soil by all other evaluated receptors exceeded MDE's threshold level for cancer risk. The COCs identified in this assessment are arsenic, vanadium, mercury, and carcinogenic PAHs in soil.

5.3 CLEANUP GOALS

A cleanup goal was identified for benzo(a)pyrene to satisfy a VCP Tier 1A (Residential Unrestricted) future land use and restriction category based on potential future single-family residential development. The MDE residential soil cleanup standard for benzo(a)pyrene is 330 micrograms per kilogram (μg/kg). However, benzo(a)pyrene is being used to represent all carcinogenic PAHs. Benzo(a)pyrene is co-located with all the carcinogenic PAHs; therefore, its removal is considered representative of the removal of other carcinogenic PAHs that may be contributing significantly to risk. The site data will be used in concert with the site-specific incremental lifetime cancer risks and hazard indices at individual sampling locations to define a site-specific remedial action level for benzo(a)pyrene to achieve a target risk level of 1 x 10⁻⁵ and a target hazard index of 1.0.

The MDE residential soil cleanup standard for PCBs is 320 ug/kg. However, reduction of PCB concentrations will be coincident with benzo(a)pyrene removal to result in attainment of target risks at individual sampling locations.

The MDE identifies a residential soil cleanup standard for arsenic and vanadium of 2 mg/kg and 55 mg/kg, respectively. However, because arsenic and vanadium are naturally occurring, it is appropriate to consider background reference concentrations. A site-wide approach was used to

identify a background reference concentration for arsenic at the MRC in Comment Response Document No. 2 of the Site Characterization Report (Tetra Tech, December 2006). The Block F-wide average concentration for arsenic, as represented by the 95 percent upper confidence limit of the mean (UCL), must be less than 6 mg/kg with no individual soil concentration exceeding 12 mg/kg. Similarly, the Block F-wide average concentration for vanadium must be less than 55 mg/kg with no individual soil concentration exceeding 91 mg/kg. This approach provides conditions where no arsenic or vanadium "hot spots" remain within Block F while attaining protection of human health through exposure to these metals in soil at Block F.

The MDE identifies a residential soil cleanup standard for mercury of 0.1 mg/kg. However, the MDE's Average Typical Concentration (ATC), based on background data collected in the state of Maryland, provides the basis for determining the need for remediation. A block-wide approach for determining if there is a need for remediation was defined in Comment Response Document No. 2 of the Site Characterization Report (Tetra Tech, December 2006). The Block F wide average concentration, as represented by the UCL, must be less than 0.5 mg/kg.

COPCs, including those constituents comprising TPH, were evaluated in the Block F-specific risk assessment and cleanup goals were subsequently developed. COPCs associated with the previously abandoned-in-place USTs were therefore included in the Block F risk assessment. To comply with MDE's OCP, soil associated with the previously abandoned-in-place USTs and piping with DRO and GRO concentrations greater than MDE cleanup standards will be removed. The MDE generic numerical residential cleanup standard for DRO and GRO in soil is 230 mg/kg.

Cleanup goals are summarized in Table 5-1. Attainment of the cleanup goals at Block F will result in a cancer risk less than 1×10^{-5} and a hazard index less than 1.0.

5.4 ATTAINMENT OF CLEANUP GOALS

To attain cleanup goals, soil with PCB concentrations greater than 320 µg/kg and benzo(a)pyrene concentrations greater than 400 mg/kg will be removed. Removal of benzo(a)pyrene results in a concomitant reduction of mercury and PCB concentrations. Therefore, the post-response action UCL mercury concentration is less than 0.5 mg/kg. Moreover, the post-response action risk at

each soil boring should be less than a cancer risk of 1×10^{-5} and the hazard index of 1.0. In addition, the previously abandoned-in-place USTs, associated piping, and associated contaminated soil with DRO and GRO concentrations greater than the MDE cleanup standard of 230 mg/kg will be removed.

Arsenic and vanadium were identified as COCs based on the results of the HHRA. However, arsenic and vanadium were considered to be present within background levels based on the analysis presented in Comment Response Document No. 2 of the Site Characterization Report (Tetra Tech, December 2006). Because arsenic and vanadium concentrations are currently within background levels, risks associated with these metals would not be included in the post-response action risk calculations. The statistical summary of pre-response action data illustrating that arsenic and vanadium are within background levels and that mercury is present at concentrations greater than the ATC is presented in Table 5-2 and summarized in the Appendix.

Table 5-3 illustrates which samples will be removed and shows the pre- and post-response action risks associated with those soil borings. Soil in some surface soil locations that have no exceedances of MDE's cleanup standards are being removed because the corresponding subsurface soil sample has concentrations greater than MDE's cleanup standards. The pre-response action risks are based on values presented in the HHRA in the Site Characterization Report (Tetra Tech, May 2006). The post-response action risks for those samples that have been removed are defined as "zero risk." The post-response action risks in those borings that remain exclude risks associated with arsenic and vanadium because their concentrations would then be considered to be within background. Arsenic and vanadium concentrations were less than their background concentrations prior to any proposed response action at the site. A statistical summary of post-response action data illustrating that mercury satisfies the ATC requirements is presented in Table 5-4 and Appendix B. Removal of soils associated with benzo(a)pyrene contamination coincidentally resulted in the attainment of cleanup standards for mercury and PCBs.

Table 5-1

Cleanup Criteria Block F, Soil Response Action Plan Lockheed Martin Middle River Complex, Middle River, Maryland

Parameter	Criterion	Test Method
PCBs (1)	≤ 320 µg/kg	EPA SW-846 8081
Benzo(a)pyrene	≤ 400 μg/kg	EPA SW-846 8270C
Mercury (2)		
- Post-response action 95% UCL for Block F soil	≤ 0.5 mg/kg	EPA SW-846 6020
Petroleum Hydrocarbon – Diesel Range Organics ⁽³⁾	≤ 230 mg/kg	EPA SW-846 8015M DRO
Petroleum Hydrocarbon – Gasoline Range Organics (3)	≤ 230 mg/kg	EPA SW-846 8015M DRO

- 1 The cleanup goal for PCBs is equal to the remedial action level required to attain the MDE residential cleanup standard for soil [Table 1 Generic Numeric Cleanup Standards for Groundwater and Soil (MDE, August 2001)].
- 2 The cleanup goal for mercury is based on the Maryland Department of the Environment Average Typical Concentration (ATC) standard and a statistical analysis of mercury data across Block F.
- The cleanup criteria for petroleum hydrocarbons is equal to the MDE residential cleanup standard for soil [Table 2 Generic Numeric Cleanup Standards for Groundwater and Soil for Total Petroleum Hydrocarbon (MDE, August 2001)]. Cleanup criteria are applicable only for the previously abandoned-in-place USTs, associated piping, and associated contaminated soil.

DRO Diesel range organics.

EPA United States Environmental Protection Agency.

GRO Gasoline range organics.

mg/kg Milligrams per kilogram.

PCB Polychlorinated biphenyls.

UCL Upper confidence limit.

μg/kg Micrograms per kilogram.

Table 5-2

Statistical Comparisons of Background Criteria to Pre-Response Action Concentrations Block F, Soil Response Action Plan Lockheed Martin Middle River Complex, Middle River, Maryland

COPC	Background	I Criteria	Pre-Response Action Concentrations					
	Maximum	UCL	Maximum	UCL				
	Surface Soil							
Mercury		0.5	1.4	0.8				
Arsenic	12	6	6	2.9				
Vanadium	91	55	49	36				
	S	ubsurface Soil						
Mercury		0.5	0.97	0.24				
Arsenic	12	6	7	3.4				
Vanadium	91	55	62	38				

Concentrations reported in milligrams per kilogram (mg/kg).

COPC Chemical of potential concern.

UCL Upper confidence limit.

Table 5-3

Pre- and Post-Response Action Risks
Block F, Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland
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	Reside	ential Risks	Reside	ntial Risks
Surface Soil Boring	(Pre-Resp	onse Action) ⁽¹⁾	(Post-Resp	onse Action) ⁽²⁾
Dorning	Cancer	Noncancer	Cancer	Noncancer
SB-22A ⁽³⁾	1.4E-05	0.34	1.1E-07	0.14
SB-236	1.2E-05	1.4	3.4E-07	0.35
SB-237	1.6E-05	2.1	2.1E-06	0.8
SB-238	1.8E-05	1.7	0	0
SB-23A	1.6E-05	0.36	9.4E-06	0.26
SB-24A	1.7E-05	0.73	7.0E-06	0.58
SB-250	2.3E-07	0.63	2.3E-07	0.082
SB-251	2.8E-07	0.74	2.8E-07	0.086
SB-252	1.9E-07	0.61	1.9E-07	0.066
SB-253	2.5E-07	0.89	2.5E-07	0.10
SB-25A	1.2E-05	0.33	9.9E-06	0.30
SB-265	6.1E-05	1.7	0	0
SB-266	2.8E-05	1.2	0	0
SB-267	6.7E-06	0.8	6.7E-06	0.22
SB-268	6.9E-04	1.6	0	0
SB-269	5.2E-05	1.6	0	0
SB-270	7.1E-06	0.82	7.1E-06	0.12
SB-30A	1.5E-05	0.3	8.6E-06	0.19
SB-31A	1.4E-05	0.27	9.1E-06	0.19
SB-50	9.3E-06	0.35	1.2E-07	0.20
SB-55	1.1E-05	0.28	7.0E-06	0.21
SB-56 ⁽³⁾	2.2E-05	0.42	1.7E-07	0.11
SB-57 ⁽³⁾	1.7E-05	0.34	1.4E-07	0.09
SB-58 ⁽³⁾	8.0E-05	0.29	2.8E-07	0.10
SB-93	8.6E-05	0.71	0	0
SB-94	6.8E-05	1.1	0	0
SB-95	4.5E-05	0.34	0	0
SB-96	1.5E-05	0.30	9.3E-06	0.20

Table 5-3

Pre- and Post-Response Action Risks
Block F, Soil Response Action Plan
Lockheed Martin Middle River Complex, Middle River, Maryland
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	Reside	ential Risks	Reside	ntial Risks
Subsurface Soil Boring	(Pre-Resp	onse Action) ⁽¹⁾	(Post-Resp	onse Action) ⁽²⁾
Con Borning	Cancer	Noncancer	Cancer	Noncancer
SB-22	1.7E-05	0.32	8.7E-06	0.18
SB-23	1.3E-05	0.22	8.4E-06	0.15
SB-236	2.0E-05	1.4	3.4E-07	0.37
SB-237	4.1E-07	1.0	4.1E-07	0.11
SB-238	6.2E-05	1.2	0	0
SB-24	1.9E-05	0.53	8.6E-06	0.37
SB-25	1.2E-05	0.27	8.6E-06	0.20
SB-250	2.2E-07	0.79	2.2E-07	0.066
SB-251	1.5E-05	1.3	3.5E-07	0.10
SB-252	1.2E-05	1.0	2.3E-07	0.077
SB-253	2.2E-07	0.75	2.2E-07	0.076
SB-26	0	0	0	0
SB-265	1.1E-05	0	0	0
SB-266	3.4E-06	0	3.4E-06	0
SB-267	2.6E-06	0	2.6E-06	0
SB-268	7.6E-05	0	0	0
SB-269	1.7E-06	0	1.7E-06	0
SB-27	0	0	0	0
SB-270	2.2E-06	0	2.2E-06	0
SB-28	0	0	0	0
SB-29	0	0	0	0
SB-295	2.2E-05	1.4	8.7E-06	0.12
SB-296	2.6E-05	2.1	9.5E-06	0.21
SB-297	1.8E-05	1.2	8.4E-06	0.12
SB-298	1.9E-05	1.3	8.6E-06	0.12
SB-299	1.3E-05	0.9	8.4E-06	0.1
SB-30	1.1E-05	0.26	8.3E-06	0.21
SB-31	8.8E-06	0.25	8.8E-06	0.25

Table 5-3

Pre- and Post-Response Action Risks Block F, Soil Response Action Plan Lockheed Martin Middle River Complex, Middle River, Maryland Page 3 of 3

0	Reside	ntial Risks	Residential Risks		
Subsurface Soil Boring	(Pre-Respo	onse Action) ⁽¹⁾	(Post-Response Action) ⁽²⁾		
con Bornig	Cancer	Noncancer	Cancer	Noncancer	
SB-50	3.3E-06	0.21	1.6E-07	0.16	
SB-55	1.6E-05	0.53	1.0E-05	0.44	
SB-56	1.0E-05	0.23	9.6E-06	0.22	
SB-57	1.3E-05	0.25	9.7E-06	0.20	
SB-58	2.1E-05	0.43	9.5E-06	0.25	
SB-93	1.1E-05	0.25	9.9E-06	0.24	
SB-94	1.9E-05	0.26	0	0	
SB-95	1.1E-05	0.26	1.0E-05	0.25	
SB-96	1.1E-05	0.22	9.8E-06	0.21	

- 1 Soil boring location risks as identified in the Site Characterization Report (Tetra Tech, May 2006).
- 2 Soil boring location risks excluding those attributable to arsenic and vanadium (less than Block F-specific background reference concentration of 12 and 91 mg/kg, respectively).

Table 5-4

Statistical Comparisons of Background Criteria to Post-Response Action Concentrations Block F, Soil Response Action Plan Lockheed Martin Middle River Complex, Middle River, Maryland

COPC	Background Cr	iteria	Post-Response Action Concentrations		
	Maximum	UCL	Maximum	UCL	
Surface Soil					
Mercury		0.5	1.4	0.38	
Subsurface Soil					
Mercury		0.5	0.97	0.23	

1 Concentrations reported in milligrams per kilogram (mg/kg).

COPC Chemical of potential concern.

UCL Upper confidence limit.

Section 6

Selected Technologies and Land Use Controls

6.1 INTRODUCTION

The selected technologies and LUCs for the proposed response action are provided in this section as required by the VCP guidance document. The NCP, 40 CFR Part 400.430 as implemented through CERCLA, served as a guide for the process used to arrive at the selected technology (i.e., selected alternative). This section includes the identification, screening, and evaluation of potential technologies and process options; preliminary and detailed screening of technologies and process options; selection of representative process options; development and detailed analysis of alternatives; comparative analysis of alternatives; and description of the proposed alternative.

The basis for technology identification and screening began with a series of discussions that included the following:

- Development of response action objectives (RAOs)
- Identification of Applicable or Relevant and Appropriate Requirements (ARARs)
- Identification of COCs
- Development of cleanup goals
- Identification of general response actions (GRAs)
- Identification of volumes or areas of the media of concern

6.1.1 Response Action Objectives

The purpose of this section is to develop RAOs for Block F. Development of RAOs is an important step in the CERCLA process. The RAOs are medium-specific goals that define the objective of conducting response actions to protect human health and the environment. The RAOs

specify the COCs, potential exposure routes and receptors, and acceptable contaminant levels for the site. The development of RAOs takes into consideration ARARs and To Be Considered (TBC) criteria.

This RAP addresses soil contamination at Block F. The RAOs were developed to permit consideration of a range of treatment and containment alternatives to obtain a Certificate of Completion from the MDE under a Tier IA (Residential Unrestricted) future land use and restriction category.

The following RAOs were developed for Block F:

- Prevent unacceptable human health risk associated with exposure to surface soil containing PCBs and PAH concentrations greater than the cleanup goals.
- Remove the previously abandoned-in-place aviation fuel USTs (REC #5), associated piping, and contaminated soil under the MDE OCP in accordance with the Code of Maryland Regulations (COMAR) 26.10.10.02.

6.1.2 Applicable or Relevant and Appropriate Requirements and To Be Considered Criteria

ARARs consist of the following:

- Any standard, requirement, criterion, or limitation under federal environmental law.
- Any promulgated standard, requirement, criterion, or limitation under a State environmental or facility-siting law that is more stringent than the associated federal standard, requirement, criterion, or limitation.

TBC criteria are nonpromulgated, nonenforceable guidelines or criteria that may be useful for developing a response action or are necessary for determining what is protective of human health and/or the environment. Examples of TBC criteria include United States Environmental Protection Agency's (EPA's) Reference Doses (RfDs) and Cancer Slope Factors (CSFs).

One of the primary concerns during the development of response action alternatives for hazardous waste sites is the degree of human health and environmental protection offered by a given remedy. Section 121 of CERCLA requires that primary consideration be given to response alternatives that

attain or exceed ARARs. The purpose of this requirement is to make CERCLA response actions consistent with other pertinent federal and state environmental requirements.

The NCP identifies the following three categories of ARARs [40 CFR Section 300.400 (g)]:

- <u>Chemical-Specific</u>: Health-risk-based numerical values or methodologies that establish concentration or discharge limits for particular contaminants. Table 6-1 presents a list of federal and State of Maryland chemical-specific ARARs and TBC criteria. These ARARs and TBC criteria provide some medium-specific guidance on "acceptable" or "permissible" concentrations of contaminants.
- <u>Location-Specific</u>: Restrict actions or contaminant concentrations in certain environmentally sensitive areas. Examples of these areas regulated under various federal laws include floodplains, wetlands, and locations where endangered species or historically significant cultural resources are present. Table 6-2 presents a list of federal and State of Maryland location-specific ARARs and TBC criteria. These ARARs and TBC criteria place restrictions on concentrations of contaminants or the conduct of activities solely based on the site's particular characteristics or location.
- <u>Action-Specific</u>: Technology- or activity-based requirements, limitations on actions, or conditions involving special substances that control or restrict response action. Examples of action-specific ARARs include wastewater discharge standards and performance or design standards, controls, or restrictions on particular types of activities. Table 6-3 presents a list of federal and State of Maryland action-specific ARARs and TBCs.

6.1.3 Chemicals Of Concern

The HHRA determined which compounds were the principal contributors to risk, also referred to as COCs. A COC is defined as a chemical that produces a cancer risk greater than 1 x 10⁻⁵ or a hazard quotient greater than 1.0. The determination of COCs was based on a Block F-wide approach rather than evaluation of results from individual soil borings. The COC determination is discussed in Section 5.

6.1.4 Cleanup Goals

Cleanup goals are chemical concentrations in environmental media that, when attained, should achieve RAOs. In general, cleanup goals are established with consideration given to the following:

• Protecting human receptors from adverse health effects

• Compliance with federal and State ARARs

Soil cleanup goals were determined for the COCs (PAHs, mercury and PCBs) and MDE soil cleanup standards for DRO and GRO were determined in Section 5.3, and attainment of the cleanup critieria was discussed in Section 5.4. Cleanup criteria are presented on Table 5-1.

6.1.5 General Response Actions and Action-Specific ARARs

GRAs are broadly defined response approaches that may be used (by themselves or in combination with one or more of the others) to attain RAOs. GRAs describe categories of actions that could be implemented to satisfy or address a component of an RAO for the site. Response action alternatives will then be composed using GRAs individually or in combination to meet the RAOs. The response action alternatives, composed of GRAs, will be capable of achieving the RAOs for contaminated soil at Block F.

The following GRAs were considered for soil at Block F:

No Action

Limited Action: LUCs

- Containment
- Removal
- In-Situ Treatment
- Ex-Situ Treatment
- Disposal

6.1.6 Estimated Volume of Contaminated Soil

Preliminary surface areas and volumes of soil that would need to be managed to allow for future land use as VCP Tier 1A (Residential Unrestricted) were estimated as described in Section 8. It is estimated that approximately 5,200 in-place cubic yards (cy) of contaminated soil with a surface area of approximately 29,000 square feet (sf) contain concentrations of COCs greater than the cleanup goals and DRO and GRO concentrations greater than the MDE soil cleanup standards.

6.2 SCREENING OF TECHNOLOGIES AND PROCESS OPTIONS

This section identifies, screens, and evaluates the potential technologies and process options that may be applicable to develop the response action alternatives for soil at Block F. The primary objective of this phase of the RAP is to develop an appropriate range of technologies and process options that will be used for developing the response action alternatives.

Technology screening evaluation is performed in this section with the completion of the following analytical steps:

- Identification and preliminary screening of technologies and process options;
- Detailed screening of technologies and process options that pass the preliminary screening step;
- Evaluation and selection of representative process options;

In this section, a variety of technologies and process options are identified under each GRA (discussed in Section 6.1.5) and screened. The selection of technologies and process options for initial screening is based on the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (EPA, October 1988). The screening is first conducted at a preliminary level to focus on relevant technologies and process options. Then the screening is conducted at a more detailed level based on certain evaluation criteria. Finally, process options are selected to represent the technologies that have passed the screening and detailed evaluation.

The evaluation criteria for detailed screening of technologies and process options that have been retained after the preliminary screening are effectiveness, implementability, and cost. The following are descriptions of these evaluation criteria:

Effectiveness

- Protection of human health and environment; reduction in toxicity, mobility, or volume; and permanence of solution.
- Ability of the technology to address the estimated areas or volumes of contaminated media.
- Ability of the technology to meet the cleanup goals identified in the RAOs.
- Technical reliability (innovative versus proven) with respect to contaminants and site conditions.

Implementability

- Overall technical feasibility at the site.
- Availability of vendors, mobile units, storage and disposal services, etc.
- Administrative feasibility.
- Special long-term maintenance and operation requirements.

Cost

- Capital cost.
- Operation and maintenance (O&M) costs.

Technologies and process options will be identified for the soil response action in the following sections.

Section 6.3 discusses the development of the response action alternatives developed from the process options retained in this section and provides a description of the conceptual design for these alternatives. This section also presents an evaluation of each response action alternative with respect to the criteria of the NCP of 40 CFR Part 300. These criteria and their relative importance are also discussed in this section.

Section 6.4 compares the analyses that were presented for each of the response action alternatives. The criteria for comparison are identical to those used for the detailed analysis of individual alternatives.

6.2.1 Preliminary Screening of Technologies and Process Options

This section identifies and screens technologies and process options for soil at a preliminary stage based on implementation with respect to site conditions and COCs. Table 6-4 summarizes the preliminary screening of technologies and process options applicable to soil. This table presents the GRAs, identifies the technologies and process options, and provides a brief description of each process option followed by screening comments. The technologies and process options that pass the initial screening step are retained for detailed screening in Section 6.2.2.

The technologies and process options for the soil response action that will be retained for detailed screening are shown below.

General Response Action	Response Action Technology	Process Option	
No Action	None	Not Applicable	
Removal	Excavation	Mechanical	
Disposal	Off-Site RCRA Landfill or TSDF		

6.2.2 Detailed Screening of Soil Treatment Technologies and Process Options

This section identifies and develops the representative process options, through a detailed screening procedure, which will be used in the formulation of response action alternatives to accomplish the RAOs and meet the cleanup goals identified for soil in Section 5.

6.2.2.1 <u>No Action</u>

No Action consists of maintaining status quo at Block F. As required under CERCLA regulations, the No Action alternative is carried through to provide a baseline for comparison of alternatives and their effectiveness in mitigating risks posed by site contaminants.

6.2.2.2 Removal

The technology considered under this GRA is excavation.

Excavation

A variety of equipment such as front-end loaders, hydraulic excavators, backhoes, and other mechanical equipment could be used to perform the excavation. The type of equipment selected must take into consideration several factors, such as the type of material to be removed, the load-bearing capacity of the ground surrounding the removal area, the depth and areal extent of removal, the required rate of removal, and the elevation of the groundwater table. Excavation is a preferred technology for the removal of well-consolidated material such as soil with significant load-bearing capacity (i.e., greater than 1,500 pounds per square foot).

Excavation logistics must take into account the available space for stormwater management, equipment decontamination, operating the equipment, loading, unloading, and stockpiling the

excavated material, location of the site, etc. After excavation is completed, the location is filled and graded with certified clean fill material or treated soils.

Effectiveness

Shallow excavation is a well-proven and effective method of removing soil with contaminant concentrations greater than the cleanup criteria from a site. Properly designed excavation would remove the soil with contaminant concentrations greater than the cleanup criteria, and the remaining soil would not pose an unacceptable risk to human health or the environment.

Implementability

Excavation of soil with contaminant concentrations greater than the cleanup criteria at Block F would be implementable. Excavation equipment is readily available. This technology is well proven and a common solution in the construction/remediation industry. During excavation, site-specific health and safety procedures and Occupational Safety and Health Administration (OSHA) regulations would be complied with to ensure that the exposure of the workers to COCs is minimized.

The excavation at Block F would extend to a depth of 10 feet bgs (or to the zone of saturation). The excavation would be cut-back or stepped, supported by trench boxes and personnel would not be permitted to enter the excavation. Existing concrete tarmac and concrete paved asphalt parking surfaces, etc. would have to be removed prior to excavation.

Cost

Cost of excavation at Block F on a unit volume basis would be low to moderate.

Conclusion

Excavation is retained in combination with other process options for the development of response action alternatives.

6.2.2.3 <u>Disposal</u>

The technology considered under this GRA is off-site landfilling.

Off-Site Landfilling

Off-site landfilling would consist of transporting the excavated soil for burial at a permitted off-site treatment, storage, and disposal facility (TSDF). Excavated soil characterized as Resource Conservation and Recovery Act (RCRA) non-hazardous waste could be disposed in a RCRA Subtitle D solid waste landfill. Excavated soil characterized as RCRA hazardous waste would have to be disposed in a RCRA Subtitle C TSDF. Excavated soil and debris with PCB concentrations greater than 50 mg/kg would have to be managed at a Toxic Substances Control Act (TSCA) TSDF.

Effectiveness

Off-site landfilling does not permanently or irreversibly reduce contaminant toxicity or mobility. However, although CERCLA preference for treatment relegates landfilling to a less preferable option, this technology can be an effective disposal option for contaminated soil and can be used in conjunction with treatment alternatives. Off-site landfills are only permitted to operate if they meet certain requirements of design and operation governing foundations, liners, leak detection, leachate collection and treatment, daily cover, post-closure inspections and monitoring, etc., which ensure the effectiveness of these facilities. The requirements of a TSCA and RCRA hazardous (Subtitle C) TSDF are typically more stringent than those of a RCRA non-hazardous (Subtitle D) solid waste landfill.

Implementability

Off-site landfilling would be easily implementable. Facilities and services are available. Disposal at a RCRA Subtitle D landfill may require certain pre-treatment, mainly the removal of free liquids but, because soil would be excavated no deeper than to a depth of the zone of saturation, associated water should be minimal and this requirement should be easy to meet. In addition, a waste profile would have to be prepared, indicating the contaminant concentrations and their leachability potential. Disposal of any soil containing compounds with Toxicity Characteristic Leaching Procedure (TCLP) levels exceeding hazardous criteria would require pre-treatment to meet Land Disposal Restrictions (LDRs) prior to landfilling. If treatment achieves Universal

Treatment Standards (UTSs), then disposal of the treated soil in a RCRA Subtitle D landfill (i.e., non-hazardous) would be permissible. If not, the treated soil would need to disposed in a RCRA Subtitle C (i.e., hazardous) TSDF. Disposal of any soil and debris with PCB concentrations greater than 50 mg/kg would be managed at a TSCA TSDF.

<u>Cost</u>

Cost of off-site landfilling would be low to moderate depending on volume and distance to the disposal facility.

Conclusion

Off-site landfilling is retained in combination with other process options for the development of response action alternatives.

6.2.3 Selection of Representative Process Options

The following GRAs, technologies, and process options, under the GRAs as noted, are retained for the development of response action alternatives:

- No Action
- Removal: Excavation
- Disposal: Off-Site RCRA Non-Hazardous (Subtitle D) Landfill, and Off-Site RCRA Hazardous (Subtitle C) TSDF, and Off-Site TSCA TSDF

The next step is to select representative process options from each technology to assemble an adequate variety of alternatives and evaluate the alternatives in sufficient detail to aid in the final selection process. All process options listed above are retained for the formulation of alternatives because the processes are sufficiently varied in their functions.

6.3 DEVELOPMENT AND DETAILED ANALYSIS OF ALTERNATIVES

This section discusses the development of the soil response action alternatives from the process options retained above and provides a description of the conceptual designs for the alternatives. This section also presents an evaluation of each response action alternative with respect to the

criteria of the NCP of 40 CFR Part 300. The criteria and the relative importance of these criteria are also discussed in this section.

6.3.1 Development of Alternatives

The technologies and process options retained after detailed screening in Section 6.2.3 were assembled into the following alternatives:

S-1. No Action:

This alternative is required by the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (EPA, 1988) as a baseline for comparison to other alternatives.

S-2. Excavation to Allow Unrestricted Residential Site Use and Off-Site Disposal:

This alternative would remove soil with COC concentrations greater than the cleanup goals to the extent necessary to allow unrestricted residential use of Block F. This would require excavation of the soil with contaminant concentrations greater than the cleanup criteria identified in Section 5.3.

It is assumed that all excavated soil would be disposed at an off-site permitted RCRA Subtitle D landfill. If any excavated material fails TCLP testing, the material would be disposed at an off-site permitted RCRA Subtitle C TSDF. If any excavated material has PCB concentrations greater than 50 mg/kg, the material would be disposed at a TSCA TSDF. The excavated areas would then be backfilled with certified clean imported fill material and Block F would be restored to pre-response action conditions. Because the soil remaining on site would no longer contain concentrations of COCs that could be harmful to potential future residential receptors, soil-related LUCs would not be required.

In addition to soil contaminated with PAHs, the previously abandoned-in-place aviation fuel USTs (REC #5), associated piping, and contaminated soil will be removed to comply with MDE OCP requirements.

6.3.2 Description and Detailed Analysis of Alternatives

This section presents a description of the conceptual design of each alternative, followed by the detailed analysis using the nine criteria of the NCP under 40 CFR Part 300. The evaluation criteria are discussed below.

6.3.2.1 <u>Evaluation Criteria</u>

In accordance with the NCP (40 CFR Part 300.430), the following nine criteria are used for the evaluation of response action alternatives:

- Overall Protection of Human Health and the Environment
- Compliance with ARARs
- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, or Volume through Treatment
- Short-Term Effectiveness
- Implementability
- Cost
- State Acceptance
- Community Acceptance

Overall Protection of Human Health and the Environment

Alternatives must be assessed for adequate protection of human health and environment, in the short and long term, from unacceptable risks posed by hazardous substances or contaminants present at Block F by eliminating, reducing, or controlling exposure to levels exceeding response action goals. Overall protection draws on the assessments of other evaluation criteria, especially long-term effectiveness and permanence, short-term effectiveness, and compliance with ARARs.

Compliance with ARARs

Alternatives must be assessed to determine whether they attain ARARs under federal environmental laws and State environmental or facility siting laws. If one or more regulations that are applicable cannot be complied with, a waiver must be invoked. Grounds for invoking a waiver would depend on the following circumstances:

- The alternative will attain a standard of performance that is equivalent to that required under the otherwise applicable standard, requirement, or limitation through use of another method or approach.
- A State requirement has not been consistently applied or the State has not demonstrated the intention to consistently apply the promulgated requirement in similar circumstances at other response actions within the State.

Long-Term Effectiveness and Permanence

Alternatives must be assessed for the long-term effectiveness and permanence they offer, along with a degree of certainty that the alternative will be successful. Factors that should be considered, as appropriate, include the magnitude of residual risk (i.e., risks posed by untreated waste or treatment residuals) and adequacy and reliability of controls (i.e., controls needed to manage untreated waste or treatment residuals).

Reduction of Toxicity, Mobility, or Volume through Treatment

The degree to which the alternative employs recycling or treatment that reduces the toxicity, mobility, or volume of the waste must be assessed, including how treatment is used to address the principal threats posed by the site.

Short-Term Effectiveness

The short-term impacts of the alternative must be assessed considering the following:

- Short-term risks that might be posed to the community during implementation.
- Potential impacts on workers during the response action and the effectiveness and reliability of protective measures.
- Potential environmental impacts of the response action and the effectiveness and reliability of mitigation measures during implementation.
- Time until protection is achieved.

Implementability

The ease or difficulty of implementing the alternatives must be assessed by considering technical feasibility, administrative feasibility, and availability of services and materials.

Cost

Capital costs must include both direct and indirect costs. Annual O&M costs must be provided. A net present worth (NPW) value of the capital and O&M costs must also be provided. Typically, the cost estimate accuracy range is plus 50 percent to minus 30 percent. Because there are no costs associated with the first alternative (No Action), a cost comparison of the two alternatives will not be performed.

State Acceptance

The MDE will review the proposed RAP and will inform Lockheed Martin in writing, on or before the end of a 75-day review period, whether the RAP has been approved or rejected. If the proposed RAP is rejected, MDE will state the modifications necessary to receive approval. The 75-day MDE review period will begin after a notice of the proposed RAP is published in a local newspaper and a sign is posted at the property indicating notice of intent to conduct the RAP.

Community Acceptance

The public will be afforded the opportunity to review and provide commentary on the proposed RAP. The MDE will receive written comments from the public for 30 days after publication of the newspaper notice and posting of the sign at the property or 5 days after the public informational meeting, whichever is later. In addition, a public informational meeting will be held within 40 days after publication of the newspaper notice.

Relative Importance of Criteria

Among the nine criteria, the threshold criteria are considered to be:

- Overall Protection of Human Health and the Environment
- Compliance with ARARs

The threshold criteria must be satisfied for an alternative to be eligible for selection.

Among the remaining criteria, the following five are considered to be the primary balancing criteria:

- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, or Volume

- Short-Term Effectiveness
- Implementability
- Cost (not applicable to Block F)

The balancing criteria are used to weigh the relative merits of alternatives.

The remaining two of the nine criteria, State acceptance and community acceptance, are considered to be modifying criteria that must be considered during response action selection. These last two criteria can only be evaluated after the MDE and community have reviewed the proposed RAP. Therefore, this RAP addresses only seven of the nine criteria. The remaining two criteria will be addressed through the RAP review, comment, and approval process.

6.3.2.2 <u>Selection of Response Action</u>

The selection of a remedy is a two-step process. The first step consists of identification of a preferred alternative and presentation of the alternative in a proposed RAP submitted to MDE and the community for review and comment. The preferred alternative must meet the following criteria:

- Protection of human health and the environment.
- Compliance with ARARs.
- Cost effectiveness in protecting human health and environment and in complying with ARARs.
- Utilization of permanent solutions and alternate treatment technologies or resource recovery technologies to the maximum extent practicable.

The second step consists of the review of the comments and consultation with the MDE to determine whether or not the preferred alternative continues to be the most appropriate response action for the site.

6.3.3 Detailed Analysis of Alternatives

6.3.3.1 <u>Alternative S-1: No Action</u>

Description of Alternative S-1

This alternative would leave Block F in its current condition. The No Action alternative is required under CERCLA to establish a basis for comparison with other alternatives.

<u>Detailed Analysis of Alternative S-1</u>

Overall Protection of Human Health and Environment

Alternative S-1 would not be protective of human health and the environment. Concentrations of PAHs, mercury, and PCBs that exceed the established site-specific cleanup goal for human health and concentrations of DRO and GRO greater than MDE soil cleanup standards would remain in the soil. Therefore, the RAOs for Block F would not be achieved.

Compliance with ARARs

Alternative S-1 would not achieve human health site-specific cleanup goals or MDE soil cleanup standards.

Long-Term Effectiveness and Permanence

Alternative S-1 would not be effective in the long term because soil COCs would remain on site and pose potential human health risks. Although concentrations of soil COCs might gradually decrease to acceptable levels over a long duration of time because of natural processes, monitoring would not be conducted to verify this.

Reduction of Toxicity, Mobility, and Volume through Treatment

Alternative S-1 does not employ any treatment.

Short-Term Effectiveness

There are no relevant issues under Alternative S-1 because no action would occur.

Implementability

There are no implementability concerns for Alternative S-1 because no action would be implemented.

Cost

There are no costs associated with Alternative S-1.

6.3.3.2 <u>Alternative S-2: Excavation to Allow Unrestricted Residential Site Use</u> and Off-Site Treatment and Disposal

Description of Alternative S-2

Alternative S-2 is illustrated on Figure 8-1 and would consist of two major components: (1) excavation to allow unrestricted residential site use and (2) off-site treatment and disposal.

Component 1: Excavation to Allow Unrestricted Residential Site Use

Figure 8-1 shows the areas of Block F that would be excavated to meet the cleanup goals. As part of site preparation, a material handling pad, decontamination zones, and haul routes would be constructed to allow equipment to access the areas to be excavated and these areas would be cleared, if required. Excavation of soil to a depth of 5 feet (or to the zone of saturation) would be conducted using a bulldozer, front-end loader, or similar equipment.

Post-removal/confirmation samples would be collected from the sidewalls and base of the excavation and analyzed for PAHs, mercury, and PCBs. Post-removal/confirmation samples in the previously abandoned-in-place aviation fuel USTs excavation would be collected from the sidewalls and base of the excavation and analyzed for DRO and GRO.

Following excavation and after post-removal/confirmation sample results confirm that soil with concentrations greater than the cleanup goals has been removed, the excavated areas would be backfilled with certified clean material, graded to original contours, and restored to pre-response action conditions

Component 2: Off-Site Disposal

The following are the expected actions for the excavated soil:

- Excavated material characterized as RCRA non-hazardous waste would be transported to a permitted RCRA Subtitle D facility for direct landfilling.
- Excavated soil that fails TCLP testing would be characterized as RCRA hazardous waste and would be transported to a permitted RCRA Subtitle C TSDF for treatment to meet TCLP limits followed by direct landfilling.
- Excavated soil with PCB concentrations greater than 50 mg/kg would be transported to a permitted TSCA TSDF for treatment, if required, followed by direct landfilling.

The volumes estimated for disposal at the various facilities would need to be verified based on sampling and analysis of stockpiled soil, followed by profiling as necessary for each facility.

Detailed Analysis of Alternative S-2

Overall Protection of Human Health and Environment

Alternative S-2 would be protective of human health and the environment. The removal of soil with COC concentrations greater than the cleanup goals will reduce potential risk for any future developments. Block F would be suitable for revegetation and potential use as a natural and recreational corridor. All of the RAOs for Block F would be achieved.

Compliance with ARARs

Alternative S-2 would achieve the human health site-specific cleanup goal established in Section 5. Location-specific and action-specific ARARs would be complied with in substance, in particular, the following:

- RCRA regulations including Identification and Listing of Hazardous Wastes and LDRs
- TSCA regulations
- OSHA regulations
- Maryland Hazardous Waste Management System Regulations
- Maryland Regulation of Water Supply, Sewage Disposal, and Solid Waste
- Maryland General Permit for Construction Activity
- Maryland OCP

Long-Term Effectiveness and Permanence

Alternative S-2 would be effective in the long term because the COCs that present an unacceptable risk to residential human receptors would be removed from Block F and deposited in a suitable

landfill outside the site, resulting in residual levels that would no longer pose an unacceptable risk to these receptors.

Reduction of Toxicity, Mobility, and Volume through Treatment

Alternative S-2 would permanently and irreversibly reduce the mobility of the contaminants to the environment by depositing them in a RCRA-permitted landfill or TSCA TSDF where their exposure to the environment would be adequately controlled. However, unless the excavated material is treated prior to landfilling, Alternative S-2 would not reduce the toxicity of the contaminated soil.

Short-Term Effectiveness

Alternative S-2 would be effective in the short term. Dust suppression and control measures would be implemented to minimize the emission of contaminated soil particulates during onsite response action activities. Erosion control measures would minimize the migration of COCs into nearby streams. Transportation of the contaminated soil to an off-site landfill would be conducted in suitable containers and by reputable transporters. In the unlikely event of a traffic accident releasing contaminated soil to the environment, an immediate hazard to the community would not be posed because of the non-volatile nature and relatively low solubility of the COCs present in the soil. However, should such an event occur, measures to prevent washing away of the soil by storm events would be warranted. Workers on site would be adequately protected if suitable health and safety procedures are followed. The approximate timeframe for implementation of this alternative is 7 weeks.

Implementability

Alternative S-2 is implementable. Excavation equipment considered under this alternative are typical in the construction industry and are readily available from several local sources. Time to coordinate with stakeholders and obtain necessary permits can easily be built into the schedule. Suitable landfills are available for treatment and/or direct disposal of the excavated non-hazardous soil and have been identified at nearby locations. Suitable landfills for treatment and disposal of excavated soil with PCB concentrations greater than 50 mg/kg (i.e., TSCA TSDF) have been identified at more distant locations.

Cost

The capital cost for Alternative S-2 is \$910,000. There are no annual O&M costs associated with Alternative S-2. The NPW value of the capital and O&M costs is \$910,000.

6.4 COMPARATIVE ANALYSIS OF ALTERNATIVES

This section compares the analyses presented for each of the response action alternatives in Section 6.3. The criteria for comparison are identical to those used for the detailed analysis of individual alternatives.

6.4.1 Soil

The following response action alternatives for soil are being compared in this section:

- Alternative S-1: No Action
- Alternative S-2: Excavation to Allow Unrestricted Residential Site Use and Off-Site Treatment and Disposal

6.4.1.1 Overall Protection of Health and the Environment

Alternative S-1 would not be protective. Alternative S-2 would be protective.

6.4.1.2 Compliance with ARARs and TBCs

There are no chemical-specific ARARs for Block F soil, only chemical-specific TBCs that are the cleanup goals developed in Section 5. Alternative S-1 would not comply with the chemical-specific TBCs. Action-specific ARARs do not apply to Alternative S-1. Alternative S-2 would comply with the chemical-specific TBCs and location- and action-specific ARARs.

6.4.1.3 Long-Term Effectiveness and Permanence

Alternative S-1 would not be effective in the long term and offers no permanent solution. Alternative S-2 would be effective in the long term because it offers a remedy that removes the

PAHs, mercury, and PCBs from Block F without the need for LUCs to prevent residential and commercial/industrial development and recreational use.

6.4.1.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Alternatives S-1 and S-2 do not employ any treatment.

6.4.1.5 Short-Term Effectiveness

Alternative S-1 would not present short-term risks to workers, the community, and the environment because no actions would be taken. Short-term risks to the community, workers, and the environment associated with Alternative S-2 could be adequately controlled.

Alternative S-1 would not achieve the soil RAOs. The approximate timeframe for implementation and attainment of RAOs would be 7 weeks for Alternative S-2.

6.4.1.6 <u>Implementability</u>

There is no action to be implemented for Alternative S-1. Alternative S-2 would be easy to implement because no on-site treatment or long-term maintenance would be required.

6.4.1.7 <u>Cost</u>

There are no costs associated with Alternative S-1. The capital and NPW cost for Alternative S-2 is \$910,000.

6.4.2 Summary of Comparative Analysis of Alternatives

Table 6-5 summarizes the comparative analysis of the two soil response action alternatives.

6.5 PROPOSED ALTERNATIVE

The proposed alternative is Alternative S-2. This alternative would remove soil with COC concentrations greater than the cleanup goals to the extent necessary to allow unrestricted residential use of Block F and remove the previously abandoned-in-place aviation fuel USTs (REC #5), associated piping, and contaminated soil with DRO and GRO concentrations greater than the MDE cleanup standards. This would require excavation of the soil with COC concentrations greater than the cleanup goals identified in Section 5. Figure 8-1 shows the areas of Block F that would be excavated to meet the cleanup goals. As part of site preparation, temporary haul routes would be constructed to allow equipment to access the areas to be excavated and these areas would be cleared using a bulldozer or similar equipment and mulched. Excavation of soil would be conducted using a bulldozer, front-end loader, hydraulic excavators, backhoe, or similar equipment.

Post-removal/confirmation samples would be collected from the sidewalls and base of the excavation and analyzed for PAHs, mercury, PCBs and DRO and GRO.

Following excavation and after post-removal/confirmation sample results confirm that soil with COC concentrations greater than the cleanup goals and soil with DRO and GRO concentrations greater than the MDE cleanup standards have been removed, the excavated areas would be backfilled with certified clean material, graded to original contours, and restored to pre-response action conditions.

It is assumed that all excavated soil would be disposed at an off-site permitted RCRA Subtitle D landfill. If any excavated material fails TCLP testing, the material would be disposed at an off-site permitted RCRA Subtitle C TSDF. If any excavated material has PCB concentrations greater than 50 mg/kg, the material would be disposed at a TSCA TSDF. Because the soil remaining on site would no longer contain concentrations of COCs that could be harmful to hypothetical future residential receptors, soil-related LUCs would not be required.

In addition to soil contaminated with PAHs, the former aviation fuel USTs (REC #5), associated piping, and contaminated soil will be removed to comply with MDE OCP requirements.

Table 6-1

Chemical-Specific ARARs Block F

Soil Response Action Plan

Lockheed Martin Middle River Complex, Middle River, Maryland

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Federal				
Cancer Slope Factors (CSFs)	NA	To Be Considered	CSFs are guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	CSFs would be considered for development of human health protection PRGs for soil at this site.
Reference Doses (RfDs)	NA	To Be Considered	RfDs are guidance values used to evaluate the potential non-carcinogenic hazard caused by exposure to contaminants.	RfDs would be considered for development of human health protection PRGs for soil at this site.
State				
Cleanup Standards for Soil and Groundwater	Maryland Environmental Article 7-508/7-208	Applicable	This document presents the approach and supporting documentation used to develop numeric cleanup standards for hazardous substances in the soil and groundwater for the State of Maryland.	These standards maybe considered for use in determining cleanup standards in the absence of a site-specific risk assessment.

ARARs Applicable or Relevant and Appropriate Requirements.

CSFs Cancer slope factors. NA Not applicable.

PRGs Preliminary remediation goals.

RfDs Reference doses.

Table 6-2

Location-Specific ARARs Block F

Soil Response Action Plan

Lockheed Martin Middle River Complex, Middle River, Maryland

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Federal				
Endangered Species Act Regulations	50 CFR Parts 81, 225, and 402	Potentially Applicable	This act requires federal agencies to take action to avoid jeopardizing the continued existence of federally listed endangered or threatened species.	If a site investigation or remediation could potentially affect an endangered species or their habitat, these regulations would apply (There have been no endangered species or their habitat identified at the MRC).
Historic Sites Act Regulations	36 CFR Part 62	Potentially Applicable	Requires federal agencies to consider to existence and location of landmarks on the National Registry of Natural Landmarks to avoid undesirable impacts on such landmarks.	The existence of National Landmarks would be identified prior to remedial activities on site including remedial investigations (There have been no National Landmarks identified at the MRC).
State				
Nongame and Endangered Species Conservation Act	Annotated Code of Maryland 10-2A-01; COMAR 08.03.08 and 08.02.12.	Potentially Applicable	Requires State agencies to use their authority to maintain and enhance nongame wildlife and endangered species populations.	If a site investigation or remediation could potentially affect an endangered species or their habitat, these regulations would apply (There have been no endangered species or their habitat identified at the MRC).
Division of Historical and Cultural Programs	Annotated Code of Maryland 5A	Potentially Applicable	The Maryland Historic Trust formed in 1961 to preserve, protect, and enhance districts, sites, buildings, structures, and objects significant in the prehistory, history, upland and underwater archeology, architecture, engineering, and culture of the State.	The existence of Maryland historic sites would be identified prior to remedial activities on site including remedial investigations (There have been no historic sites identified at the MRC).

ARARs Applicable or Relevant and Appropriate Requirements. CFR Code of Federal Regulations.

COMAR Code of Maryland Regulations.
MRC Middle River Complex.

Action-Specific ARARs Block F

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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Federal				
RCRA Regulations, Identification and Listing of Hazardous Wastes	40 CFR Part 261	Potentially Applicable	Defines the listed and characteristic hazardous wastes subject to RCRA. Appendix II contains the TCLP.	These regulations would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, as described in the regulations.
Polychlorinated Biphenyl (PCB) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions	40 CFR 761	Potentially Applicable	Amends rules under the Toxic Substances Control Act (TSCA) that addresses the use, handling, and disposal of PCBs and PCB-contaminated material.	Potential removal action may include remediation of PCB-contaminated soil and/or debris.
Guidance on Remedial Actions for Superfund Sites with PCB Contamination	OSWER Directive 9355.4-01	To Be Considered	This guidance describes how to address PCB contamination issues	PCBs are present within soils at the site.
CAA Regulations, NAAQSs	40 CFR Part 50	Relevant and Appropriate	Establishes primary (health-based) and secondary (welfare-based) air quality standards for carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur oxides emitted from a major source of air emissions. The NAAQSs form the basis for all regulations promulgated under the CAA.	Site remediation activities must comply with NAAQSs. The principal application of these standards is during response action activities resulting in exposures through dust and vapors. In general, emissions from CERCLA activities are not expected to qualify as a major source and are therefore not expected to be applicable requirements. However, the requirements may be determined to be relevant and appropriate for non-major sources with significantly similar emissions.
RCRA Regulations, LDRs	40 CFR Part 268	Potentially Applicable	This regulation prohibits the land disposal of untreated hazardous wastes and provides criteria for the treatment of hazardous waste prior to land disposal.	Response actions that involve excavating, treating, and redepositing hazardous soil would comply with LDRs.

Action-Specific ARARs Block F

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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
OSHA Regulations, General Industry Standards	29 CFR Part 1910	Applicable	Requires establishment of programs to assure worker health and safety at hazardous waste sites, including employee training requirements.	These regulations would apply to all response activities.
OSHA Regulations, Occupational Health and Safety Regulations	29 CFR Part 1910, Subpart Z	Potentially Applicable	Establishes permissible exposure limits for workplace exposure to a specific listing of chemicals.	Standards are applicable for worker exposure to OSHA hazardous chemicals during response action activities.
OSHA Regulations, Recordkeeping, Reporting, and Related Regulations	29 CFR Part 1904	Potentially Applicable	Provides recordkeeping and reporting requirements applicable to response action activities.	These requirements apply to all site contractors and subcontractors and must be followed during all site work.
OSHA Regulations, Health and Safety Standards	29 CFR Part 1926	Potentially Applicable	Specifies the type of safety training, equipment, and procedures to be used during the site investigation and response action.	All phases of the response action would be executed in compliance with this regulation.
RCRA Regulations, Contingency Plan and Emergency Procedures	40 CFR 264, Subpart D	Potentially Relevant and Appropriate	Outlines requirements for emergency procedures to be followed in case of an emergency.	The administrative requirements established in this rule would be met for response actions involving the management of hazardous waste.
RCRA Regulations, Preparedness and Prevention	40 CFR Part 264, Subpart C	Potentially Relevant and Appropriate	Outlines requirements for safety equipment and spill control for hazardous waste facilities. Facilities must be designed, maintained, constructed, and operated to minimize the possibility of an unplanned release that could threaten human health or the environment.	Safety and communication equipment would be incorporated into all aspects of the response action process, and local authorities would be familiarized with site operations.
RCRA Regulations, Standards for Owners and Operators of Hazardous Waste TSDFs.	40 CFR Part 264	Potentially Relevant and Appropriate	Establishes minimum national standards defining the acceptable management of hazardous wastes for owners and operators of facilities that treat, store, or dispose of hazardous wastes.	If response actions involving management of RCRA wastes at an off-site TSDF or if RCRA wastes are managed on site, the requirements of this rule would be followed.

Action-Specific ARARs Block F

Soil Response Action Plan Lockheed Martin Middle River Complex, Middle River, Maryland Page 3 of 4

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
RCRA Regulations, Use and Management of Containers	40 CFR Part 264, Subpart I	Potentially Relevant and Appropriate	Sets standards for the storage of containers of hazardous waste.	This requirement would apply if a response action alternative involves the storage of a hazardous waste (i.e., contaminated soil) in containers prior to treatment or disposal.
Migratory Bird Treaty Act	16 USC 703-711	Potentially Applicable	Protects migratory birds and their nests.	Proposed response action shall not kill migratory birds or destroy their nests and eggs.
State				
Maryland Hazardous Waste Management System	Title 26, Subtitle 13 of the COMAR	Potentially Applicable	Requires hazardous waste generators to ship their hazardous waste to a facility permitted to accept it or, with the appropriate permits, treat it themselves. Requires use of a certified hauler to ship hazardous waste off site, and shipment must be accompanied by a manifest. Requires compliance with regulations on the storage of the waste and specifies procedures to prevent the occurrence of circumstances that would threaten human health or the environment.	These regulations would apply if waste on site was deemed hazardous and needed to be stored, transported, or disposed of properly.
Maryland Regulation of Water Supply, Sewage Disposal, and Solid Waste	Title 26, Subtitle 4 of the COMAR	Potentially Applicable	Sets the requirements for construction and operation for solid waste disposal facilities.	These requirements would apply if on-site waste was deemed a non-hazardous solid waste and needed to be stored, transported, or disposed of properly.
Maryland General Permit for Construction Activity	Title 26, Subtitle 17 of the COMAR	Potentially Relevant and Appropriate	Establishes requirements for stormwater management and erosion and sediment control at construction sites.	Response actions involving excavation would require submittal of an erosion and sediment control plan and a stormwater management plan.

Action-Specific ARARs Block F

Soil Response Action Plan

Lockheed Martin Middle River Complex, Middle River, Maryland

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ARARs	Applicable or Relevant and Appropriate Requirements.	MDE	Maryland Department of the Environment.
CAA	Clean Air Act.	NAAQSs	National Ambient Air Quality Standards.
CERCLA	Comprehensive Environmental Response,	OSHA	Occupational Safety and Health Act.
	Compensation, and Liability Act.	RCRA	Resource Conservation and Recovery Act.
CFR	Code of Federal Regulations.	TCLP	Toxicity Characteristic Leaching Procedure.
COMAR	Code of Maryland Regulations.	TSDF	Treatment, Storage, and Disposal Facility.
LDRs	Land Disposal Restrictions.	USC	United States Code.

Table 6-4

Preliminary Screening of Technologies and Process Options, Block F Soil Response Action Plan LMC Middle River Complex, Middle River, Maryland Page 1 of 4

General Response Action	Response Action Technology	Process Option	Description	Screening Comment
No Action	None	Not applicable	No activities conducted at Block F to address contamination. Biodegradation of mercury would not occur through natural attenuation processes.	Required by the CERCLA. Retain for baseline comparison to other technologies.
Limited Action	LUCs	Engineered Controls:	Fencing, markers, warning signs.	Eliminate. This technology would leave soil contaminants in place. Fencing may not be compatible with future residential use. Markers and warnings signs would not be effective unless combined with formal administrative controls.
		Administrative Controls: Deed or Site Use Restrictions	Administrative action using property deeds or other land use prohibitions to restrict future site activities. Five-year reviews would be conducted to evaluate if additional response actions would be required.	Eliminate. This technology would leave soil contaminants in place leaving portions of Block F unsuitable for residential use. Does not meet the RAO of unrestricted site use.
	Monitoring	Sampling and Analysis	Sampling and analysis of groundwater to evaluate if additional response actions would be warranted.	Addressed in Groundwater Response Action Plan.
Containment	Cover/Barrier	Soil Cover/Multi-Media Cap	Use of semipermeable or low permeability barriers to minimize direct exposure to contaminants and potential migration to groundwater.	Eliminate. This technology would leave soil contaminants in place leaving portions of Block F unsuitable for residential use.
	Erosion Control	Rip-Rap Cover/Vegetation	Use of gravel/cobbles or dense plant growth to minimize migration of wastes/contaminated soils.	Eliminate. Block F is relatively flat and erosion is not a concern. However, revegetation is retained to allow future site use as a green space.
Removal	Excavation	Mechanical	Means for removal of contaminated soils by backhoe, bulldozer, loader, etc.	Retain for removal of contaminated soil.
In-Situ Treatment	Thermal	Vitrification	Use of high-temperature melting to fuse inorganic contaminants into a glass matrix within vadose zone or the use of moderate temperature heating to volatilize contaminants and remove them from the vadose zone.	Eliminate. This technology presents implementability concerns due to the shallow groundwater table and high moisture content of the soil.

Table 6-4

Preliminary Screening of Technologies and Process Options, Block F Soil Response Action Plan LMC Middle River Complex, Middle River, Maryland Page 2 of 4

General Response Action	Response Action Technology	Process Option	Description	Screening Comment
In-Situ Treatment	Thermal	Radio-Frequency Heating	Use of radio-frequency energy to heat soil and cause volatilization of contaminants	Eliminate. Limited thickness and shallow depth of contaminated soil renders this technology difficult to implement with limited, commercially available equipment. Not applicable for treatment of mercury.
		Electrical Heating	Use of an electrical blanket or electrical heating elements within slotted pipes to volatilize contaminants	Eliminate. The shallow depth to groundwater renders this technology difficult to implement. Not applicable for treatment of mercury.
	Physical/ Chemical	Soil Flushing/ Chemical Extraction	Use of water/solvents to remove contaminants from the vadose zone by flushing and collecting the contaminated wastewater in the saturated zone followed by above-ground pump and treat.	Eliminate. The result of this technology would be the migration of COCs from soil to groundwater. Therefore, the implementation of this technology could contaminate "clean" groundwater.
		Dynamic Underground Stripping	Steam injection at the periphery of the contaminated area resulting in the vaporization of volatile compounds bound to soil and the movement of contaminants to a centrally located extraction well.	Eliminate. Difficult to implement due to the shallow groundwater table. Not applicable for treatment of mercury.
		Soil Vapor Extraction	Use of vacuum and possibly air sparging to volatilize contaminants.	Eliminate. Not applicable for treatment of mercury.
		Chemical Fixation/ Solidification	Mixing of chemical agents in the vadose zone to chemically bind, solidify, and reduce contaminant mobility.	Eliminate. Traditional chemical fixation/stabilization processes have only limited effectiveness for the immobilization of SVOCs in contaminated soil
		Electrokinetic Separation	Use of electrodes with the application of direct current-based electrical fields to induce the migration of metallic contaminants from soil towards electrodes or to induce electrochemical reactions to destroy selected organic contaminants.	Eliminate. Shallow depth to groundwater would minimize the available resistivity required for application of this technology.
	Biological	Biodegradation	Nutrients and amendments are added to surface soil to promote biodegradation of organic compounds.	Eliminate. Not effective for mercury contamination.
In-Situ Treatment	Biological	Phytoremediation	Use of selected plants cultivated in contaminated soil to lead to uptake of metallic contaminants or	Eliminate. This innovative technology has limited demonstrated effectiveness for areas with high levels

Table 6-4

Preliminary Screening of Technologies and Process Options, Block F Soil Response Action Plan LMC Middle River Complex, Middle River, Maryland Page 3 of 4

General Response Action	Response Action Technology	Process Option	Description	Screening Comment
(Continued)	(Continued)		enhancement of biodegradation of organic contaminants by indigenous microorganisms in the root zone.	of organic contaminants. Has potential in reducing lower level organic contamination left in place, however not applicable to achieve identified cleanup goals.
Ex-Situ Treatment	Physical/ Chemical	Soil Washing/ Chemical Extraction	Use of solubilization and chemical (oxidation/reduction/neutralization) processes to remove contaminants from the solid phase and convert them into more concentrated forms or less toxic forms in liquid phase.	Eliminate. When different classes of contaminants are present, such as metals and organic compounds, a series of extraction operations using different solvents, pH adjustment, etc. may be required. By-products from the process would consist of spent solvent streams containing the wastes, requiring further treatment/disposal and recovery/recycle of the extractants.
		Chemical Fixation/ Solidification	Mixing of chemical agents to bind, solidify, and reduce contaminant mobility.	Eliminate. Not suitable for use on site to return treated soil to the excavated area because the treated matrix would be unsuitable for unrestricted residential use of the site (COCs would remain on site).
Ex-situ Treatment (Continued)	Biological	On-Site Landfarming	Tilling of contaminated soils and wastes in layers of surface soil within a treatment bed to aerate and biodegrade organic contaminants.	Eliminate. Not effective for mercury.
	Thermal	Off-Site Incineration	Use of high temperatures to pyrolize or oxidize organic contaminants into less toxic gases.	Eliminate. Not effective for destruction of mercury.
		Off-Site Thermal Desorption	Use of moderate temperatures to volatilize contaminants and remove them from the solid phase into the gaseous phase.	Eliminate. This technology would not be effective for the removed mercury contamination.

Preliminary Screening of Technologies and Process Options, Block F Soil Response Action Plan LMC Middle River Complex, Middle River, Maryland Page 4 of 4

General Response Action	Response Action Technology	Process Option	Description	Screening Comment
Ex-situ Treatment (Continued)	Solids Processing	Size Reduction	Crushing/grinding/shredding of wastes as a preliminary process to aid in downstream treatment.	Eliminate crushing because it applies to rock that would typically not be further treated. Eliminate grinding and shredding as pretreatment step for vegetative material (tree stumps) because trees, etc. are not present at Block F in contaminated areas.
		Screening	Removal/segregation of material based on size as a preliminary process to aid in downstream treatment.	Eliminate. Removal of oversized material that is typically not contaminated is not required.
Disposal TSCA	Off-Site	Non-Hazardous/Hazardous/TSCA Waste Landfilling	Disposal of excavated wastes and treatment residuals in a permitted RCRA Subtitle C or D facility or TSCA TSDF.	Retain landfilling to be used in conjunction with other response action technologies.
	On-Site	Consolidation	Excavation and relocation of contaminated soil to minimize space and closure requirements.	Eliminate. Would trigger on-site issues that are unacceptable to regulatory agencies (COCs still present on site – not suitable for unrestricted residential use of the site).
		Beneficial Reuse	Reuse of treated soil as fill material.	Eliminate. Soil treatment technologies not retained, eliminating need for disposition of treatment residuals.

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act.

COCs Chemicals of concern. LUCs Land use controls.

RCRA Resource Conservation and Recovery Act.

RAO Response action objective.

SVOCs Semivolatile organic compounds.

VOCs Volatile organic compounds.

Table 6-5
Summary of Comparative Analysis of Alternatives
Block D, Soil Response Action Plan
LMC Middle River Complex, Middle River, Maryland

Evaluation Criteria	Alternative S-1: No Action	Alternative S-2: Excavation to Allow Unrestricted Residential Site Use and Off-Site Disposal
Overall Protection of Human Health and Environment	Not protective	Protective
Chemical-Specific ARARs	Would not comply	Would comply
Location-Specific ARARs	Not applicable	Would comply
Action-Specific ARARs	Not applicable	Would comply
Long-Term Effectiveness and Permanence	Not effective	Effective
Reduction of Contaminant Toxicity, Mobility, or Volume through Treatment	None	None
Short-Term Effectiveness	No relevant issues to address	Would be effective. Minimum potential for short-term risks. Seven weeks to attain soil RAOs.
Implementability	Nothing to implement	Easy to implement
Costs: Capital	\$0	\$910,000
NPW of O&M NPW	\$0 \$0	\$-0- \$910,000

ARARs Applicable or Relevant and Appropriate Requirements.

O&M Operation and maintenance. RAO Response action objective.

NPW Net present worth.

Section 7

Evaluation Criteria for the Selected Technology

7.1 EVALUATION CRITERIA

The proposed response action will remove and dispose off site soil with COC (i.e. PAHs, mercury and PCBs) concentrations greater than the cleanup goals; removal of previously abandoned-in-place USTs and associated piping; and removal of soil associated with the USTs and piping with DRO and GRO concentrations greater than MDE soil cleanup standards. Following removal of this material, the exposed soil on the excavation base and sidewalls will be visually examined for free product, sheen, staining, or other evidence suggesting that residual contamination is present. Additional removal may be performed based on the visual examination. Following completion of removal and visual examination activities, the base and sidewalls of the removal area will be sampled to confirm that all soil with COC concentrations greater than the cleanup goals and soil with DRO and GRO concentrations greater than the MDE cleanup standards have been removed. Additional removal and sampling will be performed until it is confirmed that soil with COC concentrations greater than the cleanup goals and soil with DRO and GRO concentrations greater than the MDE cleanup standards have been removed. A complete description of the post-removal/confirmation sampling and analysis plan is presented in Section 8.3. Cleanup goals are presented in Section 5.

7.2 CONTINGENCY MEASURES

Considering the limited extent of soil with COC concentrations greater than the cleanup goals and soil with DRO and GRO concentrations greater than the MDE cleanup standards and the nature of the proposed response action (i.e., removal), the development of contingency measures to address COC impacts at Block F is not warranted.

Section 8

Proposed Response Actions

8.1 INTRODUCTION

The proposed response action will remove and dispose off site soil with COC (i.e. PAHs, mercury and PCBs) concentrations greater than the cleanup goals; removal of previously abandoned-in-place USTs and associated piping; and removal of soil associated with the USTs and piping with DRO and GRO concentrations greater than MDE soil cleanup standards. The response action for Block F will address soil and groundwater with COC concentrations greater than the cleanup goals. The soil response action proposed in this RAP will address removal of soil with COC concentrations greater than the cleanup goals; removal of previously abandoned-in-place USTs and associated piping; and removal of soil associated with the USTs and piping with DRO and GRO concentrations greater than MDE soil cleanup standards. The proposed response action for soil and USTs in Block F is described in this section. The proposed response action for groundwater in Block F is described in the Groundwater Response Action Plan provided under separate cover.

8.2 RESPONSE ACTION PLAN DESCRIPTION

The proposed soil response action is to remove soil with COC concentrations greater than the cleanup goals to obtain a Certificate of Completion under a Tier IA (Residential Unrestricted) future property use based on potential future residential development. In addition, previously abandoned-in-place USTs, associated piping, and associated soil with DRO and GRO concentrations greater than MDE soil cleanup standards will also be removed. The major components of the proposed response action, performance criteria, and sequence are described below.

8.2.1 Summary of Major Components

The major components of the response action necessary to achieve a Certificate of Completion are as follows:

- Removal of soil with COC concentrations greater than cleanup goals. Remove soil in the Former Ramp Storage Building portion of REC #13 (Former Boat Dock Area) associated with soil borings SB-93, SB-265, SB-266, SB-268, SB-269, and SB-393 (Area A) as shown in Figure 8-1 to a depth of 2 feet bgs. Remove soil in the Former Ramp Service Building portion of REC #13 (Former Boat Dock Area) associated with soil borings SB-94 and SB-397 (Area B) as shown in Figure 8-1 to a depth of 10 feet bgs. Remove soil in the Former Ramp Storage Building portion of REC #13 (Former Boat Dock Area) associated with soil borings SB-95, SB-383, and SB-390 (Area C) as shown in Figure 8-1 to a depth of 5 feet bgs. Remove soil in REC #4 (Boat Launch Area) associated with soil boring SB-238 and SB-406 (Area D) as shown in Figure 8-1 to a depth of 5 feet bgs or to the depth of the zone of saturation, whichever is less. The areal extent of removal is approximately 29,000 sf and the removed soil quantity, including the USTs, is approximately 5,200 cy. The soil boring sample locations and removal limits are indicated on Figure 8-1.
- Removal of the seven previously abandoned-in-place USTs comprising REC #5 (Former Aviation Fuel USTs) (Area E) as shown in Figure 8-1. Remove previously abandoned-in-place USTs, associated piping, and associated soil with DRO and GRO concentrations greater than MDE soil cleanup standards. Removal of the concrete tarmac and an excavation depth of 9.3 ft bgs are assumed. The USTs were reportedly closed in place, however, no closure records were available for these USTs. The UST removal procedure will therefore be as follows, as applicable:
 - Coordinate removal activities with the MDE OCP personnel.
 - Determine the location and contents of USTs.
 - Remove flammable, combustible, or other liquids from the UST storage systems.
 - Empty and clean the USTs by removing all liquids and accumulated sludges.
 - Empty, disconnect, and remove associated piping including fill lines, vents, dispensing lines, and return lines.
 - Purge UST storage systems of all explosive vapors and monitor with an appropriate direct-reading instrument before and during removal.
 - Remove USTs and any solid inert material.
 - Puncture USTs to render them unfit for further use.
 - Remove cathodic protection systems and anchorage.
 - Remove regulated substances, soils saturated with regulated substances, and visibly contaminated soil from the excavation.
 - Perform post-removal/confirmation sampling and analysis and compare results to the MDE soil cleanup standards provided in Table 5-1.
 - Backfill the excavation and restore the ground surface.
 - Amend the UST registration forms and submit to the MDE OCP within 30 days after the USTs are removed.

- Post-removal/confirmation sampling and analysis Sampling and analysis of the exposed soil on the base and sidewalls of the removal areas including the UST areas, will be performed to confirm that soils with contaminant concentrations greater than the cleanup criteria provided in Table 5-1 are removed. For removal areas where the proposed removal depth cannot be achieved due to the depth of the zone of saturation, post-excavation sampling and analysis of the exposed soil on the base of the removal areas will be performed to obtain data for informational purposes only. Post-removal/confirmation sampling and analysis procedures are presented in Section 8.3.
- Characterization, transport, and off-site disposal of removed materials Stockpiled soil will be characterized for the purposes of waste disposal, transported to an off-site non-hazardous waste disposal facility, and disposed. Removed concrete, steel and other construction/demolition materials will be characterized as appropriate. Disposal of soil at an off-site permitted non-hazardous waste disposal facility is assumed based on review of the constituent concentrations provided in Tables AF-1, AF-2 and AF-3 (Appendix A). The disposal quantity is approximately 7,600 tons based on the removal limits indicated on Figure 8-1.
- Concrete, steel and other construction/demolition materials resulting from removal of the foundations of former structures, concrete tarmac, previously abandoned-in-place USTs and piping will either be cleaned/decontaminated as appropriate and sudsequently recycled or disposed in an off-site facility permitted to accept such materials.
- Backfilling and regrading The removal areas will be backfilled and the final surface graded to match existing grades. The fill material will be certified clean material similar in grain size to removed soils and obtained from an off-site borrow source.
- Restoration The disturbed areas will either be stabilized by vegetation or repaved. All areas disturbed as a result of response action activities will be permanently stabilized.

8.2.2 Performance Criteria

The performance criteria for the response action are presented below.

Soil Removal

Soil within Block F that is identified as having COC concentrations greater than the cleanup goals will be removed to the proposed depths. The removal limits presented in the RAP were determined based on review of existing soil boring sample results provided in Tables AF-1, AF-2, and AF-3 (Appendix A). The final limits of removal will be determined after completion of post-removal/confirmation sampling. The removal limits will extend to the indicated depths or to the depth of saturation, whichever is less.

Sediments accumulated in erosion and sediment control devices (see Section 8.4) prior to confirmation that soil with COC concentrations greater than the cleanup goals has been removed will be disposed off site along with the removed soils.

UST, Associated Piping, and Soil Removal

The previously abandoned-in-place USTs, associated piping, associated soil with DRO and GRO concentrations greater than MDE soil cleanup standards, and overlying concrete tarmac will be removed. Excavation will be required to confirm UST locations. The UST removal will be performed under the MDE OCP in accordance with the COMAR 26.10.10.02 and the API's Recommended Practice 1604 (1996) modified as necessary based on conditions encountered. The final limits of removal will be determined after completion of post-removal/confirmation sampling. The removal limits will extend to the indicated depths or to the depth of the zone of saturation, whichever is less.

Post-Removal/Confirmation Sampling

Post-removal/confirmation samples will be collected from the excavation base and sidewalls of the removal areas prior to backfilling to confirm that soils with contaminant concentrations greater than the cleanup criteria provided in Table 5-1 have been removed. Additional removal may be required based on the results of the post-removal/confirmation sampling. For removal areas where the proposed removal depth cannot be achieved due to the depth of the zone of saturation, post-removal samples will be collected from the exposed soil on the base of the removal areas to obtain data for informational purposes only. Post-removal/confirmation sampling and analysis procedures are provided in Section 8.3.

Temporary Storage

Soil and materials from the removal areas will be stockpiled and secured within the Block F boundary on a materials handling pad that will consist of a minimum 8-mil-thick polyethylene geomembrane overlain by a drainage layer. Water from the materials handling pad will drain into the excavation of origin. The stockpiled soil and materials will be completely covered with a minimum 8-mil-thick polyethylene geomembrane during inactive periods to prevent movement of

soil to the surrounding area. The geomembrane cover will be secured daily using sandbags and rope or other suitable means. The stockpiled soil and materials will be temporarily stored on site until waste characterization has been completed.

Waste Characterization

Removed soil and materials will be sampled from stockpiles for waste disposal characterization at a minimum frequency of one sample per 500 cy. Composite samples consisting of three grab samples will be collected from the stockpile. The sampling frequency may be increased depending on the volume of the removed soil and waste disposal facility requirements. Samples will be analyzed for TCLP and parameters required by the waste disposal facility.

Disposal

Removed soil and materials not suitable for recycling will be transported for off-site disposal after waste characterization has been completed and the waste disposal facility has approved acceptance of the waste. Removed soil and materials not suitable for recycling will be disposed at an off-site non-hazardous waste disposal facility.

Dewatering

Dewatering of the removal areas may be required to facilitate backfilling. Water that has accumulated in the removal areas will be collected and conveyed through a sediment removal device (i.e. filter). Solids trapped in the filter will be transported to an off-site non-hazardous waste disposal facility, off-site hazardous waste TSDF, or TSCA TSDF. Permits required for the proposed response action are described in Section 9.2.2. Water will be contained, characterized as required following removal of sediment, and disposed at an off-site permitted TSDF if required or discharged to a NPDES permitted outfall or to a stabilized area.

Backfilling

The removal areas will be backfilled after completion of post-removal/confirmation sampling and excavation dewatering. Backfill soil will be certified clean soil similar in grain size to removed

soils and obtained from an off-site borrow source. Backfill material acceptance criteria are provided in Table 8-1. The off-site borrow source material will be evaluated in accordance with the procedures described in the MDE document titled Facts About...VCP – Clean Imported Fill Material². The off-site borrow source will be identified and environmental site assessment documentation obtained if available. The documentation will be reviewed by an environmental professional to determine the borrow source's suitability for use. If the borrow source is judged acceptable, soil samples will be obtained and analyzed for the target compounds using the method and at the sampling frequency recommended in the MDE document based on the location, history, and size (i.e., area and volume) of the borrow source area. Constituents detected in the samples will be evaluated for risk using the residential cleanup standards provided in MDE's Cleanup Standards for Soil and Groundwater (August 2001).

Backfill material will be compacted to a minimum of 90 percent of the maximum dry density as determined by the Standard Proctor. Additional compactive effort may be required dependent on future use of the area.

Restoration

The top 4 inches of backfill in areas to be restored using vegetation will be medium-textured loam suitable for establishment of vegetation (i.e., topsoil). The backfilled and regraded areas along with other areas disturbed during response action implementation will be restored/stabilized using permanent stabilization practices. Vegetative restoration will consist of surface preparation, fertilizing, seeding, and mulching. Vegetative restoration procedures are presented in detail in Section 8.4.2. Pavement disturbed by response action activities may be restored to pre-response action conditions based on future use of the area.

Stormwater Management and Erosion and Sediment Control

Erosion and sediment control will be performed in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 1994). Erosion and sediment control measures are described in Section 8.4. A stormwater management plan will be prepared in

2 Document available at http://www.mde.state.md.us/assets/document/Clean Imported Fill Material.pdf

accordance with the Maryland Stormwater Design Manual (MDE, October 2000). Before removal activities begin, erosion and sediment controls will be established to prevent impacts to downgradient areas. During removal, backfilling, and regrading activities and until disturbed areas are stabilized, the erosion and sediment controls will be regularly inspected and maintained.

Stabilized Construction Entrance

Ingress to and egress from the removal area(s) will be controlled using a stabilized layer of aggregate that is underlain with a geotextile (i.e., a stabilized construction entrance).

Decontamination Pad

A temporary decontamination pad will be established to clean equipment used to remove and transport contaminated soils. The pad will be sized to accommodate all the equipment to be used during response action implementation and will be constructed in a manner that contains all the contaminated materials removed from equipment and the liquids used to clean the equipment. Contaminated materials removed from the equipment and solids removed from the wash water will be disposed off site along with the removed soils. Wash water will be contained, characterized as required following removal of sediment, and disposed at an off-site permitted TSDF if required or discharged to a NPDES permitted outfall or to a stabilized area.

8.2.3 Sequence

The field duration, excluding items 1 through 3 below, required to perform the proposed response action is estimated to be approximately 7 weeks. The generalized sequence of response action activities is presented below. The sequence of response action activities is subject to change based on the Contractor's work plan.

- 1. Obtain permits, notifications, and approvals as identified in Section 9 prior to mobilization.
- 2. Hold a pre-response action implementation meeting on site with the Contractor.
- 3. Locate and mark existing site utilities. Notify Miss Utility of Maryland (1-800-257-7777; www.missutility.net) at least 48 hours, but no more than 10 working days, prior to the day

- excavation will commence. Inspect the site prior to response action implementation to verify existing site conditions.
- 4. Install perimeter controls for the stabilized construction entrance and construct the stabilized construction entrance. Install the remaining perimeter erosion and sediment controls.
- 5. Install support features including but not limited to decontamination pad and storage area(s), etc.
- 6. Protect or remove existing utilities within or in close proximity to the removal limits.
- 7. Remove soil, concrete tarmac, previously abandoned-in-place USTs, and associated piping from the indicated limits. Collect post-removal/confirmation samples from the removal area to determine the need for additional removal.
- 8. Following post-removal/confirmation that soils with contaminant concentrations greater than the cleanup criteria provided in Table 5-1 have been removed or the depth of the zone of saturation has been reached, restore the area by dewatering removal areas if necessary, backfilling, regrading, and establishing permanent stabilization for all disturbed areas.
- 9. Remove decontamination pad, material storage area, etc. Following support feature removal, stabilize areas with permanent vegetation or paving.
- 10. Following permanent stabilization of all disturbed areas, remove all remaining perimeter controls and immediately stabilize all areas disturbed by the placement and removal of perimeter controls.

8.3 POST-REMOVAL/CONFIRMATION SAMPLING AND ANALYSIS

The purpose of post-removal/confirmation sampling and analysis is to obtain sufficient data to confirm that soil with COC concentrations greater than the cleanup goals and associated soil with DRO and GRO concentrations greater than MDE cleanup standards have been removed. The post-removal/confirmation sampling and analysis plan is summarized below.

8.3.1 Sampling and Sample Evaluation

The response action implementation includes the removal and off-site disposal of soil with COC concentrations greater than the cleanup goals and soil associated with the previously abandoned-in-place USTs and piping with DRO and GRO concentrations greater than MDE soil cleanup standards. The removal areas are shown on Figure 8-1. Following removal of this material, the

exposed surfaces of the excavation (i.e., base and sidewalls) will be visually examined for evidence of remaining contamination (e.g., free-product, sheen, staining). Additional excavation may be performed based on the visual examination. The exposed surfaces of the removal area will then be sampled to determine if all the soils with contaminant concentrations greater than the cleanup criteria provided in Table 5-1 have been removed. The purpose of the excavation base and sidewall samples will be to determine whether the depth and lateral extent of removal is sufficient or if the removal depth and lateral extent need to be increased to remove soils with contaminant concentrations greater than the cleanup criteria. For removal areas where the proposed removal depth cannot be achieved due to the depth of the zone of saturation, post-excavation sampling and analysis of the exposed soil on the base of the removal areas will be performed to obtain data for informational purposes only.

Post-removal/confirmation samples will be collected, packaged, and shipped to a fixed-base laboratory. The fixed-base laboratory will analyze the samples for the constituents and per the methods indicated on Table 5-1. Post-removal/confirmation samples for soil that is not subsequently removed and disposed off-site will also be analyzed for VOCs, SVOCs, PCBs, and metals at a minimum frequency of 1 for every 5 samples (i.e., 20 percent). Post-removal/confirmation sampling results will be reviewed and the need for additional removal evaluated. If additional removal is required, additional post-removal/confirmation samples will be collected from the new exposed surfaces using the following criteria:

- If additional removal is required from the excavation base only, additional post-removal/confirmation samples will be collected from the new exposed excavation base only (i.e., no sidewall samples).
- If additional removal is required from the excavation sidewalls only, additional post-removal/confirmation samples will be collected from the new excavation sidewalls and the new exposed excavation base.
- If additional removal is required from the excavation base and sidewalls, additional post-removal/confirmation samples will be collected from the new excavation sidewalls and the new exposed excavation base.

Analytical results from the fixed-base laboratory for post-removal/confirmation samples that represent exposed surfaces of the excavation that will remain (i.e., no further removal will be performed) will be validated using EPA's Contract Laboratory Program protocol, EPA Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganics

Analyses (EPA, 1993), and EPA Region III Modifications to National Functional Guidelines for Organic Data Review, Multi-Media, Multi-Concentration (EPA, 1994) in conjunction with method-specific criteria. Analytical results from the fixed-base laboratory for samples representing soil that is subsequently removed and disposed off-site will not be validated.

8.3.2 Sampling Locations

Samples will be collected from the excavation base and sidewalls of each removal area. The excavation base of each removal area will be divided into areas of no more than 625 sf (i.e., 25-foot by 25-foot area). One post-removal/confirmation base sample will be collected from each 625-sf area. The post-removal/confirmation base sample will be a composite sample created from soil collected at four randomly determined grab locations. A minimum of four post-removal/confirmation sidewall samples will be collected from each removal area having excavation sidewall lengths less than 50 feet. Additional sidewall samples will be collected at a frequency of one sidewall sample for every 50 feet of exposed Post-removal/confirmation samples collected from excavation sidewalls will also be composite samples created from soil collected at two randomly determined grab locations.

8.4 EROSION AND SEDIMENT CONTROL

Erosion and sediment control measures will be implemented to minimize and/or eliminate erosion and sedimentation during the response action. The construction, implementation, and maintenance of the erosion and sediment control devices will be in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 1994). The number provided below with each control measure, if any, references the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 1994). The erosion and sediment control devices can be modified based on construction equipment and techniques presented in the Contractor's work plan.

The erosion and sediment control measures include the following:

• Silt Fence (E15.0) – Placed along the downslope sides of each removal area to provide a temporary sediment barrier consisting of geotextile filter fabric.

- Stabilized Construction Entrance (17.0) Placed as a controlled site entrance to reduce the amount of sediment transported by construction vehicles onto public roads. Loose dirt will be removed from the tires of construction vehicles as they traverse the stabilized construction entrance.
- Dust Control Utilized to prevent surface and air movement of dust from exposed soil surfaces and to reduce the amount of airborne substances that may present health hazards, traffic safety problems, or harm plant/animal life.
- Permanent Seeding (20.0) Utilized to establish perennial vegetation on disturbed areas by planting seeds of native grasses.
- Mulching (20.0) Utilized to prevent erosion by protecting the soil surface from raindrop impact and to reduce the velocity of overland flow.

8.4.1 Inspection and Maintenance

In general, all erosion and sediment control measures will be checked daily and after each runoff-producing rainfall event. Any required repairs will be made immediately. The following items will be checked:

- The stabilized construction entrance will be maintained in a condition that will minimize tracking sediment onto public roads.
- Silt fence will be checked for undermining or deterioration of the fabric. Sediment will be removed when the level of sediment causes bulging or reaches one-half of the fabric height.
- Seeded areas will be checked regularly to ensure that a good stand of vegetation is maintained, and will be fertilized and reseeded as needed.
- The fuel and lubricant materials storage area will be checked to ensure that stored containers are not leaking and that the lining system is functioning properly.

Erosion and sediment control devices will be inspected and maintained during the response action and until the disturbed areas are permanently stabilized. Damaged erosion and sediment control devices will be repaired immediately. The Contractor will maintain a logbook of all erosion and sediment control device inspections and maintenance. The logbook will be available at the site at all times for inspection by duly authorized officials. Post-response action maintenance will consist of performing periodic inspections of the disturbed areas and repair of disturbed areas until the areas are permanently stabilized.

8.4.2 Restoration

All areas disturbed by response action implementation activities (i.e., removal and support facility areas) will be restored/stabilized using permanent stabilization practices. Activities to establish permanent stabilization (i.e., preparing the area for seeding and seed application or repaving) will be implemented as soon as possible following the establishing of final grades. The establishment of permanent stabilization includes seed bed preparation, seeding, and mulching. mixture was selected from the list of Maryland standard seed mixtures in Section 20.0 of the Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 1994). The seed was selected based on the applicable hardiness zone, level of maintenance, and erosion resistance. The permanent seed mixture is based on Mixture 5 in Table 25 (page G-20-18) of the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control. Mixture 5 is suited for Plant Hardiness Zone 7a, in which the site is located. The permanent seed mixture consists of perennial ryegrass (Lolium perenne) seeded at a rate of 20 pounds of pure live seed (PLS) per acre, flatpea (Lathyrus sylvestris) seeded at a rate of 20 pounds PLS per acre. In the event that disturbed areas are brought to final grade outside of the optimal growing season for the permanent seed mixture, the disturbed areas will be temporarily stabilized using a temporary seed mixture. Erosion and sediment control devices will remain in place until permanent stabilization is established over the disturbed areas.

8.5 MISCELLANEOUS RESPONSE ACTION REQUIREMENTS

8.5.1 Utilities

Above- and below-ground utilities are known to exist on and near Block F. Stormwater, fire water, and potable water lines are present in Block F. Known utilities are indicated on the MRC utility map included as Appendix J of the Site Characterization Report (Tetra Tech, May 2006). The Contractor will verify, locate, and stake all utility locations within the limits of the site and adequately implement protection measures or remove the utilities before any earth-disturbing activities. The Contractor will coordinate protection, removal, or temporary utility bypasses with Lockheed Martin.

8.5.2 Groundwater Monitoring Wells

Groundwater monitoring wells MW37A through C, MW38A, MW39A, MW45A, MW46A, MW47A, MW65A and MW66A with flush-mounted protective casings exist throughout Block F. The monitoring wells will be protected during response action implementation. Groundwater monitoring well locations are shown on Figure 2-2.

8.5.3 Dust Control

During construction, the Contractor will be required, as necessary, to control the generation of dust to comply with OSHA and National Institute of Occupational Safety and Health (NIOSH) requirements. Systems used for dust control could include a sprinkler systems, water trucks, etc. The Contractor will identify the methods of dust control within the Contractor's work plan.

8.5.4 Spill Mitigation Response Procedures

Potential non-stormwater discharges during response action activities include wash water resulting from decontamination efforts associated with field equipment and vehicles, fuel, lubricant, and hydraulic fluid spills from vehicle fueling, lubrication, and maintenance, and spills of fertilizers and small quantities of laboratory chemicals used in sample collection, and other flammable substances.

All decontamination wash water will be collected in a lined decontamination and equipment wash pad area. All waters generated from decontamination and/or other washing activities will be collected, solids removed, characterized, and transported to an approved off-site permitted TSDF. All vehicle fueling, lubrication, and maintenance will be performed utilizing drip pans to contain any spills that may occur or within the decontamination pad to contain spills. Containers of detergents and vehicle maintenance fluids (e.g., oil, grease, antifreeze, hydraulic fluid, etc.) will be stored within an enclosed, lined, diked area along with the equipment fuel, which will be stored in tanks. This area, referred to as the materials storage area, will be bermed and lined with a minimum 60-mil-thick polyethylene geomembrane and will be sized to contain 110 percent of the volume stored within the area. A small sump or low point in the geomembrane will be designed to serve as a collection and monitoring point for any leaks or spills from the containers stored within

the materials storage area. When not in use, chemicals, paints, and other flammable substances will be stored in a flammable storage cabinet located within the Contractor's equipment trailer.

Good housekeeping procedures will be followed to reduce risks associated with these materials. These procedures include, but are not limited to, keeping materials in their original containers whenever possible, maintaining original labels and Material Safety Data Sheets (MSDSs), and using proper disposal methods for surplus materials. Accidental spills that may occur will be contained as appropriate for the spilled medium (liquid or solid) and collected and containerized immediately after discovery of the spill. Containerized material will be characterized for off-site transportation and disposal. The following spill mitigation equipment should be available on site during response action activities:

- Drip pans
- Oil-dry or similar compound
- Absorbent socks
- Shovels
- 55-Gallon drums or storage tank (for containerization)
- Labels for contents identification

Following spill cleanup, the cause of the spill will be investigated and material storage and handling procedures will be reviewed and revised where appropriate.

8.6 REPORTING REQUIREMENTS

Analytical reports and documentation generated as a result of the approved RAP and as necessary to obtain a Certificate of Completion will be included in the Notification of Completion Report. The Notification of Completion Report will be submitted to MDE within 90 days after completion of response action activities. The reports and documentation are described below.

Analytical reports of post-removal confirmation sample and backfill material data deliverables submitted to MDE will be in hardcopy format and electronic data deliverable (EDD) format. The EDD will be provided in Microsoft Excel[®] format to facilitate efficient and time-sensitive evaluation by MDE.

Removal activities for each discrete removal area will be documented on removal logs. The removal logs will include documentation such as identification and location of the removal area (e.g., associated soil boring sample number), contractor's name, removal date(s), backfill date(s), removal equipment used, removal area dimensions at both the ground surface and base of excavation, removal depth(s), lithology, groundwater elevation, direct-reading instrument and field screening results if applicable, visual observations, olfactory observations if any, and photographs. The final removal area limits at ground surface will be surveyed by a professional land surveyor registered in the State of Maryland. Post-removal/confirmation sampling field documentation including grab sample locations will be documented on a separate Soil Sample Log Sheet.

UST documentation will include the following information:

- UST size (gallons and dimensions) and material of construction
- UST location on the property
- Date of removal
- UST system description including condition and contents
- Method or methods used for removal of the UST system
- Method or methods used for cleaning/decontamination of recyclable materials
- Post-removal confirmation sample analytical reports and documentation
- Name of contractor who performed the work
- Receipt documenting proper disposal of the UST system
- Receipt documenting proper disposal of removed oil-contaminated soil

Waste profiles, waste characterization results, TSDF pre-approval or approval documentation, shipment manifests, delivery tickets or certificates, and treatment and disposal certificates will be provided for all contaminated media removed from Block F.

8.6.1 Recordkeeping

Lockheed Martin will maintain complete records of the response action for a minimum of 5 years.

Lockheed Martin and the MDE-certified underground storage system technician or remover will maintain complete records of UST removal for a minimum of 5 years as required by COMAR 26.10.06.11G. Lockheed Martin will maintain complete records that demonstrate compliance with the UST closure requirements for at least 5 years after completion of the removal.

Table 8-1

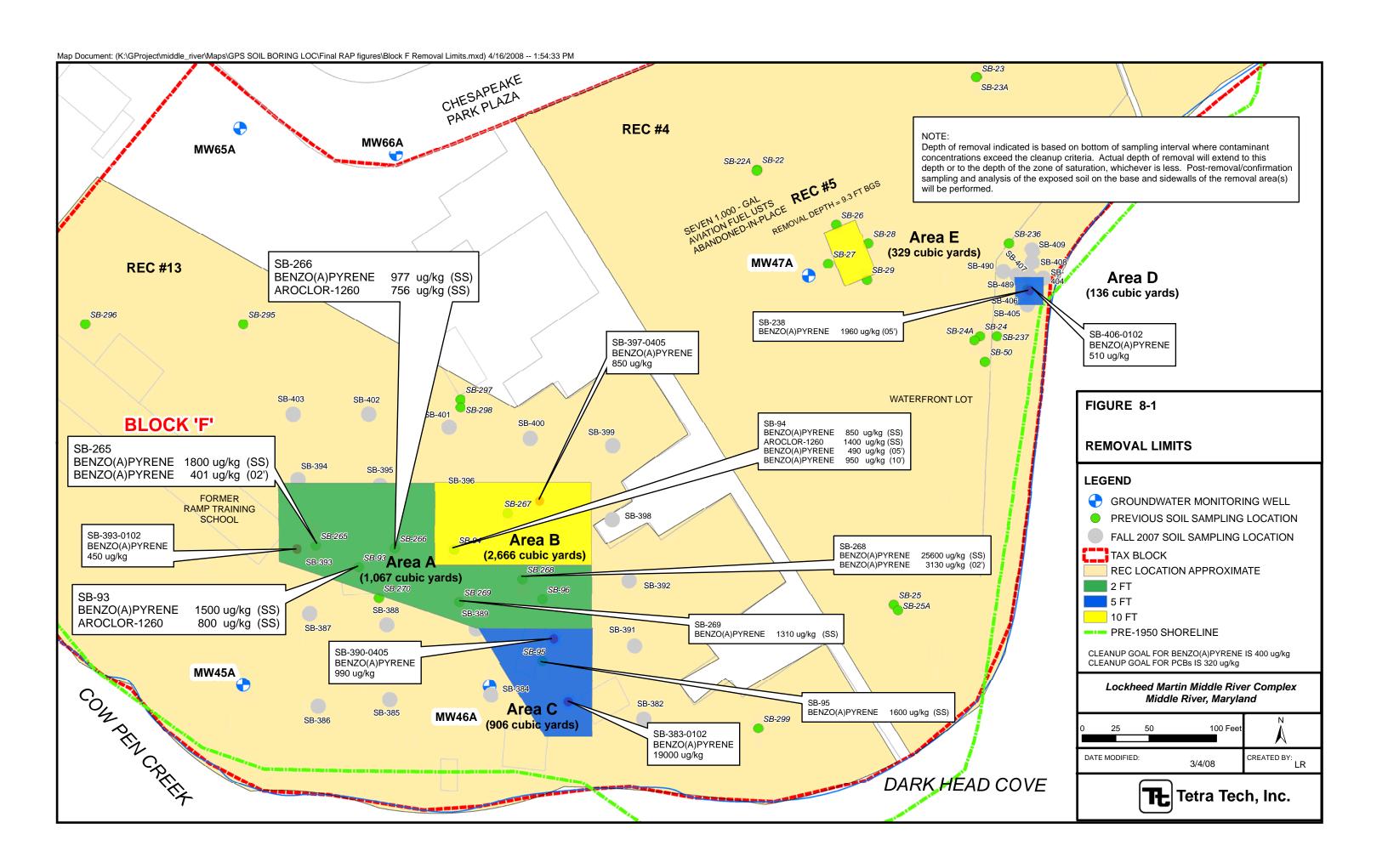
Backfill Material Acceptance Criteria Block F, Soil Response Action Plan Lockheed Martin Middle River Complex, Middle River, Maryland

Parameter	Criteria	Test Method
USCS Classification	GW, GP, GM, SW, SP, and SM	ASTM D 2487
Atterberg Limits		
- Liquid Limit	35 maximum	ASTM D 4318
- Plasticity Index	12 maximum	
Amount finer than the No. 200 U.S. Standard Sieve	25 percent maximum	ASTM D 1140
Maximum Particle Size	1 inch maximum	ASTM D 422

Backfill material will be evaluated for constituents as described in Section 8.2.2 paragraph titled "Backfilling."

ASTM American Society for Testing and Materials International.

USCS Unified Soil Classification System.



Section 9

Permits, Notifications, and Contingencies

9.1 INTRODUCTION

This section describes the permits required for the proposed response action and the required notifications and contingencies if unexpected conditions are encountered during implementation of the RAP.

9.2 PERMITS

Lockheed Martin will meet all local, State, and federal permitting requirements for the response action described in Section 8. Based on a review of requirements of MDE and Baltimore County, permitting requirements for the response action are related to earth-moving activities, excavation dewatering if necessary, and USTs.

9.2.1 Earth-Moving Activities

This section describes permits related to earth-moving activities including grading, erosion and sediment control, and stormwater management.

Although the proposed response action will not result in a planned disturbance of 1 acre or more, a Notice of Intent form will be submitted to MDE to obtain coverage under the General Permit for Construction Activity for stormwater discharges. Conditions of the General Permit include compliance with approved erosion and sediment control and stormwater management plans. The erosion and sediment control plan will be submitted to the Baltimore County Soil Conservation

District for review and approval, and the stormwater management plan will be submitted to the Baltimore County Department of Environmental Protection and Resource Management (DEPRM) for review and approval, as discussed below. As a condition of erosion and sediment control plan approval, Lockheed Martin will certify that a "responsible person" trained in techniques and standards of erosion and sediment controls will be on site during construction. After Block F has been finally stabilized and all stormwater discharges from construction sites that are authorized by this permit are eliminated, a Notice of Termination form will be submitted to MDE.

Miss Utility for Maryland will be notified (1-800-257-7777, www.missutility.net) at least 48 hours, but not more than 10 working days, before excavation begins.

A Baltimore County grading permit is required for any land disturbance and any grading activities that disturb greater than 5,000 sf or more than 100 cy of fill material. As a condition of grading permit issuance, a stormwater management plan will be submitted to the Baltimore County DEPRM for review and approval by DEPRM and the Baltimore County Soil Conservation District. The stormwater management plan will be prepared in accordance with the 2000 Maryland Stormwater Design Manual, Volumes I and II (MDE, October 2000). As an additional condition of grading permit issuance, a grading plan will be submitted to the Baltimore County DEPRM for review and approval, and an erosion and sediment control plan will be submitted to the Soil Conservation District for review and approval. The erosion and sediment control plan will be prepared in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE, 1994). The approved plans will be included with the grading permit application.

A Baltimore County stormwater management permit is required because stormwater management devices and practices are required. The approved stormwater management plan will be included with the stormwater management permit application.

9.2.2 Excavation Dewatering

Water resulting from excavation dewatering will be managed in one of the following ways:

- Contained, characterized as required, and disposed at an off-site permitted TSDF
- Filtered and subsequently discharged to surface water (regulated by MDE and EPA)
- Filtered and subsequently discharged to the local sanitary sewer system (regulated by Baltimore County)

The industrial surface water discharge permit is a combined state and federal permit under NPDES. A completed application will be submitted to MDE if required. MDE develops discharge limits based on the information provided in the permit application and issues the permit considering public comments, if any.

A wastewater discharge permit is required to discharge industrial wastewater to the local sanitary sewer system. A completed application for discharge to the Baltimore County sanitary sewer system will be submitted to the Engineering and Regulation Division of the Bureau of Utilities if required. There are specific limits set by the treatment plant for certain pollutants. Discharge limits for these and other pollutants may be set on a case-by-case basis. The discharge permit is issued by the Baltimore County Department of Public Works and Development Management.

9.2.3 Underground Storage Tanks

This section describes permits associated with removal of USTs.

MDE OCP will be notified at least 30 days before an UST is removed using the 30-Day Written Notification, Underground Storage System Removal/Abandonment form. MDE may require completion of a Notification for Underground Storage Tanks form if it is determined necessary to properly update MDE records. If so, an amended Notification for Underground Storage Tanks form will also be submitted to the MDE OCP within 30 days after the USTs are removed.

A storage system removal permit issued by the Baltimore County Department of Permits and Development Management will be obtained before any USTs are removed.

UST removal will be performed only with the continuous on-site presence, direction, supervision, and control of an MDE-Certified Underground Storage System Technician or Remover as defined by MDE and Baltimore County. The technician or remover will have proof of certification from the MDE at all times while on site.

9.3 NOTIFICATIONS

MDE will be notified immediately of any previously undiscovered contamination, changes in the RAP schedule, previously undiscovered storage tanks and other oil-related issues, and citations from regulatory entities related to health and safety practices.

9.4 CONTINGENCIES

If soil with COC concentrations greater than the cleanup goals is discovered outside the planned limits of soil removal, based on the results of post-removal/confirmation sampling and analysis, it will be addressed as discussed in Section 8.3. If free product or other unexpected petroleum contamination is discovered during UST removal, it will be addressed as discussed in Section 8.2.1.

Section 10 Implementation Schedule

The response action proposed in this RAP for Block F is anticipated to take approximately four months to complete. The response actions for the six properties that have RAPs submitted to MDE for review (Blocks B, D, E, F, G, and H) will be executed in sequence. Lockheed Martin is committed to commence work within 30 days of approval of the RAPs and the entire project is expected to take approximately twelve months to complete. Upon approval of the RAPs, Lockheed Martin will provide a more detailed schedule for the entire project and then provide the MDE with an updated schedule each month for tracking purposes. Lockheed Martin reserves the right to stage or execute each block in sequential order to minimize site disruption and costs. A draft schedule for the Block is presented below:

Deliverable/Milestone	Completion Date
Soil RAP Submittal to MDE	On or about April 22, 2008
Soil RAP Approval	On or about July 7, 2008
Submit Permits/Notifications	Within 30 days of approval
Mobilization/Site Preparation	In conjunction with other blocks over a 6 to 12 month timeframe
Soil Removal and Sampling	3 months after commencing work
Demobilization	Within 30 days of completion of soil removal
Reporting	Within 60 days of demobilization

Section 11

Administrative Requirements

11.1 INTRODUCTION

MDE's VCP stipulates several administrative requirements with which the applicant must comply. The administrative requirements include a written agreement, zoning certification, performance bond or other form of security, and health and safety plan requirements. These administrative requirements are described below.

11.2 WRITTEN AGREEMENT

A written agreement is provided with this RAP in compliance with Section 7-508 of the Environment Article, Annotated Code of Maryland. The written agreement stipulates that if the RAP is approved, the applicant agrees, subject to the withdrawal provisions set forth in Section 7-512 of the Environment Article, to comply with the provisions of the RAP. The written agreement is provided in Appendix E.

11.3 ZONING CERTIFICATION

A zoning certification is provided with this RAP in compliance with Section 7-508 of the Environment Article, Annotated Code of Maryland. Section 7-508 requires that RAPs include a certified written statement that the property meets all applicable county and municipal zoning requirements. The zoning certification is provided in Appendix E.

11.4 PERFORMANCE BOND OR OTHER SECURITY

Lockheed Martin will post a performance bond with MDE within ten days of RAP approval. The bond amount (\$140,000) will be adequate to secure and stabilize the property if the RAP is not completed.

11.5 HEALTH AND SAFETY PLAN

A project-specific Health and Safety Plan (HASP) will be prepared and submitted to MDE prior to implementation of the MDE-approved RAP. The HASP will address each planned response action activity that is performed by workers engaged in hazardous waste site activities. The project-specific HASP will reference applicable regulations that may apply to response action activities. At a minimum, the HASP will contain the required elements specified in 29 CFR Parts 1910.120 and 1926.65, as well as other regulatory and Lockheed Martin requirements that apply to the nature of the activities that will be performed. At a minimum, the project-specific HASP will address the following (29 CFR Part 1910 citation in parentheses):

- Health and safety personnel requirements and responsibilities [29 CFR Part 1910.120(b)(4)(iv)]
- Pertinent site information [29 CFR Part 1910.120(b)(4)(iv)]
- Scope of work [29 CFR Part 1910.120(b)(4)(iv)]
- A safety and health risk or hazard analysis for each planned site activity [29 CFR Part 1910.120(b)(4)(iv)]
- Training requirements [29 CFR Part 1910.120(e)]
- Personal protective equipment (PPE) requirements for each planned site activity [29 CFR Part 1910.120(c)(5)]
- Medical surveillance requirements [29 CFR Part 1910.120(h)(1)(i)]
- Air monitoring and sampling requirements
- Site control measures [29 CFR Part 1910.120(d)]
- Decontamination procedures [29 CFR Part 1910.120(k)(1)]

- An Emergency Response Plan [29 CFR Part 1910.120(1)(1)]
- Confined-space entry procedures (29 CFR Part 1910.146)
- Spill containment [29 CFR Part 1910.120(j)(1)(viii)]
- Recordkeeping [29 CFR Part 1910.120(f)(8)]

The HASP will present information to adequately address appropriate hazard recognition and evaluation and control for the potential hazards that may be anticipated for the specific planned activities.

The project-specific HASP is recognized as a dynamic document that is subject to review and possible revision, as appropriate. Potential factors that could warrant the revision of a HASP include a change in the scope of work or as a result of evaluating data collected throughout implementation of the response action.

Implementation of the appropriate portions of the project-specific HASP will be accomplished by the Site Safety Officer (SSO) (with assistance from project management, as appropriate) assigned to the response action. The SSO will be on site during all intrusive activities. Specific health and safety program implementation elements are summarized below.

11.5.1 Training and Medical Surveillance

All personnel who participate in on-site work where there is a potential for exposure to hazardous waste-related safety or health hazards will be current participants in health and safety training and medical surveillance programs. These programs are in accordance with regulatory requirements. In general, the employee training and medical requirements specified in the OSHA hazardous waste regulations are regarded as minimum requirements.

At a minimum, employees who will or may participate in any on-site activities that may involve potential exposures to hazardous waste-related safety or health hazards will first have to satisfy the following health and safety training requirements:

- 40-Hour introductory hazardous waste general worker training [29 CFR Part 1910.120(e)(3)(i)].
- On their first assignment, an additional 24 hours of activity under the direction of a trained, experienced supervisor [29 CFR Part 1910.120(e)(3)(i)].
- Individuals who will be in a supervisory position must also complete an additional 8 hours of management/supervisory health and safety training [29 CFR Part 1910.120(e)(4)].
- 8 Hours of annual health and safety refresher training for all general workers and supervisors [29 CFR Part 1910.120(e)(8)].
- Project-specific training prior to the onset of any on-site intrusive activities.

Additional health and safety training requirements may also be specified in the project-specific HASP depending on the nature of the planned activities (e.g., confined space entry training, fall protection training, excavation safety training, etc.).

11.5.2 On-Site Health and Safety Functions

The SSO will be responsible for ensuring that all health and safety requirements specified in the HASP are adequately performed and documented. This commonly includes activities such as the following:

- Conducting and documenting on-site health and safety training.
- Implementing a project-specific hazard communication program (e.g., chemical inventory, MSDSs, chemical container labeling, etc.).
- Implementing other project-specific health and safety programs that may be relevant based on the response action scope of work and the nature of planned activities (e.g., hearing conservation program, confined space entry program, respiratory protection program, etc.).
- Performing and documenting equipment inspections for equipment that is intended to be used on site.
- Calibration and use of air monitoring devices (e.g., organic vapor meters, particulate meters, etc.) and air sampling devices.
- Ensuring that specified PPE is appropriately used.
- Overseeing personnel and equipment decontamination activities.

•	Coordinating with appropriate on- and off-site contacts and agencies and managing the emergency response plan, when/as appropriate.
•	Other duties as specified in the HASP.
	•

Section 12 References

- 1. Aerial Photographs dated: 1938, 1949, 1957, 1969 and 1971.
- 2. American Petroleum Institute (API), March 1996. Closure of Underground Petroleum Storage Tanks (API Recommended Practice 1604, Third Edition).
- 3. Cassell, J.R., July 1977. Drainage Area Map Existing Storm Water Drains, Chesapeake Park Plaza/Dark Head Cove Road; Sheet A1 of 7.
- 4. Earth Tech, Inc., February 2003. Draft Phase I Environmental Assessment, Chesapeake Industrial Park.
- 5. United States Environmental Protection Agency (EPA), October 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final EPA/540/G-89/004: Office of Emergency and Remedial Response, Washington, D.C.
- 6. EPA, 1993. EPA Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analysis.
- 7. EPA, 1994. EPA Region III Modifications to National Functional Guidelines for Organic Data Review, Multi-Media, Multi-Concentration.
- 8. Maryland Department of the Environment (MDE), 1994. 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control, Maryland Department of the Environment, Water Management Administration in association with Soil Conservation Service and State Soil Conservation Committee.
- 9. MDE, October 2000. 2000 Maryland Stormwater Design Manual Volumes I & II, Maryland Department of the Environment, Water Management Administration.

- 10. MDE, August 2001. Cleanup Standards for Soil and Groundwater, Interim Final Guidance (Update No. 1).
- 11. MDE, March 2006. Guidance Document, Voluntary Cleanup Program.
- 12. Tetra Tech, Inc. (Tetra Tech), February 2004. Final Report Phase II Site Investigation of Exterior Areas, Volumes I and II, Lockheed Martin Middle River Complex.
- 13. Tetra Tech, August 2004. Historical Research Report, Lockheed Martin Middle River Complex.
- 14. Tetra Tech, April 2005. Final Data Report, Site-Wide Phase II Investigation, Middle River Complex.
- 15. Tetra Tech, May 2006. Site Characterization Report, Revision 1.0, Lockheed Martin Middle River Complex.
- 16. Tetra Tech, December 2006. Comment Response Document No. 2, Site Characterization Report, Lockheed Martin Middle River Complex.
- 17. Tetra Tech, November 2007. Soil Characterization Work Plan, Lockheed Martin Middle River Complex.

API	PENDIX A -	SUMMARY	Y OF DETE	CCTED CO	NCENTRAT	TIONS IN S	OIL

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 1 OF 9

SAMPLE ID: LABORATORY ID: SAMPLE DATE: LOCATION:	SB-22A-SS 04091701-24 9/15/2004 SB-22A	SB-23A-SS 04091701-18 9/15/2004 SB-23A	SB-24A-SS 04091701-19 9/15/2004 SB-24A	SB-25A-SS 04091701-23 9/15/2004 SB-25A	SB-30A-SS 04091701-15 9/15/2004 SB-30A	SB-31A-SS 04091701-10 9/13/2004 SB-31A	SB-55-SS 04091701-16 9/15/2004 SB-55	SB-56-SS 04091701-11 9/13/2004 SB-56	
INORGANICS (mg/kg)				I					
ANTIMONY									
ARSENIC	1.3	2.2	3.4	0.6	2.3 L	1.8 L	1.5 L	2.9 L	
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	
BERYLLIUM				5					
CADMIUM									
CHROMIUM	8.1	13	18	18	8.7 L	7.9 L	13 L	14 L	
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	
COPPER	4.9 K	5.3	36	15	4.4 K	7.4	74	11	
LEAD		5.4	67	5.9	4.5 J	2.8 J	420 J	6.3 J	
MERCURY	-	-	1.4			-			
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA	NA	
NICKEL	4.6 K	7.1	14	27	4.5 K	3.6 K	13	5.1 K	
SELENIUM									
SILVER		3.4							
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	
ZINC			120	48 K			58 J		
MISCELLANEOUS (mg/kg)									
HEXAVALENT CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	
MISCELLANEOUS (S.U.)									
PH	NA	NA	NA	NA	NA	NA	NA	NA	
PESTICIDES/PCBs (ug/kg)									
AROCLOR-1254									
AROCLOR-1260									
PETROLEUM HYDROCARBONS (ug/kg)	PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS							13000		
GASOLINE RANGE ORGANICS				1200					

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 2 OF 9

SAMPLE ID:	SB-22A-SS	SB-23A-SS	SB-24A-SS	SB-25A-SS	SB-30A-SS	SB-31A-SS	SB-55-SS	SB-56-SS
LABORATORY ID:	04091701-24	04091701-18	04091701-19	04091701-23	04091701-15	04091701-10	04091701-16	04091701-11
SAMPLE DATE:	9/15/2004	9/15/2004	9/15/2004	9/15/2004	9/15/2004	9/13/2004	9/15/2004	9/13/2004
LOCATION: SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)	SB-22A	SB-23A	SB-24A	SB-25A	SB-30A	SB-31A	SB-55	SB-56
				1	1			
ACENAPHTHENE								
ACENAPHTHYLENE								
ANTHRACENE								
BENZO(A)ANTHRACENE			74 J		44 J		110 J	
BENZO(A)PYRENE			63 J				99 J	
BENZO(B)FLUORANTHENE			66 J				94 J	
BENZO(G,H,I)PERYLENE							70 J	
BENZO(K)FLUORANTHENE			57 J		37 J		110 J	
BENZOIC ACID	NA							
BIS(2-ETHYLHEXYL)PHTHALATE								
BUTYL BENZYL PHTHALATE								
CARBAZOLE								
CHRYSENE			77 J		55 J		130 J	
DIBENZO(A,H)ANTHRACENE								
DIBENZOFURAN	-							
DIMETHYL PHTHALATE	-	60 J						
DI-N-BUTYL PHTHALATE								
DI-N-OCTYL PHTHALATE								
FLUORANTHENE	57 J		170 J		84 J		270 J	
FLUORENE								
INDENO(1,2,3-CD)PYRENE								
NAPHTHALENE								
PHENANTHRENE	44 J		92 J		74 J		160 J	
PHENOL		420						
PYRENE			110 J		110 J	37 J	160 J	
VOLATILE ORGANIC COMPOUNDS (ug/kg)		•	•	•	•			
2-BUTANONE								
ACETONE	89 J							
CARBON DISULFIDE								
METHYLENE CHLORIDE	11 B							
TOLUENE								
}-		!						

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 3 OF 9

SAMPLE ID: LABORATORY ID: SAMPLE DATE: LOCATION:	SB-57-SS 04091701-06 9/13/2004 SB-57	SB-58-SS 04091701-01 9/13/2004 SB-58	SB-93-SS 04092018-12 9/16/2004 SB-93	SB-94-SS 04092018-08 9/16/2004 SB-94	SB-95-SS 04092018-01 9/16/2004 SB-95	SB-96-SS 04092018-04 9/16/2004 SB-96	SB-236-SS 9612617009 5/9/2005 SB-236	SB-237-SS 9612621002 5/9/2005 SB-237
INORGANICS (mg/kg)	1				ı			
ANTIMONY							0.5 L	0.4 L
ARSENIC	2.2 L	1.5 L	1.8 L	2.1 L	2 L	2 L	3	3 B
BARIUM	NA	NA	NA	NA	NA	NA	36	42
BERYLLIUM							1.4	1.6
CADMIUM			3.5 L	4.5 L			0.3	0.4
CHROMIUM	11 L	24 L	110	25	14	9.3 K	17.7	19.8
COBALT	NA	NA	NA	NA	NA	NA	6.8	5.6
COPPER	7.5	9.4	21 L	21 L	34 L	5.1 L	14	12
LEAD	8.6 J	41 J	73 L	65 L	100 L	3.2 L	11	8 B
MERCURY		-	0.68	0.97	0.15	-	0.29 L	0.06
MOLYBDENUM	NA	NA	NA	NA	NA	NA	0.4 B	0.6 B
NICKEL	7.4	8.4	11	11	8.1	5.4 K	12	12
SELENIUM		-	-	-		-	2	2
SILVER								
VANADIUM	NA	NA	NA	NA	NA	NA	29.9	31
ZINC		43 J	100 K	92 K	81 K		35	28
MISCELLANEOUS (mg/kg)								
HEXAVALENT CHROMIUM	NA							
MISCELLANEOUS (S.U.)								
PH	NA	NA	NA	NA	NA	NA	8.1	NA
PESTICIDES/PCBs (ug/kg)								
AROCLOR-1254							NA	NA
AROCLOR-1260			800	1400			NA	NA
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS		100000 L	150000	67000			NA	NA
GASOLINE RANGE ORGANICS							NA	NA

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 4 OF 9

SAMPLE ID: LABORATORY ID: SAMPLE DATE: LOCATION: SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)	SB-57-SS 04091701-06 9/13/2004 SB-57	SB-58-SS 04091701-01 9/13/2004 SB-58	SB-93-SS 04092018-12 9/16/2004 SB-93	SB-94-SS 04092018-08 9/16/2004 SB-94	SB-95-SS 04092018-01 9/16/2004 SB-95	SB-96-SS 04092018-04 9/16/2004 SB-96	SB-236-SS 9612617009 5/9/2005 SB-236	SB-237-SS 9612621002 5/9/2005 SB-237
ACENAPHTHENE					160 J		NA	NA
ACENAPHTHYLENE							NA NA	NA NA
ANTHRACENE					380 J		NA NA	NA NA
BENZO(A)ANTHRACENE			1800 J	880 J	1600		NA NA	NA NA
BENZO(A)PYRENE			1500 J	850 J	1600		NA	NA
BENZO(B)FLUORANTHENE			1600 J	890 J	1800		NA	NA
BENZO(G,H,I)PERYLENE			1000 J		1000 J		NA	NA
BENZO(K)FLUORANTHENE			1500 J	1000 J	1600		NA	NA
BENZOIC ACID	NA							
BIS(2-ETHYLHEXYL)PHTHALATE							NA	NA
BUTYL BENZYL PHTHALATE							NA	NA
CARBAZOLE					190 J		NA	NA
CHRYSENE	60 J		2300 J	1100 J	1700		NA	NA
DIBENZO(A,H)ANTHRACENE					75 J		NA	NA
DIBENZOFURAN					54 J		NA	NA
DIMETHYL PHTHALATE		2000 J					NA	NA
DI-N-BUTYL PHTHALATE							NA	NA
DI-N-OCTYL PHTHALATE					53 J		NA	NA
FLUORANTHENE	98 J	630 J	3400 J	2000 J	3300	1	NA	NA
FLUORENE					130 J		NA	NA
INDENO(1,2,3-CD)PYRENE		-	820 J	360 J	990	-	NA	NA
NAPHTHALENE		-		-	-	-	NA	NA
PHENANTHRENE	54 J	-	1600 J	1100 J	1600	-	NA	NA
PHENOL							NA	NA
PYRENE	94 J	540 J	4000 J	1400 J	2500		NA	NA
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
2-BUTANONE							NA	NA
ACETONE							NA	NA
CARBON DISULFIDE							NA	NA
METHYLENE CHLORIDE						8 J	NA	NA
TOLUENE							NA	NA

TABLE AF-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 5 OF 9

SAMPLE ID: LABORATORY ID: SAMPLE DATE: LOCATION:	SB-238-SS 9613107007 5/17/2005 SB-238	SB-250-SS 9612617001 5/9/2005 SB-250	SB-251-SS 9612617003 5/9/2005 SB-251	SB-252-SS 9612617005 5/9/2005 SB-252	SB-253-SS 9612617007 5/9/2005 SB-253	SB-265-SS 9612625001 5/9/2005 SB-265	SB-266-SS 9612625003 5/9/2005 SB-266	SB-267-SS 9612625005 5/9/2005 SB-267	
INORGANICS (mg/kg)									
ANTIMONY	1 L	0.8 L	1 L	0.7 L	1 L	0.5	1	1	
ARSENIC	3	1 B	3 B	2 B	3 B	5	3 B	3 B	
BARIUM	86	37	40	31	49	29	44	79	
BERYLLIUM	1.3	0.7	0.7	0.6	0.6	1.3	0.8	0.8	
CADMIUM	2	0.2 B	0.2 B	0.1 B	0.4	0.8	1.8	0.7	
CHROMIUM	36.4	11.8	15.8	11.8	14.4	55.8	31.3	16.4	
COBALT	6.4	5.8	5.9	3.6	4.9	8.9	8.5	6	
COPPER	23	6	6	4	9	17	16	16	
LEAD	148	17	7 B	10	31	20	43	91	
MERCURY	0.24	0.04	0.02	0.04	0.07	0.09	0.51	0.07	
MOLYBDENUM	1 B	0.5 B				2 B	0.6 B		
NICKEL	21	8	9 B	6 B	8 B	20	14	9	
SELENIUM		2					3	3	
SILVER		0.05 B		-	0.2 B	1.1	1.1	0.06 B	
VANADIUM	49	20.5	24.8	20.3	29.5	46.2	33.4	21.6	
ZINC	167	32	29	25	39	50	85	287	
MISCELLANEOUS (mg/kg)									
HEXAVALENT CHROMIUM	0.49	NA	NA	NA	NA	3.6	2	NA	
MISCELLANEOUS (S.U.)									
PH	NA	NA	NA	NA	NA	8.3	NA	NA	
PESTICIDES/PCBs (ug/kg)									
AROCLOR-1254		NA	NA	NA	NA			96	
AROCLOR-1260	154	NA	NA	NA	NA	119	756	73 J	
PETROLEUM HYDROCARBONS (ug/kg)									
DIESEL RANGE ORGANICS	271000	NA							
GASOLINE RANGE ORGANICS		NA							

TABLE AF-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 6 OF 9

SAMPLE ID:	SB-238-SS	SB-250-SS	SB-251-SS	SB-252-SS	SB-253-SS	SB-265-SS	SB-266-SS	SB-267-SS
LABORATORY ID:	9613107007	9612617001	9612617003	9612617005	9612617007	9612625001	9612625003	9612625005
SAMPLE DATE:	5/17/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005
LOCATION:	SB-238	SB-250	SB-251	SB-252	SB-253	SB-265	SB-266	SB-267
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
ACENAPHTHENE		NA	NA	NA	NA	174	98	
ACENAPHTHYLENE		NA	NA	NA	NA	135	44 J	
ANTHRACENE	54 J	NA	NA	NA	NA	870	291	41 J
BENZO(A)ANTHRACENE	241 J	NA	NA	NA	NA	1980	947	209
BENZO(A)PYRENE	245 J	NA	NA	NA	NA	1800	977	212
BENZO(B)FLUORANTHENE	254 J	NA	NA	NA	NA	2300	1090	229
BENZO(G,H,I)PERYLENE	344 J	NA	NA	NA	NA	450 J	253 J	113 J
BENZO(K)FLUORANTHENE	225 J	NA	NA	NA	NA	1910	1100	241
BENZOIC ACID		NA	NA	NA	NA	152 J	157 J	925
BIS(2-ETHYLHEXYL)PHTHALATE		NA	NA	NA	NA	40 J		
BUTYL BENZYL PHTHALATE	-	NA	NA	NA	NA	25 J	-	
CARBAZOLE	40 J	NA	NA	NA	NA	242	158 J	
CHRYSENE	287 J	NA	NA	NA	NA	2090	1030	229
DIBENZO(A,H)ANTHRACENE	100 J	NA	NA	NA	NA	232	117	41 J
DIBENZOFURAN	-	NA	NA	NA	NA	86 J	43 J	
DIMETHYL PHTHALATE		NA	NA	NA	NA	-	-	
DI-N-BUTYL PHTHALATE		NA	NA	NA	NA	37 J	38 J	
DI-N-OCTYL PHTHALATE		NA	NA	NA	NA	-	-	
FLUORANTHENE	546	NA	NA	NA	NA	4020	1940	395
FLUORENE		NA	NA	NA	NA	213	94	
INDENO(1,2,3-CD)PYRENE	274 J	NA	NA	NA	NA	635	340	138 J
NAPHTHALENE		NA	NA	NA	NA	36 J		
PHENANTHRENE	249	NA	NA	NA	NA	2740	1090	163
PHENOL		NA	NA	NA	NA			
PYRENE	685 J	NA	NA	NA	NA	2570	1380	286
VOLATILE ORGANIC COMPOUNDS (ug/kg)					•			
2-BUTANONE	3.14 J	NA						
ACETONE	31 J	NA						
CARBON DISULFIDE	7.1	NA						
METHYLENE CHLORIDE		NA						
TOLUENE	1.2 J	NA						

TABLE AF-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 7 OF 9

SAMPLE ID: LABORATORY ID: SAMPLE DATE: LOCATION:	SB-268-SS 9612621005 5/9/2005 SB-268	SB-269-SS 9612621007 5/9/2005 SB-269	SB-270-SS 9612621009 5/9/2005 SB-270
INORGANICS (mg/kg)			F
ANTIMONY	2 L	1 L	1 L
ARSENIC	5	6	3 B
BARIUM	207	103	64
BERYLLIUM	1.4	1.7	1.1
CADMIUM	3	0.7	0.3 B
CHROMIUM	31.8	26.1	15.3
COBALT	11.7	6.6	5.4
COPPER	50	15	12
LEAD	447	56	64
MERCURY	0.49	0.18	0.11
MOLYBDENUM	1 B	1 B	0.6 B
NICKEL	14	13	8 B
SELENIUM		3	
SILVER	0.3 B	-	
VANADIUM	35.8	42.8	26.2
ZINC	289	74	51
MISCELLANEOUS (mg/kg)			
HEXAVALENT CHROMIUM	3.6	0.51	0.64
MISCELLANEOUS (S.U.)			
PH	NA	NA	NA
PESTICIDES/PCBs (ug/kg)			
AROCLOR-1254			
AROCLOR-1260	63	95	29 J
PETROLEUM HYDROCARBONS (ug/kg)			
DIESEL RANGE ORGANICS	NA	NA	NA
GASOLINE RANGE ORGANICS	NA	NA	NA

TABLE AF-1

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 8 OF 9

SAMPLE ID:	SB-268-SS	SB-269-SS	SB-270-SS
LABORATORY ID:	9612621005	9612621007	9612621009
SAMPLE DATE:	5/9/2005	5/9/2005	5/9/2005
LOCATION:	SB-268	SB-269	SB-270
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)			
ACENAPHTHENE	3620	79 J	
ACENAPHTHYLENE			
ANTHRACENE	9420	256 J	66 J
BENZO(A)ANTHRACENE	28700	1260 J	239
BENZO(A)PYRENE	25600	1310 J	258
BENZO(B)FLUORANTHENE	26700	1520 J	250
BENZO(G,H,I)PERYLENE	13200 J	662 J	175 J
BENZO(K)FLUORANTHENE	23000	1360 J	244
BENZOIC ACID			189 J
BIS(2-ETHYLHEXYL)PHTHALATE			
BUTYL BENZYL PHTHALATE			
CARBAZOLE	4640	123 J	32 J
CHRYSENE	28400	1250 J	269
DIBENZO(A,H)ANTHRACENE	5250	206 J	46 J
DIBENZOFURAN	1650 J	27 J	
DIMETHYL PHTHALATE			
DI-N-BUTYL PHTHALATE			
DI-N-OCTYL PHTHALATE			
FLUORANTHENE	63200	2720 J	600
FLUORENE	3580	68 J	
INDENO(1,2,3-CD)PYRENE	14500	745 J	135 J
NAPHTHALENE			
PHENANTHRENE	36100	987 J	265
PHENOL			
PYRENE	45200	1740 J	371
VOLATILE ORGANIC COMPOUNDS (ug/kg)			
2-BUTANONE	NA	NA	NA
ACETONE	NA	NA	NA
CARBON DISULFIDE	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA
TOLUENE	NA	NA	NA

SUMMARY OF DETECTED CONCENTRATIONS IN SURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 9 OF 9

1 Highlighted values indicate positive detection in exceedance of cleanup goals.

μg/kg - Micrograms per kilogram.

MDE - Maryland Department of the Environment.

mg/kg - Milligrams per kilogram.

NA - Not applicable.

NC - No criterion.

SB - Soil boring.

S.U. - Standard Units.

-- - Not detected.

- B Analyte was detected but is considered to be a laboratory contaminant.
- J Positive value is considered estimated as a result of technical noncompliance.
- K Positive value is considered biased high as a result of techical noncompliance.
- L Positive value is considered biased low as a result of technical noncompliance.

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 1 OF 27

Proposed Removal Depth

Proposed Removal Depth		1	1		1		1	
SAMPLE ID: LABORATORY ID: SAMPLE DATE: LOCATION:	SB-22-05 03111913-06 11/17/2003 SB-22	SB-22-10 03111913-07 11/17/2003 SB-22	SB-23-05 03111913-18 11/18/2003 SB-23	SB-23-10 03111913-19 11/18/2003 SB-23	SB-24-05 03111913-10 11/17/2003 SB-24	SB-24-10 03111913-11 11/17/2003 SB-24	SB-25-05 03111913-14 11/17/2003 SB-25	SB-25-10 03111913-15 11/17/2003 SB-25
INORGANICS (mg/kg)		•	•		•		•	
ANTIMONY								
ARSENIC	2.9 L	2.7 L	1.5 L	1 L	3.5 L	2.3 L	0.92 L	1.7 L
BARIUM	NA							
BERYLLIUM								4.6
CADMIUM								
CHROMIUM	13 L	16 L	5.3 L		13 L	12 L	11 L	16 L
COBALT	NA							
COPPER	10	13			28	7.8	8	19
LEAD	10 L	6 L			46 L	12 L	6.6 L	14 L
MERCURY					0.94	0.17		
MOLYBDENUM	NA							
NICKEL	8.9 L	14 L	3.6 L	-	12 L	6.7 L	24 L	46 L
SELENIUM				-		1		1
SILVER				-		1		1
THALLIUM				-		1		1
VANADIUM	NA							
ZINC				-	100 J	1		110 J
MISCELLANEOUS (%)								
PERCENT SOLIDS	70	85	84	86	80	84	85	84
TOTAL SOLIDS	NA							
MISCELLANEOUS (S.U.)								
PH	NA							
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS				-		-		-
GASOLINE RANGE ORGANICS								
TPH (C09-C36)	NA							
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
1-METHYLNAPHTHALENE	NA							
2,4-DIMETHYLPHENOL								
2-METHYLNAPHTHALENE								
ACENAPHTHENE								
ACENAPHTHYLENE				-		-		-
ANTHRACENE				-		-		-
BENZO(A)ANTHRACENE								

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 2 OF 27

NAPHTHALENE	SAMPLE ID: LABORATORY ID: SAMPLE DATE: LOCATION:	SB-22-05 03111913-06 11/17/2003 SB-22	SB-22-10 03111913-07 11/17/2003 SB-22	SB-23-05 03111913-18 11/18/2003 SB-23	SB-23-10 03111913-19 11/18/2003 SB-23	SB-24-05 03111913-10 11/17/2003 SB-24	SB-24-10 03111913-11 11/17/2003 SB-24	SB-25-05 03111913-14 11/17/2003 SB-25	SB-25-10 03111913-15 11/17/2003 SB-25
BENZO(B)FLUCRANTHENE -	, , ,				I	1			
BENZOIGH,I)PERVLENE -	` '					t			
BENZOLIGIFLUORANTHENE	` '					t			
BENZOIC ACID NA	` ' '/					t			
BENZYL ALCOHOL NA	- (/								
SIS CATHYLHEXYL)PHTHALATE	BENZOIC ACID		NA		NA	1	NA	NA	NA
CARBAZOLE CHRYSENE DIBERZOLHANTHRACENE DIBERZOLH	BENZYL ALCOHOL	NA							
CHRYSENE DIBENZO(A-HANTHRACENE DIBENZOFURAN DIMETHYL PHTHALATE	BIS(2-ETHYLHEXYL)PHTHALATE								
DIBENZO(A,H)ANTHRACENE <	CARBAZOLE								
DIBENZOFURAN	CHRYSENE								
DIMETHYL PHTHALATE -	DIBENZO(A,H)ANTHRACENE								
DIN-BUTYL PHTHALATE FLUORANTHENE FLUORENE FLUORE	DIBENZOFURAN	-							-
FLUORANTHENE FLUORENE	DIMETHYL PHTHALATE								
FLUORENE NIDENO(1,2,3-CD)PYRENE NIDENO(1,2	DI-N-BUTYL PHTHALATE								
NAPHTHALENE	FLUORANTHENE								
NAPHTHALENE N-NITROSODIPHENYLAMINE N-NITROSOD	FLUORENE								
N-NITROSODIPHENYLAMINE	INDENO(1,2,3-CD)PYRENE								
PHENANTHRENE	NAPHTHALENE								
PHENOL <th< td=""><td>N-NITROSODIPHENYLAMINE</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	N-NITROSODIPHENYLAMINE								
PYRENE <th< td=""><td>PHENANTHRENE</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	PHENANTHRENE								
VOLATILE ORGANIC COMPOUNDS (ug/kg) 1,2,4-TRIMETHYLBENZENE	PHENOL								
1.2.4-TRIMETHYLBENZENE <									
1,3,5-TRIMETHYLBENZENE <	VOLATILE ORGANIC COMPOUNDS (ug/kg)			I.		•	I.		
2-BUTANONE	1,2,4-TRIMETHYLBENZENE								
4-ISOPROPYLTOLUENE	1,3,5-TRIMETHYLBENZENE								
ACETONE 40 J 11 J 16 J 9 J 28 J 27 J CARBON DISULFIDE	2-BUTANONE								
ACETONE 40 J 11 J 16 J 9 J 28 J 27 J CARBON DISULFIDE	4-ISOPROPYLTOLUENE								
CARBON DISULFIDE	ACETONE	40 J	11 J	16 J	9 J	28 J	27 J		
SOPROPYLBENZENE	CARBON DISULFIDE								
M+P-XYLENES	ETHYLBENZENE								
M+P-XYLENES	ISOPROPYLBENZENE								
METHYLENE CHLORIDE 5 J 6 J 5 J 5 J 6 3 NAPHTHALENE									
NAPHTHALENE			5 J	6 J	5 J			5 J	6 J
	NAPHTHALENE								
	N-BUTYLBENZENE								

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 3 OF 27

SAMPLE ID	SB-22-05	SB-22-10	SB-23-05	SB-23-10	SB-24-05	SB-24-10	SB-25-05	SB-25-10
LABORATORY ID	03111913-06	03111913-07	03111913-18	03111913-19	03111913-10	03111913-11	03111913-14	03111913-15
SAMPLE DATE	11/17/2003	11/17/2003	11/18/2003	11/18/2003	11/17/2003	11/17/2003	11/17/2003	11/17/2003
LOCATION	SB-22	SB-22	SB-23	SB-23	SB-24	SB-24	SB-25	SB-25
VOCs (ug/kg) (Continued)								
O-XYLENE								
TOLUENE	-				-			
TOTAL XYLENES	NA							
TRICHLOROFLUOROMETHANE								

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 4 OF 27

Proposed Removal Depth

SAMPLE ID: LABORATORY ID: SAMPLE DATE: LOCATION:	SB-26-10 03111913-03 11/17/2003 SB-26	SB-27-10 03111913-01 11/17/2003 SB-27	SB-28-10 03111913-02 11/17/2003 SB-28	SB-29-10 03111913-05 11/17/2003 SB-29	SB-30-05 03111913-22 11/18/2003 SB-30	SB-31-05 03111913-25 11/18/2003 SB-31	SB-50-05 04091701-21 9/15/2004 SB-50	SB-50-10 04091701-22 9/15/2004 SB-50
INORGANICS (mg/kg)	3B-20	36-27	3B-26	36-29	36-30	36-31	36-30	36-30
ANTIMONY	NA	NA	NA	NA				
ARSENIC	NA	NA	NA NA	NA	0.99 L		0.96	1.2
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	3.2	4.9		
CADMIUM	NA	NA	NA	NA				
CHROMIUM	NA	NA	NA	NA	19 L	27 L	13	5.8
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	21	22	8.7	10
LEAD	NA	NA	NA	NA	7.4 L	24 L	6.7	4.8
MERCURY	NA	NA	NA	NA				
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	33 L	46 L	18	28
SELENIUM	NA	NA	NA	NA	4.4 L	11 L		
SILVER	NA	NA	NA	NA		-	-	
THALLIUM	NA	NA	NA	NA	1	1	1	
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	1	130 J	43 K	140
MISCELLANEOUS (%)								
PERCENT SOLIDS	77	75	77	76	87	84	NA	NA
TOTAL SOLIDS	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS (S.U.)								
PH	NA	NA	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	NA	NA	NA	NA			NA	NA
GASOLINE RANGE ORGANICS							NA	NA
TPH (C09-C36)	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NA	NA	NA	NA			NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA			NA	NA
ACENAPHTHENE	NA	NA	NA	NA			NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA			NA	NA
ANTHRACENE	NA	NA	NA	NA			NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA			NA	NA

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 5 OF 27

SAMPLE ID:	SB-26-10	SB-27-10	SB-28-10	SB-29-10	SB-30-05	SB-31-05	SB-50-05	SB-50-10
LABORATORY ID:	03111913-03	03111913-01	03111913-02	03111913-05	03111913-22	03111913-25	04091701-21	04091701-22
SAMPLE DATE:	11/17/2003	11/17/2003	11/17/2003	11/17/2003	11/18/2003	11/18/2003	9/15/2004	9/15/2004
LOCATION:	SB-26	SB-27	SB-28	SB-29	SB-30	SB-31	SB-50	SB-50
SVOCs (ug/kg) (Continued)			ı					1
BENZO(A)PYRENE	NA	NA	NA	NA			NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA			NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA			NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA		-	NA	NA
BENZOIC ACID	NA							
BENZYL ALCOHOL	NA							
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA			NA	NA
CARBAZOLE	NA	NA	NA	NA			NA	NA
CHRYSENE	NA	NA	NA	NA			NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA			NA	NA
DIBENZOFURAN	NA	NA	NA	NA	-	-	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA	NA		-	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA	NA	-	1	NA	NA
FLUORANTHENE	NA	NA	NA	NA		-	NA	NA
FLUORENE	NA	NA	NA	NA			NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA			NA	NA
NAPHTHALENE	NA	NA	NA	NA			NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA			NA	NA
PHENANTHRENE	NA	NA	NA	NA			NA	NA
PHENOL	NA	NA	NA	NA			NA	NA
PYRENE	NA	NA	NA	NA			NA	NA
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
1,2,4-TRIMETHYLBENZENE							NA	NA
1,3,5-TRIMETHYLBENZENE							NA	NA
2-BUTANONE	6 J			9 J			NA	NA
4-ISOPROPYLTOLUENE							NA	NA
ACETONE	48 J	29 J	14 J	45 J			NA	NA
CARBON DISULFIDE							NA	NA
ETHYLBENZENE		-				-	NA	NA
ISOPROPYLBENZENE							NA	NA
M+P-XYLENES							NA	NA
METHYLENE CHLORIDE		7 J	6 J		6 J	5 J	NA	NA
NAPHTHALENE							NA	NA
N-BUTYLBENZENE							NA	NA
1								

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 6 OF 27

SAMPLE ID	SB-26-10	SB-27-10	SB-28-10	SB-29-10	SB-30-05	SB-31-05	SB-50-05	SB-50-10
LABORATORY ID:	03111913-03	03111913-01	03111913-02	03111913-05	03111913-22	03111913-25	04091701-21	04091701-22
SAMPLE DATE	11/17/2003	11/17/2003	11/17/2003	11/17/2003	11/18/2003	11/18/2003	9/15/2004	9/15/2004
LOCATION	SB-26	SB-27	SB-28	SB-29	SB-30	SB-31	SB-50	SB-50
VOCs (ug/kg) (Continued)								
O-XYLENE	-			-			NA	NA
TOLUENE	-			-	-		NA	NA
TOTAL XYLENES	NA							
TRICHLOROFLUOROMETHANE							NA	NA

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 7 OF 27

Proposed Removal Depth

Proposed Removal Depth								
SAMPLE ID: LABORATORY ID: SAMPLE DATE: LOCATION:	SB-55-05 04091701-25 9/15/2004 SB-55	SB-55-10 04091701-17 9/15/2004 SB-55	SB-56-05 04091701-12 9/13/2004 SB-56	SB-56-10 04091701-13 9/13/2004 SB-56	SB-56-15 04091701-14 9/13/2004 SB-56	SB-57-05 04091701-07 9/13/2004 SB-57	SB-57-10 04091701-08 9/13/2004 SB-57	SB-57-15 04091701-09 9/13/2004 SB-57
INORGANICS (mg/kg)	05 00	05 00	02 00	02 00	02 00	02 07	02 07	05 07
ANTIMONY								
ARSENIC	1.9	0.58 L				0.65 L	1.8 L	0.66 L
BARIUM	NA							
BERYLLIUM	6.2							
CADMIUM								
CHROMIUM	15	8.4 L	15 L	10 L	9.5 L	8.6 L	9.5 L	5.7 L
COBALT	NA							
COPPER	56	12	10	4.7 K	3.9 K	16	6.4	
LEAD	8.4	5.2 J	3.2 J			3.2 J	3.7 J	
MERCURY								
MOLYBDENUM	NA							
NICKEL	150	11	11	5.3 K	6	-	3.8 K	-
SELENIUM	2.8	1	-			-		1
SILVER	1	1	-			-		1
THALLIUM								
VANADIUM	NA							
ZINC	270	62 J						
MISCELLANEOUS (%)								
PERCENT SOLIDS	NA							
TOTAL SOLIDS	NA							
MISCELLANEOUS (S.U.)								
PH	NA							
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS								
GASOLINE RANGE ORGANICS								
TPH (C09-C36)	NA							
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
1-METHYLNAPHTHALENE	NA							
2,4-DIMETHYLPHENOL								
2-METHYLNAPHTHALENE								
ACENAPHTHENE						-		
ACENAPHTHYLENE						-		
ANTHRACENE						-		
BENZO(A)ANTHRACENE		220 J						

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 8 OF 27

SAMPLE ID: LABORATORY ID:	SB-55-05 04091701-25	SB-55-10 04091701-17	SB-56-05 04091701-12	SB-56-10 04091701-13 9/13/2004	SB-56-15 04091701-14	SB-57-05 04091701-07	SB-57-10 04091701-08	SB-57-15 04091701-09
SAMPLE DATE:	9/15/2004 SB-55	9/15/2004 SB-55	9/13/2004 SB-56	9/13/2004 SB-56	9/13/2004 SB-56	9/13/2004 SB-57	9/13/2004 SB-57	9/13/2004 SB-57
LOCATION: SVOCs (ug/kg) (Continued)	SB-33	SB-33	5B-36	3B-36	SB-36	3B-37	3B-37	5B-57
BENZO(A)PYRENE		200 J						
BENZO(B)FLUORANTHENE		190 J						
BENZO(G,H,I)PERYLENE		140 J						
BENZO(K)FLUORANTHENE		160 J						
BENZOIC ACID	NA	NA	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	NA NA	NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
BIS(2-ETHYLHEXYL)PHTHALATE								
CARBAZOLE								
CHRYSENE		250 J						
DIBENZO(A,H)ANTHRACENE								
DIBENZOFURAN								
DIMETHYL PHTHALATE		310 J						
DI-N-BUTYL PHTHALATE								
FLUORANTHENE		490						
FLUORENE								
INDENO(1,2,3-CD)PYRENE	-	110 J						
NAPHTHALENE	-							
N-NITROSODIPHENYLAMINE								
PHENANTHRENE		190 J						
PHENOL	480		910	730	770		670	550
PYRENE		370 J						
VOLATILE ORGANIC COMPOUNDS (ug/kg)				•	•	•	•	
1,2,4-TRIMETHYLBENZENE								
1,3,5-TRIMETHYLBENZENE	1	1	-					
2-BUTANONE	1	1	-					
4-ISOPROPYLTOLUENE	1	1	-					
ACETONE	1	1	-					
CARBON DISULFIDE	1	1	-					
ETHYLBENZENE			-					
ISOPROPYLBENZENE								
M+P-XYLENES								
METHYLENE CHLORIDE	7 B		-					7 B
NAPHTHALENE								
N-BUTYLBENZENE	-	-	-					

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 9 OF 27

CAMPLE ID.	CD 55 05	CD 55 40	CD FC OF	CD 50 40	CD 50 45	CD 57.05	CD 57.40	CD 57.45
SAMPLE ID:	SB-55-05	SB-55-10	SB-56-05	SB-56-10	SB-56-15	SB-57-05	SB-57-10	SB-57-15
LABORATORY ID:	04091701-25	04091701-17	04091701-12	04091701-13	04091701-14	04091701-07	04091701-08	04091701-09
SAMPLE DATE:	9/15/2004	9/15/2004	9/13/2004	9/13/2004	9/13/2004	9/13/2004	9/13/2004	9/13/2004
LOCATION:	SB-55	SB-55	SB-56	SB-56	SB-56	SB-57	SB-57	SB-57
VOCs (ug/kg) (Continued)								
O-XYLENE						1	-	
TOLUENE						1	-	-
TOTAL XYLENES	NA							
TRICHLOROFLUOROMETHANE						-		

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 10 OF 27

Proposed Removal Depth SAMPLE ID: SB-58-05 SB-58-10 SB-58-15 SB-58-20 SB-93-05 SB-93-10 SB-93-15 SB-94-05 LABORATORY ID: 04091701-02 04091701-03 04091701-04 04091701-05 04092018-13 04092018-14 04092018-15 04092018-09 SAMPLE DATE: 9/13/2004 9/13/2004 9/13/2004 9/13/2004 9/16/2004 9/16/2004 9/16/2004 9/16/2004 LOCATION: SB-58 SB-58 SB-58 SB-58 SB-93 SB-93 SB-93 SB-94 INORGANICS (mg/kg) ANTIMONY ARSENIC 2.3 L 4.1 L 5.3 L 2.5 L BARIUM NA NA NA NA NA NA NA NA BERYLLIUM --------3.2 L CADMIUM CHROMIUM 19 L 15 L 26 L 3.8 L 20 9.9 K 18 14 COBALT NA NA NA NA NA NA NA NA COPPER 13 21 22 4.8 K 13 L 10 L 12 L 21 L LEAD 9.3 J 7.9 J 8.7 L 2.9 L 4 L 6.7 L 20 J MERCURY MOLYBDENUM NA NA NA NA NA NA NA NA NICKEL 18 17 4 K 18 12 8.6 18 23 SELENIUM 4.3 L 4.2 L SILVER THALLIUM VANADIUM NA NA NA NA NA NA NA NA ZINC 68 J 41 J 49 J ----MISCELLANEOUS (%) PERCENT SOLIDS NA NA NA NA NA NA NA NA TOTAL SOLIDS NA NA NA NA NA NA NA NA MISCELLANEOUS (S.U.) NA NA NA NA NA NA NA NA PETROLEUM HYDROCARBONS (ug/kg) DIESEL RANGE ORGANICS 17000 GASOLINE RANGE ORGANICS TPH (C09-C36) NA NA NA NA NA NA NA NA SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg) 1-METHYLNAPHTHALENE NA NA NA NA NA NA NA NA 2,4-DIMETHYLPHENOL 2-METHYLNAPHTHALENE ACENAPHTHENE 110 J --------------ACENAPHTHYLENE --------------ANTHRACENE 270 J BENZO(A)ANTHRACENE 99 J 620

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 11 OF 27

								22.442
SAMPLE ID:	SB-58-05	SB-58-10	SB-58-15	SB-58-20	SB-93-05	SB-93-10	SB-93-15	SB-94-05
LABORATORY ID:	04091701-02	04091701-03	04091701-04	04091701-05	04092018-13	04092018-14	04092018-15	04092018-09
SAMPLE DATE:	9/13/2004	9/13/2004	9/13/2004	9/13/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004
LOCATION:	SB-58	SB-58	SB-58	SB-58	SB-93	SB-93	SB-93	SB-94
SVOCs (ug/kg) (Continued)		1	1	1	1	1	1	
BENZO(A)PYRENE	83 J							490
BENZO(B)FLUORANTHENE	66 J							630
BENZO(G,H,I)PERYLENE								280 J
BENZO(K)FLUORANTHENE	86 J							450
BENZOIC ACID	NA							
BENZYL ALCOHOL	NA							
BIS(2-ETHYLHEXYL)PHTHALATE								
CARBAZOLE								200 J
CHRYSENE	100 J							660
DIBENZO(A,H)ANTHRACENE								
DIBENZOFURAN								73 J
DIMETHYL PHTHALATE	62 J							
DI-N-BUTYL PHTHALATE	-							
FLUORANTHENE	150 J							1500
FLUORENE								110 J
INDENO(1,2,3-CD)PYRENE								270 J
NAPHTHALENE								
N-NITROSODIPHENYLAMINE								
PHENANTHRENE	80 J							1200
PHENOL		690		590				
PYRENE	140 J							1100
VOLATILE ORGANIC COMPOUNDS (ug/kg)		•	•	•	•	•	•	
1,2,4-TRIMETHYLBENZENE								
1,3,5-TRIMETHYLBENZENE								
2-BUTANONE								
4-ISOPROPYLTOLUENE								
ACETONE								
CARBON DISULFIDE								
ETHYLBENZENE								
ISOPROPYLBENZENE								
M+P-XYLENES								
METHYLENE CHLORIDE							8 J	
NAPHTHALENE								
N-BUTYLBENZENE								
		1	ı	l .	l .	l .	1	l

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 12 OF 27

SAMPLE ID:	SB-58-05	SB-58-10	SB-58-15	SB-58-20	SB-93-05	SB-93-10	SB-93-15	SB-94-05
LABORATORY ID:	04091701-02	04091701-03	04091701-04	04091701-05	04092018-13	04092018-14	04092018-15	04092018-09
SAMPLE DATE:	9/13/2004	9/13/2004	9/13/2004	9/13/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004
LOCATION:	SB-58	SB-58	SB-58	SB-58	SB-93	SB-93	SB-93	SB-94
VOCs (ug/kg) (Continued)								
O-XYLENE								
TOLUENE		1	-			-		
TOTAL XYLENES	NA							
TRICHLOROFLUOROMETHANE								

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 13 OF 27

Proposed Removal Depth	10							
SAMPLE ID:	SB-94-10	SB-94-15	SB-95-05	SB-95-10	SB-96-05	SB-96-10	SB-96-15	SB-236-01
LABORATORY ID:	04092018-10	04092018-11	04092018-02	04092018-03	04092018-05	04092018-06	04092018-07	9612621001
SAMPLE DATE:	9/16/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004	5/9/2005
LOCATION:	SB-94	SB-94	SB-95	SB-95	SB-96	SB-96	SB-96	SB-236
INORGANICS (mg/kg)								
ANTIMONY								2 L
ARSENIC								4
BARIUM	NA	83						
BERYLLIUM			5.2 L			4.1 L		0.7
CADMIUM								0.4
CHROMIUM	20	27	19	9.6 K		17		19.8
COBALT	NA	5.8						
COPPER	11 L	7.4 L	24 L	5.5 L	4.3 L	13 L	3.3 L	22
LEAD	17 L	3.3 L	5.2 L	3.2 L		4.3 L		51
MERCURY								0.92 L
MOLYBDENUM	NA	0.6 B						
NICKEL	21	20	21	8.4		22		12
SELENIUM								-
SILVER								0.9
THALLIUM								-
VANADIUM	NA	31						
ZINC	33 K					1		82
MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	NA						
TOTAL SOLIDS	NA	NA						
MISCELLANEOUS (S.U.)								
PH	NA	8.2						
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS						12000		NA
GASOLINE RANGE ORGANICS								NA
TPH (C09-C36)	NA	NA						
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
1-METHYLNAPHTHALENE	NA	NA						
2,4-DIMETHYLPHENOL						-		NA
2-METHYLNAPHTHALENE						ı		NA
ACENAPHTHENE	190 J					-		NA
ACENAPHTHYLENE						1		NA
ANTHRACENE	430					-		NA
BENZO(A)ANTHRACENE	1200					-		NA

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 14 OF 27

			ı				ı	1
SAMPLE ID:	SB-94-10	SB-94-15	SB-95-05	SB-95-10	SB-96-05	SB-96-10	SB-96-15	SB-236-01
LABORATORY ID:	04092018-10	04092018-11	04092018-02	04092018-03	04092018-05	04092018-06	04092018-07	9612621001
SAMPLE DATE:	9/16/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004	5/9/2005
LOCATION:	SB-94	SB-94	SB-95	SB-95	SB-96	SB-96	SB-96	SB-236
SVOCs (ug/kg) (Continued)								
BENZO(A)PYRENE	950							NA
BENZO(B)FLUORANTHENE	1000							NA
BENZO(G,H,I)PERYLENE	600 J							NA
BENZO(K)FLUORANTHENE	940							NA
BENZOIC ACID	NA	NA						
BENZYL ALCOHOL	NA	NA						
BIS(2-ETHYLHEXYL)PHTHALATE		-						NA
CARBAZOLE	380 J	-						NA
CHRYSENE	1200							NA
DIBENZO(A,H)ANTHRACENE	-	1		-	-	-		NA
DIBENZOFURAN	130 J	1		-	-	-		NA
DIMETHYL PHTHALATE	-			77 J				NA
DI-N-BUTYL PHTHALATE	1	1			1	-		NA
FLUORANTHENE	2700	-		-	-			NA
FLUORENE	200 J							NA
INDENO(1,2,3-CD)PYRENE	590							NA
NAPHTHALENE	58 J							NA
N-NITROSODIPHENYLAMINE								NA
PHENANTHRENE	2200							NA
PHENOL			140 J					NA
PYRENE	1900							NA
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
1,2,4-TRIMETHYLBENZENE								NA
1,3,5-TRIMETHYLBENZENE								NA
2-BUTANONE								NA
4-ISOPROPYLTOLUENE								NA
ACETONE								NA
CARBON DISULFIDE								NA
ETHYLBENZENE								NA
ISOPROPYLBENZENE								NA
M+P-XYLENES		-						NA
METHYLENE CHLORIDE		-		-		-		NA
NAPHTHALENE								NA
N-BUTYLBENZENE		-		-		-		NA

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 15 OF 27

SAMPLE ID:	SB-94-10	SB-94-15	SB-95-05	SB-95-10	SB-96-05	SB-96-10	SB-96-15	SB-236-01
LABORATORY ID:	04092018-10	04092018-11	04092018-02	04092018-03	04092018-05	04092018-06	04092018-07	9612621001
SAMPLE DATE:	9/16/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004	9/16/2004	5/9/2005
LOCATION:	SB-94	SB-94	SB-95	SB-95	SB-96	SB-96	SB-96	SB-236
VOCs (ug/kg) (Continued)								
O-XYLENE								NA
TOLUENE		-	-		-		-	NA
TOTAL XYLENES	NA	NA						
TRICHLOROFLUOROMETHANE		1	-				-	NA

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 16 OF 27

Proposed Removal Depth SAMPLE ID: SB-236-05 SB-237-01 SB-237-05 SB-238-01 SB-238-05 SB-250-02 SB-251-02 SB-252-02 LABORATORY ID: 9612617010 9612621003 9612621004 9613107008 9613107009 9612617002 9612617004 9612617006 SAMPLE DATE 5/9/2005 5/9/2005 5/9/2005 5/17/2005 5/17/2005 5/9/2005 5/9/2005 5/9/2005 LOCATION: SB-236 SB-237 SB-237 SB-238 SB-238 SB-250 SB-251 SB-252 INORGANICS (mg/kg) ANTIMONY 2 L 4 L 0.3 L 0.6 L 0.9 L 0.8 L ARSENIC 2 B 3 B 4 BARIUM 24 40 27 103 68 35 41 30 BERYLLIUM 0.6 0.6 3.2 1.8 2 0.5 CADMIUM 0.5 0.3 0.3 0.6 0.5 0.2 B 0.1 B 0.2 B CHROMIUM 20.6 185 24.6 27.4 23.9 15.5 20.8 15.6 COBALT 6.2 5.1 8 8.4 14.8 2.8 7.1 3.5 COPPER 38 33 11 16 14 10 10 7 LEAD 63 11 14 5 B 7 B 6 B 81 30 MERCURY 0.07 0.97 L 0.35 0.01 0.08 0.03 0.01 0.04 MOLYBDENUM 0.7 B 0.6 B 63 0.8 B 0.6 B 0.5 B 0.7 B NICKEL 17 23 22 27 9 18 6 B 6 B SELENIUM 3 4 3 SILVER 2.3 1.4 THALLIUM VANADIUM 26.9 41.9 35.1 35.9 34.1 27.2 35.6 27.9 ZINC 131 41 57 34 24 99 54 25 MISCELLANEOUS (%) PERCENT SOLIDS NA NA NA NA NA NA NA NA TOTAL SOLIDS NA NA NA NA NA NA NA NA MISCELLANEOUS (S.U.) 7.7 NA NA NA NA NA NA NA PETROLEUM HYDROCARBONS (ug/kg) DIESEL RANGE ORGANICS NA NA 55700 881000 NA NA NA NA GASOLINE RANGE ORGANICS NA NA NA NA 21200 NA NA NA TPH (C09-C36) NA NA NA NA NA NA NA NA SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg) 1-METHYLNAPHTHALENE NA NA NA 3420 NA NA NA 2,4-DIMETHYLPHENOL NA NA NA 68 J NA NA NA 2-METHYLNAPHTHALENE NA NA NA 6900 NA NA NA ACENAPHTHENE NA NA NA 6960 NA NA NA --ACENAPHTHYLENE NA NA NA NA NA --69 J NA ANTHRACENE NA NA NA NA 2510 NA NA BENZO(A)ANTHRACENE NA NA NA 75 J 2700 NA NA NA

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 17 OF 27

			1	1				
SAMPLE ID:	SB-236-05	SB-237-01	SB-237-05	SB-238-01	SB-238-05	SB-250-02	SB-251-02	SB-252-02
LABORATORY ID:	9612617010	9612621003	9612621004	9613107008	9613107009	9612617002	9612617004	9612617006
SAMPLE DATE:	5/9/2005	5/9/2005	5/9/2005	5/17/2005	5/17/2005	5/9/2005	5/9/2005	5/9/2005
LOCATION:	SB-236	SB-237	SB-237	SB-238	SB-238	SB-250	SB-251	SB-252
SVOCs (ug/kg) (Continued)								
BENZO(A)PYRENE	NA	NA	NA	74 J	1960	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	90	2080	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	75 J	1240 J	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	87	2010	NA	NA	NA
BENZOIC ACID	NA	NA	NA			NA	NA	NA
BENZYL ALCOHOL	NA	NA	NA			NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA			NA	NA	NA
CARBAZOLE	NA	NA	NA		5690	NA	NA	NA
CHRYSENE	NA	NA	NA	92	1800	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA		392 J	NA	NA	NA
DIBENZOFURAN	NA	NA	NA		3980	NA	NA	NA
DIMETHYL PHTHALATE	NA	NA	NA		-	NA	NA	NA
DI-N-BUTYL PHTHALATE	NA	NA	NA		-	NA	NA	NA
FLUORANTHENE	NA	NA	NA	142	10000	NA	NA	NA
FLUORENE	NA	NA	NA		6330	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	67 J	1110 J	NA	NA	NA
NAPHTHALENE	NA	NA	NA		31000	NA	NA	NA
N-NITROSODIPHENYLAMINE	NA	NA	NA		81 J	NA	NA	NA
PHENANTHRENE	NA	NA	NA	58 J	18600	NA	NA	NA
PHENOL	NA	NA	NA			NA	NA	NA
PYRENE	NA	NA	NA	120	7570	NA	NA	NA
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
1,2,4-TRIMETHYLBENZENE	NA	NA	NA		658	NA	NA	NA
1,3,5-TRIMETHYLBENZENE	NA	NA	NA		139 J	NA	NA	NA
2-BUTANONE	NA	NA	NA	2.87 J		NA	NA	NA
4-ISOPROPYLTOLUENE	NA	NA	NA		165 J	NA	NA	NA
ACETONE	NA	NA	NA	27.2 J		NA	NA	NA
CARBON DISULFIDE	NA	NA	NA	0.72 J		NA	NA	NA
ETHYLBENZENE	NA	NA	NA		394	NA	NA	NA
ISOPROPYLBENZENE	NA	NA	NA		83.1 J	NA	NA	NA
M+P-XYLENES	NA	NA	NA		270 J	NA	NA	NA
METHYLENE CHLORIDE	NA	NA	NA	3.3 J	147 J	NA	NA	NA
NAPHTHALENE	NA	NA	NA		159000	NA	NA	NA
N-BUTYLBENZENE	NA	NA	NA		125 J	NA	NA	NA

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 18 OF 27

SAMPLE ID:	SB-236-05	SB-237-01	SB-237-05	SB-238-01	SB-238-05	SB-250-02	SB-251-02	SB-252-02
LABORATORY ID:	9612617010	9612621003	9612621004	9613107008	9613107009	9612617002	9612617004	9612617006
SAMPLE DATE:	5/9/2005	5/9/2005	5/9/2005	5/17/2005	5/17/2005	5/9/2005	5/9/2005	5/9/2005
LOCATION:	SB-236	SB-237	SB-237	SB-238	SB-238	SB-250	SB-251	SB-252
VOCs (ug/kg) (Continued)								
O-XYLENE	NA	NA	NA		186 J	NA	NA	NA
TOLUENE	NA	NA	NA	1.9 J	1	NA	NA	NA
TOTAL XYLENES	NA	NA	NA		456 J	NA	NA	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA		1	NA	NA	NA

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 19 OF 27

Proposed Removal Depth		2			2			
SAMPLE ID:	SB-253-02	SB-265-02	SB-266-02	SB-267-02	SB-268-02	SB-269-02	SB-270-02	SB-295-0405
LABORATORY ID:	9612617008	9612625002	9612625004	9612625006	9612621006	9612621008	9612621010	WV5857-15
SAMPLE DATE:	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	11/1/2005
LOCATION:	SB-253	SB-265	SB-266	SB-267	SB-268	SB-269	SB-270	SB-295
INORGANICS (mg/kg)								
ANTIMONY	0.9 L	NA	NA	NA	NA	NA	NA	1
ARSENIC	3 B	NA	NA	NA	NA	NA	NA	4.6
BARIUM	36	NA	NA	NA	NA	NA	NA	22.8
BERYLLIUM	0.7	NA	NA	NA	NA	NA	NA	0.96
CADMIUM	0.09 B	NA	NA	NA	NA	NA	NA	
CHROMIUM	14	NA	NA	NA	NA	NA	NA	25.1
COBALT	4	NA	NA	NA	NA	NA	NA	3.2 B
COPPER	5	NA	NA	NA	NA	NA	NA	14.6
LEAD	5 B	NA	NA	NA	NA	NA	NA	8
MERCURY	0.03	NA	NA	NA	NA	NA	NA	0.01
MOLYBDENUM	0.5 B	NA	NA	NA	NA	NA	NA	0.41 K
NICKEL	5 B	NA	NA	NA	NA	NA	NA	9.7
SELENIUM	3	NA	NA	NA	NA	NA	NA	1
SILVER	0.2 B	NA	NA	NA	NA	NA	NA	0.72
THALLIUM	1	NA	NA	NA	NA	NA	NA	1
VANADIUM	25.5	NA	NA	NA	NA	NA	NA	40.4
ZINC	20	NA	NA	NA	NA	NA	NA	27.1
MISCELLANEOUS (%)								
PERCENT SOLIDS	NA							
TOTAL SOLIDS	NA	81						
MISCELLANEOUS (S.U.)								
PH	NA	8.4	NA	NA	NA	NA	NA	NA
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	NA							
GASOLINE RANGE ORGANICS	NA							
TPH (C09-C36)	NA	ı						
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)								
1-METHYLNAPHTHALENE	NA				36.5 J			1
2,4-DIMETHYLPHENOL	NA							1
2-METHYLNAPHTHALENE	NA				32 J			-
ACENAPHTHENE	NA				350			-
ACENAPHTHYLENE	NA				49 J			-
ANTHRACENE	NA	109	30 J		1000			1
BENZO(A)ANTHRACENE	NA	432	121	81 J	2980		73 J	

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 20 OF 27

SAMPLE ID: LABORATORY ID: SAMPLE DATE:	SB-253-02 9612617008 5/9/2005	SB-265-02 9612625002 5/9/2005	SB-266-02 9612625004 5/9/2005	SB-267-02 9612625006 5/9/2005	SB-268-02 9612621006 5/9/2005	SB-269-02 9612621008 5/9/2005	SB-270-02 9612621010 5/9/2005	SB-295-0405 WV5857-15 11/1/2005
LOCATION: SVOCs (ug/kg) (Continued)	SB-253	SB-265	SB-266	SB-267	SB-268	SB-269	SB-270	SB-295
BENZO(A)PYRENE	NA	401	116	80 J	3130		62 J	
BENZO(A)FTRENE BENZO(B)FLUORANTHENE	NA NA		129	83			62 J	
` '	NA NA	374 260 J	129 85 J	83 59 J	4000 650 J		48 J	
BENZO(G,H,I)PERYLENE				90	2930			
BENZO(K)FLUORANTHENE	NA NA	405	111					
BENZOIC ACID	NA NA			333 J	180 J	47.5.1	217 J	
BENZYL ALCOHOL	NA NA					47.5 J		
BIS(2-ETHYLHEXYL)PHTHALATE	NA							
CARBAZOLE	NA 	43 J			448			
CHRYSENE	NA 	461	135	82 J	2930		69 J	
DIBENZO(A,H)ANTHRACENE	NA	86			307	-		
DIBENZOFURAN	NA				140	-		
DIMETHYL PHTHALATE	NA					-		
DI-N-BUTYL PHTHALATE	NA	32 J			37 J			
FLUORANTHENE	NA	802	245	173	8780		163	
FLUORENE	NA	32 J			331			
INDENO(1,2,3-CD)PYRENE	NA	295	92 J	62 J	948		51 J	
NAPHTHALENE	NA				57 J			
N-NITROSODIPHENYLAMINE	NA							
PHENANTHRENE	NA	417	127	47 J	3450		81 J	
PHENOL	NA							
PYRENE	NA	637	178	110	4530	28 J	113	
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
1,2,4-TRIMETHYLBENZENE	NA							
1,3,5-TRIMETHYLBENZENE	NA							
2-BUTANONE	NA							
4-ISOPROPYLTOLUENE	NA							
ACETONE	NA	21 J						
CARBON DISULFIDE	NA							
ETHYLBENZENE	NA							
ISOPROPYLBENZENE	NA							
M+P-XYLENES	NA							
METHYLENE CHLORIDE	NA	11 B						
NAPHTHALENE	NA							
N-BUTYLBENZENE	NA							

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 21 OF 27

·				1	1			1
SAMPLE ID:	SB-253-02	SB-265-02	SB-266-02	SB-267-02	SB-268-02	SB-269-02	SB-270-02	SB-295-0405
LABORATORY ID:	9612617008	9612625002	9612625004	9612625006	9612621006	9612621008	9612621010	WV5857-15
SAMPLE DATE:	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	5/9/2005	11/1/2005
LOCATION:	SB-253	SB-265	SB-266	SB-267	SB-268	SB-269	SB-270	SB-295
VOCs (ug/kg) (Continued)								
O-XYLENE	NA							
TOLUENE	NA							
TOTAL XYLENES	NA							
TRICHLOROFLUOROMETHANE	NA	2 J						

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 22 OF 27

Proposed Removal Depth

Proposed Removal Depth			1					
SAMPLE ID:	SB-295-0910	SB-296-0405	SB-296-0910	SB-297-0405	SB-297-0910	SB-298-0405	SB-298-0910	SB-299-0405
LABORATORY ID:	WV5857-16	WV5857-17	WV5857-18	WV5857-19	WV5857-20	WV5858-1	WV5858-2	WV5858-3
SAMPLE DATE:	11/1/2005	10/28/2005	10/28/2005	10/28/2005	10/28/2005	11/1/2005	11/1/2005	11/1/2005
LOCATION:	SB-295	SB-296	SB-296	SB-297	SB-297	SB-298	SB-298	SB-299
INORGANICS (mg/kg)								
ANTIMONY							-	
ARSENIC	2.9 K	5.7	2.4 K	3.3	3 K	3.5	2 K	1.3 K
BARIUM	15.1	14.5	13.7	16.3	22.3	17.7	19.6	12.5
BERYLLIUM	3.2	3.6	3.6	3.1	3.7	4.3	3.8	1.8
CADMIUM								
CHROMIUM	29	38.7	21.1	26.1	19.2	16.3 K	39.4 K	18.6 K
COBALT	8.5 K	32.3	6 K	6 K	8.7 K	8	5.3	11
COPPER	17.5	40.4	21.9	21.9	15.9	18	11.6	10.9
LEAD	8.7	9.9	7.6	8.3	8.5	8.4	10.4	4
MERCURY		0.02	0.01		-	-	-	-
MOLYBDENUM	0.44 K	0.55 K		0.43 K	0.45 K	0.32	0.35	-
NICKEL	24.3	31.4	21.3	24	25.4	23.3	17.8	13.7
SELENIUM		1			1	1	1	1
SILVER	0.99	1.6	1.2		1	1	1	1
THALLIUM		1			1.3 B	1	1	1.5 B
VANADIUM	32.5	61.6	32.8	35.3	31.8	28.4	46.4	27.2
ZINC	32.2	58	26.8	24.1	33.2	34.7	30.8	40.9
MISCELLANEOUS (%)								
PERCENT SOLIDS	NA							
TOTAL SOLIDS	84	80	84	88	84	84	83	86
MISCELLANEOUS (S.U.)								
PH	NA							
PETROLEUM HYDROCARBONS (ug/kg)								
DIESEL RANGE ORGANICS	NA							
GASOLINE RANGE ORGANICS	NA							
TPH (C09-C36)		4900 J		3500 J	3800 J	3600 B	2800 B	2900 B
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)			•					
1-METHYLNAPHTHALENE								
2,4-DIMETHYLPHENOL		-				-		
2-METHYLNAPHTHALENE								-
ACENAPHTHENE								-
ACENAPHTHYLENE						-		-
ANTHRACENE						-		
BENZO(A)ANTHRACENE								

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 23 OF 27

SAMPLE ID:	SB-295-0910	SB-296-0405	SB-296-0910	SB-297-0405	SB-297-0910	SB-298-0405	SB-298-0910	SB-299-0405
LABORATORY ID:	WV5857-16	WV5857-17	WV5857-18	WV5857-19	WV5857-20	WV5858-1	WV5858-2	WV5858-3
SAMPLE DATE:	11/1/2005	10/28/2005	10/28/2005	10/28/2005	10/28/2005	11/1/2005	11/1/2005	11/1/2005
LOCATION: SVOCs (ug/kg) (Continued)	SB-295	SB-296	SB-296	SB-297	SB-297	SB-298	SB-298	SB-299
, , ,	1		ı	1	ı	1		
BENZO(A)PYRENE								
BENZO(B)FLUORANTHENE								
BENZO(G,H,I)PERYLENE								
BENZO(K)FLUORANTHENE								
BENZOIC ACID								
BENZYL ALCOHOL								
BIS(2-ETHYLHEXYL)PHTHALATE			190 J					
CARBAZOLE								
CHRYSENE								
DIBENZO(A,H)ANTHRACENE								
DIBENZOFURAN								
DIMETHYL PHTHALATE		-		-		-	-	
DI-N-BUTYL PHTHALATE		1		-		-	1	-
FLUORANTHENE		1		-		1	1	-
FLUORENE		-					-	
INDENO(1,2,3-CD)PYRENE								
NAPHTHALENE								
N-NITROSODIPHENYLAMINE								
PHENANTHRENE								
PHENOL								
PYRENE								
VOLATILE ORGANIC COMPOUNDS (ug/kg)								
1,2,4-TRIMETHYLBENZENE		1		-		-	1	
1,3,5-TRIMETHYLBENZENE	NA							
2-BUTANONE		-					-	
4-ISOPROPYLTOLUENE								
ACETONE	14 J	29 J	14 J	37 L	36 L	29 B	16 B	
CARBON DISULFIDE								
ETHYLBENZENE								
ISOPROPYLBENZENE				-		-		
M+P-XYLENES						-		-
METHYLENE CHLORIDE	8 B	8 B	6 B	7 B	8 B			
NAPHTHALENE								
N-BUTYLBENZENE								

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 24 OF 27

	(F-							
SAMPLE ID	SB-295-0910	SB-296-0405	SB-296-0910	SB-297-0405	SB-297-0910	SB-298-0405	SB-298-0910	SB-299-0405
LABORATORY ID:	WV5857-16	WV5857-17	WV5857-18	WV5857-19	WV5857-20	WV5858-1	WV5858-2	WV5858-3
SAMPLE DATE	11/1/2005	10/28/2005	10/28/2005	10/28/2005	10/28/2005	11/1/2005	11/1/2005	11/1/2005
LOCATION	SB-295	SB-296	SB-296	SB-297	SB-297	SB-298	SB-298	SB-299
VOCs (ug/kg) (Continued)								
O-XYLENE								
TOLUENE								
TOTAL XYLENES					-			
TRICHLOROFLUOROMETHANE								

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 25 OF 27

Proposed Removal Depth	
SAMPLE ID:	SB-299-0910
LABORATORY ID:	WV5858-4
SAMPLE DATE:	11/1/2005
LOCATION:	SB-299
INORGANICS (mg/kg)	
ANTIMONY	
ARSENIC	2.2 K
BARIUM	42.2
BERYLLIUM	2.6
CADMIUM	
CHROMIUM	16 K
COBALT	9.3
COPPER	11.2
LEAD	11.2
MERCURY	0.01 B
MOLYBDENUM	
NICKEL	18.1
SELENIUM	
SILVER	
THALLIUM	2 B
VANADIUM	20.7
ZINC	42.7
MISCELLANEOUS (%)	
PERCENT SOLIDS	NA
TOTAL SOLIDS	85
MISCELLANEOUS (S.U.)	
PH	NA
PETROLEUM HYDROCARBONS (ug/kg)	
DIESEL RANGE ORGANICS	NA
GASOLINE RANGE ORGANICS	NA
TPH (C09-C36)	2900 B
SEMIVOLATILE ORGANIC COMPOUNDS (ug/kg)	
1-METHYLNAPHTHALENE	
2,4-DIMETHYLPHENOL	
2-METHYLNAPHTHALENE	
ACENAPHTHENE	
ACENAPHTHYLENE	
ANTHRACENE	
BENZO(A)ANTHRACENE	

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 26 OF 27

SAMPLE ID:	
LABORATORY ID:	
SAMPLE DATE:	11/1/2005
LOCATION:	SB-299
SVOCs (ug/kg) (Continued)	1
BENZO(A)PYRENE	
BENZO(B)FLUORANTHENE	
BENZO(G,H,I)PERYLENE	
BENZO(K)FLUORANTHENE	
BENZOIC ACID	
BENZYL ALCOHOL	
BIS(2-ETHYLHEXYL)PHTHALATE	
CARBAZOLE	
CHRYSENE	
DIBENZO(A,H)ANTHRACENE	
DIBENZOFURAN	
DIMETHYL PHTHALATE	
DI-N-BUTYL PHTHALATE	
FLUORANTHENE	
FLUORENE	
INDENO(1,2,3-CD)PYRENE	
NAPHTHALENE	
N-NITROSODIPHENYLAMINE	
PHENANTHRENE	
PHENOL	
PYRENE	
VOLATILE ORGANIC COMPOUNDS (ug/kg)	
1,2,4-TRIMETHYLBENZENE	
1,3,5-TRIMETHYLBENZENE	NA
2-BUTANONE	
4-ISOPROPYLTOLUENE	
ACETONE	16 B
CARBON DISULFIDE	
ETHYLBENZENE	
ISOPROPYLBENZENE	
M+P-XYLENES	
METHYLENE CHLORIDE	7 B
NAPHTHALENE	
N-BUTYLBENZENE	

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL BLOCK F, SOIL RESPONSE ACTION PLAN LMC MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 27 OF 27

	SAMPLE ID:	SB-299-0910
	LABORATORY ID:	WV5858-4
	SAMPLE DATE:	11/1/2005
	LOCATION:	SB-299
VOCs (ug/kg) (Continued)		
O-XYLENE		-
TOLUENE		-
TOTAL XYLENES	•	-
TRICHLOROFLUOROMETHANE		

1 Highlighted values indicate positive detection in exceedance of cleanup goals.

μg/kg - Micrograms per kilogram.

MDE - Maryland Department of the Environment.

mg/kg - Milligrams per kilogram.

NA - Not applicable.

NC - No criterion. SB - Soil boring.

ob - Soil boiling.

S.U. - Standard Units.

SVOC - Semivolatile organic compound.

VOC - Volatile organic compound.

-- - Not detected.

B - Analyte was detected but is considered to be a laboratory contaminant.

J - Positive value is considered estimated as a result of technical noncompliance.

K - Positive value is considered biased high as a result of techical noncompliance.

L - Positive value is considered biased low as a result of technical noncompliance.

TABLE AF-3 SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS BLOCK F LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 1 OF 8

SAMPLE ID: LABORATORY ID: SAMPLE DATE: LOCATION: DEPTH RANGE:	SB-382-0102 A7J170235001 10/15/2007 SB-382 1 - 2	SB-382-0203 A7J170235002 10/15/2007 SB-382 2 - 3	SB-382-0405 A7J170235003 10/15/2007 SB-382 4 - 5	SB-382-0708 A7J170235004 10/15/2007 SB-382 7 - 8	SB-383-0102 A7J170235005 10/15/2007 SB-383 1 - 2	SB-383-0102DL A7J170235005 10/15/2007 SB-383 1 - 2	SB-383-0203 A7J170235006 10/15/2007 SB-383 2 - 3	SB-385-0102 A7J170235013 10/15/2007 SB-385 1 - 2
MISCELLANEOUS (%)								
PERCENT SOLIDS	85.6	76.2	80.4	79.2	88	NA	87.2	92
SEMIVOLATILE SOIL (ug/kg)								
BENZO(A)PYRENE					NA	19000	51 J	
PESTICIDES/PCBs (ug/kg)								
AROCLOR-1260					34 J	NA		NA
SAMPLE ID:	SB-383-0405	SB-383-0708	SB-384-0102	SB-384-0203	SB-384-0405	SB-384-0708	SB-384-0708RE	SB-386-0405

SAMPLE ID:	SB-383-0405	SB-383-0708	SB-384-0102	SB-384-0203	SB-384-0405	SB-384-0708	SB-384-0708RE	SB-386-0405
LABORATORY ID:	A7J170235007	A7J170235008	A7J170235009	A7J170235010	A7J170235011	A7J170235012	A7J170235012	A7J170235019
SAMPLE DATE:	10/15/2007	10/15/2007	10/15/2007	10/15/2007	10/15/2007	10/15/2007	10/15/2007	10/15/2007
LOCATION:	SB-383	SB-383	SB-384	SB-384	SB-384	SB-384	SB-384	SB-386
DEPTH RANGE:	4 - 5	7 - 8	1 - 2	2 - 3	4 - 5	7 - 8	7 - 8	4 - 5
MISCELLANEOUS (%)								
PERCENT SOLIDS	79.2	83.1	87	86	84.6	76.6	NA	89.5
SEMIVOLATILE SOIL (ug/kg)								
BENZO(A)PYRENE	38 J	10 J	-	-			NA	
PESTICIDES/PCBs (ug/kg)								
AROCLOR-1260			-	-		NA		

TABLE AF-3 SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS BLOCK F LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 2 OF 8

SB-385-0708

84.4

SB-386-0102

88.8

SB-386-0203

93.6

380

SB-388-0203

87

9.9 J

SB-388-0405

78.4

SB-385-0405

SAMPLE ID:

PERCENT SOLIDS

BENZO(A)PYRENE

AROCLOR-1260

SEMIVOLATILE SOIL (ug/kg)

PESTICIDES/PCBs (ug/kg)

SB-385-0102RE

84.1

SB-385-0203

93.7

12 J

LABORATORY ID: SAMPLE DATE:	A7J170235013 10/15/2007	A7J170235014 10/15/2007	A7J170235015 10/15/2007	A7J170235016 10/15/2007	A7J170235017 10/15/2007	A7J170235018 10/15/2007	A7J170248006 10/15/2007	A7J170248007 10/15/2007
LOCATION:	SB-385	SB-385	SB-385	SB-385	SB-386	SB-386	SB-388	SB-388
DEPTH RANGE:	1 - 2	2 - 3	4 - 5	7 - 8	1 - 2	2 - 3	2 - 3	4 - 5
MISCELLANEOUS (%)								
PERCENT SOLIDS	NA	91	93	84.7	90	89.2	87.6	90.8
SEMIVOLATILE SOIL (ug/kg)								
BENZO(A)PYRENE	NA		-	-		-	-	
PESTICIDES/PCBs (ug/kg)								
AROCLOR-1260								
SAMPLE ID:	SB-386-0708	SB-387-0102	SB-387-0203	SB-387-0405	SB-387-0708	SB-388-0102	SB-390-0102	SB-390-0203
LABORATORY ID:	A7J170235020	A7J170248001	A7J170248002	A7J170248003	A7J170248004	A7J170248005	A7J170248013	A7J170248014
SAMPLE DATE:	10/15/2007	10/15/2007	10/15/2007	10/15/2007	10/15/2007	10/15/2007	10/15/2007	10/15/2007
LOCATION:	SB-386	SB-387	SB-387	SB-387	SB-387	SB-388	SB-390	SB-390
DEPTH RANGE:	7 - 8	1 - 2	2 - 3	4 - 5	7 - 8	1 - 2	1 - 2	2 - 3
MISCELLANEOUS (%)								

91.4

TABLE AF-3 SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS BLOCK F LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 3 OF 8

SAMPLE ID	: SB-388-0708	SB-389-0102	SB-389-0203	SB-389-0405	SB-389-0708	SB-391-0708	SB-392-0102	SB-392-0203
LABORATORY ID	: A7J170248008	A7J170248009	A7J170248010	A7J170248011	A7J170248012	A7J170248020	A7J170253001	A7J170253002
SAMPLE DATE	: 10/15/2007	10/15/2007	10/15/2007	10/15/2007	10/15/2007	10/16/2007	10/16/2007	10/16/2007
LOCATION	: SB-388	SB-389	SB-389	SB-389	SB-389	SB-391	SB-392	SB-392
DEPTH RANGE	: 7 - 8	1 - 2	2 - 3	4 - 5	7 - 8	7 - 8	1 - 2	2 - 3
MISCELLANEOUS (%)	-							
PERCENT SOLIDS	90.3	91.2	85	87.5	86.4	85.3	90.3	89.3
SEMIVOLATILE SOIL (ug/kg)								
BENZO(A)PYRENE		220 J		33 J	9.7 J			
PESTICIDES/PCBs (ug/kg)								
AROCLOR-1260								
SAMPLE ID	: SB-390-0405	SB-390-0708	SB-391-0102	SB-391-0203	SB-391-0405	SB-393-0405	SB-393-0708	SB-394-0102
LABORATORY ID	: A7J170248015	A7J170248016	A7J170248017	A7J170248018	A7J170248019	A7J170253007	A7J170253008	A7J170253009
SAMPLE DATE	10/15/2007	10/15/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007

SAMPLE ID:	SB-390-0405	SB-390-0708	SB-391-0102	SB-391-0203	SB-391-0405	SB-393-0405	SB-393-0708	SB-394-0102	
LABORATORY ID:	A7J170248015	A7J170248016	A7J170248017	A7J170248018	A7J170248019	A7J170253007	A7J170253008	A7J170253009	
SAMPLE DATE:	10/15/2007	10/15/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	
LOCATION:	SB-390	SB-390	SB-391	SB-391	SB-391	SB-393	SB-393	SB-394	
DEPTH RANGE:	4 - 5	7 - 8	1 - 2	2 - 3	4 - 5	4 - 5	7 - 8	1 - 2	
MISCELLANEOUS (%)									
PERCENT SOLIDS	82.8	82.3	83.6	65.8	87	93.5	86.9	90	
SEMIVOLATILE SOIL (ug/kg)									
BENZO(A)PYRENE	990	-	-			7.5 J	-	140 J	
PESTICIDES/PCBs (ug/kg)									
AROCLOR-1260									

TABLE AF-3 SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS BLOCK F LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 4 OF 8

SAMPLE ID:	SB-392-0405	SB-392-0708	SB-393-0102	SB-393-0203	SB-395-0203	SB-395-0405	SB-395-0708	SB-396-0102	
LABORATORY ID:	A7J170253003	A7J170253004	A7J170253005	A7J170253006	A7J170253014	A7J170253015	A7J170253016	A7J170253017	
SAMPLE DATE:	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	
LOCATION:	SB-392	SB-392	SB-393	SB-393	SB-395	SB-395	SB-395	SB-396	
DEPTH RANGE:	4 - 5	7 - 8	1 - 2	2 - 3	2 - 3	4 - 5	7 - 8	1 - 2	
MISCELLANEOUS (%)									
PERCENT SOLIDS	84.9	84.4	94.6	92.6	95.9	86.9	87	85.5	
SEMIVOLATILE SOIL (ug/kg)									
BENZO(A)PYRENE	20 J	-	450	-				80 J	
PESTICIDES/PCBs (ug/kg)									
AROCLOR-1260			22 J						

SAMPLE ID:	SB-394-0203	SB-394-0405	SB-394-0708	SB-395-0102	SB-397-0102	SB-397-0203	SB-397-0405	SB-397-0708	
LABORATORY ID:	A7J170253010	A7J170253011	A7J170253012	A7J170253013	A7J170258001	A7J170258002	A7J170258003	A7J170258004	
SAMPLE DATE:	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	
LOCATION:	SB-394	SB-394	SB-394	SB-395	SB-397	SB-397	SB-397	SB-397	
DEPTH RANGE:	2 - 3	4 - 5	7 - 8	1 - 2	1 - 2	2 - 3	4 - 5	7 - 8	
MISCELLANEOUS (%)									
PERCENT SOLIDS	90.6	86.7	86.2	83.2	95.1	89.4	95.1	85.2	
SEMIVOLATILE SOIL (ug/kg)									
BENZO(A)PYRENE	25 J	-		-	80 J		850		
PESTICIDES/PCBs (ug/kg)	PESTICIDES/PCBs (ug/kg)								
AROCLOR-1260		-		-			19 J		

TABLE AF-3 SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS BLOCK F LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 5 OF 8

SAMPLE ID:	SB-396-0203	SB-396-0405	SB-396-0708	SB-398-0708	SB-399-0102	SB-399-0203	SB-399-0405	SB-399-0708
LABORATORY ID:	A7J170253018	A7J170253019	A7J170253020	A7J170258008	A7J170258009	A7J170258010	A7J170258011	A7J170258012
SAMPLE DATE:	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007
LOCATION:	SB-396	SB-396	SB-396	SB-398	SB-399	SB-399	SB-399	SB-399
DEPTH RANGE:	2 - 3	4 - 5	7 - 8	7 - 8	1 - 2	2 - 3	4 - 5	7 - 8
MISCELLANEOUS (%)								
PERCENT SOLIDS	86	84.8	83.8	86.3	90.8	89.9	84.5	83.3
SEMIVOLATILE SOIL (ug/kg)								
BENZO(A)PYRENE							22 J	
PESTICIDES/PCBs (ug/kg)								
AROCLOR-1260			-					

SAMPLE ID:	SB-398-0102	SB-398-0203	SB-398-0405	SB-400-0405	SB-400-0708	SB-401-0102	SB-401-0203	SB-401-0405		
LABORATORY ID:	A7J170258005	A7J170258006	A7J170258007	A7J170258015	A7J170258016	A7J170258017	A7J170258018	A7J170258019		
SAMPLE DATE:	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007		
LOCATION:	SB-398	SB-398	SB-398	SB-400	SB-400	SB-401	SB-401	SB-401		
DEPTH RANGE:	1 - 2	2 - 3	4 - 5	4 - 5	7 - 8	1 - 2	2 - 3	4 - 5		
MISCELLANEOUS (%)										
PERCENT SOLIDS	90.9	86	89.4	84.1	80.3	79.7	88.3	83.1		
SEMIVOLATILE SOIL (ug/kg)										
BENZO(A)PYRENE	29 J	33 J	-	-		25 J	-			
PESTICIDES/PCBs (ug/kg)	PESTICIDES/PCBs (ug/kg)									
AROCLOR-1260			-	-						

TABLE AF-3 SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS BLOCK F LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 6 OF 8

SAMPLE ID:	SB-400-0102	SB-400-0203	SB-402-0203	SB-402-0405	SB-402-0708	SB-403-0102	SB-403-0203	SB-403-0405
LABORATORY ID:	A7J170258013	A7J170258014	A7J170283002	A7J170283003	A7J170283004	A7J170283005	A7J170283006	A7J170283007
SAMPLE DATE:	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007
LOCATION:	SB-400	SB-400	SB-402	SB-402	SB-402	SB-403	SB-403	SB-403
DEPTH RANGE:	1 - 2	2 - 3	2 - 3	4 - 5	7 - 8	1 - 2	2 - 3	4 - 5
MISCELLANEOUS (%)								
PERCENT SOLIDS	91.6	92.1	84.7	83.6	84.1	88.6	88.4	84.7
SEMIVOLATILE SOIL (ug/kg)								
BENZO(A)PYRENE	9.1 J			-				
PESTICIDES/PCBs (ug/kg)				•		•		•
AROCLOR-1260								

_								
SAMPLE ID:	SB-401-0708	SB-402-0102	SB-404-0102	SB-404-0203	SB-404-0405	SB-404-0708	SB-405-0102	SB-405-0203
LABORATORY ID:	A7J170258020	A7J170283001	A7J170283009	A7J170283010	A7J170283011	A7J170283012	A7J170283013	A7J170283014
SAMPLE DATE:	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007
LOCATION:	SB-401	SB-402	SB-404	SB-404	SB-404	SB-404	SB-405	SB-405
DEPTH RANGE:	7 - 8	1 - 2	1 - 2	2 - 3	4 - 5	7 - 8	1 - 2	2 - 3
MISCELLANEOUS (%)								
PERCENT SOLIDS	86	79.9	86.6	81.2	78	76.5	91.3	90.3
SEMIVOLATILE SOIL (ug/kg)								
BENZO(A)PYRENE	-	37 J			18 J	72 J	36 J	
PESTICIDES/PCBs (ug/kg)								
AROCLOR-1260								

TABLE AF-3 SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS BLOCK F LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 7 OF 8

SAMPLE ID:	SB-403-0708	SB-405-0708	SB-406-0102	SB-406-0203	SB-406-0405	SB-406-0708	SB-407-0102	SB-407-0203	
LABORATORY ID:	A7J170283008	A7J170283016	A7J170283017	A7J170283018	A7J170283019	A7J170283020	A7J180324001	A7J180324002	
SAMPLE DATE:	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	
LOCATION:	SB-403	SB-405	SB-406	SB-406	SB-406	SB-406	SB-407	SB-407	
DEPTH RANGE:	7 - 8	7 - 8	1 - 2	2 - 3	4 - 5	7 - 8	1 - 2	2 - 3	
MISCELLANEOUS (%)									
PERCENT SOLIDS	83.5	77.4	87.2	87.5	79.9	78.3	78.6	78.1	
SEMIVOLATILE SOIL (ug/kg)									
BENZO(A)PYRENE		230 J	510	320 J	62 J	85 J	130 J	190 J	
PESTICIDES/PCBs (ug/kg)									
AROCLOR-1260				21 J					

SAMPLE ID:	SB-405-0405	SB-407-0405	SB-407-0708	SB-408-0102	SB-408-0203	SB-408-0405	SB-408-0708	SB-409-0102	
LABORATORY ID:	A7J170283015	A7J180324003	A7J180324004	A7J180324005	A7J180324006	A7J180324007	A7J180324008	A7J180324011	
SAMPLE DATE:	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	
LOCATION:	SB-405	SB-407	SB-407	SB-408	SB-408	SB-408	SB-408	SB-409	
DEPTH RANGE:	4 - 5	4 - 5	7 - 8	1 - 2	2 - 3	4 - 5	7 - 8	1 - 2	
MISCELLANEOUS (%)									
PERCENT SOLIDS	83.3	73.7	72.7	81.8	83.8	86.1	81.1	77.6	
SEMIVOLATILE SOIL (ug/kg)									
BENZO(A)PYRENE	330 J	110 J	30 J	87 J	50 J	12 J		39 J	
PESTICIDES/PCBs (ug/kg)		•						<u> </u>	
AROCLOR-1260						15 J			

SUMMARY OF DETECTED CONCENTRATIONS IN SUBSURFACE SOIL - FALL 2007 RESULTS BLOCK F

LOCKHEED MARTIN MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND PAGE 8 OF 8

SAMPLE ID:	SB-409-0203	SB-409-0405	SB-409-0708	SB-489-0102	SB-489-0203	SB-489-0405	SB-489-0708		
LABORATORY ID:	A7J180324012	A7J180324013	A7J180324014	A7J180324015	A7J180324016	A7J180324017	A7J180324018		
SAMPLE DATE:	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007	10/16/2007		
LOCATION:	SB-409	SB-409	SB-409	SB-489	SB-489	SB-489	SB-489		
DEPTH RANGE:	2 - 3	4 - 5	7 - 8	1 - 2	2 - 3	4 - 5	7 - 8		
MISCELLANEOUS (%)									
PERCENT SOLIDS	81.6	78.5	73.5	79.8	76.3	79.3	73.3		
SEMIVOLATILE SOIL (ug/kg)									
BENZO(A)PYRENE		67 J	-	9.6 J	260 J	9.8 J	21 J		
PESTICIDES/PCBs (ug/kg)									
AROCLOR-1260									

SAMPLE ID:	SB-490-0405	SB-490-0708
LABORATORY ID:	A7J180324009	A7J180324010
SAMPLE DATE:	10/17/2007	10/17/2007
LOCATION:	SB-490	SB-490
DEPTH RANGE:	4 - 5	7 - 8
MISCELLANEOUS (%)		
PERCENT SOLIDS	79.4	86.6
SEMIVOLATILE SOIL (ug/kg)		
BENZO(A)PYRENE	110 J	31 J
PESTICIDES/PCBs (ug/kg)		
AROCLOR-1260		

1 Highlighted values indicate positive detection in exceedance of cleanup goals.

μg/kg - Micrograms per kilogram.

MDE - Maryland Department of the Environment.

mg/kg - Milligrams per kilogram.

NA - Not applicable.

NC - No criterion.

SB - Soil boring.

S.U. - Standard Units.

SVOC - Semivolatile organic compound.

VOC - Volatile organic compound.

-- - Not detected.

- B Analyte was detected but is considered to be a laboratory contaminant.
- J Positive value is considered estimated as a result of technical noncompliance.
- K Positive value is considered biased high as a result of techical noncompliance.
- L Positive value is considered biased low as a result of technical noncompliance.

APPENDIX B - STATISTICAL SUMMARY OF PRE- AND POST-REMOVAL ACTION DATA

Appendix B

Statistical Summary of Pre- and Post-Removal Data Block F Lockheed Martin Middle River Complex Middle River, Maryland

Arsenic, vanadium, mercury, carcinogenic polycyclic aromatic hydrocarbons (cPAH), polychlorinated biphenyls (PCBs), and total petroleum hydrocarbons (TPH) were identified as chemicals of concern (COC) in soil.

Arsenic and vanadium are considered to be present within site-specific background concentrations in surface and subsurface soil. For arsenic, Lockheed Martin, Inc. and the Maryland Department of the Environment (MDE) agreed that no sample can remain on site with a concentration greater than 12 milligrams per kilogram (mg/kg) and the upper confidence limit of the mean (UCL) concentration must be less than 6 mg/kg to be considered background. For vanadium, Lockheed Martin, Inc. and the MDE agreed that no sample can remain on site with a concentration greater than 91 mg/kg and the UCL concentration must be less than 55 mg/kg to be considered background. These criteria are attained under current conditions in surface soil and subsurface soil (Tables B-1 and B-2).

For mercury, the criteria being used for remediation is the average typical concentration (ATC). The post-excavation UCL concentration for mercury must be less than the ATC of 0.5 mg/kg. This criterion has not currently been met in surface soil, but has been met in subsurface soil (Tables B-1 and B-2). The removal of soil associated with cPAH contamination will reduce mercury's UCL concentration to a level less than the ATC.

Soil sample boring locations must be less than the target incremental lifetime cancer risk of 1 x 10-5 and the target hazard index of 1.0. Because arsenic and vanadium meet the background requirements, risks associated with exposure to arsenic and vanadium are removed from the total risk at each boring. In the surface and subsurface soil, the target hazard index is not exceeded. In surface soil, the target cancer risk is exceeded at boring locations SB-265, SB-266, SB-268, SB-269, SB-93, SB-94, and SB-95. In subsurface soil, the target cancer risk is exceeded at boring locations SB-238 and SB-268. The exceedance of the target cancer risk at subsurface soil location SB-238 results in the removal of soil at its surface soil location. The exceedance of the risks at these locations is primarily due to the presence of carcinogenic PAHs. The maximum benzo[a]pyrene concentration remaining following the virtual removal of soil is 401 ug/kg. Using benzo[a]pyrene to represent risks associated with carcinogenic PAHs, soil with benzo[a]pyrene concentrations greater than 400 ug/kg shold be excavated (Tables B-3 and B-4).

Sample locations with benzo[a]pyrene concentrations greater than 400 μ g/kg are targeted for excavation. These samples are shaded in the attached tables (Tables B-5 and B-6). To determine if the target UCL concentrations are attained for arsenic, vanadium, and

mercury, replacement values must be included in the samples that are targeted for removal. The detection limits identified in the laboratory data were used as the replacement values. For arsenic, vanadium, and mercury, these values are 0.5 mg/kg, 0.1 mg/kg, and 0.1 mg/kg, respectively (Tables B-7 and B-8).

The UCLs were calculated using the United States Environmental Protection Agency's ProUCL software. The output of the software and the data used for the calculations are attached (Tables B-9 through B-20).

Soil associated with underground storage tanks with TPH concentrations greater than the MDE cleanup standard for TPH-DRO and TPH-GRO of 230 mg/kg will be removed.

Removal of soils associated with benzo[a]pyrene contamination coincidentally results in the attainment of cleanup standards for mercury, PCBs and TPH. Target risks are achieved across the block.

TABLE B-1
SUMMARY OF PRE- AND POST-REMOVAL ANALYSIS
BLOCK F
SURFACE SOIL
LOCKHEED MARTIN MIDDLE RIVER COMPLEX
MIDDLE RIVER, MARYLAND

		Pre	Pre-Removal		Pos	Post-Bemoval	Individual Soil	Poet-Reenonse
Metal	Maximum	UCL	Basis of UCL	Maximum	ISI	Basis of IICI	Sample Becult	Action 1101
A	,	0.0				200 10 0000	Calliple 1859all	100 TO 100
Arsenic	0	2.9	Approximate Gamma	വ	3.9	99% Chebyshey (Mean SD)	/ 12 ma/kg	/ 8 ma///a
Vonodi im	Ç	00			l	(So incoming of the control of the c	51/8/11	By/SII o /
variaulum	48	30	Student's t UCL	6 7	22	Hall's Bootstran LICI	/ 01 ma/kg	/ FF ma///a
. 9. 0.0	,	0				יישיים ביסיומים איים:	500	DV/511 00 /
wercury	4.	Σ.	1 99% Chebyshev (Mean, SD)	7.	0.38	95% Chehyshey (Mean SD)		/ O E ma///a

1 All concentrations in milligrams per kilogram (mg/kg).

UCL - Upper confidence limit of the mean

TABLE B-2 SUMMARY OF PRE- AND POST-REMOVAL ANALYSIS BLOCK F SUBSURFACE SOIL LOCKHEED MARTIN MIDDLE RIVER COMPLEX MIDDLE RIVER, MARYLAND

		Р	re-Removal		Po	ost-Removal	Individual Soil	Post-Response
Metal	Maximum	UCL	Basis of UCL	Maximum	UCL	Basis of UCL	Sample Result	Action UCL
Arsenic	7	3.4	97.5% Chebyshev (Mean, SD)	7	3.3	97.5% Chebyshev (Mean, SD)	< 12 mg/kg	< 6 mg/kg
Vanadium	62	38	Approximate Gamma	62	37	Student's t UCL	< 91 mg/kg	< 55 mg/kg
Mercury	0.97	0.24	97.5% Chebyshev (Mean, SD)	0.97	0.24	97.5% Chebyshev (Mean, SD)		< 0.5 mg/kg

¹ All concentrations in milligrams per kilogram (mg/kg).

UCL - Upper confidence limit of the mean

TABLE B-3 PRE- AND POST-RESPONSE ACTION RISKS BLOCK F SURFACE SOIL

		ntial Risks		tial Risks		ntial Risks	
	(Pre-Resp	onse Action)		onse Minus	(Post-Res	ponse Action)	B[a]P
Surface Soil		(1)	Backg	round) ⁽²⁾		(3)	Concentration
Boring	Cancer	Noncancer	Cancer	Noncancer	Cancer	Noncancer	(ug/kg) ⁽⁴⁾
SB-22A	1.40E-05	0.34	1.10E-07	0.14	1.10E-07	0.14	ND
SB-236	1.20E-05	1.4	3.40E-07	0.35	3.40E-07	0.35	NA
SB-237	1.60E-05	2.1	2.10E-06	0.8	2.10E-06	0.8	NA
SB-238	1.80E-05	1.7	9.00E-06	0.28	0	0	245
SB-23A	1.60E-05	0.36	9.40E-06	0.26	9.40E-06	0.26	190
SB-24A	1.70E-05	0.73	7.00E-06	0.58	7.00E-06	0.58	63
SB-250	2.30E-07	0.63	2.30E-07	0.082	2.30E-07	0.082	NA
SB-251	2.80E-07	0.74	2.80E-07	0.086	2.80E-07	0.086	NA
SB-252	1.90E-07	0.61	1.90E-07	0.066	1.90E-07	0.066	NA
SB-253	2.50E-07	0.89	2.50E-07	0.1	2.50E-07	0.1	NA
SB-25A	1.20E-05	0.33	9.90E-06	0.3	9.90E-06	0.3	200
SB-265	6.10E-05	1.7	4.70E-05	0.23	0	0	1800
SB-266	2.80E-05	1.2	2.80E-05	0.31	0	0	977
SB-267	6.70E-06	0.8	6.70E-06	0.22	6.70E-06	0.22	212
SB-268	6.90E-04	1.6	6.80E-04	0.39	0	0	2560
SB-269	5.20E-05	1.6	3.40E-05	0.19	0	0	1310
SB-270	7.10E-06	0.82	7.10E-06	0.12	7.10E-06	0.12	258
SB-30A	1.50E-05	0.3	8.60E-06	0.19	8.60E-06	0.19	180
SB-31A	1.40E-05	0.27	9.10E-06	0.19	9.10E-06	0.19	185
SB-50	9.30E-06	0.35	1.20E-07	0.2	1.20E-07	0.2	NA
SB-55	1.10E-05	0.28	7.00E-06	0.21	7.00E-06	0.21	99
SB-56	2.20E-05	0.42	1.70E-07	0.11	1.70E-07	0.11	ND
SB-57	1.70E-05	0.34	1.40E-07	0.09	1.40E-07	0.09	ND
SB-58	8.00E-05	0.29	2.80E-07	0.1	2.80E-07	0.1	ND
SB-93	8.60E-05	0.71	8.00E-05	0.62	0	0	1500
SB-94	6.80E-05	1.1	6.20E-05	0.98	0	0	850
SB-95	4.50E-05	0.34	3.90E-05	0.25	0	0	1600
SB-96	1.50E-05	0.3	9.30E-06	0.2	9.30E-06	0.2	190

¹ Soil boring location risks as identified in the Site Characterization Report (Tetra Tech, May 2006).

Soil boring location risks as identified in the Site Characterization Report (Tetra Tech, May 2006) minus

² risks associated with arsenic and vanadium.

Soil boring location risks excluding those attributable to arsenic and vanadium (less than Block D-specific

³ background reference concentration of 12 and 91 mg/kg, respectively).

⁴ Concentration used to calculate risk in the Site Characterization Rerpot (Tetra Tech, May 2006)

TABLE B-4 PRE- AND POST-RESPONSE ACTION RISKS BLOCK D SUBSURFACE SOIL

		ntial Risks onse Action)		ntial Risks onse Minus		ntial Risks oonse Action)	B[a]P
Subsurface	((1)		round) ⁽²⁾	((2)	Concentration
Soil Boring	Cancer	Noncancer	Cancer	Noncancer	Cancer	Noncancer	(ug/kg) ⁽⁴⁾
SB-22	1.70E-05	0.32	8.70E-06	0.18	8.70E-06	0.18	ND
SB-23	1.30E-05	0.22	8.40E-06	0.15	8.40E-06	0.15	ND
SB-236	2.00E-05	1.4	3.40E-07	0.37	3.40E-07	0.37	NA
SB-237	4.10E-07	1	4.10E-07	0.11	4.10E-07	0.11	NA
SB-238	6.20E-05	1.2	5.30E-05	0.16	0	0	1960
SB-24	1.90E-05	0.53	8.60E-06	0.37	8.60E-06	0.37	ND
SB-25	1.20E-05	0.27	8.60E-06	0.2	8.60E-06	0.2	ND
SB-250	2.20E-07	0.79	2.20E-07	0.066	2.20E-07	0.066	NA
SB-251	1.50E-05	1.3	3.50E-07	0.1	3.50E-07	0.1	N
SB-252	1.20E-05	1	2.30E-07	0.077	2.30E-07	0.077	NA
SB-253	2.20E-07	0.75	2.20E-07	0.076	2.20E-07	0.076	NA
SB-26	NA	NA	NA	ΝA	NA	NA	NA
SB-265	1.10E-05	NA	1.10E-05	NA	0	NA	401
SB-266	3.40E-06	NA	3.40E-06	NA	3.40E-06	NA	116
SB-267	2.60E-06	NA	2.60E-06	NA	2.60E-06	.NA	80
SB-268	7.60E-05	NA	7.60E-05	NA	0	NA	3130
SB-269	1.70E-06	NA	1.70E-06	NA	1.70E-06	NA	ND
SB-27	NA	NA	NA	NA	NA	NA	NA
SB-270	2.20E-06	NA	2.20E-06	NA	2.20E-06	NA	62
SB-28	NA	NA	NA	NA	NA	NA	NA
SB-29	NA	NA	NA	NA	NA	NA	NA
SB-295	2.20E-05	1.4	8.70E-06	0.12	8.70E-06	0.12	ND
SB-296	2.60E-05	2.1	9.50E-06	0.21	9.50E-06	0.21	ND
SB-297	1.80E-05	1.2	8.40E-06	0.12	8.40E-06	0.12	ND
SB-298	1.90E-05	1.3	8.60E-06	0.12	8.60E-06	0.12	ND
SB-299	1.30E-05	0.9	8.40E-06	0.1	8.40E-06	0.1	ND
SB-30	1.10E-05	0.26	8.30E-06	0.21	8.30E-06	0.21	ND
SB-31	8.80E-06	0.25	8.80E-06	0.25	8.80E-06	0.25	ND
SB-50	3.30E-06	0.21	1.60E-07	0.16	1.60E-07	0.16	ND
SB-55	1.60E-05	0.53	1.00E-05	0.44	1.00E-05	0.44	ND
SB-56	1.00E-05	0.23	9.60E-06	0.22	9.60E-06	0.22	ND
SB-57	1.30E-05	0.25	9.70E-06	0.2	9.70E-06	0.2	ND
SB-58	2.10E-05	0.43	9.50E-06	0.25	9.50E-06	0.25	ND
SB-93	1.10E-05	0.25	9.90E-06	0.24	9.90E-06	0.24	ND
SB-94	1.90E-05	0.26	1.80E-05	0.24	0	0 ·	NA
SB-95	1.10E-05	0.26	1.00E-05	0.25	1.00E-05	0.25	ND
SB-96	1.10E-05	0.22	9.80E-06	0.21	9.80E-06	0.21	ND

¹ Soil boring location risks as identified in the Site Characterization Report (Tetra Tech, May 2006). Soil boring location risks as identified in the Site Characterization Report (Tetra Tech, May 2006) minus

² risks associated with arsenic and vanadium.

Soil boring location risks excluding those attributable to arsenic and vanadium (less than Block D-specific

³ background reference concentration of 12 and 91 mg/kg, respectively).

⁴ Concentration used to calculate risk in the Site Characterization Rerpot (Tetra Tech, May 2006)

TABLE B-5 PRE-RESPONSE ACTION COC CONCENTRATIONS BLOCK F SURFACE SOIL LOCKHEED MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Soil Boring	Arsenic	Vanadium	Mercury
MRC-MW46(0910)	NA	NA	NA
SB-22A-SS	1.3	NA	0.12 U
SB-23A-SS	2.2	NA	0.1 U
SB-24A-SS	3.4	NA	1.4
SB-25A-SS	0.6	NA	0.11 U
SB-30A-SS	2.3 L	NA	0.11 UL
SB-31A-SS	1.8 L	NA	0.11 UL
SB-50-SS	3.2	NA	0.42
SB-55-SS	1.5 L	NA	0.11 UL
SB-56-SS	2.9 L	NA	0.16 UL
SB-57-SS	2.2 L	NA	0.13 UL
SB-58-SS	1.5 L	NA	0.1 UL
SB-93-SS	1.8 L	NA	0.68
SB-94-SS	2.1 L	NA	0.97
SB-95-SS	2 L	NA	0.15
SB-96-SS	2 L	NA	0.12 U
SB-236-SS	3	29.9	0.29 L
SB-236-01	4	. 31	0.92 L
SB-237-SS	3 B	31	0.06
SB-237-01	5	41.9	0.35
SB-238-SS	3	49	0.24
SB-238-01	3	35.9	0.08
SB-250-SS	1 B	20.5	0.04
SB-251-SS	3 B	24.8	0.02
SB-252-SS	2 B	20.3	0.04
SB-253-SS	3 B	29.5	0.07
SB-265-SS	5	46.2	0.09
SB-266-SS	3 B	33.4	0.51
SB-267-SS	3 B	21.6	0.07
SB-268-SS	5	35.8	0.49
SB-269-SS	6	42.8	0.18
SB-270-SS	3 B	26.2	0.11

- 1 All concentrations are in milligrams per kilogram (mg/kg).
- 2 Highlighted samples are those targeted for removal.

COC - Chemical of concern.

SB - Soil boring

B - Blank contamination

U - Not detected.

L - Concentration is biased low.

NA - Not analyzed

TABLE B-6 PRE-RESPONSE ACTION COC CONCENTRATIONS BLOCK F SUBSURFACE SOIL LOCKHEED MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Soil Boring	Ars	enic	Vana	dium	Mer	cury
SB-22-05	2.9	L	NA.		0.12	U
SB-22-10	2.7	L	NA.		0.12	υ
SB-23-05	1.5	L	NA		0.12	U
SB-23-10		L	NA		0.12	U
SB-24-05	3.5	L	NA.		0.94	
SB-24-10	2.3		NA		0.17	
SB-25-05	0.92		NA NA		0.12	11
SB-25-10	1.7		NA NA		0.12	
SB-26-10	NA		NA NA		NA NA	<u> </u>
SB-27-10	NA NA		NA NA		NA NA	ļ
SB-28-10		<u> </u>				
	NA		NA.		NA	L
SB-29-10	NA		NA		NA	
SB-30-05	0.99		NA NA		0.12	U
SB-31-05	0.59	UR	NA NA		0.12	
SB-50-05	0.96		NA.		0.11	
SB-50-10	1.2		NA NA			
SB-55-05	1.9		NA		0.11	U
SB-55-10	0.58	L	NA		0.11	UL
SB-56-05	0.53	UL	NA		0.11	UL
SB-56-10	0.58	UL	NA		0.12	UL
SB-56-15	0.56		NA		0.11	
SB-57-05	0.65		NA.		0.11	
SB-57-10	1.8		NA NA		0.12	
SB-57-15	0.66		NA.		0.11	
SB-58-05	2.3		NA NA			UL
SB-58-10	4.1		NA NA		0.12	UL
SB-58-15	5.3		NA NA			UL
SB-58-20	2.5	L	NA NA		0.12	UL
SB-93-05	0.59		NA		0.12	U
SB-93-10	0.56		NA		0.11	U
SB-93-15	0.56		NA		0.11	U
SB-94-05	0.58		NA		0.12	U
SB-94-10	0.55		NA		0.11	U
SB-94-15	0.59		NA		0.12	Ú
SB-95-05	0.58	UL .	NA	-	0.12	U
SB-95-10	0.59	UL.	NA:		0.12	U
SB-96-05	0.52	UL	NA		0.1	U
SB-96-10	0.59	UL	NA		0.12	U
SB-96-15	0.6		NA		0.12	U
SB-236-05	. 7		26.9		0.97	<u> </u>
SB-237-05		В	35.1		0.01	
SB-238-05	3		34.1		0.07	
SB-250-03	3		27.2		0.03	
SB-251-02	5		35.6		0.03	
	4					
SB-252-02			27.9		0.04	
SB-253-02	3		25.5		0.03	
SB-265-02	NA NA		NA.		NA	
SB-266-02	NA		NA		NA	
SB-267-02	NA NA		NA		NA	
SB-268-02	NA		NA		NA	
SB-269-02	NA		NA		NA	
SB-270-02	NA		NA		NA	
SB-295-0405	4.6		40.4		0.01	
SB-294-0910	2.9	K	32.5		0.01	U
SB-296-0405	5.7		61.6		0.02	
SB-296-0910	2.4	K	32.8		0.01	
SB-297-0405	3.3		35.3		0.1	U
SB-297-0910	3.3	K	31.8		0.01	
SB-298-0405	3.5	15	28.4			
		1/			0.01	
SB-298-0910	2		46.4		0.01	
SB-299-0405	1.3		27.2		0.01	
SB-299-0910	2.2	K	20.7		0.01	В

All concentrations are in milligrams per kilogram (mg/kg).
 Highlighted samples are those targeted for removal.

COC - Chemical of concern.

SB - Soil boring
B - Analyte was detected but is considered to be a laboratory contaminant.
U - Not detected.
L - Concentration is biased low.
K - Concentration is biased high.

R - Rejected data.

TABLE B-7 POST-RESPONSE ACTION COC CONCENTRATIONS BLOCK F SURFACE SOIL LOCKHEED MIDDLE RIVER COMPLEX, MIDDLE RIVER, MARYLAND

Soil Boring	Ars	enic	Vana	adium	Mer	cury
MRC-MW46(0910)	NA		NA		NA	1
SB-22A-SS	1.3		NA		0.12	U
SB-23A-SS	2.2		NA		0.1	U
SB-24A-SS	3.4		NA		1.4	
SB-25A-SS	0.6		NA		0.11	U
SB-30A-SS	2.3	L .	NA		0.11	UL
SB-31A-SS	1.8	L	. NA		0.11	UL
SB-50-SS	3.2		NA		0.42	
SB-55-SS	1.5	L	NA		0.11	UL
SB-56-SS	2.9	L .	NA		0.16	UL
SB-57-SS	2.2	L	NA		0.13	UL
SB-58-SS	1.5	L	NA		0.1	UL
SB-93-SS	0.5	U	NA		0.1	U
SB-94-SS	0.5	U	NA		0.1	U
SB-95-SS	0.5	U	NA		0.1	Ü
SB-96-SS	2	L	NA		0.12	U
SB-236-SS	3		29.9		0.29	L
SB-236-01	4		31		0.92	L
SB-237-SS		В	31		0.06	
SB-237-01	5		41.9		0.35	
SB-238-SS	0.5	U	0.1	U	0.1	U
SB-238-01	3		35.9		0.08	
SB-250-SS		В	20.5		0.04	
SB-251-SS	3		24.8		0.02	
SB-252-SS		В	20.3		0.04	
SB-253-SS		В	29.5		0.07	
SB-265-SS	0.5	U	0.1	U	0.1	U
SB-266-SS		Ü	0.1	U	0.1	U
SB-267-SS		В	21.6		0.07	
SB-268-SS	0.5		0.1	U	0.1	U
SB-269-SS		U	0.1	U	0.1	U
SB-270-SS	3	В	26.2		0.11	

2 Concentrations of excavated samples are replaced with the following detection limits:

Arsenic 0.5 U mg/kg Vanadium 0.1 U mg/kg Mercury 0.1 U mg/kg

3 Highlighted samples are those targeted for removal.

COC - Chemical of concern.

SB - Soil boring

B -Blank contamination.

U - Not detected.

L - Concentration is biased low.

TABLE B-8 POST-RESPONSE ACTION COC CONCENTRATIONS BLOCK F

SUBSURFACE SOIL

MIDDLE RIVER	COMPLEY	

O di Brazilia			T			
Soil Boring		enic		dium		cury
SB-22-05	2.9		NA NA	ļ	0.12	U
SB-22-10	2.7		NA		0.12	U
SB-23-05	1.5		NA	ļ	0.12	
SB-23-10		L	NA		0.12	U
SB-24-05	3.5		NA		0.94	
SB-24-10	2.3		NA		0.17	
SB-25-05	0.92	L	NA		0.12	
SB-25-10	1.7	L	NA.		0.12	U
SB-26-10	NA		NA		NA	
SB-27-10	NA		NA		NA	
SB-28-10	NA		NA		NA	
SB-29-10	NA		NA		NA	
SB-30-05	0.99	L .	NA	l	0.12	U
SB-31-05	0.59		NA		0.12	
SB-50-05	0.96		NA.		0.11	
SB-50-10	1.2		NA NA	· · · · · · · · · · · · · · · · · · ·	0.11	
SB-55-05	1.9		NA NA		0.11	
SB-55-10	0.58		NA NA	· · · · · · · · · · · · · · · · · · ·	0.11	
SB-55-10 SB-56-05	0.58		NA NA		0.11	
				ļ		
SB-56-10	0.58		NA	ļ	0.12	
SB-56-15	0.56		NA		0.11	
SB-57-05	0.65		NA		0.11	
SB-57-10	1.8		NA		0.12	
SB-57-15	0.66		NA NA		0.11	
SB-58-05	2.3		NA		0.12	
SB-58-10	4.1		NA		0.11	
SB-58-15	5.3	L	NA		0.12	UL
SB-58-20	2.5	L	NA		0.12	UL
SB-93-05	0.59	UL	NA		0.12	U
SB-93-10	0.56	UL	NA		0.11	
SB-93-15	0.56	UL	NA		0.11	
SB-94-05	0.5		NA		0.1	
SB-94-10	0.5		NA		0.1	
SB-94-15	0.59		NA		0.12	
SB-95-05	0.58		NA.		0.12	
SB-95-10	0.59		NA.			Ü
SB-96-05	0.52		NA NA			Ü
SB-96-10	0.59		NA NA		0.12	
SB-96-15	0.6		NA NA		0.12	
SB-236-05	7	01	26.9		0.12	
		В				<u> </u>
SB-237-05			35.1		0.01	
SB-238-05	0.5	U	0.1	U	0.1	U
SB-250-02	3		27.2		0.03	
SB-251-02	5		35.6		0.01	
SB-252-02	4		27.9		0.04	
SB-253-02	3		25.5		0.03	
SB-265-02	NA		NA		NA	
SB-266-02	NA.		NA		NA	
SB-267-02	NA.		NA		NA	
SB-268-02	0.5	Ų	, NA		NA	
SB-269-02	NA		NA		NA	
SB-270-02	NA		NA.		NA	
SB-295-0405	4.6		40.4		0.01	
SB-294-0910	2.9	K	32.5		0.01	U
SB-296-0405	5.7		61.6		0.02	
SB-296-0910	2.4	K	32.8		0.01	
SB-297-0405	3.3		35.3		0.1	Ú
SB-297-0910	3:	K	31.8		0.01	
SB-298-0405	3.5		28.4		0.01	
SB-298-0910	2.3	K	46.4		0.01	
SB-299-0405	1.3		27.2		0.01	
SB-299-0405 SB-299-0910	2.2		20.7			
1 All concentrations an				Ļ	0.01	P

COC - Chemical of concern.
SB - Soil boring
B - Analyte was detected but is considered to be a laboratory contaminant.
U - Not detected.
L - Concentration is biased low.
K - Concentration is biased high.
R - Rejected data.

TABLE B-9 PRO-UCL PRE-REMOVAL ARSENIC CONCENTRATION BLOCK F SURFACE SOIL

Data File: AS V HG BLC	OCK F AP	PENDIX.xls	6	Variable:	Arsenic (Pl	RE SURF)	
Raw Statistics			Normal D	istribution T	est		
Number of Valid Samples	31	Shapiro-	Shapiro-Wilk Test Statistic			0.88667	
Number of Unique Samples		17	Shapiro-	Wilk 5% C	ritical Value		0.929
Minimum		0.5	Data not	t normal at	5% significa	ance level	
Maximum		6					
Mean		2.429032	95%	6 UCL (Ass	uming Norn	nal Distribut	ion)
Median		. 2	Student'	s-t UCL			2.84724
Standard Deviation		1.371907					
Variance		1.882129		Gamm	a Distributio	on Test	
Coefficient of Variation		0.564796	A-D Test Statistic				0.618497
Skewness		1.071467	A-D 5%	Critical Val	ue		0.751578
			K-S Tes	t Statistic			0.132553
Gamma Statis	stics		K-S 5%	Critical Val	ue		0.158658
k hat		3.425873	Data foll	ow approxi	mate gamm	na distributio	on
k star (bias corrected)		3.115843		gnificance			
Theta hat		0.709026		Y			
Theta star		0.779575	95% U	CLs (Assur	ning Gamm	a Distributio	on)
nu hat		212.4042		nate Gamr			2.896096
nu star		193.1822		Gamma L			2.924681
Approx.Chi Square Value	(.05)	162.0271					
Adjusted Level of Signific	<u> </u>	0.0413	ı	Lognormal Distribution Test			
Adjusted Chi Square Value		160.4434	Shapiro-	Wilk Test S			0.952174
			<u>-</u>		ritical Value		0.929
Log-transformed Stati	stics				at 5% signi		
Minimum of log data		-0.693147	,				
Maximum of log data		1.791759	95% l	JCLs (Assu	iming Logno	ormal Distrib	oution
Mean of log data		0.734503	95% H-l				3.041765
Standard Deviation of log	data	0.578753	95% Ch	ebyshev (N	IVUE) UCL		3.62381
Variance of log data		0.334955	97.5% C	hebyshev	(MVUE) UC	L	4.132059
		•			IVUE) ÚCL		5.130415
				,			
			ģ	95% Non-pa	arametric U	CLs	
			CLT UC				2.834327
			Adj-CLT	UCL (Adju	sted for ske	wness)	2.884994
		***************************************			ed for skewr		2.855143
			Jackknif				2.84724
				d Bootstrap	UCL		2.834785
			Bootstra	<u> </u>			2.919443
RECOMMENDATION				otstrap UC	L		2.921775
Assuming gamma distribution (0.05)				le Bootstra			2.83871
			BCA Bootstrap UCL			2.874194	
Use Approximate Gamma UCL			95% Chebyshev (Mean, Sd) UCL			CL	3.503073
2.22			97.5% Chebyshev (Mean, Sd) UCL			3.967811	
					lean, Sd) U		4.880699
			99% UN	enysnev (IV	iean, Suj U	ŲL.	4.880699

TABLE B-10 PRO-UCL PRE-REMOVAL VANADIUM CONCENTRATION BLOCK F SURFACE SOIL

Data File:	AS V HG B	LOCK F AF	PENDIX.xI	S	Variable:	Vanadium	(PRE SURF	=)	
Raw Statistics				Normal D	istribution T	est			
Number of Valid Samples		16	Shapiro	Shapiro-Wilk Test Statistic			0.949257		
Number of Unique Samples		15			ritical Value		0.887		
Minimum	•	<u>'</u>	20.3	<u> </u>		5% significa	J		
Maximum			49						
Mean			32.4875	95%	6 UCL (Ass	uming Norn	nal Distribut	ion)	
Median			31		's-t UCL			36.42136	
Standard D	Deviation		8.976033						
Variance			80.56917		Gamm	na Distributio	on Test		
	of Variation		0.276292	A-D Tes	st Statistic			0.244492	
Skewness			0.369926		Critical Va	ue		0.738006	
				*****	st Statistic			0.110064	
	Gamma Sta	atistics			Critical Val	LLE :		0.214961	
k hat		2000	13.97544		Data follow approximate gamma distribution				
	corrected)		11.39671		at 5% significance level				
Theta hat			2.324614	ut 0 70 0	grimoarioc				
Theta star			2.850603	95% 11	Cl s (Assur	⊥ ning Gamm	a Distributio	n)	
nu hat			447.2141		mate Gamr			36.85947	
nu star			364.6948		d Gamma l			37.39709	
	Square Val	lue (05)	321.4376	710,000	a Gamma C	JOE		37.33703	
	evel of Signi		0.03348		Lognorm	⊥ nal Distributi	on Test		
			316.8167	Shaniro	-Wilk Test		OII 1 est	0.955836	
Adjusted Chi Square Value		010.0107			ritical Value		0.933630		
Log-transformed Statistics				~	at 5% signi		2272		
Minimum o			3.010621	Data ar	ognomia.	at 676 digiti	nounce leve		
Maximum o			3.89182	95%	UCI s (Assi	ıming Logno	rmal Dietrih	oution	
Mean of log			3.444652	95% H-I		ining Login	Jimai Distric	37.25769	
	eviation of I	og data	0.279558		ebyshev (M	IVUE) UCI		42.50322	
Variance of		og data	0.078153			(MVUE) UC	I	46.83207	
	log data		0.070.00		ebyshev (N		_	55.33528	
				30 /3 311	<i>abje</i> (00.00020	
					95% Non-na	arametric U	Cle		
				CLT UC			020	36.17857	
					and the second second	sted for ske	wness)	36.40031	
						ed for skewr		36.45595	
-				Jackknif		Ja Tor Skewi	1033)	36.42136	
		-1-3			d Bootstrap	LICI		35.91295	
				Bootstra		OOL		36.59026	
RECOMMENDATION				Hall's Bootstrap UCL			36.44348		
Data are normal (0.05)				Percentile Bootstrap UCL			36.1		
	a are norm	u. (0.00)						36.2875	
Use Stu	Use Student's-t UCL				BCA Bootstrap UCL 95% Chebyshev (Mean, Sd) UCL		21.	42.26891	
03e 0tu	dont o-t OOL	-							
				97.5% Chebyshev (Mean, Sd) UCL 99% Chebyshev (Mean, Sd) UCL				46.50133	
	:			99% UN	ebysnev (N	iean, 50) U	JL	54.8151	

TABLE B-11 PRO-UCL PRE-REMOVAL MERCURY CONCENTRATION BLOCK F SURFACE SOIL

Data File:	AS V HG I	BLOCK F A	PPENDIX.xls	3	Variable:	Mercury P	RE SURF	
<u></u>								
Raw Statistics			Normal Distribution Test				0.684292	
Number of Valid Samples 31			Shapiro-Wilk Test Statistic					
Number of Unique Samples 22			Shapiro-Wilk 5% Critical Value				0.929	
Minimum			0.02	Data not normal at 5% significance level				
Maximum			1.4					
Mean			0.250484			uming Nor	nal Distribu	tion)
Median	<u> </u>		0.08	Student	's-t UCL			0.352181
Standard E	Deviation		0.333612					
Variance			0.111297		Gamm	na Distributi	on Test	
	of Variation	า	1.331872	A-D Tes	st Statistic			2.141092
Skewness			2.086285	A-D 5%	Critical Val	ue		0.781923
				K-S Tes	t Statistic			0.248855
	Gamma St	atistics		K-S 5%	K-S 5% Critical Value			
k hat			0.869621	Data do	es not follo	w a gamma	distribution	0.163222
k star (bias	corrected)		0.80697		gnificance l			
Theta hat			0.288038					
Theta star			0.310401	95% U	CLs (Assur	ning Gamm	na Distributio	on)
nu hat			53.91653		nate Gamn			0.360214
nu star			50.03213		d Gamma L			0.367687
Approx.Chi	i Square Va	lue (.05)	34.79112	,				0.007007
	evel of Sign		0.0413	I	Lognorm	al Distribut	ion Test	
	hi Square \		34.08396	Shapiro-	Wilk Test S		1	0.896072
**-]					ritical Value		0.929
Log-trar	nsformed St	tatistics					ificance leve	
Minimum o			-3.912023		. reginerina.	at 5 / 5 orgin		,1
Maximum o			0.336472	95% (ICLs (Ass)	ımina Loanı	ormal Distrik	oution
Mean of log			-2.059538	95% H-L		Login		0.409061
	eviation of	log data	1.127193		ebyshev (M	WUE) LICI		0.476264
Variance of			1.270565			MVUE) UC	1	0.581455
	J		1121 3000		ebyshev (M			0.788083
-				0070 071	ebyenev (ivi	VOL) OOL		0.700003
					15% Non-na	arametric U	Cle	
· · · · · · · · · · · · · · · · · · ·			-	CLT UC		arametric O	OLS	0.349041
						sted for ske)WDOCC)	0.373031
112.1						d for skewr		
		11.10.0		Jackknif		u ioi skewi	1000)	0.355923
					Bootstrap	IICI		0.352181
			 	Bootstra		UUL		0.346578
RECOMMENDATION				otstrap UC			0.399174	
Data are Non-parametric (0.05)				e Bootstrap			0.378058	
Data are Non-parametric (0.05)							0.351452	
Use 99% Chebyshev (Mean, Sd) UCL			BCA Bootstrap UCL 95% Chebyshev (Mean, Sd) UCL				0.382581	
036 337	o Onebysile	v (ivieali, S	u) UCL					0.511663
	·					Mean, Sd)		0.624675
				99% Che	euysnev (M	ean, Sd) U(J.	0.846666

TABLE B-12 PRO-UCL PRE-REMOVAL ARSENIC CONCENTRATION BLOCK F SUBSURFACE SOIL

Data File:	AS V HG B	LOCK F A	PPENDIX.xls		Variable:	Arsenic (P	RE SUB)	
							T	
Raw Statistics				Normal Distribution Test				
Number of Valid Samples			52	Lilliefor's Test Statistic				0.154131
Number of Unique Samples			37	Lilliefor's	Lilliefor's 5% Critical Value			
Minimum			0.26	Data are normal at 5% significance level				0.122866
Maximum			7					
Mean			1.935481	95% UCL (Assuming Normal Distribu				ion)
Median			1.6	Student's-t UCL				2.324461
Standard D	eviation		1.674329					
Variance			2.803377	····	Gamm	a Distributi	on Test	
Coefficient	of Variation		0.865071	A-D Tes	t Statistic			1.525294
Skewness			0.983457	A-D 5%	Critical Val	ue		0.775023
				K-S Tes	t Statistic			0.178668
	Gamma Sta	atistics		K-S 5% Critical Value				0.126189
k hat			1.195318	Data do	distribution			
k star (bias	corrected)		1.139178		gnificance			
Theta hat			1.619219					
Theta star			1.699016	95% U	CLs (Assur	ning Gamn	na Distributio	n)
nu hat			124.3131		mate Gamr			2.430573
nu star			118.4745	Adjusted	d Gamma L	JCL		2.446469
Approx.Chi	Square Val	ue (.05)	94.34198					
Adjusted Le	evel of Signi	ficance	0.045385		Lognormal Distribution Test			
Adjusted Chi Square Value		93.729	Lilliefor's	Test Statis			0.190628	
			Lilliefor's	5% Critica	l Value		0.122866	
Log-transformed Statistics			Data not	lognormal	at 5% sign	ficance leve	I	
Minimum o	f log data		-1.347074		J. T			
Maximum o	of log data		1.94591	95% l	JCLs (Assu	ming Logn	ormal Distrib	ution
Mean of log	g data		0.186948	95% H-U	JCL			3.074237
Standard D	eviation of I	og data	1.074905	95% Ch	ebyshev (M	IVUE) UCL		3.759418
Variance of	log data		1.155421	97.5% C	hebyshev ((MVUE) UC	L	4.472242
				99% Ch	ebyshev (M	VUE) UCL		5.872447
							·	***
				9	5% Non-pa	arametric U	CLs	
-				CLT UC		After And to		2.317395
				Adj-CLT	UCL (Adju	sted for ske	ewness)	2.351231
						ed for skewi		2.329739
				Jackknif	e UCL			2.324461
3000					d Bootstrap	UCL		2.299671
				Bootstra	p-t UCL			2.343338
RECOMMENDATION			Hall's Bo	otstrap UC	L		2.352961	
Data are Non-parametric (0.05)			.05)	Percenti	le Bootstra	o UCL		2.303846
				BCA Boo	otstrap UCL	_		2.338269
Use 97.5	5% Chebysh	nev (Mean,	Sd) UCL	95% Che	ebyshev (M	ean, Sd) U	CL	2.947563
						Mean, Sd)		3.385492
				99% Che	ebyshev (M	ean, Sd) U	CL	4.245718

TABLE B-13 PRO-UCL PRE-REMOVAL VANADIUM CONCENTRATION BLOCK F SUBSURFACE SOIL

Data File:	AS V HG E	BLOCK F A	PPENDIX.xls		Variable:	Vanadium	(PRE SUB)	
	 Raw Statistic				Normal D	iotribution T	0.01	
	Valid Samp		17	Chanira		istribution T	est	0.045004
			l		-Wilk Test			0.845931
Minimum	Unique Sar	npies	16			ritical Value		0.892
			20.7	Data no	t normal at	5% significa	ance level	
Maximum			61.6			l		
Mean			33.49412			uming Norn	nal Distributi	
Median	<u> </u>		32.5	Student	's-t UCL			37.49266
Standard D	Deviation		9.443018					
Variance	<u> </u>		89.17059			a Distribution	n Test	
	of Variation	1	0.281931		st Statistic			0.563242
Skewness			1.766255		Critical Val	ue		0.738207
					st Statistic			0.194582
	Gamma Sta	atistics			Critical Val			0.208781
k hat			15.92763				a distributio	n
	corrected)		13.15609	at 5% si	ignificance I	evel		
Theta hat			2.102894					
Theta star			2.545902	95% U	CLs (Assur	ning Gamm	a Distributio	n)
nu hat			541.5395	Approxi	mate Gamn	na UCL		37.52365
nu star			447.3071	Adjusted	d Gamma L	JCL		37.97568
Approx.Chi	i Square Va	lue (.05)	399.2723					
Adjusted L	evel of Sign	ificance	0.03461		Lognorm	al Distributi	on Test	
Adjusted C	hi Square V	alue	394.5198	Shapiro	-Wilk Test S			0.939579
		4				ritical Value		0.892
Log-trar	nsformed St	atistics					ficance leve	
Minimum o	f log data		3.030134			J	I	
Maximum o	of log data		4.120662	95%	UCLs (Assu	ımina Loano	rmal Distrib	ution
Mean of log	g data		3.479649	95% H-l				37.56811
Standard D	eviation of I	og data	0.251224	95% Ch	ebyshev (M	VUE) UCL		42.38112
Variance of			0.063114			MVUE) UCI		46.25648
					ebyshev (M			53.86887
					95% Non-pa	arametric U(CLs	
				CLT UC			, <u> </u>	37.26127
						sted for ske	wness)	38.3096
						d for skewn		37.65618
				Jackknif		TOI SKEWII	000)	37.49266
					d Bootstrap	HCI		37.49200
				Bootstra		JUL		39.26035
R	ECOMMEN	DATION			ootstrap UC	1		58.15628
	ing gamma		(0.05)		ie Bootstrap			
rissulli	ing gairina	distribution	(0.00)					37.32353
llea Ann	roximate G	amma LICI			otstrap UCL		N	38.1
ose App	noximate G	anina UUL				ean, Sd) UC		43.47717
						Mean, Sd) l		47.79684
				99% Un	ebysnev (M	ean, Sd) UC	/L	56.282

TABLE B-14 PRO-UCL PRE-REMOVAL MERCURY CONCENTRATION BLOCK F SUBSURFACE SOIL

Data File:	AS V HG E	LOCK F AF	PENDIX.xls		Variable:	Mercury (P	RE SUB)	
	aw Statistic					istribution T	est	
Number of			52		s Test Stati			0.473729
Number of	Unique Sar	nples	12	Lilliefor'	s 5% Critica	al Value		0.122866
Minimum			0.005	Data ar	e normal at	5% significa	ance level	
Maximum			0.97					·
Mean			0.082692	95%	% UCL (Ass	uming Norr	nal Distribut	ion)
Median			0.055	Student	's-t UCL			0.124103
Standard D	eviation		0.178247				-	
Variance		-	0.031772		Gamm	a Distribution	on Test	
Coefficient	of Variation		2.155546	A-D Tes	st Statistic			6.918564
Skewness		*	4.766812	A-D 5%	Critical Val	ue		0.788146
	•			K-S Tes	st Statistic			0.385184
	Gamma St	atistics		K-S 5%	Critical Val	ue		0.12762
k hat			0.843733				distribution	
k star (bias	corrected)		0.807877		ignificance			
Theta hat	······································		0.098008					
Theta star			0.102358	95% U	CLs (Assur	ning Gamm	a Distribution	n)
nu hat			87.74823		mate Gamr			0.10874
nu star			84.01917		d.Gamma l			0.109598
Approx.Chi	Square Va	lue (.05)	63.893		<u> </u>			
	evel of Sign		0.045385		Lognorm	al Distributi	on Test	
Adjusted C			63.39287	Lilliefor's	s Test Stati			0.301479
					s 5% Critica			0.122866
Log-tran	sformed St	atistics					ficance leve	
Minimum o			-5.298317					
Maximum o			-0.030459	95%	UCLs (Assu	iming Logn	ormal Distrik	oution
Mean of log			-3.19121	95% H-				0.10861
Standard D		log data	1.097071	95% Ch	ebyshev (N	IVUE) UCL		0.13275
Variance of			1.203566			(MVÚE) UC	L	0.158289
					ebyshev (N			0.208456
				(95% Non-pa	arametric U	CLs	
				CLT UC				0.12335
						sted for ske	ewness)	0.14081
						ed for skew		0.126826
				Jackkni			/	0.124103
					d Bootstrap	UCL		0.123576
					ap-t UCL			0.316296
R	ECOMMEN	DATION			ootstrap UC	L		0.355811
		rametric (0.	05)		ile Bootstra			0.000011
Data	210 14011 pc		, ,		otstrap UC			0.148077
Isa 97	5% Chebys	hev (Mean,	Sd) UCI			lean, Sd) U	CI	0.190437
036 37.	o to Onebys	inov (ivicali,	Ou, OOL			(Mean, Sd)		0.190457
			+			lean, Sd) U		0.328638
				33% UI	enysitev (IV	ican, Suj U	OL	0.020000

TABLE B-15 PRO-UCL POST-REMOVAL ARSENIC CONCENTRATION BLOCK F SURFACE SOIL

Data File:	AS V HG E	BLOCK F A	PPENDIX.xls	;	Variable:	Arsenic (P	OST SURF)	
	law Statistic					istribution T	est	
	Valid Samp		31	Shapiro-Wilk Test Statistic				0.902901
	Unique Sai	mples	16			Critical Value		0.929
Minimum			0.25	Data no	t normal at	5% significa	ance level	
Maximum			5					
Mean			1.641935			suming Norr	nal Distribut	
Median			1.5	Student	's-t UCL			2.025091
Standard D	Deviation		1.256921					
Variance			1.579849			na Distribution	on Test	
	of Variation	١	0.765512	A-D Tes	st Statistic			1.181236
Skewness			0.778034	A-D 5%	Critical Va	lue		0.765829
				K-S Tes	st Statistic			0.184256
	Gamma St	atistics		K-S 5%	Critical Va	lue		0.160945
k hat			1.410785	Data do	es not follo	w a gamma	distribution	
k star (bias	corrected)		1.295763		ignificance			
Theta hat			1.163845					
Theta star			1.267157	95% U	CLs (Assu	ming Gamm	na Distributio	n)
nu hat			87.46867		mate Gamı			2.173664
nu star			80.33729		d Gamma l			2.208216
Approx.Chi	Square Va	lue (.05)	60.68493	······································				
	evel of Sign		0.0413		Loanorn	nal Distributi	on Test	
	hi Square V		59.73538	Shapiro	-Wilk Test			0.85164
				·		ritical Value		0.929
Log-trar	sformed St	atistics				l at 5% signi		
Minimum o			-1.386294		_			
Maximum o			1.609438	95%	UCLs (Assi	uming Logno	ormal Distrib	oution
Mean of log			0.101343	95% H-				2.894345
	eviation of	log data	1.01144			/VUE) UCL		3.448472
Variance of			1.023011			(MVUE) UC		4.160842
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					(WUE) UCL		5.560154
	4				02 y 01 10 V (10	1		
					95% Non-n	arametric U	CLs	
				CLT UC				2.013261
						sted for ske	wness)	2.046968
						ed for skewr		2.030349
·				Jackknii		Tor skewi	1633)	2.025091
					d Bootstrap	LICL		2.025091
					ip-t UCL	I OCL		
	ECOMMEN	IDATION	-		ootstrap UC	\ <u>\</u>		2.078939
	are Non-pa		05)					2.045097
Dala	are morre	uamenic (U	(.03)		le Bootstra			2.016129
Hea 000	/ Chabriel -	\ /\do=== 0	:4) IICI		otstrap UC			2.064516
Use 99%	% Chebyshe	v (iviean, S	a) UCL			lean, Sd) U		2.625955
						(Mean, Sd)		3.051741
				99% Ch	ebyshev (M	lean, Sd) U	ÚL	3.888116

TABLE B-16 PRO-UCL POST-REMOVAL VANADIUM CONCENTRATION BLOCK F SURFACE SOIL

Data File:	AS V HG E	BLOCK F AF	PPENDIX.xls		Variable:	Vanadium	(POST SU	RF)
R	aw Statistic	S			Normal D	istribution T	est	
Number of	Valid Samp	oles	16	Shapiro	-Wilk Test	Statistic		0.854421
	Unique Sar		11			ritical Value		0.887
Minimum	•		0.05			5% significa		
Maximum			41.9					
Mean			19.55313	959	% UCL (Ass	uming Norn	nal Distribut	tion)
Median			23.2		's-t UCL	<u>y</u>		25.96822
Standard D	eviation		14.63757		T			
Variance			214.2585	•	Gamm	a Distributio	on Test	
	of Variation	l l	0.748605	A-D Tes	st Statistic			2.758945
Skewness	or variation	, 	-0.3893		Critical Val	LIE		0.816166
- Chevinose			0.0000		st Statistic	1		0.395934
	Gamma St	atistics			Critical Val	LLE		0.229929
k hat	Garrina Gt		0.40426			w a gamma	distribution	
k star (bias	corrected)		0.370128		ignificance			
Theta hat	correctedy		48.36765	ut 0 /0 0				-
Theta star			52.82798	95% [l	ning Gamm	l la Distributio	2n)
nu hat			12.93633		mate Gamr			45.18763
nu star			11.8441		d Gamma l			50.01189
	Square Va	luo (OE)	5.125058	Aujuste	u Gamina C	JCL		30.01109
	evel of Sign		0.03348		Lognorm	ıal Distributi	on Tost	
	hi Square V		4.630683	Chanira	-Wilk Test		UII TEST	0.643386
Adjusted C	ni Square v	alue	4.030003			ritical Value		0.043380
Log tron	oformed Ct	ctictics	-					
	sformed St	ausucs	0.005700	Data no	i lognormai	at 5% signi	licance leve	≓l
Minimum o			-2.995732	050/	1101 - (4		I Dietui	
Maximum o			3.735286			iming Logno	ormai Distri	
Mean of log		1	1.347995	95% H-				62450.12
	eviation of	log data	3.030508		nebyshev (M		•	640.576
Variance of	log data		9.183977			(MVUE) UC	L	857.1475
				99% Cr	ebyshev (M	IVUE) UCL		1282.56
					050()			
						arametric U	ULS	05 57000
				CLT UC		L.,,		25.57229
						sted for ske		25.19174
						ed for skewi	ness)	25.90887
				Jackkni				25.96822
					d Bootstrap	UCL		25.47323
					ap-t UCL			25.62901
	ECOMMEN				ootstrap UC			24.89489
Data	are Non-pa	arametric (0	.05)		ile Bootstra	<u> </u>		25.53438
					otstrap UC			24.83125
Use Hal	l's Bootstra	p UCL				lean, Sd) U		35.50405
						(Mean, Sd)		42.40603
		p method y		99% Ch	ebyshev (M	lean, Sd) U	CL	55.96362
an erratic, ı	unreasonab	ly large UC	L value,					
use 99% C	hebyshev (l	Mean, Sd) l	JCL					

TABLE B-17 PRO-UCL POST-REMOVAL MERCURY CONCENTRATION BLOCK F SURFACE SOIL

Data File:	AS V HG B	LOCK F AF	PPENDIX.xls		Variable:	(POST SU	JRF)	
1	Raw Statistic					istribution T	est	
Number of	Valid Samp	les	31		-Wilk Test			0.451759
Number of	Unique Sar	nples	14	Shapiro	-Wilk 5% C	ritical Value		0.929
Minimum			0.02	Data no	t normal at	5% significa	ance level	
Maximum			1.4				·	
Mean			0.156613			uming Norn	nal Distribut	ion)
Median			0.055	Student	's-t UCL		-	0.244954
Standard D	Deviation		0.289797					
Variance			0.083982		Gamm	a Distribution	on Test	
Coefficient	of Variation		1.850403	A-D Tes	st Statistic		-	5.376837
Skewness			3.46578	A-D 5%	Critical Val	ue		0.782206
				K-S Tes	st Statistic			0.379649
	Gamma Sta	atistics		K-S 5%	Critical Val	ue		0.163257
k hat			0.863839	Data do	es not follo	w a gamma	distribution	
k star (bias	s corrected)		0.801747	at 5% s	ignificance	level		
Theta hat			0.181299					
Theta star			0.195339	95% U	CLs (Assur	ning Gamm	a Distributio	on)
nu hat			53.55804		mate Gamr			0.225514
nu star			49.70833		d Gamma l			0.23021
Approx.Ch	i Square Va	lue (.05)	34.52103	,.,				
Adjusted L	evel of Sign	ificance	0.0413		Lognorm	nal Distributi	on Test	
Adjusted C	hi Square V	'alue	33.81682	Shapiro	-Wilk Test	Statistic		0.72153
						ritical Value		0.929
Log-trai	nsformed St	atistics				at 5% signi		
Minimum c	of log data		-3.912023	•				
Maximum	of log data		0.336472	95%	UCLs (Assı	iming Logno	ormal Distrik	oution
Mean of lo	g data		-2.53425	95% H-				0.186445
Standard E	Deviation of	og data	0.945576	95% Ch	ebyshev (N	IVUE) UCL		0.223982
Variance o	f log data		0.894113	97.5% (Chebyshev	(MVUE) UC	L	0.268296
				99% Ch	ebyshev (M	IVUE) UCL		0.355343
				;	95% Non-pa	arametric U	CLs	
				CLT UC				0.242226
				Adj-CLT	UCL (Adju	sted for ske	wness)	0.276845
		.				ed for skewr		0.250354
		·	·	Jackkni			,	0.244954
				Standar	d Bootstrap	UCL		0.245472
					ap-t UCL			0.405174
R	ECOMMEN	DATION			ootstrap UC	L.		0.558622
	are Non-pa		.05)		ile Bootstra			0.254839
			,		otstrap UCI			0.282581
Use 959	% Chebyshe	v (Mean. S	d) UCL			lean, Sd) U	ÖL	0.38349
		(, , , , , , , , , , , , , , , , , , ,	,			(Mean, Sd)		0.481659
						lean, Sd) U(0.674495

TABLE B-18 PRO-UCL POST-REMOVAL ARSENIC CONCENTRATION BLOCK F SUBSURFACE SOIL

Data File:	AS V HG	BLOCK F A	PPENDIX.xls	S	Variable:	Arsenic (F	OST SUB)	
	law Statistic				Normal D	istribution 7	est	
	Valid Sam		53	Lilliefor's	s Test Stat	istic		0.165015
	Unique Sa	mples	37	Lilliefor's	s 5% Critic	al Value		0.121701
Minimum			0.25	Data are	e normal at	5% signific	ance level	
Maximum			7					
Mean			1.850566	95%	6 UCL (Ass	suming Nor	mal Distribut	ion)
Median			1.3		's-t UCL			2.237804
Standard D	Deviation		1.683377					
Variance			2.833758		Gamn	na Distributi	on Test	
Coefficient	of Variation	า	0.909655	A-D Tes	st Statistic			1.676645
Skewness			1.05831	A-D 5%	Critical Va	lue		0.776889
					t Statistic			0.193087
	Gamma St	atistics		K-S 5%	Critical Val	ue		0.125313
k hat			1.118178				distribution	
k star (bias	corrected)		1.067464		gnificance			
Theta hat			1.654983					
Theta star			1.73361	95% U	CLs (Assur	ning Gamn	na Distributio	on)
nu hat			118.5269	Approxi	mate Gamr	na UCI		2.33711
nu star			113.1512		d Gamma U			2.352472
Approx.Chi	Square Va	lue (.05)	89.59514					2.002 172
			nal Distribut	ion Test				
	hi Square V		89.01009	Lilliefor's	s Test Stati		1	0.202918
	•,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				5% Critica			0.121701
Log-tran	sformed St	atistics					ificance leve	
Minimum o			-1.386294			l at 6 76 digit		
Maximum o			1.94591	95% [JCI s (Assi	ımina Loan	ormal Distrib	oution
Mean of log			0.10578	95% H-l		Login		2.958617
Standard D		log data	1.104467			VUE) UCL		3.61756
Variance of			1.219848			(MVUE) UC	:1	4.31349
***************************************					ebyshev (M		_	5.680509
•					objective (iv	002		0.000000
				Ç	95% Non-na	arametric U	CLs	
	-			CLT UC			1	2.230905
						sted for ske	wness)	2.266822
						ed for skewi		2.243406
				Jackknif		od for skewi	1033)	2.237804
				700	d Bootstrap	LICI		2.230206
				Bootstra		JUL		2.285323
RI	ECOMMEN	DATION			otstrap UC	<u> </u>		2.262296
		rametric (0	05)		le Bootstraj		· ·	2.255377
Data			,		otstrap UCI		 	
Use 97 F	5% Chehve	hev (Mean,	Sd) LICI			- lean, Sd) U		2.255094
000 07.0	2 /0 Onebys	i iov (ivicai),	Su) UCL			Mean, Sd) U		2.858473
								3.294595
				33 % CN6	bysnev (M	ean, Sd) U	J.L.	4.151272

TABLE B-19 PRO-UCL POST-REMOVAL VANADIUM CONCENTRATION BLOCK F SUBSURFACE SOIL

Data File:	AS V HG B	LOCK F A	PPENDIX.xis		Variable:	Vanadium	(POST SUE	3)
	Ctatiatia				Now	 		
	law Statistic		1 1 1	Ob :		istribution T	est	0.000000
	Valid Samp		17		-Wilk Test			0.896362
	Unique Sar	npies	16	·	-Wilk 5% C			0.892
Minimum			0.05	Data ar	e normal at	5% significa	ance level	
Maximum			61.6		<u> </u>			
Mean			31.49118			uming Norn	nal Distribut	
Median			31.8	Student	's-t UCL			36.75941
Standard D	Deviation		12.44154					
Variance			154.7919			a Distribution	on Test	
	of Variation	1	0.39508		st Statistic			3.070931
Skewness			-0.051225		Critical Val	ue		0.754961
					st Statistic			0.390081
	Gamma Sta	atistics			Critical Val			0.212759
k hat			1.558659		es not follo		distribution	
	corrected)		1.322817	at 5% s	ignificance l	evel		
Theta hat			20.20402					
Theta star			23.80614	95% U	CLs (Assur	ning Gamm	a Distributio	n)
nu hat			52.99442	Approxi	mate Gamn	na UCL		46.29727
nu star			44.97579	Adjuste	d Gamma L	ICL		48.25497
Approx.Ch	Square Va	lue (.05)	30.59231					
Adjusted L	evel of Sign	ificance	0.03461		Lognorm	al Distributi	on Test	
Adjusted C	hi Square V	'alue	29.35119	Shapiro	-Wilk Test S			0.407024
				Shapiro	-Wilk 5% C	ritical Value		0.892
Log-trar	nsformed St	atistics		Data no	t lognormal	at 5% signi	ficance leve	
Minimum c	f log data		-2.995732			, and the second		
Maximum o	of log data		4.120662	95%	UCLs (Assu	ıming Logno	ormal Distrib	ution
Mean of lo	g data		3.095824	95% H-				336.3086
	eviation of I	og data	1.589683	95% Ch	ebyshev (M	VUE) UCL		201.4674
Variance o			2.527091		Chebyshev (L	259.2974
•					ebyshev (M	<u> </u>		372.8931
					, ,			
					95% Non-pa	arametric U	CLs	
				CLT UC				36.45455
		•			UCL (Adju	sted for ske	wness)	36.41449
					CL (Adjuste			36.75316
				Jackkni			,	36.75941
					d Bootstrap	UCL		36.40723
					ap-t UCL	J U L		36.51498
R	ECOMMEN	DATION			ootstrap UC			37.75948
	ta are norma		 		ile Bootstra			36.37941
Da	a are norm	u. (0.00)	 		otstrap UCL		*	36.10588
Hea Stu	dent's-t UCI				ebyshev (M		ار	
USE SIU	dent s-t OCI	<u> </u>			Chebyshev (M			44.64423
								50.33556
			<u> </u>	99% Ch	ebyshev (M	ean, Sa) U	JL.	61.51509

TABLE B-20 PRO-UCL POST-REMOVAL MERCURY CONCENTRATION BLOCK F SUBSURFACE SOIL

Data File:	AS V HG B	LOCK F AF	PPENDIX.xls		Variable:	Mercury (F	POST SUB)	
R	aw Statistic	s			Normal D	istribution T	est	
Number of	Valid Samp	les	52	Lilliefor'	s Test Stati	stic		0.491439
Number of	Unique Sar	nples	11	Lilliefor'	s 5% Critica	al Value		0.122866
Minimum		-	0.005	Data ar	e normal at	5% signific	ance level	
Maximum			0.97					
Mean			0.082019	95%	6 UCL (Ass	uming Norr	nal Distribut	ion)
Median			0.055	Student	's-t UCL			0.123452
Standard D	eviation		0.178343					
Variance			0.031806		Gamm	a Distributi	on Test	
Coefficient	of Variation		2.174402	A-D Tes	st Statistic			6.913881
Skewness			4.770668	A-D 5%	Critical Val	ue		0.788352
——————————————————————————————————————				K-S Tes	t Statistic			0.401207
	Gamma Sta	atistics			Critical Val	ue		0.127642
k hat			0.83986				distribution	
k star (bias	corrected)		0.804227		ignificance l			
Theta hat			0.097658					
Theta star			0.101985	95% U	CLs (Assur	ning Gamm	na Distributio	on)
nu hat			87.34545		mate Gamn			0.107927
nu star			83.63962		d Gamma L			0.108781
Approx.Chi	Square Va	lue (.05)	63.56188	710,000				01100701
Adjusted Le	evel of Signi	ificance	0.045385		Lognorm	ı nal Distribut	ion Test	
Adjusted C			63.06311	L illiefor's	s Test Statis		1	0.305946
rajacioa el	oqualo i		00.00011		s 5% Critica			0.122866
l og-tran	sformed St	atistics					ificance leve	
Minimum of			-5.298317	- Bata no	lognoma	l at 6 76 digit	1	"
Maximum c			-0.030459	95%	IICI s (Assi	ımina Loan	ormal Distrik	oution
Mean of log			-3.203019	95% H-		l logi		0.106719
Standard D		og data	1.093465		ebyshev (M	IVIIE) LICI		0.130451
Variance of		og data	1.195666		Chebyshev (<u> </u>	0.155489
·	log data		1.100000		ebyshev (N			0.204672
				0070 011	CBySHCV (IV	1002,002		0.204072
						l arametric I I	Cle	
				CLT UC				0.122699
					UCL (Adju	eted for eka	Jwness)	0.140182
					CL (Adjuste			0.126179
		-		Jackkni		o for skew	1033)	0.123452
-					d Bootstrap			0.121155
					ap-t UCL	TOOL TOOL		0.325825
RI	ECOMMEN	DATION			ootstrap UC	. 		0.352649
· · · · · · · · · · · · · · · · · · ·	are Non-pa		05)		ile Bootstra			0.332049
Dala	are Morr-pa	iametric (o	.03)		otstrap UCI			
Heo 07 5	5% Chebysl	nov (Magn	64) FICI		<u>-</u>		CI	0.148173
056 97.3	o Onebysi	iev (iviean,	Su) UCL		ebyshev (M			0.189822
	1		-		Chebyshev (0.236469
				99% CN	ebyshev (M	iean, Sa) U	UL	0.328096



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Project Site Na	ame:	LMC MR 1/2/200940		Sample ID N	Var 2 2	7115
Project No.:		1121600940		Sample Loc	vo <u>> /> /</u>	31/5
Surface S Subsurface Sediment Other: QA Samp	ce Soil			Sampled By C.O.C. No.: Type of Sam [] Low Cor	nple:	3
				[] High Col	ncentration	
GRAB SAMPLE DA	TA:					
Date:		Depth Interval	Color	Description (S	Sand, Silt, Clay, Mo	oisture, etc.)
Time: Method:						
Monitor Reading (pp	im).					
COMPOSITE SAMP	LE DATA:					
Date:	Time	Depth Interval	Color	T Description (6		
	0730	GURFALE	Color	Description (S	Sand, Silt, Clay, Mo	etc.)
Method:	0,770	3000142				
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	Analysis		Container Requ	irements	Collected	Other
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Project Site Na	ime:	ene me		Sample ID	No ·	10	>
Project No.:		112100099	· 4.	Sample Lo		5B-	>96
_				Sampled B		CW	V
[] Surface S				C.O.C. No.			
[] Subsurfac				* - (0)			
[] Sediment [] Other:				Type of Sa			
[] QA Samp	le Type:			[] Low Co	ncentration oncentration		
	-			_ [] ' "9" > (JI Certifation		
GRAB SAMPLE DA	TA:		La Romana.				
Date:		Depth Interval	Color	Description	(Sand, Silt, Clay	, Moisture	, etc.)
Time:							
Method: Monitor Reading (pp	•~/·						
COMPOSITE SAMP							
Date:	Time	Donth Interval	Color		11 12 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15		<u>Proposition (</u>
Date.		Depth Interval	Color	Description	(Sand, Silt, Clay	, Moisture	, etc.)
	0735	5000 700					·····
Method:				_			
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Monitor Readings			·····	`.	· · · · · · · · · · · · · · · · · · ·		
(Range in ppm):							
SAMPLE COLLECT	ION INFORMAT	ION:					
	Analysis		Container Requ	irements	Collected		Other
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OBSERVATIONS / N	DIES:			MAP:			
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Project Site Na	ame:	eme me		Sample ID	O No ·	P 28	200
Project No.:		11216 00746		Sample Lo	ocation:	<u> </u>	347
[] Surface So [] Subsurfac	oil		antiques and a section of the sectio	Sampled E C.O.C. No	By:	دى	
[] Sediment	e our			Type of Sa	amnle:		
[] Other:				II Low C	ampie. Concentrati	ion	
[] QA Sampl	le Type:				Concentrati		
GRAB SAMPLE DA	TA:						
Date: Time:		Depth Interval	Color	Description	n (Sand, Silt,	, Clay, Moi	sture, etc.)
Method:		4					
Monitor Reading (ppr	·m).	-					
COMPOSITE SAMPI							
Date:	Time	Donth Interval	Color	T Presciption		<u>Abdabbanan</u>	Elifornitation de la company
Date.		Depth Interval	Color	Description	n (Sand, Silt,	, Clay, Mois	sture, etc.)
_	0 737	SVAPALE					
Method:							
Maritar Dandings		 					
Monitor Readings					· .		
(Range in ppm):							
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SAMPLE COLLECTI	ION INFORMAT	/ION:					
	Analysis	And de facility by the facility of the facilit	Container Req	uirements	Collec	cted	Other
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Project Site Na	me:	IME MR	i Otom	Sample ID	No ·	' .v . ^> i	دنه د
Project No.:		112 1C 0099	9,	Sample Lo		13-3º	10
			<u>: 5'</u>	Sampled By:			
[] Surface S				C.O.C. No.		***************************************	<u> </u>
[] Subsurfac	e Soil					***************************************	***************************************
[] Sediment				Type of Sa			
[] Other: [] QA Sampl	la Tuna:			[] Low Concentration [] High Concentration			
[] Wh ballipi	e rype.				oncentration		
GRAB SAMPLE DA	TA:						
Date:		Depth Interval	Color	Description	(Sand, Silt, Cla	v. Moistur	re. etc.)
Time:					<u> </u>	7,	
Method:							
Monitor Reading (ppr							
COMPOSITE SAMP	LE DATA:						
Date:	Time	Depth Interval	Color	Description ((Sand, Silt, Cla	y, Moistur	re, etc.)
	0739	GURFACE			<u> </u>		
Method:							
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Monitor Readings				`	·		
(Range in ppm):							
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SAMPLE COLLECTI		ON:					
	Analysis		Container Requ	uirements	Collected		Other
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Project Site Na	me:	LMC MR		Sample ID) No ·		
Project No.:		112 EC0099	i&	Sample Lo	ocation:	<u> 513 -</u>	247
				Sampled I		CW	
∬ Surface S				C.O.C. No	o.:		
[] Subsurfac	e Soil						
[] Sediment				Type of Sa	ample:		
[] Other: [] QA Sampl	e Type:			_ [] Low C	oncentration	1	
[] GA Gailipi	e rype.			_ [] mign C	Concentration	1	
GRAB SAMPLE DA	TA:						N. C. C. State (1971)
Date:		Depth Interval	Color	Description	(Sand, Silt, C	lav. Moisti	ure. etc.)
Time:							
Method:							
Monitor Reading (ppi							
COMPOSITE SAMP	LE DATA:						
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, C	lay, Moistu	ıre, etc.)
	0745	SURFACE					
Method:						***************************************	
Monitor Readings	1						
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(Range in ppm):	<u> </u>						
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SAMPLE COLLECTI	ON INFORMATI	ON:					
	Analysis		Container Requ	irements	Collecte	d	Other
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Project Site Na	me:	MINR		Sample ID N	In ·	62-766	
Project No.:		11716000	વ્હ	Sample Loca	ation:	717-330	
[] Subsurfact [] Sediment [] Other:	[Surface Soil [] Subsurface Soil [] Sediment				By:		
GRAB SAMPLE DAT	7A:						
Date:		Depth Interval	Color	Description (S	and Silt Clay	, Moisture, etc.)	
Time:			00.01	Description (C	and, one, clay	, worsture, etc.)	
Method:							
Monitor Reading (ppn	n):						
COMPOSITE SAMPL	E DATA:						
Date:	Time	Depth Interval	Color	Description (S	and. Silt. Clav	Clay, Moisture, etc.)	
	0750	GURFACE				,	
Method:							
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Monitor Readings	1					·····	
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(Range in ppm):							
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	Analysis		Container Requi	irements	Collected	Other	
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Project Site Na	ame:	LMC - MR 112160000	•	_ Sample ID	No.:	5B-351
Project No.:	•	11716009	48	Sample Lo Sampled B	ocation:	
{} Surface So [] Subsurface				C.O.C. No.		
[] Subsurfact [] Sediment [] Other: [] QA Sampl	t		***************************************		ample: oncentration Concentration	
GRAB SAMPLE DA				_ Uə	Oncommune	
GRAB SAMPLE DA Date:	<u>ra:</u>	Depth Interval	Color	Description	ı (Sand, Silt, Clay,	
Time:		Depai me	1	Descripción.	(Sano, Sinc, Giay,	Moisture, e.c.,
Method:		1	1			
Monitor Reading (ppr			1			
COMPOSITE SAMPI						
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay,	Moisture, etc.)
<u> </u>	0754	SURFACE	4			
Method:					*	
Dending.		,	 			
Monitor Readings	 			``	***************************************	
(Range in ppm):		, 				
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SAMPLE COLLECTI	TOWNS CORMAT!		, ************************************			
SAMPLE COLL.	Analysis	<u>ONSHREEDERSTERMENT</u>	Container Requi	·mante	Collected	Other
	Amary C.C		/ Container	Tementa	Concolou	- Care.
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Project Site Nar	ne:	LMC MR		Sample ID No.:	413-352
Project No.:		LMC MR 1121000999		Sample Location:	GB-352
Surface So Subsurface Sediment Other: QA Sample	e Soil			Sampled By: C.O.C. No.: Type of Sample: [] Low Concentrati [] High Concentrat	
GRAB SAMPLE DAT	A:				
Date:		Depth Interval	Color	Description (Sand, Silt	, Clay, Moisture, etc.)
Time:					
Method:					
Monitor Reading (ppn					
COMPOSITE SAMPL	E DATA:				
Date:	Time	Depth Interval	Color	Description (Sand, Silt,	Clay, Moisture, etc.)
	0758	GURFALE			
Method:					
Monitor Readings					
(Range in ppm):					
SAMPLE COLLECTION	ON INFORMATI	ON:			
	Analysis		Container Requi	irements Collec	ted Other
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Project Site Nar	me:	LMCMR		Sample ID N	Vo.: <u>5B-</u>	353
Project No.:	-	LMC MR	<u> </u>	_ Sample Loc	ation:	
Surface Soil Subsurface Soil Sediment Other: QA Sample Type:				Sampled By C.O.C. No.: Type of Sam [] Low Cor [] High Col	nple:	<u> </u>
GRAB SAMPLE DAT	ia.					
Date:		Depth Interval	Color	Description (S	Sand, Silt, Clay, Mo	isture etc.)
Time:					,,,,	noture, etc.,
Method:						
Monitor Reading (ppn						
COMPOSITE SAMPL	E DATA:					
Date:	Time	Depth Interval	Color	Description (S	Sand, Silt, Clay, Mo	oisture, etc.)
	0800	SVEFACE		***		
Method:						
			····	1	·	
Monitor Readings			·			
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Range in ppm):						
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SAMPLE COLLECTION	ON INFORMATI	ON:				
	Analysis		Container Requ	irements	Collected	Other
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BSERVATIONS / NO	OTES:			MAP:		
ircle if Applicable:				Signature(s):		
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Project Site Nar	me:	inc me		Sample ID N	in· < f	2 2 < 11
Project No.:		INC MR	Ų	Sample Loca	ation:	2 - 527
			<u> </u>	Sampled By:	:	3-354 W
Surface So				C.O.C. No.:	***************************************	
[] Subsurface [] Sediment	e Soil			T	•	
[] Sediment [] Other:				Type of Sam		
[] QA Sample	e Tvne:	***************************************		[] Low Con- [] High Con		
				[] riigit oo.,	Rentration	
GRAB SAMPLE DAT	ÍΑ					
Date:		Depth Interval	Color	Description (S	Sand, Silt, Clay, N	Noisture, etc.)
Time:		1				
Method:		4				
Monitor Reading (ppn COMPOSITE SAMPL						
		######################################				
Date:	Time	Depth Interval	Color	Description (S	Sand, Silt, Clay, M	foisture, etc.)
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Method:						
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Monitor Readings				` `		
(Range in ppm):			-1			
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SAMPLE COLLECTION	ON INFORMAT	ION:				
	Analysis		Container Requi	irements	Collected	Other
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(Range in ppm):			·	1	***		
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SAMPLE COLLECT	ION INFORMATI	กมะ					
W	Analysis		Container Requ	···iromonts	Collect		
	511417 0.0		Container Neq	ullements	Collect	ea	Other
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	<u>B</u>						
OBSERVATIONS / N	ATEC.			IMAP:			
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Kidan disababan menanga							
Circle if Applicable:	 	<u> </u>	<u> La citation Labor</u>	Signature(s):			
MS/MSD	Duplicate ID I	No.:					



						Page of
Project Site Na	ıme:	LMC-MR		Sample ID	No ·	62-267
Project No.:		LMC - MR 1121 C00999	2	Sample Loc	cation:	<u> うわ 75 C</u>
Surface S [] Subsurface [] Sediment	ce Soil	,		Sampled By C.O.C. No.: Type of Sar	ample:	5B-367
[] Other: [] QA Sampl	le Type:		***************************************		oncentration oncentration	
GRAB SAMPLE DA	TA:					
Date:		Depth Interval	Color	Description	(Sand, Silt, Cla	y, Moisture, etc.)
Time:						
Method:]				
Monitor Reading (ppi						
COMPOSITE SAMP	LE DATA:					
Date:	Time	Depth Interval	Color	Description /	(Sand, Silt, Cla	y, Moisture, etc.)
	0841	SURFACE				1
Method:						
Monitor Readings						
(Range in ppm):						
SAMPLE COLLECTI		ION:	To delicate Book			
	Analysis		Container Requ	uirements	Collected	Other
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OBSERVATIONS / N	IOTES:			MAP:		
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Circle if Applicable:				Signature(s):		
MS/MSD	Duplicate ID	No ·	<u> Marie Maria de Caractera de C</u>	1 0.9		
		No.:				



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Project Site Na	ame:	IMI ME		Sample I) No ·	12	~2/2
Project No.:		LMC MR 1121CD0999	?	Sample L	ocation:	<u> 917°</u>	-363
			2	Sampled	By:	1913	
Surface S	ioil			C.O.C. No	o.:		
[] Subsurfac	ce Soil				***************************************		
[] Sediment				Type of S	ample:		
[] Other:	I - 7			[] Low C	oncentration	n	
[] QA Samp	ie Type:		***	[] High C	Concentratio	'n	
GRAB SAMPLE DA	ŤΑ						
Date:		Depth Interval	Color	Description	n (Sand, Silt, C	Nov Main	
Time:		Jepan intervar	COIOI	Description	i (Sailu, Siit, C	lay, Wois	ture, etc.)
Method:		1		İ			
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COMPOSITE SAMP							
Date:	Time	Depth Interval	Color	Docorintian	Vennd Sill C	Nav Mais	
	0843		COIOI	Description	(Sand, Silt, C	lay, Wolst	ure, etc.)
1 A - 4b d	0097	guarges	****	_			
Method:				_			
			····				
Monitor Readings				`			
(Range in ppm):							
(Nange III ppin).							
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SAMPLE COLLECT	ION INFORMAT	ION:					
	Analysis		Container Requ	uiramente	Collecte	<u>.</u>	Othor
			Oontainer Requ	unements	Conecte	;u	Other
713							
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OBSERVATIONS / N	OTES:			MAP:			
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Circle if Applicable:				Signature(s):	<u> </u>		
MS/MSD	Duplicate ID	No.:	<u>anicolina a fabricación de fabrici</u>	2.3			



r					Page_	of				
Project Site Na	me:	LMC W	اگ	Sample ID No.:	L':2 -	36.11				
Project No.:		LMC N	- 99 g	Sample Locatio	n:	101				
Surface S Subsurface Sediment Other:	oil e Soil			Sampled By: C.O.C. No.: Type of Sample	O.C. No.:					
[] QA Sampl	le Type:			[] High Conce						
GRAB SAMPLE DA	TAL									
Date: Time:		Depth Interval	Color	Description (Sand	l, Silt, Clay, Moisti	ure, etc.)				
Method:										
Monitor Reading (ppr	m):									
COMPOSITE SAMP										
Date:	Time	Depth Interval	Color	December 18-	C'' C'- 1					
	0845	4 SEFACE	Color	Description (Sand	, Siit, Clay, Moisti	ire, etc.)				
N/othod:	0017	Ly Uring Mana.								
Method:					w					
	_									
Monitor Readings				` `	****					
(Range in ppm):			·							
SAMPLE COLLECTI	ON INFORMAT	ON:								
	Analysis		Container Requ	uirements (Collected	Other				
	*									
	<u> 748 —</u>									
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OBSERVATIONS / N	OTES:			MAP:						
Circle if Applicable:				Signature(s):						
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GVIFAU!	'									





Converted to Well: Yes

Page	of	descent

U	J	Tetra	Tech N	NUS, Ind).	<u>B(</u>	DRING LOG			Page _		of _	
PRC DRIL	JECT LING	NAM NUM COM RIG:		Lock 112 - Ben Truck	LC 00 IYAS BO Worter	885 0.5. d G	DATE: GEOLOG	IST:	SB-500 11 27 07 JASON DAL SCOTT MO				
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness		RIAL DESCRIPTION Material Classification	U S C S *	Remarks	Sample Sample	Sampler BZ	Borehole**	Γ
666)-2					Olive	Olive to Black Silty clay loam,			0			
0406	2-6					Onany Ned	Sandy clay clean; Stiff, day low			and the state of t			
08(o	6-12				***************************************		plasticity Oraqueto Red Sandy Clay, clain			ORGANIZATION OF THE PROPERTY O			
							Soft, moist.						
	12						OEnd of borns						
				-									
				-									
			rock brok										***************************************
* Includ Rema		or readino	g in 6 foot	intervals @	borehole. In	crease	reading frequency if elevated reponse re	ead.	Dr Backgrou	illing Ar nd (ppn		0	

_____ No ____ Well I.D. #:



P	a	g	е	-	of	***************************************

PROJECT NAME: PROJECT NAME: DRILLING COMPANY: DRILLING RIG: The modest frequency of the property of the prope	Ľ)		100,		<u>R(</u>	DRING LOG		1 6	ige _	 01 _	
Sample (and of proper of p	PRO	JECT	MIIM	E: BER: PANY:	Locked 112 J BLV	C GOS Myns Bro Moulted	24:2 885 8.	BILE BORING N DATE: GEOLOGIS DRILLER:		11 27 07 JASON DAVIES			
Cleg Loan, Clean, Organies; shownst Orange Sandy Clean; Clean, showst Wedness showst Wedness showst Madrin shiff; low Plashety Orange Sandy Clay; Clean, moist Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shiff; Madrin shift; Ma	No. and Type or	(Ft.) or Run	6" or RQD	Recovery / Sample	Change (Depth/Ft.) or Screened	Soil Density/ Consistency or Rock			s c	Remarks			
Orange Sandy Clay Class, Sl. marst Medion st. Ff. low plasterty Orange Sandy Clay Clay Clay, Sandy Clay Clay, Sandy Clay Clay, Sandy Clay Clay Medion st. Ff. Medio	Oool	0-2						(lag Loan, clear,					
plaste ty Oto 4-6 Orang Sandy Clay i Clean moist Medin stiff; madrite plaste ty Orang to Red a Clay of trace Fine grand Sand Cont i hard; low plaste ty, dry Sandy Clay, sotunted loose 12 - end of hard; When rock coring, enter rock brokeness.		2-4						Orange Sandy Cley;					
Clay of trace The grand sand Cont I hard, Iow plashet, dry Sandy Clay, Sotrabel Iowse Id- end of horin When rock coring, enter rock brokeness.	0406	7						plasherty	***************************************				
Clay of trace Finggrand Sand Control hard, low plashate, dra Orange to Red Sandy Clay Saturbal loose 12'- end of harin When rock coring, enter rock brokeness.								clean, moist;					
low plashaty, drag Orange to Red Sandy Clay, Saturated 100 se 12'- end of harris When rock coring, enter rock brokeness.	σ8(°	6-10						Orange to Red -	ř.				
Orang to Reda Sandy Clay, sotunted 100 se 12'- end of haring 12'- end of haring 100 se													
When rock coring, enter rock brokeness.		10-р						Orange to Reda Sandy Clay, Saturated					
		12											
Remarks: Background (ppm):	** Includ	de moni				borehole. In	ncrease	reading frequency if elevated reponse re	ad.				

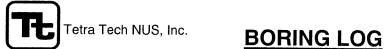
	se reading frequency if eleva	ted reported read.	Drilling Area	
			Background (ppm): 6	_
Yes	No X	Well I.D. #:		_
	Yes	Yes No _X	Yes NoX Well I.D. #:	Background (ppm): 6

TŁ	Tetra	Tech	NUS,	Inc.
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BORING LOG

Page ___ of ___

Sample		Blows /	Sample	Lithology	N.	IATE	RIAL DESCRIPTION	U	SCOTT MONTO		D Rea	ading	(pp
No. and Type or RQD	(Ft.) or Run No.	6" or RQD (%)	Recovery / Sample Length	Change (Depth/Ft.) or Screened Interval	Soll Density/ Consistency or Rock Hardness	Color	Material Classification	808.	Remarks	Sample	Sampler BZ	Borehole**	- D. C.
0001	0-2	100	4116			Olive	to Black S. Hacky			6		iën	
	-		14.			Loo				1			
		_				ers	anie contit, clan			1			
	7-4	-				Cry	sted stone fill	\Box	W	1			
	$\overline{}$	-		35.		me	tund w) heavy	\dashv		#			_
0406	4-6	-				Sana	(costut, most	\dashv		+	_		_
0 100	10					020	of / gellar time-	\dashv		\mathbb{H}			
						5 ra	t les	\dashv		$^{+}$	\dashv	\dashv	-
0810	6-10			ı		Juga	w to Rud F-med.	7		Н	\dashv	\dashv	-
						90	med sand al			Н		7	_
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T						\dashv		+	i	+	+	+	_
	monito	r reading				rease re	eading frequency if elevated reponse rea	d.	Drilling Background	g Are	a		



Page ___ of ___

_		,											
		NAM		Lock	heed W	lor th	BORING N DATE:	lo.:	SB-503				
		NUM			ICOC	88	DATE:		1127/07				
			PANY:		you br	e Buch	GEOLOGI	ST:	1. DALIESSO				
DUIL	LING	RIG:	-	TMG			DRILLER:		Scott Mon	100			
Ci-	D#-	D1 (<u>N</u>	1ATE	RIAL DESCRIPTION			PID/F	ID Rea	ading (pp
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length		Soil Density/ Consistency or Rock Hardness		Material Classification	U S C S *	Remarks	Sample	Sampler BZ	Borehole**	
0001	0-1					Olive	to Black Silk Cla Loga			0			Q.
							ianic similar			+	†		Г
	1-2	$\overline{}$				01					T		
		$\overline{}$					e Sandy Clay clean			-	1		_
0406	2-5					<u> </u>	10.50, M. 5.0 L				\vdash		
<u> </u>		-				9	100 t-m 3700/						
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	t						t graves contex,			+			
	5-6	5				401	a figure said			1			
	$\neg \uparrow$					9at					Н	\dashv	
						3 4, 1	Mocro, dense				H	\dashv	
	25-6	3			· ·	01					H		
							2 Leon 2m 364	\dashv		Application of the second		\dashv	
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	8 - 11						No recession	\dashv					
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1012	0-10			ľ			Con la produ			Bellin Adda.		\neg	
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							around said cata			Disposition of the second	+	\neg	
				Ī		Ī,	dense Moist			a.c.	$\neg \dagger$	十	-
				Ī			lev plestick	1		l	\dashv	T	
	12			ľ		ľ	end I have	\exists		$\dagger \exists \dagger$	\dashv	\dashv	
				ľ				\top		-	\top	\dashv	
								\top				+	
	e monito		rock brok in 6 foot i		borehole. Ind	crease r	eading frequency if elevated reponse rea	ıd.	Drillir Background	ig Ar (ppn	ea n):[0	
	_										, L	1000	
Conve	rted t	o Well	: \\	Yes _		1	No Well I.D.	#:					



Converted to Well:

Yes

Ľ) Total	100111	100, 111	.	<u>B(</u>	DRING LOG		Pa	ige _		01 _	
PROJECT NAME: PROJECT NUMBER: DRILLING COMPANY: DRILLING RIG:			Lockhard Mesting 112 TC 00895 BL Myno Bros. TMGD			BORING N DATE: GEOLOGI: DRILLER:	SB-SOY 11/27/07 J. DALIESSIO SCOTT MUNTAGE						
		2.7			N	1ATE	PID/FID Reading (pp						
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval				U	Remarks	Sample	Sampler BZ		Driller R7**
	0-1			/			Concrete			0	П		
0∞1	1-2						Crushed she W						
		/_					mand the			No. of Particular Property Control			
	2-4	//					D. Gry/Born to Blue	4					
		//					clay, moist,			NA CONTRACTOR OF THE PARTY OF T			
							fien						
5406	4-5				****		Dog to blut			No.		_	
		$\overline{}$					Clay, str, wet					\dashv	
	5-6	//					Gy to yellow say	_				\dashv	
							day; moit,				4	\dashv	
	, ,						Time .				\dashv	_	
	6-8						try b blak Clay				+	4	
				ŀ			Lean hard, St				\dashv	\dashv	
							noist, low	_		H	\dashv	\dashv	
1810	3-10						4.1	\dashv			+	+	
2010				ŀ			One is black Clay clay len, wet, mod	\dashv			\dashv	+	
	$\neg \uparrow$			•			soft and plashets	_		2000	_	+	
	2-12					,	Bound Clay Clay	\dashv		and an an an an an an an an an an an an an	\top	T	
							SFF GALZO				T	+	
				ſ			on planting				十	T	_
١	2			Ī			End of boin			V	1	\top	
							7 3	1		1	+	\top	
										1	十	十	
											\top	\top	
	monito		rock brok in 6 foot i		borehole. Ind	crease r	eading frequency if elevated reponse rea	ıd.	Drillin Background			٥	

No _____ Well I.D. #: ___



Converted to Well:

Yes

No

Ľ		Tetra	I COII I	voo, iii	··	<u>B(</u>	DRING LOG		Р	age .	W. Carlo	of_	-	
PROJECT NAME: PROJECT NUMBER: DRILLING COMPANY: DRILLING RIG:			Lockhed Martin, BIKE 112 IC 00885 BL Myro Bur TMGP BORING No.: DATE: GEOLOGIST: DRILLER:					11/27/07						
					l N	MATE	RIAL DESCRIPTION		PID/FID Reading (
Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness			∪ % C % *	Remarks	Sample	Z		Γ	
	0 - Qr	5/					Brown to Block			Q	T			
Ř	.`						Suy Cly Loam, my rice			Ш.	1			
<u>0</u> 201	0.5.	<u> </u>					Gray Sandy Clay, mod							
0406	3 - 6						Care find around			ON THE REAL PROPERTY.	\vdash		_	
010-							Sands, wet mistill	ì		The state of the s	-		-	
							W could she							
							GII moteral			- Herenande				
	1-8						Oraze Clay dog			-				
							Clean, st mist							
							Fran	_		- Investor				
1819	8-1 0						Ory chan soraled	_		-	\sqcup	\dashv		
							V. 100 50 1 E	_		1	H	_		
	a · (2)			-			One to Bree Clar			+	\vdash	-		
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							. Maryl stiff			- Company of the Comp	П	\dashv		
							med elastice			Distributions		十		
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	12						and of boring			V		_		
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-+	1			-				+		+	+	+		
				-				+		+ +	\perp	+		
			rock brok		borehole. Inc	crease r	eading frequency if elevated reponse rea	ad .	Drilli	ng Ar	 			
Rema	rks: _	-3".						· · ·	Background			٥		

Well I.D. #: _



BORING LOG Page ___ of ___ BORING No.: 58-506 PROJECT NAME: PROJECT NUMBER: 112 IC 008 85 DATE:
GEOLOGIST:

J. Dali Essis DRILLING COMPANY: BL Myns Bus **DRILLING RIG:** IMGP' DRILLER: MATERIAL DESCRIPTION PID/FID Reading (ppm) Sample Depth Blows / Sample Lithology U No. (Ft.) 6" or Recovery Change s (Depth/Ft.) Soil Density/ and or RQD 1 Sampler BZ Driller BZ** Consistency С Run Type or (%) Sample or Remarks Color RQD No. Length Screened OΓ **Material Classification** S Rock Interval Hardness 0-2 0001 0406 4.5 0810 80-11 When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read. **Drilling Area** Remarks: Background (ppm): No X Converted to Well: Well I.D. #: Yes



Page _/_ of /__

PRO DRIL	JECT LING	ΓΝΑΜΙ ΓΝΟΜ G COM G RIG:	BER:	Lock 112 BLW TMG	P		DATE: GEOLOGI: DRILLER:		SB-507 11/28/07 J. DALIESS, SCOTT MO.) } }			
					N	1ATE	RIAL DESCRIPTION			PID/FI	ID Rea	ıding ((ppn
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness		Material Classification	U S C S *	Remarks	Sample	Sampler BZ	Borehole**	Driller BZ**
	0.2						Concrete			0			
000	2-4						Brown / Gry Souly Cly			1	\Box		
			_				witrace for around			\mathbf{H}			<u> </u>
							Cartet's maist			T			
							mod frew						
6406	4-6						Gran Clay: demi			The state of the s			
							V. soft; saturated,			and a second			
		//					low plastity			A CALL DESCRIPTION OF THE PARTY			
	6-10	/				Lish	to Ook Brand Gray			and the second			
							Clari deen			SUCK STREET			
							m Kom, mast						
							m. plasking			office of the second			
0810	0-11						Gon Stern Sean						
							Sign AP Sill						
							lew plantes						
	11-12						Bran Clay: Olean,					_	
							m. fairs 3, must	_					
				}			molarit			ALL TAXABLE STATES	_		
											\bot		
	2 -						ed day			M	_	_	
								_			4	_	
		$\langle \cdot \rangle$						_			\bot		
		$/ \downarrow$						_		\sqcup	4	\dashv	
										\sqcup	\dashv	\downarrow	
* When	rock co	ring enter	rock brok	eness									
** Includ	e monit				borehole. In	crease i	reading frequency if elevated reponse rea	ad.	Drillin				
Rema	ırks: _								Background	(ppn	n):[0	
Canu	 	to Mal	1.	Voc			No. / Well I D	и.					



Converted to Well:

Yes

	J retra	rechi	NUS, Inc	.	<u>B(</u>	DRING LOG		Pa	ge_	-	of _	
PROJE(PROJE(DRILLIN DRILLIN	CT NAM CT NUM IG COM IG RIG:	E: BER: PANY:	Local BLM. TAGE	thed V ± c 00 Jos Ros	885	BORING N DATE: GEOLOGI DRILLER:		6P-508 11/28/07 J Dalies 210 Scott Me	. }·	:4		
Sample Dep No. (Ft. and or Type or Rui RQD No	6" or RQD 1 (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval		Color	RIAL DESCRIPTION Material Classification	U S C S *	Remarks		ID Rea		Π
0-2 0001 2-0	$+ \rightarrow$					Concerte Orange / bry Clay, clean s. moist; still		bored thry 0.2				
9-5				Ora	, J61	y Clay med shift, must			and the second s			
6-	2					Chy; wet; medium Stiff, chem Ony to Ned Chang,			PODE STREET STATE STATE OF THE			
						mod stiff, low						
910 8-10						Tanto Bour Sady Clay Saturdal V. loose low- Plack by			Andrews of the second s			
10-11						Tan to brown sand Chy wet, Soft, phihotog Tan to Marcon Clay,			AND THE COST, A STREET, SOME STREET, AND AND AND AND AND AND AND AND AND AND			
n						clean, so moist itiff; high plasheity End of bom			Con an arrangement			-
			-									
When rock of Include more Remarks:	nitor readino			borehole. Ind	crease r	eading frequency if elevated reponse rea	ad.	Drillin Background				

No X

Well I.D. #:



Converted to Well:

Yes

U		Tella	Techi	NOS, III	<i>.</i> .	<u>B(</u>	DRING LOG		Pa	ige _	-	of _	
PRC DRII	JEC ⁻	F NAM F NUM G COM G RIG:	BER:	Lock 112I BLM TMG	yes Pers	10 to 85	DATE:		5B-509 11/29/07 J. Daliessia Scatt m	- G 4			**************************************
					N.	/ATE	RIAL DESCRIPTION				ID Rea	ding /	(ppr
Sample No. and Type of RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness		Material Classification	U S C S *	Remarks	Sample	N	Borehole**	Π
	0-1						Concrete		card leatin	0	\Box		┢
(200) c	2-3						Yello-to orange			1			
		/					Sorty Clay; & mout;						
		$/\!\!\!/$					med Styl low			West on the last	\sqcup		
0406	3-5						plishing .			The state of the s	\vdash	\dashv	
UTIO	<i>J</i>						Ton to oney F-med.			\blacksquare		\dashv	
							In fire seed cot to		11	- Nacitive	H	\dashv	
							must medium dence				H	\dashv	
	5-B.						One to red				П	\forall	
							Clay denistrant			OTHER DESIGNATION OF THE PERSONS IN COLUMN TWO IS NOT THE PERSON IN THE PERSON IN THE PERSON IN THE PERSON IN THE PERSON IN TH			
							still low-plastite						
2810	8-12			ŀ			Onge to Red Sady	_		and the same of th		\dashv	
				ŀ			Stiff la plashet			100		_	
	1)			ŀ			Stift, las plashety			and the second s	\dashv	\dashv	_
							1, 20	\dashv		V	+	\dashv	
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\dashv	\dashv	$\overline{}$		-				\dashv	*		+	_	4
-	\dashv	\rightarrow		-		_		+		\dashv	+	+	4
	e monito		rock broke in 6 foot in		borehole. Inc	crease r	eading frequency if elevated reponse rea	ıd.	Drillin Background			ð	

Well I.D. #:

No _



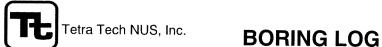
Page ____ of ___

_		,					JAING LOG		. •	.90.			
		T NAM		Loc	chud M	nat	BORING N DATE:	lo.:	58-510				
		T NUM G COM		117I	<u> </u>	<u>) S</u>	DATE:	O.T.	11/28/07				
		RIG:	FAINT.	<u> </u>	47 013 R	//3	GEOLOGI	51:	J. Daciesses				
	1	Tilia.	,	* ! } [DRILLER:		Scott Mon }	- insulation			
Sample	Depth	Blows /	Sample	Lithology	<u> </u>	IAIE	RIAL DESCRIPTION	۱.,		PID/F	ID Re	ading	(pp
No. and Type o RQD	(Ft.) or	6" or RQD (%)	Recovery / Sample Length		Soil Density/ Consistency or Rock Hardness		Material Classification	U	Remarks	Sample	Sampler BZ	Borehole**	10 milion
	0-2						Concrete Crusted stone Ton Finedgrad sout			Ø			
0601	Q -3						To F. medital soul			#	<u> </u>		L
							den. El mont, duse			#	<u> </u>		
 	3-4						One Son Clay Stiff			4	<u> </u>		L
	и о						day, low plashaty			0000	<u> </u>		L
9010	4-8						Clay I trace soul			1	 - -		_
							(4)			+	\vdash	\vdash	-
							love plant			+			
0810	8-9						Dark Brown to black			${\dagger}$			
							sed de l'high						
							fine gravel could			Total Control			
							(1282), da						*********
							Very s.ft						
	9-12						Brown Moroon an,			distribution			
							Clear SHIF, low						
							plashuto			V			
	2			ŀ			12'- end of boring	_				_	
		$\langle \cdot \rangle$						_			_	_	
	\dashv			-				4			\dashv	\dashv	
				-				\dashv			\dashv	\dashv	
				-				\dashv			_	_	
	\dashv			F				\dashv			\dashv	+	
	_			F				\dashv			\dashv	\dashv	
		ring, enter						L					
** Includ Rema		or reading	in 6 foot i	ntervals @	borehole. Ind	crease r	eading frequency if elevated reponse rea	d.	Drillin				
									Background	(ppn	n):L	と	
Conve	erted	to Well	: \	res _		1	√ Well I.D.	#:					



BORING LOG Tetra Tech NUS, Inc. Page _/_ of _/_ PROJECT NAME: Lockhed Mati, B)KE BORING No.: SB-511 PROJECT NUMBER: 1121 C 60 8 85 DATE: 11/29/6-7
GEOLOGIST: 5 DOLIGSSO DRILLING COMPANY: BL Myns Bro **DRILLING RIG:** TMGP Scort Mo-tog DRILLER: MATERIAL DESCRIPTION PID/FID Reading (ppm) Sample Depth Blows / Sample Lithology U No. (Ft.) 6" or Recovery Change s (Depth/Ft.) Soil Density/ and or RQD Sampler BZ Type or Run (%) Consistency С BZ* Sample or Remarks RQD Color Screened **Material Classification** No. Length or S Rock Interval Hardness Concerter until stre 0 0001 0406 5-6 0810 B.16 10-12 ince fin-grand sand

** Include monitor reading in 6 Remarks:		Increase reading frequency if	f elevated reponse read.	Drilling Area Background (ppm):
Converted to Well:	Yes	No	Well I.D. #:	



Page ___ of

_		,					JAING LOG			.90 _		٠	
PRC	JEC.	T NAM	E:	Lock	cheed W	Tart	BORING N DATE:	10.:	SB 512.				
		T NUM		工工工	<u> </u>	15	DATE:		11/29/07				
		RIG:	FAINT.	THUS			GEOLOGI	S1:					
	T	1110.	T	1 1 1 1 1 1		4475	DRILLER:	,	Scott Mant				
Sample	Depth	Blows /	Sample	Lithology	<u> </u>	1AIE	RIAL DESCRIPTION	┨		PID/F	ID Rea	ading (pp
No. and Type o RQD	(Ft.) or	6" or RQD (%)	Recovery / Sample Length		Soil Density/ Consistency or Rock Hardness		Material Classification	U S C S *	Remarks	Sample	Sampler BZ	Borehole**	D.::IL. 0.7**
<u> </u>	0-2						Asphel + Crushed			6			
-							Showfull rotal			4			<u> </u>
0061	2.8						Ong to L. Born			4			<u></u>
0406							Clay 1 to Sad;			4			
-		$\overline{}$					St mout, stift						NAME OF THE OWNER, OWNER, OWNE
0810	a_a						Tourplants			1	Щ		
0.810	0 1						Ch +1 - G			- Maria	\vdash		
	4 - lo					Oran	Sandy Cy with Amod			+			
						- /	Fill motor of Country			- Long Control	Н	\dashv	
							Show + asphild)						
							soundted			Anna di prim		\dashv	
	10-12						Day to Red			West Control	\Box	\dashv	
							Souly Clay, med. 5 - F.			and disease of the same			_
							slightly moist			ورثلة فالطفار والأجمعة			
	12			-			end of ba			4			
				-			-			Ш			
				-				_			_	\perp	
				-				_		\sqcup	_	_	
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	\dashv			-				\dashv		$\vdash \vdash$	+	+	
		ing, enter									丄		XXXX
** Includ Rema	e monit ı rks:	or reading	in 6 foot i	intervals @	borehole. Inc	crease r	eading frequency if elevated reponse rea	ıd.	Drillin Background			<i>O</i>	
	_					******			Dackyround	(hhii	ル <u>L</u>		
Conve	erted	to Well	: `	res _		١	√lo Well I.D.	#:_					



Page _ of _

PROJECT NAME: Lockhed Mortin

PROJECT NUMBER: 112 I Cook 85

DRILLING COMPANY: 86 March 11 29 107

DRILLING RIG: DRILLER: Scott Mortes

					N	1ATE	RIAL DESCRIPTION	Ī	200TT VIIC-16	, å.	ID Rea	ding	(ppm
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness		Material Classification	U S C S *	Remarks	Sample	Sampler BZ	Borehole**	Driller BZ**
	0-2						Crushed show I'll			0	П		
							Crushed show fill miles, concle, saids Olive Sandy Clay, clan most, Soft						
1000	2-6	/_					Olive Sandy Cly, Cla						
							mont, soft						
			~				mod - Olashing			The second second			
0406	6-8						mod plating Formed Sondo, Clean, Schold	إيدار المراسمة ا					
		//	-1				F-Mchandsond,						
		$\langle \cdot \rangle$					Clair, Sohl		****				
							Cleen, Soluto loose Brown to Onge F. M'grand sonds; Clem, moist Medium donse Drye to Bom F-med. grand sonds, stiff St. Moist En y by						
0810	8-10						Brown to Onge						
				ŀ			F.m"grad sodo;						
				-			Clem, moist						
				-			medium donse	_				\perp	
	10:12	$\langle \cdot \rangle$					Dry to Bom F-ma.	_		A CONTRACTOR OF THE PARTY OF TH	\bot	\perp	
		$/ \downarrow$		-			grand sads, stiff						
				-			st moist	_		4	\perp	\perp	
	n	$/ \downarrow$		-			E146			<u> </u>			
				-			~			\perp			
		4		-						\perp	\perp	\perp	
	_	$/\!\!\!\!/$											
	-	$/ \downarrow$		-		_		_		\perp			
	 -	$\overline{}$		-						\perp			
	_	$/ \downarrow$		L		_							
	\dashv	$/ \downarrow$		_									
* Whon r													7

When rock coring, enter rock Include monitor reading in 6 Remarks:		Increase read	ding frequency i	if elevated reponse rea	d.	Drilling Background	g Area (ppm):	3
Converted to Well:	Yes	_ No) <u>X</u> .	Well I.D.	#:	<u> </u>		



Converted to Well:

Yes

Ľ	<u> </u>	retra	recni	NOS, INC			<u>DRING LOG</u>		Р	age _		of _	
PRC DRIL	JEC ⁻	T NAM T NUM G COM G RIG:		Lock!	myra La	25	DATE:	ST:	SB-514 11/29/07 J. DALINSOO Scott Mr.	nteo			
Cample	Danth	Diama (C	1 (44 - 1 -	N.	/ATE	RIAL DESCRIPTION			PID/F	ID Rea	ading ((pp
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	Sample	Sampler BZ	Borehole**	
	0-1						Control stope fill moteul			0			L
Otol	1-2												<u> </u>
							Olive Sandy Clay, Sl. woist, low-planing			Manage (1994) (1994)			
	ı						SAK						
0416	2-6						Bron to One			Agraphic			
							med. stiff but			No.			
							elelek			100 (100 person			
	6-7						Red to White Clay:						
							sofunity, Visit			and the second			
0810	7-10						D. Bren / Red Clay			Manage Control		_	
	<u> </u>						munt! mad 5th			LECTURE CONTRACTOR CON	\dashv	\dashv	
							mou.			No.	7		
	01						Rynd 0 10-			V			
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	\dashv			}		+		_		+	-	\dashv	
+	\dashv			_		\dashv		\dashv		+	+	+	
	e monit		rock brok in 6 foot i		borehole. Ind	crease r	eading frequency if elevated reponse re	ad.	Drilli Backgroupe	ng Are			

No 🐇

Well I.D. #:



Converted to Well:

Yes

BORING LOG

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L)		,			JRING LUG			9 –		O	+
PRO DRIL	JECT LING		BER:	BLr	0 6 7 '-745	d W 85			NODAL ESSIO				
DHIL	LING	RIG:	Y	TM	G'P		DRILLER:		Scott Mont	-			
Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval			RIAL DESCRIPTION Material Classification	U S C S *	Remarks	Sample Sample	Sampler BZ Ba	Borehole**	
000)	0-1						D. Boun to Black			0			
							fill we had (asshelf)			6. S. SALES			
	1-2						Sand & Fire aroul			and the same of th			
							fell or tocals			No.			
	2-4						Orese Buy Clay			2000			
							w her fin grand sand						
							contet; & moist			-			
							med sill, mod-delite			The state of the s			
0406	4-5						Ores Sorly Clay			encase minimización de compression d			
							solution, soft			**************************************			
							Low plastity			EFFECTENCETTERSALE			
	5-6						Bru 6 Onge Clay			Newson and the Control of the Contro			
							Clam el monit			Office by the second			
							5hyp, law glastily			**************************************			
	6-8						Oranch Gray			ALLES FOR PARTIES			
		\angle					Ocy dem, & mod			September 7070			
		\angle					med still i mod-			oper to a second designation of the second d			
							platity			Middy's ministration			
0810	870						On Soly Clay, sate ?	rd.		\$-100 pt			
							U.sdt, low- plathty			A STATE OF THE PARTY OF THE PAR			
	10-12						Bron Once Clay;			general age.			
							clear, et moret;			With State April			
							styl, no planting		***************************************				
	12'						12'-end of bon			\vee		\bot	
			r rock brol g in 6 foot		borehole. Ir	ncrease	reading frequency if elevated reponse re	ad.	Drillin	g Ar	ea		
Rema									Background			0	

No _____ Well I.D. #:

TŁ	Tetra Tech NUS, Inc.
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PRO DRIL	JECT LING	NAMI NUMI COMI RIG:	BER:	Lock! NDI BLM10 TMGP			GEOLOGI DRILLER:	ST:	SB-516 11/30/07 JDALIESTIN SCOTT MO- tag				
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval			RIAL DESCRIPTION Material Classification	U S C S *	Remarks	Sample Sample	Sampler BZ ea	Borehole**	Π
	0-1						Concrete		Uhland ske	0			
							and enstad		dull to hanne	Terrory Office			
							sto- 611		theolo concrete	One of the last of			
							metrial		slet (0-1)	REPUBLIC MANAGEMENT			
0001	2-4						Orange Clay and			AND STATES AND			
							crished show fill mohl			Park to the stage			
							s(moil, ned			Charge-speak			
							sy; mod-			**************************************			
		/_					plastick	ļ		V			
	4	/					4 - End of born		Geopph have				
		/					, J		while hammeng-				
		\angle							not alle to				
		/	,						go any desper				
							Water Committee	(I the lade				
		//						<u> </u>					
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		//							***************************************	-	$-\downarrow$	\perp	
											_	\dashv	
* When	rock co	ring ento	r rock bro	keness									
** Includ	de moni				borehole. Ir	ncrease	reading frequency if elevated reponse re	ead.	Drillin				
Rema	arks: .								Background	(ppn	n):[0	}
Conv	erted	to We	ll:	Yes .			No <u> </u>). #:					



P	a	n	ρ.	1	of	1
	a	9	$\overline{}$		O1	

PROJECT NAME: Lockhard mortin, BIKE
PROJECT NUMBER: 112 IC 00885
DRILLING COMPANY: BL Myeas Bros.
DRILLING RIG: TMEP

BORING No.: SB-517
DATE: 11/30/07
GEOLOGIST: J DALIESSID
DRILLER: Scott Montag

					N	1ATE	RIAL DESCRIPTION	П		PID/FII	D Rea	ding	(ppm)
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	Sample	Sampler BZ	Borehole**	Driller BZ**
	0-1						Bloke Siltz Og/ nam,			0			
							organics			eggeometry.			
0001	1-5	/_					Ong to Bu S. Hy			P Population of China			
		/					Can med stiff						
		/					mid-pleatert il			Sales of the Sales			
		/					mont ()			and the control of th			
0406	5-7	//					Orax Clay Clean			The second second			
		\angle					& mait sty.		***************************************				
		//					med - An lich			100			
	7.8						Ohe Obj. de-						
		//			-		mail, med stiff			NAME AND ADDRESS OF THE PARTY O			
							not dot						
0810	B-9	/					Orge South Clay.		****	one with Pitter or fitting			
		/					SIL, SHE Wet			and a street of the street of			
		//					low plastick						
	9-12	\angle					Orgo / Gry Clay,			CONTRACTOR OF THE PERSON OF TH	\Box		
		\angle					SHI day,				_		
		-					to one & placety				_		
	12	$\langle \cdot \rangle$					12 and of body			\bigvee			
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When rock coring, enter rock Include monitor reading in 6 Remarks:		s @ borehole	. Increase reading free	quency if e	elevated reponse read.	Drilling Area Background (ppm):	
Converted to Well:	Yes		No		Well I.D. #:		



Page	Maleh	of	1

PROJECT NAME: Lockhed Martin, BILE
PROJECT NUMBER: 112 I C 00 885

DRILLING COMPANY: BL my control

DRILLING RIG: Truck marked Go pube.

BORING No.: 5B-518

DATE: 11/3 0/07

GEOLOGIST: JASON DALIE 55:0

DRILLER: SCOTT MONTRO

					N		RIAL DESCRIPTION			PID/FI	D Rea	ding ((ppm)
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	U S C S *	Remarks	Sample	Sampler BZ	Borehole**	Driller BZ**
	0-2						Coraste		Cored Grant 6-2	10			
000	2-5						Soidy Clay: wet;			1996 throughout the			
							Sordy Clay; wet; m.stiff, med-			The state of the s			
							1 .t. t						
0406	5-7						One to Olin Clay			NACOTORNO DO			
							one to Ohn Clay;			Salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah sa			
		//					destate; moist			PH CONTRACTOR			
	7-8						Ong Sandy Clay.			933000000000000000000000000000000000000			
		-					clean wet			and the second s			
		-					lou plastuty			-			
- 01-		$-\!$					- S-47%			or-vinal Miles (1804)			
0810	870						T- medige-led said,			0.000			
	10-12						Brown to Orac			Production (_	
	10-12						Sandy Clay: Jean			Wentered policies	\dashv		
							mont low soft			Ampril 6 o speed	\dashv		
	-						pholips			outropostus (jobs)	\dashv	\dashv	
	12			•			12: end of has			<u> </u>	\dashv		\dashv
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When rock coring, enter rock Include monitor reading in 6 Remarks:	ncy if elevated reponse read.	Drilling Area Background (ppm):		
Converted to Well:	Yes	No _ <u>{</u>	Well I.D. #:	



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PROJECT NAME:	Lockhed Martin, BIKE	BORING No.:	58-5 F
PROJECT NUMBER:		DATE:	11/30/07
DRILLING COMPANY:	Bl Myo Bur	GEOLOGIST:	S. DALIESS O
DRILLING RIG:	TMGP	DRILLER:	SCOTT HINTAG

					N	1ATEI	RIAL DESCRIPTION			PID/FI	D Rea	ding ((ppm)
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color		U S C S *	Remarks	Sample	Sampler BZ	Borehole**	Driller BZ**
	0]				***************************************		Concrete Onen Sordy Clay & most low placety and St.FF Brown to Onge Clay in their sort		Coned through (6-2)	0			
6001	2-5						Onen Sad Clay		<i>V</i>	and a second			
<u> </u>							& most low						
							Plant med St.FF						
0406	5-7.	5/					Brown to Ong Cly						
							in thea self &			-			
		-					maist, medistilli					_	
	01.	10					and place & order					\dashv	
0810	1.5						Oncoy to be grad			- Control of the Cont			
							sord wet, medium			de constante		_	
	10-12						Book to Red			(Alarman and Alarm		_	
	10-12						Can to led -					\dashv	
	l						Clay clear,			\		\dashv	
							has also hit			Priorages	_		
	17						for gladity 12-end of boars			J		\dashv	ᅦ
	\dashv			ŀ			12- or y space				+	\neg	
												\dashv	
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When rock coring, enter rock Include monitor reading in 6		nole. Increase reading frequency if e	elevated reponse read.	Drilling Area
Remarks:	•	Background (ppm):		
Converted to Well:	Yes	No X	Well I.D. #:	



Page ___ of ___

PROJECT NAME: Lockheed Motin, BIKE

PROJECT NUMBER: 112 00885

DRILLING COMPANY: BL Myens Bros

DRILLING RIG: Trace

DRILLER: Scott

שוווע		HIG:		TIMG			DRILLER:		20 TT				
C	Sample Donth Blow		Cau1-	l laborio	MATERIAL DESCRIPTION					PID/FI	D Rea	ding (ppm)
Sample No. and Type or RQD	(Ft.) or	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color		∪	Remarks	Sample	Sampler BZ	Borehole**	Driller BZ**
0001	04						Sity Clay Loam, organic Orax Clay; clam: d. noist, med			0			
	1-4						Oray Clay; clem:						
		/					d. noist, med			- Andread - Andr			
							shift mod -			afficia page and a second	-		ļ
	11 /						aleshity			Section 201			
0406	4-6					Oraze	Sandy Clay & most med still			TO THE STATE OF TH			
	. 3						low-plostati			The state of the s			
	63						¥						
							Onex Sarly Clay			Ì			
0810	8-11						Ton F-modificand			STREET, SALL SALLS			
							Sand, loose; sothand						
	11-12						Sady Clas, SC						
							Sondy Clay, Sh Mart: Medium stiff land 1 athor	_					
							12 and d Lai			W			
							12 end of being	_	Miles Miles Are Are an annual and a second a				

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* Whon													

* Wr	nen	rock	coring,	enter	rock	bro	keness.					
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** Include monitor reading in 6	foot intervals @ borehol	 e. Increase reading frequency if 	elevated reponse read.	Drilling Area
Remarks:				Background (ppm): 💍
Converted to Well:	Yes	No	Well I.D. #:	



					га	ge
Project Site Na Project No.:	ame:	Lockheed M	artin Block E	Sample II Sample L Sampled	ocation: SB-S	00
¶ Surface S				C.O.C. No		oster
[] Subsurfac						1.
[] Sediment [] Other:				Type of S		
[] QA Samp	le Type:	8			Concentration Concentration	
GRAB SAMPLE DA	NTA:					
Date: 11-27-0	70	Depth Interval	Color	Description	(Sand, Silt, Clay, Me	oisture, etc.)
Time(55)-1024	0940					
Method: DPT Monitor Reading (pp		0-1 84.	Black	Silty C	lay Loam	
COMPOSITE SAME				1	/	
Date:			citationia in the balance			
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	oisture, etc.)
Method:						
Monitor Readings						
(Range in ppm):						
SAMPLE COLLECT	ION INFORMA	ATION:				MATERIAL STREET
	Analysis		Container Requ	uirements	Collected	Other
	ocs		1 4-07 dear		,	Curer
	PH		1 8-02 clear			
	VOLS			5		
	CBs				_	
	letals				_	
Be, Ni, Co, Fe	MA		*		-	
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DBSERVATIONS / N	OTES:		E	MAP:		
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ircle if Applicable:	# 7/4K0 E.S.			Signature(s):		
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SOIL & SEDIMENT SAMPLE LOG SHEET

Page_ of Lockheed Martin Block E Project Site Name: 58-500-0406 Sample ID No.: Project No.: 112 IC00 885 Sample Location: SB-500 Sampled By: J. Foster [] Surface Soil C.O.C. No.: 322417 Subsurface Soil [] Sediment Type of Sample: [] Other: [] Low Concentration [] QA Sample Type: [] High Concentration GRAB SAMPLE DATA: Date: 11-27-07 Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Time: 9950 Method: DPT 4-6 ft Gray Sandy Clay Monitor Reading (ppm): COMPOSITE SAMPLE DATA: Date: Time Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Method: Monitor Readings (Range in ppm): SAMPLE COLLECTION INFORMATION: **Analysis Container Requirements** Collected Other 8260 VOCS 4-07 clear 4955 TPH 2108 8-02 dear -8270 SVOCS 8082 PLBS ICP/MS Metals Be. Ni Co. Fe MA **OBSERVATIONS / NOTES:** MAP: Pared Area SB-501 NIT.S. Circle if Applicable: Signature(s): MS/MSD **Duplicate ID No.:**



Page_ of Project Site Name: Lockheed Martin Block E Sample ID No.: 58-500-0810 Project No.: 112IC00885 Sample Location: 5B-500 Sampled By: J. Foster [] Surface Soil C.O.C. No.: 322417 f Subsurface Soil Sediment
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 Sediment Type of Sample: [] Other: [] Low Concentration [] QA Sample Type: [] High Concentration GRAB SAMPLE DATA: Date: 11- 27-07 Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Time: 0955 Clay Method: DPT 8-10 ft. Monitor Reading (ppm): 0 COMPOSITE SAMPLE DATA: Date: Time Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Method: Monitor Readings (Range in ppm): SAMPLE COLLECTION INFORMATION: Analysis **Container Requirements** Collected Other VQCS 8260 4 OZ clear glass 8015 MAT 807 dear alass SVOCS 8270 8087 PLBS ICP/MS Metals Be Ni Co. Fe Mu **OBSERVATIONS / NOTES:** MAP: Pared Area -M SB-500 SB-501 N.T.S. Circle if Applicable: Signature(s): MS/MSD **Duplicate ID No.:**



Page_ of Project Site Name: Lockheed Martin, Block E Sample ID No.: SB. 501-0001 AIL00885 Project No.: Sample Location: SB-501 Sampled By: 1 Surface Soil C.O.C. No.: 322417 [] Subsurface Soil [] Sediment Type of Sample: [] Other: [] Low Concentration [] QA Sample Type: [] High Concentration GRAB SAMPLE DATA: Date: 11-17-07 Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Time: 1027 Method: DPT Black Silty Clay Loan 0-1 ft. Monitor Reading (ppm): COMPOSITE SAMPLE DATA: Date: Time Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Method: Monitor Readings (Range in ppm): SAMPLE COLLECTION INFORMATION: Analysis **Container Requirements** Collected Other 8260 VOCS 4 07 clear alass 8015 TPH 8 02 clear Xlass 8270 SVOCS 8082 PLBS ICP/MS Metals Be, Ni, Co, Fe, Mn OBSERVATIONS / NOTES: MAP: C boneg onso > NITIS. - Grass Area 1 Circle if Applicable: Signature(s): MS/MSD **Duplicate ID No.:**



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Project Site Na Project No.:	oil .	FORKHERY WORT	tin, Block E	Sample ID Sample Lo Sampled E C.O.C. No	O No.: SB-Soli ocation: SI By:	1-0406 B-501
Subsurfac Sediment Other: QA Sampl	le Type:					
GRAB SAMPLE DA				KLAR OF ST	AND EVERY TO SEE THE SECOND	
	10.5	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	oisture, etc.)
	035					
	DPT	4-6 ft	Orange	Sandy	Clay	
Monitor Reading (ppr COMPOSITE SAMP		ALECTROPIC STREET, STR		The second second second	*	
	1	A SANSAR MATERIAL SANSAR SANSA		A TRANSPORTER		DINITED
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	oisture, etc.)
Method:						
Monitor Readings						
(Range in ppm):						
7.00 500						
SAMPLE COLLECTI		TION:	BEST STATE OF THE STATE OF			
2010	Analysis		Container Requ		Collected	Other
8260	VQCS			ar glass		
8015	TPH		1 807 400	ar glass		
8089	PCBS					
ICP/MS	Metals					
Be, Mi, Co. Fe			1			+
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OBSERVATIONS / N	OTES:	410世紀1120世紀		MAP:		
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Page_ of Project Site Name: Lockheed Martin Block E Sample ID No.: SB-501-0810 Project No.: 112 IC00885 Sample Location: SR-501 Sampled By: JF □ Surface Soil C.O.C. No.: 322417 - Subsurface Soil [] Sediment Type of Sample: [] Other: [] Low Concentration [] QA Sample Type: [] High Concentration GRAB SAMPLE DATA: Date: 11-27-97 Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) 1035 Time: 8-10 Ft. Clay of trace fine grained sand Method: DFI Orande-Beg Monitor Reading (ppm): Q COMPOSITE SAMPLE DATA: Date: Time Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Method: Monitor Readings (Range in ppm): SAMPLE COLLECTION INFORMATION: Analysis **Container Requirements** Collected Other 8260 VOCS 402 clear glass TPH 8015 8 02 clear alass 8270 SVOCS 8082 PCBs ILP/MS Metals Be, Ni. Co. Fe, Ma OBSERVATIONS / NOTES: MAP: Pared Area N.T.S. Circle if Applicable: Signature(s): MS/MSD **Duplicate ID No.:**



SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: Lockheed Martin, Block E 58-502-0001 Sample ID No .: Project No.: 112 IL 600 885 Sample Location: 58-502 Sampled By: J. Foster Surface Soil C.O.C. No.: 322417 [] Subsurface Soil [] Sediment Type of Sample: [] Other: Low Concentration [] QA Sample Type: [] High Concentration GRAB SAMPLE DATA: Date: 11.71-07 Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Time: 1109 Method: DPT 0-1 ft. Silty Clay Loam; Slightly moist Olive-Black Monitor Reading (ppm): O COMPOSITE SAMPLE DATA: Date: Time Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Method: Monitor Readings (Range in ppm): SAMPLE COLLECTION INFORMATION: Analysis **Container Requirements** Collected Other 8260 VOCS 4 07 clear alass TPH 8015 8 0Z clear glass SVOCS 8270 8082 PLBS ICP/MS Metals Be, Ni, Co. Fe. Mr. **OBSERVATIONS / NOTES:** MAP: Pared Area N SB-500 N.T.S Circle if Applicable: Signature(s): MS/MSD **Duplicate ID No.:**



Page_ of Lockheed Martin Block E 58-502-0406 Project Site Name: Sample ID No.: Project No.: Sample Location: SB-502 Sampled By: J. Foster [] Surface Soil C.O.C. No.: 322417 Subsurface Soil [] Sediment Type of Sample: [] Other: [] Low Concentration [] QA Sample Type: [] High Concentration GRAB SAMPLE DATA: Date: 11-27-07 Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Time: 1115 4-6 ft. Method: DPT Orange-Yelkow Fine Sand; loose; wet Monitor Reading (ppm): 0 COMPOSITE SAMPLE DATA: Date: Time Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Method: Monitor Readings (Range in ppm): SAMPLE COLLECTION INFORMATION: **Analysis Container Requirements** Collected Other VOCS 8260 4 02 clear alass for TPH 8015 80% clear glass, or SVOCS 8270 8082 PCBS ILP/MS Metals Be, N; Co. Fe, Ma **OBSERVATIONS / NOTES:** MAP: Poved Area SB-502 SB-591 SB-500 N.T.S. - Grass Area-Circle if Applicable: Signature(s): MS/MSD **Duplicate ID No.:**



Page___ of Lockheed Martin Block E 58-502-0810 Project Site Name: Sample ID No.: Project No.: Sample Location: SB-503 Sampled By: J. Foster [] Surface Soil C.O.C. No.: 322417 Subsurface Soil [] Sediment Type of Sample: [] Other: [] Low Concentration [] QA Sample Type: [] High Concentration GRAB SAMPLE DATA: Date: 11-27-07 Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Time: 1140 DPT Method: Fine-Medium Grained Sand 8-10 ft Drange-Red Monitor Reading (ppm): 0 COMPOSITE SAMPLE DATA: Date: Time Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Method: Monitor Readings (Range in ppm): SAMPLE COLLECTION INFORMATION: Analysis **Container Requirements** Collected Other 8260 VOCS 4 02 clear glass 8015 TPH 8 0% clear glass 8270 SVOCS PCBS 2082 ICP/MS Metals **OBSERVATIONS / NOTES:** MAP: Pared Area A A SB-502 SB-501 SB-500 N.T.S. Grass Area Circle if Applicable: Signature(s): MS/MSD **Duplicate ID No.:**



SOIL & SEDIMENT SAMPLE LOG SHEET

Page_ Project Site Name: Lockheed Mortin Block E Sample ID No.: 58-503-0001 Project No.: 119IC 00882 Sample Location: SR-503 Sampled By: J. Foster Th Surface Soil C.O.C. No.: 322417 [] Subsurface Soil [] Sediment Type of Sample: [] Other: [] Low Concentration [] QA Sample Type: [] High Concentration GRAB SAMPLE DATA: Date: 11-27-07 Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Time: 1245 Method: DPT 0-1 ++-Silty Clay Loam Olive-Black Monitor Reading (ppm): Q COMPOSITE SAMPLE DATA: Date: Time Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Method: Monitor Readings (Range in ppm): SAMPLE COLLECTION INFORMATION: Analysis **Container Requirements** Collected Other 8260 VOUS 4 02 clear glass TPH 8015 802 clear glass 8270 SUDCS PCBS 8082 ICP/MS Metals Be, Ni Co. Fe. Min **OBSERVATIONS / NOTES:** MAP: M Paved Area Duplicate collected. See below A for nomenclature. SB-503 58-502 SB-901 N.T.S. Circle if Applicable: Signature(s): MS/MSD **Duplicate ID No.:** The second DUP-01



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Project Site Na Project No.:		Lockhoed Mar	tin, Block E	Sample I	Location: SB-	03-0406 503 oster
[] Surface S				C.O.C. N		
Subsurfac					-2 86	111.
[] Sediment	į.			Type of S		
[] Other:	la Tuna				Concentration	
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GRAB SAMPLE DA	ATA:	VENTAL STATE OF THE STATE OF TH	Activities in the constitution	NESTER AND AND A		
Date: 11-27-0	70	Depth Interval	Color	Description	n (Cand Cilt Class I	
Time: 1355		- opin morran	00101	Descriptio	n (Sand, Silt, Clay, M	Moisture, etc.)
Method: DPT		4-6 ft	Yellow	T' - Mal	\ "	4
Monitor Reading (pp	om): Q	25. (385)	10.	Line-Wear	ium sand im	er
COMPOSITE SAME	PLE DATA:					
Date:	Time	Depth Interval	Color	Description	n (Sand, Silt, Clay, N	foleturo etc.)
				Decemption	(Janu, Jin, Clay, I	ioisture, etc.)
Method:						
				 		
Monitor Readings						···
(Range in ppm):						

SAMPLE COLLECT	TON INFORMA	TION:				
	Analysis		Container Requ	uirements	Collected	Other
82(0	VOCS		1 402 01			
8015	TPH		1805 01	1955 198		
970	SVOCS			-		
8082	PCB5					
ICP/MS	Metals					
Be, Ni, Co, Fe	WW		1		~	

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Project Site Na Project No.:	Soil	Lockheed Man	rtin, Block E	Sample II Sample L Sampled C.O.C. No	ocation: Sg- By: J- Fo	ster
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[] Sediment [] Other: [] QA Samp					ample: Concentration Concentration	
GRAB SAMPLE DA	ATA:					interestative entre
Date: 11-27-07		Depth Interval	Color	Description	(Sand, Silt, Clay, M	oisture etc.)
Time: 1313					(ourid, ont, oray, w	oisture, etc.)
Method: DPT		10-12 8+.	Orange-Gray	Clay w/	Fine-Med. Gr	bin Sand
Monitor Reading (pp		10 .9 .11	7 20	, ,		3
COMPOSITE SAME	PLE DATA:					
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	oisture, etc.)
Method:						
Monitor Readings						
(Range in ppm):						
	<u> </u>					
SAMPLE COLLECT	ION INFORMA	TION				
THE POLICE	Analysis	IIION.		·		
8260	VOCS		Container Requ		Collected	Other
8015	TPH		1 8 07 010			+
9768	SVOCS		1 8 03 970	55 jar		
2082	PCBS	***				
ICP/MS	Metals	75-				
Be. Ni Co. Fo			V			
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BSERVATIONS / N	OTEO					
BSERVATIONS / N	OTES:			MAP:		Santa Santa
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Project Site Na Project No.:		Tockheed Wart	in, Block E	Sample Sample	Location: SB-50 d By: J. fo	+- 0001 + Ster
Surface S				C.O.C. N	Vo.: 32241	
[] Subsurfac						
[] Sediment [] Other:				Type of		
[] Other: [] QA Samp	lo Timo				Concentration	
[] QA Sanip	ie Type:			_ [] High	Concentration	
GRAB SAMPLE DA		阿斯斯斯斯 烈素酸				
Date: 11-27-(2.1	Depth Interval	Color	Description	on (Sand, Silt, Clay, Mo	pisture, etc.)
Time: 1340						
Method: 5PT		0-1 ft.	Grey	Coushed	Stone Fill mate	rial
Monitor Reading (pp	om): O		J		- 11	
COMPOSITE SAME	LE DATA:					
Date:	Time	Depth Interval	Color	Description	on (Sand, Silt, Clay, Mo	isture, etc.)
Method:						
Monitor Readings	-			-		
(Range in ppm):				 		
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SAMPLE COLLECT	ION INFORMA	TION:	64			
A	Analysis		Container Req	uirements	Collected	Other
8>10	VOCS			955 94		-
8015	TPH		1 802 8	955 798		
8270	SVOCS		,	1		
8082	PCBs					
ICP/MS	Metals			h	_	
Be, Ni, Co, Fe	· Ma			V.		

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Project Site No.:		Lockhed Mar-	tin, Block E	Sample Sample	Location:	B-504-0 SB-504 J. Foster	
[] Surface S				C.O.C. I		322417	
∯ Subsurfa						200011	-
[] Sediment [] Other:	t			Type of	Sample:		
[] QA Samp	ale Type:			[] Low	Concentratio	n	
U QA Oamp	ne Type.			[] High	Concentration	on	
GRAB SAMPLE DA	ATA:					Comments awen	
Date: 11-27-0	1	Depth Interval	Color	Description	on (Sand, Silt, C	Clay Moietu	o oto)
Time: 1350					tourie, only	Jiay, Moistui	e, etc.)
Method: DPT		4-6 ft.	DK Grey Black	Clay	; wet		
Monitor Reading (pr	om): ()		J	0.49	2 mei		
COMPOSITE SAMI	PLE DATA:						
Date:	Time	Depth Interval	Color	Description	n (Sand, Silt, C	lav Moistur	e etc.)
					(curia, ont, c	riay, moistur	e, etc.)
Method:							
				+			
Monitor Readings							
(Range in ppm):				-			
(mange in ppin):							
TARREST CONTRACTOR OF THE PARTY							
SAMPLE COLLECT		TION:		NIL BUIL			
0310	Analysis		Container Req	uirements	Collecte	d	Other
8260	Vocs		1 4 02 198				
8015	TPH		1 802 190	1	_		
8087	SVOCS				_		
ICP/MS	Metals				~		
Be, Ni, Co, Fe					-		
De N. co, re	AM.						
min v		***					
DBSERVATIONS / N	OTES:			MAP:			
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				N.T.S.	58-504		
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ircle if Applicable:				Signature(s):			
MS/MSD	Duplicate ID	No.:				_	
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Project Site Na Project No.:	ame:	Lockhood Man	rtin, Block E		Location: SE-	
[] Surface S	Soil			Sampled C.O.C. N		oster
¶ Subsurfa				0.0.0.1	Vo.: 3224	1.1
[] Sediment [] Other:	t			Type of \$	Sample:	
[] QA Samp	ole Type:				Concentration	
				_ U High	Concentration	
GRAB SAMPLE DA						
Date: 11-27-0		Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, M	oisture, etc.)
Time: 1355 Method: DPT)	0-10-54	Olive-Black	()	20) (200 - 201)	
Monitor Reading (pr	om): O	8-10 ft.	Ollne- DIOCK	Clays	wet mod. sof	
COMPOSITE SAME						
Date:	Time	Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, Mo	oisture, etc.)
Method:						
Monitor Readings						
(Range in ppm):						
, ,				-		
				 		
SAMPLE COLLECT	TON INFORMA	TION:				
	Analysis		Container Requ	uirements	Collected	Other
8260	Jocs		1	2012		Other
8015	TPH		1 8 02 glas	5 104		
8082	PCBs		- I			
ILP/MS	Metals					
	e. Mn		1/			
774-9,1	10.40					
						
DBSERVATIONS / N	IOTES:			,		
ADOLITY ATTOMS / IT	OTES.			MAP:	17:00	
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				A	58-503	SB-502
				71		ass Area
				N.T.S.	A 58-504	ass Area
				70-1-3-		- 1
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ircle if Applicable:						
	D			Signature(s):		
MS/MSD	Duplicate ID	No.:	ı		2	1
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Project Site N Project No.:	ame:	Lockheed Mar	tin, Block E		ocation: SB-	5-0001 505
1 Surface				Sampled C.O.C. No		oster
[] Subsurfa				0.0.0.14		TII
[] Sedimen [] Other:	t			Type of S	ample:	
[] QA Sam	nle Type:				Concentration	
		No.		[] High (Concentration	
GRAB SAMPLE DA						
Date: 11-27-0	7	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	pisture, etc.)
Time: 1425 Method: DPT		6 . 6.				
Monitor Reading (p	nm): O	9-1 Ft	Gray	Sandy C	lay; mod, stiff	E; slimoist
COMPOSITE SAM	PI F DATA:		,		,	
Date:			Manager Committee			1
Date.	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	oisture, etc.)
Method:						
modiod.				 		
Monitor Readings						
(Range in ppm):				 		
,						
				+		
SAMPLE COLLECT	TON INFORMAT	IION:				
	Analysis		Container Req	uirements	Collected	Other
8260	VOCS		1 402 alg		Conected	Other
8015	TPH		1 802 019			
8270	SVQCs		7	-		
8087	PCBs					
ICP/MS	Metals			war and the same of		
Be, Ni Co, Fe	NM,3		4			
DBSERVATIONS / N	IOTES:		THE YEAR	MAP:		
				N boneg	Acea	_
				N Paves		SB-500
				1 4	502 61	ass Area
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ircle if Applicable:				Signature(s):		
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Project No.:	[] Surface Soil		tin, Block E	Sample I	Location: SR	
				C.O.C. N		
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[] Sediment				Type of S	Sample:	
[] Other:	20 (S2222)			[] Low	Concentration	
[] QA Samp	le Type:				Concentration	
GRAB SAMPLE DA	TA:			CHANGE CONTRACTOR	of teacher more substitute of	NASSALISATION OF THE
Date: 11-27-07	I	Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, Me	oletura etc.)
Time: 1430					(ourie, one, oney, mi	orsture, etc.)
Method: DPT		4-6 ft.	Orange	Fine-Me	d-grain sind;	wet m stif
Monitor Reading (pp	om): Q	.,	50	1 (00)	0 31 411 3410 5	00 01 3111
COMPOSITE SAME	PLE DATA:					A Place the second
Date:	Time	Depth Interval	Color	Description	n (Sand, Silt, Clay, Mo	oisture etc.)
					(out), one, oray, me	visitire, etc.)
Method:						
Monitor Readings						
(Range in ppm):						
				 		
	——					
SAMPLE COLLECT	ION INFORMA	TION:	No. Working Street Control of Control	ALLEGE STREET		
	Analysis		Container Requ	uirements	Collected	l out-
8760	Vocs		1 4 07 glass		Collected	Other
8015	TPH		1 802 glass			
9270	SVOCS		31	77		+
8087	PCBS					
ICP/MS	Metals				~	-
Be, Ni, Co, Fe			1			
				1		+
DBSERVATIONS / N	OTEC.	r di la Millione de la Constantina				
ABOLITY ATTOMS / TO	OTES.			MAP:		
				Pared Area	Acr	∆ 58-500
			i	N 5B-502	ASB-501	28-200
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						15/A
			10	N.T.S.		W-36A
				-	SB-202	
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ircle if Applicable:				Signature(s):		
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					Pa	ge or	
Project Site Name: Lockheed A			rin, Block E	Sample ID No.: Sample Location: Sampled By:		18-505-0810 1: 58-505 3-F05ter	
[] Surface S	Soil			C.O.C.			
f Subsurfac					320	(11	
Sediment [] Other:				Type of	f Sample:		
[] Other: [] QA Samp	le Type:			[] Low Concentration [] High Concentration			
GRAB SAMPLE DA	ITA:						
Date: 11-27-0	I	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)			
Time: 1435				(Same, Say, Moisture, etc.)			
Method: DPT		8-10 Ft.	Orange	Clay; Saturated, Soft non-plasti			
Monitor Reading (pp COMPOSITE SAME			9	, , ,			
Date:	Time	Depth Interval	Color	Descript	ion (Sand, Silt, Clay, Mo	oisture, etc.)	
Method:						······································	
Monitor Readings							
(Range in ppm):							
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SAMPLE COLLECT	ION INFORMAT	TON:		- TANKA			
	Analysis		Container Requ	uirements	Collected	Other	
8260	VOCS		1 4 02 glass	191			
8015	TPH		1 802 9/955	301			
0768	5VQC5			,			
3082 ICP/MS	PCBS						
Be, Ni, Ca, Fe	Metals				/,		
DC WI Ca LE	, MN		V				
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DBSERVATIONS / N	OTES:			MAP:		e i Alikawa ci ili	
					A	A 58-500	
				ĮV A	SB-501		
				N.T.S.	A @MU	n-36A	
					SB-505		
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ircle if Applicable:				Signature(s):			
MS/MSD Duplicate ID No.:							
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Project Site Name: Lockheed Mo			Sample ID N		ocation:	206	
Surface Soil		(15.5)		Sampled	By:	Foster	
[] Subsurfac	e Soil			C.O.C. N	o.: 322	+17	
[] Sediment [] Other:				Type of S	Sample:		
[] Other: [] QA Sampl	le Tyne:			Dow Concentration			
	5.0			_ [] High	Concentration		
GRAB SAMPLE DA	The second secon			n Afail Junia (1821)			
Date: 11-33	07	Depth Interval	Color	Description	oisture 'etc.)		
Time: c934 Method: DPT				Description (Sand, Slit, Clay, Moisture, etc.)			
Method: DPT Monitor Reading (pp.	m): ()	0-1 ++	Black	Fine G	Irained Sand		
COMPOSITE SAMP	LE DATA:						
Date:	Time	Ponth Internal					
	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)			
Method:	1						
Monitor Readings	1						
(Range in ppm):							
(riange in ppin).							
SAMPLE COLLECT	ON INFORMA	TION					
	Analysis	IION;				2012/11/22	
8260	VOCS		Container Requ		Collected	Other	
8015	TPH		22/0 20 7	195	-		
8270	SVOCS		, 0 02 griss	741	-		
8082 Trans	PCB5					+	
ICP/MS	Metals					1	
Be, Ni, Co, 1	-e, M,						
				1			
OBSERVATIONS / N	OTES:	医型型规则及	利用学研究。據新聞	MAP:			
DUM	s stoil	·llected					
				N.		(5.0)	
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				N.T.S			
				=	SB-506	SB-505	
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Circle if Applicable:		AND SHOWER		Signature(s):			
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Project Site Name: Lockheed Mag Project No.: Lockheed Mag 112 IC00 885			stin, Block E	Sample L	ocation: JA	6 0406	
[] Surface S	[] Surface Soil			Sampled	by:	ster	
- Subsurfac				C.O.C. N	0.: 3224	17	
[] Sediment [] Other:				Type of Sample: [] Low Concentration			
[] QA Samp	la Typa:						
	• •			_ [] High (Concentration		
GRAB SAMPLE DA	TA:						
Date: 11-28-0		Depth Interval	Color	or Description (Sand Silt Clay Mo			
Time: 0953	1			Sandy Clay 5 moist, Stiff			
Method: DPT		4-6 4+	Yellow-Brown				
Monitor Reading (pp COMPOSITE SAMP	m): ()			J	75(31)		
Date:			of the property of the			SHEESE JAC.	
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	isture, etc.)	
					, , , , , , , , , , , , , , , , , , , ,		
Method:							
Monitor Readings							
(Range in ppm):							
				 			
SAMPLE COLLECT	ION INFORMA	TION:	The second second second	Marin de Holle - Santa	PRINT PROPERTY.		
	Analysis		Container Requ	ulramente			
8260	VOCS		1 4 02 9/955		Collected	Other	
8015	TPH		1 8 02 9/05	195			
8270	SVOCS		3				
3082 ICP/MS	PCBS				/		
Be, Ni, Co, Fe	Metals				_		
BC, N1, CO, FE	- M/V		V				
OBSERVATIONS / N	OTES:	os diversión en la		MAP:	TO BE SEEN WEST STREET	245 S 21 S 21 S 25 S 25 S 25 S	
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				SB-501	SB-506		
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ircle if Applicable:		(N) (N) (N) (N) (N)	ARREST CONTRACTOR NAME	Signature (-)			
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-		Lockheed Martin, Block E		Sample I Sample I Sampled	ocation: 58	76 0810	
[] Surface So ⊕ Subsurface				C.O.C. N		osier 1417	
[] Sediment	e Soll						
[] Other:				Type of Sample: [] Low Concentration			
[] QA Sample	е Туре:				Concentration		
GRAB SAMPLE DAT	TA:	The State of the S					
Date: 11-28-0	A POSSESSION OF THE PARTY	Depth Interval	Color				
Time: 0954				Description (Sand, Silt, Clay, Moisture, etc.)			
Method: DPT		8-10 ft-	Yellow-Brown	n Sandy Clay; saturated; soft			
Monitor Reading (ppr COMPOSITE SAMP			**************************************)))) ((((((((((((((((, , , , ,	
			and the Abel of the		of which the con-		
Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)			
Method:	 						
wiethod:							
Monitor Readings	-	ļ					
(Range in ppm):							
(Hange in ppm):							
		 					
		 					
SAMPLE COLLECTI	ON INFORMA	ATION:	References and the last				
	Analysis	AT A TO STAND OF THE STAND OF THE STAND	Container Requ	iromente		15 Total 12 47	
8260	VQCs		1 4 02 9/955	jar.	Collected	Other	
8015	TPH		1 8 02 9/05	195			
\$270 \$082	SVOCS		3	-	9		
ICP/MS	PCB5 Metals						
Be, Ni, Lo. F	e. Ma		- 1		3		
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				A	ASB-506	-30313	
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Project Site Name: Local Project No.:		Lockheed Martin, Block E 112 ICO0885		Sample ID No.: 58-507-0001 Sample Location: 58-507			
1 Surface S	ioil	(*)		Sampled	By: J.F		
[] Subsurfac				C.O.C. No	D.: 3224	17	
[] Sediment				Type of S	ample	,	
[] Other:				Type of Sample: [] Low Concentration			
[] QA Samp	le Type:			[] High (Concentration		
GRAB SAMPLE DA	STATE OF THE PARTY.					With the state of the state of	
Date: 11-18-07		Depth Interval Color		Description (Sand, Silt, Clay, Moisture, etc.)			
Time: jii0							
Method: DPT		0-1 ++'	Brown-Gray	Sandy clay w/ trace fine growel.			
Monitor Reading (pp COMPOSITE SAMP	m): 🔾)			2	
					Maritim Law 18		
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	isture, etc.)	
Method:		-					
Monitor Readings	-						
(Range in ppm):							
(riange in ppin).							
SAMPLE COLLEGE							
SAMPLE COLLECT		TION:					
8260	Analysis		Container Requ	irements	Collected	Other	
3015	TPH		1 4 02 glass	394			
8270	SVOCS		22/6 20 8 1	jar	/		
8082	PCB5						
ICP/MS	Metals						
Be Ni Co, Fe.	Mw		- 1			-	
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OBSERVATIONS / N	OTES:	A SOCIETY STATE	16. 并发现在18. 18. 18. 18. 18. 18. 18. 18. 18. 18.	MAP:		() 建食 (数据) () ()	
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Project Site Na Project No.:		Lockheed Mar	tin, Block E	Sample Sample Sample	Location: SB-5	507	
[] Surface S				C.O.C. N	10: 32241	ster	
Subsurfac	e Soil			0.0.0.	32241	t .	
[] Sediment [] Other:				Type of \$	Sample:		
[] QA Samp	le Type:			_ [] Low	Concentration		
lj GA Samp	ie Type.			_ [] High	Concentration		
GRAB SAMPLE DA	TA:			STATISTICS ASSESSMENT		ATRICE STATE	
Date: 11-28-0	7	Depth Interval	Color	Description	n (Sand, Silt, Clay, Mo	CONTRACTOR STATE	
Time: 1115		4-6 ft.		Description	ii (Saitu, Siit, Clay, Mo	isture, etc.)	
Method: DPT			Grey	clay; v. soft; saturated; low plas.			
Monitor Reading (pp	m): Q		, , ,	0.1930	30(1)	-)	
COMPOSITE SAMP	LE DATA:						
Date:	Time	Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, Mo	Sture et \	
		-			··· (ourie, one, oray, mo	isture, etc.)	
Method:							
				 			
Monitor Readings							
(Range in ppm):							
(3 рр).							
CAMPI F COLL FOR							
SAMPLE COLLECT		TION:	2.67 班拉斯克克克斯		March 1981 Acres		
8260	Analysis		Container Requ	irements	Collected	Other	
8015	VOCS		1 4 02 glass	jar			
8270	TPH SVOCS		2201p 50 8 1	395			
8082	PCBs			-			
ICP/MS	Metals				V		
Be Ni Lo F	a. Mu				2		
7 (1308)	5.) 14.16		V		~		
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OBSERVATIONS / N	OTES:	SUPPLIES PARTY		MAP:	feathgetone sole easier.	Park of the Supplement of the Supplement	
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Circle if Applicable:		5。110 一世的"真魔才	die 2145 / 1875 (#	Signature(s):			
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Project Site Na Project No.:	ime:	Lockheed Mar	tin, Block E	Sample ID	ocation: SR-5	
[] Surface S	oil			Sampled B	By:	ster
1 Subsurfac	e Soil			C.O.C. No	3224	17
Sediment				Type of Sa	ample:	
[] Other:				I Low C	oncentration	
[] QA Samp	le Type:			[] High C	Concentration	
GRAB SAMPLE DA	TA:			Service Conference Conference	AND MINISTER OF	
Date: 11-28-0	Tc	Depth Interval	Color	The second of the second		
Time: +120			00101	Description	(Sand, Silt, Clay, Mo	isture, etc.)
Method: DPT		8-10 ft.	Brown-Grey	claus de	an; m. firm;	10.000
Monitor Reading (pp	m): 🔾	0 (*	Div it cheg	01.93	and) in citim)	MOIST
COMPOSITE SAMP	LE DATA:		elegación extensión de la lacella (M		\$25.00 miles (\$10.00)	
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	
		~			(ourid, ont, clay, Mo	isture, etc.)
Method:						
Monitor Deading	*					
Monitor Readings						
(Range in ppm):						
SAMPLE COLLECT	ION INFORMA	ATION:	Salara Salara			
	Analysis		Container Requ	irements	Collected	
8260	VOCS		1 4 02 9/955	191	Collected	Other
8015	TPH		22010 50 8 1	101		
8270	SVOCS		3	3	7	
8082	PCB5				0	
ICP/MS	Metals					
Be, Ni, Co, F	e, Mn				V	
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DBSERVATIONS / N	OTES:	of the there is the table	and the sample of the sample of			
			Barrier Andrews	MAP:		
				as.		
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				N.T.S.		
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			1	A 58-5	93	5B-501
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ircle if Applicable:	1.00			Signature(s):		
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Project Site Na Project No.:	me:	Lockheed Mar	tin, Block E	Sample II	ocation: 58-5	8-0001
Surface S	oil	.95		Sampled I	By: J. Fo	
[] Subsurfac				C.O.C. No	32241	
[] Sediment				Tuno of C		
[] Other:				Type of Sa	ampie: oncentration	
[] QA Sampl	е Туре:				Concentration	
GRAB SAMPLE DA	TA:	ALC: NO TO HELD AND A STREET				
Date: 11-28-0	7	Depth Interval	Color	Deportation	ADS TO BE SUPPLY OF THE PARTY O	
Time: 1340		1	00.01	1	(Sand, Sift, Clay, Mo	
Method: DPT		0-1 ft.	Orange-Gray	Clay. 519	-moist; Stiff	- land alastic
Monitor Reading (ppr	m): Q		cinge chig	- 5	3-111	ion blacked
COMPOSITE SAMP	LE DATA:				To want to see the second	Marie and the second
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	isture etc.)
	<u> </u>	-			, , , , , , , , , , , , , , , , , , , ,	notare, etc.)
Method:						
Monitor Readings		 				
(Range in ppm):						
(go pp.ii).						
CAMPI F COLL FOR	27.00.00					
SAMPLE COLLECTI		ATION:			San Bapang Bandung	arrents of the
8260	Analysis		Container Requ	irements	Collected	Other
8015	VOCS		1 4 02 9/955	191	-	
8270	TPH		22 pla 50 8 1	198		
8082	SVOCS					
ICP/MS	PCBs Metals					
Be Ni Co, Fe	M					
Bo, 101, Co, Fe	14.14		V		~	
1			-			
OBSERVATIONS / N	OTES:		Control of the control	MAP:	or Cospecial and the Asian Residen	OL 2-10-10-10-10-10-10-10-10-10-10-10-10-10-
		1100	The state of the s	mar.		天红旗队的。在
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ircle if Applicable:			经营业工程 加利亚加	Signature(s):		
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Project Site Na Project No.:	me:	Lockheed Mar	tin, Block E	Sample II	ocation: 58	508-0400	6
[] Surface S		(*)		Sampled C.O.C. No		Foster	
¶ Subsurfac	e Soil			C.O.C. No	o.: _32	2417	
Sediment Other:				Type of S	ample:		
[] QA Sampl	e Type			_ [] Low C	concentration		
				_ [] High (Concentration		
GRAB SAMPLE DA	TA:		e de la companya de l	e Programme		CLASSIC STREET	
Date: 11-18-0	1	Depth Interval	Color	Description	(Sand, Silt, Clay	Moisture 'et	c)
Time: 1345			V II O				u.)
Method: DPT Monitor Reading (ppr	m): 0	4-6 ft.	Yellow-Orange	Sandy Cl	ay swet 35	++0	
COMPOSITE SAMP	m): O		COPAC ADMINISTRA				
Date:	T		Control of the Control		E SHE SHE A.D.	10 Karan	洲。是
Date.	Time	Depth Interval	Color	Description	(Sand, Silt, Clay	, Moisture, etc	c.)
Method:	 						
wethod.							
Maritan B. III	 						
Monitor Readings							
(Range in ppm):							
CAMPUE COLLEGE							
SAMPLE COLLECTI		TION:	11.11年7月7月2日				
8260	Analysis		Container Requ	irements	Collected	Othe	er
8015	TPH		1 4 02 glass	394			
8270	SVOCS		22016 20 8 1	jar			
8082	PCB5						
ICP/MS	Netals						
Be, Ni, Lo.			1/		V		
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OBSERVATIONS / N	OTES:	Committee the committee	A 1017 - 01917 - 0094 NO	773			
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Project Site Na Project No.:	me:	Lockheed Mar	tin, Block E	Sample II	ocation: 58-5	08
[] Surface So		*		Sampled C.O.C. No	By: J. Fo.	ster
ff Subsurfac	e Soil			O.O.C. N	0.: 32241	
[] Sediment [] Other:				Type of S	ample:	
[] Other: [] QA Sampl	e Type:			[] Low C	Concentration	
HALL INC.	37.70			_ [] High (Concentration	
GRAB SAMPLE DAT	ra:			27 7 SHOT STAFF SHAZE	NATION SCHOOL STATE	A THE STATE OF THE
Date: 11-28-0	7	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	2010/06/2010/06/2019
Time: 350		8-10 Ft.			, (dana, ont, clay, with	isture, etc.)
Method: DPT	Pi ·		Tan-Brown	Soudy	lay; Saturated:	V. 100 Se
Monitor Reading (ppr				5)) = 1101 4160) (1.1430
COMPOSITE SAMP						
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	isture, etc.)
Method:		•				
Monitor Readings						
(Range in ppm):				 		
SAMPLE COLLECT	ON INFORMA	TON	No. 100 lb 100 l			
	Analysis	HON				
8260	VQCs		Container Requ		Collected	Other
8015	TPH		1 4 02 9/955	121		
୭୭.୮୦	SVOCS		1 8 02 9/05	jar		
8082	PCB5					
ICP/MS	Metals					
Be, Ni, Co, Fe	L, MN		V		7	
OBSERVATIONS / N	OTES:		Market Property and accompany			
		in introduction of the country		MAP:		斯· 图图 [4] [4] [4]
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Circle if Applicable:	T 675 TT (850)	(6)5000000000000000000000000000000000000		Signature(s):		
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	190 -57 195	2002-04-05-05				ı
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Page___ of __ Lockheed Martin, Block E Project Site Name: Sample ID No.: SB-509-0001 Project No.: Sample Location: 5B-509 Sampled By: J. Foster f Surface Soil C.O.C. No.: 26186 [] Subsurface Soil Sediment
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 Sediment Type of Sample: [] Other: [] Low Concentration [] QA Sample Type: [] High Concentration GRAB SAMPLE DATA: Date: 11-29-07 Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Time: 1100 Method: DPT Yellow-Drompe Sandy Clay; Slt. Moist; mod. Stiff 0-1 44. Monitor Reading (ppm): 0 COMPOSITE SAMPLE DATA: Date: Time Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Method: Monitor Readings (Range in ppm): SAMPLE COLLECTION INFORMATION: **Analysis** Container Requirements Collected Other 8260 VOCS TPH 8015 8 07 21955 8270 SVOLS 8082 PLBS ILP/MS Metals Be, Ni, Co, Fe, MA **OBSERVATIONS / NOTES:** MAP: N.T.S. Grass Area Circle if Applicable: Signature(s): MS/MSD **Duplicate ID No.:**



					∘ Pag	e of
Project Site Na Project No.:		Lockheed Mar	tin, Block E	Sample I Sample L Sampled	ocation: SB-5	09
Surface S				C.O.C. N	By: J. Fos: 26186	ier
SubsurfaceSediment	e Soil			22		,
[] Other:				Type of S	Sample:	
[] QA Sampl	le Type:			_ [] Low (Concentration Concentration	
GRAB SAMPLE DA	TA:	all the Medical Action	O CAPTER TRANSPORT	will be the same		Wild Constant
Date: 11-29-0	7	Depth Interval	Color	Description	n (Sand, Silt, Clay, Mo	
Time: 1105						
Method: DPT		4-6 64.	10n-ocouse	Fine/Med.	Grain Sand ; n	naist
Monitor Reading (pp	m): Q		J	1	3,1	1(2)
COMPOSITE SAMP	LE DATA:	ALCOHOL: NAME OF	Control of Control	特性,可有是理想		and translation
Date:	Time	Depth Interval	Color	Description	n (Sand, Silt, Clay, Mo	isture, etc.)
Method:		•				
Monitor Readings						
(Range in ppm):						
(riange in ppin).						
SAMPLE COLLECT	ION INFORM					
SAMPLE COLLECT		THON:			September 19	THE SANDER OF
8260	VQCs		Container Requ		Collected	Other
8015	TPH		1 4 02 9/955	9	/	
82.70	SVOCS		1 8 05 9/055	301		
8082	PCB5				7	
ICP/MS	Metals				-	
Be, Ni, Co F	e. Mn		1/		7	
, , ,						
						
						
OBSERVATIONS / N	OTES.	NO STEUDENIA NA VOLVENSO DO COM				
o Do Litty Mollo / N	OTES.	SECTION OF STREET		MAP:		
				N	14 × A	
				A	@ MW-34 A	
					D SB-509	
				1		1
				N.T.S.		
				Po	ver Area	ſ
					A 5B-500	ı
Ob- L Is a				61955 91	UA .	I
Circle if Applicable:	7	1. 分别 · · · · · · · · · · · · · · · · · ·		Signature(s):		
MS/MSD	Duplicate II	D No.:			>	1
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Project Site Nar Project No.:	ne:	Lockheed Mar	tin, Block E		Location: SB	509
[] Surface So		*		Sampled C.O.C. N		35/Er
- Subsurface	Soil			C.O.C. N	lo.: 2618	Ь
Sediment				Type of S	Sample:	
[] Other:	_			[] Low	Concentration	
[] QA Sample	e Type:				Concentration	
GRAB SAMPLE DAT	A:	LETER MANIERA, PROPERT	ARTISTO AND AND AND A		1. Kalizansi esa mane 1.22	
Date: 11-29-0		Depth Interval	Color			
Time: 1110				Descriptio	n (Sand, Silt, Clay, M	Moisture, etc.)
			Orange-Red	c 1. cl	0 E	
			ALMAGE-KER	Sandy Clay; Fine; Moist		
COMPOSITE SAMPL	E DATA:	学生就是自己的发生	or of some Supporting Action 25.			CONTRACTOR STATE
Date:	Time	Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, M	Moisture, etc.)
Method:						
wearou:						
Monitor Readings	 					
-						
(Range in ppm):						
						10
SAMPLE COLLECTI	ON INFORMA	TION:		独观的 ,但是438		Supplied on Highlin &
	Analysis		Container Requ	uirements	Collected	Other
8260	VOCS		1 4 02 9/955	194	,	
8015	TPH		1 8 0Z glass	198	7	
8270	SVOCS					
3082 ICP/MS	PCBS					
Be, Ni Co. Fe	Netals				/	
De, NI, Co, FE	N/A		- V		/	
OBSERVATIONS / N	OTES:	2000年中的1000年		MAP:	IN STREET, STR	Maria Santania (n. 1887)
				* Commission of the Commission	A DEATH DRUGS TO BUS SHARING	III SATINGELIAU
				Ŋ	@ MW-34 A	
				1	A 58-	- o0
				1	T 28-	507
				NiT.S.		
				l	1 1,000	
					Paved Area A SB-500)
Circle if Applicable:	NINGS OF THE		Pri Alle Constantino			
				Signature(s):	->	
MS/MSD	Duplicate I	D No.:				
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Project Site Na Project No.:	me:	Lockheed Mar	tin, Block E	Sample ID	cation: SB-	0 (JE) 509 510 (J
Surface SeSubsurface		S.*		Sampled E C.O.C. No.	sy: T. Fos	ter
[] Sediment	e Soil					
[] Other:				Type of Sa	mple:	
[] QA Sampl	le Type:	-		_ [] Low Co	oncentration oncentration	
GRAB SAMPLE DA	ancient and the property of th		The first persons	Market Street, Sec.		
Date: 11-28-0-		Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	isture etc.\
Time: 1525		- 1 61				nsture, etc.)
Method: DPT Monitor Reading (pp	ml: C	0-1 Ft.	Tan	Fine-Med	grain sand.	
COMPOSITE SAMP	m): O				,	
Date:		FESTALISM PROPERTY		《图》是为中华	a facilities that the second of the	
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	isture, etc.)
Method:		•				
Monitor Readings						
(Range in ppm):						
SAMPLE COLLECT					-	
	Analysis	TION:	Container Requ	liremente		
8760	VOCS		1 4 02 9/955	ivements inv	Collected	Other
8015	TPH		22010 50 8 1	121		
\$5.70	SVQCs		3	3.		
3082 ICP/MS	PC B5				/	
D- 41'	Metals					
RE, N1, Co,	Fe, Ma					
OBSERVATIONS / N	OTES:		15 作录 6 · 10 · 17 · 17 · 17 · 17 · 17 · 17 · 17	MAP:		
				N	MW-32 A	
				A	8	
					N SB-51	0
				N.T.S.	U 30 31	`
					MW-34 A	
					•	
					A SB-	509
Circle if Applicable: MS/MSD	Parties Partie			Signature(s):		
MO/NOU	Duplicate ID	No,:				
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Project Site Nar Project No.:	ne:	Lockheed Mar	tin, Block E	_ Sample L	ocation: SB-39	9-0406 32-510
[] Surface So {} Subsurface [] Sediment				Sampled C.O.C. No	0.: 26186	er
[] Other: [] QA Sample				Type of S Low C High (ample: Concentration Concentration	
GRAB SAMPLE DAT	AND THE RESERVE OF THE PARTY OF		CVIDIO DE LA PROPE	FIRE TRANSPORT		Manufacture Victor
Date: 11-28-0		Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	sture etc.)
Time: 5 30 Method: DPT Monitor Reading (ppn		4-6 ft.	Brown		fine sand; SIt	
COMPOSITE SAMPL			EATHER PARENCE STOLE		The Air State County	
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Moi	sture, etc.)
Method:		•				
Monitor Readings	<u> </u>					
(Range in ppm):						
SAMPLE COLLECTION	ON INFORMA Analysis	TION:	Container Requ	Irements		
8760	VOCS		1 4 02 9/955		Collected	Other
8015 82.70	TPH		22010 50 8 1	195	/	-
8082	SVOCS PCB5			<u> </u>		
ICP/MS	Metals				,	
Be, Ni, Co, F	NN,		V			
			- Au			
OBSERVATIONS / NO	OTES:			MAP:		
				N	@MW-32A	
				N-T-S-	A 58-510)
					@ MW-34A A SB-50	
					A SB-50	9
Circle if Applicable:		THE STATE OF STREET STATES		Signature(s):		
MS/MSD	Duplicate II	O No.:		-		



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Project Site Na	me:	Lockheed Mar	need Martin, Block E		Sample ID No.: SB-502-0810		
Project No.:		117 IC00 882		Sample L		59 510	
[] Surface So	oil		1111-12-0-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	Sampled	By: J, Fo	ster	
⊕ Subsurfac				C.O.C. No	0.: 26186		
[] Sediment	- 5511			Type of C	ample.		
[] Other:				Type of S	ample: Concentration		
[] QA Sampl	e Type:				Concentration		
GRAB SAMPLE DA	TA:			A SECTION AND LANGE		965 SHI E - 200 (200)	
Date: 11-28-0		Depth Interval	Color	Description	(Sand Silt Clay Me	Meture etc.	
Time: 153	5			Description (Sand, Silt, Clay, Moisture, etc.)			
Method: DPT		8-10 Ft.	Brown-Black	Sandy C	lay w/ high f	ne cobble conte	
Monitor Reading (pp	m): ()				, ,		
COMPOSITE SAMP	LE DATA:		11 15 多种种 计程序单			THE STATE OF	
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	isture, etc.)	
Method:	-	-					
Method:							
Monitor Readings							
(Range in ppm):		 					
(mange in ppin).							
5411B/ E 55/ / 5							
SAMPLE COLLECT		ATION:	TO SEE MINISTER		为100mm 100m		
8260	Analysis		Container Requ		Collected	Other	
8015	TPH		1 4 02 9/955	4			
85.70	SVQCS		1 8 02 9/05	jar			
8082	PC Bs						
ICP/MS	Metals						
	Fe, Ma						
,,,,,,	10,100						
						+	
OBSERVATIONS / N	OTES:		201910	MAP:			
Dveli	cate in	Hected, See 1	2/01	N	A STATE OF THE STA		
			o ciaw	٨	@ MW- 32A	1	
tor	nomenc)	oture.		1	Ф		
				N.T.5.	. /D.S	10	
				-	A SB-5		
					11. 70 1		
					@ MW-34A		
Circle if Application							
Circle if Applicable: MS/MSD	B. HATTERSON	2000年		Signature(s):			
MISTAISU	Duplicate			1	2	l	
	D	UP-04					



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Project Site Na Project No.:		rockheed War	tin, Block E	Sample I Sample I Sampled	ocation: SB-3	511
Surface Solution Subsurface				C.O.C. N		
[] Sediment	6 2011			T		
[] Other:				Type of S	Sample: Concentration	
[] QA Sampl	le Type:			[] High	Concentration	
GRAB SAMPLE DA	TA:		T-NOTE HINTERS	ATSOLY PERIODS	AUPLE TRANSPORT SPRINTS OF A TURN AND A	
Date: 11-29-0	1	Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, Moi	Militarity and
Time: 0230		0-1 ft.		ł		
Method: DPT	Monitor Reading (ppm):		Orange-Brown	Clay; S	It moist; stiff-	very stiff
COMPOSITE SAMP	LE DATA:		TO SECURE WAS A SECURE FOR THE PARTY OF THE	, , ,		
Date:	Time	Depth Interval				2) Paylor
	- 111116	Depth Interval	Color	Description	n (Sand, Silt, Clay, Moi	sture, etc.)
Method:	 		 			
Monitor Readings						
(Range in ppm):						
SAMPLE COLLECTI	ON INFORMA	TION:	THE RESERVED AND THE RE	Siliezane.caracia		
	Analysis		Container Requi	iromente	.	全国共和国共
8260	VOCS		1 4 02 9/955		Collected	Other
8015	TPH		2016 20 8 1	101	/	
<u> </u>	SVQCS		3	-		
ICP/MS	PCB5 Metals					
	Fe. My					
, , , , , ,	- , /V · W		- V		/	
		-				
OBSERVATIONS / N	OTES:	PAGE SE AMERICAN SE SELLEN				
- Amono in	OILS.			MAP:	A PART OF THE PART	
				N		
			1	٨	@ MW 31A	1
			i	1		
				N.T.S.	1 18 21	Δ
					A SB-511	SB-510
			1			
Circle if Applicable:	e Blorgues sun	C. SERVICE				
MS/MSD	Dunlin-1			Signature(s):		
mo/Mab	Duplicate ID	No.:				
			1	-7		- 1



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Project Site Na Project No.:	me:	Lockheed Mar	tin, Block E	Sample II	ocation: SB-5	11
[] Surface S	oil	*		Sampled I C.O.C. No	1.73	162
{} Subsurfac	e Soil			C.O.C. NO	26186	
[] Sediment				Type of Sa	ample.	
[] Other:	-			[] Low C	oncentration	
[] QA Samp	le Type:				Concentration	
GRAB SAMPLE DA	TA:	JELONG STREET, ST	STORY CONTRACTOR (ALC)	Z Double source and	181-263-17	
Date: 11-29-0	7	Depth Interval	Color	South one hadding	化基础的图像	的现在分词形式
Time: 0825			00101	Description	(Sand, Silt, Clay, Mo	isture, etc.)
Method: DPT		4-6 ++	0000000	Clau . <14	t. moist; Stiff/	22:4> 291
Monitor Reading (pp	m): 🗘		Disage Brown	Clay	3 3 3 4 4 9	3/11/1
COMPOSITE SAMP	LE DATA:	SHEED REPORTED	TO STATE PERIORS		N. S. A. S. S. S. S. S. S. S. S. S. S. S. S. S.	45% 800 SECTION
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	sture etc.)
			and the second second		, , , , , , , , , , , , , , , , , , , ,	
Method:						
Monitor Deadings						
Monitor Readings						
(Range in ppm):						
SAMPLE COLLECT		TION:		September 1	STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET,	SAME SAME IN
8260	Analysis		Container Requ	irements	Collected	Other
8015	TPH		1 4 02 glass	198		
05.68	SVQCS		1 8 02 9/95	398	/	
8082	PC B5					
ICP/MS	Metals				,	
Be Ni Co.	Fe Mn		- 1			
, , ,	1					
OBSERVATIONS / N	OTEC	Live in Code that was the second				
ODSERVATIONS / N	OTES;		国际的人员广泛市	MAP:		
				N	- 1	
				À	@ MW-31A	1
				1		
				N.T.S.	A SB-511	^
			1		U 20 31	Δ 58-510
						20 -1-
						- 1
						- 1
Circle if Applicable:	Like English		96887487867538889960	Signature(s):		
MS/MSD	Duplicate II	No.:				- 1
			- 1			I
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Project Site Na Project No.:	me:	Lockheed Mar	tin, Block E	Sample II	ocation: SB-S	11
[] Surface S		œ		Sampled C.O.C. No	By: T. Fost	25
{} Subsurfac	e Soil			C.O.C. N	o	
[] Sediment [] Other:				Type of S	ample:	
[] QA Sampl	le Type:			_ [] Low C	Concentration	
				_ [] High (Concentration	
GRAB SAMPLE DA	The base of the second of the second of	17 为中国的战争发展。				RESERVE FOR THE STATE OF THE ST
Date: 11-29-1	07	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture,		sture, etc.)
Time: 0 8 30 Method: DPT		A 1 - F				
Manites Deadle 1		8-10 Fti	Orange-Red	Sandy C	lay; saturated; 1	ow plasticity
COMPOSITE SAMP		Selfons protein and variety of the selfons			, ,	,
Date:	Time	· 2015-00-100-00-00-00-00-00-00-00-00-00-00-00	A DESCRIPTION AND A STATE OF A ST		A PART OF THE PART	17.03 ID 785 (E.)
J 4.0.	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Moi	sture, etc.)
Method:	 					
mourou.						
Monitor Readings	1					
(Range in ppm):						
(Hange in ppin).						
						110
SAMPLE COLLECT	IONUMEORIA					
OAMIT LE COLLECT	Analysis	HON:	1010年1月1日 1010年10日本			BELLIN BELLIN
8260	VOCS		Container Requ		Collected	Other
8015	TPH		1 4 02 9/955	9	, , , , , , , , ,	
୧୭.୮୦	SVOCS		1 8 02 glass	jar		
8082	PC BS	W				
ICP/MS	Metals					
BE, Ni, CO.	Fe, Mn		V		7	
•						
OBSERVATIONS / N	IOTES:	Programme and the	THE SECOND STREET	MAP:		
			COLTAGE OF THE SAME	MAC-UP SEE THE	10.0 (4) (4) (4) (4) (4) (4) (4) (4) (4) (4)	
				14	@ MW-31 A	
				Á	@ Was 2111	
				1		1
				N.T.S.	. (0.51)	۸
				~	D 28-211	Δ
			55			SB-510
Circle if Applicable:	E 2710 Friends		PERMITTED CONTINUES, ASS. DAY	01		
MS/MSD	Duplicate II	O No :		Signature(s):		
CHECKED THE TOTAL	poate It	- 11011				
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Project Site Na Project No.:		rockheed War	tin, Block E	Sample	Location: SB.	512
[] Subsurfac				C.O.C. N	lo.: 26181	0
Sediment				Type of §	Sample	
[] Other:	_			∏ Low	Concentration	
[] QA Sampl	le Type:			[] High	Concentration	
GRAB SAMPLE DA	TA:		U. Marie Charles Signal	5753052F3V-344		LOVE BELLEVIEW W. C. C. C. C. C. C. C. C. C. C. C. C. C.
Date: 11-29-0		Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.		
Time: 0955)	0-1 ft.		Cand, Sitt, Clay, Moisture,		isture, etc.)
	Method: DPT		Orange-L+ Brown	clay w/	trace sand; st	t. moist.
Monitor Reading (ppi COMPOSITE SAMP		NAME OF THE PERSON OF THE PERS	9	,		
Date:	The same of the sa	A CARCOLLAND AND SECUL	79.79		化多数对数数约40分 0	The Harth
Date:	Time	Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, Mo	elsture, etc.)
Method:						
Metriod.						
Monitor Readings		 				
(Range in ppm):						
(Hange in ppm).						
SAMPLE COLLECT	ON INFORMA	TON	CONTRACTOR STATES TO SERVICE STATES			
	Analysis				15% FREE 1887	对对关于177 多点。
8260	VOCS		Container Requi		Collected	Other
8015	TPH		1 8 05 9/422	121		
85.70	SVQCS		3	7.,		
3082 ICP/MS	PC BS				V	1
	Metals					T
Be, Ni, Co, Fe	= MM		V		_	
					 	
						
						
OBSERVATIONS / N	OTES:	PARTIES AND PROPERTY.	ALAP ACADIS - Ex 25 Exist			
	01120			MAP:		2.特别指60年
				N	SB-512	
				A	D MW-31A	A C S - L
			I	T	B WM. 21 W	@ MW-32A
				N.T.S.		SB-510
				-	A 58-511	Δ
						1
						I
Circle if Applicable:		Carrier Action Services	81816 vs. meneralismos	Claust i i		
MS/MSD	Duplicate II	D No.:		Signature(s):	2 —	
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Project Site Na Project No.:		Lockheed Mar	tin, Block E	Sample I Sample L Sampled	ocation: SB-5	12
[] Surface S				C.O.C. N		
[] Subsurfac [] Sediment	e Soll			S 1 50000		
[] Other:				Type of S		
[] QA Samp	le Type:			_ [] Low (Concentration Concentration	
GRAB SAMPLE DA	TA:		Service of the servic			
Date: 11-29-0	1	Depth Interval	Color	Color Description (Sand, Silt, Clay, Moisture, e		
Time: 1000				Description	(Sand, Silt, Clay, Mc	oisture, etc.)
Method: DPT		4-6 ft.	Orange-Lt Brown	r clay w/t	trace sand: slt.	Maist.
Monitor Reading (pp			5		, , ,	
COMPOSITE SAMP	T	A. 自由。例如 · 是 · 是 · 是		新在中华和州特	美观的 类型设计型	
Date:	Time	Depth Interval	Color	Description	ı (Sand, Silt, Clay, Mo	elsture, etc.)
Method:						
100						
Monitor Readings						
(Range in ppm):						
SAMPLE COLLECT	ION INFORMA	TION	PERSONAL PROPERTY OF THE PROPE			
	Analysis					作品等的特殊
8260	VOCS		Container Requ		Collected	Other
8015	TPH		1 8 02 9/453	101		
०८.८४	SVOCS		3	741		
8082	PCB5				V	
ICP/MS	Metals		-		7	
Be, Ni, Co, F	e, Mn		V			
OBSERVATIONS / N	IOTES:	1 TO 22 1 TO 1 TO 1 TO 1	新 (25 PA) (24 0)	MAP:	TOTAL SECTION OF THE	
						THE WASHINGTON
				N	5B-512	
				1	Q MW-31A	MW-32A
				1	4	3
			-	N.T.3.		
					A SB-511	A
					90	SB-510
Circle if Applicable:		ar a factor of the design of the		Signature(s):		
MS/MSD	Duplicate II	D No.:		orginature(s):		
		7.00				



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Project Site Na Project No.:	me:	rockheed Mar	tin, Block E		Location: SB-S	7-0810	
[] Surface So	oil			Sampled C.O.C. N	By: J. Fos	ter	
⊕ Subsurface	e Soil			0.0.0.1	lo.: <u>26186</u>		
Sediment Other:				Type of S			
[] QA Sampl	е Туре:			_ [] Low	Concentration Concentration		
GRAB SAMPLE DA	TA:		The Thirt south	este authorização	Section of the sectio	ALANDONIA DE LA COMPONIA DE LA COMPONIA DE LA COMPONIA DE LA COMPONIA DE LA COMPONIA DE LA COMPONIA DE LA COMP	
Date: 11-29-	.07	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture,		icture etc.	
ime: 1005					w (ound, ont, olay, we	isture, etc.)	
Method: DPT		8-10 t+1	Sprono	Sondy Clay; saturated; loose			
Monitor Reading (ppi COMPOSITE SAMP			J	,	, ,	3110	
Date:	THE REAL PROPERTY AND ADDRESS OF THE PERSON	25 1/28 PHILIPS 17			计算操作等的图形 。1967		
Date.	Time	Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, Mo	isture, etc.)	
Method:		-					
Metriod.							
Monitor Readings							
(Range in ppm):							
CAMPUE COLUMN							
SAMPLE COLLECT	the same of the last of the la	TION:			等于中国的国际人。		
8260	VQCs		Container Requ		Collected	Other	
8015	TPH		1 4 03 9/955	9	0		
85.70	SVOCS		1 8 02 glass	301	1		
8082	PC B5				-		
ICP/MS	Metals	***************************************					
Be. Ni, Co. F	e Mn		V		0		
OBSERVATIONS / N	IOTES:	United the Market Control of		MAP:		Red C SC Submittee C C C C C C C C C C C C C C C C C C	
		A CONTRACTOR OF THE PROPERTY O	enter until de par en enter en les exponentes en	MIN'S			
Dupli	cate colle	ected. See b	wola	Ŋ	(0.61)		
For	namenc	surfal		1	58.21X		
	COCCOTION ON MODERNIA	TOTAL 0.00) T14	3 MW-31A (B WM-27H	
			-	N.T.S.			
					A 58-511	Δ	
					en 85	SB-510	
Circle if Applicable:	A DESTRUCTION	CANTO A TRANSPORT	per l'En Pages Pages de pass d'année	Clanatura			
MS/MSD	Duplicate II	D No.:		Signature(s):			
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	Dail	0.3				l l	



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Project Site Nar Project No.:		Lockheed Mar	tin, Block E	Sample I Sample L Sampled	ocation: SB-	513	
Surface So				C.O.C. N	o.: <u>3618</u>	194	
[] Subsurfac	e Soil			0.0.0.70	7018	0	
Sediment Other:				Type of S	ample:		
[] QA Sampl	е Туре:			[] Low ([] High (Concentration Concentration		
GRAB SAMPLE DAT	TA:		Control of the second	Broad Constitution			
Date: 11-29-07		Depth Interval	Color	Description	n (Sand, Silt, Clay, Mo	leture etc.\	
Time: 1030							
Method: DPT		0-1 ft.	Olive	Sandy Clay impist; mod placticity			
Monitor Reading (ppr	m): 🗘			3	33	,	
COMPOSITE SAMP	LE DATA:		A SALES OF STREET		NEW PROPERTY OF	# 41 E F9 E	
Date:	Time	Depth Interval	Color	Description	ı (Sand, Silt, Clay, Mo	isture, etc.)	
Method:		-					
Monitor Readings							
(Range in ppm):							
SAMPLE COLLECT	ON INFORMA	TION:		1985 - July 1985 4 1876	turaerariaesaksam irron		
	Analysis	The second secon	Container Requ	ulramente		E Manager Conf.	
8260	VQCs		1 4 02 glass	/94	Collected	Other	
8015	TPH		20 8 1	921			
92.70	SVOCS		7		/		
8082	PC BS				V		
ICP/MS	Metals						
Be, Ni, Co, Fe	e, Ma		V				
OBSERVATIONS / N	OTES:	S VENEZASONIA IZENERA	automorphic to produce a	MAP:			
		TA MERCHAN COLUMN CONSTRUCTION		MAP;			
				N A	@ MW-30 A		
				N.T.S.	Δ SB: S13		
					A SB-507		
Circle if Applicable:		OR SHEET I STATES STREET	* A NE NACO DE LOS ANIONIDAS DE SENTIMA DE LA CONTRACTOR DE LA CONTRACTOR DE LA CONTRACTOR DE LA CONTRACTOR DE				
MS/MSD	Dunlleste II			Signature(s):			
	Duplicate II	J 140.:		2		ļ	
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Project Site Name: Project No.: [] Surface Soil {} Subsurface Soil [] Sediment [] Other:		Lockheed Mar	tin, Block E	Sample ID No.: 58-513-0406 Sample Location: 58-513 Sampled By: 7. Foster C.O.C. No.: 26186			
[] Other: [] QA Sampl	е Туре:				Concentration Concentration		
GRAB SAMPLE DA	TA:	非常 多种种类型 医多种种					
Date: 11-29-0		Depth Interval	Color			THE SPARE WITH	
Time: 1035			Coldi	Descriptio	n (Sand, Silt, Clay, Moi	sture, etc.)	
Method: DPT		4-6 Ft.	olive	Sandy Clay; moist; mod. placticity			
Monitor Reading (ppi COMPOSITE SAMP	m): O					Finely	
		HE SHARE OF ST	A PROPERTY OF A STEEL		并在这种特殊的证据的	Para Cara Cara S	
Date:	Time	Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, Mois	sture, etc.)	
Method:	 						
wethou.							
Monitor Readings							
(Range in ppm):							
(riange in ppin).							
SAMPLE COLLECT	ON INFORMA	TON					
	Analysis	IION.			建筑的影响	1992年·阿尔斯克·	
8260	VOCS		Container Requ		Collected	Other	
8015	TPH		1 8 02 glass	121	-		
0758	SVQCS		1 0 02 9135	7.11	-		
8082	PC BS				-		
ICP/MS	Metals						
Be, Ni, Co, Fe	, M _M		V				
OBSERVATIONS / N	OTES:			MAP:	「 高端を見ると、 電流を		
				N	A 05-WM @		
				A	B was 2011		
				M.T.S.	∆ SB-S13		
					A SB-507		
Circle if Applicable:			Military and a second				
MS/MSD	Duplicate II	NA.	HE AREA OF THE STATE OF	Signature(s):			
	Duplicate IL) NO.:			>	- 1	



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Project Site Na Project No.:		112 ICO0885	tin, Block E	Sample Sample Sample	Location: SB-31	3
[] Surface So				C.O.C. N		161
[] Subsurfac	e Soil				40100	
[] Sediment [] Other:				Type of S		
[] QA Sampl	e Type:				Concentration	
155	35053 4			_ [] High	Concentration	
GRAB SAMPLE DA	TA:		THE PERSON OF	FREE CAMER		10 July 1
Date: 11-29-1		Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.		sture etc.)
				}	A.W	
Method: DPT		8-10 64.	Brown-Orange	Fine-Med	grained sand. M	oist
Monitor Reading (ppi COMPOSITE SAMP			J	Woyer	grained sand. M stely Stiff.	
	T	TO COMP ENGINE			學等的特別的學生可以	
Date:	Time	Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, Moi	sture, etc.)
Method:						
Monitor Readings						
(Range in ppm):						
SAMPLE COLLECT	ON INFORMA	TION:		1266554 Naj-346		E INVESTIGAÇÃO
	Analysis		Container Requ	STREET, STREET	Collected	FEED BY WEST FOR
8560	VOCS		1 4 02 9/955		Collected	Other
8015	TPH		22010 50 8 1	195	1 0	
85.70	SVOCS		3,1		/	
8082	PCB5				3	
ICP/MS	Metals					
Be, Ni, Co, Fe	IMA					
OBSERVATIONS / N	OTES:		SERVICE CONTRACT	MAP:		TO THE PERSON OF
					EE SO PENCH STAFF FRIERINGS	HONDER WARE COME &
				N	@ MW-30A	
				N.T.S.	D SB-513	
					A SB-507	
Circle if Applicable:	and the second		IC SUCH FARMALISM SON DESERVA	Signature(s):		
MS/MSD	Duplicate II	D No.:		orginature(s):		
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		1				



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Project No.: {} Surface S	Surface Soil Subsurface Soil		Thin Block E	Sample I Sample I Sampled C.O.C. N	Location: SB-5	ter		
[] Subsurfact [] Sediment [] Other: [] QA Samp				[] Low (Type of Sample: [] Low Concentration [] High Concentration			
GRAB SAMPLE DA								
Date: 11-29-0	1	Depth Interval	Color	Descriptio	loisture, etc.)			
Time: 1145		C.						
Method: DPT		0-1 ft.	Kellow-Orange	Sandy C	lay's Mod-Stiff	Slt. Moist		
Monitor Reading (pp COMPOSITE SAME	Market Company							
	T	ENTERNA PER MINISTRA						
Date:	Time	Depth Interval	Color	Description	n (Sand, Silt, Clay, M	oisture, etc.)		
Method:								
Monitor Readings	-							
				_				
(Range in ppm):								
SAMPLE COLLECT		TION:						
201	Analysis		Container Req	uirements	Collected	Other		
8260	VOCS		1 402 9/9	ss jar	1			
	TPH		1 805 010	us jar	7			
8082	PCBS				7			
	Metals				U			
Be, Ni Co Fe			- 1/		-	-		
D-, 701, CV, FC	, /*/ //							
		1/2	THE PARTY OF THE P					
				-				
DBSERVATIONS / N	OTES:			MAP:				
				N	A SB-514	61935		
			4	1		Pared		
				1		9		
				N.T.S.		MW-30A		
				@ /	NM-PY4			
				0	WM-82C	ł		
						l		
ircle if Applicable:								
	Day 1			Signature(s):				
MS/MSD	Duplicate ID	No.:						
	i				The same of the sa	- 1		



Page_ of Project Site Name: Lockheed Martin, Block E SB-514-0406 Sample ID No.: Project No.: 112IC00885 Sample Location: SB-514 Sampled By: J. Foster Surface Soil C.O.C. No.: 26186 A Subsurface Soil [] Sediment Type of Sample: [] Other: [] Low Concentration [] QA Sample Type: [] High Concentration GRAB SAMPLE DATA: Date: 11-29-07 Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Time: \150 Method: DPT Clay; High Plasticity; SIt. Moist 4-6 4. Brown-Orange Monitor Reading (ppm): () COMPOSITE SAMPLE DATA: Date: Time Depth Interval Color Description (Sand, Silt, Clay, Moisture, etc.) Method: Monitor Readings (Range in ppm): SAMPLE COLLECTION INFORMATION: **Analysis Container Requirements** Collected Other 8260 VOCS 0/955 ,00 8015 HAT 8270 SVOCS PCBS 8082 ICP/MS Metals Be. Ni Co. Fe. Mn **OBSERVATIONS / NOTES:** MAP: A SB-514 Grass Paved 8 MW-30A N.T.S. Circle if Applicable: Signature(s): MS/MSD **Duplicate ID No.:**



					Р	age of	
Project Site Na Project No.:				_ Sample	Location: SB-1		
[] Surface S	Soil			Sampled		oster	
Subsurfac				C.O.C. N	No.: 2615	86	
[] Sediment				Type of	Sample:		
[] Other:					Concentration		
[] QA Samp	le Type:				Concentration		
GRAB SAMPLE DA	ΤΔ.		Parm contents assessment assessment				
Date: 11 - 29 - 0		Depth Interval	Color	December 1			
			Color	Description (Sand, Silt, Clay, Moisture		Moisture, etc.)	
Method: DPT		8-10 ft.	Dark Brown	Clay w/ trace sand; slt. moist			
Monitor Reading (pp	om): 🔾	0 10 11	Pale Diomi	Clay w	INACE ZUNG?	21.140161	
COMPOSITE SAMP			755 N 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
Date: Time Depth Interva		Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, I	Moisture, etc.)	
Method:	-						
Method:				-			
Monitor Readings				<u> </u>			
(Range in ppm):				 			
(i lange in ppin).							
SAMPLE COLLECT	ION INCORMAT	TON					
	Analysis	ION.	Container Regu	Uromonto	T 0-11-1-1		
8960	Vocs		Container Requirements		Collected	Other	
8015	TPH		1 803 01055 101				
8270	SVOCS		1 3	125)41.	-		
8089	PCBS						
ICP/MS	Metals				/		
Be, Ni, Co, Fe	Mn		V				
BSERVATIONS / N	OTES:	The state of the s		MAP:			
					ASB-514	Grass	
				N		Paved	
				T		A	
				NITIS &	MW-62A	MW-30A	
				10113	D MW-626	And the Control of	
					= 0.7€50		
			1				
ircle if Applicable:				Signature(s):			
MS/MSD	Duplicate ID	No.:		(1)	2		
	DV	P- 06					



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Project Site Na Project No.: Surface S Subsurface Sediment Other: QA Sample	oil e Soil	Tockheed Wa	utin, Block E	Sample ID No.: SB-515-0001 Sample Location: SB-515 Sampled By: 5. Foster C.O.C. No.: 36186 Type of Sample: [] Low Concentration [] High Concentration		
CDAD CAMPI E DA						
GRAB SAMPLE DA	TA;					de la
Date: 11-29-07			Color	Descriptio	n (Sand, Silt, Clay, Mo	isture, etc.)
Time: 1330		200 00 400	Brown	Fill ma	10	
Method: DPT		0-1 8+.	Black	Till ma	Tual	
Monitor Reading (pp			117600			
COMPOSITE SAMP	LE DATA:					
Date:	Time	Depth Interval	Color	Description	n (Sand, Silt, Clay, Mo	isture, etc.)
Method:						
Monitor Readings				 	-	
(Range in ppm):				—		
(riange in ppin).						
				1		N
SAMPLE COLLECTI	ON INFORMA	TION:				
	Analysis		Container Requ	uirements	Collected	Other
8260	VOCS		Pla 50 4 1		Conected	Other
3015	TPH			9	-	
8270	SVOCS		1 805 36	155 ,98		
8082	PCBS			-	V	
ICP/MS	Metals				- /	
Be, Ni, Co, Fe,					1	
pe, rei, co, re,	IA/AI					
DBSERVATIONS / NO	OTES:	Carabia Mazara	A CONTROL OF THE STATE OF	MAP:		13000 1000
					A . D	
				N A	A 58-514 1 58-515	
				N.T.S.	@ WM-630	
ircle if Applicable:				Signature(s):		
MS/MSD	Duplicate ID	No.:		1	2	



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Project Site Na Project No.: [] Surface S	Soil	Tockheeg Wo	rtin, Block E	Sample I Sample L Sampled C.O.C. N	By: SB-51	ter
- Subsurfac	ce Soil			0.0.0.1	26186	
[] Sediment				Type of C	omnle.	
[] Other:				Type of S		
[] QA Samp	le Type:				Concentration	
u an oamp	е туре.			_ [] High	Concentration	
GRAB SAMPLE DA	TA:					era managaran ka
Date: 11-29-		Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)		
Time: 1335						
Method: bPT		4-6 ft.	Orange	Sandy C	lay, so trut	ed selt
Monitor Reading (ppm):			, , ,	0	0,	
COMPOSITE SAMP	LE DATA:					
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	isture, etc.)
Method:					-	
Monitor Readings						
				-		
(Range in ppm):						
						W
SAMPLE COLLECT	ION INFORMAT	ΠΟN:				The second
	Analysis		Container Req	uirements	Collected	Other
8790	VOCS		1 4 0 Z ala			
8015	TPH		1 802 010	155 98		
8270	SVOLS				/	
2082 ICP/MS	PCBS				/	
	Metals					
Be, Ni, Co, Fe	MA		V			
		1000				
111						
						-
BSERVATIONS / N	OTES:			MAP:		
					A 58-51	4
				N		
				1 1	1 SB-515	
				N.T.S.	4.1.7.1	
					@ MW-626	
					@ WM-87C	
ircle if Applicable:				Signature(s):		
MS/MSD	Duplicate ID	No.:		3.12.12.0(0).	>	I
	ASSESSED AND AND AND AND AND AND AND AND AND AN	MINISTER AND ADDRESS OF THE ADDRESS		12		1
	I .		10			



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Project Site Name: Project No.: [] Surface Soil [] Subsurface Soil [] Sediment [] Other: [] QA Sample Type:		tin, Block E	Sampled C.O.C. N Type of S	Docation: 58-5 By: 3. Fos lo.: 26/80	ster		
[] QA Samp	le Type:				Concentration		
GRAB SAMPLE DA	TA:					Attivities services	
Date: 11-29-0-	1	Depth Interval	Color	Color Description (Sand, Silt, Clay		oisture, etc.)	
Time: 1340			0				
Method: bpT Monitor Reading (pp	m). ^	8-10 ft.	URange	Sandy	Clay; satur	ctedi	
COMPOSITE SAMP				4	Jeny Soft		
Date:	Time	D-# I-I-				LE HOMESTER CON	
Date.	Time	Depth Interval	Color	Description	Description (Sand, Silt, Clay, Moisture, etc.)		
Method:							
Monitor Readings	1			+	×		
(Range in ppm):							
SAMPLE COLLECT		TION:					
0.10	Analysis		Container Rec		Collected	Other	
	TPH		1 802 0/055 jar		-		
	SVOCS		1 802 9	1422 7 41		-	
8082	PCBS					+	
ICP/MS	Metals						
Be, Ni, Co, Fe	- Mn		V				
BSERVATIONS / N	OTES:	The Control		MAP:			
	.,,			N	Δ SB-51	14	
				NITIS.	@ MW-62A	C	
Circle if Applicable:				Signature(s):			
MS/MSD	Duplicate ID	No.:		orginature(s):	7		
		0s149UES			-		



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Project Site Name: Project No.:		Forkpeed War	Fin, Block E	Sample ID No.: SB-516-000 Sample Location: SB-516 Sampled By: J. Foster		
Surface S				C.O.C. No		
[] Subsurfac				5.553.533	90100	
[] Sediment				Type of S		
[] Other:	I- T.				Concentration	
[] QA Samp	le Type:			_ [] High (Concentration	
GRAB SAMPLE DA	TA:					CHEST PROJECT
Date: 11-30-07		Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	oisture, etc.)
Time: 1105						
Method: DFT		0-1 ft.	Orange	Clay ; 5	ilt. maist ; mo	8. stift
Monitor Reading (pp			3	, ,		
COMPOSITE SAMP						
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	isture, etc.)
Method:						
Monitor Readings	-					
(Range in ppm):						
(Hange in ppm):						
SAMPLE COLLECT		TION:				
8260	Analysis		Container Requirements		Collected	Other
8015	TPH			55 304		
8270	SUOCS		1 802 319	155 jar		
8082	PCBs					-
ICP/MS	Metals			-01		
Be, N; Co, Fe			1/			
	1			100	7-(3F)	
					.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
DBSERVATIONS / N	OTES:			MAP:		
				N	1 58-515 A S	8-518
				N.		
					A 58-516 A	<0.519
				N.T.S.	4 22 2.0 4	35 3.1
				= *	× * * *	***
			(6	mus.	fe.	nee
irolo id Augustanti	T					
ircle if Applicable:	I		7 m 27 m 27	Signature(s):		Michel St. Commission of the C
MS/MSD	Duplicate ID	No.:	**		= 7	1
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Project Site Name: Project No.: Surface Soil Subsurface Soil Sediment Other:		Lockheed Mar 112 ICOURSS	tin, Block E	Sample ID Sample Lo Sampled E C.O.C. No Type of Sa [] Low Co	7-0001 17 ter	
[] QA Sampl	е Туре:				oncentration	
GRAB SAMPLE DA	τΔ.	upilitation in a language and a				No and American
Date: 11-30-07		Depth Interval	Color	Description	(Canal City Olave M	
Time: 0320		Deptil interval	COIOI	The state of the s	(Sand, Silt, Clay, Mo	disture, etc.)
Method: DPT		0-1 ft.	Black	5.17y C1	ay Loan	
Monitor Reading (ppr	m): O	- 1 11	Diaci-	high ongo	in ics	
COMPOSITE SAMP						
Date:	Time	Depth Interval	Color	Description	(Cand Cilt Clay M.	
Date.	Time	Deptil interval	Color	Description	(Sand, Silt, Clay, Mo	listure, etc.)
Mathadi	 					
Method:						
Monitor Readings						-
(Range in ppm):						
18			 			
SAMPLE COLLECTI	ON INFORMA	TION:				
	Analysis		Container Requ	irements	Collected	Other
3560	VOCS		1 4 07 0/9		-	- Cilici
8015	TPH		18675	955 198		
8270	SUOCS		13	2.		1
8082	PLBS				7,	
ICPINS	Metals				-	
Be, Ni, Co, F.	e Ma		1			
974144						
OBSERVATIONS / N	OTEC.					
ODSERVATIONS / N	OTES.		E CONTRACTOR OF	MAP:		
				И	Sewer grate	- fence
ot-1-1/ a						
Circle if Applicable:			是14年的1日 · 人名日本	Signature(s):		
MS/MSD	Duplicate II	D No.:	HLL			i
	l .			- A		I



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Project Site Name: Project No.: [] Surface Soil [] Subsurface Soil [] Sediment [] Other: [] QA Sample Type:		Tookhash Was	tin Stock E	Sample II Sample L Sampled C.O.C. No	1-0406 517 ster	
					ample: Concentration Concentration	ncentration
GRAB SAMPLE DA	TA:	2.00m是26mm(MARAM				
Date: 11-30-6		Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	oisture, etc.)
Time: 0 830			Orange/Brown	< 11	r	C- 1
Method: 0 PT Monitor Reading (pp	m): 0	4-6 fts	Citage/ Boun	3.149	Clay, mod. 5	otE,
COMPOSITE SAME				Slight	y moist	
Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)		
Method:						
Monitor Readings						
(Range in ppm):						
		-				
SAMPLE COLLECT		TION:				
9316	Analysis		Container Requ		Collected	Other
	TPH		1 4 02 0/95	2 305	-	
	SVOCS		1 802 819	22 724		
	PLBS		,		/	
ICP/MS	Metals					
Be. Ni, Co,	Fe Ma		¥			
						-
	- All s					+
OBSERVATIONS / N	IOTES:		4 2 46 1	MAP:		
				A (A	58-516	
				1 - 2	and the same	* 1
			1	N.T.S.	D SB-517	1 fance
			I		国	_ , _ , _ ,
			I		Ħ	
			ta .			988
Circle if Applicable:				Signature(s):		
MS/MSD	Duplicate ID	No.:		-ignature(s).		-
		420,07000			3	ļ



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Project Site Name: Project No.: [] Surface Soil {} Subsurface Soil {} Sediment {} Other: {} QA Sample Type:		Lockheed Mart	in, Block E	Sample II Sample L Sampled I C.O.C. No	ocation: SB-S By: J. Fo:	17
				Type of Sample: [] Low Concentration [] High Concentration		
GRAB SAMPLE DAT	ΓA:	ulangung i jagga olganis				
Date: 11-30-07		Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	oisture, etc.)
Time: 0835 Method: 087		8-10 fti	Olive		slightly noist	
Monitor Reading (ppn				2-11-1		
COMPOSITE SAMPI	LE DATA:					
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	oisture, etc.)
Method:						
Monitor Readings (Range in ppm):						
SAMPLE COLLECTION	ON INFORMA	TION:		SVERENCE OF		
	Analysis		Container Req	uirements	Collected	Other
8260	VOCS		1 402 ala	ss iar		
8015	TPH		1 802 010	20, 50		
8270	PCBS					
3082 ICP/MS	Metals					
	- WW					
Re, 101, Co. 19	JACK		V			
	- IIII.					
OBSERVATIONS / NO	OTES:			MAP:		
				N.T.S	Δ SB-517	ferce
					Be so	grate
circle if Applicable:			1100	Signature(s):	7111-1-1	
MS/MSD	Duplicate ID) No.:			2	



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Project Site Name: Project No.: { Surface Soil Subsurface Soil Sediment Other: QA Sample Type:		Lockheed Man	rtia Block E	Sample L Sampled C.O.C. N	Ocation: SR-6 By: J. Fo O.: 2618	2461	
			-4	[] Low (Type of Sample: [] Low Concentration [] High Concentration		
GRAB SAMPLE DA	TA:						
Date: 11-30-0		Depth Interval	Color	Description	n (Sand, Silt, Clay, M	oisture, etc.)	
Time: 992	2			· ·	Carled St.		
Method: bfT		0-1 ft	Gray	Concada	C11 1 1 1 1	2	
Monitor Reading (pp			O	Sony Clay	wet	white the state of	
COMPOSITE SAMP	LE DATA:			0 0			
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, M	oisture, etc.)	
Method:							
Monitor Readings	1			 			
(Range in ppm):				 			
(до рр).							
SAMPLE COLLECTI	ON INFORMA						
SAMPLE COLLECT		HON:					
3260	Analysis		Container Requirements		Collected	Other	
3015	TPH		1 4 02 glass jar				
8270	SUDCS		1 8 02 3/955 398				
2083	PCBs				-		
ICP/MS	Meta	1,					
Be, Ni Co, F			1				
			- W				
	100		The second secon				
DBSERVATIONS / N	OTES:			MAP:			
					52 514		
				1	A SB-518 A	SB: 513	
				2.7.4			
				=		-	
					Δ	SB 507	
ircle if Applicable:		THE WILLIAM TO THE		Signature(s):			
MS/MSD	Duplicate ID	No.:					
						l	



					Pa	ge or
Project Site Name: Project No.: [] Surface Soil [] Subsurface Soil [] Sediment [] Other: [] QA Sample Type:		Lockheed Ma	vtia, Block E	D No.: 5B-50 cocation: 5B-50 S	ster	
				_ [] Low C	Concentration Concentration	
GRAB SAMPLE DA	TA:					Fig. 1981
Date: 11-30-0	1	Depth Interval	Color	Description	(Sand, Silt, Clay, M	oisture, etc.)
Time: 093	5				moderally stiff	
Method: bP <		4-6 ft.	On anye/	1 1	mountain sum	
Monitor Reading (pp			Olive	noist		
COMPOSITE SAMP	LE DATA:					
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	oisture, etc.)
Method:						
Monitor Readings	1		-			
(Range in ppm):						
(nange in ppin).						
	1			l		
SAMPLE COLLECT		10N:		0.000		
(2.51.6	Analysis		Container Requ		Collected	Other
8260	Jacs			36, 320	-/-	
8270	TPH		18 02 16	No 6 550 16		
8087	PCBS				/	-
ICP/MS	Metal					
	Fe Ma)				-
BC, M, CO,	LE 1014					
						T
OBSERVATIONS / N	IOTES:			MAP:		
				N	1 SB-514	
				A	S	
				N.T. S.	Δ SB-514 Δ SB-518	V 28-213
				_		100
						A SB. 507
						185
Circle if Applicable:				Ol		
MS/MSD	Dunlinete in			Signature(s):		
INI 3/IVI 3D	Duplicate ID	NO.:				ļ
					- Contract of the Contract of	



						age of	
Project Site Name: Project No.: [] Surface Soil [] Subsurface Soil [] Sediment [] Other: [] QA Sample Type:		Lockheed Ma	wtin, Block E	Sample Sample Sample C.O.C.	Location: SR	518-0810 5-518 Foster 186	
				_ [] Low	Sample: Concentration Concentration		
GRAB SAMPLE DAT	A:					mines en externe	
Date: 11-30-0	1	Depth Interval	Color	Description	Description (Sand, Silt, Clay, Moisture, etc.		
Time: 0945 Method: DPT		8-10 ft.	Bran	Fin to A	Fin to redun grand Sand; Saturated; lase		
Monitor Reading (ppm COMPOSITE SAMPL					or, saucaus	, rese	
Date:	Time	Depth Interval	Color	Description	on (Sand, Silt, Clay,	Moisture, etc.)	
Method:							
Monitor Readings							
(Range in ppm):							
SAMPLE COLLECTION	ON INFORMAT	TION:		or 181910-1819			
	Analysis		Container Requ	irements	Collected	Other	
8260	VOLS		1 402 alass ; or				
8015	TPH		1 802 8)035 904				
8982	PCBS						
ICP/MS	Meta						
Be, Ni, Co, Fo					/		
BSERVATIONS / NO	TES:			MAP:			
				-	Δ SB-S14 Δ SB-S18		
				N.T.S.	V 28-218	V 28-213	
						A 58-507	
ircle if Applicable:		The recognition of		Signature(s):	Company of the Company		
MS/MSD	Duplicate ID	No.:		- No.			



					ray	e 0i
Project Site Name: Lo		Lockheed Mortin Block E		Sample Location: SB-519		
f Surface S	oil			C.O.C. N		1461
[] Subsurfac	e Soil			0.0.0.1	36106	
[] Sediment				Type of	Sample:	
[] Other:	-			[] Low	Concentration	
[] QA Sampl	le Type:			[] High	Concentration	
GRAB SAMPLE DA	TA:					
Date: 11-30-07		Depth Interval	Color	Description	on (Sand, Silt, Clay, Mo	isture, etc.)
Time: 1020		4				
Method: DPT		0-1 4+	Orange	Sand	Italy soft	ly mount
Monitor Reading (ppi COMPOSITE SAMP				Moder	ethy soft	
					4	
Date:	Time	Depth Interval	Color	Descriptio	n (Sand, Silt, Clay, Mo	isture, etc.)
Method:						
Monitor Readings	 			-		
(Range in ppm):				1		
(go pp).				 		
	—					
SAMPLE COLLECTI	ON INFORMA	TION:				
DAMI EL COLLECTI	Analysis	ITION;	Container Req	ulromente	T	
8260	JOLS		1 4 07 0 1 95		Collected	Other
8015	TPH		1 8 07 019		-	
8210	SVOCS		1) 13	37 741	1	1
8082	PCBs				/	1
ICP/MS	Metals				/	
Be, Ni, Co, Fe	M.		7		/	T
	7.00					
OBSERVATIONS / N	OTES:		n i e svarenet je	MAP:		
					A 58-518	Δ
				1	28.218	SB-513
				N.T.S.	1 sg-519	Δ 58-507
				,	C Fen	ie
Single 14 August Li						- 10
Circle if Applicable:				Signature(s):		
MS/MSD	Duplicate ID) No.:				



					ray	le 01
Project Site Name: Lockhe Project No.: IIaIc [] Surface Soil [] Subsurface Soil [] Sediment		Lockheed Marti	in Block E	Sample Sampled C.O.C. N	Location: SB-519 d By: 3, Fost No.: 26186 Sample:	er
[] Other: [] QA Samp	lo Typo:			_ [] Low	Concentration	
[] QA Samp	e Type:			_ [] High	Concentration	
GRAB SAMPLE DA	TA:					
Date: 11-30-07		Depth Interval	Color	Description	on (Sand, Silt, Clay, Mo	isture, etc.)
Time: 1035 Method: DPT	- 10-		Breun	CO	ul ba (:	. 0
Monitor Reading (pp	m)·	4-6 4.	- Ceren	Clay.	" I trace (in slightly mosst	gares
COMPOSITE SAMP			Oran	Sand	slightly moist	
Date:	Time	Depth Interval	Color	Decembelo	= (C==1 CIII CI - 11	
	70	Deptir interval	COIO	Description	n (Sand, Silt, Clay, Mo	isture, etc.)
Method:	T			+		
Monitor Readings						
(Range in ppm):						
, g _F _/						
			-	 		- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10
				-		
SAMPLE COLLECT	ON INFORMA	TION:				
	Analysis		Container Requ	uirements	Collected	Other
82.60	VOCS		1 402 0/03			Cuici
8015	TPH			107 30	7	1
8270	SVOCS		13	J		
3082 ICP/MS	PCBS					
	e Mu	,				
13C, 141, CO, F	5, 10,00		V			
The second second				···		-
						
OBSERVATIONS / N	OTEO					
OBSERVATIONS / N	OTES:			MAP:		
				1	A 58-518	58-513
				N.T.S.	A SB-519	SB-507
					£ 40	ence
Circle if Applicable:				Signature(s):		
MS/MSD	Duplicate ID	No.:			2-7	.c.



		-			Pa	ge of	
Project Site Name:		Forkheed War	tin Block E	Sample ID No.: SB-519-0810 Sample Location: SB-519 Sampled By: 7, Foster			
[] Surface S				C.O.C. 1			
† Subsurfac				0.0.0.	<u> </u>	0	
[] Sediment				Type of	Sample:		
[] Other: [] QA Samp	le Type:				Concentration		
u an camp	ne Type.			_ [] High	Concentration		
GRAB SAMPLE DA	TA:						
Date: 11-30-07	1	Depth Interval	Color	Description	on (Sand, Silt, Clay, Mo	oisture, etc.)	
Time: 1030							
Method: DPT		8-10 ft.	Orange.	Time le	median grand i	sand!	
Monitor Reading (pp			8	wet;	median grand ?	/	
COMPOSITE SAME	LE DATA:			tel verke 55			
Date:	Time	Depth Interval	Color	Description	on (Sand, Silt, Clay, Mo	oisture, etc.)	
Method:			200				
				-			
Monitor Readings							
(Range in ppm):							
				 			
SAMPLE COLLECT	ION INFORMA	TION:					
	Analysis	****	Container Req	uirements	Collected	Other	
8360	VOCS		1 4 07 0/99		Collected	Other	
8015	TPH		1 807 610			-	
8270	SVOCS		1)	3			
8082	PLBS						
ICP/MS	Metals				/		
Be, Ni, Co. F	e, Mr		V				
- mine-ui							
				100	 	 	
BSERVATIONS / N	OTES:	Kar all file e in the		MAP:			
	•			.)		- 213	
				10		SB-513	
				1 1	D 58-518	Δ	
				N.T.S.			
				-=-		58-507	
			1	ĺ	D SB-519		
				-	6 7 6	Δ	
					T. fen	ce	
ircle if Applicable:				61			
MS/MSD	Dunlinete ID	Na -		Signature(s):			
mo/wou	Duplicate ID	NO.:			>	- 1	
					7	- 1	



Tetra Tech NUS, Inc. SOIL & SEDIMENT SAMPLE LOG SHEET

					Pa	ige or
Project Site Name: Lockheed No.:			rtin Block E	Sample Sample	Location: SB-	
Surface S				C.O.C. 1		
[] Subsurfac					0.019	0
[] Sediment					Sample:	
[] Other: [] QA Samp	la Tumar	MC			Concentration	
[] QA Samp	ie Type:			_ [] High	Concentration	
GRAB SAMPLE DA	TA;				100	to a superior
Date: 11-30-0	7	Depth Interval	Color	Description	on (Sand, Silt, Clay, N	loisture, etc.)
Time: 1135						
Method: DPT		0-1 64.	Drange	Silty	clay Loam	
Monitor Reading (pp COMPOSITE SAMP			3.1.3)	
		y exercise expenses				
Date:	Time	Depth Interval	Color	Description	on (Sand, Silt, Clay, M	loisture, etc.)
Method:	 					
Monitor Readings						
(Range in ppm):						
				 		
SAMPLE COLLECT	ON INFORMA	TION:	ADDITION TO STATE OF THE		July 1 miles and the second	
	Analysis		Container Requ	uirements	Collected	Other
8260	VOCS		1 402 10			- Curer
8015	TPH			.4	~	
8270	SVOC					
8082	PCBS				/	
ICP/MS	Metal	15			/	
Be, Ni, Co, F	6 14				-	
				to the second second		
				811		
OBSERVATIONS / N	OTES:			MAP:		
				.1	Fence.	
				N ×	1000	4
				1	A SB- 517	
				N.T.S.	mm	
				-	1	Δ
					(smer	58-520
			14		35000	-0 300
S-1-1/1-1/1-1						
Circle if Applicable:				Signature(s):		
MS/MSD	Duplicate ID	No.:				1
	l			-	and the same of th	Į.

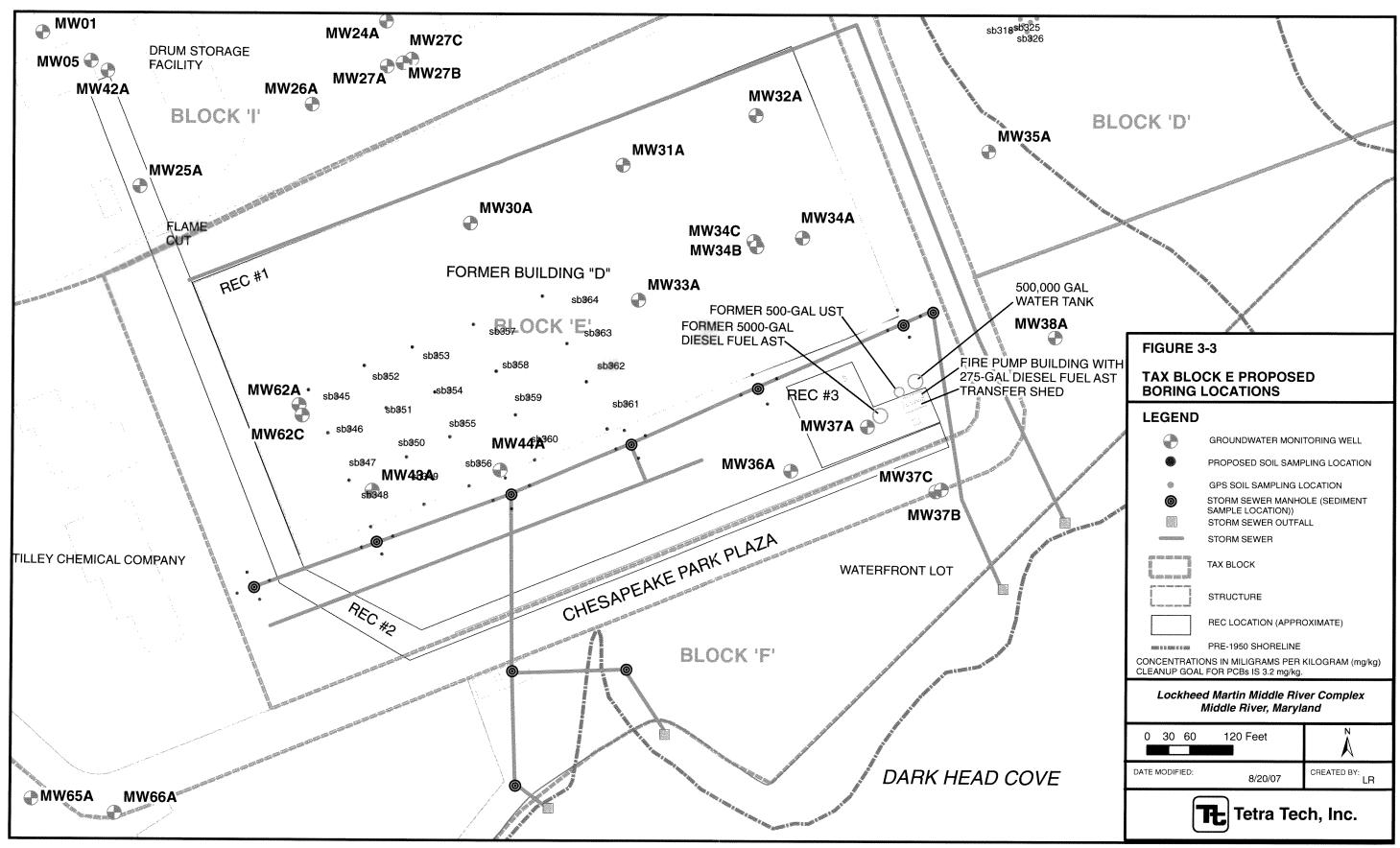


					Pa Pa	ge of
Project Site Name: Lockheed Project No.:		FOCKHEED MAN	tin, Block E	_ Sample L	ocation: SB-5	
Subsurfa Sedimen Other:					0.: 2618	
GRAB SAMPLE D	ATA:	The Design of the Control of the Con				
Date: 11-30		Donth Interval	Colon			
Time: 1140		Depth Interval	Color	Description	(Sand, Silt, Clay, M	oisture, etc.)
Method: DPT		4-6 Ft.		1000	1	_
Monitor Reading (p	pm):		Diande	Sandy C	lay; SI+ mois	•
COMPOSITE SAM			Band of the mean of			
Date:	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, M	oisture, etc.)
Method:						
					XIII XIII	
Monitor Readings						
(Range in ppm):						
						1000
						
						
SAMPLE COLLEC	TION INFORMAT	TION:	W. (23) 11 (23) 11 (4) 11 (1)			
	Analysis	iioii.	Contain an Do			
8260	VOCS		Container Req		Collected	Other
8015	HIT		1 12 1111		-	
8270	SVOCS		1 8 03 glas	12 700		
8082	PCBS					
ICP/MS	Metals					
Be, Ni, Co, 1	E. Mn		V			
. ,						
						1
- Alexandria			SIII - 3 38II			
BSERVATIONS / I	NOTES:			MAP:		
				2	tence I	
				V -X-		~
				1	158-517	
				N.1.5.	TITE	
				-	1	∇
					Stoim)	58-520
					Deriv	
ircle if Applicable:				01		
MS/MSD		Na -		Signature(s):	>	
WIS/WISD	Duplicate ID	NO.:		-3	2	
	1				1	



Tetra Tech NUS, Inc. SOIL & SEDIMENT SAMPLE LOG SHEET

					Pa	ge of
Project Site Na Project No.: [] Surface S		TISTE 00885	wtin Block E	Sample I Sample L Sampled C.O.C. N	ocation: SB-S By: 5, Fos	ter
SubsurfaceSedimentOther:	ce Soil			Type of S	Sample:	
[] QA Samp					Concentration Concentration	
GRAB SAMPLE DA						The Marian
Date: 11-30-0	7	Depth Interval	Color	Description	n (Sand, Silt, Clay, Mo	oisture, etc.)
Time: 1145 Method: DPT		0 10 6	Τ.			
Monitor Reading (pp	/m):	8-10 94.	Tan	tive- W69	grained sand	10026
COMPOSITE SAME						
Date:	T	B0-1				
Date.	Time	Depth Interval	Color	Description	(Sand, Silt, Clay, Mo	isture, etc.)
Mathadi	_					
Method:						
Monitor Readings						
(Range in ppm):						
		300				
SAMPLE COLLECT	ION INFORMAT	TION:				
	Analysis		Container Requ	irements	Collected	Other
8260	VOCS		1402 9/0			
8015	TPH		18 05 81	noj čep		
8087	SVOCS			J		
ICP/MS	PCBs Metals					
Be, Ni, Co,					-/-	
0-, /- () 001	Pol 1.44					
			, , , , , , , , , , , , , , , , , , , ,			
						-
DBSERVATIONS / N	OTES:			MAP:	35.644	
				N ×	fence >	**
				Λ Δ	SB-517	
				N.T.S.	TIII) a	
			1	77.1.3.	()	Δ
				1000	Storm)	3.222
			1		Divin	SB-520
ircle if Applicable:			The state of the s	Signature(s):		
MS/MSD	Duplicate ID	No.:		o.g.iatare(s).		[
		20225		- Te	>	- 1
	l		1			



APPENDIX D- DATA VALIDATION REPORTS (IN-CD ONLY)					



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO:

M. MARTIN

DATE:

DECEMBER 18, 2007

FROM:

PRESTON SMITH

COPIES:

DV FILE

SUBJECT:

ORGANIC DATA VALIDATION - BENZO(a)PYRENE AND PCBs

LOCKHEED MIDDLE RIVER COMPLEX

SAMPLE DELIVERY GROUP (SDG): 7J17235

SAMPLES:

20/Soil/

SB-382-0102	SB-382-0203
SB-382-0405	SB-382-0708
SB-383-0102	SB-383-0203
SB-383-0405	SB-383-0708
SB-384-0102	SB-384-0203
SB-384-0405	SB-384-0708
SB-385-0102	SB-385-0203
SB-385-0405	SB-385-0708
SB-386-0102	SB-386-0203
SB-386-0405	SB-386-0708

Overview

The sample set for SDG 7J17235, Lockheed MRC, consists of twenty (20) soil environmental samples.

All soil samples were analyzed for benzo(a)pyrene and PCBs. The samples were collected by TetraTech NUS on October 15, 2007 and analyzed by Test America Laboratories, Inc. Analyses were conducted using SW-846 Method 8270C and SW-846 Method 8082.

The findings in this report are based upon a general review of all available data including: data completeness, GC/MS tuning, holding times, initial/continuing calibrations, laboratory method/preparation blank results, surrogate spike/internal standard recoveries, laboratory control sample (LCS)/blank spike results, matrix spike/matrix spike duplicate results, analyte quantitation, and detection limits. Areas of concern are listed below.

Major Problems

None.

Minor Problems

The positive results less than the CRQL reported for benzo(a)pyrene in samples SB-383-0203, SB-383-0405, SB-383-0708 and for Aroclor-1260 in sample SB-383-0102 were qualified estimated (J) due to uncertainty near the detection limit.

Notes

The MS/MSD and the check sample recovery were not spiked with the target compound benzo(a)pyrene. No validation action was required because the other surrogate recoveries were within permissible limits.

Percent recovery for the surrogate spike of decachlorobiphenyl was greater than the 199% recovery limit in sample # SB-383-0102. No action was taken because the other surrogate recovery was within the recovery

limits.

Executive Summary

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: The positive results less than the CRQL reported for benzo(a)pyrene and Aroclor-1260 were qualified due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (9/94) as modified by Region III.

Tetra Tech NUS Preston R. Smith

Environmental Scientist/Data Validator

Tetra Tech NUS Joseph A. Samchuck

Data Validation Quality Assurance Officer

Attachments:

- 1. Appendix A Qualified Analytical Results
- 2. Appendix B Results as Reported by the Laboratory
- 3. Appendix C Support Documentation

Data Qualifier Key:

J - Positive result is considered estimated, "J", as a result of technical noncompliances.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination

B = Field Blank Contamination

C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)

C01 = GC/MS Tuning Noncompliance

D = MS/MSD Recovery Noncompliance

E = LCS/LCSD Recovery Noncompliance

F = Lab Duplicate Imprecision

G = Field Duplicate Imprecision

H = Holding Time Exceedance

I = ICP Serial Dilution Noncompliance

J = GFAA PDS - GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance

K = ICP Interference - includes ICS % R Noncompliance

L = Instrument Calibration Range Exceedance

M = Sample Preservation Noncompliance

N = Internal Standard Noncompliance

N01 = Internal Standard Recovery Noncompliance Dioxins

N02 = Recovery Standard Noncompliance Dioxins

N03 = Clean-up Standard Noncompliance Dioxins

O = Poor Instrument Performance (e.g. base-line drifting)

P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)

Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)

R = Surrogates Recovery Noncompliance

S = Pesticide/PCB Resolution

T = % Breakdown Noncompliance for DDT and Endrin

U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC

V = Non-linear calibrations; correlation coefficient r < 0.995

W = EMPC result

X = Signal to noise response drop

Y = Percent solids <30%

Z = Uncertainty at 2 sigma deviation is greater than sample activity

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: OS

 nsample
 SB-382-0102

 samp_date
 10/15/2007

 lab_id
 A7J170235001

 qc_type
 NM

 units
 UG/KG

 Pct_Solids
 86.0

 DUP_OF:
 BUP_OF:

nsample samp_date lab_id qc_type units Pct_Solids DUP_OF: SB-382-0203 10/15/2007 A7J170235002 NM UG/KG 76.0 nsample samp_date lab_id qc_type units Pct_Solids

DUP_OF:

SB-382-0405 10/15/2007 A7J170235003 NM

UG/KG 80.0

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.7	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date

SB-382-0708 10/15/2007 A7J170235004 nsample samp_date lab_id SB-383-0102DL 10/15/2007 A7J170235005 nsample samp_date lab_id qc_type SB-383-0203 10/15/2007 A7J170235006

lab_id qc_type units

NM UG/KG 79.0 qc_type
units
Pct_Solids
DUP_OF:

NM UG/KG 88.0

units
Pct_Solids
DUP_OF:

UG/KG 87.0

NM

Pct_Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	19000		

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	51	J	Р

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date lab_id qc_type units

Pct_Solids

DUP_OF:

SB-383-0405 10/15/2007 A7J170235007

NM UG/KG 79.0

nsample samp_date lab_id

qc_type units Pct_Solids DUP_OF:

BENZO(A)PYRENE

Parameter

SB-383-0708 10/15/2007

> A7J170235008 NM UG/KG

83.0

Result

10

Val

Qual

J

nsample samp_date

lab_id qc_type units

NM UG/KG 87.0

SB-384-0102

A7J170235009

10/15/2007

Pct_Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	38	J	Р

Qual Code	F
Р	BENZO(A)PYREN

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

DUP_OF:

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: OS

 nsample
 SB-384-0203

 samp_date
 10/15/2007

 lab_id
 A7J170235010

 qc_type
 NM

 units
 UG/KG

 Pct_Solids
 86.0

at0 lab_id
qc_type
units
Pct_Solids
DUP_OF:

 nsample
 SB-384-0405

 samp_date
 10/15/2007

 lab_id
 A7J170235011

 qc_type
 NM

 units
 UG/KG

 Pct_Solids
 85.0

nsample samp_date lab_id qc_type units Pct_Solids

DUP_OF:

SB-384-0708 10/15/2007 A7J170235012 NM

UG/KG 77.0

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.7	U	

DUP_OF:

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: OS

nsample SB-385-0102 10/15/2007 samp_date A7J170235013 lab_id NM qc_type units UG/KG Pct_Solids

92.0

nsample samp_date lab_id qc_type units

DUP_OF:

10/15/2007 A7J170235014 NM UG/KG Pct_Solids

91.0

SB-385-0203

nsample samp_date lab_id qc_type

units

Pct_Solids

DUP_OF:

10/15/2007 A7J170235015 NM

SB-385-0405

UG/KG 93.0

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.4	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.4	U	

- [Parameter	Result	Val Qual	Qual Code
	BENZO(A)PYRENE	1.4	U	

PROJ NO:

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date SB-385-0708

10/15/2007 A7J170235016 nsample samp_date lab_id

SB-386-0102 10/15/2007 A7J170235017 nsample samp_date lab_id

SB-386-0203 10/15/2007 A7J170235018

lab_id qc_type units

NM UG/KG qc_type units

NM UG/KG

90.0

qc_type units Pct_Solids NM UG/KG 89.0

Pct_Solids DUP_OF:

85.0

Pct Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.4	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date

SB-386-0405

nsample samp_date SB-386-0708 10/15/2007

samp_date 10/15/2007 lab_id A7J170235019

lab_id

A7J170235020

 qc_type
 NM

 units
 UG/KG

 Pct_Solids
 90.0

qc_type units Pct_Solids NM UG/KG 84.0

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: PEST/PCB

 nsample
 SB-382-0102

 samp_date
 10/15/2007

 lab_id
 A7J170235001

 qc_type
 NM

 units
 UG/KG

units UG/KG
Pct_Solids 86.0

DUP_OF:

nsample samp_date lab_id

qc_type

Pct_Solids

DUP_OF:

units

10/15/2007 A7J170235002 NM

SB-382-0203

NM UG/KG 76.0 nsample samp_date lab_id qc_type units SB-382-0405 10/15/2007 A7J170235003 NM

units UG/KG
Pct_Solids 80.0

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	43	U	
AROCLOR-1221	43	U	
AROCLOR-1232	43	U	
AROCLOR-1242	43	U	
AROCLOR-1248	43	U	
AROCLOR-1254	43	U	
AROCLOR-1260	43	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	41	U	
AROCLOR-1221	41	U	
AROCLOR-1232	41	U	
AROCLOR-1242	41	U	
AROCLOR-1248	41	U	
AROCLOR-1254	41	U	
AROCLOR-1260	41	U	

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-382-0708 10/15/2007 nsample samp_date lab_id SB-383-0102 10/15/2007 A7J170235005 nsample samp_date lab_id SB-383-0203 10/15/2007 A7J170235006

lab_id qc_type units A7J170235004 NM UG/KG

qc_type units

NM UG/KG 88.0 qc_type units Pct_Solids NM UG/KG 87.0

Pct_Solids DUP_OF: 79.0

Pct_Solids DUP_OF:

DUP_OF:

.

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	42	U	
AROCLOR-1221	42	U	
AROCLOR-1232	42	U	
AROCLOR-1242	42	U	
AROCLOR-1248	42	U	
AROCLOR-1254	42	U	
AROCLOR-1260	42	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	34	J	Р

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id

qc_type

Pct_Solids

units

SB-383-0405 10/15/2007

NM

UG/KG

79.0

samp_date A7J170235007

lab_id qc_type units

Pct_Solids

DUP_OF:

nsample

10/15/2007 A7J170235008 NM

SB-383-0708

UG/KG 83.0

nsample samp_date lab_id qc_type

10/15/2007 A7J170235009 NM

SB-384-0102

UG/KG 87.0

Pct_Solids DUP_OF:

units

DUP_	OF:
AROC	LOR-1016
AROC	LOR-1221

AROCLOR-1232 AROCLOR-1242 AROCLOR-1248 AROCLOR-1254 AROCLOR-1260

Parameter

Val Qual	Qual Code			
U				
U				
U				
U				
U				
U				
U				
	Qual U U U U U U U			

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	40	U	
AROCLOR-1221	40	U	
AROCLOR-1232	40	U	
AROCLOR-1242	40	U	
AROCLOR-1248	40	U	
AROCLOR-1254	40	U	
AROCLOR-1260	40	U	

Result	Val Qual	Qual Code
38	U	
38	U	
38	U	
38	U	
38	U	
38	U	
38	U	
	38 38 38 38 38 38	Result Qual 38 U 38 U 38 U 38 U 38 U 38 U 38 U

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id SB-384-0203 10/15/2007

A7J170235010 NM

 qc_type
 NM

 units
 UG/KG

 Pct_Solids
 86.0

DUP_OF:

nsample samp_date

 samp_date
 10/15/200

 lab_id
 A7J17023

 qc_type
 NM

units
Pct_Solids
DUP_OF:

SB-384-0405 10/15/2007 A7J170235011 NM UG/KG

UG/KG 85.0 nsample samp_date lab_id qc_type SB-384-0708RE 10/15/2007 A7J170235012 NM

units UG/KG
Pct_Solids 77.0

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	43	U	
AROCLOR-1221	43	U	
AROCLOR-1232	43	U	
AROCLOR-1242	43	U	
AROCLOR-1248	43	U	
AROCLOR-1254	43	U	
AROCLOR-1260	43	U	

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id qc_type SB-385-0102RE 10/15/2007 A7J170235013

NM

92.0

UG/KG

samp_date
lab_id
qc_type
units
Pct_Solids

nsample

DUP_OF:

SB-385-0203 10/15/2007 A7J170235014 NM UG/KG

91.0

nsample samp_date lab_id qc_type units Pct_Solids SB-385-0405 10/15/2007 A7J170235015 NM

s UG/KG _Solids 93.0

DUP_OF:

Pct_Solids DUP_OF:

units

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U.	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U.	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	υ	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

00885 SDG: 7J17235 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id

SB-385-0708 10/15/2007

A7J170235016

nsample samp_date lab_id

SB-386-0102 10/15/2007 A7J170235017 nsample samp_date lab_id qc_type

SB-386-0203 10/15/2007 A7J170235018

qc_type units

NM UG/KG 85.0

qc_type units Pct_Solids

DUP_OF:

NM UG/KG 90.0

units Pct_Solids DUP_OF:

UG/KG 89.0

NM

Pct_Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	Ū	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

00885

SDG: 7J17235 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample

SB-386-0405

nsample

SB-386-0708

samp_date

10/15/2007 A7J170235019 samp_date lab_id

10/15/2007

lab_id qc_type

NM

qc_type

A7J170235020 NM

units Pct_Solids UG/KG 90.0

units Pct_Solids UG/KG 84.0

DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	-
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	. 39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Client Sample ID: SB-382-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170235- Date Sampled: 10/15/07 1 Prep Date: 10/22/07 Prep Batch #: 7295066 Dilution Factor: 1		1: 10/17/07	Matr	ix	: SO
% Moisture: 14	Method	: SW846 827	ос		
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	ND	390	ug/kg	1.5	
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS			
Nitrobenzene-d5	68	(24 - 112)	-		
2-Fluorobiphenyl	66	(34 - 110)	,		
Terphenyl-d14	81	(41 - 119))		
Phenol-d5	74	(28 - 110)		2.0
2-Fluorophenol	71	(26 - 110) ·		
2,4,6-Tribromophenol	60	(10 - 118) .		
NOTE (S):					

Client Sample ID: SB-382-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170235-002 Date Sampled: 10/15/07 14:10 Prep Date: 10/22/07 Prep Batch #: 7295066 Dilution Factor: 1 % Moisture: 24		10/17/07 10/25/07		so so
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	430	ug/kg	1.7
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	59	(24 - 112)		
2-Fluorobiphenyl	57	(34 - 110)		
Terphenyl-d14	75	(41 - 119)		
Phenol-d5	69	(28 - 110)		
2-Fluorophenol	67	(26 - 110)		
2,4,6-Tribromophenol	60	(10 - 118)		

NOTE(S):

Client Sample ID: SB-382-0405

GC/MS Semivolatiles

Lot-Sample #: A	A7J170235-003	Work Order #:	J86GA1AD	Matrix		so
Date Sampled: 1						
Prep Date 1		Analysis Date:				
Prep Batch #: 7						
Dilution Factor: 1						
% Moisture: 2		Method:	SW846 8270	C		
		•		•		
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	MDL	-
Benzo(a) pyrene		ND	410	ug/kg	1.6	
				•		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Nitrobenzene-d5		58	(24 - 112)			
2-Fluorobiphenyl		57	(34 - 110)	The second second		
Terphenyl-d14		77	(41 - 119)		_	
Phenol-d5		68	(28 - 110)			
2-Fluorophenol		63	(26 - 110)			
2,4,6-Tribromopher	nol	45	(10 - 118)			
370mm (Q)						
NOTE(S):				<u></u>		

Client Sample ID: SB-382-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170235-004 Date Sampled: 10/15/07 14:20 Prep Date: 10/22/07 Prep Batch #: 7295066 Dilution Factor: 1 % Moisture: 21		10/17/07 10/25/07		rix	: SO
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	·
Benzo(a)pyrene	ND	420	ug/kg	1.6	
	PERCENT	RECOVERY			
SURROGATE	RECOVERY	LIMITS			
Nitrobenzene-d5	56	(24 - 112)			
2-Fluorobiphenyl	49	(34 - 110)		•	
Terphenyl-d14	75	(41 - 119)			
Phenol-d5	62	(28 - 110)			
2-Fluorophenol	61	(26 - 110)			
2,4,6-Tribromophenol	50	(10 - 118)			

NOTE(S):

Client Sample ID: SB-383-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170235-005 Date Sampled: 10/15/07 14:40 Prep Date: 10/22/07 Prep Batch #: 7295066 Dilution Factor: 20		10/17/07 10/26/07			SO
% Moisture: 12	method:	SW040 02/0	C		
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	19000	7500	ug/kg	30	
SURROGATE Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	PERCENT RECOVERY 75 DIL 80 DIL 92 DIL 76 DIL 70 DIL 54 DIL	RECOVERY LIMITS (24 - 112) (34 - 110) (41 - 119) (28 - 110) (26 - 110) (10 - 118)			

DIL 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.

Client Sample ID: SB-383-0203

GC/MS Semivolatiles

TOC_SOMETE # · · · ·	A7J170235-006	Work Order #:	J86GE1AD	Matrix	:	SO
_		Date Received:				
Prep Date:	10/22/07	Analysis Date:	10/26/07			
Prep Batch #:						
Dilution Factor:					•	
% Moisture:	13	Method:	SW846 8270	C .		
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene		51 J	380	ug/kg	1.5	
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Nitrobenzene-d5		63	(24 - 112)			
		64	(34 - 110)			
2-Fluorobiphenyl		0 1	(31 110)			
2-Fluorobiphenyl Terphenyl-d14		75	(41 - 119)			
			•			
Terphenyl-d14		75	(41 - 119)			

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Client Sample ID: SB-383-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170235-007			trix SO
Date Sampled: 10/15/07 14:50	Date Received:	10/17/07	
Prep Date: 10/22/07	Analysis Date:	10/26/07	
Prep Batch #: 7295066			
Dilution Factor: 1			
% Moisture: 21	Method:	SW846 8270C	
		REPORTING	
PARAMETER	RESULT	LIMIT UNITS	MDL
Benzo(a)pyrene	38 J	420 ug/kg	1.6
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Nitrobenzene-d5	56	$\overline{(24 - 112)}$	••
2-Fluorobiphenyl	52	(34 - 110)	
Terphenyl-d14	74	(41 - 119)	
Phenol-d5	65	(28 - 110)	
2-Fluorophenol	62	(26 - 110)	
2,4,6-Tribromophenol	49	(10 - 118)	
NOTE(S):			

J Estimated result. Result is less than RL.

Client Sample ID: SB-383-0708

GC/MS Semivolatiles

Lot-Sample #: A Date Sampled: 1 Prep Date: 1 Prep Batch #: 7 Dilution Factor: 1	10/15/07 14:55 10/22/07 7295066	Date Received: Analysis Date:	10/17/07 10/26/07			SO
% Moisture: 1	L /	Method:	SW846 8270	_		
PARAMETER		RESULT	REPORTING LIMIT	UNITS	MDL	
Benzo (a) pyrene		10 J	400	ug/kg	1.6	
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Nitrobenzene-d5		61	(24 - 112)			
2-Fluorobiphenyl		60	(34 - 110)			
Terphenyl-d14		77	(41 - 119)			
Phenol-d5		66	(28 - 110)			
2-Fluorophenol		64	(26 - 110)			
2,4,6-Tribromopher	nol	47	(10 - 118)			
NOTE (C).				•		

J Estimated result. Result is less than RL.

Client Sample ID: SB-384-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170235-009 Date Sampled: 10/15/07 15:05 Prep Date: 10/22/07 Prep Batch #: 7295066 Dilution Factor: 1 % Moisture: 13		10/17/07 10/26/07		c: SO
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	•	
Nitrobenzene-d5	57	(24 - 112)	•	
2-Fluorobiphenyl	59	(34 - 110)		
Terphenyl-d14	71	(41 - 119)		
Phenol-d5	58	(28 - 110)		
2-Fluorophenol	59	(26 - 110)		
2,4,6-Tribromophenol	50	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-384-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170235-010 Date Sampled: 10/15/07 15:1 Prep Date: 10/22/07 Prep Batch #: 7295066 Dilution Factor: 1 % Moisture: 14	O Date Received:	10/17/07 10/26/07		: so
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	60	(24 - 112)		
2-Fluorobiphenyl	57	(34 - 110)		
Terphenyl-d14	73	(41 - 119)	•	
Phenol-d5	63	(28 - 110)		
2-Fluorophenol	62	(26 - 110)		
2,4,6-Tribromophenol	52	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-384-0405

GC/MS Semivolatiles

Date Sampled: Prep Date: Prep Batch #:	10/15/07 15:15 10/22/07 7295066	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix		SO
Dilution Factor: % Moisture:		Method:	SW846 8270	C		
o noiscare	13	nethodiiiiiiiiiii	0			
			REPORTING			
PARAMETER	•	RESULT	LIMIT	UNITS	MDL	<u></u>
Benzo(a)pyrene		ND	390	ug/kg	1.5	
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS			
Nitrobenzene-d5		58	(24 - 112)			
2-Fluorobiphenyl		57	(34 - 110)			
Terphenyl-d14		70	(41 - 119)			
Phenol-d5		60	(28 - 110)			
2-Fluorophenol		59	(26 - 110)			
2,4,6-Tribromophe	enol	41	(10 - 118)			
NOTE (S):						

Client Sample ID: SB-384-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170235-012 Date Sampled: 10/15/07 15:20 Prep Date: 10/22/07 Prep Batch #: 7295066		10/17/07	Matri	x: SO
Dilution Factor: 1 % Moisture: 23	Method:	SW846 8270	С	
VINISTATE 23		2.1013 32.10		
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	430	ug/kg	1.7
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	58	(24 - 112)		
2-Fluorobiphenyl	52	(34 - 110)	,	
Terphenyl-d14	76	(41 - 119)		
Phenol-d5	65	(28 - 110)		
2-Fluorophenol	64	(26 - 110)		
2,4,6-Tribromophenol	49	(10 - 118)		

NOTE(S):

Client Sample ID: SB-385-0102

GC/MS Semivolatiles

Work Order #:	J86GQ1AD	Matrix	ζ	: SO
5 Date Received:	10/17/07			
Analysis Date:	10/26/07			
Method:	SW846 8270	C		
	REPORTING			
RESULT	LIMIT	UNITS	MDL	
ND	360	ug/kg	1.4	
PERCENT	RECOVERY			
RECOVERY	LIMITS			
58	(24 - 112)			
58	(34 - 110)			
69	(41 - 119)			
60	(28 - 110)			
59	(26 - 110)			
61	(10 - 118)			
	Method: RESULT ND PERCENT RECOVERY 58 58 69 60 59	REPORTING LIMIT ND 360 PERCENT RECOVERY RECOVERY LIMITS 58 (24 - 112) 58 (34 - 110) 69 (41 - 119) 60 (28 - 110) 59 (26 - 110)	### Date Received: 10/17/07 Analysis Date: 10/26/07 Method: SW846 8270C	Method: SW846 8270C REPORTING LIMIT UNITS MDL 1.4

NOTE (5):

Client Sample ID: SB-385-0203

GC/MS Semivolatiles

Date Sampled: Prep Date: Prep Batch #: Dilution Factor:	10/15/07 15:28 10/22/07 7295066 1	Work Order #: Date Received: Analysis Date:	10/17/07 10/26/07			so
% Moisture:	9.0	Method:	SW846 82/U	C		
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	MDL _	
Benzo(a)pyrene		ND	360	ug/kg	1.4	
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS			
Nitrobenzene-d5		63	(24 - 112)			
2-Fluorobiphenyl		62	(34 - 110)			
Terphenyl-d14		72	(41 - 119)			
Phenol-d5		65	(28 - 110)			
2-Fluorophenol		65	(26 - 110)			
2,4,6-Tribromoph	enol	64	(10 - 118)			
NOTE (S):			<u> </u>		· · · · · · · · · · · · · · · · · · ·	

Client Sample ID: SB-385-0405

GC/MS Semivolatiles

Lot-Sample #: Date Sampled:					Mat	rix	• • • • •	: S	Ю
Prep Date:	10/22/07	Analysis Date	e:	10/26/07					
Prep Batch #:		· -							
Dilution Factor:									
% Moisture:		Method	:	SW846 8270	С				
				REPORTING					
PARAMETER		RESULT		LIMIT	UNITS		MDL		
Benzo(a) pyrene		ND		360	ug/kg		1.4		
		4							
		PERCENT		RECOVERY					
SURROGATE		RECOVERY		LIMITS					
Nitrobenzene-d5		63		(24 - 112)					
2-Fluorobiphenyl		64		(34 - 110)					
Terphenyl-d14		72		(41 - 119)					
Phenol-d5		68		(28 - 110)					
2-Fluorophenol		67		(26 - 110)					
2,4,6-Tribromophe	enol	69		(10 - 118)					

NOTE(S):

Client Sample ID: SB-385-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170235-016 Date Sampled: 10/15/07 15:35 Prep Date: 10/22/07 Prep Batch #: 7295066		10/17/07	Matrix		: SO
Dilution Factor: 1		4 - 14			
% Moisture: 15	Method:	SW846 8270	C		
PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL	
Benzo(a)pyrene	ND	390	ug/kg	1.5	
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS			
Nitrobenzene-d5	51	(24 - 112)		4	
2-Fluorobiphenyl	48	(34 - 110)			
Terphenyl-d14	60	(41 - 119)			
Phenol-d5	53	(28 - 110)			
2-Fluorophenol	53	(26 - 110)			
2,4,6-Tribromophenol	42	(10 - 118)			

NOTE(S):

Client Sample ID: SB-386-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170235-017 Date Sampled: 10/15/07 15:4 Prep Date: 10/22/07 Prep Batch #: 7295066		10/17/07	Matr	ix	: SO
Dilution Factor: 1					
% Moisture: 10	Method:	SW846 8270	C		
	DD0111 B	REPORTING	INTEG	MDT	
PARAMETER	RESULT	<u>LIMIT</u>	UNITS	MDL_	
Benzo(a)pyrene	ND	370	ug/kg	1.4	
	PERCENT	RECOVERY			
SURROGATE	RECOVERY	LIMITS			
Nitrobenzene-d5	60	(24 - 112)			
2-Fluorobiphenyl	61	(34 - 110)			
Terphenyl-d14	73	(41 - 119)			
Phenol-d5	62	(28 - 110)			
2-Fluorophenol	62	(26 - 110)			
2,4,6-Tribromophenol	60	(10 - 118)			

NOTE (S):

Client Sample ID: SB-386-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170235-018 Date Sampled: 10/15/07 15:48				: SO		
Prep Date:		Analysis Date:	10/26/07			
Prep Batch #:						
Dilution Factor:				_		
% Moisture:	11	Method:	SW846 8270	С		
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene		ND .	370	ug/kg	1.5	
,		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Nitrobenzene-d5		58	(24 - 112)			
2-Fluorobiphenyl		57	(34 - 110)			
Terphenyl-d14		70	(41 - 119)			
Phenol-d5		64	(28 - 110)			
		62	(26 - 110)	•		
2-Fluorophenol						

Client Sample ID: SB-386-0405

GC/MS Semivolatiles

	10/15/07 15:50 10/22/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix		SO
Dilution Factor:	1					
% Moisture:	10	Method:	SW846 8270	C		
			DEPODETNO			
		DDG!!! #	REPORTING	INTEG	MDT	
PARAMETER		RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene		ND	370	ug/kg	1.5	
					·	
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Nitrobenzene-d5		68	(24 - 112)			
2-Fluorobiphenyl		67	(34 - 110)			
Terphenyl-d14		80	(41 - 119)			
Phenol-d5		73	(28 - 110)			
2-Fluorophenol		73	(26 - 110)			
2,4,6-Tribromoph	enol	69	(10 - 118)			

NOTE (S):

Client Sample ID: SB-386-0708

GC/MS Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/15/07 15:55 10/22/07 7295066		10/17/07	Matrix	: so
Dilution Factor: % Moisture:		Method:	SW846 8270	c.	
o mondeare		110011041111111111111111111111111111111	Ş 313 - 31 · 3		
			REPORTING		
PARAMETER	* .	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	390	ug/kg	1.5
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		61	(24 - 112)		
2-Fluorobiphenyl		57	(34 - 110)		
Terphenyl-d14		75	(41 - 119)		
Phenol-d5		66	(28 - 110)		
2-Fluorophenol		65	(26 - 110)		•
	nol	55	(10 - 118)		

Client Sample ID: SB-382-0102

GC Semivolatiles

	10/15/07 14:00 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SO
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>		Final Wgt/Vol: 10 ml
% Moisture:	14	Method:	SW846 8082	
			REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Aroclor 1016		ND	39	ug/kg
Aroclor 1221		ND	39	ug/kg
Aroclor 1232		ND	39	ug/kg
Aroclor 1242		ND	39	ug/kg
Aroclor 1248		ND	39	ug/kg
Aroclor 1254		ND	39	ug/kg
Aroclor 1260		ND	39	ug/kg
		PERCENT	RECOVERY	
SURROGATE		RECOVERY	LIMITS	
Tetrachloro-m-xy	lene	99	(10 - 196)	
Decachlorobiphen	yl	114	(10 - 199)	
2000011201022211011	<i>i</i> –			

NOTE(S):

Client Sample ID: SB-382-0203

GC Semivolatiles

	10/15/07 14:10 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07		к:	
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.17 g	Final	Wgt/Vol:	10 mL
% Moisture:	24	Method:	SW846 8082			
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	_	
Aroclor 1016		ND	43	ug/kg		
Aroclor 1221		ND	43	ug/kg		
Aroclor 1232		ND	43	ug/kg		
Aroclor 1242		ND	43	ug/kg		
Aroclor 1248		ND	43	ug/kg		
Aroclor 1254		ND	43	ug/kg		
Aroclor 1260		ND	43	ug/kg		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xy	lene	98	(10 - 196)			
Decachlorobiphen		118	(10 - 199)			
	-					

NOTE(S):

Client Sample ID: SB-382-0405

GC Semivolatiles

Lot-Sample #: A7J170235-003 Date Sampled: 10/15/07 14:15 Prep Date: 10/19/07 Prep Batch #: 7292031	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SO
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>		Final Wgt/Vol: 10 mL
% Moisture: 20	Method:	SW846 8082	
	DECILI T	REPORTING LIMIT	UNITS
PARAMETER	RESULT	41	ug/kg
Aroclor 1016	ND		ug/kg
Aroclor 1221	ND	41	
Aroclor 1232	ND	41	ug/kg
Aroclor 1242	ND	41	ug/kg
Aroclor 1248	ND	41	ug/kg
Aroclor 1254	ND	41	ug/kg
Aroclor 1260	ND	41	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	157	(10 - 196)	
Decachlorobiphenyl	181	(10 - 199)	

NOTE(S):

Client Sample ID: SB-382-0708

GC Semivolatiles

Dilution Factor: 1 Initial Wgt/Vol: 30.07 g Final Wgt/Vol.: 10 mL ** Moisture: 21 Method: SW846 8082 PARAMETER RESULT LIMIT UNITS Aroclor 1016 ND 42 ug/kg Aroclor 1221 ND 42 ug/kg Aroclor 1232 ND 42 ug/kg Aroclor 1242 ND 42 ug/kg Aroclor 1248 ND 42 ug/kg Aroclor 1254 ND 42 ug/kg Aroclor 1260 ND 42 ug/kg Brown results RECOVERY LIMITS LIMITS	Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/15/07 14:20 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	K:	SO
REPORTING RESULT LIMIT UNITS Units	-		-			Wgt/Vol:	10 mL
PARAMETER RESULT LIMIT UNITS Aroclor 1016 ND 42 ug/kg Aroclor 1221 ND 42 ug/kg Aroclor 1232 ND 42 ug/kg Aroclor 1242 ND 42 ug/kg Aroclor 1248 ND 42 ug/kg Aroclor 1254 ND 42 ug/kg Aroclor 1260 ND 42 ug/kg PERCENT RECOVERY LIMITS	<pre>% Moisture:</pre>	21	Method:	SW846 8082			
PARAMETER RESULT LIMIT UNITS Aroclor 1016 ND 42 ug/kg Aroclor 1221 ND 42 ug/kg Aroclor 1232 ND 42 ug/kg Aroclor 1242 ND 42 ug/kg Aroclor 1248 ND 42 ug/kg Aroclor 1254 ND 42 ug/kg Aroclor 1260 ND 42 ug/kg PERCENT RECOVERY LIMITS				REPORTING			
Aroclor 1016 ND 42 ug/kg Aroclor 1221 ND 42 ug/kg Aroclor 1232 ND 42 ug/kg Aroclor 1242 ND 42 ug/kg Aroclor 1248 ND 42 ug/kg Aroclor 1254 ND 42 ug/kg Aroclor 1260 ND 42 ug/kg PERCENT RECOVERY LIMITS	PARAMETER		RESULT	LIMIT	UNITS	~	
Aroclor 1232 ND 42 ug/kg Aroclor 1242 ND 42 ug/kg Aroclor 1248 ND 42 ug/kg Aroclor 1254 ND 42 ug/kg Aroclor 1260 ND 42 ug/kg Aroclor 1260 ND 42 ug/kg PERCENT RECOVERY SURROGATE RECOVERY LIMITS			ND	42	ug/kg		
Aroclor 1242 ND 42 ug/kg Aroclor 1248 ND 42 ug/kg Aroclor 1254 ND 42 ug/kg Aroclor 1260 ND 42 ug/kg Aroclor 1260 ND 42 ug/kg PERCENT RECOVERY SURROGATE RECOVERY LIMITS	Aroclor 1221		ND	42	ug/kg		
Aroclor 1248 Aroclor 1254 Aroclor 1260 ND 42 ug/kg Aroclor 1260 ND 42 ug/kg Aroclor 1260 ND 42 ug/kg Aroclor 1260 ND EECOVERY ELIMITS LIMITS	Aroclor 1232		ND	42	ug/kg		
Aroclor 1254 Aroclor 1260 ND 42 ug/kg Aroclor 1260 ND PERCENT RECOVERY LIMITS LIMITS	Aroclor 1242		ND	42	ug/kg		
Aroclor 1260 ND 42 ug/kg PERCENT RECOVERY SURROGATE RECOVERY LIMITS	Aroclor 1248		ND	42	ug/kg		
PERCENT RECOVERY SURROGATE RECOVERY LIMITS	Aroclor 1254		ND	42	ug/kg		
SURROGATE RECOVERY LIMITS	Aroclor 1260		ND	42	ug/kg		
DOI: 10.00			PERCENT	RECOVERY			
Tot rachlero-m-xylene 99 (10 - 196)	SURROGATE		RECOVERY	LIMITS			
Terracutoro-m-vyrene	Tetrachloro-m-xy	lene	99	(10 - 196)			
Decachlorobiphenyl 108 (10 - 199)	_		108	(10 - 199)			

NOTE(S):

Client Sample ID: SB-383-0102

GC Semivolatiles

Lot-Sample #: A7J170235-005 Date Sampled: 10/15/07 14:40 Prep Date: 10/19/07 Prep Batch #: 7292031 Dilution Factor: 1 % Moisture: 12	Work Order #: Date Received: Analysis Date: Initial Wgt/Vol: Method:	10/17/07 10/23/07 30.08 g	Matrix: SO Final Wgt/Vol: 10 mL
		REPORTING	
PARAMETER	RESULT	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	ND	37	ug/kg
Aroclor 1260	34 J	37	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECO VER Y	LIMITS	
Tetrachloro-m-xylene	79/-)	(10 - 196)	
Decachlorobiphenyl (816 *	(10 - 199)	

NOTE(S):

^{*} Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Client Sample ID: SB-383-0203

GC Semivolatiles

Lot-Sample #: And Date Sampled: 10 Prep Date: 10 Prep Batch #: 72	0/15/07 14:45 0/19/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	· · · · · · · · · · · · · · · · · · ·	so
Dilution Factor: 1	272031	<pre>Initial Wgt/Vol:</pre>	30.09 g	Final	Wgt/Vol:	10 mL
% Moisture: 13	3	Method:	SW846 8082			
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	_	
Aroclor 1016		ND	38	ug/kg		
Aroclor 1221		ND	38	ug/kg		
Aroclor 1232		ND	38	ug/kg		
Aroclor 1242		ND	38	ug/kg		
Aroclor 1248		ND	38	ug/kg		
Aroclor 1254		ND	38	ug/kg		
Aroclor 1260		ND	38	ug/kg		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xyle	ne	86	(10 - 196)			
Decachlorobiphenyl		100	(10 - 199)			

NOTE (S):

Client Sample ID: SB-383-0405

GC Semivolatiles

	10/15/07 14:50 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	к	SO
Dilution Factor:		<pre>Initial Wgt/Vol:</pre>	30 g	Final	Wgt/Vol:	10 mL
% Moisture:	21	Method:	SW846 8082			
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	_	
Aroclor 1016		ND	42	ug/kg		
Aroclor 1221		ND	42	ug/kg		
Aroclor 1232		ND	42	ug/kg		
Aroclor 1242		ND	42	ug/kg		
Aroclor 1248		ND	42	ug/kg		
Aroclor 1254		ND	42	ug/kg		
Aroclor 1260		ND	42	ug/kg		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xy	lene	82	(10 - 196)			
Decachlorobiphen		110	(10 - 199)			

NOTE(S):

Client Sample ID: SB-383-0708

GC Semivolatiles

Date Sampled: Prep Date: Prep Batch #:	10/15/07 14:55 10/19/07 7292031	Work Order #: Date Received: Analysis Date:	10/17/07 10/23/07		: Wqt/Vol:	
Dilution Factor: % Moisture:		<pre>Initial Wgt/Vol: Method:</pre>		Fillai	ngc/ voi	10 1111
* MOISCUIC	17	Accessed to the second	REPORTING			
PARAMETER		RESULT	LIMIT	UNITS		
Aroclor 1016		ND	40	ug/kg		
Aroclor 1221		ND	40	ug/kg		
Aroclor 1232		ND	40	ug/kg		
Aroclor 1242		ND	40	ug/kg		
Aroclor 1248		ND	40	ug/kg		
Aroclor 1254		ND	40	ug/kg		
Aroclor 1260		ND	40	ug/kg		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xy	lene	93	(10 - 196)			
Decachlorobiphen	yl	112	(10 - 199)			

NOTE(S):

Client Sample ID: SB-384-0102

GC Semivolatiles

Lot-Sample #: A7J170235-009 Date Sampled: 10/15/07 15:0 Prep Date: 10/19/07 Prep Batch #: 7292031	Date Received: Analysis Date:	10/17/07 10/23/07	Matrix: SO Final Wgt/Vol: 10 mL
Dilution Factor: 1 % Moisture: 13	<pre>Initial Wgt/Vol: Method:</pre>		- '
• MOISCATO 15		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38 .	ug/kg
Aroclor 1232	ND	38	ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	ND	38	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	-
Tetrachloro-m-xylene	103	(10 - 196)	
Decachlorobiphenyl	117	(10 - 199)	

NOTE(S):

Client Sample ID: SB-384-0203

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/15/07 15:10 10/19/07	Date Received: Analysis Date:	10/17/07 10/23/07		C:	
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>		Final	Wgt/Vol:	10 mL
<pre>% Moisture:</pre>	1.4	Method:	SW846 8082			
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	_	
Aroclor 1016		ND	38	ug/kg		
Aroclor 1221		ND	38	ug/kg		
Aroclor 1232		ND	38	ug/kg		
Aroclor 1242		ND	38	ug/kg		
Aroclor 1248		ND	38	ug/kg		
Aroclor 1254		ND	38	ug/kg		
Aroclor 1260		ND	38	ug/kg		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xy	ene	84	(10 - 196)			
Decachlorobipheny		108	(10 - 199)			

NOTE(S):

Client Sample ID: SB-384-0405

GC Semivolatiles

Lot-Sample #: A7J1 Date Sampled: 10/19 Prep Date: 10/19 Prep Batch #: 7292	5/07 15:15 Date 9/07 Anal 031	Received:	10/17/0	07 07		K	
Dilution Factor: 1		ial Wgt/Vol:			rinai	Wgt/Vol:	TO HILL
% Moisture: 15	Meti	100	DWOTO	0002			
			REPORT	ING			
PARAMETER	RESU	JLT	LIMIT		UNITS	_	
Aroclor 1016	ND		39		ug/kg		
Aroclor 1221	ND		39		ug/kg		
Aroclor 1232	ND		39		ug/kg		
Aroclor 1242	ND		39		ug/kg		
Aroclor 1248	ND		39		ug/kg		
Aroclor 1254	ND		39		ug/kg		
Aroclor 1260	ND		39		ug/kg		
	PERC	CENT	RECOVE	RY			
SURROGATE	RECO	OVERY	LIMITS				
Tetrachloro-m-xylene	87		(10 -	•			
Decachlorobiphenyl	97		(10 -	199)			

NOTE(S):

Client Sample ID: SB-384-0708

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #: Dilution Factor:	10/15/07 15:20 10/24/07 7297357	Work Order #: Date Received: Analysis Date: Initial Wgt/Vol:	10/17/07 10/28/07		<pre>Wgt/Vol:</pre>	
% Moisture:		Method:			_	
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	_	
Aroclor 1016		ND	43	ug/kg		
Aroclor 1221		ND	43	ug/kg		
Aroclor 1232		ND	43	ug/kg		
Aroclor 1242		ND	43	ug/kg		
Aroclor 1248		ND	43	ug/kg		
Aroclor 1254		ND	43	ug/kg		
Aroclor 1260		ND	43	ug/kg		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xy	lene	63	(10 - 196)			
Decachlorobiphen	yl	81	(10 - 199)			

NOTE(S):

Client Sample ID: SB-385-0102

GC Semivolatiles

Lot-Sample #: A7J170235-013 Date Sampled: 10/15/07 15:29 Prep Date: 10/24/07 Prep Batch #: 7297357	Date Received: Analysis Date:	10/17/07 10/28/07	Matrix: SO Final Wqt/Vol: 10 mL
Dilution Factor: 1 % Moisture: 8.0	<pre>Initial Wgt/Vol: Method</pre>		5 '
* Moisture: o.∪	reciiod	BN010 0002	
		REPORTING	
PARAMETER	RESULT	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	ND	36	ug/kg
Aroclor 1260	ND	36	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	58	(10 - 196)	
Decachlorobiphenyl	60	(10 - 199)	
- -			

NOTE (S):

Client Sample ID: SB-385-0203

GC Semivolatiles

Date Sampled: Prep Date: Prep Batch #:	10/15/07 15:28 10/19/07 7292031	Work Order #: Date Received: Analysis Date:	10/17/07 10/23/07	Matrix: SO Final Wqt/Vol: 10 mI	•
Dilution Factor:		Initial Wgt/Vol:	_	- •	_
% Moisture:	9.0	Method:	5W646 6U62		
			REPORTING		
PARAMETER		RESULT	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		ND	36	ug/kg	
Aroclor 1260		ND	36	ug/kg	
SURROGATE Tetrachloro-m-xy Decachlorobiphen		PERCENT RECOVERY 89 109	RECOVERY LIMITS (10 - 196) (10 - 199)		

NOTE(S):

Client Sample ID: SB-385-0405

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/15/07 15:32 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07 10/23/07	Matrix: SO	a.T
Dilution Factor:		<pre>Initial Wgt/Vol: Method</pre>		Final Wgt/Vol: 10 m	ш
% Moisture:	7.0	metnod:	5W646 6U62		
			REPORTING		
PARAMETER		RÉSULT	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		ND	36	ug/kg	
Aroclor 1260		ND	36	ug/kg	
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS	·	
Tetrachloro-m-xy	lene	90	(10 - 196)		
Decachlorobiphen		110	(10 - 199)		

NOTE(S):

Client Sample ID: SB-385-0708

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/15/07 15:35 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SO
Dilution Factor:		<pre>Initial Wgt/Vol:</pre>	30.2 g	Final Wgt/Vol: 10 mL
% Moisture:	15	Method:	SW846 8082	
			REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Aroclor 1016		ND	39	ug/kg
Aroclor 1221		ND	39	ug/kg
Aroclor 1232		ND	39	ug/kg
Aroclor 1242		ND	39	ug/kg
Aroclor 1248		ND	39	ug/kg
Aroclor 1254		ND	39	ug/kg
Aroclor 1260		ND	39	ug/kg
		PERCENT	RECOVERY	
SURROGATE		RECOVERY	LIMITS	
Tetrachloro-m-xy	lene	95	(10 - 196)	
Decachlorobiphen	yl	112	(10 - 199)	
_				

NOTE(S):

Client Sample ID: SB-386-0102

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/15/07 15:45 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	k SO	
Dilution Factor:		<pre>Initial Wgt/Vol:</pre>	30.1 g	Final	Wgt/Vol: 10	mL
<pre>% Moisture:</pre>	10	Method:	SW846 8082			
			REPORTING			
PARAMETER		RESULT	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		ND	37	ug/kg		
Aroclor 1260		ND	37	ug/kg		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xyl	Lene	88	(10 - 196)			
Decachlorobipheny	/1	106	(10 - 199)			

NOTE(S):

Client Sample ID: SB-386-0203

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/15/07 15:48 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SO
Dilution Factor:		<pre>Initial Wgt/Vol:</pre>	30.02 g	Final Wgt/Vol: 10 mL
<pre>% Moisture:</pre>	11	Method:	SW846 8082	
			REPORTING	
PARAMETER		RESULT	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		ND	37	ug/kg
Aroclor 1260		ND	37	ug/kg
		PERCENT	RECOVERY	
SURROGATE		RECOVERY	LIMITS	
Tetrachloro-m-xy	lene	163	(10 - 196)	
Decachlorobiphen		186	(10 - 199)	

Client Sample ID: SB-386-0405

GC Semivolatiles

Lot-Sample #: A7J170235-019 Date Sampled: 10/15/07 15:50 Prep Date: 10/19/07 Prep Batch #: 7292031 Dilution Factor: 1	Date Received: Analysis Date: Initial Wgt/Vol:	10/17/07 10/23/07 30.19 g	Matrix: SO Final Wgt/Vol.:: 10 mL
% Moisture: 10	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	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	ND	37	ug/kg
Aroclor 1260	ND	37	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	86	(10 - 196)	
Decachlorobiphenyl	119	(10 - 199)	

NOTE(S):

Client Sample ID: SB-386-0708

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/15/07 15:55 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07 10/23/07	Matrix S	
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.05 g	Final Wgt/Vol: 1	0 mL
<pre>% Moisture:</pre>	16	Method:	SW846 8082		
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	
Aroclor 1016		ND	39	ug/kg	
Aroclor 1221		ND	39	ug/kg	
Aroclor 1232		ND	39	ug/kg	
Aroclor 1242		ND	39	ug/kg	
Aroclor 1248		ND	39	ug/kg	
Aroclor 1254		ND	39	ug/kg	
Aroclor 1260		ND	39	ug/kg	
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Tetrachloro-m-xy	lene	87	(10 - 196)		
Decachlorobiphen		108	(10 - 199)		

NOTE(S):

APPENDIX C

SUPPORT DOCUMENTATION



ANALYTICAL REPORT

PROJECT NO. 112IC00855

LMC MR SDG #: 7J17235

Michael Martin

Tetra Tech NUS Inc 20251 Century Blvd Suite 200 Germantown, MD 20874

TESTAMERICA LABORATORIES, INC.

Project Manager

November 6, 2007

CASE NARRATIVE

7J17235

The following report contains the analytical results for twenty solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc from the LMC MR Site, project number 112IC00855. The samples were received October 17, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID: A7J170235.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba and Michael Martin on October 30, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters, which are never reported on a dry weight basis, is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 3.6, 3.8 and 4.9°C.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for OC samples may not be met at these quantitation levels.

POLYCHLORINATED BIPHENYLS-8082

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for OC samples may not be met at these quantitation levels.

During the analytical sequence for PCB analysis, samples and QC in this NCM reflect an incorrect injection time on the raw data due to the system computer automatically adjusting from Daylight Savings Time to Eastern Standard Time on the wrong weekend.

Due to a Daylight Savings Time related software issue in the data acquisition system, sample(s) SB-385-0102 indicates an injection time of 0110 hours. Because of this software issue, this run appeared out of sequence on the Form 8 and was adjusted to reflect the true chronological order. The inject time for this sample was not changed to maintain data integrity.

For sample(s) SB-383-0102, the recovery for one surrogate compound is outside acceptance criteria. Since the method criterion is that one of two surrogate compounds must meet acceptance criteria, no corrective action was required.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica North Canton (formerly STL North Canton) 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, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

OC 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. TestAmerica North Canton (formerly STL North Canton) 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.

For SW846/RCRA methods, 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.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC/MS methods and at a 5% frequency for GC/MS methods.

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. Multi peak responders may not be included in the target spike list due to co-elution. 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. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) 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). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still 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 under the following circumstances:

• Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride,	Phthalate Esters	Copper, Iron, Zinc,	Copper, Iron, Zinc, Lead
Acetone, 2-Butanone		Lead, Calcium,	
,	i	Magnesium, Potassium,	
	Į.	Sodium, Barium,	Į į
		Chromium, Manganese	·

OUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the
 blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times
 the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated 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. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

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. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is 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.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion 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 and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica North Canton (formerly STL North Canton) Certifications and Approvals:

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225), Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), OhioVAP

Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), OhioVAP (#CL0024), West Virginia (#210), Wisconsin (#999518190), NAVY, ARMY, USDA Soil Permit,

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ANALYTICAL METHODS SUMMARY

7J17235

PARAMETI	ER	ANALYTICAL METHOD	
Semivola	SW-846 8082 atile Organic Compounds by GC/MS esidue as Percent Solids	SW846 8082 SW846 8270C MCAWW 160.3 MOD	
Reference	ces:		
MCAWW	"Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.		
SŴ846	"Test Methods for Evaluating Solid "Methods" Third Edition November 1		

SAMPLE SUMMARY

7J17235 : A7J170235

<u>wo</u> #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
J86FW J86F9 J86GC J86GC J86GG J86GG J86GM J86GM J86GM J86GP J86GQ J86GT J86GV	001 002 003 004 005 006 007 008 009 010 011 012 013 014	SB-382-0102 SB-382-0203 SB-382-0405 SB-383-0102 SB-383-0203 SB-383-0405 SB-384-0102 SB-384-0102 SB-384-0708 SB-384-0708 SB-385-0102 SB-385-0203 SB-385-0203 SB-385-0405	DATE 10/15/07 10/15/07 10/15/07 10/15/07 10/15/07 10/15/07 10/15/07 10/15/07 10/15/07 10/15/07 10/15/07 10/15/07	TIME 14:00 14:10 14:15 14:20 14:40 14:45 14:50 14:55 15:05 15:10 15:15 15:20 15:28 15:32
J86GX	017	SB-386-0102	10/15/07	15:45
J86GW	016	SB-385-0708	10/15/07 10/15/07 10/15/07	15:45
J86G4 J86G5	019	SB-386-0405 SB-386-0708	10/15/07 10/15/07	

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.

Chain of Custody Record



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Chain of Custody Record



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SW846 8270C SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Lot #: A7J170235

Extraction: XXA130L01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	SRG05	SRG06	TOT OUT
	=======================================	======	======	======	======	======	======	
	SB-382-0102	68	66	81	74	71	60	00
02	SB-382-0203	59	57	75	69	67	60	00
03	SB-382-0405	58	57	77	68	63	45	00
04	SB-382-0708	56	49	75	62	61	50	00
05	SB-383-0102	75 D	80 D		76 D	70 D	54 D	00
	SB-383-0203	63	64	75	64	62	47	00
	SB-383-0405	56	52	74	65	62	49	00
	SB-383-0708	61	60	77	66	64	47	00
	SB-384-0102	57	59	71	58	59	50	00
10	SB-384-0203	60	57	73	63	62	52	00
11	SB-384-0405	58	57	70	60	59	41	00
12	SB-384-0708	58	52	76	65	64	49	00
13	SB-385-0102	58	58	69	60	59	61	00
14	SB-385-0203	63	62	72	65	65	64	00
15	SB-385-0405	63	64	72	68	67	69	00
•	SB-385-0708	51	48	60	53	53	42	00
	SB-386-0102	60	61	73	62	62	60	00
18	SB-386-0203	58	57	70	64	62	62	00
,	SB-386-0405	68	67	80	73	73	69	00
20	SB-386-0708	61	57	75	66	65	55	00
21	METHOD BLK. J9JEV1AA	68	71	79	71	67	48	00
	LCS J9JEV1AC	70	67	79	68	65	63	00
23	SB-382-0102 D	69	69	80	76	73	73	00
24	SB-382-0102 S	69	70	81	75	71	65	00
								

SURROGATES	QC LIMITS
SRG01 = Nitrobenzene-d5	(24-112)
SRG02 = 2-Fluorobiphenyl	(34-110)
SRG03 = Terphenyl-d14	(41-119)
SRG04 = Phenol-d5	(28-110)
SRG05 = 2-Fluorophenol	(26-110)
SRG06 = 2,4,6-Tribromophenol	(10-118)

FORM II

[#] Column to be used to flag recovery values
* Values outside of required QC Limits

D System monitoring Compound diluted out

SW846 8270C CHECK SAMPLE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Lot #: A7J220000

WO #: J9JEV1AC BATCH: 7295066

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
1,2,4-Trichlorobenzene	670	460	69	43- 110	========
Acenaphthene	670	450	67	46- 110	
2,4-Dinitrotoluene	670	530	79	55- 116	
Pyrene	670	520	78	58 - 113	
N-Nitrosodi-n-propylamine	670	450	68	40- 114	
1,4-Dichlorobenzene	670	430	64	38 - 110	
Pentachlorophenol	670	250	38	10- 110	
Phenol	670	430	65	39- 110	
2-Chlorophenol	670	440	66	39- 110	
4-Chloro-3-methylphenol	670	460	69	42- 110	
4-Nitrophenol	670	420	63	24 - 117	

NOTES (S):		•	

* Values outside of QC limits

phre recovery:	out or	<u> </u>	·
COMMENTS:			

SW846 8270C MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Matrix Spike ID: SB-382-0102

Lot #: A7J170235

WO #: J86FW1AG BATCH: 7295066

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
=======================================	=======	=======	=======	======	========	=======
1,2,4-Trichlorobenzene	780	ND	560	72	33- 110	l
Acenaphthene	780	ND	530	68	10- 200	l
2,4-Dinitrotoluene	780	ND	610	79_	42- 118	l <u></u>
Pyrene	780	ND	620	79	10- 200	
N-Nitrosodi-n-propylamine	780	ND	580	74	30- 121	
1,4-Dichlorobenzene	780	ND	490	63	26- 110	
Pentachlorophenol	780	ND	290	38	10- 182	
Phenol	780	ND	570	73	10- 144	
2-Chlorophenol	780	ND	580	74	32- 110	
4-Chloro-3-methylphenol	780	ND	590	76	32- 117	
4-Nitrophenol	780	ND	490	63	10- 125	

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk

					_
*	Values	outside	of	QC	limits

RPD: 0 out of 0 outside limits Spike Recovery: 0 out of 11 outside limits

COMMENTS:

FORM III

SW846 8270C MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Matrix Spike ID: SB-382-0102

Lot #: A7J170235

WO #: J86FW1AH BATCH: 7295066

	SPIKE ADDED	MSD CONCENT.	MSD %	90	QC I	LIMITS	
COMPOUND	(ug/kg)	(ug/kg)	REC	RPD	RPD	REC	QUAL
	=======	=======	=====	======	====	=======	=======
1,2,4-Trichlorobenzene	780	570	73	0.94	30	33- 110	
Acenaphthene	780	540	70	2.2	30	10- 200	
2,4-Dinitrotoluene	780	660	84	6.8	30	42- 118	
Pyrene	780	620	79	0.35	30	10- 200	
N-Nitrosodi-n-propylamine	780	600	77	3.2	30	30- 121	
1,4-Dichlorobenzene	780	510	66	3.0	30	26- 110	
Pentachlorophenol	780	230	30	23	30	10- 182	
Phenol	780	570	73	0.52	30	10- 144	
2-Chlorophenol	780	580	75	1.7	30	32 - 110	
4-Chloro-3-methylphenol	780	620	80	4.0	30	32- 117	
4-Nitrophenol	780	570	74	15	30	10- 125	

NOTES (S):

Results and reporting limits have been adjusted for dry weight.

 $\ensuremath{\mathtt{\#}}$ Column to be used to flag recovery and RPD values with an asterisk

*	Values	outside	of	QC	limits
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RPD:	0	out	of		11	out	side li	mits	
Spike	Recov	ery:		0	out	of	11	outside	limits

COMMENTS	1
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5B SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17235

Lab File ID: 2DF1024 DFTPP Injection Date: 10/24/07

Instrument ID: A4AG2 DFTPP Injection Time: 1212

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51 68 69 70 127 197 198 199 275 365 441 442 443	30.0 - 60.0% of mass 198 Less than 2.0% of mass 69 Mass 69 relative abundance Less than 2.0% of mass 69 40.0 - 60.0% of mass 198 Less than 1.0% of mass 198 Base Peak, 100% relative abundance 5.0 - 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443 Greater than 40.0% of mass 198 17.0 - 23.0% of mass 442	35.5 0.6 (1.6)1 40.3 0.0 (0.0)1 50.2 0.2 100.0 6.6 24.7 3.2 10.9 79.1 14.9 (18.9)2
	1-Value is % of mass 69 2-Value is % of mass	ass 442

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

	EPA	LAB	LAB	DATE	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
	=======================================	==========		========	=======
01	SSTD009	L9	2SHHH1024	10/24/07	1223
02	SSTD008	L8	2SHH1024	10/24/07	1240
03	SSTD007	L7	2SH1024	10/24/07	1257
04	SSTD006	L6	2SMH1024	10/24/07	1315
05	SSTD005	L5	2SMM1024	10/24/07	1332
06	SSTD004	L4	2SM1024	10/24/07	1349
07	SSTD003	L3	2SML1024	10/24/07	1406
80	SSTD002	L2	2SL1024	10/24/07	1424
09	SSTD001	L1	2SLL1024	10/24/07	1441
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page 1 of 1

FORM V SV

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 17-OCT-2007 15:56 End Cal Date : 24-OCT-2007 14:41

Quant Method : ISTD Origin : Disabled Target Version : 4.14 Integrator : HP RTE

: \\cansvr11\dd\chem\MSS\a4ag2.i\71024A.b\8270p.m : 24-Oct-2007 15:10 a4ag2.i Method file

Last Edit

Curve Type : Average

Compound	0.05000	0.25000 Level 2	0.50000 Level 3	•	2.500 Level 5	5.000 Level 6	RRF	 % RSD
	7.500	10.000	12.500]		1
	Level 7	Level 8	Level 9			1]	1.
144 Hexachlorophene	+++++	+++++	+++++	++++	======== +++++	+++++		:
	+++++	+++++	+++++]		I .	+++++	 +++++
145 Hexachlorophene product	+++++	 +++++	+++++	+++++	 +++++	 +++++		
	+++++	+++++	+++++			1	 +++++	, +++++
146 Benzo(a)pyrene	1.13356	 0.91950	0.94978	0.99564	1.01295	 1.09296	 	
	1.09655	1.13883	1.25011			İ	1.06554	9.85
148 3-Methylcholanthrene	+++++	+++++	+++++	+++++	+++++	 +++++		
	+++++	+++++ 	+++++ .				+++++	+++++
149 Indeno(1,2,3-cd)pyrene	1.11314		1.04225	1.09901	1.11743	1.20553		
	1.21453	1.25502	1.37265	!		į į	1.15604	10.21
150 Dibenz(a,h)anthracene	0.95549		0.90658	0.93889	0.95736	1.03913	 	
	1.04814	1.07257	1.18011	 	İ		0.99520	9.89
151 Benzo(g,h,i)perylene	1.07565	0.85637	0.88607	0.92765	0.94183	1.01237	 	
	1.02211	1.05245	1.14437		į	į	0.99099	9.53
199 3-Picoline	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	1	į	ļ	+++++	++++
200 N,N-Dimethylacetamide	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++ -	- +++++	+++++	!	İ	į	+++++	+++++
201 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++ -	+++++	+++++]	1	j	į	+++++	+++++
202 Diphenyl	+++++	+++++	+++++	+++++	 ++++	+++++]		
	+++++	+++++	+++++		1		+++++	+++++

5B SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.:

Lab File ID: 2DF1025 DFTPP Injection Date: 10/25/07

Instrument ID: A4AG2 DFTPP Injection Time: 1006

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51 68 69 70 127 197 198 199 275 365 441 442 443	30.0 - 60.0% of mass 198 Less than 2.0% of mass 69 Mass 69 relative abundance Less than 2.0% of mass 69 40.0 - 60.0% of mass 198 Less than 1.0% of mass 198 Base Peak, 100% relative abundance 5.0 - 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443 Greater than 40.0% of mass 198 17.0 - 23.0% of mass 442	33.3 0.2 (0.7)1 38.6 0.2 (0.5)1 48.5 0.4 100.0 6.4 24.9 3.1 11.7 83.7 15.5 (18.6)2
	1-Value is % of mass 69 2-Value is % of mass	ass 442

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

	EPA	LAB	LAB	DATE	THE NAME OF THE PARTY OF THE PA
	SAMPLE NO.	SAMPLE ID	FILE ID		TIME
	DEMILLE NO.	SAMELE ID	ETTE TD	ANALYZED	ANALYZED
01	SSTD006	L6	2000	10/05/05	
02	J9JEVBLK	J9JEV1AA	2SMH1025	10/25/07	1016
03	J9JEVCHK	_ · · · · · · ·	J9JEV1AA	10/25/07	1338
		J9JEV1AC	J9JEV1AC	10/25/07	1356
04	SB-382-0102	J86FW1AD	J86FW1AD	10/25/07	1505
05	SB-382-0102	J86FWlAG	J86FW1AG	10/25/07	1522
06	SB-382-0102	J86FW1AH	J86FW1AH	10/25/07	1539
07	SB-382-0203	J86F91AD	J86F91AD	10/25/07	2124
08	SB-382-0405	J86GA1AD	J86GA1AD	10/25/07	2141
09	SB-382-0708	J86GClAD	J86GC1AD	10/25/07	2158
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page 1 of 1

FORM V SV

1/87 Rev.

SDG No.: 7J17235

Data File: \\cansvr11\dd\chem\MSS\a4ag2.i\71025A.b\2SMH1025.D Page 3

Report Date: 25-Oct-2007 10:31

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4ag2.i

Injection Date: 25-OCT-2007 10:16
Init. Cal. Date(s): 17-OCT-2007 24-OCT-2007
Init. Cal. Times: 15:56 14:41
Quant Type: ISTD Lab File ID: 2SMH1025.D Init. Cal. Date(s): 17-OCT-2
Analysis Type: Init. Cal. Times: 15:56
Lab Sample ID: Quant Type: ISTD
Method: \\cansvr11\\dd\chem\MSS\a4ag2.i\\71025A.b\\8270p.m

]		CCAL	MIN	1	MAX	1
COMPOUND	RRF / AMOUNT	RF5	RRF5	RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
		==============		=====		_========	========
146 Benzo(a)pyrene	1.06554	1.08282	1.08282	0.010	-1.62122	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1.15604	1.21134	1.21134	0.010	-4.78348	50.00000	Averaged
150 Dibenz(a,h)anthracene	0.99520	1.02369	1.02369	0.010	-2.86228	50.00000	Averaged
151 Benzo(g,h,i)perylene	0.99099	1.01766	1.01766	0.010	-2.69153	50.00000	Averaged
\$ 154 Nitrobenzene-d5	0.30387	0.31433	0.31433	0.010	-3.44206	50.00000	Averaged
\$ 155 2-Fluorobiphenyl	1.19376	1.24748	1.24748	0.010	4.49966	50.00000	Averaged
\$ 156 Terphenyl-d14	0.81794	0.86382	0.86382	0.010	-5.60931	50.00000	Averaged
\$ 157 Phenol-d5	1.52843	1.52673	1.52673	0.010	0.11082	[50.00000	Averaged
\$ 158 2-Fluorophenol	1.19836	1.18057	1.18057	0.010	1.48433	50.00000	Averaged
\$ 159 2,4,6-Tribromophenol	0.15460	0.16563	0.16563	0.010	-7.12826	50.00000	Averaged
\$ 186 2-Chlorophenol-d4	1.30490	1.32134	1.32134	0.010	-1.25989	50.00000	Averaged
\$ 187 1,2-Dichlorobenzene-d4	0.82867	0.84301	0.84301	0.010	-1.72938	50.00000	Averaged
M 195 Cresols, total	2.49329	2.46155	2.46155	0.010	1.27300	50.00000	Averaged
101 Diphenylamine	0.51130	0.52679	0.52679	0.010	-3.02948	50.00000	Averaged
	1 ' 1	1			1	i	

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17235

Lab File ID: 2DF1026 DFTPP Injection Date: 10/26/07

Instrument ID: A4AG2 DFTPP Injection Time: 0642

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51 68 69 70 127 197 198 199 275 365 441 442 443	30.0 - 60.0% of mass 198 Less than 2.0% of mass 69 Mass 69 relative abundance Less than 2.0% of mass 69 40.0 - 60.0% of mass 198 Less than 1.0% of mass 198 Base Peak, 100% relative abundance 5.0 - 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443 Greater than 40.0% of mass 198 17.0 - 23.0% of mass 442	33.1 0.6 (1.6)1 39.1 0.2 (0.4)1 49.3 0.4 100.0 6.6 25.8 3.4 11.8 82.3 15.6 (18.9)2
'	1-Value is % of mass 69 2-Value is % of mass	ass 442

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

	EPA	LAB SAMPLE TD	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	SAMPLE NO.	SAMPLE ID	LITTE ID	ANADIZED	HIVALITAED
01	SSTD006	L6	2SMH1026	10/26/07	0653
02	SB-383-0203	J86GE1AD	J86GE1AD	10/26/07	1058
03	SB-383-0205 SB-383-0405	J86GGLAD	J86GG1AD	10/26/07	1115
04	SB-383-0708	J86GJ1AD	J86GJ1AD	10/26/07	1132
05	SB-384-0102	J86GKLAD	J86GK1AD	10/26/07	1150
06		J86GMLAD	J86GMLAD	10/26/07	1207
07	SB-384-0405	J86GNLAD	J86GN1AD	10/26/07	1224
08	SB-384-0708	J86GP1AD	J86GP1AD	10/26/07	1241
09	SB-385-0102	J86GQ1AD	J86GQ1AD	10/26/07	1259
10	SB-385-0203	J86GT1AD	J86GT1AD	10/26/07	1316
11	SB-385-0405	J86GVLAD	J86GVlAD	10/26/07	1333
12	SB-385-0708	J86GW1AD	J86GWLAD	10/26/07	1350
13	SB-386-0405	J86G41AD	J86G41AD	10/26/07	1408
14	SB-386-0102	J86GX1AD	J86GX1AD	10/26/07	1425
15	SB-386-0708	J86G51AD	J86G51AD	10/26/07	1442
16	SB-386-0203	J86G31AD	J86G31AD	10/26/07	1459
17	SB-383-0102	J86GD1AD	J86GD1AD	10/26/07	1517
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FORM V SV

Data File: \\cansvr11\dd\chem\MSS\a4ag2.i\71026A.b\2SMH1026.D Page 3 Report Date: 26-Oct-2007 07:06

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4ag2.i Lab File ID: 2SMH1026.D Analysis Type:

Injection Date: 26-OCT-2007 06:53

Init. Cal. Date(s): 17-OCT-2007 24-OCT-2007 15:56

14:41

Init. Cal. Times:

Lab Sample ID: L6 Quant Type: ISTD Method: \\cansvr11\\dd\\chem\\MSS\a4ag2.i\\71026A.b\\8270p.m

	·	.		CCAL	MIN	1	MAX	
COMPOUND	RRF	TRUDOMA \	RF5	RRF5	RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
			=======================================				=========	*****
146 Benzo(a)pyrene	1	1.06554	1.07886	1.07886	0.010	-1.24937	20.00000	Averaged
149 Indeno(1,2,3-cd)pyrene	1 .	1.15604	1.21994	1.21994	0.010	-5.52819	50.00000	Averaged
150 Dibenz(a,h)anthracene	1	0.99520	1.03062	1.03062	0.010	-3.55865	50.00000	Averaged
151 Benzo(g,h,i)perylene	- [0.99099	1.02047	1.02047	0.010	-2.97552	50.00000	Averaged
\$ 154 Nitrobenzene-d5	1	0.30387	0.30639	0.30639	0.010	-0.82935	50.00000	Averaged
\$ 155 2-Fluorobiphenyl	I	1.19376	1.24421	1.24421	0.010	-4.22587	50.00000	Averaged
\$ 156 Terphenyl-d14		0.81794	0.86631	0.86631	0.010	-5.91389	50.00000	Averaged
\$ 157 Phenol-d5	ĺ	1.52843	1.49359	1.49359	0.010	2.27930	50.00000	Averaged
\$ 158 2-Fluorophenol		1.19836	1.20823	1.20823	0.010	-0.82385	50.00000	Averaged
\$ 159 2,4,6-Tribromophenol	1	0.15460	0.16507	0.16507	0.010	-6.76783	50.00000	Averaged
\$ 186 2-Chlorophenol-d4	1	1.30490	1.29772	1.29772)	0.010	0.55008	50.00000	Averaged
\$ 187 1,2-Dichlorobenzene-d4	ĺ	0.82867	0.82929	0.82929	0.010	-0.07473	50.00000	-
M 195 Cresols, total	ĺ	2.49329	2.68822	2.68822	0.010	-7.81826	50.00000	
101 Diphenylamine	i	0.51130	0.53341	0.53341	0.010	-4.32578	50.00000l	- '
	i	i	i	i				

SW846 8270C METHOD BLANK SUMMARY

J9JEV1AA

BLANK WORKORDER NO.

Lab	Name:	TestAmerica	Laboratories,	Inc
-----	-------	-------------	---------------	-----

Lab Code: TALCAN SDG Number:7J17235

Lab File ID: J9JEV1AA. Lot Number: A7J170235

Date Analyzed: 10/25/07 Time Analyzed: 13:38

Matrix: SOLID Date Extracted:10/22/07

GC Column: DB-5.625 ID: .18 Extraction Method: 3550B

Instrument ID: AG2 Level: (low/med) LOW

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

SAMPLE LAB DATE TIME ANALYZED Analyzed An						
SB-382-0102 J86FW1AD J86FW1AD. 10/25/07 15:05			SAMPLE	LAB	DATE	TIME
01 SB-382-0102 J86FWIAD J86FWIAD 10/25/07 15:05 02 SB-382-0102 J86FWIAG S J86FWIAG 10/25/07 15:22 03 SB-382-0102 J86FWIAH D J86FWIAH 10/25/07 15:39 04 SB-382-0203 J86FPIAD J86FPIAD 10/25/07 21:24 05 SB-382-0405 J86GCIAD J86GCIAD 10/25/07 21:41 06 SB-382-0708 J86GCIAD J86GCIAD 10/25/07 21:58 07 SB-383-0102 J86GCIAD J86GCIAD 10/26/07 15:17 08 SB-383-0203 J86GCIAD J86GCIAD 10/26/07 10:58 09 SB-383-0203 J86GCIAD J86GCIAD 10/26/07 10:58 09 SB-383-0708 J86GCIAD J86GCIAD 10/26/07 11:15 01 SB-383-0708 J86GCIAD J86GCIAD 10/26/07 11:32 11 SB-384-0102 J86GCIAD J86GCIAD 10/26/07 11:32 12 SB-384-0203 J86GCIAD J86GCIAD 10/26/07 12:07 13 SB-384-0203 J86GCIAD J86GCIAD 10/26/07 12:07 13 SB-384-0405 J86GCIAD J86GCIAD 10/26/07 12:24 14 SB-384-0708 J86GCIAD J86GCIAD 10/26/07 12:24 15 SB-385-0102 J86GCIAD J86GCIAD 10/26/07 12:41 15 SB-385-0102 J86GCIAD J86GCIAD 10/26/07 12:59 16 SB-385-0203 J86GCIAD J86GCIAD 10/26/07 13:33 18 SB-385-0708 J86GCIAD J86GCIAD 10/26/07 13:33 18 SB-385-0708 J86GCIAD J86GCIAD 10/26/07 13:50 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07 14:55 19 SB-386-0203 J86GCIAD J86GCIAD 10/26/07		CLIENT ID.	WORK ORDER #	FILE ID	ANALYZED	ANALYZED
Description			===========		========	========
03 SB-382-0102 J86FW1AH D J86FW1AH 10/25/07 15:39 04 SB-382-0203 J86F91AD J86F91AD 10/25/07 21:24 05 SB-382-0405 J86GA1AD J86GA1AD 10/25/07 21:41 06 SB-382-0708 J86GC1AD J86GC1AD 10/25/07 21:58 07 SB-383-0102 J86GD1AD J86GB1AD 10/26/07 15:17 08 SB-383-0203 J86GB1AD J86GB1AD 10/26/07 10:58 09 SB-383-0405 J86GG1AD J86GG1AD 10/26/07 11:15 10 SB-383-0708 J86GHAD J86GG1AD 10/26/07 11:32 11 SB-384-0102 J86GK1AD J86GM1AD 10/26/07 11:50 12 SB-384-0203 J86GM1AD J86GM1AD 10/26/07 12:07 13 SB-384-0405 J86GM1AD J86GM1AD 10/26/07 12:24 14 SB-385-0102 J86GQ1AD J86GP1AD 10/26/07 12:41 15 SB-385-0203 J86GM1AD J86GM1AD 10/26/07 <t< td=""><td>01</td><td>SB-382-0102</td><td>J86FW1AD</td><td>J86FWlAD.</td><td>10/25/07</td><td>15:05</td></t<>	01	SB-382-0102	J86FW1AD	J86FWlAD.	10/25/07	15:05
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06 SB-382-0708 J86GC1AD J86GC1AD 10/25/07 21:58 07 SB-383-0102 J86GD1AD J86GD1AD 10/26/07 15:17 08 SB-383-0203 J86GB1AD J86GB1AD 10/26/07 10:58 09 SB-383-0405 J86GG1AD J86GG1AD 10/26/07 11:15 10 SB-383-0708 J86GJ1AD J86GG1AD 10/26/07 11:32 11 SB-384-0102 J86GK1AD J86GK1AD 10/26/07 11:50 12 SB-384-0203 J86GM1AD J86GM1AD 10/26/07 12:07 13 SB-384-0405 J86GM1AD J86GM1AD 10/26/07 12:07 13 SB-384-0405 J86GM1AD J86GM1AD 10/26/07 12:24 14 SB-385-0102 J86GG1AD J86GG1AD 10/26/07 12:41 15 SB-385-0102 J86GY1AD J86GY1AD 10/26/07 13:16 17 SB-385-0405 J86GY1AD J86GY1AD 10/26/07 13:33 18 SB-385-0708 J86GY1AD J86GY1AD 10/26/07 14:25	04	SB-382-0203	J86F91AD	J86F91AD.	10/25/07	21:24
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08 SB-383-0203 J86GE1AD J86GE1AD 10/26/07 10:58 09 SB-383-0405 J86GG1AD J86GG1AD 10/26/07 11:15 10 SB-383-0708 J86GJ1AD J86GJ1AD 10/26/07 11:32 11 SB-384-0102 J86GK1AD J86GK1AD 10/26/07 11:50 12 SB-384-0203 J86GM1AD J86GM1AD 10/26/07 12:07 13 SB-384-0405 J86GM1AD J86GM1AD 10/26/07 12:24 14 SB-384-0708 J86GP1AD J86GP1AD 10/26/07 12:41 15 SB-385-0102 J86GQ1AD J86GQ1AD 10/26/07 12:59 16 SB-385-0203 J86GY1AD J86GY1AD 10/26/07 13:16 17 SB-385-0405 J86GY1AD J86GY1AD 10/26/07 13:33 18 SB-385-0708 J86GY1AD J86GY1AD 10/26/07 14:25 20 SB-386-0102 J86GY1AD J86GY1AD 10/26/07 14:25 21 SB-386-0405 J86GY1AD J86GY1AD 10/26/07 14:25	06	SB-382-0708	J86GClAD	J86GC1AD.	10/25/07	21:58
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13 SB-384-0405 J86GN1AD 10/26/07 12:24 14 SB-384-0708 J86GP1AD J86GP1AD 10/26/07 12:41 15 SB-385-0102 J86GQ1AD J86GQ1AD 10/26/07 12:59 16 SB-385-0203 J86GT1AD J86GT1AD 10/26/07 13:16 17 SB-385-0405 J86GV1AD J86GV1AD 10/26/07 13:33 18 SB-385-0708 J86GW1AD J86GW1AD 10/26/07 13:50 19 SB-386-0102 J86GX1AD J86GX1AD 10/26/07 14:25 20 SB-386-0203 J86G31AD J86G31AD 10/26/07 14:59 21 SB-386-0405 J86G41AD J86G41AD 10/26/07 14:08 22 SB-386-0708 J86G51AD J86G51AD 10/26/07 14:42 23 CHECK SAMPLE J9JEV1AC C J9JEV1AC 10/25/07 13:56 24	11	SB-384-0102	J86GK1AD	J86GK1AD.	10/26/07	11:50
14 SB-384-0708 J86GP1AD J86GP1AD. 10/26/07 12:41 15 SB-385-0102 J86GQ1AD J86GQ1AD. 10/26/07 12:59 16 SB-385-0203 J86GT1AD J86GT1AD. 10/26/07 13:16 17 SB-385-0405 J86GV1AD J86GV1AD. 10/26/07 13:33 18 SB-385-0708 J86GW1AD J86GW1AD. 10/26/07 13:50 19 SB-386-0102 J86GX1AD J86GX1AD. 10/26/07 14:25 20 SB-386-0203 J86G31AD J86G31AD. 10/26/07 14:59 21 SB-386-0405 J86G41AD J86G41AD. 10/26/07 14:08 22 SB-386-0708 J86G51AD J86G51AD. 10/26/07 14:42 23 CHECK SAMPLE J9JEV1AC C J9JEV1AC. 10/25/07 13:56 24	12	SB-384-0203	J86GMLAD	J86GM1AD.	10/26/07	12:07
15 SB-385-0102 J86GQ1AD J86GQ1AD 10/26/07 12:59 16 SB-385-0203 J86GT1AD J86GT1AD 10/26/07 13:16 17 SB-385-0405 J86GV1AD J86GV1AD 10/26/07 13:33 18 SB-385-0708 J86GW1AD J86GW1AD 10/26/07 13:50 19 SB-386-0102 J86GX1AD J86GX1AD 10/26/07 14:25 20 SB-386-0203 J86G31AD J86G31AD 10/26/07 14:59 21 SB-386-0405 J86G41AD J86G41AD 10/26/07 14:08 22 SB-386-0708 J86G51AD J86G51AD 10/26/07 14:42 23 CHECK SAMPLE J9JEV1AC J9JEV1AC 10/25/07 13:56 24 25 26 27	13	SB-384-0405	J86GN1AD	J86GN1AD.	10/26/07	12:24
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18 SB-385-0708 J86GW1AD 10/26/07 13:50 19 SB-386-0102 J86GX1AD J86GX1AD 10/26/07 14:25 20 SB-386-0203 J86G31AD J86G31AD 10/26/07 14:59 21 SB-386-0405 J86G41AD J86G41AD 10/26/07 14:08 22 SB-386-0708 J86G51AD J86G51AD 10/26/07 14:42 23 CHECK SAMPLE J9JEV1AC C J9JEV1AC 10/25/07 13:56 24 SB	16	SB-385-0203	J86GT1AD	J86GT1AD.	10/26/07	13:16
19 SB-386-0102 J86GX1AD J86GX1AD 10/26/07 14:25 20 SB-386-0203 J86G31AD J86G31AD 10/26/07 14:59 21 SB-386-0405 J86G41AD J86G41AD 10/26/07 14:08 22 SB-386-0708 J86G51AD J86G51AD 10/26/07 14:42 23 CHECK SAMPLE J9JEV1AC J9JEV1AC 10/25/07 13:56 24 SB	17	SB-385-0405	J86GV1AD	J86GV1AD.	10/26/07	13:33
20 SB-386-0203 J86G31AD J86G31AD. 10/26/07 14:59 21 SB-386-0405 J86G41AD J86G41AD. 10/26/07 14:08 22 SB-386-0708 J86G51AD J86G51AD. 10/26/07 14:42 23 CHECK SAMPLE J9JEV1AC J9JEV1AC. 10/25/07 13:56 24	18	SB-385-0708	J86GW1AD	J86GW1AD.	10/26/07	13:50
SB-386-0405 J86G41AD J86G41AD. 10/26/07 14:08	19	SB-386-0102	J86GX1AD	J86GX1AD.	10/26/07	14:25
22 SB-386-0708 J86G51AD J86G51AD. 10/26/07 14:42 23 CHECK SAMPLE J9JEV1AC C J9JEV1AC. 10/25/07 13:56 24	20	SB-386-0203	J86G31AD	J86G31AD.	10/26/07	14:59
23 CHECK SAMPLE J9JEV1AC C J9JEV1AC. 10/25/07 13:56 24 25 26 2 27 28 29 29 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	21	SB-386-0405	J86G41AD	J86G41AD.	10/26/07	14:08
24 25 26 27 28 29	22	SB-386-0708	J86G51AD	J86G51AD.	10/26/07	14:42
25	23	CHECK SAMPLE	J9JEV1AC C	J9JEV1AC.	10/25/07	13:56
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28	26			·		
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	28					
30	29					
	30					i

COMMENTS:			
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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17235

Work Order #...: J9JEV1AA

Matrix..... SOLID

MB Lot-Sample #: A7J220000-066

Analysis Date..: 10/25/07

Prep Date....: 10/22/07 **Prep Batch #...:** 7295066

Final Wgt/Vol..: 2 mL

Dilution Factor: 1

Initial Wgt/Vol: 30 g

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PARAMETER	RESULT	LIMIT	UNITS	METHO:	D '.
Benzo(a)pyrene	ND	330	ug/kg	SW846	8270C
	PERCENT	RECOVERY			
SURROGATE	RECOVERY	LIMITS			
Nitrobenzene-d5	68	(24 - 11	2)		
2-Fluorobiphenyl	71	(34 - 11	0)		
Terphenyl-d14	79	(41 - 11	9)		
Phenol-d5	71	(28 - 11	0)		
2-Fluorophenol	67	(26 - 11	0)		
2,4,6-Tribromophenol	48	(10 - 11	8)		•
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NOTE(S):

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

8B SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17235

Lab File ID (Standard): 2SMH1025 Date Analyzed: 10/25/07

Instrument ID: A4AG2 Time Analyzed: 1016

		IS1 (DCB) AREA #	RT	IS2 (NPT) AREA #	RT	IS3 (ANT) AREA #	1
	12 HOUR STD	481781	3.62	2043835	4.52	1022011	5.79
	UPPER LIMIT	963562	4.12	4087670	5.02	2044022	6.29
	LOWER LIMIT	240891	3.12	1021918	4.02	511006	5.29
	EPA SAMPLE NO.						
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22	J9JEVBLK J9JEVCHK SB-382-0102 SB-382-0102 SB-382-0203 SB-382-0405 SB-382-0708	537952 551528 422938 428388 335445 373065 409523 325694	3.62 3.62 3.62 3.62 3.62 3.63 3.63	2376990 2378351 1909219 1942116 1549447 1731654 1879185 1502770	4.51 4.52 4.52 4.52 4.52 4.52 4.52	1219234 1245863 1047028 1069629 880008 934902 1013648 860719	5.78 5.78 5.79 5.79 5.79 5.80 5.80

IS1 (DCB) = 1,4-Dichlorobenzene-d4

UPPER LIMIT = +100%

LOWER LIMIT = - 50%

IS2 (NPT) = Naphthalene-d8

of internal standard area.

IS3 (ANT) = Acenaphthene-d10

of internal standard area.

Column used to flag internal standard area values with an asterisk.

page 1 of 1

FORM VIII SV-1

8C SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17235

Lab File ID (Standard): 2SMH1025 Date Analyzed: 10/25/07

Instrument ID: A4AG2 Time Analyzed: 1016

		TC4 (DIDT)	г — —	Tar (april			 -
		IS4 (PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6 (PRY) AREA #	RT
	12 HOUR STD	1733227	6.88	1575705	8.85	1527308	10.35
	UPPER LIMIT	3466454	7.38	3151410	9.35	3054616	10.85
	LOWER LIMIT	866614	6.38	787853	8.35	763654	9.85
	EPA SAMPLE NO.		=====		=====	=======	=====
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22	J9JEVBLK J9JEVCHK SB-382-0102 SB-382-0102 SB-382-0203 SB-382-0405 SB-382-0708	2102542 2168542 1908871 1900667 1642035 1719415 1821115 1525731	6.88 6.88 6.88 6.89 6.89 6.89	1945670 2022569 1776459 1781084 1595633 1651818 1748064 1447046	8.85 8.85 8.86 8.86 8.87 8.87	1872681 1953744 1703515 1692660 1567366 1557063 1597408 1366664	10.34 10.36 10.36 10.36 10.38 10.38

IS4 (PHN) = Phenanthrene-d10 IS5 = Chrysene-d12 (CRY)

= Perylene-d12

UPPER LIMIT = +100%

of internal standard area.

LOWER LIMIT = - 50%

of internal standard area.

Column used to flag internal standard area values with an asterisk.

page 1 of 1

IS6

(PRY)

FORM VIII SV-2

8B SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17235

Lab File ID (Standard): 2SMH1026 Date Analyzed: 10/26/07

Instrument ID: A4AG2 Time Analyzed: 0653

		IS1 (DCB)		IS2 (NPT)	l	IS3 (ANT)	I
		AREA #	RT	AREA #	RT	AREA #	RT
	=========	========	=====	=======================================	=====	========	======
	12 HOUR STD	304679	3.60	1259272	4.50	623790	5.77
	=========	========	=====	=========	=====	=======	======
	UPPER LIMIT	609358	4.10	2518544	5.00	1247580	6.27
	TOWED TIME	150340	=====	========	======		=====
	LOWER LIMIT	152340	3.10	629636	4.00	311895	5.27
	EPA SAMPLE		=====		=====	~=======	=====
	NO.						
		=======	======		=====	~======	=====
01	SB-383-0203	356495	3.60	1525222	4.50	812305	5.77
02	SB-383-0405	482037	3.60	2071032	4.50	1104368	5.77
03	SB-383-0708	485372	3.60	2089078	4.50	1113402	5.77
04	SB-384-0102	279900	3.60	1200610	4.50	621050	5.77
05 06	SB-384-0203	448724	3.60	1922764	4.50	1024611	5.77
07	SB-384-0405 SB-384-0708	378578 262021	3.60 3.60	1586951	4.50	861860	5.77
08	SB-385-0102	374702	3.60	1111623 1571904	4.50 4.50	591493 848399	5.77 5.77
09	SB-385-0203	490888	3.60	2033894	4.50	1110828	5.77
10	SB-385-0405	457296	3.60	2040934	4.50	1056951	5.77
11	SB-385-0708	392805	3.60	1671542	4.50	887532	5.77
12	SB-386-0405	385280	3.60	1719963	4.50	923893	5.77
13	SB-386-0102	278310	3.60	1188853	4.50	627208	5.77
14	SB-386-0708	472908	3.60	2082927	4.50	1104484	5.77
15	SB-386-0203	501505	3.60	2236922	4.50	1177436	5.77
16 17	SB-383-0102	391346	3.60	1790326	4.50	947037	5.77
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4 UPPER LIMIT = +100% of internal standard area.

IS3 (ANT) = Acenaphthene-d10 LOWER LIMIT = -50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

page 1 of 1

FORM VIII SV-1

8C SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17235

Lab File ID (Standard): 2SMH1026 Date Analyzed: 10/26/07

Instrument ID: A4AG2 Time Analyzed: 0653

		IS4 (PHN)		IS5 (CRY)	-m	IS6 (PRY)	
		AREA #	RT	AREA #	RT	AREA #	RT
	12 HOUR STD	1072166	6.86	972413	8.83	947293	10.32
	UPPER LIMIT	2144332	7.36	1944826	9.33	1894586	10.82
	LOWER LIMIT	536083	6.36	486207	8.33	473647	9.82
	EPA SAMPLE				=====		
		========	=====	=========	=====	=======	======
01	SB-383-0203	1403405	6.85	1293250	8.82	1296540	10.31
02 03	SB-383-0405	1910439	6.85	1754743	8.82	1723772	10.31
04	SB-383-0708 SB-384-0102	1917922 1092125	6.85 6.85	1769305 1003846	8.82 8.82	1752091 975028	10.31
05	SB-384-0102 SB-384-0203	1792485	6.85	1654918	8.82	1629128	10.31
06	SB-384-0405	1502460	6.85	1375148	8.82	1341033	10.31
07	SB-384-0708	1026559	6.85	934698	8.82	915745	10.31
08	SB-385-0102	1429157	6.85	1348852	8.82	1311735	10.31
09	SB-385-0203	1959759	6.85	1787388	8.82	1755491	10.31
10	SB-385-0405	1906799	6.85	1746103	8.82	1744207	10.31
11	SB-385-0708	1536673	6.86	1375945	8.82	1376712	10.31
12	SB-386-0405	1563545	6.85	1437551	8.82	1419425	10.31
13	SB-386-0102	1063536	6.85	953318	8.82	957495	10.31
14	SB-386-0708	1908931	6.86	1749353	8.82	1718864	10.31
15	SB-386-0203	2053344	6.86	1865876	8.83	1843730	10.32
16	SB-383-0102	1645542	6.86	1543041	8.84	1570145	10.33
17 18							
19							
20							
21				·····			
22							
		t		1			

IS4 (PHN) = Phenanthrene-d10 UPPER LIMIT = +100% IS5 (CRY) = Chrysene-d12 of internal standard area. IS6 (PRY) = Perylene-d12 LOWER LIMIT = -50%

of internal standard area.

page 1 of 1

FORM VIII SV-2

[#] Column used to flag internal standard area values with an asterisk.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Date Sampled...: 10/15/07 14:00 Date Received..: 10/17/07

Prep Date....: 10/22/07 Analysis Date..: 10/25/07

Prep Batch #...: 7295066

Dilution Factor: 1 Initial Wgt/Vol: 30.01 q Final Wgt/Vol.: 2 mJ

PARAMETER	PERCENT	RECOVERY	_ 1	RPD	
1,2,4-Trichloro-	RECOVERY 72	LIMITS	RPD	LIMITS	METHOD
benzene	12	(33 - 110)			SW846 8270C
Delizene	77	(22 - 110)			
	73	(33 - 110)	0.94	(0-30)	SW846 8270C
Acenaphthene	68	(10 - 200)			SW846 8270C
	70	(10 - 200)	2.2	(0-30)	SW846 8270C
2,4-Dinitrotoluene	79	(42 - 118)			SW846 8270C
	84	(42 - 118)	6.8	(0-30)	SW846 8270C
Pyrene	79	(10 - 200)			SW846 8270C
	79	(10 - 200)	0.35	(0-30)	SW846 8270C
N-Nitrosodi-n-propyl- amine	74	(30 - 121)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	SW846 8270C
	77	(30 - 121)	3.2	(0-30)	SW846 8270C
1,4-Dichlorobenzene	63	(26 - 110)			SW846 8270C
	66	(26 - 110)	3.0	(0-30)	SW846 8270C
Pentachlorophenol	38	(10 - 182)			SW846 8270C
	30	(10 - 182)	23	(0-30)	SW846 8270C
Phenol	73	(10 - 144)			SW846 8270C
	73	(10 - 144)	0.52	(0-30)	SW846 8270C
2-Chlorophenol	74	(32 - 110)			SW846 8270C
	75	(32 - 110)	1.7	(0-30)	SW846 8270C
4-Chloro-3-methylphenol	76	(32 - 117)			SW846 8270C
	80	(32 - 117)	4.0	(0-30)	SW846 8270C
4-Nitrophenol	63	(10 - 125)		•	SW846 8270C
	74	(10 - 125)	15	(0-30)	SW846 8270C
		DEDGENE			
SURROGATE		PERCENT		RECOVERY	
Vitrobenzene-d5		RECOVERY		LIMITS	_
residence us		69		(24 - 112	
-Fluorobiphenyl		69		(24 - 112	
- ractoprening		70		(34 - 110	
erphenyl-d14		69		(34 - 110	
or bucity I - at 4		81		(41 - 119	
henol-d5		80		(41 - 119	
TEHOT-G2		75 		(28 - 110	
- Fluorophone		76		(28 - 110	
-Fluorophenol		71		(26 - 110	
		73		(26 - 110)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17235

Work Order #...: J86FW1AG-MS

Matrix..... SO

MS Lot-Sample #: A7J170235-001

J86FW1AH-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	65 73	(10 - 118) (10 - 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.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17235 Work Order #...: J86FW1AG-MS Matrix...... SO

MS Lot-Sample #: A7J170235-001 J86FW1AH-MSD

Date Sampled...: 10/15/07 14:00 Date Received..: 10/17/07 Prep Date....: 10/22/07 Analysis Date..: 10/25/07

Prep Batch #...: 7295066

Dilution Factor: 1 Initial Wgt/Vol: 30.01 g Final Wgt/Vol.: 2 mL

	SAMPLE	SPIK	CE MEASRD		PERCNT			
PARAMETER	AMOUNT	AMT	AMOUNT	UNITS	RECVRY	RPD	METHO	D
1,2,4-Trichloro-	ND	780	560	ug/kg	72		SW846	8270C
benzene								
	ND	780	570	ug/kg	73	0.94	SW846	8270C
Acenaphthene	ND	780	530	ug/kg	- 68		SW846	8270C
	ND	780	540	ug/kg	70	2.2	SW846	8270C
2,4-Dinitrotoluene	ND	780	610	ug/kg	79			8270C
	ND	780	660	ug/kg	84	6.8	SW846	8270C
Pyrene	ND	780	620	ug/kg	79		SW846	8270C
	ND	780	620	ug/kg	79	0.35	SW846	8270C
N-Nitrosodi-n-propyl- amine	ND	780	580	ug/kg	74		SW846	8270C
	ND	780	600	ug/kg	77	3.2	SW846	8270C
1,4-Dichlorobenzene	ND	780	490	ug/kg	63		SW846	8270C
•	ND	780	510	ug/kg	66	3.0	SW846	8270C
Pentachlorophenol	ND	780	290	ug/kg	38		SW846	8270C
	ND	780	230	ug/kg	30	23	SW846	8270C
Phenol	ND	780	570	ug/kg	73		SW846	8270C
	ND	780	570	ug/kg	73	0.52	SW846	8270C
2-Chlorophenol	ND	780	580	ug/kg	74		SW846	8270C
	ND	780	580	ug/kg	75	1.7	SW846	8270C
4-Chloro-3-methylphenol	ND	780	590	ug/kg	76		SW846	8270C
_	ND	780	620	ug/kg	80	4.0	SW846	8270C
4-Nitrophenol	ND	780	490	ug/kg	63		SW846	8270C
	ND	780	570	ug/kg	74	15	SW846	8270C
		•	PERCENT		RECOVERY			
SURROGATE	_		RECOVERY		LIMITS			
Nitrobenzene-d5			69		(24 - 112)	-		
			69		(24 - 112)			

	PERCENT	RECOVERY
SURROGATE	RECOVERY	LIMITS
Nitrobenzene-d5	69	(24 - 112)
	69	(24 - 112)
2-Fluorobiphenyl	70	(34 - 110)
	69	(34 - 110)
Terphenyl-d14	81	(41 - 119)
	80	(41 - 119)
Phenol-d5	75	(28 - 110)
	76	(28 - 110)
2-Fluorophenol	71	(26 - 110)
	73	(26 - 110)

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17235 Wo

Work Order #...: J86FW1AG-MS

Matrix..... SO

MS Lot-Sample #: A7J170235-001

J86FW1AH-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	65	(10 - 118)
	73	(10 - 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 #...: 7J17235 Work Order #...: J9JEV1AC Matrix.....: SOLID

LCS Lot-Sample#: A7J220000-066

Prep Date....: 10/22/07 Analysis Date..: 10/25/07

Prep Batch #...: 7295066

Dilution Factor: 1 Final Wgt/Vol..: 2 mL

Initial Wgt/Vol: 30 g

	PERCENT	RECOVERY		
PARAMETER	RECOVERY	LIMITS	METHOD	
1,2,4-Trichloro-	69	(43 - 110)	SW846 8270C	
benzene				
Acenaphthene	67	(46 - 110)	SW846 8270C	
2,4-Dinitrotoluene	79	(55 - 116)	SW846 8270C	
Pyrene	78	(58 - 113)	SW846 8270C	
N-Nitrosodi-n-propyl- amine	68	(40 - 114)	SW846 8270C	
1,4-Dichlorobenzene	64	(38 - 110)	SW846 8270C	
Pentachlorophenol	38	(10 - 110)	SW846 8270C	
Phenol	65	(39 - 110)	SW846 8270C	
2-Chlorophenol	66	(39 - 110)	SW846 8270C	
4-Chloro-3-methylphenol	69	(42 - 110)	SW846 8270C	
4-Nitrophenol	63	(24 - 117)	SW846 8270C	
		PERCENT	RECOVERY	
SURROGATE		RECOVERY	LIMITS	
Nitrobenzene-d5		70	(24 - 112)	
2-Fluorobiphenyl		67	(34 - 110)	
Terphenyl-d14		79	(41 - 119)	
Phenol-d5		68	(28 - 110)	
2-Fluorophenol		65	(26 - 110)	
2,4,6-Tribromophenol		63	(10 - 118)	
NOTE (S)	•			

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17235 Work Order #...: J9JEV1AC Matrix....: SOLID

LCS Lot-Sample#: A7J220000-066

Prep Date....: 10/22/07 Analysis Date..: 10/25/07

Prep Batch #...: 7295066

Dilution Factor: 1 Final Wgt/Vol..: 2 mL

Initial Wgt/Vol: 30 g

	SPIKE	MEASURED		PERCENT		
PARAMETER	TUUOMA	AMOUNT	UNITS	RECOVERY	METHOD	
1,2,4-Trichloro-	670	460	ug/kg	69	SW846 8270C	
benzene						
Acenaphthene	670	450	ug/kg	67	SW846 8270C	
2,4-Dinitrotoluene	670	530	ug/kg	79	SW846 8270C	
Pyrene	670	520	ug/kg	78	SW846 8270C	
N-Nitrosodi-n-propyl- amine	670	450	ug/kg	68	SW846 8270C	
1,4-Dichlorobenzene	670	430	ug/kg	64	SW846 8270C	
Pentachlorophenol	670	250	ug/kg	38	SW846 8270C	
Phenol	670	430	ug/kg	65	SW846 8270C	
2-Chlorophenol	670	440	ug/kg	66	SW846 8270C	
4-Chloro-3-methylphenol	670	460	ug/kg	69	SW846 8270C	
4-Nitrophenol	670	420	ug/kg	63	SW846 8270C	
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS	_		
Nitrobenzene-d5		70	(24 - 112))		
2-Fluorobiphenyl		67	(34 - 110))		
Terphenyl-d14		79	(41 - 119))		
Phenol-d5		68	(28 - 110)			
2-Fluorophenol		65	(26 - 110)) ·		
2,4,6-Tribromophenol		63	(10 - 118)) .		

NOTE(S):

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

Bold print denotes control parameters

Report Date : 10-Oct-2007 14:11

STL North Canton

INITIAL CALIBRATION DATA

: 14-SEP-2007 15:17 Start Cal Date End Cal Date : 10-OCT-2007 01:35 Quant Method : ESTD Origin : Disabled Target Version : 4.14 Integrator : Falcon : \\cansvrll\DD\chem\GCS\a2hp10.i\710091C-1.b\PCB10.m
: 10-Oct-2007 14:09 serraa Method file Last Edit Curve Type : Average

Calibration File Names:

Level 1: \\cansvr11\DD\chem\GCS\a2hp10.i\710091C-1.b\038F3801.D Level 2: \\cansvr11\DD\chem\GCS\a2hp10.i\710091C-1.b\039F3901.D Level 3: \\cansvr11\DD\chem\GCS\a2hp10.i\710091C-1.b\040F4001.D Level 4: \\cansvr11\DD\chem\GCS\a2hp10.i\710091C-1.b\041F4101.D Level 5: \\cansvr11\DD\chem\GCS\a2hp10.i\710091C-1.b\042F4201.D Level 6: \\cansvr11\DD\chem\GCS\a2hp10.i\710091C-1.b\043F4301.D

		0.05000	0.10000	0.20000	0.50000	1.000	2.000		
Compound		Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	•	₹ RSD
			=======		ESTERNIES SES	BKIGHESS	=======	RITITOTER	
2 AROCLOR-1221(1)		678100	753730	691025	640198	621883	587058	661999	8.864
(2)		486460	417000	354830	324334	287307	280975	358484	22.335
(3)	*	1935960	1886340	1751380	1624940	1614415	1512056	1720849	9.679
3 AROCLOR-1016(1)		738140	688730	661085	641250	590896	554687	645798	10.257
(2)		1180600	1102910	1074925	1032464	956096	896292	1040548	9.866
(3)		2048180	1953320	1927230	1943544	1833867	1784738	1915147	4.883
(4)		794520	713600	702735	684156	636405	617216	691439	9.109
(5)		842160	803130	781010	759270	719439	695683	766782	7.037
4 AROCLOR-1232(1)		909420	759800	801615	752382	695680	698493	769565	10.312
(2)		550940	508980	474295	481080	441697	436240	482205	8.924
(3)		919860	876080	869335	862766	830448	827894	864397	3.915
(4)		329400	310150	284120	273960	257524	252011	284527	10.624
(5)		355720	356580	329375	319788	299196	293046	325451	8.319
5 AROCLOR-1242(1)		1188780	1095630	996815	955676	912315	993855	1023845	9.871
(2)		1850160	1932410	1838105	1801868	1721974	1624316	1794805	6.016
(3)		4549800	4254100	4029210	4017942	3942745	3613601	4067900	7.719
(4)		2537540	2300550	2144135	2143750	2083180	1975266	2197403	8.974
(5)		1872740	1791500	1665130	1624270	1571524	1495548	1670119	8.387
6 AROCLOR-1248(1)		1059440	933850	965705	923242	916200	886184	947437	6.399
(2)		1107800	1007150	1037860	985462	965568	938387	1007038	5.958
(3)		1546740	1446520	1427750	1375000	1363279	1317925	1412869	5.678
(4)	j	946600	858930	854480	819962	799323	776194	842581	7.125
(5)		627200	562890	546055	538706	529444	509476	552295	7.378
7 AROCLOR-1254(1)		826460	791160	753320	711906	696912	695009	745795	7.280
(2)	1	1416380	1366390	1301955	1224660	1217626	1195399	1287068	6.980
(3)	· i	1792540	1898890	1834435	1761442	1783768	1740365	1801907	3.169
(4)	j	1417560	1381880	1310430	1276862	1267377	1251647	1317626	5.115
(5)		1618160	1623280	1541820	1511688	1515928	1471464	1547057	3.966
	,	· i	1	1		!		I I	1

Report Date : 10-Oct-2007 14:11

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 14-SEP-2007 15:17 End Cal Date : 10-OCT-2007 01:35

Quant Method : ESTD Origin : Disabled Target Version : 4.14

Integrator : Falcon
Method file : \\cansvrll\DD\chem\GCS\a2hpl0.i\710091C-1.b\PCB10.m
Last Edit : 10-Oct-2007 14:09 serraa Method file

Curve Type : Average

	0.05000	0.10000	0.20000	0.50000	1.000	2.000		
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
 			========					*****
8 AROCLOR-1260(1)	3180860	3038230	3000710	2930810	2732604	2624020	2917872	7.046
(2)	5844480	5460170	5391810	5297106	4980783	4793397	5294624	7.011
(3)	5244780	5099250	5046105	4978016	4721476	4591578	4946867	4.950
(4)	7737060	6900710	6856545	6906292	6616813	6394635	6902009	6.602
(5)	3847540	3449700	3381540	3348944	3243204	3164055	3405831	7.019
9 AROCLOR-1262(1)	1112740	1109350	983425	1003246	951413	972456	1022105	6.938
(2)	1511140	1522570	1342595	1382294	1317340	1337690	1402272	6.510
(3)	1780220	1794110	1612085	1668702	1563287	1617112	1672586	5.675
(4)	3319320	3383230	3097430	3296254	3109510	3209141	3235814	3.609
(5)	1363960	1375810	1240770	1287444	1226640	1263144	1292961	4.885
10 AROCLOR-1268(1)	729480	711290	615475	642646	618481	588524	650983	8.713
(2)	4147760	4076870	3704450	4083982	3904123	3708627	3937635	4.988
(3)	3879660	3835340	3518520	3845300	3753593	3521614	3725671	4.417
(4)	3293700	3267220	2947545	3243182	3174266	2993644	3153260	4.683
(5)	10441220	10696290	9594670	10641734	10379413	9611009	10227389	4.870
M 11 TOTAL PCB	+++++	+++++	+++++	+++++	+++++	++++	+++++	+++++
\$ 1 TCMX	71926400	69253600	69552400	69891800	66106520	63416240	68357827	4.476
\$ 12 DCB	72339600	66344600	65454200	61427600	59264780	57453440	63714037	8.555
1	i i				· 		· 	i

Data File: \\cansvr11\DD\chem\GCS\a2hp10.i\710091C-1.b\044F4401.D

Report Date: 10-Oct-2007 14:12

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp10.i Injection Date: 10-OCT-2007 01:51

Lab File ID: 044F4401.D Init. Cal. Date(s): 14-SEP-2007 10-OCT-2007

Analysis Type: Init. Cal. Times: 15:17 01:35

Lab Sample ID: ICV Quant Type: ESTD

Method: \\CANSVR11\dd\chem\GCS\a2hp10.i\710091C-1.b\PCB10.m

AMOUNT	RF1	RRF	10.0	/ 0 DD 7 DE			
		10202	120	/ %DRIFT	%D /	%DRIFT	CURVE TYPE
			===:		=====		
645798	575877	0.010	:	10.82706	15	5.00000	Averaged
1040548	1011997	0.010	1	2.74383	15	5.00000	Averaged
1915147	1922380	0.010	1	-0.37770	15	5.00000	Averaged
691439	689650	0.010	İ	0.25868	1 15	5.00000	Averaged
766782	751750	0.010	1	1.96040	15	5.00000	Averaged
2917872	2906216	0.010	1	0.39948	19	5.00000	Averaged
5294624	5254358	0.010	l	0.76051	15	5.00000	Averaged
4946867	5342754	0.010	1	-8.00277	19	5.00000	Averaged
6902009	6238265	0.010		9.61668	19	5.00000	Averaged
3405831	3320304	0.010	1	2.51118	19	5.00000	Averaged
	1040548 1915147 691439 766782 2917872 5294624 4946867 6902009	1040548	1040548	1040548	1040548 1011997 0.010 2.74383 1915147 1922380 0.010 -0.37770 691439 689650 0.010 0.25868 766782 751750 0.010 1.96040 2917872 2906216 0.010 0.39948 5294624 5254358 0.010 0.76051 4946867 5342754 0.010 -8.00277 6902009 6238265 0.010 9.61668	1040548 1011997 0.010 2.74383 15 1915147 1922380 0.010 -0.37770 15 691439 689650 0.010 0.25868 15 766782 751750 0.010 1.96040 15 2917872 2906216 0.010 0.39948 15 5294624 5254358 0.010 0.76051 15 4946867 5342754 0.010 -8.00277 15 6902009 6238265 0.010 9.61668 15	1040548 1011997 0.010 2.74383 15.00000 1915147 1922380 0.010 -0.37770 15.00000 691439 689650 0.010 0.25868 15.00000 766782 751750 0.010 1.96040 15.00000 2917872 2906216 0.010 0.39948 15.00000 5294624 5254358 0.010 0.76051 15.00000 4946867 5342754 0.010 -8.00277 15.00000 6902009 6238265 0.010 9.61668 15.00000

Data File: $\CANSVR11\dd\chem\GCS\a2hp10.i\71023-1.b\002F0201.D$ Report Date: 23-Oct-2007 07:47

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp10.i Injection Date: 23-OCT-2007 07:36

Lab File ID: 002F0201.D Init. Cal. Date(s): 14-SEP-2007 10-OCT-2007

Analysis Type: wipe Init. Cal. Times: 15:17 01:35

Lab Sample ID: E142 Quant Type: ESTD

Method: \CANSVR11\dd\chem\GCS\a2hp10.i\71023-1.b\PCB10.m

	1 1	MIN	MAX	
COMPOUND	RRF / AMOUNT	RF0.500 RRF %D /	%DRIFT %D / %DRIFT	CURVE TYPE
. = = = = = = = = = = = = = = = = = = =				=======
1 TCMX	68357827	70832840 0.010 -3	3.62067 15.00000	Averaged
AROCLOR-1016(1)	645798	601944 0.010	6.79066 15.00000	Averaged
(2)	1040548	1015182 0.010	2.43774 15.00000	Averaged
(3)	1915147	1960134 0.010 -2	2.34904 15.00000	Averaged
(4)	691439	691330 0.010	0.01570 15.00000	Averaged
(5)	766782	765498 0.010	0.16745 15.00000	Averaged
AROCLOR-1260(1)	2917872	2972184 0.010 -:	1.86134 15.00000	Averaged
(2)	5294624	5446636 0.010 -2	2.87106 15.00000	Averaged
(3)	4946867	5208410 0.010 -	5.28703 15.00000	Averaged
(4)	6902009	7317136 0.010 -6	6.01458 15.00000	Averaged
(5)	3405831	3588278 0.010 -!	5.35692 15.00000	Averaged
12 DCB	63714037	66810480 0.010 -4	4.85991 15.00000	Averaged

FORM 8 SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Case No.:

Lab Code: TALCAN SAS No.: SDG No.: 7J17235

GC Column: RESTEK PEST CLPI ID: 0.53 (mm) Init. Calib. Date(s): 09/14/07 10/10/0

Instrument ID: A2HP10

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURRO	ATE RT FROM 1 S2 :	NITIAL CALI 6.87	BRATION		
	CLIENT	LAB	DATE	TIME	S1	S2
	SAMPLE NO.	SAMPLE ID	ANALYZED	ANALYZED	RT #	RT #
		#=====================================		========	=======	======
01	*	E142	10/23/07	0736	1.27	6.87
02	SB-382-0102	J86FW1AC	10/23/07	0852	1.27	6.87
03	SB-382-0102	J86FW1AE	10/23/07	0907	1.27	6.87
04	SB-382-0102	J86FWLAF	10/23/07	0923	1.27	6.87
05	SB-382-0203	J86F91AC	10/23/07	0938	1.27	6.87
06	SB-382-0405	J86GA1AC	10/23/07	0953	1.27	6.87
07	SB-382-0708	J86GC1AC	10/23/07	1008	1.27	6.87
80	SB-383-0102	J86GD1AC	10/23/07	1024	1.27	6.85
	SB-383-0203	J86GE1AC	10/23/07	1039	1.27	6.87
	SB-383-0405	J86GG1AC	10/23/07	1054	1.27	6.87
11	SB-383-0708	J86GJ1AC	10/23/07	1110	1.27	6.87
	SB-384-0102	J86GKLAC	10/23/07	1125	1.27	6.87
13	SB-384-0203	J86GMLAC	10/23/07	1140	1.27	6.87
14	J9C2NBLK	J9C2NLAA	10/23/07	1155	1.27	6.87
1.5		E178	10/23/07	1211	1.27	6.87
16	SB-384-0405	J86GN1AC	10/23/07	1226	1.27	6.87
17	SB-385-0203	J86GT1AC	10/23/07	1312	1.27	6.87
18	SB-385-0405	J86GV1AC	10/23/07	1327	1.27	6.87
	SB-385-0708	J86GWLAC	10/23/07	1342	1.27	6.87
20	SB-386-0102	J86GX1AC	10/23/07	1358	1.27	6.87
21	SB-386-0203	J86G31AC	10/23/07	1413	1.27	6.87
	SB-386-0405	J86G41AC	10/23/07	1428	1.27	6.87
23	SB-386-0708	J86G51AC	10/23/07	1443	1.27	6.87
24	J9C2NCHK	J9C2NLAC	10/23/07	1459	1.27	6.87
25		E178	10/23/07	1514	1.27	6.87
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28 29						
29 30						
31]				
32						
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QC LIMITS

S1 = TCMX (+/- 0.10 MINUTES)

(+/- 0.10 MINUTES)

page 1 of 1

FORM VIII SV

[#] Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

Data File: $\CANSVR11\dd\chem\GCS\a2hp10.i\71023-1.b\020F2001.D$ Report Date: 23-Oct-2007 12:34

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp10.i Injection Date: 23-OCT-2007 12:11

Init. Cal. Date(s): 14-SEP-2007 10-OCT-2007 Lab File ID: 020F2001.D

Init. Cal. Times: Analysis Type: wipe 15:17 01:35

Lab Sample ID: E178 Quant Type: ESTD

Method: \CANSVR11\dd\chem\GCS\a2hp10.i\71023-1.b\PCB10.m

	· <u> </u>	MIN	MAX	
COMPOUND	RRF / AMOUNT	RF0.500 RRF %D /	%DRIFT %D / %DRIFT C	URVE TYPE

1 TCMX	68357827	65768440 0.010 3	.78799 15.00000	Averaged
AROCLOR-1016(1)	645798	606598 0.010 6	.07000 15.00000	Averaged
(2)	1040548	1019962 0.010 1	.97836 15.00000	Averaged
(3)	1915147	2011098 0.010 -5	.01014 15.00000	Averaged
(4)	691439	712276 0.010 -3	.01363 15.00000	Averaged
(5)	766782	790118 0.010 -3	.04337 15.00000	Averaged
AROCLOR-1260(1)	2917872	3032672 0.010 -3	.93436 15.00000	Averaged
. (2)	5294624	5566666 0.010 -5	.13807 15.00000	Averaged
(3)	4946867	5314324 0.010 -7	.42807 15.00000	Averaged
. (4)	6902009	7510682 0.010 -8	.81878 15.00000	Averaged
(5)	3405831	3700776 0.010 -8	.66002 15.00000	Averaged
12 DCB	63714037	64033920 0.010 -0	.50206 15.00000	Averaged

Data File: \\CANSVR11\dd\chem\GCS\a2hp10.i\71023-1.b\032F3201.D

Report Date: 23-Oct-2007 15:58

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp10.i

Injection Date: 23-OCT-2007 15:14

Lab File ID: 032F3201.D

Init. Cal. Date(s): 14-SEP-2007 10-OCT-2007

Init. Cal. Times: 15:17

01:35

Analysis Type: wipe Lab Sample ID: E178 Quant Type: ESTD

Method: \CANSVR11\dd\chem\GCS\a2hp10.i\71023-1.b\PCB10.m

	1	MIN	MAX	1
COMPOUND	RRF / AMOUNT	RF0.500 RRF %D	/ %DRIFT %D / %DRIFT	CURVE TYPE
********	====== ====== ==			
\$ 1 TCMX	68357827	67470320 0.010	1.29832 15.00000	Averaged
3 AROCLOR-1016(1)	645798	714326 0.010	-10.61138 15.00000	Averaged
(2)	1040548	1115004 0.010	-7.15548 15.00000	Averaged
(3)	1915147	2090746 0.010	-9.16899 15.00000	Averaged
(4)	691439	733102 0.010	-6.02561 15.00000	Averaged
(5)	766782	817608 0.010	-6.62848 15.00000	Averaged
8 AROCLOR-1260(1)	2917872	3095332 0.010	-6.08182 15.00000	Averaged
(2)	5294624	5695948 0.010	-7.57983 15.00000	Averaged
(3)	4946867	5412466 0.010	-9.41199 15.00000	Averaged
(4)	6902009	7642932 0.010	-10.73489 15.00000	Averaged
(5)	3405831	3775638 0.010	-10.85807 15.00000	Averaged
\$ 12 DCB	63714037	64932400 0.010	-1.91224 15.00000	Averaged

FORM 8 SEMIVOLATILE ANALYTICAL SEQUENCED

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN

Case No.:

SAS No.:

SDG No.: 7J17235□

GC Column: RESTEK PEST CLPI ID: 0.53 (mm) Init. Calib. Date(s): 09/14/07 10/10/07

Instrument ID: A2HP10

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW: DD

MEAN SURROGATE RT FROM INITIAL CALIBRATION								
TETRA TECH N LAB	. [
SAMPLE NO. SAMPLE ID ANALYZED ANALYZED RT # RT #	ļ	S1: 6.87	S2 :	1.27		بللا	-	,
SAMPLE NO. SAMPLE ID ANALYZED ANALYZED RT # RT #		መድመውክ መድርሀ Ni	I TAR	በ ከልጥፑ	TTME '			
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02 SB-384-0708 J86GP2AC 10/28/07 0110 6.87 1.27 AD 03 SB-385-0102 J86GQ2AC 10/28/07 0110 6.87 1.27 04 J9PMTBLK J9PMTIAA 10/28/07 0524 6.87 1.27 05 J9PMTCHK J9PMTIAC 10/28/07 0539 6.87 1.27 06 E178 10/28/07 0554 6.87 1.27 07 08	1			=======				
03 SB-385-0102 J86GQ2AC 10/28/07 0110 6.87 1.27 04 J9PMTBLK J9PMTLAA 10/28/07 0524 6.87 1.27 05 J9PMTCHK J9PMTLAC 10/28/07 0539 6.87 1.27 06 E178 10/28/07 0554 6.87 1.27 07 08 09	01		E178					
04 J9PMTBLK J9PMT1AA 10/28/07 0524 6.87 1.27					•	•		AΠ
10	03			•		•		
06 E178 10/28/07 0554 6.87 1.27 07 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31								
07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 23 24 25 26 27 28 29 30 31					· ·			!
08 09 10 1 11 1 12 1 13 1 14 1 15 1 16 1 17 1 18 1 19 1 20 1 21 1 22 1 23 1 24 1 25 1 26 1 27 1 28 1 29 30 30 30 31 1		•	E178	10/28/0/	0554	6.87	1.27	
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QC LIMITS I

S1 = DCB

(+/-0.10 MINUTES)

S2 = TCMX

(+/- 0.10 MINUTES)□

Column used to flag retention time values with an asterisk.

* Values outside of QC limits. []

page 1 of 10

FORM VIII SV

Data File: $\CANSVR11\dd\chem\GCS\a2hp10.i\71027-1.b\020F2001.D$

Report Date: 28-Oct-2007 01:53

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Injection Date: 28-OCT-2007 01:39 Instrument ID: a2hp10.i

Init. Cal. Date(s): 14-SEP-2007 10-OCT-2007 Init. Cal. Times: 15:17 01:35 Lab File ID: 020F2001.D

Analysis Type: wipe Lab Sample ID: E178 Quant Type: ESTD

Method: \\CANSVR11\dd\chem\GCS\a2hp10.i\71027-1.b\PCB10.m

	<u> </u>) MIN)) MAX	1
COMPOUND		RRF / AMOUNT	RF0.500 RRF %	D / %DRIFT %D / %DRIFT	CURVE TYPE
				======== = ==========================	
1 TCMX		68357827	66618720 0.010	2.54412 15.00000	Averaged
3 AROCLOR-1016(1)		645798	629302 0.010	2.55435 15.00000	Averaged
(2)		1040548	1028466 0.010	1.16110 15.00000	Averaged
(3)		1915147	2014166 0.010	-5.17034 15.00000	Averaged
(4)		691439	706068 0.010	-2.11579 15.00000	Averaged
(5)		766782	786608 0.010	-2.58561 15.00000	Averaged
B AROCLOR-1260(1)		2917872	3044554 0.010	-4.34158 15.00000	Averaged
. (2)		5294624	5576946 0.010	-5.33223 15.00000	Averaged
(3).		4946867	5275510 0.010	-6.64345 15.00000	Averaged
(4)		6902009	7418848 0.010	-7.48824 15.00000	Averaged
(5)		3405831	3635742 0.010	-6.75053 15.00000	Averaged
\$ 12 DCB		63714037	62101840 0.010	2.53036 15.00000	Averaged
		1	ı i i	1	1

Data File: \\CANSVR11\dd\chem\GCS\a2hp10.i\71027-1.b\041F4101.D

Report Date: 28-Oct-2007 07:07

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp10.i

Injection Date: 28-OCT-2007 05:54

Lab File ID: 041F4101.D Init. Cal. Date(s): 14-SEP-2007 10-OCT-2007 Analysis Type: wipe Init. Cal. Times: 15:17 01:35
Lab Sample ID: E178 Quant Type: ESTD
Method: \CANSVR11\dd\chem\GCS\a2hp10.i\71027-1.b\PCB10.m

	l	_	MIN	1	MAX	
COMPOUND	RRE	TRUOMA \ 3	RF0.500 RRF %	D / %DRIFT %D	/ %DRIFT	CURVE TYPE
					s======	
\$ 1 TCMX		68357827	65537240 0.010	4.12621	15.00000	Averaged
3 AROCLOR-1016(1)	1	645798	657818 0.010	-1.86128	15.00000	Averaged
(2)	ţ	1040548	1054978 0.010	-1.38679	15.00000	Averaged
(3)	1	1915147	1991416 0.010	-3.98244	15.00000	Averaged
(4)	1	691439	693704 0.010	-0.32764	15.00000	Averaged
(5)	• [766782	772936 0.010	-0.80257	15.00000	Averaged
8 AROCLOR-1260(1)		2917872	2974162 0.010	-1.92913	15.00000	Averaged
(2)	1	5294624	5441200 0.010	-2.76839	15.00000	Averaged
(3)	1	4946867	5184048 0.010	-4.79456	15.00000	Averaged
(4)	-1	6902009	7273078 0.010	-5.37624	15.00000	Averaged
(5)	1 :	3405831	3537734 0.010	-3.87287	15.00000	Averaged
\$ 12 DCB		63714037	61384040 0.010	3.65696	15.00000	Averaged

J9C2N1AA

SW846 8082 METHOD BLANK SUMMARY

Lab Name: TestAmerica Laboratories, Inc.

Lab Code: TALCAN SDG Number:7J17235

Lab File ID: 019F1901. Lot Number: A7J170235

Matrix: SOLID Extraction Method: 3550B/3665A

Date Extracted: 10/19/07

Date Analyzed(1): 10/23/07 Date Analyzed(2): N/A

Time Analyzed(1): 11:55 Time Analyzed(2): N/A

Instrument ID(1): P10 Instrument ID(2): N/A

GC Column(1): RTXOPPPEST ID: 032 GC Column(2): N/A ID: N/A

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

		SAMPLE	DATE	DATE
	CLIENT ID.	WORK ORDER #	ANALYZED(1)	ANALYZED(2)
		=======================================	=======================================	========
01	SB-382-0102	J86FW1AC	10/23/07	N/A
02	SB-382-0102	J86FW1AE S	10/23/07	N/A
03	SB-382-0102	J86FW1AF D	10/23/07	N/A
04	SB-382-0203	J86F91AC	10/23/07	_N/A
05	SB-382-0405	J86GA1AC	10/23/07	N/A
06	SB-382-0708	J86GC1AC	10/23/07	N/A
07	SB-383-0102	J86GD1AC	10/23/07	N/A
08	SB-383-0203	J86GE1AC	10/23/07	N/A
09	SB-383-0405	J86GG1AC	10/23/07	N/A
10	SB-383-0708	J86GJ1AC	10/23/07	N/A
11	SB-384-0102	J86GK1AC	10/23/07	_N/A
12	SB-384-0203	J86GM1AC	10/23/07	N/A
13	SB-384-0405	J86GN1AC	10/23/07	N/A
14	SB-385-0203	J86GT1AC	10/23/07	N/A
15	SB-385-0405	J86GV1AC	10/23/07	N/A
16	SB-385-0708	J86GW1AC	10/23/07	N/A
17	SB-386-0102	J86GX1AC	10/23/07	N/A
18	SB-386-0203	J86G31AC	10/23/07	N/A
19	SB-386-0405	J86G41AC	10/23/07	N/A
20	SB-386-0708	J86G51AC	10/23/07	N/A
21	CHECK SAMPLE	J9C2N1AC C	10/23/07	N/A

J9PMT1AA

SW846 8082 METHOD BLANK SUMMARY

Lab Name: TestAmerica Laboratories. Inc.

Lab Code: TALCAN

SDG Number: 7J17235

Lab File ID: 039F3901.

Lot Number: A7J170235

Matrix: SOLID

Extraction Method: 3550B/3665A

Date Extracted: 10/24/07

Date Analyzed(1): 10/28/07

Date Analyzed(2): N/A

Time Analyzed(1): 05:24

Time Analyzed(2): N/A

Instrument ID(1): P10

Instrument ID(2): N/A

GC Column(1): RTXOPPPEST ID: 032 GC Column(2): N/A

N/A

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

•	CLIENT ID.	SAMPLE WORK ORDER #	DATE ANALYZED(1)	DATE ANALYZED(2)
		=======================================		=========
	SB-384-0708	J86GP2AC	10/28/07	N/A
02	SB-385-0102	J86GQ2AC	10/28/07	N/A
03	INTRA-LAB QC	J9EHC1AK	10/28/07	N/A
04	LAB MS/MSD	J9EHC1AL S	10/28/07	N/A
05	LAB MS/MSD	J9EHC1AM D	10/28/07	N/A
06	CHECK SAMPLE	J9PMT1AC C	10/28/07	N/A
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METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: 7J17235

MB Lot-Sample #: A7J190000-031

Work Order #...: J9C2N1AA

Matrix..... SOLID

Prep Date....: 10/19/07

Final Wgt/Vol..: 10 mL

Analysis Date..: 10/23/07

Dilution Factor: 1

Prep Batch #...: 7292031 Initial Wgt/Vol: 30 g

		REPORTI	NG	
PARAMETER	RESULT	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
	PERCENT	RECOVER	Y	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	89	(10 - 1	96)	
Decachlorobiphenyl	94	(10 - 199)		

NOTE(S):

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

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: 7J17235

Work Order #...: J9PMT1AA

Matrix....: SOLID

MB Lot-Sample #: A7J240000-357

Prep Date....: 10/24/07

Final Wgt/Vol..: 10 mL

Analysis Date..: 10/28/07

Prep Batch #...: 7297357

Dilution Factor: 1

Initial Wgt/Vol: 30 g

PARAMETER	RESULT	REPORTING LIMIT	; UNITS	METHOD	
Aroclor 1016	ND	33	ug/kg	SW846 8082	
Aroclor 1016 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	
	PERCENT	RECOVERY			
SURROGATE	RECOVERY	LIMITS			
Tetrachloro-m-xylene	98	(10 - 196	5)		
Decachlorobiphenyl	107	(10 - 199	9)		

NOTE(S):

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

Data File: \cansvr11\DD\chem\GCS\a2hp10.i\71023-1.b\019F1901.D

Report Date: 24-Oct-2007 12:21

STL North Canton

Data file: \\cansvr11\DD\chem\GCS\a2hp10.i\71023-1.b\019F1901.D

Lab Smp Id: J9C2N1AA Client Smp ID: INTRA-LAB BLANK

Inj Date : 23-OCT-2007 11:55

Operator : Inst ID: a2hp10.i

Smp Info : J9C2N1AA Misc Info : ALL.SUB

Comment

Method : \\CANSVR11\dd\chem\GCS\a2hp10.i\71023-1.b\PCB10.m Meth Date: 24-Oct-2007 07:59 Quant Type: ESTD Cal Date : 10-OCT-2007 01:35 Cal File: 043F4301.D Als bottle: 19 QC Sample: METHOD BLANK

Dil Factor: 1.00000

Integrator: Falcon Compound Sublist: ALL.SUB

Sample Matrix: SOIL Target Version: 4.14

Processing Host: CANPGCSV30

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF Vt		Dilution Factor final volume
Vo	30.000	initial volume
Cpnd Variable		Local Compound Variable

CONCENTRATIONS ON-COL FINAL RESPONSE (ng) (ug/kg) TARGET RANGE RATIO

\$ 1 TCMX CAS #: 877-09-8 1.269 1.269 0.000 1220951 0.01786 5.954

CAS #: 11104-28-2

Peaks not detected for Quant. or Qual. signal(s).

3 AROCLOR-1016 CAS #: 12674-11-2

Peaks not detected for Quant. or Qual. signal(s).

4 AROCLOR-1232 CAS #: 11141-16-5

Peaks not detected for Quant. or Qual. signal(s).

2 AROCLOR-1221

Data File: \\cansvr11\DD\chem\GCS\a2hp10.i\71023-1.b\019F1901.D
Report Date: 24-Oct-2007 12:21

				CONCENTRAT	'IONS FINAL		
RT	EXP RT DL	T RT I	RESPONSE			TARGET RANGE	RATIO
====	*******					=========	=====
5	AROCLOR-1242				CAS #:	53469-21-9	
Peaks	not detected	for Quant. o	r Qual.	signal(s).			
6	AROCLOR-1248					12672-29-6	
Peaks	not detected	for Quant. o	r Qual. :	signal(s).			
7	AROCLOR-1254					11097-69-1	
Peaks	not detected	for Quant. or	r Qual.	signal(s).			
	AROCLOR-1260					11096-82-5	
Peaks	not detected	for Quant. o	r Qual.	signal(s).			•
9	AROCLOR-1262					37324-23-5	
Peaks	not detected	for Quant. o	r Qual.	signal(s).			
	AROCLOR-1268					11100-14-4	
Peaks		for Quant. o		_			
M 11	TOTAL PCB					1336-36-3	
_	und Not Detec	·					
\$ 12	DCB					2051-24-3	-
6.867	6.868 -	0.001	1204156	0.01890	6.300		

SW846 8082 SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Lot #: A7J170235

Extraction: XXA71QH01

	CLIENT ID.	SRG01	SRG02	TOT O	UT
		=======	======	=====	== İ
	SB-382-0102	99	_114	00	ĺ
	SB-382-0203	98	118	00	i
03	= 002 0100	157	181	00	¦
04	SB-382-0708	99	108	00	¦
0.5	SB-383-0102	79	(816*)	01	¦
	SB-383-0203	86	100	00	1
07	SB-383-0405	82	110	00	一¦
08	SB-383-0708	93	112	00	¦
09	SB-384-0102	103	117	00	
10	SB-384-0203	84	108	00	¦
11	SB-384-0405	87	97	00	
12	SB-384-0708 RE-1	63	81	00	¦
13	SB-385-0102 RE-1	58	60	00	¦
14	SB-385-0203	89	109	00	-¦
15	SB-385-0405	90	110	00	-
16	SB-385-0708	95	112	00	-¦
17	SB-386-0102	88	106	00	
18	SB-386-0203	163	186	00	-
19	SB-386-0405	86	119	00	-¦
20	SB-386-0708	87	108	00	
21	INTRA-LAB QC	78	84	00	-
22	METHOD BLK. J9C2N1AA	89	94	00	-
23	METHOD BLK. J9PMT1AA	98	107	00	-
24	LCS J9C2N1AC	97	120	00	-!
25	LCS J9PMT1AC	99	107		-
	SB-382-0102 D	97	115	00	-
27 İ	LAB MS/MSD D	83	88	00	-
,			_00	00	_

[#] Column to be used to flag recovery values

^{*} Values outside of required QC Limits

D System monitoring Compound diluted out

SW846 8082 SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Lot #: A7J170235

Extraction: XXA71QH01

CLIENT ID	•	SRG01	SRG02	TOT OU	JT
**********	=======================================	======	======		:= İ
01 SB-382-0102 S		105	117	00	i
02 LAB MS/MSD S		63	73	00	-i

SURROGAT			. •	QC LIMITS
SRG01	=	Tetrachloro-m-xylene		(10-196)
SRG02	=	Decachlorobiphenyl		(10-199)

[#] Column to be used to flag recovery values

^{*} Values outside of required QC Limits

D System monitoring Compound diluted out

SW846 8082 CHECK SAMPLE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Lot #: A7J190000

WO #: J9C2N1AC BATCH: 7292031

SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	 QUAL
220		= =====	=========	========
			!	
	ADDED	ADDED CONCENT. (ug/kg) (ug/kg) ==== ========= ===================	ADDED CONCENT. % (ug/kg) (ug/kg) REC ==== ====== ===== ==== ==== ==== ==== ==== ==== ==== ==== ==== ==== ==== ==== ==== ==== ===== ===== ===== ===== ===== ===== ===== ===== ===== ======	ADDED CONCENT. % LIMITS (ug/kg) (ug/kg) REC REC ==== ======== ===== ===== ======

NOTES	(S)	
-------	-----	--

* Values outs:	ide o	f Q	C 1	imi	ts
----------------	-------	-----	-----	-----	----

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

SW846 8082 CHECK SAMPLE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Lot #: A7J240000

WO #: J9PMT1AC BATCH: 7297357

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
====================================	=======================================	=======================================	=====	==========	-=======
Aroclor 1016	330	330	98	34- 127	,
Aroclor 1260	330	330	100	32 - 141	

MOTOR	101
NOTES	(8)

* Values outside of QC limits

spike kecovery:	0	out of	2	outside	limits	
COMMENTS:		•		*		
				· · · · · · · · · · · · · · · · · · ·		

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Matrix Spike ID: SB-382-0102

Lot #: A7J170235

WO #: J86FW1AE BATCH: 7292031

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
	=======	=======	=======	=====	=======	========
Aroclor 1016	390	ND	390	101	10- 199	
Aroclor 1260	390	ND	430	110	10- 199	

NOTES	(S)

Results and reporting limits have been adjusted for dry weight.

RPD:	0	out	of		0	outs	ide	li	mits	
Spike	Recov	ery:		0	out	of		2	outside	limits

COMMENTS:

 $[\]ensuremath{\sharp}$ Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Matrix Spike ID: SB-382-0102

Lot #: A7J170235

WO #: J86FW1AF BATCH: 7292031

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD	QC I	LIMITS REC	QUAL
=======================================	========	=======	=====	=======	====	========	========
Aroclor 1016	390	390	101	0.14	30	10- 199	
Aroclor 1260	390	420	109	0.080	30	10- 199	!

NOTES	(S)

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

0 out of 2 outside limits Spike Recovery: 0 out of 2 outside limits COMMENTS:

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Matrix Spike ID: LAB MS/MSD

Level: (low/med) LOW

Lot #: A7J190235

WO #: J9EHC1AL BATCH: 7297357

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
Aroclor 1016 Aroclor 1260	400	ND ND	260 270	66 67	10- 199 10- 199	

NOTES (S):

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of ___0 outside limits Spike Recovery: 0 out of 2 outside limits

COMMENTS:

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17235

Matrix Spike ID: LAB MS/MSD

Level: (low/med) LOW

Lot #: A7J190235

WO #: J9EHClAM BATCH: 7297357

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD	QC :	LIMITS REC	OUAL
Amoral on 1016	=======	=======	====	======	====	=======	========
Aroclor 1016 Aroclor 1260	400	330	83 82	<u>23</u> 19	30	10- 199 10- 199	

NO'	PRS	1	S	١	,
INC.	COL	•	2		- 2

Results and reporting limits have been adjusted for dry weight.

RPD: 0 out of 2 outside limits Spike Recovery: 0 out of 2 outside limits

COMMENTS	:
----------	---

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: 7J17235 Work Order #...: J9C2N1AC Matrix......: SOLID

LCS Lot-Sample#: A7J190000-031

Prep Date....: 10/19/07 Analysis Date..: 10/23/07

Prep Batch #...: 7292031

Dilution Factor: 1 Final Wgt/Vol..: 10 mL

Initial Wgt/Vol: 30 g

 PERCENT
 RECOVERY

 PARAMETER
 RECOVERY
 LIMITS
 METHOD

 Aroclor 1016
 98
 (34 - 127)
 SW846 8082

 Aroclor 1260
 111
 (32 - 141)
 SW846 8082

 SURROGATE
 RECOVERY
 LIMITS

 Tetrachloro-m-xylene
 97
 (10 - 196)

 Decachlorobiphenyl
 120
 (10 - 199)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: 7J17235 Work Order #...: J9C2N1AC Matrix......: SOLID

LCS Lot-Sample#: A7J190000-031

Prep Batch #...: 7292031

Dilution Factor: 1 Final Wgt/Vol..: 10 mL

Initial Wgt/Vol: 30 g

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Aroclor 1016	330	330	ug/kg	98	SW846 8082
Aroclor 1260	330	370	ug/kg	111	SW846 8082
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Tetrachloro-m-xylene		97	(10 - 196)		•
Decachlorobiphenyl		120	(10 - 199)		

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 #...: 7J17235 Work Order #...: J9PMT1AC Matrix.....: SOLID

LCS Lot-Sample#: A7J240000-357

Prep Batch #...: 7297357

Dilution Factor: 1 Final Wgt/Vol..: 10 mL

Initial Wgt/Vol: 30 g

 PERCENT
 RECOVERY

 PARAMETER
 RECOVERY
 LIMITS
 METHOD

 Aroclor 1016
 98
 (34 - 127)
 SW846 8082

 Aroclor 1260
 100
 (32 - 141)
 SW846 8082

 SURROGATE
 RECOVERY
 LIMITS

 Tetrachloro-m-xylene
 99
 (10 - 196)

 Decachlorobiphenyl
 107
 (10 - 199)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: 7J17235 Work Order #...: J9PMT1AC Matrix......: SOLID

LCS Lot-Sample#: A7J240000-357

Prep Date....: 10/24/07 Analysis Date..: 10/28/07

Prep Batch #...: 7297357

Dilution Factor: 1 Final Wgt/Vol..: 10 mL

Initial Wgt/Vol: 30 g

PARAMETER Aroclor 1016 Aroclor 1260	SPIKE <u>AMOUNT</u> 330 330	MEASURED AMOUNT 330 330	UNITS ug/kg ug/kg	PERCENT RECOVERY 98 100	METHOD SW846 8082 SW846 8082	
CUDDOCATE		PERCENT	RECOVERY			
SURROGATE Tetrachloro-m-xylene		<u>RECOVERY</u> 99	<u>LIMITS</u> (10 - 196)			

(10 - 199)

107

NOTE(S):

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

Bold print denotes control parameters

Decachlorobiphenyl



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO:

M. MARTIN

DATE:

JANUARY 4, 2008

FROM:

PRESTON SMITH

COPIES:

DV FILE

SUBJECT:

ORGANIC DATA VALIDATION - BENZO(a)PYRENE AND PCBs

LOCKHEED MIDDLE RIVER COMPLEX

SAMPLE DELIVERY GROUP (SDG): 7J17248

SAMPLES:

20/Soil/

SB-387-0102	SB-387-0203
SB-387-0405	SB-387-0708
SB-388-0102	SB-388-0203
SB-388-0405	SB-388-0708
SB-389-0102	SB-389-0203
SB-389-0405	SB-389-0708
SB-390-0102	SB-390-0203
SB-390-0405	SB-390-0708
SB-391-0102	SB-391-0203
SB-391-0405	SB-391-0708

Overview

The sample set for SDG 7J17248, Lockheed MRC, consists of twenty (20) soil environmental samples.

All soil samples were analyzed for benzo(a)pyrene and PCBs. The samples were collected by TetraTech NUS on October 15, 2007 and October 16, 2007 and analyzed by Test America Laboratories, Inc. Analyses were conducted using SW-846 Method 8270C and SW-846 Method 8082.

The findings in this report are based upon a general review of all available data including: data completeness, GC/MS tuning, holding times, initial/continuing calibrations, laboratory method/preparation blank results, surrogate spike/internal standard recoveries, laboratory control sample (LCS)/blank spike results, matrix spike/matrix spike duplicate results, analyte quantitation, and detection limits. Areas of concern are listed below.

Major Problems

None.

Minor Problems

The positive results less than the CRQL reported for benzo(a)pyrene in samples SB-387-0102, SB-389-0102, SB-389-0405, SB-389-0708, and SB-390-0102 were qualified estimated (J) due to uncertainty near the detection limit.

Notes

The MS/MSD and the check sample recovery were not spiked with the target compound benzo(a)pyrene. Therefore, potential matrix effects could not be evaluated. No validation action was required because the surrogate recoveries were within permissible limits.

Percent recovery for the surrogate spike of decachlorobiphenyl was greater than the upper quality control recovery limit in the PCB MS sample. No action was taken because the other surrogate recovery was within the recovery limits.

Executive Summary

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: The positive results less than the CRQL reported for benzo(a)pyrene were qualified due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation 9/94) as modified by Region III.

Tetra Tech NUS Preston R. Smith

Environmental Scientist/Data Validator

Tetra Tech NUS Joseph A. Samchuck

Data Validation Quality Assurance Officer

Attachments:

- 1. Appendix A Qualified Analytical Results
- 2. Appendix B Results as Reported by the Laboratory
- 3. Appendix C Support Documentation

Data Qualifier Key:

- J Positive result is considered estimated, "J", as a result of technical noncompliances.
- U Nondetected result.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

SDG: 7J17248 MEDIA: SOIL DATA FRACTION: OS

00885

nsample samp_date lab_id

SB-387-0102 10/15/2007

A7J170248001 NM

UG/KG

93.7

qc_type units Pct_Solids DUP_OF:

nsample samp_date lab_id qc_type

units

10/15/2007 A7J170248002 NM UG/KG 91.4

Pct_Solids DUP_OF:

nsample

samp_date lab_id

qc_type units Pct_Solids SB-387-0405 10/15/2007 A7J170248003

NM UG/KG 84.0

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	12	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.4	U	

SB-387-0203

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

00885

SDG: 7J17248 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date

lab_id

units

qc_type

10/15/2007

A7J170248004

NM UG/KG 89.0

Pct_Solids DUP_OF:

SB-387-0708

samp_date lab_id

nsample

qc_type units Pct_Solids DUP_OF:

SB-388-0102

10/15/2007 A7J170248005

NM UG/KG 93.6

nsample samp_date

lab_id qc_type

Pct_Solids DUP_OF:

units

Qual Val Parameter Result Qual Code BENZO(A)PYRENE 1.5 U

SB-388-0203

A7J170248006

10/15/2007

NM

88.0

UG/KG

Val Qual Parameter Result Qual Code BENZO(A)PYRENE 1.5 U

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	380		

00885

SDG: 7J17248 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date

lab_id

SB-388-0405

10/15/2007

A7J170248007 NM

qc_type units UG/KG Pct_Solids 90.8 DUP_OF:

nsample

SB-388-0708 samp_date 10/15/2007 lab_id A7J170248008

qc_type units Pct_Solids DUP_OF:

nsample

samp_date lab_id qc_type

units Pct_Solids DUP_OF:

SB-389-0102 10/15/2007 A7J170248009 NM

UG/KG 91.2

		Val	Qual
Parameter	Result	Qual	Code
BENZO(A)PYRENE	1.4	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.4	U	

NM

90.3

UG/KG

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	220	J	Р

00885

SDG: 7J17248 MEDIA: SOIL DATA FRACTION: OS

 nsample
 SB-389-0203

 samp_date
 10/15/2007

 lab_id
 A7J170248010

 qc_type
 NM

 units
 UG/KG

Pct_Solids 85.0 DUP_OF:

samp_date
lab_id
qc_type
units
Pct_Solids
DUP_OF:

nsample

SB-389-0405 10/15/2007 A7J170248011 NM UG/KG 87.0

nsample samp_date lab_id qc_type units Pct_Solids

DUP_OF:

SB-389-0708 10/15/2007 A7J170248012 NM UG/KG

86.0

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	33	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	9.7	J	Р

00885

SDG: 7J17248 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date

10/15/2007

A7J170248013

lab_id qc_type units

NM UG/KG

87.0

Pct_Solids DUP_OF:

SB-390-0102

nsample samp_date lab_id

qc_type

units Pct_Solids DUP_OF:

SB-390-0203

10/15/2007

A7J170248014 NM

UG/KG 78.0

nsample

samp_date lab_id

qc_type units

Pct_Solids

10/15/2007 A7J170248015 NM

> UG/KG 83.0

SB-390-0405

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	9.9	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.7	Ū	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	990		

00885

SDG: 7J17248 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date lab_id

qc_type

units

SB-390-0708 10/15/2007 A7J170248016

A7J17024 NM UG/KG 82.0 nsample samp_date lab_id qc_type units Pct_Solids

DUP_OF:

SB-391-0102 10/16/2007 A7J170248017 NM UG/KG

lab_id qc_type units Pct_Solids DUP_OF:

 nsample
 SB-391-0203

 samp_date
 10/16/2007

 lab_id
 A7J170248018

 qc_type
 NM

NM UG/KG 66.0

Pct_Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

84.0

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	2	U	

00885

SDG: 7J17248 MEDIA: SOIL DATA FRACTION: OS

nșample samp_date SB-391-0405

nsample samp_date SB-391-0708 10/16/2007

10/16/2007 lab_id A7J170248019

lab_id qc_type A7J170248020 NM

qc_type units Pct_Solids

ΝM UG/KG 87.0

units Pct_Solids UG/KG 85.0

DUP_OF:

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

SDG: 7J17248 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample SB-387-0102 samp_date 10/15/2007 lab_id A7J170248001 qc_type NM 93.7

Pct_Solids DUP_OF:

nsample samp_date lab_id qc_type Pct_Solids

DUP_OF:

10/15/2007 A7J170248002 NM

SB-387-0203

91.4

nsample samp_date lab_id qc_type Pct_Solids

SB-387-0405 10/15/2007 A7J170248003

NM 84.0

DUP_OF:

Parameter	units	Result	Val Qual	Qual Code
AROCLOR-1016	UG/KG	35	Ú	
AROCLOR-1221	UG/KG	35	U	
AROCLOR-1232	UG/KG	35	U	
AROCLOR-1242	UG/KG	35	U	
AROCLOR-1248	UG/KG	35	U	
AROCLOR-1254	UG/KG	35	U	
AROCLOR-1260	UG/KG	35	U	

Parameter	units	Result	Val Qual	Qual Code
AROCLOR-1016	UG/KG	36	U	
AROCLOR-1221	UG/KG	36	U	
AROCLOR-1232	UG/KG	36	U	
AROCLOR-1242	UG/KG	36	Ú	
AROCLOR-1248	UG/KG	36	U	
AROCLOR-1254	UG/KG	36	U	
AROCLOR-1260	UG/KG	36	U	

units	Result	Val Qual	Qual Code
UG/KG	39	U	
UG/KG	39	U	
UG/KG	39	U	
UG/KG	39	U	
UG/KG	39	U	
UG/KG	39	U	
UG/KG	39	Ü	
	UG/KG UG/KG UG/KG UG/KG UG/KG	UG/KG 39 UG/KG 39 UG/KG 39 UG/KG 39 UG/KG 39 UG/KG 39	UG/KG 39 U UG/KG 39 U UG/KG 39 U UG/KG 39 U UG/KG 39 U UG/KG 39 U UG/KG 39 U

nsample	SB-387-0708	nsample	SB-388-0102	nsample	SB-388-0203
samp_date	10/15/2007	samp_date	10/15/2007	samp_date	10/15/2007
lab_id	A7J170248004	lab_id	A7J170248005	lab_id	A7J170248006
qc_type	NM	qc_type	NM	qc_type	NM
Pct_Solids	89.0	Pct_Solids	93.6	Pct_Solids	88.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
AROCLOR-1016	UG/KG	37	U	
AROCLOR-1221	UG/KG	37	· U	
AROCLOR-1232	UG/KG	37	U	
AROCLOR-1242	UG/KG	37	U	
AROCLOR-1248	UG/KG	37	Ú	
AROCLOR-1254	UG/KG	37	U	
AROCLOR-1260	UG/KG	37	U	

Parameter	units	Result	Val Qual	Qual Code
AROCLOR-1016	UG/KG	35	U	
AROCLOR-1221	UG/KG	35	U	
AROCLOR-1232	UG/KG	.35	U	
AROCLOR-1242	UG/KG	35	U	
AROCLOR-1248	UG/KG	35	U	
AROCLOR-1254	UG/KG	35	U	
AROCLOR-1260	UG/KG	35	Ū	

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Parameter	units	Result	Val Qual	Qual Code
AROCLOR-1016	UG/KG	38	U	
AROCLOR-1221	UG/KG	38	U	
AROCLOR-1232	UG/KG	38	U	
AROCLOR-1242	UG/KG	38	U	
AROCLOR-1248	UG/KG	38	U	
AROCLOR-1254	UG/KG	38	U	
AROCLOR-1260	UG/KG	38	Ū	

nsample	SB-388-0405	nsample	SB-388-0708	nsample	SB-389-0102	
samp_date	10/15/2007	samp_date	10/15/2007	samp_date	10/15/2007	
lab_id	A7J170248007	lab_id	A7J170248008	lab_id	A7J170248009	
qc_type Pct_Solids DUP_OF:	NM 90.8	qc_type Pct_Solids DUP_OF:	NM 90.3	qc_type Pct_Solids DUP_OF:	NM 91.2	

Parameter	units	Result	Val	Qual
,			Qual	Code
AROCLOR-1016	UG/KG	36	Ū	
AROCLOR-1221	UG/KG	36	Ų	
AROCLOR-1232	UG/KG	36	Ú	
AROCLOR-1242	UG/KG	36	U	
AROCLOR-1248	UG/KG	36	Ü	
AROCLOR-1254	UG/KG	36	U	
AROCLOR-1260	UG/KG	36	U	

Parameter	units	Result	Val Qual	Qual Code
AROCLOR-1016	UG/KG	37	U	
AROCLOR-1221	UG/KG	37	U	
AROCLOR-1232	UG/KG	37	Ü	
AROCLOR-1242	UG/KG	37	U	
AROCLOR-1248	UG/KG	37	U	
AROCLOR-1254	UG/KG	37	U	
AROCLOR-1260	UG/KG	37	U	

Parameter	units	Result	Val Qual	Qual Code
AROCLOR-1016	UG/KG	36	U	
AROCLOR-1221	UG/KG	36	U	
AROCLOR-1232	UG/KG	36	U	
AROCLOR-1242	UG/KG	36	U	
AROCLOR-1248	UG/KG	36	U	
AROCLOR-1254	UG/KG	36	U	
AROCLOR-1260	UG/KG	36	U	

nsample	SB-389-0203	nsample	SB-389-0405	nsample	SB-389-0708
samp_date	10/15/2007	samp_date	10/15/2007	samp_date	10/15/2007
lab_id	A7J170248010	lab_id	A7J170248011	lab_id	A7J170248012
qc_type	NM	qc_type	NM	qc_type	NM
Pct_Solids	85.0	Pct_Solids	87.0	Pct_Solids	86.0
DUP_OF:		DUP_OF:		DUP_OF:	

	,			
Parameter	units	Result	Val	Qual
			Qual	Code
AROCLOR-1016	UG/KG	39	U	
AROCLOR-1221	UG/KG	39	U	
AROCLOR-1232	UG/KG	39	U	
AROCLOR-1242	UG/KG	39	U	
AROCLOR-1248	UG/KG	39	J	
AROCLOR-1254	UG/KG	39	U	
AROCLOR-1260	UG/KG	39	υ	

Parameter	units	Result	Val	Qual
			Qual	Code
AROCLOR-1016	UG/KG	38	U	
AROCLOR-1221	UG/KG	38	Ū	
AROCLOR-1232	UG/KG	38	Ü	
AROCLOR-1242	UG/KG	38	IJ	
AROCLOR-1248	UG/KG	38	U	
AROCLOR-1254	UG/KG	38	U	
AROCLOR-1260	UG/KG	38	U	

Parameter	units	Result	Val Qual	Qual Code
AROCLOR-1016	UG/KG	38	U	
AROCLOR-1221	UG/KG	38	U	
AROCLOR-1232	UG/KG	38	U	
AROCLOR-1242	UG/KG	38	U	
AROCLOR-1248	UG/KG	.38	U	
AROCLOR-1254	UG/KG	38	U	
AROCLOR-1260	UG/KG	38	U	

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	00 000 0400		OD 000 0000		CB 200 040E	
nsample	SB-390-0102	nsample	SB-390-0203	nsample	SB-390-0405	
samp_date	10/15/2007	samp_date	10/15/2007	samp_date	10/15/2007	
lab_id	A7J170248013	lab_id	A7J170248014	lab_id	A7J170248015	
qc_type	NM	qc_type	NM	qc_type	NM	
Pct_Solids	87.0	Pct_Solids	78.0	Pct_Solids	83.0	
DUP_OF:		DUP_OF:		DUP_OF:		

Parameter	units	Result	Val Qual	Qual Code
AROCLOR-1016	UG/KG	38	U	
AROCLOR-1221	UG/KG	38	U	
AROCLOR-1232	UG/KG	38	. U	
AROCLOR-1242	UG/KG	38	U	
AROCLOR-1248	UG/KG	38	U	
AROCLOR-1254	UG/KG	38	U	
AROCLOR-1260	UG/KG	38	U	

Parameter	units	Result	Val	Qual
			Qual	Code
AROCLOR-1016	UG/KG	42	U	
AROCLOR-1221	UG/KG	42	U	
AROCLOR-1232	UG/KG	42	U	
AROCLOR-1242	UG/KG	42	U	
AROCLOR-1248	UG/KG	42	U	
AROCLOR-1254	UG/KG	42	U	
AROCLOR-1260	UG/KG	42	U	

Parameter	units	Result	Val	Qual
			Qual	Code
AROCLOR-1016	UG/KG	40	U	
AROCLOR-1221	UG/KG	40	U	
AROCLOR-1232	UG/KG	40	U	
AROCLOR-1242	UG/KG	40	U	
AROCLOR-1248	UG/KG	40	U	
AROCLOR-1254	UG/KG	40	U	
AROCLOR-1260	UG/KG	40	U	

SDG: 7J17248 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample SB-390-0708 nsample SB-391-0102 nsample SB-391-0203 samp_date 10/15/2007 samp_date 10/16/2007 samp_date 10/16/2007 lab_id A7J170248016 lab_id A7J170248017 lab_id A7J170248018 qc_type NM qc_type NM qc_type NM Pct_Solids 82.0 Pct_Solids 84.0 Pct_Solids 66.0 DUP_OF: DUP_OF: DUP_OF:

Parameter	units	Result	Val	Qual
			Qual	Code
AROCLOR-1016	UG/KG	40	U	
AROCLOR-1221	UG/KG	40	U	
AROCLOR-1232	UG/KG	40	U	
AROCLOR-1242	UG/KG	40	U	
AROCLOR-1248	UG/KG	40	U	
AROCLOR-1254	UG/KG	40	U	
AROCLOR-1260	UG/KG	40	U	

Parameter	units	Result	Val	Qual
			Qual	Code
AROCLOR-1016	UG/KG	39	U	
AROCLOR-1221	UG/KG	39	Ü	
AROCLOR-1232	UG/KG	39	U	
AROCLOR-1242	UG/KG	39	U	
AROCLOR-1248	UG/KG	39	U	
AROCLOR-1254	UG/KG	39	Ú	
AROCLOR-1260	UG/KG	39	U	

Parameter	units	Result	Val Qual	Qual Code
AROCLOR-1016	UG/KG	50	U	
AROCLOR-1221	UG/KG	50	U	
AROCLOR-1232	UG/KG	50	U	
AROCLOR-1242	UG/KG	50	U	
AROCLOR-1248	UG/KG	50	U	
AROCLOR-1254	UG/KG	50	U	
AROCLOR-1260	UG/KG	50	U	

SDG: 7J17248 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date

lab_id

qc_type

SB-391-0405

10/16/2007

NM

87.0

A7J170248019

SB-391-0708 10/16/2007

samp_date lab_id

nsample

A7J170248020

qc_type Pct_Solids NM 85.0

Pct_Solids DUP_OF:

DUP_OF:

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Parameter	units	Result	Val Qual	Qual Code
			Quai	Code
AROCLOR-1016	UG/KG	38	U	
AROCLOR-1221	UG/KG	38	U	
AROCLOR-1232	UG/KG	38	U	
AROCLOR-1242	UG/KG	38	U	
AROCLOR-1248	UG/KG	38	U	
AROCLOR-1254	UG/KG	38	U	
AROCLOR-1260	UG/KG	38	U	

Parameter	units	Result	Val	Qual
			Qual	Code
AROCLOR-1016	UG/KG	39	U	
AROCLOR-1221	UG/KG	39	U	
AROCLOR-1232	UG/KG	39	U	
AROCLOR-1242	UG/KG	39	U	
AROCLOR-1248	UG/KG	39	U	
AROCLOR-1254	UG/KG	39	U	
AROCLOR-1260	UG/KG	39	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Tetra Tech NUS, Inc

Client Sample ID: SB-387-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170248-001 Date Sampled: 10/15/07 16:00 Prep Date: 10/22/07 Prep Batch #: 7295068 Dilution Factor: 1		10/17/07	Matri	i x	SOLID
% Moisture: 6.3	Method:	SW846 8270	oc .		
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	12 J	350	ug/kg	1.4	
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS			
Nitrobenzene-d5	75	(24 - 112)	•		
2-Fluorobiphenyl	78	(34 - 110)			
Terphenyl-d14	91	(41 - 119)			
Phenol-d5	86	(28 - 110)			
2-Fluorophenol	81	(26 - 110)			
2,4,6-Tribromophenol	55	(10 - 118)			
NOTE (S):					

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech NUS, Inc

Client Sample ID: SB-387-0203

GC/MS Semivolatiles

Lot-Sample #: A7J17 Date Sampled: 10/15 Prep Date: 10/22 Prep Batch #: 72950 Dilution Factor: 1	/07 16:03 Date Received /07 Analysis Date	d: 10/17/07	Mat:	rix S	SOLID
% Moisture: 8.6	Method	: SW846 8270	C		
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	ND	360	ug/kg	1.4	
	PERCENT	RECOVERY			
SURROGATE	RECOVERY	LIMITS			
Nitrobenzene-d5	69	(24 - 112)	•		
2-Fluorobiphenyl	68	(34 - 110)			
Terphenyl-d14	84	(41 - 119)			
Phenol-d5	70	(28 - 110)			
2-Fluorophenol	67	(26 - 110)			
2,4,6-Tribromophenol	49	(10 - 118)			
NOTE (S):					

Results and reporting limits have been adjusted for dry weight.

Client Sample ID: SB-387-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170248-003 Date Sampled: 10/15/07 16:07 Prep Date: 10/22/07 Prep Batch #: 7295068		10/17/07	Matrix	· · · · · · · · · · · · · · · · · · ·	SOLID
Dilution Factor: 1 % Moisture: 16	Method:	SW846 8270	C		
o instantation in	no chodi.	5,,010 02,70			
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	ND	390	ug/kg	1.5	
	PERCENT	RECOVERY			
SURROGATE	RECOVERY	LIMITS			
Nitrobenzene-d5	64	$\frac{111113}{(24 - 112)}$			
2-Fluorobiphenyl	67	(34 - 112)			
<u> </u>	86				
Terphenyl-d14		(41 - 119)			
Phenol-d5	68	(28 - 110)			
2-Fluorophenol	68	(26 - 110)			
2,4,6-Tribromophenol	59	(10 - 118)			

Results and reporting limits have been adjusted for dry weight.

NOTE (S):

Client Sample ID: SB-387-0708

GC/MS Semivolatiles

		•				
-		Work Order #: Date Received:		Matrix	SOLID	
Prep Date:	10/22/07	Analysis Date:	10/25/07			
Prep Batch #:	7295068	_				
Dilution Factor:	1					
% Moisture:	11	Method:	SW846 8270	С		
			REPORTING			
PARAMETER	•	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene		ND	370	ug/kg	1.5	
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Nitrobenzene-d5		56	(24 - 112)			
2-Fluorobiphenyl		61	(34 - 110)			
Terphenyl-d14		85	(41 - 119)			
Phenol-d5		64	(28 - 110)			
2-Fluorophenol		57	(26 - 110)			
2,4,6-Tribromophe	enol	57	(10 - 118)			
NOTE (S) ·			•			

Client Sample ID: SB-388-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170248- Date Sampled: 10/15/07 1 Prep Date: 10/22/07 Prep Batch #: 7295068 Dilution Factor: 1		.: 10/17/07	Matr	ix	: SOLID
% Moisture: 6.4	Method	.: SW846 8270	C		
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	380	350	ug/kg	1.4	
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS			
Nitrobenzene-d5	71	$\frac{24 - 112}{}$	•		
2-Fluorobiphenyl	75	(34 - 110)			
Terphenyl-d14	83	(41 - 119)			
Phenol-d5	79	(28 - 110)			
2-Fluorophenol	77	(26 - 110)			
2,4,6-Tribromophenol	80	(10 - 118)			

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

Client Sample ID: SB-388-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170248-006 Date Sampled: 10/15/07 16:17 Prep Date: 10/22/07 Prep Batch #: 7295068		10/17/07	Matrix	SOLID
Dilution Factor: 1 % Moisture: 12	Method:	SW846 8270	С	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	65	$\frac{24}{(24 - 112)}$		
2-Fluorobiphenyl	69	(34 - 110)		
Terphenyl-d14	87	(41 - 119)		
Phenol-d5	70	(28 - 110)		
2-Fluorophenol	71	(26 - 110)		

(10 - 118)

73

NOTE (S):

Results and reporting limits have been adjusted for dry weight.

2,4,6-Tribromophenol

Client Sample ID: SB-388-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170248-007 Date Sampled: 10/15/07 16:20 Prep Date: 10/22/07 Prep Batch #: 7295068 Dilution Factor: 1		10/17/07	Matrix	SOLID
% Moisture: 9.2	Method:	SW846 8270	С	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	360	ug/kg	1.4
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	59	(24 - 112)		
2-Fluorobiphenyl	61	(34 - 110)		
Terphenyl-d14	86	(41 - 119)		
Phenol-d5	62	(28 - 110)		
2-Fluorophenol	58	(26 - 110)		
2,4,6-Tribromophenol	47	(10 - 118)		
NOTE(S):				

Client Sample ID: SB-388-0708

GC/MS Semivolatiles

Lot-Sample #: A7J1 Date Sampled: 10/1 Prep Date: 10/2 Prep Batch #: 7295 Dilution Factor: 1	5/07 16:22 Date 2/07 Anal		10/17/07	Matrix	·	SOLID
% Moisture: 9.7	Metho	od:	SW846 8270	C ,		
			REPORTING			
PARAMETER	RESUI	T	LIMIT	UNITS	MDL	
Benzo(a)pyrene	ND		370	ug/kg	1.4	
	PERCI	PNT	RECOVERY			
SURROGATE	RECOV		LIMITS			
Nitrobenzene-d5	67		(24 - 112)			
2-Fluorobiphenyl	72		(34 - 110)		,	
Terphenyl-d14	89		(41 - 119)			
Phenol-d5	72		(28 - 110)			
2-Fluorophenol	70		(26 - 110)			
2,4,6-Tribromophenol	45		(10 - 118)			

Results and reporting limits have been adjusted for dry weight.

NOTE (S):

Client Sample ID: SB-389-0102

GC/MS Semivolatiles

Lot-Sample #: A Date Sampled: 1 Prep Date: 1 Prep Batch #: 7 Dilution Factor: 1	10/15/07 16:33 10/22/07 7295068	**	10/17/07	Matrix		SOLID
% Moisture: 8	3.8	Method:	SW846 8270	C		
PARAMETER		RESULT	REPORTING LIMIT	UNITS	MDL	
Benzo(a)pyrene		220 J	360	ug/kg	1.4	
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS			
Nitrobenzene-d5		63	(24 - 112)			
2-Fluorobiphenyl		67	(34 - 110)			
Terphenyl-d14		83	(41 - 119)			
Phenol-d5		66	(28 - 110)			
2-Fluorophenol		66	(26 - 110)			
2,4,6-Tribromophen	nol	39	(10 - 118)			
NOTE (S):						

J Estimated result. Result is less than RL.

Client Sample ID: SB-389-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170248-010 Date Sampled: 10/15/07 16:36 Prep Date: 10/22/07 Prep Batch #: 7295068 Dilution Factor: 1		10/17/07	Matrix	solid
% Moisture: 15	Method:	SW846 8270	OC .	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	61	(24 - 112)	•	
2-Fluorobiphenyl	63	(34 - 110)		
Terphenyl-d14	88	(41 - 119)		
Phenol-d5	67	(28 - 110)		
2-Fluorophenol	67	(26 - 110)		
2,4,6-Tribromophenol	54	(10 - 118)		

Results and reporting limits have been adjusted for dry weight.

NOTE (S):

Client Sample ID: SB-389-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170248-011 Date Sampled: 10/15/07 16:3 Prep Date: 10/22/07 Prep Batch #: 7295068 Dilution Factor: 1		10/17/07	Matri	x:	SOLID
% Moisture: 13	Method	SW846 8270	С		
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	33 Ј	380	ug/kg	1.5	
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS			
Nitrobenzene-d5	56	(24 - 112)			
2-Fluorobiphenyl	59	(34 - 110)			
Terphenyl-d14	87	(41 - 119)			
Phenol-d5	60	(28 - 110)			
2-Fluorophenol	62	(26 - 110)			
2,4,6-Tribromophenol	56	(10 - 118)			
NOTE (S) •					

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Client Sample ID: SB-389-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170248-01 Date Sampled: 10/15/07 16: Prep Date: 10/22/07 Prep Batch #: 7295068 Dilution Factor: 1	41 Date Received. Analysis Date.	.: 10/17/07 .: 10/25/07		ix	: SOLID
% Moisture: 14	Method	.: SW846 8270	С		
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	9.7 J	380	ug/kg	1.5	
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS			
Nitrobenzene-d5	61	(24 - 112)			
2-Fluorobiphenyl	61	(34 - 110)			,
Terphenyl-d14	88	(41 - 119)		•	
Phenol-d5	65	(28 - 110)			
2-Fluorophenol	. 65	(26 - 110)			
2,4,6-Tribromophenol	38	(10 - 118)			
NOTE (S):					

J Estimated result. Result is less than RL.

Client Sample ID: SB-390-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170248-01 Date Sampled: 10/15/07 16: Prep Date: 10/22/07 Prep Batch #: 7295068 Dilution Factor: 1		: 10/17/07	Matr	ix: SOLID
% Moisture: 13	Method	.: SW846 8270)C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	9.9 J	380	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS	_	
Nitrobenzene-d5	64	(24 - 112)		
2-Fluorobiphenyl	70	(34 - 110)		
Terphenyl-d14	85	(41 - 119)		
Phenol-d5	66	(28 - 110)		
2-Fluorophenol	65	(26 - 110)		
2,4,6-Tribromophenol	40	(10 - 118)		
NOTE(S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-390-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170248-014 Date Sampled: 10/15/07 16:4 Prep Date: 10/22/07 Prep Batch #: 7295068 Dilution Factor: 1		10/17/07	Matr	ix:	SOLID
% Moisture: 22	Method:	SW846 8270	OC .		
•		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	ND	420	ug/kg	1.7	
	PERCENT	RECOVERY			
SURROGATE	RECOVERY	LIMITS			
Nitrobenzene-d5	64	(24 - 112)	•		
2-Fluorobiphenyl	66	(34 - 110)			
Terphenyl-d14	91	(41 - 119)			
Phenol-d5	66	(28 - 110)			
2-Fluorophenol	67	(26 - 110)			
2,4,6-Tribromophenol	57	(10 - 118)			
NOTE (S):	·		*		

Client Sample ID: SB-390-0405

GC/MS Semivolatiles

Lot-Sample #	.: A7J170248-015	Work Order #	.: J86K11AD	Matrix:	SOLID
Date Sampled	- 10/15/07 16:51	Date Received	• 10/17/07		

Date Sampled...: 10/15/07 16:51 Date Received..: 10/17/07 Prep Date....: 10/22/07 Analysis Date..: 10/25/07

Prep Batch #...: 7295068

Dilution Factor: 1
% Moisture....: 17

Method..... SW846 8270C

		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo (a) pyrene	990	400	ug/kg	1.6	_
	PERCENT	RECOVERY			
SURROGATE	RECOVERY	LIMITS			
Nitrobenzene-d5	61	(24 - 112)			
2-Fluorobiphenyl	66	(34 - 110)			
Terphenyl-d14	79	(41 - 119)			
Phenol-d5	63	(28 - 110)			
2-Fluorophenol	63	(26 - 110)			
2,4,6-Tribromophenol	40	(10 - 118)			
SURROGATE Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol	PERCENT RECOVERY 61 66 79 63 63	RECOVERY LIMITS (24 - 112) (34 - 110) (41 - 119) (28 - 110) (26 - 110)	ug/ kg	1.6	

NOTE(S):

Client Sample ID: SB-390-0708

GC/MS Semivolatiles

-	10/15/07 16:53 10/22/07 7295068	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix		SOLID
% Moisture:	18	Method:	SW846 8270	С		
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene		ND	400	ug/kg	1.6	
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Nitrobenzene-d5		60	(24 - 112)			
2-Fluorobiphenyl		60	(34 - 110)			
Terphenyl-d14		88	(41 - 119)			
Phenol-d5		66	(28 - 110)			
2-Fluorophenol		64	(26 - 110)			
2,4,6-Tribromophe	enol	57	(10 - 118)			

Results and reporting limits have been adjusted for dry weight.

NOTE (S):

Client Sample ID: SB-391-0102

GC/MS Semivolatiles

	_	1: 10/17/07	Matri	x: SOLID
% Moisture: 16	Method	: SW846 82700		
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.6
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	•	
Nitrobenzene-d5	64	(24 - 112)		
2-Fluorobiphenyl	69	(34 - 110)		
Terphenyl-d14	89	(41 - 119)		
Phenol-d5	66	(28 - 110)		
2-Fluorophenol	67	(26 - 110)		
2,4,6-Tribromophenol	50	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-391-0203

GC/MS Semivolatiles

	10/16/07 08:47 10/22/07 7295068	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	SOLID
% Moisture:	34	Method:	SW846 8270	С	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	500	ug/kg	2.0
		PERCENT.	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		57	(24 - 112)		
2-Fluorobiphenyl		59	(34 - 110)		
Terphenyl-d14		85	(41 - 119)		
Phenol-d5		60	(28 - 110)		
2-Fluorophenol		58	(26 - 110)		
2,4,6-Tribromophe	enol	39	(10 - 118)		
NOTE (S):					

Client Sample ID: SB-391-0405

GC/MS Semivolatiles

Date Sampled:	10/16/07 08:50 10/22/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	: SOLID
Dilution Factor:		Wathad .	CM046 9970	C	
% Moisture:	. 13	Method:	SW846 8270	C	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	380	ug/kg	1.5
		DED CENT	DE GOVERNY		
		PERCENT	RECOVERY	•	•
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		61	(24 - 112)		
2-Fluorobiphenyl		65	(34 - 110)		
Terphenyl-d14		84	(41 - 119)		
Phenol-d5		64	(28 - 110)		
2-Fluorophenol		62	(26 - 110)		
2,4,6-Tribromophe	enol	33	(10 - 118)		
NOTE(S):					

Client Sample ID: SB-391-0708

GC/MS Semivolatiles

Lot-Sample #: A7 Date Sampled: 10 Prep Date: 10 Prep Batch #: 72	/16/07 08:52 Date /22/07 Anal		10/17/07	Matrix	: SOL	ID
Dilution Factor: 1 % Moisture: 15	Meth	od:	SW846 8270	C		
			REPORTING			
PARAMETER	RESU	LT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	ND		390	ug/kg	1.5	
·						
	PERC	ENT	RECOVERY			
SURROGATE	RECO	VERY	LIMITS			
Nitrobenzene-d5	62		(24 - 112)			
2-Fluorobiphenyl	66		(34 - 110)			
Terphenyl-d14	85		(41 - 119)			
Phenol-d5	60		(28 - 110)			
2-Fluorophenol	61		(26 - 110)		•	
2,4,6-Tribromopheno	1 . 35		(10 - 118)			
NOTE (S):						

Client Sample ID: SB-387-0102

GC Semivolatiles

Lot-Sample #: A7J170248-001	Work Order #:	J86J41AC	Matrix SOLID
Date Sampled: 10/15/07 16:00	Date Received:	10/17/07	
<pre>Prep Date: 10/19/07</pre>	Analysis Date:	10/24/07	
Prep Batch #: 7292024			
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.01 g	Final Wgt/Vol: 10 mL
% Moisture: 6.3	Method:	SW846 8082	
	•	REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	35	ug/kg
Arcelor 1221	ND	35	ug/kg
Arodlor 1232	ND	35	ug/kg
Arodlor 1242	ND	35	ug/kg
Aroclor 1248	ND	35	ug/kg
Aroclor 1254	ND	35	ug/kg
Aroclor 1260	ND	35	ug/kg
	PERCENT	RECOVERY	

RECOVERY

117

144

LIMITS

(10 - 196)

(10 - 199)

NOTE(S):

SURROGATE

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-387-0203

GC Semivolatiles

Lot-Sample #: A7J170248-002	Work Order #:	J86J91AC	Matrix: SOLID
Date Sampled: 10/15/07 16:03	Date Received:	10/17/07	
Prep Date: 10/19/07	Analysis Date:	10/24/07	
Prep Batch #: 7292024			
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.12 g	Final Wgt/Vol: 10 mL
% Moisture: 8.6	Method:	SW846 8082	_
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	36	ug/kg
Aroclor 1221	ND	36	ug/kg
Arodlor 1232	MD	3.6	ug/kg
Aroclor 1242	ND	36	ug/kg
Aroclor 1248	ND	36	ug/kg
Aroclor 1254	ND	36	ug/kg
Aroclor 1260	ND	36	ug/kg

RECOVERY

 SURROGATE
 RECOVERY
 LIMITS

 Tetrachloro-m-xylene
 107
 (10 - 196)

 Decachlorobiphenyl
 119
 (10 - 199)

PERCENT

NOTE(S):

Client Sample ID: SB-387-0405

GC Semivolatiles

Lot-Sample #: A7J170248-003 Date Sample 1: 10/15/07 16:07 Prep Date: 10/19/07 Prep Batch #: 7292024		10/17/07	Matrix: SOLID
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.13 g	Final Wgt/Vol: 10 mL
% Moisture: 16	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	39	ug/kg
Aroclor 1221	ND	39	ug/kg
Aroclor 1232	ND	39	ug/kg
Arocler 1212	ND	39	ug/kg
Aroclor 1248	ND ·	39	ug/kg
Aroclor 1254	ND	39	ug/kg
Aroclor 1260	ND	39	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	98	(10 - 196)	
Decachlorobiphenyl	115	(10 - 199)	

Client Sample ID: SB-387-0708

GC Semivolatiles

Lot-Sample #: A7J170248-00 Date Sampled: 10/15/07 16: Prep Date: 10/19/07 Prep Batch #: 7292024		1.0/17/07	Matrix: SOLID
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	_	Final Wgt/Vol: 10 mL
% Moisture: 11	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	37	ug/kg
Aroclor 1221	ND	37	ug/kg
Arodlor 1232	ND	37	ug/kg
Aroclor 1242	ND	37	ug/kg
Aroclor J248	ND	37	ug/kg
Aroclor 1254	ND	37	ug/kg
Aroclor 1260	ND	37	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	95	(10 - 196)	
Decachlorobiphenyl	121	(10 - 199)	

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

Client Sample ID: SB-388-0102

GC Semivolatiles

Lot-Sample #: A7J170248-005 Date Sampled: 10/15/07 16:15 Prep Date: 10/19/07 Prep Batch #: 7292024		10/17/07	Matrix: SOLID
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.02 g	Final Wgt/Vol: 10 mL
% Moisture: 6.4	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESUL'T	LIMIT	UNITS
Aroclor 1016	ND	35	ug/kg
Aroclor 1221	ND	35	ug/kg
Aroclor_1232	ND	35	ug/kg
Aroclor 1242	ND	35	ug/kg
Aroclor 1248	ND	35	ug/kg
Aroclor 1254	ND	35	ug/kg
Aroclor 1260	ND	35	ug/kg
GUDDOGAMS)	PERCENT RECOVERY	RECOVERY LIMITS	
SURROGATE Tetrachloro-m-xylene	91	$\frac{\text{LIMILS}}{(10 - 196)}$	
Decachlorobiphenyl	108	(10 - 198)	
Decachiol oblipheny i	100	(10 199)	

NOTE(S):

Client Sample ID: SB-388-0203

GC Semivolatiles

Lot-Sample #: A7J170248-006 Date Sampled: 10/15/07 16:17 Prep Date: 10/19/07 Prep Batch #: 7292024	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SOLID
Dilution Factor: 1	Initial Wgt/Vol:	30.01 g	Final Wgt/Vol: 10 mL
% Moisture: 12	Method:	SW846 8082	_
DADAMBURD	DECLE E	REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38	ug/kg
Aroclor 1232	ND	38	ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	ND	38	ug/kg

	PERCENT	RECOVERY
SURROGATE	RECOVERY.	LIMITS
Tetrachloro-m-xylene	98	(10 - 196)
Decachlorobiphenyl	118	(10 - 199)

NOTE(S):

Client Sample ID: SB-388-0405

GC Semivolatiles

Lot-Sample #: A7J170248-0 Date Sampled: 10/15/07 16 Prep Date: 10/19/07 Prep Batch #: 7292024		: 10/17/07	Matrix: SOLID
Dilution Factor: 1	Initial Wgt/Vol	: 30.01 g	Final Wgt/Vol: 10 mL
% Moisture: 9.2	Method	: SW846 8082	
PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242	RESULT ND ND ND ND	REPORTING LIMIT 36 36 36 36	UNITS ug/kg ug/kg ug/kg ug/kg
Aroclor 1248	ND	36	ug/kg
Aroclor 1254	ND	36	ug/kg
Aroclor 1260	ND	36	ug/kg

PERCENT

113

116

RECOVERY

RECOVERY

(10 - 196)

(10 - 199)

LIMITS

NOTE(S):

SURROGATE

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-388-0708

GC Semivolatiles

Lot-Sample #: A7J170248-008 Date Sampled: 10/15/07 16:22 Prep Date: 10/19/07 Prep Batch #: 7292024		10/17/07	Matrix: SOLID
Dilution Factor: 1	Initial Wgt/Vol:	30.01 g	Final Wgt/Vol: 10 mL
% Moisture: 9.7	Method:	SW846 8082	
		REPORTING	
PARAMETET:	RESULT	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	ND	37	ug/kg
Aroclor 1260	ND	37	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	98	(10 - 196)	
Decachlorobiphenyl	113	(10 - 199)	
NOTE(S):			

Client Sample ID: SB-389-0102

GC Semivolatiles

Lot-Sample #: A7J Date Sampled: 10/ Prep Date: 10/ Prep Batch #: 729	15/07 16:33 Date Rece 19/07 Analysis	r #: J86KP1AC ived: 10/17/07 Date: 10/24/07	Matrix: SOLID
Dilution Factor: 1	Initial W	gt/Vol: 30.05 g	Final Wgt/Vol: 10 mL
% Moisture: 8.8	Method	: SW846 8082	=
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	36	ug/kg
Aroclor 1221	ND	36	ug/kg
Aroclor 1232	ND	36	ug/kg
Arocler 1242	ND	36	ug/kg
Aroclor 1248	ND	. 36	ug/kg
Aroclor 1254	ND	36	ug/kg
Aroclor 1260	ND	36	ug/kg

	PERCENT	RECOVERY
SURROGATE	RECOVERY	LIMITS
Tetrachloro-m-xylene	115	(10 - 196)
Decachlorobiphenyl	118	(10 - 199)

NOTE(S):

Client Sample ID: SB-389-0203

GC Semivolatiles

Lot-Sample #: A7J170248-010	Work Order #:	J86KR1AC	Matrix SOLID
Date Sampled: 10/15/07 16:36	Date Received:	10/17/07	, .
<pre>Prep Date: 10/19/07</pre>	Analysis Date:	10/24/07	
Prep Batch #: 7292024			
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.03 g	Final Wgt/Vol: 10 mL
% Moisture: 15	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	39	ug/kg
Aroclor 1221	ND	39	ug/kg
Aroclor 1232	ND	3.9	ug/kg
Aroclor 1242	ND	39	ug/kg
Aroclor 1248	ND	39	ug/kg
Aroclor 1254	ND	39	ug/kg
Aroclor 1260	ND	39	ug/kg
	PERCENT	R.ECOVERY	•
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	98	(10 - 196)	
Decachlorobiphenyl	118	(10 - 199)	

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

Client Sample ID: SB-389-0405

GC Semivolatiles

Lot-Sample #: A7J170248-011 Date Sampled: 10/15/07 16:39 Prep Date: 10/19/07 Prep Batch #: 7292024		10/17/07	Matrix: SOLID
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>		J .
% Moisture: 13	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38	ug/kg
Aroclor (232	ND.	38 -	ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	ND	38	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	108	(10 - 196)	
Decachlorobiphenyl	120	(10 - 199)	

NOTE(S):

Client Sample ID: SB-389-0708

GC Semivolatiles

-		Work Order #: Date Received:		Matrix	ĸ:	SOLID
Prep Date:	10/19/07	Analysis Date:	10/24/07			
Prep Batch #:	7292024					
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.17 g	Final	Wgt/Vol:	10 mL
% Moisture:	14	Method:	SW846 8082			
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	_	
Aroclor 1016		ND	38	ug/kg	_	
Aroclor 1221		ND	38	ug/kg		
Aroclor 1232		ND	38	ug/kg		
Arcclor 1242		ND	38	ug/kg		
Aroclor 1248		ND	38	ug/kg		
Aroclor 1254		ND	38	ug/kg	•	
Aroclor 1260		ND	38	ug/kg		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xyle	ene	92	(10 - 196)			
Decachlorobipheny	1	118	(10 - 199)			

Client Sample ID: SB-390-0102

GC Semivolatiles

-	10/15/07 16:45 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matri	к:	SOLID
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.05 g	Final	Wgt/Vol:	10 mL
% Moisture:	13	Method:	SW846 8082			
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS		
Aroclor 1016		ND	38	ug/kg		
Aroclor 1221		ND	38	ug/kg		
Arodler 1232,		ND	38	ug/kg		
Aroclor 1242	,	ND.	38	ug/kg		
Aroclor 1248		ND	38	ug/kg		
Aroclor 1254		ND	38	ug/kg		
Aroclor 1260		ND	38	ug/kg		
		PERCENT	RECOVERY		7	
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xyl	ene	102	(10 - 196)			
Decachlorobipheny	<i>'</i> 1	114	(10 - 199)			

NOTE(S):

Client Sample ID: SB-390-0203

GC Semivolatiles

Lot-Sample #: A7J Date Sampled: 10/ Prep Date: 10/ Prep Batch #: 729	'15/07 16:47 D a '19/07 A a		10/17/07	Matrix	SOLID
Dilution Factor: 1	I	nitial Wgt/Vol:	30 g	Final	Wgt/Vol: 10 mL
% Moisture: 22	Mo	Method:	SW846 8082		
			REPORTING		
PARAMETER	ום		LIMIT	UNITS	
Aroclor 1016	<u>N</u> I				-
				ug/kg	
Aroclor 1221	NI			ug/kg	
Aroclor 1232	NI	D		ug/kg	• •
Aroclor 1242	NI	D .	42	ug/kg	
Aroclor 1248	NI	D .	42	ug/kg	
Aroclor 1254	NI	D	42	ug/kg	
Aroclor 1260	NI	D	42	ug/kg	
	PI	ERCENT	RECOVERY		
SURROGATE	RI	ECOVERY	LIMITS		
Tetrachloro-m-xylene	9(0	(10 - 196)		
Decachlorobiphenyl		21	(10 - 199)		
			·		

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

Client Sample ID: SB-390-0405

GC Semivolatiles

Lot-Sample #: A7J170248-015 Date Sampled: 10/15/07 16:51 Prep Date: 10/19/07 Prep Batch #: 7292024		10/17/07	Matrix: SOLID
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.19 g	Final Wgt/Vol: 10 mL
% Moisture: 17	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	40	ug/kg
Aroclor 1221	ND	40	ug/kg
Aroclor 1232	ND	40	ug/kg
Aroglor 1242	ND	40	ug/kg
Aroclor 1248	ND	40	ug/kg
Aroclor 1254	ND	40	ug/kg
Aroclor 1260	ND	40	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	84	(10 - 196)	
Decachlorobiphenyl	106	(10 - 199)	

NOTE(S):

Client Sample ID: SB-390-0708

GC Semivolatiles

Lot-Sample #: A7J170248-016 Date Sampled: 10/15/07 16:53 Prep Date: 10/19/07 Prep Batch #: 7292024		.10/17/07	Matrix: SOLID
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.01 g	Final Wgt/Vol: 10 mL
% Moisture: 18	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	40	ug/kg
Aroclor 1221	ND	40	ug/kg
Aroclor 1232	ND	40	ug/kg
Aroclor 1242	ND	40	ug/kg
Aroclor 1248	ND	40	ug/kg
Aroclor 1254	ND	40	ug/kg
Aroclor 1260	ND	40	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	97	(10 - 196)	
Decachlorobiphenyl	112	(<u>1</u> 0 - 199)	
			·

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

Client Sample ID: SB-391-0102

GC Semivolatiles

Lot-Sample #: A7 Date Sampled: 10 Prep Date: 10 Prep Batch #: 72	0/16/07 08:45 0/19/07		10/17/07	Matriz	ĸ:	SOLID
Dilution Factor: 1		<pre>Initial Wgt/Vol:</pre>	30.06 g	Final	Wgt/Vol:	10 mL
% Moisture: 16	6	Method:	SW846 8082			
			REPORTING			
PARAMETIER		RESULT	LIMIT	UNITS	_	
Aroclor 1016		ND	39	ug/kg		
Aroclor 1221		ND	39	ug/kg		
Aroclor 1232	* * * * * * * * * * * * * * * * * * * *	ND	39	ug/kg		
Aroclor 1242		ND	39	ug/kg	•	
Aroclor 1248		ND	39	ug/kg		
Aroclor 1254		ND	39	ug/kg		
Aroclor 1260		ND	39	ug/kg		
			RECOVERY			
SURROGATE			LIMITS			
Tetrachloro-m-xylen		87	(10 - 196)			
Decachlorobiphenyl		107	(10 - 199)			

NOTE(S):

Client Sample ID: SB-391-0203

GC Semivolatiles

Lot-Sample #: A7J170248-018 Date Sampled: 10/16/07 08:4 Prep Date: 10/19/07 Prep Batch #: 7292024		10/17/07	Matrix: SOLID
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.09 g	Final Wgt/Vol: 10 mL
% Moisture: 34	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	50	ug/kg
Aroclor 1221	ИD	50	ug/kg
Aroclom 1232	ND ·	50	ug/kg
Arocler 1242	ND	50	ug/kg
Aroclor 1248	ND	50	ug/kg
Aroclor 1254	ND	50	ug/kg
Aroclor 1260	ND	50	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	103	(10 - 196)	
Decachlorobiphenyl	129	(10 - 199)	

NOTE(S):

Tetra Tech NUS, Inc

Client Sample ID: SB-391-0405

GC Semivolatiles

Lot-Sample #: A7J170248-019	Work Order #:	J86LD1AC	Matrix SOLID
Date Sampled: 10/16/07 08:	0 Date Received:	10/17/07	
Prep Date: 10/19/07	Analysis Date:	10/24/07	
Prep Batch #: 7292024			
Dilution Factor: 1	Initial Wgt/Vol:	30.09 g	Final Wgt/Vol: 10 mL
% Moisture: 13	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38	ug/kg
Aroclor 1232	ND	38	ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	ND	38	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	97	(10 - 196)	·
Decachlorobiphenyl	120	(10 - 199)	
NOTE(S):			

Results and reporting limits have been adjusted for dry weight.

Tetra Tech NUS, Inc

Client Sample ID: SB-391-0708

GC Semivolatiles

- "	10/16/07 08:52 10/19/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SOLID
Dilution Factor:		<pre>Initial Wgt/Vol:</pre>	30.2 g	Final Wgt/Vol: 10 mL
% Moisture:	15	Method:	SW846 8082	
PARAMETER		RESULT	REPORTING LIMIT	UNITS
Aroclor 1016		ND	39	ug/kg
Aroclor 1221		ND	39	ug/kg
Aroclor 1232		ND	39	ug/kg
Aroclor 1242		ND . 7 .	39.	ug/kg
Aroclor 1248		ND	39	ug/kg
Aroclor 1254		ND	39	ug/kg
Aroclor 1260		ND	39	ug/kg
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS	
Tetrachloro-m-xyl	ene	75	(10 - 196)	
Decachlorobipheny	71	109	(10 - 199)	

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

APPENDIX C

SUPPORT DOCUMENTATION



ANALYTICAL REPORT

PROJECT NO. 112IC00885

LMC MR SDG #: 7J17248

Michael Martin

Tetra Tech NUS Inc 20251 Century Blvd Suite 200 Germantown, MD 20874

TESTAMERICA LABORATORIES, INC.

Project Manager

November 7, 2007



CASE NARRATIVE

CASE NARRATIVE

7J17248

The following report contains the analytical results for twenty solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00885. The samples were received October 17, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7J170248.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to John Poremba and Michael Martin on October 30, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 3.6, 3.8, and 4.9°C.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

POLYCHLORINATED BIPHENYLS-8082

For sample(s) SB-387-0102 (MS/MSD), the recovery for one surrogate compound is outside acceptance criteria. Since the method criterion is that one of two surrogate compounds must meet acceptance criteria, no corrective action was required.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica North Canton (formerly STL North Canton) 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, which is described in detail in QA Policy, QA-003. 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. TestAmerica North Canton (formerly STL North Canton) 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.

For SW846/RCRA methods, 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.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

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. Multi peak responders may not be included in the target spike list due to co-elution. 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. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) 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). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still 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 under the following circumstances:

• Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride,	Phthalate Esters	Copper, Iron, Zinc,	Copper, Iron, Zinc, Lead
Acetone, 2-Butanone		Lead, Calcium,	
		Magnesium, Potassium,	
		Sodium, Barium,	
		Chromium, Manganese	

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated 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. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

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. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is 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.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion 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 and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica North Canton (formerly STL North Canton) Certifications and Approvals:

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),

Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), OhioVAP (#CL0024), West Virginia (#210), Wisconsin (#999518190), NAVY, ARMY, USDA Soil Permit,

N:\QAQC\Customer Service\Narrative - Combined RCRA _CWA 061807.doc

ANALYTICAL METHODS SUMMARY

7J17248

PARAMET	ER	ANALYTICAL METHOD
Semivol	SW-846 8082 atile Organic Compounds by GC/MS esidue as Percent Solids	SW846 8082 SW846 8270C MCAWW 160.3 MOD
Referen		1101.W 100.5 1.02
MCAWW	"Methods for Chemical Analysis of Wa EPA-600/4-79-020, March 1983 and sub	·
SW846	"Test Methods for Evaluating Solid W Methods", Third Edition, November 19	

SAMPLE SUMMARY

7J17248 : A7J170248

<u>WO # -</u>	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
J86J4	001	SB-387-0102	10/15/07	16:00
J86J9	002	SB-387-0203	10/15/07	16:03
J86KC	003	SB-387-0405	10/15/07	.16:07
J86KJ	004	SB-387-0708	10/15/07	16:10
J86KK	005	SB-388-0102	10/15/07	16:15
J86KL	006	SB-388-0203	10/15/07	
J86KM	007	SB-388-0405	10/15/07	16:20
J86KN	800	SB-388-0708	10/15/07	16:22
J86KP	009	SB-389-0102	10/15/07	16:33
J86KR	010	SB-389-0203	10/15/07	16:36
J86KT	011	SB-389-0405	10/15/07	16:39
J86KV	012	SB-389-0708	10/15/07	16:41
J86KX	013	SB-390-0102	10/15/07	16:45
J86K0	014	SB-390-0203	10/15/07	16:47
J86K1	015	SB-390-0405	10/15/07	16:51
J86K4	016	SB-390-0708	10/15/07	16:53
J86K6	017	SB-391-0102	10/16/07	08:45
J86LC	018	SB-391-0203	10/16/07	08:47
J86LD	019	SB-391-0405	10/16/07	
J86LE	020	SB-391-0708	10/16/07	
NOTE (S	;) <u>:</u>			

⁻ The analytical results of the samples listed above are presented on the following pages.

 $[\]hbox{- 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.

Chain of Custody Record



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Chain of Custody Record



Severn Trent Laboratories, Inc.

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Chain of Custody Record



Severn Trent Laboratories, Inc.

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Possible Hazard Identification Non-Hazard Flammable Skin Irritant	Poison B	Unknown		ample] Re.	,-		ent	10	Dispo	osal E	By La	ab		Archi	ve Fo	or		_ Mor	nihs			y be a		sed if	sample	s are	retained	
Turn Around Time Required		V					•	180	Req	quiren	nents	s (Spe																
24 Hours 48 Hours 7 Days 14 Da	ays 🗌 21 Day		er	51				ļ		-Α				_Δ														
1. Relinquished By		Date /	1%	107	Time	 	J	1.1	Rece	ikaa i	Ву 2	1	<i>\</i>	Ψ	+ ~	_	\mathcal{U}		 ,		•			Date	16-	70	Time 4	130
2. Réfiniquished By		Date	191	, ,	Time			2.1	Rece.	ived i	Ву	````			<u>, , , , , , , , , , , , , , , , , , , </u>									Date			Time	
								<u> </u>				<u> </u>	\bigcirc	<u>ت</u>										16	17.	07	0	940
3. Relinquished By		Date			Time	9		3.1	Rece	ived i	Ву													Date			Time	
Comments		1			·													•		······				1			L	
DISTRIBUTION: WHITE - Returned to Client with Report;	CANARY Stars	with the Same	olo:	שואום	- Fiet	d C a -						· .													<u> </u>			
2.5 THE OTHER PRODUCTION OF THE PORT OF TH	Univant - Blays	wan ale bamp	J. 12, 1	i ii Vi	- 1.160	о Сор	y								,													

SW846 8270C SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17248

Lot #: A7J170248

Extraction: XXA13QL01

	CLIENT ID.	SRG01	SRG02	SRG03	SRG04	SRG05	SRG06	TOT OUT
	=======================================	======	======	======	======	======	======	
	SB-387-0102	75	78	91	86	81	55	00
02	<u>SB-387-0203</u>	69	68	84	70	67	49	00
03	SB-387-0405	64	67	86	68	68	59	00
04	SB-387-0708	56	61	85	64	57	57	00
05	SB-388-0102	71	75	83	79	77	80	00
06	SB-388-0203	65	69	87	70	71	73	00
07	SB-388-0405	59	61	86	62	58	47	00
08	SB-388-0708	67	72	89	72	70	45	00
09	SB-389-0102	63	67	83	66	66	39	00
10	SB-389-0203	61	63	88	67	67	54	00
11	SB-389-0405	56	59	87	.60	62	56	00
12	SB-389-0708	61	61	88	65	65	38	00
13	SB-390-0102	64	70	85	66	65	40	00
14	SB-390-0203	64	66	91	66	67	57	00
15	SB-390-0405	61	66	79	63	63	40	00
16	SB-390-0708	60	60	88	66	64	57	00
17 j	SB-391-0102	64	69	89	66	67	50	00
18	SB-391-0203	57	59	85	60	58	39	00
19	SB-391-0405	61	65	84	64	62	33	00
20	SB-391-0708	62	66	85	60	61	35	00
21	METHOD BLK. J9JEW1AA	68	70	85	67	68	37	!
22	LCS J9JEW1AC	72	74	84	74	73	64	00
23	SB-387-0102 D	58	66	80	69	63	73	00
24	SB-387-0102 S	67	72	84	73	67		00 -
		. <u>~</u>				6 /	76	00

SURROGAT	ES		QC LIMITS
SRG01	=	Nitrobenzene-d5	(24-112)
SRG02	=	2-Fluorobiphenyl	(34-110)
SRG03	=	Terphenyl-d14	(41-119)
SRG04	=	Phenol-d5	(28-110)
SRG05	=	2-Fluorophenol	(26-110)
SRG06	=	2,4,6-Tribromophenol	(10-118)

FORM II

[#] Column to be used to flag recovery values

^{*} Values outside of required QC Limits

D System monitoring Compound diluted out

SW846 8270C CHECK SAMPLE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17248

Lot #: A7J220000

WO #: J9JEW1AC BATCH: 7295068

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	QUAL
1,2,4-Trichlorobenzene	670	=== ===================================	!	1	=======
Acenaphthene		480	73	43- 110	
	670	500	75	46- 110	
2,4-Dinitrotoluene	<u>6</u> 70	550	82	55- 116	
Pyrene	670	530	1 80	58- 113	
N-Nitrosodi-n-propylamine	670	520	77	40- 114	
1,4-Dichlorobenzene	670	440	67	38- 110	
Pentachlorophenol	670	190	29	10- 110	
Phenol	670	480	72	39- 110	
2-Chlorophenol	670	470	71	39- 110	
4-Chloro-3-methylphenol	670	500	74	42- 110	
4-Nitrophenol	670	330	49	24- 117	·

		,
	·	
	•	•
* Values outside of QC limits		•
•		
Gnika Bagarrama		
	<u>ll</u> outside limits	•
COMMENTS:		
· · · · · · · · · · · · · · · · · · ·		

NOTES (S):

SW846 8270C MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17248

Matrix Spike ID: SB-387-0102

Level: (low/med) LOW

Lot #: A7J170248

WO #: J86J41AG BATCH: 7295068

	SPIKE ADDED	SAMPLE CONCENT.	MS CONCENT.	MS %	LIMITS	
COMPOUND	(ug/kg)	(ug/kg)	(ug/kg)	REC	REC	QUAL
======================================	========	========	========	=====	========	=======
1,2,4-Trichlorobenzene	710	ND	490	69	33- 110	
Acenaphthene	710	ND .	510	73	10- 200	
2,4-Dinitrotoluene	710	ND	600	85	42- 118	
Pyrene	710	22	630	86	10- 200	
N-Nitrosodi-n-propylamine	710	ND	520	74	30- 121	
1,4-Dichlorobenzene	710	ND	430	61	26- 110	
Pentachlorophenol	710	ND	380	54	10- 182	
Phenol	710	ND	500	70	10- 144	
2-Chlorophenol	710	ND	490	70	32- 110	
4-Chloro-3-methylphenol	710	ND	550	78	32- 117	
4-Nitrophenol	710	ND	510	72	10- 125	· · · · · · · · · · · · · · · · · · ·

NOTES (S):

Results and reporting limits have been adjusted for dry weight.

RPD:	0	out	of _	0	out	side li	mits	
Spike	Recov	ery:	Ò	out	of	<u> 11</u>	outside	limits
COMMEN	ITS:							

· FORM III

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

SW846 8270C MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17248

Matrix Spike ID: SB-387-0102

Level: (low/med) LOW

Lot #: A7J170248

WO #: J86J41AH BATCH: 7295068

	SPIKE ADDED	MSD CONCENT.	MSD %	olo	חר ז	LIMITS	
COMPOUND	(ug/kg)	(ug/kg)	REC	RPD	RPD	REC	OUAL
=======================================	========	=======	=====	======	====	========	
1,2,4-Trichlorobenzene	710	420	59	15	30	33- 110	
Acenaphthene	710	490	68	5.9	30	10- 200	
2,4-Dinitrotoluene	710	560	80	6.0	30	42- 118	
Pyrene	710	530	72	17	30	10- 200	
N-Nitrosodi-n-propylamine	710	480	67	9.0	30	30- 121	
1,4-Dichlorobenzene	710	380	54	11	30	26- 110	
Pentachlorophenol	710	350	50	7.0	30	10- 182	
Phenol	710	490	69	2.2	30	10- 144	
2-Chlorophenol	710	470	66	5.5	30	32- 110	
4-Chloro-3-methylphenol	710	530	74	5.3	30	32- 117	
4-Nitrophenol	710	480	68	5.2	30	10- 125	

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: __0 out of __11 outside limits

Spike Recovery: 0 out of 11 outside limits

COMMENTS:

···-	 	

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17248

Lab File ID: 8DF1024 DFTPP Injection Date: 10/24/07

Instrument ID: A4HP8 DFTPP Injection Time: 1405

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51 68 69 70 127 197 198 199 275 365 441 442 443	30.0 - 60.0% of mass 198 Less than 2.0% of mass 69 Mass 69 relative abundance Less than 2.0% of mass 69 40.0 - 60.0% of mass 198 Less than 1.0% of mass 198 Base Peak, 100% relative abundance 5.0 - 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443 Greater than 40.0% of mass 198 17.0 - 23.0% of mass 442	✓43.3 ✓0.2 (0.4)1 ✓53.0 ✓0.3 (0.5)1 ✓51.9 ✓0.0 ✓0.0 ✓6.5 ✓26.5 ✓3.3 ✓8.3 ✓52.9 ✓9.8 (18.6)2
	1-Value is % of mass 69 2-Value is % of mass 69	ass 442

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

	EPA	LAB	LAB	DATE	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
0.7	dampoor	T-	000001004	10/04/07	1500
01	SSTD005	L5	8SMM1024	10/24/07	1522
02	SSTD004	L4	8SM1024	10/24/07	1541
03	SSTD003	L3	8SML1024	10/24/07	1600
04	SSTD002	L2	8SL1024	10/24/07	1619
05	SSTD001	L1	8SLL1024	10/24/07	1638
06	SSTD009	L9	8HHH1024	10/24/07	1656
07	SSTD008	L8	8SHH1024	10/24/07	1715
08	SSTD007	L7	8SH1024	10/24/07	1734
		1			
09	SSTD006	L6	8SMH1024	10/24/07	1753
10					
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page 1 of 1

FORM V SV

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 24-OCT-2007 15:22 End Cal Date : 24-OCT-2007 17:53

Quant Method : ISTD Origin : Disabled Target Version : 4.14

Integrator : HP RTE

Method file : \\cansvr11\\dd\chem\MSS\a4hp8.i\\71024a.b\\8270P.m

Last Edit : 24-Oct-2007 17:15 gruberj

Last Edit Curve Type : Average

	0.05000	0.25000	0.50000	1 1.000	2.500	5.000			
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	 % RSD	
	7.500 Level 7	 10.000 Level 8	12.500 Level 9]]	 	1
144 Hexachlorophene	+++++	+++++	+++++	======= +++++ 	+++++	+++++	======= +++++		: <-
145 Hexachlorophene product	+++++	+++++	+++++	 +++++ 	+++++	+++++	 +++++	+++++	
146 Benzo(a)pyrene	1.16862		0.99660 1.40500		1.04702	1.14009	ا 13115. هـر	/ 12.298	
148 3-Methylcholanthrene	+++++ +++++	+++++	+++++	+++++ 	+++++	+++++	 +++++ 	++++	 <-
149 Indeno(1,2,3-cd)pyrene	1.15525	1.02036	1.08130 1.47228	1.16366]	1.14381	1.23994	 	/ ∕11.285	 - -
150 Dibenz(a,h)anthracene	0.98770		0.89316	0.96975	0.95807	1.05400	 	/12.905	
151 Benzo(g,h,i)perylene	1.12101	0.90918	0.87601 1.17786	0.98078 	0.94801	1.00857	/ 1.01275	✓ 9.694	
232 Bis(2-hydroxypheny1)methane	+++++	+++++	+++++	+++++	+++++	+++++	 +++++ 	++++	 <-
233 Bis(4-hydroxyphenyl)methane	+++++	+++++	+++++	****	+++++	+++++	+++++	+++++	 - <-
234 4-Chlorophenol	+++++	+++++	+++++	+++++ j	+++++	+++++	 	+++++	 <-
235 2,3-Dichlorophenol	+++++	+++++ +++++	+++++	+++++	*****	+++++	+++++	*** **	 <-

5B SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17248

Lab File ID: 8DF1024A

DFTPP Injection Date: 10/24/07

Instrument ID: A4HP8

DFTPP Injection Time: 1831

m/e	ION ABUNDANCE CRITERIA	% RELATIVE
=====	TOTAL TABOUNDANCE CITEDIA	ABUNDANCE
===== 51 68 69 70 127 197 198 199 275 365 441	30.0 - 60.0% of mass 198 Less than 2.0% of mass 69 Mass 69 relative abundance Less than 2.0% of mass 69 40.0 - 60.0% of mass 198 Less than 1.0% of mass 198 Base Peak, 100% relative abundance 5.0 - 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443	ABUNDANCE 41.2 70.0 (0.0)1 749.2 70.2 (0.5)1 750.0 70.0
442	Greater than 40.0% of mass 198	√52.6 ———
443	17.0 - 23.0% of mass 442	10.1 (19.1)2
· ——— ·	1-Value is % of mass 69 2-Value is % of mass	SS 442

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

	EPA	LAB	LAB	DATE	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
	=========	==========	== ====================================	========	========
01	SB-389-0203	J86KR1AD	J86KR1AD	10/24/07	0000
02	SSTD006	L6	8SMH024A	10/24/07	1850
03	J9JEWBLK	J9JEW1AA	J9JEW1AA	10/24/07	1948
04	J9JEWCHK	J9JEW1AC	J9JEWLAC	10/24/07	2008
05	SB-387-0102	J86J41AD	J86J41AD	10/24/07	2027
	SB-387-0102	J86J41AG	J86J41AG	10/24/07	2046
07	SB-387-0102	J86J41AH	J86J41AH	10/24/07	2106
	SB-387-0203	J86J91AD	J86J91AD	10/24/07	2125
	SB-387-0405	J86KC1AD	J86KC1AD	10/24/07	2144
	SB-388-0102	J86KK1AD	J86KKLAD	10/24/07	2223
	SB-388-0203	J86KL1AD	J86KL1AD	10/24/07	2243
1	SB-388-0405	J86KM1AD	J86KMLAD	10/24/07	2302
1	SB-388-0708	J86KN1AD	J86KN1AD	10/24/07	2321
	SB-389-0102	J86KP1AD	J86KPlAD	10/24/07	2340
1	SB-389-0405	J86KT1AD	J86KT1AD	10/25/07	0019
	SB-389-0708	J86KVLAD	J86KVLAD	10/25/07	0038
		J86KX1AD	J86KX1AD	10/25/07	0058
	SB-390-0203	J86K01AD	J86K01AD	10/25/07	0117
		J86K11AD	J86K11AD	10/25/07	0136
		J86K41AD	J86K41AD	10/25/07	0156
		J86K61AD	J86K6lAD	10/25/07	0215
22	SB-391-0203	J86LC1AD	J86LC1AD	10/25/07	0234

page 1 of 2

FORM V SV

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17248

Lab File ID: 8DF1024A

DFTPP Injection Date: 10/24/07

Instrument ID: A4HP8

DFTPP Injection Time: 1831

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51 68 69 70 127 197 198 199 275 365 441 442 443	30.0 - 60.0% of mass 198 Less than 2.0% of mass 69 Mass 69 relative abundance Less than 2.0% of mass 69 40.0 - 60.0% of mass 198 Less than 1.0% of mass 198 Base Peak, 100% relative abundance 5.0 - 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443 Greater than 40.0% of mass 198 17.0 - 23.0% of mass 442	√41.2 √0.0 (0.0)1 √49.2 √0.2 (0.5)1 √50.0 √0.0 √0.0 √6.6 √25.6 √3.4 √8.3 √52.6 √10.1 (19.1)2
11	1-Value is % of mass 69 2-Value is % of mass	 ass 442

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

	EPA	TAD	1 777	Ţ	
		LAB	LAB	DATE	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
0.7	=========	==========	==========	========	========
01	SB-391-0405	J86LD1AD	J86LD1AD	10/25/07	0254
02	SB-391-0708	J86LE1AD	J86LE1AD	10/25/07	0313
03		<u> </u>			
04					
05					· · · · · · · · · · · · · · · · · · ·
06					
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page 2 of 2

FORM V SV

Data File: \\cansvr11\dd\chem\MSS\a4hp8.i\71024b.b\8SMH024A.D Page 3 Report Date: 25-Oct-2007 09:16

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp8.i

Injection Date: 24-OCT-2007 18:50
Init. Cal. Date(s): 24-OCT-2007 24-OCT-2007 Lab File ID: 8SMH024A.D

Analysis Type: Init. Cal. Times: 15:22 17:53

Lab Sample ID: L6 Quant Type: ISTD

Method: \\cansvr11\dd\chem\MSS\a4hp8.i\71024b.b\8270p.m

1					- -		
	<u> </u>	l	CCAL	MIN	1 .	MAX	
COMPOUND	RRF / AMOUNT	RF5	RRF5	RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
_======================================		==============	=========	=====	========	=========	=========
142 Benzo(k) fluoranthene	1.27628	1.29509	1.29509	0.010	-1.47383	50.00000	Averaged
146 Benzo(a)pyrene	1.13115	1.16736	1.16736	0.010	√ -3.20127	20.00000	_
149 Indeno(1,2,3-cd)pyrene	1.20757	1.25840	1.25840	0.010			
150 Dibenz(a,h)anthracene	1.03171	1.07928	1.07928	0.010		,	
151 Benzo(g,h,i)perylene	1.01275	1.03520	1.03520			,	Averaged
198 1,4-Dioxane	0.61653	0.59923	0.59923	0.010		,,	_
\$ 154 Nitrobenzene-d5	0.49725	0.50470	0.50470		,		Averaged
\$ 155 2-Fluorobiphenyl	1.28432	1.32854	1.32854		,	•	Averaged
\$ 156 Terphenyl-d14	0.79730	0.82165	0.82165	•	/		
\$ 157 Phenol-d5	1.85917	1.80727	1.80727	•	,		Averaged
\$ 158 2-Fluorophenol	1.28007	1.26893	1.26893	•		•	Averaged
\$ 159 2,4,6-Tribromophenol	0.14264	0.14359	0.14359		/	,	Averaged
\$ 186 2-Chlorophenol-d4	1.23332	1.23641	1.23641	•			Averaged
\$ 187 1,2-Dichlorobenzene-d4	0.82588	0.83081	0.83081	•			Averaged
M 195 Cresols, total	2.85006	2.81030	2.81030	•		50.00000	Averaged
101 Diphenylamine	0.50153	0.51579	•	•	1.39505	50.00000	Averaged
	1 0.50153	0.515/9	0.51579	0.010	-2.84175	50.00000	Averaged
	_	I_					1

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.:

SAS No.:

SDG No.: 7J17248

Lab File ID: 8DF1025

DFTPP Injection Date: 10/25/07

Instrument ID: A4HP8

DFTPP Injection Time: 1049

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51 68 69 70 127 197 198 199 275 365 441 442 443	5.0 - 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443	39.7 √0.0 (0.0)1 √48.8 √0.2 (0.4)1 √49.8 √0.0 √100.0 √6.6 √26.3 √3.5 √8.5 √55.7 √10.4 (18.7)2
II	1-Value is % of mass 69 2-Value is % of mass	ass 442

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

SAMPI	E NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01 SSTD00 02 SB-387 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22	ľ	86KJ1AD	8SMH1025 J86KJ1AD	10/25/07 10/25/07	1108 1748

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FORM V SV

Data File: \\cansvr11\dd\chem\MSS\a4hp8.i\71025a.b\8SMH1025.D Page 3

Report Date: 25-Oct-2007 10:33

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a4hp8.i

Lab File ID: 8SMH1025.D

Injection Date: 25-OCT-2007 11:08
Init. Cal. Date(s): 24-OCT-2007 24-OCT-2007

Analysis Type: Lab Sample ID: L6

Init. Cal. Times: 15:22

17:53

Quant Type: ISTD Method: \\cansvr11\dd\chem\MSS\a4hp8.i\71025a.b\8270p.m

	l I	!	CCAL	MIN	1	MAX	
COMPOUND	RRF / AMOUNT	RF5	RRF5	RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
	==== ======	=========		=====]========	========	
142 Benzo(k)fluoranthene	1.27628	1.27362	1.27362	0.010	0.20863	50.00000	Averaged
146 Benzo(a)pyrene	1.13115	1.14710	1.14710	0.010	/ -1.40995	20.00000	_
149 Indeno(1,2,3-cd)pyrene	1.20757	1.26215	1.26215	0.010	-4.52013	50.00000	
150 Dibenz(a,h)anthracene	1.03171	1.07447	1.07447	0.010	-4.14468		J
l51 Benzo(g,h,i)perylene	1.01275	1.05340	1.05340	0.010	-4.01368	50.000001	_
198 1,4-Dioxane	0.61653	0.53467	0.53467	0.010	13.27802	50.00000I	_
154 Nitrobenzene-d5	0.49725	0.49318	0.49318	0.010	J _{0.81811}	50.00000	Averaged
155 2-Fluorobiphenyl	1.28432	1.30074	1.30074	0.010	J _{-1.27859}	•	
156 Terphenyl-d14	0.79730	0.79771	0.79771	0.010	√-0.05047	•	Averaged
5 157 Phenol-d5	1.85917	1.78653	1.78653	0.010	J 3.90724 I	- ,	Averaged
158 2-Fluorophenol	1.28007	1.17239	1.17239	0.010	√8.41221		Averaged
159 2,4,6-Tribromophenol	0.14264	0.13803	0.13803	0.010			Averaged
186 2-Chlorophenol-d4	1.23332	1.19584	1.19584	0.010	3.03869	•	Averaged
187 1,2-Dichlorobenzene-d4	0.82588	0.82139	0.82139				Averaged
195 Cresols, total	2.85006	2.77915	2.77915	,		50.000001	Averaged
01 Diphenylamine	0.50153	0.51552	0.51552	•	,	50.000001	Averaged
	i i	i	i				

SW846 8270C METHOD BLANK SUMMARY

Lab Name: TestAmerica Laboratories, Inc.

Lab Code: TALCAN

Lab File ID: J9JEW1AA.

Date Analyzed: (10/24/07

Matrix: SOLID

GC Column: DB 5.625

ID: .00

Instrument ID: HP8

BLANK WORKORDER NO. J9JEW1AA

SDG Number: 7J17248

Lot Number: A7J170248

Time Analyzed: (19:48

Date Extracted: 10/22/07

Extraction Method: 3550B

Level: (low/med) LOW

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

CLIENT ID. WORK ORDER # FILE ID ANALYZED ANALYZED ANALYZED			SAMPLE		LAB	DATE	TIME
SB-387-0102		CLIENT ID.	WORK ORDER	. #	FILE ID		· · · · · · · · · · · · · · · · · · ·
SB-387-0102 J86J41AD J86J41AD 10/24/07 20:27 20:28-387-0102 J86J41AG S J86J41AG 10/24/07 20:46 3B-387-0102 J86J41AH D J86J41AH 10/24/07 21:06 20:46 SB-387-0203 J86J91AD J86J91AD J86J91AD J0/24/07 21:25 20:55 SB-387-0405 J86KC1AD J86KC1AD J86KC1AD J0/24/07 21:25 20:56 SB-387-0708 J86KC1AD J86KC1AD J86KC1AD J0/24/07 21:24 20:23 38:388-0102 J86KC1AD J86KC1AD J0/24/07 22:23 38:388-0203 J86KC1AD J86KC1AD J0/24/07 22:23 38:388-0405 J86KC1AD J86KC1AD J86KC1AD J0/24/07 23:30 38:388-0708 J86KC1AD J86KC1AD J0/24/07 23:21 38:389-0102 J86KC1AD J86KC1AD J0/24/07 23:21 38:389-0102 J86KC1AD J86KC1AD J0/24/07 23:21 38:389-0203 J86KC1AD J86KC1AD J0/24/07 23:21 38:389-0405 J86KC1AD J86KC1AD J0/24/07 23:40 38:389-0405 J86KC1AD J86KC1AD J0/24/07 23:40 38:389-0405 J86KC1AD J86KC1AD J0/24/07 23:40 38:389-0405 J86KC1AD J86KC1AD J0/24/07 00:00 38:389-0708 J86KC1AD J86KC1AD J0/25/07 00:19 38:389-0708 J86KC1AD J86KC1AD J0/25/07 00:38 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:58 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:58 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:56 38:390-0708 J86KC1AD J86KC1AD J0/25/07 00:58 38:390-0708 J86KC1AD J86KC1A		=======================================					
O2 SB-387-0102 J86J41AG S J86J41AG 10/24/07 20:46	01	SB-387-0102	:		1	!	:
03 SB-387-0102 J86J41AH D J86J41AH D J86J41AH D J86J41AH D J86J91AD D	02	SB-387-0102	J86J41AG	s S	J86J41AG.		
04 SB-387-0203 J86J91AD J86J91AD 10/24/07 21:25 05 SB-387-0405 J86KC1AD J86KC1AD 10/24/07 21:44 06 SB-387-0708 J86KSJ1AD J86KSJAD 10/25/07 17:48 07 SB-388-0102 J86KKIAD J86KKIAD 10/24/07 22:23 08 SB-388-0203 J86KKIAD J86KKIAD 10/24/07 22:43 09 SB-388-0405 J86KMIAD J86KMIAD 10/24/07 23:02 10 SB-388-0708 J86KMIAD J86KMIAD 10/24/07 23:21 11 SB-389-0102 J86KMIAD J86KMIAD 10/24/07 23:40 12 SB-389-0102 J86KMIAD J86KMIAD 10/24/07 23:40 13 SB-389-0405 J86KMIAD J86KMIAD 10/24/07 23:40 14 SB-389-0102 J86KMIAD J86KMIAD 10/24/07 00:00 13 SB-389-0405 J86KMIAD J86KMIAD 10/25/07 00:19 14 SB-389-0405 J86KMIAD J86KMIAD 10/25/07 00:19 15 SB-389-0405 J86KMIAD J86KMIAD 10/25/07 00:38 <t< td=""><td>03</td><td>SB-387-0102</td><td>J86J41AH</td><td>D</td><td>J86J41AH.</td><td>:</td><td></td></t<>	03	SB-387-0102	J86J41AH	D	J86J41AH.	:	
DESTINATION DESTINATION	04	SB-387-0203	J86J91AD		J86J91AD.		
OF SB-387-0708 J86KJIAD J86KLIAD 10/25/07 17:48	05	SB-387-0405	J86KC1AD		J86KC1AD.		
OF SB-388-0102 J86KK1AD J86KK1AD 10/24/07 22:23	06	SB-387-0708	J86KJ1AD		J86KJ1AD.		
SB-388-0203 J86KL1AD J86KL1AD 10/24/07 22:43 O9 SB-388-0405 J86KM1AD J86KM1AD 10/24/07 23:02 10 SB-388-0708 J86KN1AD J86KM1AD 10/24/07 23:21 11 SB-389-0102 J86KP1AD J86KP1AD 10/24/07 23:40 12 SB-389-0203 J86KP1AD J86KP1AD 10/24/07 00:00 13 SB-389-0405 J86KP1AD J86KP1AD 10/25/07 00:19 14 SB-389-0708 J86KV1AD J86KV1AD 10/25/07 00:38 15 SB-390-0102 J86KV1AD J86KV1AD 10/25/07 00:58 16 SB-390-0203 J86K01AD J86KV1AD 10/25/07 01:17 17 SB-390-0405 J86K11AD J86K1AD 10/25/07 01:36 18 SB-390-0708 J86K1AD J86K1AD 10/25/07 01:56 18 SB-391-0102 J86K61AD J86K61AD 10/25/07 02:15 18 SB-391-0203 J86L2AD J86L2AD 10/25/07 02:34 20 SB-391-0405 J86L2AD J86L2AD 10/25/07 02:54 21 SB-391-0708 J86L2AD J86L2AD 10/25/07 02:54 22 SB-391-0708 J86L2AD J86L2AD 10/25/07 02:54 23 CHECK SAMPLE J9JEW1AC J9JEW1AC 10/24/07 20:08 24	07	SB-388-0102	J86KK1AD				
SB-388-0405 J86KM1AD J86KM1AD 10/24/07 23:02	08	SB-388-0203	J86KL1AD		J86KL1AD.		
10 SB-388-0708 J86KN1AD J86KN1AD 10/24/07 23:21 11 SB-389-0102 J86KP1AD J86KP1AD J86KP1AD 10/24/07 23:40 12 SB-389-0203 J86KR1AD J86KR1AD 10/24/07 00:00 13 SB-389-0405 J86KT1AD J86KT1AD J86KT1AD 10/25/07 00:19 14 SB-389-0708 J86KV1AD J86KV1AD J86KV1AD 10/25/07 00:38 15 SB-390-0102 J86KV1AD J86KV1AD 10/25/07 00:58 16 SB-390-0203 J86K01AD J86K01AD 10/25/07 01:17 17 SB-390-0405 J86K11AD J86K01AD 10/25/07 01:36 18 SB-390-0708 J86K1AD J86K1AD 10/25/07 01:36 18 SB-391-0102 J86K61AD J86K61AD 10/25/07 01:56 19 SB-391-0102 J86K61AD J86K61AD 10/25/07 02:15 18 SB-391-0203 J86L01AD J86L01AD 10/25/07 02:34 18 SB-391-0405 J86L01AD J86L01AD 10/25/07 02:34 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 18 SB-391-0708 J86L01AD J86L01AD 10/25/07 02:54 10/24/07 20:08 18 SB-391-0708			J86KM1AD		J86KM1AD.		
SB-389-0102			J86KN1AD		J86KN1AD.		
12 SB-389-0203 J86KR1AD J86KR1AD 10/24/07 00:00 13 SB-389-0405 J86KT1AD J86KT1AD 10/25/07 00:19 14 SB-389-0708 J86KV1AD J86KV1AD 10/25/07 00:38 15 SB-390-0102 J86KX1AD J86KX1AD 10/25/07 00:58 16 SB-390-0203 J86K01AD J86K01AD 10/25/07 01:17 17 SB-390-0405 J86K11AD J86K11AD 10/25/07 01:36 18 SB-390-0708 J86K41AD J86K41AD 10/25/07 01:56 19 SB-391-0102 J86K61AD J86K61AD 10/25/07 02:15 19 SB-391-0203 J86L01AD J86K61AD 10/25/07 02:34 20 SB-391-0405 J86L01AD J86L01AD 10/25/07 02:54 21 SB-391-0405 J86L01AD J86L01AD 10/25/07 03:13 22 SB-391-0708 J86L01AD J86L01AD 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC C J9JEW1AC 10/24/07 20:08 24	11	SB-389-0102	J86KP1AD		J86KP1AD.		
13 SB-389-0405 J86KT1AD J86KT1AD 10/25/07 00:19 14 SB-389-0708 J86KV1AD J86KV1AD 10/25/07 00:38 15 SB-390-0102 J86KX1AD J86KX1AD 10/25/07 00:58 16 SB-390-0203 J86K01AD J86K01AD 10/25/07 01:17 17 SB-390-0405 J86K11AD J86K11AD 10/25/07 01:36 18 SB-390-0708 J86K41AD J86K41AD 10/25/07 01:56 19 SB-391-0102 J86K61AD J86K61AD 10/25/07 02:15 20 SB-391-0203 J86LC1AD J86LC1AD 10/25/07 02:34 21 SB-391-0405 J86LD1AD J86LD1AD 10/25/07 02:54 22 SB-391-0708 J86LE1AD J86LE1AD 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC J9JEW1AC 10/24/07 20:08 24 25 26 27 28 29 29 20 20 20 20 SB-391-0708	12	SB-389-0203	J86KR1AD	i	J86KR1AD.		
14 SB-389-0708 J86KV1AD J86KV1AD 10/25/07 00:38 15 SB-390-0102 J86KX1AD J86KX1AD 10/25/07 00:58 16 SB-390-0203 J86K01AD J86K01AD 10/25/07 01:17 17 SB-390-0405 J86K11AD J86K11AD 10/25/07 01:36 18 SB-390-0708 J86K41AD J86K41AD 10/25/07 01:56 19 SB-391-0102 J86K61AD J86K61AD 10/25/07 02:15 20 SB-391-0203 J86LC1AD J86LC1AD 10/25/07 02:34 21 SB-391-0405 J86LD1AD J86LD1AD 10/25/07 02:54 22 SB-391-0708 J86LE1AD J86LE1AD 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC J9JEW1AC 10/24/07 20:08 24 SB-391-0708 SB-391-0708 10/24/07 20:08	13	SB-389-0405	J86KT1AD		J86KT1AD.		
15 SB-390-0102 J86KX1AD J86KX1AD 10/25/07 00:58 16 SB-390-0203 J86K01AD J86K01AD 10/25/07 01:17 17 SB-390-0405 J86K11AD J86K11AD 10/25/07 01:36 18 SB-390-0708 J86K41AD J86K41AD 10/25/07 01:56 19 SB-391-0102 J86K61AD J86K61AD 10/25/07 02:15 20 SB-391-0203 J86LC1AD J86LC1AD 10/25/07 02:34 21 SB-391-0405 J86LD1AD J86LD1AD 10/25/07 02:54 22 SB-391-0708 J86LE1AD J86LE1AD 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC J9JEW1AC 10/24/07 20:08 24 25 26	14	SB-389-0708	J86KV1AD		J86KV1AD.		1
16 SB-390-0203 J86K01AD J86K01AD 10/25/07 01:17 17 SB-390-0405 J86K11AD J86K11AD 10/25/07 01:36 18 SB-390-0708 J86K41AD J86K41AD 10/25/07 01:56 19 SB-391-0102 J86K61AD J86K61AD 10/25/07 02:15 20 SB-391-0203 J86LC1AD J86LC1AD 10/25/07 02:34 21 SB-391-0405 J86LD1AD J86LD1AD 10/25/07 02:54 22 SB-391-0708 J86LE1AD J86LE1AD 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC J9JEW1AC 10/24/07 20:08 24	15	SB-390-0102	J86KX1AD	i	J86KX1AD.		
17 SB-390-0405 J86K11AD J86K11AD 10/25/07 01:36 18 SB-390-0708 J86K41AD J86K41AD 10/25/07 01:56 19 SB-391-0102 J86K61AD J86K61AD 10/25/07 02:15 20 SB-391-0203 J86LC1AD J86LC1AD 10/25/07 02:34 21 SB-391-0405 J86LD1AD J86LD1AD 10/25/07 02:54 22 SB-391-0708 J86LE1AD J86LE1AD 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC C J9JEW1AC 10/24/07 20:08 24	16	SB-390-0203	J86K01AD	i	J86K01AD.		!
18 SB-390-0708 J86K41AD J86K41AD 10/25/07 01:56 19 SB-391-0102 J86K61AD J86K61AD 10/25/07 02:15 20 SB-391-0203 J86LC1AD J86LC1AD 10/25/07 02:34 21 SB-391-0405 J86LD1AD J86LD1AD 10/25/07 02:54 22 SB-391-0708 J86LE1AD J86LE1AD 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC C J9JEW1AC 10/24/07 20:08 24 25 26 27 28 29 29 29 20	,		J86K11AD	i	J86K11AD.		
19 SB-391-0102 J86K61AD J86K61AD 10/25/07 02:15 20 SB-391-0203 J86LC1AD J86LC1AD 10/25/07 02:34 21 SB-391-0405 J86LD1AD J86LD1AD 10/25/07 02:54 22 SB-391-0708 J86LE1AD J86LE1AD 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC C J9JEW1AC 10/24/07 20:08 24 SB-391-0708	•		J86K41AD	i	J86K41AD.	10/25/07	
20 SB-391-0203 J86LC1AD J86LC1AD. 10/25/07 02:34 21 SB-391-0405 J86LD1AD J86LD1AD. 10/25/07 02:54 22 SB-391-0708 J86LE1AD J86LE1AD. 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC C J9JEW1AC. 10/24/07 20:08 24	19	SB-391-0102	J86K61AD		J86K61AD.	10/25/07	
21 SB-391-0405 J86LD1AD J86LD1AD. 10/25/07 02:54 22 SB-391-0708 J86LE1AD J86LE1AD. 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC J9JEW1AC. 10/24/07 20:08 24	1.		J86LC1AD	i,	J86LC1AD.		
22 SB-391-0708 J86LE1AD J86LE1AD 10/25/07 03:13 23 CHECK SAMPLE J9JEW1AC C J9JEW1AC 10/24/07 20:08 24 SB-391-0708 <td>21</td> <td>SB-391-0405</td> <td>J86LD1AD</td> <td></td> <td>J86LD1AD.</td> <td></td> <td></td>	21	SB-391-0405	J86LD1AD		J86LD1AD.		
23 CHECK SAMPLE	22	SB-391-0708	J86LE1AD		J86LE1AD.		
24	23	CHECK SAMPLE	J9JEWlAC C		J9JEW1AC.		
26	! -			_			
27	! -			i-			
28	26			i-			
29	27			i_			
				_ i -			
30	!			[_		<u> </u>	
	30						

COMMENTS:	
	TODAK TIT

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17248

Work Order #...: J9JEW1AA

Matrix..... SOLID

MB Lot-Sample #: A7J220000-068

Prep Date....: 10/22/07

Final Wgt/Vol..: 2 mL

Analysis Date..: 10/24/07

Dilution Factor: 1

Prep Batch #...: 7295068

Initial Wgt/Vol: 30 g

PARAMETER Benzo(a)pyrene	RESULT ND	REPORTING LIMIT 330	UNITS ug/kg	METHOD SW846 8270C
SURROGATE Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	PERCENT RECOVERY 68 70 85 67 68 37	RECOVERY LIMITS (24 - 112 (34 - 110 (41 - 119 (28 - 110) (26 - 110) (10 - 118)))))	

NOTE(S):

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

8B SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17248

Lab File ID (Standard): 8SMH024A Date Analyzed: 10/24/07

Instrument ID: A4HP8 Time Analyzed: 1850

		IS1 (DCB)		IS2 (NPT)		IS3 (ANT)	
		AREA #	RT ======	AREA #	RT	AREA #	RT
	12 HOUR STD	178549	3.59	708147	4.49	394655	5.76
	UPPER LIMIT	357098	4.09	1416294	4.99	789310	6.26
	LOWER LIMIT	89275	3.09	354074	3.99	197328	5.26
	EPA SAMPLE NO.		=====				=====
01	SB-389-0203	133209	3.59	565508	4 40	300001	======
02	J9JEWBLK	127813	3.59	519687	4.49 4.48	328881 287717	5.76 5.76
03	J9JEWCHK	128327	3.59	535500	4.48	303162	5.76
04	SB-387-0102	106176	3.59	483260	4.48	295992	5.76
05	SB-387-0102	104693	3.59	460557	4.49	271045	5.76
06	SB-387-0102	120643	3.59	561354	4.49	330721	5.76
07	SB-387-0203	110676	3.59	467498	4.48	282423	5.76
08	SB-387-0405	118839	3.59	502318	4.48	296832	5.76
09	SB-388-0102	125069	3.59	555307	4.49	318791	5.76
10	SB-388-0203	128160	3.59	553153	4.49	313603	5.76
11	SB-388-0405	129262	3.59	541208	4.49	313667	5.76
12	SB-388-0708	118691	3.59	516502	4.48	296409	5.75
	SB-389-0102	133133	3.59	575305	4.48	335028	5.76
	SB-389-0405	133842	3.59	561474	4.49	320255	5.76
	SB-389-0708	129722	3.59	551436	4.49	319230	5.76
16 1 7	SB-390-0102	136092	3.59	553947	4.48	321185	5.76
18	SB-390-0203 SB-390-0405	122517	3.59	512942	4.49	306487	5.76
19	SB-390-0405 SB-390-0708	118619 122217	3.59	505544	4.48	290162	5.76
1	SB-390-0708 SB-391-0102	130009	3.59	517155	4.48	294056	5.76
1	SB-391-0102 SB-391-0203	129724	3.59	546009	4.48	308977	5.76
	SB-391-0203 SB-391-0405	118210	3.59	554202 511147	4.49	318841 298519	5.76 5.76
22		110210	3.39	51114/	4.49	430013	5.76

IS1 (DCB) = 1,4-Dichlorobenzene-d4

UPPER LIMIT = +100%

IS2 (NPT) = Naphthalene-d8

of internal standard area.

IS3 (ANT) = Acenaphthene-d10

LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

page 1 of 2

FORM VIII SV-1

8C SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17248

Lab File ID (Standard): 8SMH024A Date Analyzed: 10/24/07

Instrument ID: A4HP8 Time Analyzed: 1850

		IS4 (PHN)		IS5 (CRY)		IS6 (PRY)	1
		AREA #	RT	AREA #	RT	156(PR1) AREA #	RT
		=========	======			AREA #	K1
	12 HOUR STD	741681	6.84	737253	8.86	607133	10.39
		=========	======	========	======	=======================================	
	UPPER LIMIT	1483362	7.34	1474506	9.36	1214266	10.89
	===========	========	=====	=========	======	========	=====
	LOWER LIMIT	370841	6.34	368627	8.36	303567	9.89
		========	======	========	======	========	=====
	EPA SAMPLE	·					
	NO.						
	=========	=======	=====	========	=====	========	=====
01	SB-389-0203	616089	6.85	620598	8.84	492160	10.37
02	J9JEWBLK	555229	6.84	621316	8.85	538172	10.38
03	J9JEWCHK	572200	6.85	575172	8.87	483181	10.39
04	SB-387-0102	566345	6.84	548595	8.84	472376	10.38
05	SB-387-0102	520693	6.85	503070	8.84	392779	10.37
06	SB-387-0102	610523	6.85	571542	8.84	435195	10.37
07	SB-387-0203	537032	6.85	517220	8.85	428970	10.38
80	SB-387-0405	560747	6.85	526974	8.84	426742	10.37
09 10	SB-388-0102	609420	6.85	644768	8.85	437030	10.38
11	SB-388-0203	588518	6.85	588022	8.84	467439	10.37
12	SB-388-0405 SB-388-0708	613745 602197	6.85 6.85	600056	8.85	481815	10.38
13	SB-389-0102	617814	6.84	592822	8.84	491289	10.37
14	SB-389-0405	616414	6.85	632133	8.84	505796	10.37
15	SB-389-0403	611345	6.85	590008 599394	8.86 8.87	466891	10.39
16	SB-390-0102	609804	6.85	624254	8.86	492175	10.41
17	SB-390-0203	587836	6.85	593474	8.84	494038 453872	10.39
18	SB-390-0405	575517	6.85	613914	8.84	464972	10.36
19	SB-390-0708	563643	6.85	555531	8.84	451302	10.37
20	SB-391-0102	605699	6.85	608575	8.83	486871	10.37
21	SB-391-0203	612449	6.85	623305	8.84	508370	10.36
22	SB-391-0405	596945	6.85	641294	8.84	496750	10.37
	0,2	330313	0.00	011271	0.04	470730	10.37
	· 1		I		[

IS4 (PHN) = Phenanthrene-d10 IS5 (CRY) = Chrysene-d12 UPPER LIMIT = +100% of internal standard area.

IS6 (PRY) = Perylene-d12

LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk.

page 1 of 2

FORM VIII SV-2

8B SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.:

Lab File ID (Standard): 8SMH024A Date Analyzed: 10/24/07

Instrument ID: A4HP8 Time Analyzed: 1850

		IS1 (DCB)		IS2 (NPT)	Ţ	IS3 (ANT)	
	==========	AREA #	RT	AREA #	RT	AREA #	RT
	12 HOUR STD	178549	3.59	708147	4.49	394655	5.76
	UPPER LIMIT	357098	4.09	1416294	4.99	789310	6.26
	LOWER LIMIT	89275	3.09	354074	3.99	197328	5.26
	EPA SAMPLE NO.			=======	=====		======
01	======================================	=======================================	======	========	=====	========	======
01 02	SB-391-0708	119670	3.59	499169	4.49	281031	5.76
03							
04 05							
06							
07 08							
09							
10							
11 12							
13							
14 15							
16							
17							·
18 19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4

-Dichlorobenzene-d4 UPPER LIMIT = +100%

IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

of internal standard area.

SDG No.: 7J17248

LOWER LIMIT = - 50%

of internal standard area.

Column used to flag internal standard area values with an asterisk.

page 2 of 2

FORM VIII SV-1

8C SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17248

Lab File ID (Standard): 8SMH024A Date Analyzed: 10/24/07

Instrument ID: A4HP8 Time Analyzed: 1850

		IS4 (PHN)	Γ	IS5 (CRY)		IS6 (PRY)	T
		AREA #	RT	AREA #	RT	AREA #	RT
	12 HOUR STD	741681	6.84	737253	8.86	607133	10.39
	UPPER LIMIT	1483362	7.34	1474506	9.36	1214266	10.89
	LOWER LIMIT	370841	6.34	368627	8.36	303567	9.89
•	EPA SAMPLE NO.						=====
01 02	SB-391-0708	563333	6.85	567701	8.83	458809	10.36
03 04							
05 06							
07 08							
09 10 11							
12 13							
14 15							
16 17							
18 19			·				
20 21	-				-	-	
22							

IS4

IS5 (CRY)

(PHN) = Phenanthrene-d10 UPPER LIMIT = +100% = Chrysene-d12 = Perylene-d12 of internal standard area.

LOWER LIMIT = - 50%

of internal standard area.

Column used to flag internal standard area values with an asterisk.

page 2 of 2

IS6

(PRY)

FORM VIII SV-2

8B SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17248

Lab File ID (Standard): 8SMH1025 Date Analyzed: 10/25/07

Instrument ID: A4HP8 Time Analyzed: 1108

	1	TG1 (Dom)	r				
	=======================================	IS1 (DCB) AREA #	RT	IS2 (NPT) AREA #	RT	IS3 (ANT) AREA #	RT
	12 HOUR S'TD	112616	3.52	443095 =======	4.42	256037	5.69
	UPPER LIMIT	225232	4.02	886190	4.92	512074	6.19
	LOWER LIMIT	56308	3.02	221548	3.92	128019	5.19
	EPA SAMPLE NO.		=====	========	=====		=====
01 02 03 04 05 06 07 08 09 10 11	SB-387-0708	105484	3.53	466560	4.42	260148	5.69
13 14 15 16 17							
18 19 20 21 22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4

UPPER LIMIT = +100%

IS2 (NPT) = Naphthalene-d8

of internal standard area.

IS3 (ANT) = Acenaphthene-d10

LOWER LIMIT = - 50%

of internal standard area.

Column used to flag internal standard area values with an asterisk.

page 1 of 1

FORM VIII SV-1

8C SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17248

Lab File ID (Standard): 8SMH1025 Date Analyzed: 10/25/07

Instrument ID: A4HP8 Time Analyzed: 1108

		TG4 (DIBT)		Tage (cores)		T	
		IS4 (PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6 (PRY) AREA #	RT
		========	=====	=======	======	2222222	======
	12 HOUR STD	477512	6.78	483632	8.80	416820	10.28
	UPPER LIMIT	955024	7.28	967264	9.30	833640	10.78
	LOWER LIMIT	238756	6.28	241816	8.30	208410	9.78
	EPA SAMPLE NO.		=====	=========	======	========	=====
01 02 03 04 05	SB-387-0708	502176	6.78	471930	8.78	239065	10.26
06 07 08							
09 10 11							
12 13							
14 15							
16 17 18							
19 20							
21 22							

IS4 (PHN) = Phenanthrene-d10

UPPER LIMIT = +100%

IS5 (CRY) = Chrysene-dl2 IS6 (PRY) = Perylene-dl2

of internal standard area.

LOWER LIMIT = - 50%

of internal standard area.

Column used to flag internal standard area values with an asterisk.

page 1 of 1

FORM VIII SV-2

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17248 Work Order #...: J86J41AG-MS Matrix....: SOLID

MS Lot-Sample #: A7J170248-001 J86J41AH-MSD

Date Sampled...: 10/15/07 16:00 Date Received..: 10/17/07 Prep Date....: 10/22/07 Analysis Date..: 10/24/07

Prep Batch #...: 7295068

Dilution Factor: 1 Initial Wgt/Vol: 30.14 g Final Wgt/Vol.: 2 mL

% Moisture....: 6.3

Tiolbeardinin 0.3					
	PERCENT	RECOVERY		RPD	
PARAMETER	RECOVERY	LIMITS	RPD	LIMITS	METHOD
1,2,4-Trichloro-	69	(33 - 110)			SW846 8270C
benzene	eg cha	the second			
	59	(33 - 110)	15	(0-30)	SW846 8270C
Acenaphthene	73	(10 - 200)			SW846 8270C
	68	(10 - 200)	5.9	(0-30)	SW846 8270C
2,4-Dinitrotoluene	85	(42 - 118)			SW846 8270C
	80	(42 - 118)	6.0	(0-30)	SW846 8270C
Pyrene	86	(10 - 200)			SW846 8270C
	72	(10 - 200)	17	(0-30)	SW846 8270C
N-Nitrosodi-n-propyl- amine	74	(30 - 121)			SW846 8270C
	67	(30 - 121)	9.0	(0-30)	SW846 8270C
1,4-Dichlorobenzene	61	(26 - 110)			SW846 8270C
	54	(26 - 110)	11	(0-30)	SW846 8270C
Pentachlorophenol	54	(10 - 182)			SW846 8270C
	5 0	(10 - 182)	7.0	(0-30)	SW846 8270C
Phenol	70	(10 - 144)			SW846 8270C
	69	(10 - 144)	2.2	(0-30)	SW846 8270C
2-Chlorophenol	70	(32 - 110)			SW846 8270C
	66	(32 - 110)	5.5	(0-30)	SW846 8270C
4-Chloro-3-methylphenol	78	(32 - 117)			SW846 8270C
	74	(32 - 117)	5.3	(0-30)	SW846 8270C
4-Nitrophenol	72	(10 - 125)			SW846 8270C
	68	(10 - 125)	5.2	(0-30)	SW846 8270C
		PERCENT		RECOVERY	
SURROGATE	_	RECOVERY		LIMITS	
Nitrobenzene-d5		67 58		(24 - 112)	•
2-Fluorobiphenyl		72			·
z r raoropibuenia		66		(34 - 110	
Terphenyl-d14				(34 - 110	
rerbiterily r-014		84		(41 - 119	
Phenol-d5		80		(41 - 119	
FITETIOT-03		'73 69		(28 - 110	
		<i>و</i> م		(28 - 110)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17248 Work Order #.

Work Order #...: J86J41AG-MS

Matrix..... SOLID

MS Lot-Sample #: A7J170248-001

J86J41AH-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	67	(26 - 110)
	63	(26 - 110)
2,4,6-Tribromophenol	76	(10 - 118)
	73	(10 - 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.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17248 Work Order #...: J86J41AG-MS Matrix.....: SOLID

MS Lot-Sample #: A7J170248-001 J86J41AH-MSD

Date Sampled...: 10/15/07 16:00 Date Received..: 10/17/07 Prep Date....: 10/22/07 Analysis Date..: 10/24/07

Prep Batch #...: 7295068

Dilution Factor: 1 Initial Wgt/Vol: 30.14 g Final Wgt/Vol.: 2 mL

% Moisture....: 6.3

	SAMPLE	SPIKE	MEASRD		PERCNT		
PARAMETER	AMOUNT	AMT	AMOUNT	UNITS	RECVRY	RPD	METHOD
1,2,4-Trichloro-	ND	710	490	ug/kg	69		SW846 8270C
benzene							_
	ND	710	120	ug/kg	59	15	SW846 8270C
Acenaphthene	ND	710	510	ug/kg	73		SW846 8270C
	ND	710	490	ug/kg	68	5.9	SW846 8270C
2,4-Dinitrotoluene	ND	710	600	ug/kg	85		SW846 8270C
	ND	710	560	ug/kg	80	6.0	SW846 8270C
Pyrene	22	710	630	ug/kg	86		SW846 8270C
	22	710	530	ug/kg	72	17	SW846 8270C
N-Nitrosodi-n-propyl-	ND	710	520	ug/kg	74		SW846 8270C
amine							
	ND	710	480	ug/kg	67	9.0	SW846 8270C
1 4 Dieklessker		F7.0	420		61		GE20.4.C. 00.77.0.G
1,4-Dichlorobenzene	ND	710	430	ug/kg	61		SW846 8270C
	ND	710	380	ug/kg	54	11	SW846 8270C
Pentachlorophenol	ND 	710	380	ug/kg	54		SW846 8270C
	ND	710	350	ug/kg	50	7.0	SW846 8270C
Phenol	ND	710	500	ug/kg	70		SW846 8270C
	ND	710	490	ng/kg	69	2.2	SW846 8270C
2-Chlorophenol	ND	710	490	ug/kg	70		SW846 8270C
	ND	710	470	ug/kg	66	5.5	SW846 8270C
4-Chloro-3-methylphenol	ND	710	550	ug/kg	78		SW846 8270C
	ND	710	530	ug/kg	74	5.3	SW846 8270C
4-Nitrophenol	ND	710	510	ug/kg	72		SW846 8270C
	ND	710	480	ug/kg	68	5.2	SW846 8270C
		PI	ERCENT		RECOVERY		

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	67	(24 - 112)
	58	(24 - 112)
2-Fluorobiphenyl	72	(34 - 110)
	66	(34 - 110)
Terphenyl-d14	84	(41 - 119)
	80	(41 - 119)
Phenol-d5	73	(28 - 110)
	69	(28 - 110)

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17248

Work Order #...: J86J41AG-MS

Matrix..... SOLID

MS Lot-Sample #: A7J170248-001

J86J41AH-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	67	(26 - 110)
	63	(26 - 110)
2,4,6-Tribromophenol	76	(10 - 118)
	73	(10 - 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 #...: 7J17248 Work Order #...: J9JEW1AC Matrix......: SOLID

LCS Lot-Sample#: A7J220000-068

Prep Batch #...: 7295068

Dilution Factor: 1 Final Wgt/Vol..: 2 mL

Initial Wgt/Vol: 30 g

	PERCENT	RECOVERY	
PARAMETER	RECOVERY	LIMITS	METHOD
1,2,4-Trichloro-	73	(43 - 110)	SW846 8270C
benzene			
Acenaphthene	75	(46 - 110)	SW846 8270C
2,4-Dinitrotoluene	82	(55 - 116)	SW846 8270C
Pyrene	80	(58 - 113)	SW846 8270C
N-Nitrosodi-n-propyl-	77	(40 - 114)	SW846 8270C
amine			
1,4-Dichlorobenzene	67	(38 - 110)	SW846 8270C
Pentachlorophenol	29	(10 - 110)	SW846 8270C
Phenol	72	(39 - 110)	SW846 8270C
2-Chlorophenol	71	(39 - 110)	SW846 8270C
4-Chloro-3-methylphenol	74	(42 - 110)	SW846 8270C
4-Nitrophenol	49	(24 - 117)	SW846 8270C
	•	PERCENT	RECOVERY
SURROGATE		RECOVERY	LIMITS
Nitrobenzene-d5		72	$\frac{311118}{(24 - 112)}$
2-Fluorobiphenyl		74	(34 - 110)
Terphenyl-d14		84	(41 - 119)
Phenol-d5		74	(28 - 110)
2-Fluorophenol		73	(26 - 110) .
2,4,6-Tribromophenol			·
T/1/0 IIIDIOMODICIOI		64	(10 - 118)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: 7J17248 Work Order #...: J9JEW1AC Matrix......: SOLID

LCS Lot-Sample#: A7J220000-068

Prep Date....: 10/22/07 Analysis Date..: 10/24/07

Prep Batch #...: 7295068

Dilution Factor: 1 Final Wgt/Vol..: 2 mL

Initial Wgt/Vol: 30 g

PARAMETER 1,2,4-Trichloro- benzene	SPIKE <u>AMOUNT</u> 670	MEASURED AMOUNT 480	UNITS ug/kg	PERCENT RECOVERY 73	METHOD SW846 8270C
Acenaphthene 2,4-Dinitrotoluene Pyrene N-Nitrosodi-n-propyl- amine	670 670 670 670	500 550 530 520	ug/kg ug/kg ug/kg ug/kg	75 82 80 77	SW846 8270C SW846 8270C SW846 8270C SW846 8270C
1,4-Dichlorobenzene Pentachlorophenol Phenol 2-Chlorophenol 4-Chloro-3-methylphenol 4-Nitrophenol	670 670 670 670 670 670	440 190 480 470 500	ug/kg ug/kg ug/kg ug/kg ug/kg	67 29 72 71 74	SW846 8270C SW846 8270C SW846 8270C SW846 8270C SW846 8270C
SURROGATE Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	670	PERCENT RECOVERY 72 74 84 74 73 64	RECOVERY LIMITS (24 - 112) (34 - 110) (41 - 119) (28 - 110) (26 - 110) (10 - 118)	49	SW846 8270C

NOTE(S):

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

Bold print denotes control parameters

Report Date : 06-Nov-2007 10:39

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 27-JUN-2007 15:36
End Cal Date : 19-OCT-2007 02:34
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : Falcon
Method file : \\CANSVR11\DD\\chem\GCS\\a2hp4.i\71018IC-1.b\\HP4PCBF.m
Last Edit : 21-Oct-2007 15:48 serraa
Curve Type : Average

Calibration File Names:
Level 1: \\CANSVR11\DD\\chem\GCS\\a2hp4.i\71018IC-1.b\\038B3801.D

carroration rife Names:
Level 1: \\CANSVR11\DD\chem\GCS\a2hp4.i\71018IC-1.b\038B3801.D
Level 2: \CANSVR11\DD\chem\GCS\a2hp4.i\71018IC-1.b\039B3901.D
Level 3: \CANSVR11\DD\chem\GCS\a2hp4.i\71018IC-1.b\040B4001.D
Level 4: \CANSVR11\DD\chem\GCS\a2hp4.i\71018IC-1.b\041B4101.D
Level 5: \\CANSVR11\DD\chem\GCS\a2hp4.i\71018IC-1.b\04284201.D
Level 6: \CANSVR11\DD\chem\GCS\a2hp4.i\71018IC-1.b\043B4301.D

	0.05000	0.10000	0.20000	0.50000	1.000	2.000	l	J
Compound	Level		Level 3			Level 6	RRF	% RSD
	!	= =======				2===a====		=== = =====
2 AROCLOR 1221(1)	51848			405356	358130	345615	416600	15.278
(2)	35406			271220	237506	222834	278214	16.97
(3)	121742		978090	956968	857013	818798	979747	14.64
3 AROCLOR-1016(1)	59132	•		644938	688251	589437	674885	12.24
(2)	92384	0 1263210	1188845	1052580	1064053	959606	1075356	12-13
(3)	141886	0 2051050	1875900	1716230	1764566	1671578	1749697	12.08
(4)	77656	0 1085130	1021050	900944	933004	872429	931520	11.769
(5)	69104		887400	789962	791002	733321	855366	23.316
4 AROCLOR-1232(1)	98460	0 893870	889710	798404	818660	740506	854292	10.089
(2)	59976	0 549200	548775	502184	506467	454233	526770	9.527
(3)	97420	0 872230	866220	814644	835575	779229	857016	7.802
(4)	48612	0 478180	475985	445014	451894	412614	458301	6.005
(5)	45214	0 398480	391950	341850	339665	307352	371906	14.052
5 AROCLOR -1242(1)	79136	0 609530	607160	541674	470427	471625	581963	20.545
(2)	130050	0 969030	947970	871498	786271	778140	942235	20.435
(3)	202616	0 1525290	1509720	1406476	1334904	1350372	1525487	16.894
(4)	110366	0 830450	840505	756518	704027	702982	823024	18.194
(5)	101658	0 746010	729515	652170	609056	599890	725537	21.342
6 AROCLOR-1248(1)	56448	0 497900	489880	431424	433486	399348	469420	12.750
(2)	105414	882050	968905	840950	864933.	835134	907685	9.528
(3)] 131288	1148270	1199690	1031456	1075501	1018242	1131006	9.988
(4)	111824	960690	1040280	885948	927548	885019	969621	9.574
(5)	77640	680320	710775	597658	610822	582924	659817	11.499
7 AROCLOR-1254(1)	141416	1166290	1072675	1084044	1010670	970789	1119771	14.200
(2)	1815320	1585830	1434385	1464408	1387951	1328715	1502768	11.686
(3)	2470360	2150580	1989965	2086302	2007348	1910477	2102505	9.429
(4)	1698720	1495610	1385190	1475510	1475254	1441896	1495363	7.149
. (5)	2094700	1830480	1676420	1793706	1709596	1645944	1791808	9.157
		i i	i	i	, I	1		,,,

Report Date : 06-Nov-2007 10:39

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 27-JUN-2007 15:36 End Cal Date : 19-OCT-2007 02:34

Quant Method : ESTD Origin : Disabled Target Version : 4.14 Integrator : Falcon

Method file : \\CANSVR11\DD\chem\GCS\a2hp4.i\71018IC-1.b\HP4PCBF.m : 21-Oct-2007 15:48 serraa

Last Edit

Curve Type : Average

		0.05000	0.10000	0.20000	0.50000	1.000	2.000		
Compound		Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
0.1007.00.1(-)	======				××======		=======		
8 AROCLOR-1260(1)		1218220	1655990	1560695	1432826	1411768	1374603	1442350	10.53
(2)		1919900	2555770	2502850	2296150	2255632	2228079	2293064	9.90
(3)		1539200	2071740	2027050	1863588	1853342	1894552	1874912	9.994
(4)		2613500	3721890	3919530	3698272	3589994	3670572	3535626	13.145
(5)		1323000	1830470	1781860	1671928	1608351	1679435	1649174	10.846
9 ARCCLOR-1262(1)		1546760	1390460	1158790	1240718	1177491	1146879	12768501	12.519
(2)		3082520	2763250	2268905	2591596	2525994	2464248	2616085	10.697
(3)		2630600	2272480	1815790	2099984	20502961	2005920	2145845	13.028
(4)		5326640	4648490	3977370	4759200	4643122	45093501	4644029	9.346
(5)	1	2497400	2142440	1832075	2038288	1982310	1937804	2071720	11.231
10 AROCLOR-1268(1)	į	1172680	1152400	982315	998212	10362891	945044	1047823	8.950
(2)	- 1	1701120	1709850	1412215	14448461	1519203	1368287	1525920	
(3)	ĺ	6427980	6414420	5854005	6067210	6412832	5885982	6177071	9.672
(4)	i	5190460	51500001	4756995	5014834	5329616	4868745		4.440
(5)	i	13506280	13628210	12769225		13840974		5051775	4.226
11 TOTAL PCB	j	+++++	+++++	+++++			12944545	13297601	3.177
	, 			*****	+++++	+++++	++++	+++++	+++++
1 TCMX		300188001	450306001	443440001	********	========		=======================================	
12 DCB	1		•			•	40504680	41686727	15.494
	J	23533600	31680000	32129000	29662160	27720300	29179850	28984152	10.796

Data File: \\cansvr11\DD\chem\GCS\a2hp4.i\71018IC-1.b\044B4401.D

Report Date: 21-Oct-2007 15:29

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp4.i

Lab File ID: 044B4401.D

Injection Date: 19-OCT-2007 02:51
Init. Cal. Date(s): 27-JUN-2007 19-OCT-2007
Init. Cal. Times: 15:36 02:34

Analysis Type: Lab Sample ID: ICV

Quant Type: ESTD Method: \\cansvr11\dd\chem\GCS\a2hp4.i\71018IC-1.b\HP4PCBF.m

	J	Į.		MIN	1	MAX	
COMPOUND	RRF /	AMOUNT	RF1	RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
=======================================	====== =====	===== ==	========	=====	========	========	========
AROCLOR-1016(1)	1	674885	646890	0.010	4.14814	15.00000	Averaged
(2)	1	075356	1134220	0.010	-5.47394	15.00000	Averaged
(3)	1	749697	1842130	0.010	-5.28279	15.00000	Averaged
(4)	1	931520	976674	0.010	-4.84740	15.00000	Averaged
(5)	1	855366	827269	0.010	3.28477	15.00000	_
AROCLOR-1260(1)	1	442350	1533633	0.010	-6.32875	15.00000	_
(2)	2:	293064	2522848	0.010	-10.02085	15.00000	=
(3)	1:	874912	2258634	0.010	-20.46613	15.00000	_
(4)	3:	535626	3618792	0.010	-2.35222	15.00000	-
(5)	10	649174	1808421	0.010	-9.65617	15.00000	Averaged

FORM 8 SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17248

GC Column: RESTEK PEST CLPI ID: 0.53 (mm) Init. Calib. Date(s): 06/27/07 10/19/0

Instrument ID: A2HP4

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURRO S1 : 1.57		INITIAL CAL 8.07	IBRATION	-	
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 30 31 31 31 31 31 31 31 31 31 31 31 31 31	SB-387-0102 SB-387-0102 SB-387-0203 SB-387-0405 SB-387-0708	1660 J86J41AC J86J41AF J86J41AF J86J91AC J86KC1AC J86KK1AC J86KK1AC J86KM1A	10/24/07 10/24/07	0820 0946 1003 1020 1037 1055 1112 1129 1146 1203 1220 1237 1254 1311 1329 1346 1403 1420 1438 1455 1512 1529 1546 1603 1620 1746 1803	1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57	8.08 8.07 8.07 8.07 8.07 8.07 8.07 8.07

S1 = TCMX

QC LIMITS
(+/- 0.10 MINUTES)
(+/- 0.10 MINUTES)

 $S2 = DCB \qquad (+/- 0.10 \text{ MINUTES})$

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

page 1 of 1

FORM VIII SV

Report Date: 24-Oct-2007 08:33

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp4.i

Injection Date: 24-OCT-2007 08:20

Lab File ID: 002B0201.D

Init. Cal. Date(s): 27-JUN-2007 19-OCT-2007 Init. Cal. Times: 15:36 02:34

Analysis Type: Init. Cal. Times: 15:36

Lab Sample ID: 1660 Quant Type: ESTD Method: \cansvr11\dd\chem\GCS\a2hp4.i\71024-1.b\HP4PCBF.m

	l	1	MIN	1	MAX	
COMPOUND	RRF	/ AMOUNT	RF0.500 RRF %	D / %DRIFT %D	/ %DRIFT	CURVE TYPE
			====== =		-======	
1 TCMX	1	41686727	50865720 0.010	-22.01898	15.00000	Averaged
AROCLOR-1016(1)	1	674885	717450 0.010	-6.30697	15.00000	Averaged
(2)	1	1075356	1160184 0.010	-7.88840	15.00000	Averaged
(3)	1	1749697	1765124 0.010	-0.88168	15.00000	Averaged
(4)	1	931520	934176 0.010	-0.28518	15.00000	Averaged
(5)	1	855366	812020 0.010	5.06752	15.00000	Averaged
AROCLOR-1260(1)	Ī	1442350	1451802 0.010	-0.65530	15.00000	Averaged
(2)	I,	2293064	2363448 0.010	-3.06945	15.00000	Averaged
(3)	1	1874912	1977156 0.010	-5.45327	15.00000	Averaged
(4)	1	3535626	3816352 0.010	-7.93991	15.00000	Averaged
(5)	1	1649174	1811900 0.010	-9.86712	15.00000	Averaged
12 DCB	1	28984152	32624600 0.010	-12.56013	15.00000	Averaged

Data File: \\cansvr11\\dd\chem\GCS\a2hp4.i\\71024-1.b\\036B3601.D

Report Date: 24-Oct-2007 18:16

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp4.i

Injection Date: 24-OCT-2007 18:03

Lab File ID: 036B3601.D Analysis Type:

Init. Cal. Date(s): 27-JUN-2007 19-OCT-2007 Init. Cal. Times: 15:36 02:34

Lab Sample ID: E178 Quant Type: ESTD

Method: \\cansvr11\dd\chem\GCS\a2hp4.i\71024-1.b\HP4PCBF.m

	i	1	1	MIN	l	MAX	
COMPOUND	RRF	/ AMOUNT	RF0.500	RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
=======================================		=======	-				========
\$ 1 TCMX	1	41686727	53801000 0	.010	-29.06027	15.00000	Averaged
3 AROCLOR-1016(1)	1	674885	824048 0	.010	-22.10196	15.00000	Averaged
(2)	1 .	1075356	1314588 0	.010	-22.24681	15.00000	Averaged
(3)	ŀ	1749697	2121234 0	.010	-21.23434	15.00000	Averaged
(4)	1	931520	1114846 0	.010	-19.68037	15.00000	Averaged
(5)	1	855366	942802 0	.010	-10.22208	15.00000	Averaged
8 AROCLOR-1260(1)	1	1442350	1721690 0	.010	-19.36698	15.00000	Averaged
(2)	1	2293064	2847758 0	.010	-24.19011	15.00000	Averaged
(3)	1	1874912	2366526 0	.010	-26.22064	15.00000	Averaged
(4)	1	3535626	4675906 0	.010	-32.25114	15.00000	Averaged
(5)	I	1649174	2115186 0	.010	-28.25730	15.00000	Averaged
\$ 12 DCB	1	28984152	35216440 0	.010	-21.50240	15.00000	Averaged
	1	- 1	i		I	ı	

SW846 8082 METHOD BLANK SUMMARY

BLANK WORKORDER NO. J9C2A1AA

Lab Name: TestAmerica Laboratories, Inc.

Lab Code: TALCAN

SDG Number:7J17248

Lab File ID: 019B1901.

Lot Number: A7J170248

Matrix: SOLID

Extraction Method: 3550B/3665A

Date Extracted: 10/19/07

Date Analyzed(1): 10/24/07

Date Analyzed(2): N/A

Time Analyzed(1): 13:11

Time Analyzed(2): N/A

Instrument ID(1): P4

Instrument ID(2): N/A

GC Column(1): N/A ID: N/A

GC Column(2): N/A ID:

N/A

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

		SAMPLE	DATE	DATE
	CLIENT ID.	WORK ORDER #	ANALYZED(1)	ANALYZED(2)
	=======================================	: =========	= ==========	=========
01	<u>SB-387-0102</u>	J86J41AC	10/24/07	N/A
02		J86J41AE S	10/24/07	N/A
03	SB-387-0102	J86J41AF D	10/24/07	N/A
04	SB-387-0203	J86J91AC	10/24/07	N/A
05	SB-387-0405	J86KC1AC	10/24/07	N/A
06	SB-387-0708	J86KJ1AC	10/24/07	N/A
07	SB-388-0102	J86KK1AC	10/24/07	N/A
08	SB-388-0203	J86KL1AC	10/24/07	N/A
09	SB-388-0405	J86KM1AC	10/24/07	N/A
10	SB-388-0708	J86KN1AC	10/24/07	N/A
11	SB-389-0102	J86KP1AC	10/24/07	N/A
12	SB-389-0203	J86KR1AC	10/24/07	N/A
13	SB-389-0405	J86KT1AC	10/24/07	N/A
14	SB-389-0708	J86KV1AC	10/24/07	N/A
15	SB-390-0102	J86KX1AC	10/24/07	N/A
16	SB-390-0203	J86K01AC	10/24/07	N/A
17	SB-390-0405	J86K11AC	10/24/07	N/A
18	SB-390-0708	J86K41AC	10/24/07	N/A
19	SB-391-0102	J86K61AC	10/24/07	N/A
20	SB-391-0203	J86LC1AC	10/24/07	N/A
21	SB-391-0405	!	10/24/07	N/A
22	SB-391-0708		10/24/07	N/A
23 3	CHECK SAMPLE		10/24/07	N/A
			,,-	11/47

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: 7J17248 Work Order #...: J9C2A1AA Matrix.....: SOLID

MB Lot-Sample #: A7J190000-024

Prep Date....: 10/19/07 Final Wgt/Vol.:: 10 mL

Analysis Date..: 10/24/07 Prep Batch #...: 7292024

Dilution Factor: 1 Initial Wgt/Vol: 30 g

REPORTING

PARAMETER	RESULT	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
	PERCENT	RECOVER	Y	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	84	(10 - 196)		
Decachlorobiphenyl	124	(10 - 19	99)	

NOTE(S):

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

Data File: \cansvr11\dd\chem\GCS\a2hp4.i\71024-1.b\019B1901.D Page 1
Report Date: 24-Oct-2007 13:24

STL North Canton

Data file: \\cansvr11\\dd\chem\GCS\a2hp4.i\71024-1.b\019B1901.D Lab Smp Id: J9C2A1AA Client Smp ID: INTRA-LA Client Smp ID: INTRA-LAB BLANK Inj Date : 24-OCT-2007 13:11 Operator Inst ID: a2hp4.i Smp Info : J9C2A1AA Misc Info: Comment Method : \\cansvr11\dd\chem\GCS\a2hp4.i\71024-1.b\HP4PCBF.m Meth Date: 24-Oct-2007 09:42 Quant Type: ESTD Cal Date : 19-OCT-2007 02:34 Cal File: 043B4301.D Als bottle: 1 QC Sample: METHOD BLANK Dil Factor: 1.00000 Integrator: Falcon

Integrator: Falcon Compound Sublist: pcb.sub Target Version: 4.14 Sample Matrix: SOIL

Processing Host: CANSVR10

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description		
55				
DF	1.000	Dilution Factor		
Vt	10000.000	final volume		
Vo	30.000	initial volume		
Cpnd Variable		Local Compound Variable		

							CON	ICENTR	ATIONS		
							ON-	COL	FINAL		
RT	EXP	RT	DLT	RT		RESPONSE	E (ng)	(ug/kg)	TARGET RANGE	RATIO
	====		====:	====		======	===	=		==========	====
\$ 1	TCMX								CAS #:	877-09-8	
1.571	1.	.571	0.	.000		699125	0.0	1677	5.590		
				·					- 		
2	AROC	LOR-1	221						CAS #:	11104-28-2	
Peaks	not	detec	ted f	or Q	uant. o	r Qual.	sign	al(s)	•		
								•			
		-									
3	AROC:	LOR-1	016						CAS #:	12674-11-2	
D 1 -							_				
Peaks	not (getec.	tea i	or Qu	iant. o	r Qual.	sign	al(s).	•		
4	ADOCI	LOR-1:							G2 G		
-	AROCI	LOK-1.	232						CAS #:	11141-16-5	
Deaks	not (detect	ed f	or O	ant o	r Qual.	ai an	27 (2)		•	
LCUAS	1100	4CC C C	Leu I	or Qu	ianc. O	. Qual.	sign	aı(S).			

Data File: \\cansvr11\dd\chem\GCS\a2hp4.i\71024-1.b\019B1901.D Page 2 Report Date: 24-Oct-2007 13:24

				CONCENTR	ATIONS		
				ON-COL			
RT	EXP RT	DLT RT	RESPONSE	(ng)	(ug/kg)	TARGET RANGE	RATIO
====	=======	=======	=======	*======	======	==========	====
. 5	AROCLOR-	1242			CAS #:	53469-21-9	
		cted for Quant		signal(s)			
	AROCLOR-1					12672-29-6	
		ted for Quant					
	AROCLOR-1					11097-69-1	
		ted for Quant					
	AROCLOR-1					 11096-82-5	
		ted for Quant.					
\$ 12 8.074	DCB	-0.002	718802	0.02480	CAS #: :	2051-24-3	
	TOTAL PCB					1336-36-3	
Compou	nd Not Det	ected					
-							

SW846 8082 SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17248

Lot #: A7J170248

Extraction: XXA71QH01

	1			
	CLIENT ID.	SRG01	SRG02	·TOT OUT
		======	======	======
	SB-387-0102	117	144	00
	SB-387-0203	107	119	00
	SB-387-0405	98	115	00
04	SB-387-0708	95	121	00
05	SB-388-0102	91	108	00
06	SB-388-0203	98	118	00
07	SB-388-0405	113	116	00
08	SB-388-0708	98	113	00
09	SB-389-0102	115	118	00
10	SB-389-0203	98	118	00
11	SB-389-0405	108	120	00
12	SB-389-0708	92	118	00
13	SB-390-0102	102	114	00
14	SB-390-0203	90	121	00
15	SB-390-0405	84	106	00
16	SB-390-0708	97	112	00
17	SB-391-0102	87	107	00
18	SB-391-0203	103	129	00
19	SB-391-0405	97	120	00
20	SB-391-0708	75	109	00
21	METHOD BLK. J9C2A1AA	84	124	00
22	LCS J9C2A1AC	91	133	00
23	SB-387-0102 D	111	203*	01
24	SB-387-0102 S	99	302*	01

SURROGA	TES		QC LIMITS
SRG01	=	Tetrachloro-m-xylene	(10-196)
SRG02	=	Decachlorobiphenvl	(10-199)

FORM II

[#] Column to be used to flag recovery values

^{*} Values outside of required QC Limits

D System monitoring Compound diluted out

SW846 8082 CHECK SAMPLE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17248

Lot #: A7J190000

WO #: J9C2A1AC BATCH: 7292024

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	% REC	QC LIMITS REC	 QUAL
======================================	=======================================	=========	=====	=========	=======
Aroclor 1016	330	320	95	34- 127	1.
Aroclor 1260	330	410	123	32- 141	

NOTES(S):			•	
		· .	•	
		-		

· Values outside of QC limits

pike Recovery:	0	out of	2	outside limits		
OMMENTS:						
	.				 	

FORM III

SW846 8082 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc. Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17248

Matrix Spike ID: SB-387-0102

Level: (low/med) LOW

Lot #: A7J170248

WO #: J86J41AE BATCH: 7292024

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC	LIMITS REC	QUAL
=======================================	=======	=======	=======	=====	=========	=======================================
Aroclor 1016	360	ND	340	97	10- 199	!
Aroclor 1260	360	ND	370	104	10- 199	

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk * Values outside of QC limits RPD: 0 out of ____0 outside limits Spike Recovery: __0 out of __2 outside limits COMMENTS:

FORM III

SW846 8082 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17248

Matrix Spike ID: SB-387-0102

Level: (low/med) LOW

Lot #: A7J170248

WO #: J86J41AF BATCH: 7292024

	SPIKE	MSD	MSD				1
	ADDED	CONCENT.	%	%	QC I	LIMITS	
COMPOUND	(ug/kg)	(ug/kg)	REC	RPD	RPD	REC	QUAL
=======================================	=======	=======	====	======	====	========	========
Aroclor 1016	350	360	101	3.5	30	10- 199	<u> </u>
Aroclor 1260	350	370	105	0.11	30	10- 199	

NOTES	(2)
14(1) (1)(1)	131

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk

' Values outside of QC limits

₹PD:	0	out	of	2	outs	ide	lim	its	
pike	Recove	ery:	0	out	of		2	outside	limits
OMMEN	NTS:								

FORM III

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: 7J17248 Work Order #...: J9C2A1AC Matrix......: SOLID

LCS Lot-Sample#: A7J190000-024

Prep Date....: 10/19/07 Analysis Date..: 10/24/07

Prep Batch #...: 7292024

Dilution Factor: 1 Final Wgt/Vol..: 10 mL

Initial Wgt/Vol: 30 g

 PERCENT
 RECOVERY

 PARAMETER
 RECOVERY
 LIMITS
 METHOD

 Aroclor 1016
 95
 (34 - 127)
 SW846 8082

 Aroclor 1260
 123
 (32 - 141)
 SW846 8082

 SURROGATE
 RECOVERY
 LIMITS

 Tetrachloro-m-xylene
 91
 (10 - 196)

 Decachlorobiphenyl
 133
 (10 - 199)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: 7J17248 Work Order #...: J9C2A1AC Matrix......: SOLID

LCS Lot-Sample#: A7J190000-024

Prep Date....: 10/19/07 Analysis Date..: 10/24/07

Prep Batch #...: 7292024

Dilution Factor: 1 Final Wgt/Vol..: 10 mL

Initial Wgt/Vol: 30 q

SPIKE MEASURED PERCENT PARAMETER AMOUNT AMOUNT UNITS RECOVERY METHOD Aroclor 1016 330 320 ug/kg 95 SW846 8082 Aroclor 1260 330 410 ug/kg 123 SW846 8082

 SURROGATE
 PERCENT
 RECOVERY

 Tetrachloro-m-xylene
 91
 (10 - 196)

 Decachlorobiphenyl
 133
 (10 - 199)

NOTE(S):

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

Bold print denotes control parameters

Tetra Tech NUS, Inc

Client Sample ID: SB-387-0102

GC/MS Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/15/07 16:00 10/22/07		10/17/07	Matri	x:	SOLID
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.18 g	Final	Wgt/Vol:	2 mL
% Moisture:	6.3	Method:	SW846 8270			
PARAMETER		RESULT	REPORTING LIMIT	UNITS	_	
Benzo(a)pyrene		12 J	350	ug/kg		
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS	•		
Nitrobenzene-d5		75	(24 - 112)			
2-Fluorobiphenyl		78	(34 - 110)			
Terphenyl-d14		91	(41 - 119)			
Phenol-d5		86	(28 - 110)			
2-Fluorophenol		81	(26 - 110)			
2,4,6-Tribromophe	nol	55	(10 - 118)			
NOTE(S):	٠					

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Data File: \cansvr11\dd\chem\MSS\a4hp8.i\71024b.b\J86J41AD.D Page 1

Report Date: 25-Oct-2007 12:35

STL North Canton

Semivolatile REPORT SW-846 Method 8270

Data file: \\cansvr11\\dd\chem\MSS\a4hp8.i\71024b.b\J86J41AD.D

Lab Smp Id: j86j41ad Client Smp ID: SB-387-0102

Inj Date : 24-OCT-2007 20:27

Operator: 001710 Inst ID: a4hp8.i

Smp Info : j86j41ad,71024b.b,8270p,1-827042d.sub

Misc Info : Comment :

Method : \\cansvr11\\dd\\chem\MSS\a4hp8.i\71024b.b\8270P.m

Meth Date : 25-Oct-2007 12:35 gruberj Quant Type: ISTD

Cal Date : 24-OCT-2007 17:53 Cal File: 8SMH1024.D

Als bottle: 16 Dil Factor: 1.00000

Integrator: HP RTE Compound Sublist: 1-827042d.sub

Target Version: 4.14

Processing Host: CANPMSSV01

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws *) * CpndVariable

Name	Value	Description
DF Uf Vt Vi Ws Cpnd Variable	1.000 2000.000 0.50000	Dilution Factor ng unit correction factor Volume of final extract (uL)(1000 low, 2 Volume injected (uL) Weight of sample extracted (g) Local Compound Variable

			CONCENTRATIONS	
		QUANT SIG	ON-COLUMN FINAL	
Compo	unds	MASS	RT EXP RT REL RT RESPONSE (NG) (ug/kg)
=====		====	5202	=
* 1	1,4-Dichlorobenzene-d4	152	3.588 3.588 (1.000) 106176 2.00000	(Q)
* 2	Naphthalene-d8	136	4.483 4.487 (1.000) 483260 2.00000	
* 3	Acenaphthene-d10	164	5.757 5.757 (1.000) 295992 2.00000	
* 4	Phenanthrene-d10	188	6.844 6.844 (1.000) 566345 2.00000	
* 5	Chrysene-d12	240	8.844 8.863 (1.000) 548595 2.00000	
* 6	Perylene-d12	264	10.378 10.392 (1.000) 472376 2.00000	
9	Pyridine	79	Compound Not Detected.	
10	N-Nitrosodimethylamine	74	Compound Not Detected.	
11	Ethyl methacrylate	69	Compound Not Detected.	
12	3-Chloropropionitrile	54	Compound Not Detected.	
13	Malononitrile	66	Compound Not Detected.	
209	Benzaldehyde	77	Compound Not Detected.	
,21	Aniline	93	Compound Not Detected.	
22	Phenol	94	Compound Not Detected.	
23	bis(2-Chloroethyl)ether	93	Compound Not Detected.	
24	2-Chlorophenol	128	Compound Not Detected.	
26	1,3-Dichlorobenzene	146	Compound Not Detected.	
27	1,4-Dichlorobenzene	146	Compound Not Detected.	

Data File: \\cansvr11\dd\chem\MSS\a4hp8.i\71024b.b\J86J41AD.D Report Date: 25-Oct-2007 12:35 Page 3

	OUANT SIG	CONCENTRATIONS
Compounds	MASS	ON-COLUMN FINAL RT EXP RT REL RT RESPONSE (NG) (ug/kg)
-	====	RT EXP RT REL RT RESPONSE (NG) (ug/kg)
115 Phenanthrene	178	6.863 6.863 (1.003) 37148 0.12133 16.080
116 Anthracene	178	Compound Not Detected.
119 Carbazole	167	Compound Not Detected.
120 Di-n-Butylphthalate	149	Compound Not Detected.
123 Fluoranthene	202	7.738 7.743 (1.131) 68129 0.20796 27.563 (OM)
124 Benzidine	184	Compound Not Detected.
125 Pyrene	202	7.912 7.926 (0.895) 52265 0.15573 20.640
131 Butylbenzylphthalate	149	Compound Not Detected.
133 3,3'-Dimethoxybenzidine	244	Compound Not Detected.
135 3,3'-Dichlorobenzidine	252	Compound Not Detected.
136 Benzo(a) Anthracene	228	8.835 8.854 (0.999) 20382 0.06372 8.4448 (H)
137 Chrysene	228	8.869 8.887 (1.003) 43008 0.14475 19.185
138 4,4'-Methylene bis(o-chloroan	231	Compound Not Detected.
139 bis(2-ethylhexyl)Phthalate	149	8.763 8.777 (0.991) 26153 0.11847 15.702
140 Di-n-octylphthalate	149	Compound Not Detected.
141 Benzo(b) fluoranthene	252	9.898 9.916 (0.954) 53990 0.18105 23.996
142 Benzo(k)fluoranthene	252	9.926 9.945 (0.956) 20387 0.06763 8.9637 (QM)
146 Benzo(a)pyrene	252	10.306 10.325 (0.993) 22182 0.08303 11.004
149 Indeno(1,2,3-cd)pyrene	276	12.042 12.076 (1.160) 21943 0.07694 10.197
150 Dibenz(a,h)anthracene	278	Compound Not Detected.
151 Benzo(g,h,i)perylene	276	12.557 12.595 (1.210) 24843 0.10386 13.765
198 1,4-Dioxane	88	Compound Not Detected.
\$ 154 Nitrobenzene-d5	82	3.964 3.968 (0.884) 448669 3.73425 494.93
\$ 155 2-Fluorobiphenyl	172	5.243 5.247 (0.911) 743799 3.91320 518.65
\$ 156 Terphenyl-d14	244	7.993 8.002 (0.904) 991369 4.53303 600.80
\$ 157 Phenol-d5	99	3.295 3.290 (0.918) 638985 6.47404 858.06
\$ 158 2-Fluorophenol	112	2.761 2.713 (0.770) 413734 6.08823 806.92
\$ 159 2,4,6-Tribromophenol	330	6.329 6.329 (1.099) 87689 4.15400 550.56
\$ 186 2-Chlorophenol-d4	132	3.439 3.434 (0.958) 421872 6.44332 853.98
\$ 187 1,2-Dichlorobenzene-d4	152	3.699 3.699 (1.031) 152895 3.48723 462.19
M 195 Cresols, total	100	Compound Not Detected.
101 Diphenylamine	169	Compound Not Detected.

QC Flag Legend

Q - Qualifier signal failed the ratio test.
 M - Compound response manually integrated.
 H - Operator selected an alternate compound hit.

SAMPLE CALC

SAMPLE ID:

COMPOUND: BAP

IS AREA 472376 DILUTION COMPOUND OF INTEREST AREA IS AMOUNT (NG) Final Extract Volume (UL) AVE RRF PERCENT SOLIDS AMOUNT INJECTED (UL) CONCENTRATION PPB

2000

1.1312

0.937

0.5

Sample Amount (g) 30.18



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO:

MIKE MARTIN

DATE:

JANUARY 4, 2008

FROM:

THOMAS JACKMAN

COPIES:

DV FILE

SUBJECT:

ORGANIC DATA VALIDATION - BENZO(A)PYRENE/PCBS

LOCKHEED MIDDLE RIVER FACILITY

SAMPLE DELIVERY GROUP (SDG) -7J17253

SAMPLES:

20/Solid

SB-392-0102	SB-392-0203	SB-392-0405	SB-392-0708
SB-393-0102	SB-393-0203	SB-393-0405	SB-393-0708
SB-394-0102	SB-394-0203	SB-394-0405	SB-394-0708
SB-395-0102	SB-395-0203	SB-395-0405	SB-395-0708
SB-396-0102	SB-396-0203	SB-396-0405	SR-396-0708

Overview

This sample set for the Lockheed Middle River, SDG 7J17253, consists of 20 environmental soil samples. The samples were analyzed for benzo(a)pyrene and polychlorinated biphenyls(PCBs). No field duplicates were included in this data set.

The samples were collected by Tetra Tech NUS, Inc. on October 16, 2007 and analyzed by Test America. The samples were analyzed by SW-846 Method 8270C for benzo(a)pyrene and Method 8082 for PCBs.

Summary

The findings in this report are based upon a general review of all available data including: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank contamination, surrogate spike, matrix spike/matrix spike duplicate (MS/MSD) results, Laboratory Control Sample (LCS) results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below; documentation supporting these findings is presented in Appendix C. Qualified analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

Major Problems

None.

Minor Problems

 Positive results reported below the reporting limit (RL) but above the method detection limit (MDL) for the organic analyses were qualified as estimated, "J". MEMO TO: M. MARTIN - PAGE 2 DATE: JANUARY 4, 2008

Notes

In the analysis of benzo(a)pyrene, matrix spike/matrix spike duplicate recoveries and RPDs were outside quality criteria for sample SB-392-0102MS/MSD and the batch MS/MSD used by the laboratory. No data were qualified on the basis of the MS/MSD results because benzo(a)pyrene was not one of the spiked compounds.

In the PCB analysis, matrix spike/matrix spike duplicate RPDs were outside quality criteria for sample SB-392-0102MS/MSD. No data were qualified on the basis of the MS/MSD results because these analytes were not detected in the unspiked sample. In addition, percent recoveries were acceptable for both compounds in the MS and MSD analyses.

Executive Summary

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "Region III Modifications to the National Functional Guidelines for Organic Data Review" (9/94). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Teck NUS Thomas Jackman Environmental Scientist

Terra Tech MUS Joseph A. Samchuck Quality Assurance Officer

Attachments:

- 1. Appendix A Qualified Analytical Results
- 2. Appendix B Results as reported by the Laboratory
- 3. Appendix C Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination

B = Field Blank Contamination

C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)

C01 = GC/MS Tuning Noncompliance

D = MS/MSD Recovery Noncompliance

E = LCS/LCSD Recovery Noncompliance

F = Lab Duplicate Imprecision

G = Field Duplicate Imprecision

H = Holding Time Exceedance

I = ICP Serial Dilution Noncompliance

J = GFAA PDS - GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance

K = ICP Interference - includes ICS % R Noncompliance

L = Instrument Calibration Range Exceedance

M = Sample Preservation Noncompliance

N = Internal Standard Noncompliance

N01 = Internal Standard Recovery Noncompliance Dioxins

N02 = Recovery Standard Noncompliance Dioxins

N03 = Clean-up Standard Noncompliance Dioxins

O = Poor Instrument Performance (e.g. base-line drifting)

P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)

Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)

R = Surrogates Recovery Noncompliance

S = Pesticide/PCB Resolution

T = % Breakdown Noncompliance for DDT and Endrin

U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC

V = Non-linear calibrations; correlation coefficient r < 0.995</p>

W = EMPC result

X = Signal to noise response drop

Y = Percent solids <30%

Z = Uncertainty at 2 sigma deviation is greater than sample activity

00885

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: OS

nsample

SB-392-0102 10/16/2007

nsample samp_date SB-392-0203 10/16/2007

nsample samp_date SB-392-0405

samp_date lab_id

A7J170253001

lab_id

lab_id

10/16/2007 A7J170253003

qc_type units

NM

qc_type

A7J170253002 NM

qc_type

NM

Pct_Solids

UG/KG 90.2

units Pct_Solids DUP_OF:

UG/KG 89.0

units Pct_Solids DUP_OF:

UG/KG 85.0

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.4	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	_

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	20	J	Р

00885

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date SB-392-0708RE

10/16/2007

lab_id

A7J170253004

qc_type units

NM UG/KG

84.0

Pct_Solids DUP_OF:

nsample samp_date

lab_id qc_type

units

10/16/2007 A7J170253005 NM

SB-393-0102

UG/KG Pct_Solids 94.6 DUP_OF:

nsample

samp_date

lab_id qc_type

units

Pct_Solids DUP_OF:

NM UG/KG

SB-393-0203

A7J170253006

10/16/2007

92.6

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	450		

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.4	U	

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: OS

00885

nsample samp_date lab_id

SB-393-0405 10/16/2007

A7J170253007

NM qc_type UG/KG 93.5

Pct_Solids DUP_OF:

units

nsample samp_date

lab_id qc_type NM

units Pct_Solids DUP_OF:

SB-393-0708

10/16/2007 A7J170253008

UG/KG 87.0

nsample

samp_date lab_id

qc_type units

Pct_Solids

DUP_OF:

A7J170253009 NM UG/KG

90.0

SB-394-0102

10/16/2007

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	7.5	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	140	J	Р

00885

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date lab_id

SB-394-0203

10/16/2007 A7J170253010

qc_type NM units UG/KG 90.6

Pct_Solids DUP_OF:

samp_date lab_id qc_type units

Pct_Solids

DUP_OF:

nsample

SB-394-0405 10/16/2007 A7J170253011

NM UG/KG 87.0

nsample

samp_date lab_id

qc_type units Pct_Solids DUP_OF:

SB-394-0708RE 10/16/2007 A7J170253012

NM UG/KG 86.0

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	25	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

00885

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date SB-395-0102

10/16/2007

A7J170253013

lab_id qc_type units

NM UG/KG

83.0

Pct_Solids DUP_OF:

nsample

lab_id

qc_type units Pct_Solids

samp_date 10/16/2007 A7J170253014 NM UG/KG 95.9

Parameter

SB-395-0203RE

Val

Qual

U

Result

1.4

Qual

Code

DUP_OF:

BENZO(A)PYRENE

nsample

samp_date lab_id

qc_type units

Pct_Solids

DUP_OF:

SB-395-0405 10/16/2007 A7J170253015 NM

UG/KG

87.0

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

Pct_Solids

DUP_OF:

00885

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: OS

 nsample
 SB-395-0708
 nsample

 samp_date
 10/16/2007
 samp_date

 lab_id
 A7J170253016
 lab_id

 qc_type
 NM
 qc_type

 units
 UG/KG
 units

UG/KG units
87.0 Pct_Solids
DUP_OF:

samp_date
lab_id
qc_type
units
Pct_Solids

A7J170253018 NM UG/KG 86.0

SB-396-0203

10/16/2007

DUP_OF:

nsample

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	Ü	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	80	J	Р

SB-396-0102

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: OS

00885

nsample

SB-396-0405

samp_date

10/16/2007

nsample samp_date SB-396-0708

lab_id A7J170253019

lab_id

10/16/2007 A7J170253020

qc_type units

NM

qc_type units

NM

Pct_Solids

UG/KG 85.0

Pct_Solids DUP_OF:

UG/KG 84.0

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-392-0102

10/16/2007

A7J170253001

lab_id qc_type NM units UG/KG Pct_Solids 90.2

DUP_OF:

nsample samp_date lab_id

10/16/2007 A7J170253002 qc_type NM units UG/KG Pct_Solids

DUP_OF:

nsample samp_date lab_id

SB-392-0405 10/16/2007 A7J170253003

qc_type NM units ŲG/KG Pct_Solids 85.0

DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	. 37	· U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	Ü	
AROCLOR-1254	37	Ũ	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	Ú	
AROCLOR-1260	37	U	

SB-392-0203

89.0

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	0000
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	<u></u>
AROCLOR-1254	39	Ü	
AROCLOR-1260	39	U	

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date

SB-392-0708

10/16/2007

lab_id qc_type units

A7J170253004 NM UG/KG 84.0

DUP_OF:

Pct_Solids

nsample samp_date lab_id

qc_type units

Pct_Solids DUP_OF:

SB-393-0102 10/16/2007

A7J170253005

NM UG/KG 94.6

nsample samp_date

SB-393-0203 10/16/2007

lab_id qc_type units

A7J170253006 NM UG/KG

92.6

Pct_Solids

DUP_OF:

Result	Val Qual	Qual Code
39	U	
39	U	
39	U	
39	U	
39	U	
39	U	
39	U	
	39 39 39 39 39	Result Qual 39 U 39 U 39 U 39 U 39 U 39 U 39 U

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	-
AROCLOR-1221	35	U	<u> </u>
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	22	J	Р

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

00885

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-393-0405

10/16/2007

A7J170253007

lab_id qc_type units

A7J1702530 NM UG/KG

93.5

Pct_Solids DUP_OF: nsample samp_da

samp_date lab_id qc_type

units

10/16/2007 A7J170253008 NM UG/KG

87.0

SB-393-0708

Pct_Solids
DUP_OF:

nsample

samp_date

SB-394-0102 10/16/2007

qc_type units A7J170253009 NM UG/KG

90.0

Pct_Solids

DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	Ū	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	-
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	Ű	
AROCLOR-1260	38	Ū	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	-
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	Ü	
AROCLOR-1260	37	U	

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-394-0203

10/16/2007

lab_id

A7J170253010

qc_type units Pct_Solids

NM UG/KG 90.6

DUP_OF:

nsample samp_date

lab_id qc_type

Pct_Solids

DUP_OF:

units

SB-394-0405 10/16/2007 A7J170253011 NM

UG/KG 87.0

nsample samp_date lab_id qc_type

SB-394-0708 10/16/2007 A7J170253012

Pct_Solids

UG/KG 86.0

NM

DUP_OF: .

units

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	Ü	
AROCLOR-1242	36	U	
AROCLOR-1248	36	Ū	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	Ü	
AROCLOR-1260	38	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	Ü	
AROCLOR-1242	38	U	
AROCLOR-1248	38	Ü	
AROCLOR-1254	38	U	
AROCLOR-1260	38	Ü	

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id

DUP_OF:

AROCLOR-1260

SB-395-0102

10/16/2007

A7J170253013

qc_type NM units Pct_Solids

UG/KG

83.0

40 U nsample samp_date

lab_id

units

qc_type

Pct_Solids

DUP_OF:

SB-395-0203 10/16/2007 A7J170253014

NM UG/KG

95.9

nsample

samp_date lab_id

qc_type

SB-395-0405 10/16/2007

87.0

A7J170253015 NM UG/KG

units Pct_Solids DUP_OF:

Parameter	Result	Val Quai	Qual Code
AROCLOR-1016	40	U	
AROCLOR-1221	40	U	
AROCLOR-1232	40	U	
AROCLOR-1242	40	Ū	
AROCLOR-1248	40	Ú	
AROCLOR-1254	40	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	34	U	
AROCLOR-1221	. 34	U	
AROCLOR-1232	34	U	
AROCLOR-1242	34	Ü	
AROCLOR-1248	34	U	
AROCLOR-1254	34	U	
AROCLOR-1260	34	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-395-0708

10/16/2007

lab_id qc_type A7J170253016

units Pct_Solids

NM UG/KG 87.0

DUP_OF:

nsample samp_date lab_id

SB-396-0102 10/16/2007 A7J170253017

qc_type NM UG/KG Pct_Solids 85.0

DUP_OF:

units

nsample

samp_date lab_id

qc_type units

Pct_Solids

UG/KG 86.0

SB-396-0203

A7J170253018

10/16/2007

NM

DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	· U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	<u> </u>
AROCLOR-1254	38	U U	
AROCLOR-1260	38	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	Ū	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	-
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	Ü	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	Ū	
AROCLOR-1260	38	U	

SDG: 7J17253 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample

SB-396-0405

nsample

SB-396-0708 10/16/2007

samp_date lab_id

10/16/2007

samp_date lab_id

qc_type

A7J170253019 NM

qc_type

A7J170253020 NM

units Pct_Solids DUP_OF:

UG/KG 85.0

units

UG/KG 84.0

Pct_Solids

DUP_OF:

Parameter	Result	Vai Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	-
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	· · · · · ·
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	
AROCLOR-1254	39	U	<u> </u>

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39		
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Client Sample ID: SB-392-0102

GC/MS Semivolatiles

=	10/16/07 08:55 10/22/07 7295069	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	so so
% Moisture:	9.8	Method:	SW846 8270	С	
			REPORTING		
PARAMETER	·	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	370	ug/kg	1.4
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		46	(24 - 112)		
2-Fluorobiphenyl		48	(34 - 110)		
Terphenyl-d14		60	(41 - 119)		
Phenol-d5		49	(28 - 110)		
2-Fluorophenol		46	(26 - 110)		
2,4,6-Tribromophe	enol	49	(10 - 118)		
NOTE (S):					

Client Sample ID: SB-392-0203

GC/MS Semivolatiles

Lot-Sample #: A7 Date Sampled: 10 Prep Date: 10 Prep Batch #: 72 Dilution Factor: 1	0/16/07 08:57 Date 0/22/07 Ana l		10/17/07	Matrix	s	30
% Moisture: 11	Meth	od:	SW846 8270	C		
PARAMETER	RESU		REPORTING LIMIT	UNITS	MDL	
Benzo(a) pyrene	ND		370	ug/kg	1.5	
SURROGATE	PERC RECO		RECOVERY LIMITS			
Nitrobenzene-d5	62		(24 - 112)			
2-Fluorobiphenyl	66		(34 - 110)			
Terphenyl-d14	76		(41 - 119)			
Phenol-d5	63		(28 - 110)			
2-Fluorophenol	59		(26 - 110)			
2,4,6-Tribromopheno	1 42		(10 - 118)			
NOTE (S):						.,

Client Sample ID: SB-392-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170253-0 Date Sampled: 10/16/07 08 Prep Date: 10/22/07 Prep Batch #: 7295069 Dilution Factor: 1		1: 10/17/07	Matr	ix	: SO
% Moisture: 15	Method	: SW846 827	0C		
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	20 J	390	ug/kg	1.5	
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	_		
Nitrobenzene-d5	63	(24 - 112))		
2-Fluorobiphenyl	66	(34 - 110)) .		
Terphenyl-d14	77	(41 - 119))		
Phenol-d5	66	(28 - 110))		
2-Fluorophenol	65	(26 - 110))		
2,4,6-Tribromophenol	63	(10 - 118))		
NOTE (S):					·

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Client Sample ID: SB-392-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170253-00 Date Sampled: 10/16/07 09: Prep Date: 10/27/07 Prep Batch #: 7299474 Dilution Factor: 1		10/17/07	Matr	rix: SO
% Moisture: 16	Method:	SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	65	$\frac{\text{LIMITS}}{(24 - 112)}$	•	
2-Fluorobiphenyl	67	(34 - 112)		
Terphenyl-d14	87	(41 - 119)		
Phenol-d5	64	(28 - 110)		
2-Fluorophenol	64	(26 - 110)		
2,4,6-Tribromophenol	49	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-393-0102

GC/MS Semivolatiles

Lot-Sample #: A7J1 Date Sampled: 10/1 Prep Date: 10/2 Prep Batch #: 7295 Dilution Factor: 1	16/07 09:24 Date 22/07 Analy		10/17/07	Matrix	: SO
% Moisture: 5.4	M etho	od:	SW846 82700	C	
PARAMETER	RESUI		REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	450	_	350	ug/kg	1.4
	PERCE	INT	RECOVERY		
SURROGATE	RECOV	ERY	LIMITS		•
Nitrobenzene-d5	57		(24 - 112)		
2-Fluorobiphenyl	63		(34 - 110)		
Terphenyl-d14	75 .		(41 - 119)		
Phenol-d5	64		(28 - 110)		
2-Fluorophenol	57		(26 - 110)		
2,4,6-Tribromophenol	61		(10 - 118)		
NOTE (S):					

Client Sample ID: SB-393-0203

GC/MS Semivolatiles

-	10/16/07 09:26 10/22/07 7295069	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	: SO
% Moisture:		Method:	SW846 8270	С	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	360	ug/kg	1.4
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		57	(24 - 112)		
2-Fluorobiphenyl		60	(34 - 110)		
Terphenyl-d14	-	70	(41 - 119)		
Phenol-d5		62	(28 - 110)		
2-Fluorophenol		61	(26 - 110)		
2,4,6-Tribromophe	enol	56	(10 - 118)		
NOTE (S):				· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·

Client Sample ID: SB-393-0405

GC/MS Semivolatiles

-	-	: 10/17/07	Matr	Fix SO
% Moisture: 6.5	Method	: SW846 8270	C .	
	•	REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	7.5 J	350	ug/kg	1.4
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	<u>LIMITS</u>		
Nitrobenzene-d5	62	(24 - 112)		
2-Fluorobiphenyl	65	(34 - 110)		
Terphenyl-d14	80	(41 - 119)		
Phenol-d5	70	(28 - 110)		
2-Fluorophenol	59	(26 - 110)		•
2,4,6-Tribromophenol	53	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-393-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170253-00 Date Sampled: 10/16/07 09: Prep Date: 10/22/07 Prep Batch #: 7295069		: 10/17/07	Matr	ix: SO
Dilution Factor: 1 % Moisture: 13	Method	: SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5
				•
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	58	(24 - 112)		
2-Fluorobiphenyl	57	(34 - 110)		
Terphenyl-d14	75	(41 - 119)		
Phenol-d5	62	(28 - 110)		
2-Fluorophenol	51	(26 - 110)		
2,4,6-Tribromophenol	47	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-394-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170253-00 Date Sampled: 10/16/07 09: Prep Date: 10/22/07 Prep Batch #: 7295069		: 10/17/07	Matr	ix: SO
Dilution Factor: 1 % Moisture: 10	Method	: SW846 8270	C	•
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	\mathtt{MDL}
Benzo(a)pyrene	140 J	370	ug/kg	1.4
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	64	(24 - 112)	•	
2-Fluorobiphenyl	67	(34 - 110)		
Terphenyl-d14	72	(41 - 119)		
Phenol-d5	67	(28 - 110)		
2-Fluorophenol	64	(26 - 110)		
2,4,6-Tribromophenol	53	(10 - 118)		
NOTE(S):	·			

J Estimated result. Result is less than RL.

Client Sample ID: SB-394-0203

GC/MS Semivolatiles

Lot-Sample #:	A7J170253-010	Work Order #:	J86L91AD	Matri	x SO
Date Sampled:	10/16/07 09:39	Date Received:	10/17/07		
Prep Date:	10/22/07	Analysis Date:	10/25/07		
Prep Batch #:	7295069				
Dilution Factor:	1				
% Moisture:	9.4	Method:	SW846 8270	С	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	\mathtt{MDL}
Benzo(a)pyrene		25 J	360	ug/kg	1.4
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5	· · · · · · · · · · · · · · · · · · ·	64	(24 - 112)		•
2-Fluorobiphenyl		64	(34 - 110)		
Terphenyl-d14		80	(41 - 119)		
Phenol-d5		68	(28 - 110)		
2-Fluorophenol		61	(26 - 110)		
2,4,6-Tribromophe	enol	61	(10 - 118)		
NOTE (S):					

J Estimated result. Result is less than RL.

Client Sample ID: SB-394-0405

GC/MS Semivolatiles

Lot-Sample #: A Date Sampled: 1 Prep Date: 1 Prep Batch #: 7 Dilution Factor: 1	.0/16/07 09:41 .0/22/07 /295069		10/17/07	Matrix	so
% Moisture: 1	.3	Method:	SW846 8270	C .	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	380	ug/kg	1.5
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		54	(24 - 112)	•	
2-Fluorobiphenyl		54	(34 - 110)		
Terphenyl-d14		71	(41 - 119)		
Phenol-d5		56	(28 - 110)		
2-Fluorophenol		49	(26 - 110)		
2,4,6-Tribromophen	ol	33	(10 - 118)		•
NOTE (S):					

Client Sample ID: SB-394-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170253-03 Date Sampled: 10/16/07 09 Prep Date: 10/27/07 Prep Batch #: 7299474 Dilution Factor: 1		: 10/17/07	Matr	ix: SO
% Moisture: 14	Method	SW846 8270)C.	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND .	380	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	51	(24 - 112)	-	
2-Fluorobiphenyl	51	(34 - 110)		
Terphenyl-d14	67	(41 - 119)		
Phenol-d5	51	(28 - 110)		
2-Fluorophenol	48	(26 - 110)		
2,4,6-Tribromophenol	29	(10 - 118)		
-				
NOTE (S):				

Client Sample ID: SB-395-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170253-0 Date Sampled: 10/16/07 09 Prep Date: 10/22/07 Prep Batch #: 7295069 Dilution Factor: 1		: 10/17/07	Matr	rix: SO
% Moisture: 17	Method	: SW846 827	oc	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	400	ug/kg	1.6
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	44	(24 - 112)	_	
2-Fluorobiphenyl	56	(34 - 110)		
Terphenyl-d14	75	(41 - 119)		
Phenol-d5	58	(28 - 110)		
2-Fluorophenol	56	(26 - 110)		
2,4,6-Tribromophenol	69	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-395-0203

GC/MS Semivolatiles

-	10/16/07 09:50 10/27/07 7299474	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix		SO
% Moisture:		Method:	SW846 8270	С		, k
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene		ND	340	ug/kg	1.4	
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Nitrobenzene-d5		58	(24 - 112)			
2-Fluorobiphenyl		57	(34 - 110)			
Terphenyl-d14		74	(41 - 119)			
Phenol-d5	•	58	(28 - 110)			
2-Fluorophenol		57	(26 - 110)			
2,4,6-Tribromophe	enol	41	(10 - 118)			
NOTE (S):						

Client Sample ID: SB-395-0405

GC/MS Semivolatiles

Lot-Sample #: A7J1702 Date Sampled: 10/16/0 Prep Date: 10/22/0 Prep Batch #: 7295069 Dilution Factor: 1	7 09:52 Date Received. 7 Analysis Date.	.: 10/17/07	Matı	rix: SO
% Moisture: 13	Method	.: SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	\mathtt{MDL}
Benzo(a)pyrene	ND	380	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	59	$\frac{211113}{(24 - 112)}$		
2-Fluorobiphenyl	66	(34 - 110)		
Terphenyl-d14	79	(41 - 119)		
Phenol-d5	67	(28 - 110)		
2-Fluorophenol	63	(26 - 110)		
2,4,6-Tribromophenol	53	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-395-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170253- Date Sampled: 10/16/07 0 Prep Date: 10/22/07 Prep Batch #: 7295069 Dilution Factor: 1		.: 10/17/07	Matr	ix: SO
% Moisture: 13	Method	.: SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	57	(24 - 112)		
2-Fluorobiphenyl	57	(34 - 110)		
Terphenyl-d14	75	(41 - 119)		
Phenol-d5	61	(28 - 110)		
2-Fluorophenol	61	(26 - 110)		
2,4,6-Tribromophenol	59	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-396-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170253-03 Date Sampled: 10/16/07 10 Prep Date: 10/22/07 Prep Batch #: 7295069 Dilution Factor: 1		: 10/17/07	Matr	: SO
% Moisture: 15	Method	: SW846 8270)C	
PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	80 J	390	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS	-	
Nitrobenzene-d5	59	(24 - 112)		
2-Fluorobiphenyl	62	(34 - 110)		
Terphenyl-d14	70	(41 - 119)		
Phenol-d5	64	(28 - 110)		
2-Fluorophenol	60	(26 - 110)		
2,4,6-Tribromophenol	67	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-396-0203

GC/MS Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 10:07 10/22/07 7295069		10/17/07	Matrix	s: so
Dilution Factor: % Moisture:	_	Method:	SW846 8270	С	
		• .	REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	380	ug/kg	1.5
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		56	(24 - 112)		
2-Fluorobiphenyl		57	(34 - 110)		
Terphenyl-d14		74	(41 - 119)		
Phenol-d5		65	(28 - 110)		
2-Fluorophenol		63	(26 - 110)		
2,4,6-Tribromophe	nol	67	(10 - 118)		
NOTE (S):					

Client Sample ID: SB-396-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170253- Date Sampled: 10/16/07 1 Prep Date: 10/22/07 Prep Batch #: 7295069 Dilution Factor: 1		.: 10/17/07	Matr	rix: SO
% Moisture: 15	Method	.: SW846 8270)C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS	_	
Nitrobenzene-d5	64	(24 - 112)		
2-Fluorobiphenyl	64	(34 - 110)		
Terphenyl-d14	79	(41 - 119)		
Phenol-d5	72	(28 - 110)		
2-Fluorophenol	71	(26 - 110)		
2,4,6-Tribromophenol	55	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-396-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170253-02 Date Sampled: 10/16/07 10: Prep Date: 10/22/07 Prep Batch #: 7295069		: 10/17/07	Matr	ix: SO
Dilution Factor: 1 % Moisture: 16	Method	: SW846 8270)C	
	·	REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.6
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS	_	·
Nitrobenzene-d5	55	(24 - 112)		
2-Fluorobiphenyl	54	(34 - 110)		
Terphenyl-d14	74	(41 - 119)		
Phenol-d5	62	(28 - 110)		
2-Fluorophenol	60	(26 - 110)		
2,4,6-Tribromophenol	57	(10 - 118)		
NOTE(S):		•		

Client Sample ID: SB-392-0102

GC Semivolatiles

Lot-Sample #: A7J170253-001 Date Sampled: 10/16/07 08:55 Prep Date: 10/23/07 Prep Batch #: 7295394	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SO
Dilution Factor: 1 % Moisture: 9.8	<pre>Initial Wgt/Vol:</pre>		Final Wgt/Vol: 10 mL
o norseure 9.0	Method:	SW846 8082	
DADAMERE		REPORTING	
PARAMETER	RESULT	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	3 <i>7</i>	ug/kg
Aroclor 1254	ND	37	_
Aroclor 1260	ND	37	ug/kg ug/kg
			ug/ kg
	PERCENT	RECOVERY	,
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	88	(10 - 196)	
Decachlorobiphenyl	72	(10 - 199)	

NOTE(S):

Client Sample ID: SB-392-0203

GC Semivolatiles

Prep Date: Prep Batch #:	10/16/07 08:57 10/23/07 7295394	Work Order #: Date Received: Analysis Date:	10/17/07	Matri	x:	so
Dilution Factor:		<pre>Initial Wgt/Vol:</pre>		Final	Wgt/Vol:	10 mL
% Moisture:	11	Method:	SW846 8082			
·			REPORTING			
PARAMETER		RESULT	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		ND .	37	ug/kg		
Aroclor 1260		ND	37	ug/kg		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xyl		89	(10 - 196)			
Decachlorobipheny	1	88	(10 - 199)			

NOTE(S):

Client Sample ID: SB-392-0405

GC Semivolatiles

		Work Order #:		Matrix SO
Date Sampled:	10/16/07 08:59	Date Received:	10/17/07	
Prep Date:		Analysis Date:		
Prep Batch #:	7295394	•		
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.09 a	Final Wgt/Vol: 10 mL
% Moisture:	15	Method:	,	
			REPORTING	
PARAMETER	<u></u>	RESULT	LIMIT	UNITS
Aroclor 1016		ND	39	ug/kg
Aroclor 1221		ND	39	ug/kg
Aroclor 1232		ND	39	na/ka

39

39

39

39

ug/kg

ug/kg

ug/kg

ug/kg

	PERCENT	RECOVERY
SURROGATE	RECOVERY	LIMITS
Tetrachloro-m-xylene	91	(10 - 196)
Decachlorobiphenyl	79	(10 - 199)

ND

ND

ND

ND

NOTE(S):

Aroclor 1242

Aroclor 1248

Aroclor 1254

Aroclor 1260

Client Sample ID: SB-392-0708

GC Semivolatiles

Date Sample #: A7J170253-004 Date Sampled: 10/16/07 09:0 Prep Date: 10/23/07		10/17/07	Matrix SO
Prep Batch #: 7295394 Dilution Factor: 1 % Moisture: 16	<pre>Initial Wgt/Vol: Method:</pre>		Final Wgt/Vol: 10 mL
DIDINGGE		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	39	ug/kg
Aroclor 1221	ND	39	ug/kg
Aroclor 1232	ND	39	ug/kg
Aroclor 1242	ND	39	ug/kg
Aroclor 1248	ND	39	ug/kg
Aroclor 1254	ND	39	ug/kg
Aroclor 1260	ND	39	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	96	(10 - 196)	
Decachlorobiphenyl	92	(10 - 199)	

 $\underline{\text{NOTE}(S)}$:

Client Sample ID: SB-393-0102

GC Semivolatiles

/Vol: 30.04 g Final Wgt/\(\text{Vol:}\) SW846 8082 REPORTING	Vol: 10 mL
REPORTING	
LIMIT UNITS ·	
35 ug/kg	
35 ug/kg	
-31 -31	
RECOVERY	
LIMITS	
(10 - 199)	
	35 ug/kg 35 ug/kg 35 ug/kg 35 ug/kg 35 ug/kg 35 ug/kg RECOVERY LIMITS (10 - 196)

NOTE(S):

J Estimated result. Result is less than RL.

Client Sample ID: SB-393-0203

GC Semivolatiles

Lot-Sample #:	A7J170253-006	Work Order #:	J861.41AC	Matrix SO
Date Sampled:	10/16/07 09:26	Date Received:	10/17/07	Mac11x 50
Prep Date:	10/23/07	Analysis Date:		
Prep Batch #:			10/23/01	
Dilution Factor:		Initial Wgt/Vol:	30 08 a	Final Wgt/Vol: 10 mL
% Moisture:	7.4	Method		rinai wgt/voi: 10 mL
				•
			REPORTING	
PARAMETER		RESULT	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	
Aroclor 1254		ND	0.5	ug/kg
Aroclor 1260		ND .		ug/kg
		IND	36	ug/kg
CUDDOCAME		PERCENT	RECOVERÝ	

LIMITS

(10 - 196)

(10 - 199)

RECOVERY

90

82

NOTE (S):

SURROGATE

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-393-0405

GC Semivolatiles

Prep Batch #:	10/16/07 09:28 10/23/07 7295394	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix SO
Dilution Factor: % Moisture:		<pre>Initial Wgt/Vol:</pre>		Final Wgt/Vol: 10 mL
• Moisture:	6.5	Method:	SW846 8082	
PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242	•	RESULT ND ND ND ND	REPORTING LIMIT 35 35	UNITS ug/kg ug/kg ug/kg
Aroclor 1248		ND	35 35	ug/kg ug/kg
Aroclor 1254 Aroclor 1260		ND	35	ug/kg
WIOCIOI 1500	•	ND	35	ug/kg
SURROGATE Tetrachloro-m-xyl	ene	DECOMP	RECOVERY LIMITS (10 - 196)	
Decachlorobinhon	1	1 2 7	•	

(10 - 199)

137

NOTE(S):

Decachlorobiphenyl

Client Sample ID: SB-393-0708

GC Semivolatiles

Lot-Sample #: A7J170253-008 Date Sampled: 10/16/07 09:3		J86L71AC 10/17/07	Matrix SO
Prep Date: 10/23/07	Analysis Date:		
Prep Batch #: 7295394	•	_0, _0, 0,	
Dilution Factor: 1	Initial Wgt/Vol:	30 06 a	Final Wat /W. 1
% Moisture: 13	Method:		Final Wgt/Vol: 10 mL
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38	ug/kg
Aroclor 1232	ND	38	ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	3. 3
Aroclor 1260	ND ·	38	ug/kg ug/ka

PERCENT

98

93

RECOVERY

RECOVERY

(10 - 196)

(10 - 199)

LIMITS

ug/kg

NOTE(S):

SURROGATE

Results and reporting limits have been adjusted for dry weight.

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-394-0102

GC Semivolatiles

Lot-Sample #: A7J170253-009		J86L81AC	Matrix SO
Date Sampled: 10/16/07 09:3	Date Received:	10/17/07	IMCIIX
Prep Date: 10/23/07	Analysis Date:		
Prep Batch #: 7295394	1 ==	10/23/01	
Dilution Factor: 1	Initial Wgt/Vol:	30 14 a	Final Wat /Mal . 10 *
% Moisture: 10	Method:		Final Wgt/Vol: 10 mL
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	37	ug/kg
Aroclor 1221	ND	37	ug/kg
Aroclor 1232	ND	37	ug/kg
Aroclar 1242		J ,	ug/kg

37

37

37

37

ug/kg

ug/kg

ug/kg

ug/kg

	PERCENT	RECOVERY
SURROGATE	RECOVERY	LIMITS
Tetrachloro-m-xylene	97	$\frac{10 - 196}{}$
Decachlorobiphenyl	98	(10 - 199)

ND

ND

ND

ND

NOTE (S):

Aroclor 1242

Aroclor 1248

Aroclor 1254

Aroclor 1260

Client Sample ID: SB-394-0203

GC Semivolatiles

Lot-Sample #: A7J170253-1 Date Sampled: 10/16/07 01 Prep Date: 10/23/07 Prep Batch #: 7295394	9:39 Date Received: Analysis Date:	10/17/07 10/29/07	Matrix SO
Dilution Factor: 1 % Moisture: 9.4	Initial Wgt/Vol:		Final Wgt/Vol: 10 mL
o morbitale 9.4	Method:	SW846 8082	
D10110000		REPORTING	
PARAMETER	RESULT	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	2 2
Aroclor 1254	ND ·	36	ug/kg
Aroclor 1260	ND	36	ug/kg
	ND	30	ug/kg
CHDDOGATT	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	•
Tetrachloro-m-xylene	109	(10 - 196)	
Decachlorobiphenyl	96	(10 - 199)	

NOTE(S):

Client Sample ID: SB-394-0405

GC Semivolatiles

Prep Date: Prep Batch #:	10/16/07 09:41 10/23/07 7295394	Work Order #: Date Received: Analysis Date:	10/17/07	Matri	x:	SO
Dilution Factor:		<pre>Initial Wgt/Vol:</pre>		Final	Wgt/Vol:	10 mL
% Moisture:	13	Method:	SW846 8082		•	
		•	REPORTING			
PARAMETER		RESULT	LIMIT	UNITS		
Aroclor 1016		ND	38	ug/kg	-	
Aroclor 1221		ND	38	ug/kg		
Aroclor 1232		ND	38	ug/kg		
Aroclor 1242		ND	38	ug/kg		
Aroclor 1248		ND	38	ug/kg		
Aroclor 1254		ND	38	ug/kg		
Aroclor 1260		ND	38	ug/kg		
				ag/kg		
07777		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xyl		93	(10 - 196)			
Decachlorobipheny	1	97	(10 - 199)			
			•			

NOTE(S):

Client Sample ID: SB-394-0708

GC Semivolatiles

Lot-Sample #: A7J170253-012 Date Sampled: 10/16/07 09:43 Prep Date: 10/23/07 Prep Batch #: 7295394	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix SO
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.1 g	Final Wgt/Vol: 10 mL
% Moisture: 14	Method:		mge, rottil to min
Aroclor 1248	RESULT ND ND ND ND ND ND ND	REPORTING LIMIT 38 38 38 38 38	UNITS ug/kg ug/kg ug/kg ug/kg ug/kg
Amonda - 1000	ND	38 38	ug/kg ug/kg
SURROGATE Tetrachloro-m-xylene	PERCENT RECOVERY 81 87	RECOVERY LIMITS (10 - 196) (10 - 199)	

NOTE(S):

Client Sample ID: SB-395-0102

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 09:48 10/23/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matri	x:	SO
Dilution Factor: % Moisture:		<pre>Initial Wgt/Vol:</pre>		Final	Wgt/Vol:	10 mL
· ADECEMENT	± 1	Method:				
PARAMETER			REPORTING			
		RESULT	LIMIT	UNITS	•	
Aroclor 1016		ND	40	ug/kg	_	
Aroclor 1221		ND	40	uq/kq		
Aroclor 1232		ND	40	ug/kg		
Aroclor 1242		ND	40	ug/kg ug/kg		
Aroclor 1248		ND	40	ug/kg		
Aroclor 1254		ND	40	J J		
Aroclor 1260		ND		ug/kg		
	·		40	ug/kg		
		PERCENT	RECOVERY			

RECOVERY

89

85

(10 - 196)

(10 - 199)

 $\underline{\text{LIMITS}}$

NOTE(S):

SURROGATE

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-395-0203

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 09:50 10/23/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matri	*: SO
Dilution Factor:	-	<pre>Initial Wgt/Vol:</pre>	30.03 q	Final	Wgt/Vol: 10 mL
% Moisture:	4.1	Method:			nge, tori. 10 mil
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	
Aroclor 1016		ND	34	ug/kg	-
Aroclor 1221		ND	34	ug/kg	
Aroclor 1232		ND	34	ug/kg	
Aroclor 1242		ND	34	ug/kg	
Aroclor 1248	,	ND	34	ug/kg	
Aroclor 1254		ND	34	ug/kg	
Aroclor 1260		ND	34	ug/kg	
		PERCENT	RECOVERY		
SURROGATE		DECC	LIMITS		
Tetrachloro-m-xyl		87	(10 - 196)		
Decachlorobipheny	1	81	(10 - 199)		
NOTE(S):		•			

Client Sample ID: SB-395-0405

GC Semivolatiles

Lot-Sample #: A7J170253-015 Date Sampled: 10/16/07 09:52 Prep Date: 10/23/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SO
Prep Batch #: 7295394 Dilution Factor: 1 % Moisture: 13	<pre>Initial Wgt/Vol: Method:</pre>		Final Wgt/Vol: 10 mL
PARAMETER	RESULT	REPORTING	INITEG
Aroclor 1016	ND ND	LIMIT 38	UNITS
Aroclor 1221	ND	38	ug/kg
Aroclor 1232	ND	38	ug/kg ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	ND	38	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	90	(10 - 196)	
Decachlorobiphenyl	64	(10 - 199)	
NOME (C)			

NOTE(S):

Client Sample ID: SB-395-0708

GC Semivolatiles

Lot-Sample #: A7 Date Sampled: 10 Prep Date: 10 Prep Batch #: 72	/16/07 09:54 Date Reco /23/07 Analysis	er #: J86MG1AC eived: 10/17/07 Date: 10/29/07	Matri	x	so
Dilution Factor: 1	Initial V	Vgt/Vol: 30.09 q	Final	Mat /Nol	10
% Moisture: 13		SW846 8082	rinai	Wgt/Vol:	IO WT
		REPORTING	•		
PARAMETER	RESULT	LIMIT	UNITS		
Aroclor 1016	ND	38	ug/kg	_	
Aroclor 1221	ND	38	ug/kg		
Aroclor 1232	ND	38	ug/kg		
Aroclor 1242	ND ·	38	ug/kg		
Aroclor 1248	ND	38	ug/kg		
Aroclor 1254	ND	38	, ,		
Aroclor 1260	ND	38	ug/kg		
	IND .	30	ug/kg		
	PERCENT	RECOVERY			
SURROGATE	RECOVERY	TIMITS			

LIMITS

(10 - 196)

(10 - 199)

RECOVERY

90

70

$\underline{NOTE}(S)$:

Results and reporting limits have been adjusted for dry weight.

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-396-0102

GC Semivolatiles

Lot-Sample #: A Date Sampled: 1 Prep Date: 1 Prep Batch #: 7 Dilution Factor: 1 % Moisture: 1	0/16/07 10:05 0/23/07 295394	Work Order #: Date Received: Analysis Date: Initial Wgt/Vol: Method:	10/17/07 10/31/07 30 g	Final	x: Wgt/Vol:	
PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260		RESULT ND ND ND ND ND ND ND ND ND ND ND	REPORTING LIMIT 39 39 39 39 39 39 39	UNITS ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg		
SURROGATE Tetrachloro-m-xylen Decachlorobiphenyl	e g	RECOVERY	RECOVERY <u>LIMITS</u> (10 - 196) (10 - 199)			

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

Client Sample ID: SB-396-0203

GC Semivolatiles

Lot-Sample #: A7J170253-018 Date Sampled: 10/16/07 10:07 Prep Date: 10/23/07 Prep Batch #: 7295394	Analysis Date:	10/17/07 10/31/07	Matrix SO
Dilution Factor: 1 % Moisture: 14	Initial Wgt/Vol:		Final Wgt/Vol: 10 mL
	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38	ug/kg
Aroclor 1232	ND	38	ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	ND	38	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	89	$\frac{2111115}{(10 - 196)}$	
Decachlorobiphenyl	93	(10 - 199)	

NOTE (S):

Client Sample ID: SB-396-0405

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 10:09 10/23/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matri	×: so	
Dilution Factor:	-	<pre>Initial Wgt/Vol:</pre>	30.07 g	Final	Wgt/Vol: 10 ml	L
% Moisture:	15	Method:	SW846 8082			
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS		
Aroclor 1016		ND	39	ug/kg	-	
Aroclor 1221		ND	39	ug/kg		
Aroclor 1232		ND	39	ug/kg		
Aroclor 1242		ND	39	ug/kg		
Aroclor 1248		ND	39	ug/kg		
Aroclor 1254		ND	39	ug/kg		
Aroclor 1260		ND	39	ug/kg		
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xyl		83.	(10 - 196)			
Decachlorobipheny	1	96	(10 - 199)			

 $\underline{NOTE}(S)$:

Client Sample ID: SB-396-0708

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #: Dilution Factor: % Moisture:	10/16/07 10:11 10/23/07 7295394 1	Work Order #: Date Received: Analysis Date: Initial Wgt/Vol: Method	10/17/07 10/29/07 30.15 g	Matrix: SO Final Wgt/Vol.: 10 mL
PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260		17 m	REPORTING LIMIT 39 39 39 39 39 39 39	UNITS ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg
SURROGATE Tetrachloro-m-xyle	ene	RECOVERY 130	RECOVERY LIMITS (10 - 196) (10 - 199)	

NOTE(S):

APPENDIX C SUPPORT DOCUMENTATION

CASE NARRATIVE

7J17253

The following report contains the analytical results for twenty solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00885. The samples were received October 17, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7J170253.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on November 02, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 3.6, 3.8, and 4.9°C.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for SB-392-0102 had RPD's and recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The matrix spike/matrix spike duplicate(s) for batch(es) 7299474 had RPD's outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

POLYCHLORINATED BIPHENYLS-8082

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for SB-392-0102 had RPD's outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica North Canton (formerly STL North Canton) 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, which is described in detail in QA Policy, QA-003. 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. TestAmerica North Canton (formerly STL North Canton) 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.

For SW846/RCRA methods, 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.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

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. Multi peak responders may not be included in the target spike list due to co-elution. 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. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) 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). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still 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 under the following circumstances:

• Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride,	Phthalate Esters	Copper, Iron, Zinc,	Copper, Iron, Zinc, Lead
Acetone, 2-Butanone		Lead, Calcium,	
	1	Magnesium, Potassium,	
	· · · · · · · · · · · · · · · · · · ·	Sodium, Barium,	·
	<u> </u>	Chromium, Manganese	

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated 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. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

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. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is 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.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion 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 and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica North Canton (formerly STL North Canton) Certifications and Approvals:

California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), OhioVAP (#CL0024), West Virginia (#210), Wisconsin (#999518190),NAVY, ARMY, USDA Soil Permit,

N:\QAQC\Customer Service\Narrative - Combined RCRA CWA 061807.doc

Chain of Custody Record



STL-4124 (0901) Client		···		Jey	em neut l	aboratories, Inc.	
Address Tehra Tech		Project Ma	nager Le Ma Number (Area Cod	LIN		Date VO ///	Chain of Custody Number
City State Z	t200	1 001	- 7 ZX -	de)/Fax Number		10/16/07 Lab Number	Chain of Custody Number 322967
Project Name and Location (State)	D 0874	Site Contac	Itadley	Lab Contact	· · · · · ·	Analysis (Attach list if	Page
Contract/Purchase Order/Quote No.	20014	Carrier/Way	bill Number	Ken Ives		ore space is needed)	
Contract/Purchase Order/Quote No.			MA		2882		
112 TC 86 885 Sample I.D. No. and Description			Matrix	Containers & Preservatives	87.7		Special Instructions/ Conditions of Receipt
to the line is not each sample may be combined on one line.	Date	Time	Aqueous Sed.	Unpres. HZSO4 HNO3 HCI NaOH ZnAC/ NaOH	100		
5B-391-0102	10/16 0	885		7 I I X X X X X X X X X X X X X X X X X			
-0203	1 0	347			1/2		* henro (a) pyven
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391 -0708 392 -0102	08	752			╫┾╂┼╌┼╾		
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0405	08						
392 0708	08:						
393-0102	09						
0203	09		+				
1 0405	09		+				1
3-393-0708 sible Hazard Identification	10/16 09		2		V		
Non-Hazard D Flamman D -		Sam	pple Disposal		88		Phenzo (G) pyrent
Around Time Required		known	Return To Client	Disposal By Lab A	Archive For	(A fee may be assess Months longer than 1 month)	sed if samples are retained
24 Hours 7 Days 14 Days	21 Days 1	Other	alry				
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	Da	ate	Time	3. Received By	> .		i i i i i i i i i i i i i i i i i i i
ments			1	1		* .	Dale Time
RIBUTION: WHITE - Returned to Client with Report: CAI	VARY CO			."			to design the second

Chain of Custody Record



Severn Trent Laboratories, Inc.

STL-4124 (0901) Client	······································	Project	Mana	aer											·	Ta.:-		,							
Address Tetra Tech		M	ik.	e /	Nav	h)									Date	10/	16/	クレ		Chain d	of Custoc 322	Y Numb	er R	
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Germantonn Mi Z	^{Code} <i>OS</i> 74	Site Co	ntact	14.	He.		ab Co ISe						•			lysis (rage			n	
Project Name and Location (State)		Carrier/	Wayb	ill Num	bel	l_ <u>.</u>		∨ 4		S _		-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\	4	89											
Contract/Purchase Order/Quote No. 117 EC 60 885			•	Mat	rix			Con	taine serva			ا ا	3	75								Specia Condit	al Inst tions o	ructions of Receip	t
Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous Sed.	Soil	/Joorge	Unpres. H2SO4	-,		I	ZnAc/ NaOH	- N	2877	808											
5B-394-0102	10/16	2937		<u> </u>	X	-	n		1		NS	1		-		+-	++	_	 	+	1	<u> </u>	/!		
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Possible Hazard Identification Non-Hazard Flammable Skin Irritant	Poison B	Unknown	1	nple Dis Return	•	nat.	De					 -				<u>. </u>		fee m	ay be a	ssesse		Deutc Imples ar		ed Y	Z ¹
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2-Aelinquished By		Date	·/	Tin			2. R	eceiv	ed B	Y	-	1	<u> </u>	<u> </u>	<u>~</u> _	-	···				Date	6-67	Time		
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DISTRIBUTION: WHITE - Returned to Client with Report: CA	ANARY - Stays with	the Sample	: PIN	IK - Fie	ld Cop	y			<u> </u>				·												St
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SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP ANI
PCS	%	SB-393-0203	A7J170253006	NM	10/16/2007	10/23/2007	10/24/2007	7	<u> </u>	8
PCS	%	SB-396-0708	A7J170253020	ŅM	10/16/2007	10/23/2007	10/24/2007	7	1	8
PCS	%	SB-392-0102	A7J170253001	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
PCS	%	SB-392-0203	A7J170253002	NM	10/16/2007	10/23/2007	10/24/2007	. 7	1	8
PCS	%	SB-392-0405	A7J170253003	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
PCS	%	SB-393-0102	A7J170253005	NM	10/16/2007	10/23/2007	10/24/2007	. 7	1	8
PCS	%	SB-393-0405	A7J170253007	NM	10/16/2007	10/23/2007	10/24/2007	7	1 :	8
PCS	%	SB-393-0708	A7J170253008	NM ·	10/16/2007	10/23/2007	10/24/2007	7	1	8
PCS	%	SB-394-0102	A7J170253009	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
PCS	%	SB-394-0203	A7J170253010	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
PCS	%	SB-396-0203	A7J170253018	NM	10/16/2007	10/23/2007	10/24/2007	7	. 1	8
PCS	%	SB-392-0708	A7J170253004	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
PCS	%	SB-396-0405	A7J170253019	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
PCS	. %	SB-394-0405	A7J170253011	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
PCS	%	SB-396-0102	A7J170253017	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
Mondaye	Novembe	KI2 2007							P	age 1 of 6

Page 1 of 6

AMPLE -395-0708 -395-0405 -395-0203 -395-0102 -394-0708	A7J170253016 A7J170253015 A7J170253014 A7J170253013	QC TYPE NM NM NM	SAMP DATE 10/16/2007 10/16/2007 10/16/2007	10/23/2007 10/23/2007	ANAL DATE 10/24/2007 10/24/2007	SMP_EXTR 7 7	EXTR ANL 1	SMP_ANL ANTER SCHLEGER ANTER SCHLEGER 8
-395-0405 -395-0203 -395-0102 -394-0708	A7J170253015 A7J170253014	NM NM	10/16/2007	10/23/2007		7	1	8
395-0203 395-0102 394-0708	A7J170253014	NM			10/24/2007	7	1	8
395-0102 394-0708			10/16/2007	10/00/0007				
394-0708	A7J170253013	N.I.A.		10/23/2007	10/24/2007	7	1	8
		INIVI	10/16/2007	10/23/2007	10/24/2007	7	1	8
	A7J170253012	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
394-0708RE	A7J170253012	NM	10/16/2007	10/27/2007	10/29/2007	11	2	13
394-0405	A7J170253011	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
396-0708	A7J170253020	NM	10/16/2007	10/22/2007	10/25/2007	. 6	3	9
396-0405	A7J170253019	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
396-0203	A7J170253018	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
396-0102	A7J170253017	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
395-0708	A7J170253016	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
895-0405	A7J170253015	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
95-0203RE	A7J170253014	NM	10/16/2007	10/27/2007	10/29/2007	11	2	13
92-0102	A7J170253001	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
94-0203	A7J170253010	NM ·	10/16/2007	10/22/2007	10/25/2007	6	3	. 9
94-0102	\7J170253009	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
93-0708	\7J170253008	NM	10/16/2007	10/22/2007	10/05/0007	0		9
9999	96-0102 95-0708 95-0405 95-0203RE 92-0102 4-0203	P6-0102 A7J170253017 P5-0708 A7J170253016 P5-0405 A7J170253015 P5-0203RE A7J170253014 P2-0102 A7J170253001 P4-0203 A7J170253009 P4-0102 A7J170253009	96-0102 A7J170253017 NM 95-0708 A7J170253016 NM 95-0405 A7J170253015 NM 95-0203RE A7J170253014 NM 92-0102 A7J170253001 NM 4-0203 A7J170253010 NM 4-0102 A7J170253009 NM	96-0102 A7J170253017 NM 10/16/2007 95-0708 A7J170253016 NM 10/16/2007 95-0405 A7J170253015 NM 10/16/2007 95-0203RE A7J170253014 NM 10/16/2007 92-0102 A7J170253001 NM 10/16/2007 94-0203 A7J170253010 NM 10/16/2007 95-0203RE A7J170253000 NM 10/16/2007	26-0102 A7J170253017 NM 10/16/2007 10/22/2007 25-0708 A7J170253016 NM 10/16/2007 10/22/2007 25-0405 A7J170253015 NM 10/16/2007 10/22/2007 25-0203RE A7J170253014 NM 10/16/2007 10/27/2007 22-0102 A7J170253001 NM 10/16/2007 10/22/2007 24-0203 A7J170253010 NM 10/16/2007 10/22/2007 25-0203RE A7J170253001 NM 10/16/2007 10/22/2007	26-0102 A7J170253017 NM 10/16/2007 10/22/2007 10/25/2007 25-0708 A7J170253016 NM 10/16/2007 10/22/2007 10/25/2007 25-0405 A7J170253015 NM 10/16/2007 10/22/2007 10/25/2007 25-0203RE A7J170253014 NM 10/16/2007 10/27/2007 10/29/2007 22-0102 A7J170253010 NM 10/16/2007 10/22/2007 10/25/2007 4-0203 A7J170253010 NM 10/16/2007 10/22/2007 10/25/2007 4-0102 A7J170253009 NM 10/16/2007 10/22/2007 10/25/2007 3-0708 A7J170253009 NM 10/16/2007 10/22/2007 10/25/2007	76-0102 A7J170253017 NM 10/16/2007 10/22/2007 10/25/2007 6 75-0708 A7J170253016 NM 10/16/2007 10/22/2007 10/25/2007 6 75-0405 A7J170253015 NM 10/16/2007 10/22/2007 10/25/2007 6 75-0203RE A7J170253014 NM 10/16/2007 10/27/2007 10/29/2007 11 72-0102 A7J170253001 NM 10/16/2007 10/22/2007 10/25/2007 6 74-0203 A7J170253010 NM 10/16/2007 10/22/2007 10/25/2007 6 75-0203RE A7J170253001 NM 10/16/2007 10/22/2007 10/25/2007 6 75-0203RE A7J170253001 NM 10/16/2007 10/22/2007 10/25/2007 6 75-0203RE A7J170253000 NM 10/16/2007 10/22/2007 10/25/2007 6	96-0102 A7J170253017 NM 10/16/2007 10/22/2007 10/25/2007 6 3 95-0708 A7J170253016 NM 10/16/2007 10/22/2007 10/25/2007 6 3 95-0405 A7J170253015 NM 10/16/2007 10/22/2007 10/25/2007 6 3 95-0203RE A7J170253014 NM 10/16/2007 10/27/2007 10/29/2007 11 2 92-0102 A7J170253001 NM 10/16/2007 10/22/2007 10/25/2007 6 3 4-0203 A7J170253010 NM 10/16/2007 10/22/2007 10/25/2007 6 3 4-0102 A7J170253009 NM 10/16/2007 10/22/2007 10/25/2007 6 3

SORT	UNITS	NSAMPLE	LAB ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	SB-393-0405	A7J170253007	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	%	SB-393-0203	A7J170253006	NM	10/16/2007	10/22/2007	10/25/2007	· 6	3	9
OS	%	SB-393-0102	A7J170253005	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
os	%	SB-392-0708RE	A7J170253004	NM	10/16/2007	10/27/2007	10/29/2007	• 11	2	13
os	%	SB-392-0203	A7J170253002	NM ·	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	%	SB-395-0102	A7J170253013	NM	10/16/2007	10/22/2007	10/25/2007	. 6	3	9
OS	%	SB-392-0405	A7J170253003	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	UG/KG	SB-396-0203	A7J170253018	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	UG/KG	SB-394-0405	A7J170253011	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
os	UG/KG	SB-394-0708RE	A7J170253012	ŃM	10/16/2007	10/27/2007	10/29/2007	11	2	13
OS .	UG/KG	SB-395-0102	A7J170253013	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
os	UG/KG	SB-395-0203RE	A7J170253014	NM	10/16/2007	10/27/2007	10/29/2007	11	2	13
os	UG/KG	SB-395-0405	A7J170253015	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
os	UG/KG	SB-396-0102	A7J170253017	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	UG/KG	SB-393-0203	A7J170253006	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	UG/KG	SB-396-0405	A7J170253019	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
os	UG/KG	SB-395-0708	A7J170253016	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
os	UG/KG	SB-394-0203	A7J170253010	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
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OS	SALE MANUFACTURE DE LA CONTROL		LAB ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
03	UG/KG	SB-394-0102	A7J170253009	NM -	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	UG/KG	SB-393-0405	A7J170253007	NM	10/16/2007	10/22/2007	10/25/2007	6	3	. 9
os	UG/KG	SB-393-0102	A7J170253005	NM ·	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	UG/KG	SB-392-0708RE	A7J170253004	NM ·	10/16/2007	10/27/2007	10/29/2007	11	2	13
OS	UG/KG	SB-392-0405	A7J170253003	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	UG/KG	SB-392-0203	A7J170253002	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	UG/KG	SB-392-0102	A7J170253001	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
os	UG/KG	SB-396-0708	A7J170253020	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
os	UG/KG	SB-393-0708	A7J170253008	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
PCB .	%	SB-394-0405	A7J170253011	NM ·	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-395-0708	A7J170253016	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-394-0102	A7J170253009	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-392-0102	A7J170253001	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-396-0708	A7J170253020	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-396-0405	A7J170253019	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-396-0102	A7J170253017	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
PCB	%	SB-395-0405	A7J170253015	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
PCB	%	SB-395-0203	A7J170253014	· NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
Monday 1		12.2007		SECURIOS (Production de la company				•	U	10

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP ANL
PCB	%	SB-395-0102	A7J170253013	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
РСВ	%	SB-392-0405	A7J170253003	NM	10/16/2007	10/23/2007	10/29/2007	7	. 6	13
PCB	%	SB-396-0203	A7J170253018	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
PCB	%	SB-392-0203	A7J170253002	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
СВ	%	SB-394-0708	A7J170253012	NM	10/16/2007	10/23/2007	10/29/2007	, 7	6 .	13
PCB	%	SB-392-0708	A7J170253004	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-393-0102	A7J170253005	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
CB	%	SB-393-0203	A7J170253006	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
CB	%	SB-393-0405	A7J170253007	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
СВ	%	SB-393-0708	A7J170253008	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
СВ	%	SB-394-0203	A7J170253010	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
CB.	UG/KG	SB-394-0708	A7J170253012	NM .	10/16/2007	10/23/2007	10/29/2007	7	6	13
CB .	UG/KG	SB-392-0102	A7J170253001	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
СВ	UG/KG	SB-396-0405	A7J170253019	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
CB	UG/KG	SB-396-0203	A7J170253018	NM ·	10/16/2007	10/23/2007	10/31/2007	7	8	15
СВ	UG/KG	SB-396-0102	A7J170253017	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
СВ	UG/KG	SB-395-0708	A7J170253016	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
CB	UG/KG	SB-395-0405	A7J170253015	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
onday, I	Vovembe	12,2007							TO SUPERIOR STATE OF THE PERSON OF THE PERSO	ige 5 of 6

SORT	UNITS	NSAMPLE	LAB ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CMD EVED	EVED AND	
PCB	UG/KG	SB-395-0203	A7J170253014	NM	10/16/2007	10/23/2007	10/31/2007	SMP_EXTR	EXTR_ANL 8	SMP_ANL
PCB	UG/KG	SB-395-0102	A7J170253013	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15 15
PCB	UG/KG	SB-396-0708	A7J170253020	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-394-0405	A7J170253011	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-394-0203	A7J170253010	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-394-0102	A7J170253009	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-393-0708	A7J170253008	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-393-0405	A7J170253007	NM ·	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-393-0203	A7J170253006	NM.	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-393-0102	A7J170253005	NM	10/16/2007	10/23/2007	10/29/2007	, 7	6	
PCB	UG/KG	SB-392-0708	A7J170253004	NM	10/16/2007	10/23/2007	10/29/2007	7		13
PCB	UG/KG	SB-392-0203	A7J170253002	NM	10/16/2007				6	13
PCB	UG/KG	SB-392-0405				10/23/2007	10/29/2007	7	6	13
	Jama	- OD 002-0400	A7J170253003	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13

CALCULATION WORKSHEET

Page 1 of 1

CLIENT:	SDG No.					
LOCKHEED MIDDLE RIVER	7J17253					
SUBJECT:						
EXAMPLE CALCULATION - BENZO(A)PYRENE - SOIL						
BY:	DATE:					
T. JACKMAN	11/28/07					

Sample ID = SB-392-0708 Benzo(a)pyrene Concentration = 450 ug/kg

EQUATION:

$$C_{s} = \frac{A_{x} \times ls \times Vt \times Df}{Als \times RRF \times V_{i} \times W_{s} \times D}$$

Where:

=	analyte concentration in soil		ug/kg
=	analyte response	=	2822007
=	amount of internal standard	=	2 ng
=	volume of final extract	=	2000 uL
=	dilution factor	=	1
=	response of internal standard	=	1666602
=	response factor of compound	=	1.06554
=	volume injected	=	0.5 uL
=	sample weight	==	30.09 g
=	percent solids	=	0.946
	= = = = = = = = = = = = = = = = = = = =	= analyte response = amount of internal standard = volume of final extract = dilution factor = response of internal standard = response factor of compound = volume injected = sample weight	= analyte response = amount of internal standard = volume of final extract = dilution factor = response of internal standard = response factor of compound = volume injected = sample weight =

Therefore: benzo(a)pyrene concentration in soil =

2822007 x 2ng x 2000uL x 1 1666602 x 1.06554 x 0.5uL x 30.09g x 0.946

C_s = 447 ug/kg

Client Sample ID: SB-393-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170253-005	Work Order #: J86L21AD	Matrix SO
Date Sampled: 10/16/07 09:24	Date Received: 10/17/07	
Prep Date: 10/22/07	Analysis Date: 10/25/07	
Prep Batch #: 7295069		
Prep Batch #: 7295069 Dilution Factor: 1	Initial Wgt/Vol: 30.09	Final Wgt/Vol. 2 mL
	Method: SW846 8270C	
	REPORTING	

<u> BES</u> ULT	LIMIT	UNITS
450	350	ug/kg
PERCENT	RECOVERY	
RECOVERY	LIMITS	
57	(24 - 112)	
63	(34 - 110)	
75	(41 - 119)	
64	(28 - 110)	
57	(26 - 110)	
61	(10 - 118)	
	PERCENT RECOVERY 57 63 75 64 57	## April 19 ##

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Data File: \\cansvr11\\dd\chem\MSS\a4ag2.i\\71025A.b\\J86L21AD.D Page 1

Report Date: 26-Oct-2007 08:08

STL North Canton

Semivolatile REPORT SW-846 Method 8270

Data file: \\cansvr11\\dd\chem\MSS\a4aq2.i\\71025A.b\\J86L21AD.D

Client Smp ID: SB-393-0102 Lab Smp Id: J86L21AD

Inj Date : 25-OCT-2007 16:48

Operator : 046900 Ins Smp Info : J86L21AD,71025A.b,8270P,PAH.SUB Inst ID: a4ag2.i

Misc Info: Comment

: \\cansvr11\dd\chem\MSS\a4ag2.i\71025A.b\8270p.m Method Meth Date: 26-Oct-2007 08:06 hulat Quant Type: ISTD

Cal Date : 24-OCT-2007 12:23 Cal File: 2SHHH1024.D

Als bottle: 16

Dil Factor: 1.00000

Compound Sublist: PAH.SUB Integrator: HP RTE

Target Version: 4.14

Processing Host: CANPMSSV04

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws) * CpndVariable

Name	Value,	Description
DF Uf		Dilution Factor ng unit correction factor
Vt	2000.000	Volume of final extract (uL) (1000 low, 2
Vi	0.50000/	Volume injected (uL)
Ws Cpnd Variable	30.090	Weight of sample extracted (g) Local Compound Variable
chim variable		nocar compound variable

						CONCENTRA	ATIONS
		QUANT SIG				ON-COLUMN	FINAL
Compo	unds	MASS	RT	EXP RT REL RT	RESPONSE	(NG)	(ug/kg)
====	######################################	====	====	=======================================	= =======	======	
* 1	1,4-Dichlorobenzene-d4	152	3.625	3.624 (1.000)	384923	2.00000	(Q)
* 2	Naphthalene-d8	136	4.519	4.518 (1.000)	1833380	2.00000	
* 3	Acenaphthene-d10	164	5.789	5.789 (1.000)	969704	2.00000	
* 4	Phenanthrene-dl0	188	6.883	6.877 (1.000)	1849095	2.00000	
* 5	Chrysene-d12	240	8.865	8.853 (1.000)	1717122	2.00000	
* 6	Perylene-d12	264	10.377	10.347 (1.000)	1666602) 2.00000	
. 23	bis(2-Chloroethyl)ether	93	Сол	pound Not Detect	bd		
35	Nitrobenzene	77	Com	pound Not Detect	ed.		
51	Naphthalene	128	4.536	4.536 (1.004)	104001	0.13356	17.755
62	2-Methylnaphthalene	142	5.030	5.024 (1.113)	33558	0.06737	8.9555
63	1-Methylnaphthalene	142	5.101	5.101 (1.129)	29820	0.05616	7.4654
70	2-Chloronaphthalene	162	Com	pound Not Detect	ed.		
79	Acenaphthylene	152	5.695	5.689 (0.984)	59465	0.07352	9.7729
82	Acenaphthene	153	5.813	5.812 (1.004)	280064	0.51500	68.462(Q)
86	Dibenzofuran	168	5.936	5.936 (1.025)	136687	0.19358	25.734
94	Fluorene	166	6.189	6.189 (1.069)	243226	0.39890	53.027
107	Hexachlorobenzene	284	Com	pound Not Detect	ed.		
115	Phenanthrene	178	6.901	6.895 (1.003)	4479430	4.79991	638.07

Data File: $\c \mbox{MSS}\a4ag2.i\71025A.b\J86L21AD.D$ Page 2 Report Date: 26-Oct-2007 08:08

							CONCENTRA	TIONS
		QUANT SIG					ON-COLUMN	FINAL
Compo	punds	MASS	RT	EXP RT	REL RT	RESPONSE	(NG)	(ug/kg)
		====		2222222		=======	======	======
125	Pyrene	202	7.954	7.948	(0.897)	6902650	7.13375	948.32
136	Benzo(a)Anthracene	228	8.859	8.842	(0.999)	3657873	3.62680	482.13
137	Chrysene	228	8.889	8.877	(1.003)	3254485	3.59809	478.31
141	Benzo(b) fluoranthene	252	9.906	9.877	(0.955)	3994980	4.07382	541.55(M)
142	Benzo(k)fluoranthene	252	9.930	9.912	(0.957)	1688747	1.67428	222.57(QM)
146	Benzo(a)pyrene	252	10.306	10.283	(0.993)	2822007	3.17823	422.50
149	Indeno(1,2,3-cd)pyrene	276	12.036	12.000	(1.160)	1692826	1.75727	233.60
150	Dibenz(a,h)anthracene	278	12.042	12.006	(1.160)	421835	0.50866	67.619
151	Benzo(g,h,i)perylene	276	12.553	12.506	(1.210)	1574752	1.90697	253.50
\$ 154	Nitrobenzene-d5	82	4.001	4.001	(0.885)	789239	2.83337	376.65
\$ 155	2-Fluorobiphenyl	172	5.277	5.277	(0.912)	1828556	3.15923	419.97
\$ 156	Terphenyl-d14	244	8.030	8.024	(0.906)	2630448	3.74574	497.94
\$ 157	Phenol-d5	99	3.336	3.318	(0.920)	1414163	4.80741	639.07
\$ 158	2-Fluorophenol	112	2.789	2.742	(0.770)	986554	4.27750	568.63
\$ 159	2,4,6-Tribromophenol	330	6.366	6.359	(1.100)	340139	4.53757	603.20

QC Flag Legend

 $^{{\}tt Q}$ - Qualifier signal failed the ratio test. ${\tt M}$ - Compound response manually integrated.

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 26-OCT-2007 16:09

End Cal Date : 26-OCT-2007 18:50
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Thtegrator : HP PTF

Integrator : HP RTE

Method file : \cansvr11\dd\chem\MSS\a4hp7.i\71026a.b\8270P.m

Last Edit : 27-Oct-2007 08:58 ulmanm

Curve Type : Average

	0.05000	0.25000	0.50000	1.000	2.500	5.000	I	i	-
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD	İ
								J]
	7.500	10.000	12.500	!	!	!	!	!	-
	Level 7	Level 8	Level 9		İ		1		
144 **	= ========		========	=== =================================	++++	+++++	= ===================================	======= 	=
144 Hexachlorophene	1 +++++	+++++ +++++	+++++	+++++ !	+++ ++	+++++ 	 +++++	I I +++++	 <
	-	+++++ 	****** 	: 	, 	! 		,	- -
145 Hexachlorophene product	1 +++++	, +++++	+++++	 +++++	++++	+++++	İ	' 	i
	+++++	+++++	+++++		j		+++++	+++++	<
	-		 	 			Ĭ	} -	-
146 Benzo(a)pyrene	1.17968	0.97166	1.01188	1.05737	1.09953	1.12316	1/	1]	ı
	1.13493	1.16596	1.25556	İ	[l	1.11108	7.898	3
	-				[·····		-
148 3-Methylcholanthrene	+++++	+++++	+++++	++++	+++++	+++++			
	+++++	+++++	+++++	1	1	 	++++	+++++	<-
149 Indeno(1,2,3-cd)pyrene	1.23781	1.06242	1.07379	1.12596	1.20599	1	 		- -
149 Indeno(1,2,3-cd/pyrene	1.22933	1.27705	1.37576		1.20599 	1 1.234/5	l 1.20254	l 8.349	
	-			: 	ı 	! 			·
150 Dibenz (a, h) anthracene	1.02771	0.83559	0.86017	0.92198	0.95752	0.97952			i
	0.98402	1.01704	1.10090		İ	j	0.96494	8.618	3 [
	-								- [
151 Benzo(g,h,i)perylene	1.07704	0.89128	0.93016	0.97952	1.02707	1.01343			ŀ
	1.01579	1.05027	1.13828				1.01365	7.332	2
	-	·							١.
230 2-Chloroacetophenone	+++++	+++++	++++	+++++	+++++	+++++	ļ.		1
	+++++	+++++	+++++			:	++++	+++++	<-
199 3-Picoline	1 +++++	+++++	+++++	+++++	+++++	+++++			.
199 3-FICOTINE	+++++	+++++	+++++		 	44444	+++++	+++++	<-
	-					 			i
200 N,N-Dimethylacetamide	+++++	+++++	+++++	++++	+++++	+++++	, 		i
-	+++++	+++++	+++++	į	İ	' i	+++++	+++++	<-
	-								-[
201 Quinoline	+++++	++++	+++++	+++++	+++++	+++++	1		
	+++++	++++	+++++	!		1	++++	++++	<-
	-								!
	_	!							.1

CALCULATION WORKSHEET

Page 1 of 1

CLIENT:	SDG No.					
LOCKHEED MIDDLE RIVER	7J17253					
SUBJECT:						
EXAMPLE CALCULATION - AROCLOR-1260 - SOIL						
EXAMPLE CALCULATION - AROU	CLOR-1260 - SOIL					
BY:	CLOR-1260 - SOIL DATE:					

Sample ID = SB-393-0102 Concentration = 22 ug/kg

Aroclor-1260

EQUATION:

$$C_{W} = \frac{A_{X} \times V_{t} \times Df}{CF \times V_{i} \times W_{s} \times D}$$

Where:

Cs	=	analyte concentration in soil		ug/kg
A_{x}	=	analyte response	==	416153.8
V_{t}	=	volume of final extract	=	10000 uL
Df	=	dilution factor	=	1
CF	=	calibration factor	=	6449886
V_{i}	=	volume injected	=	1 uL
Ws	=	sample weight	=	30.04 g
D	=	percent solids	=	0.946

Therefore: Aroclor-1260 concentration in soil =

 $C_s = 22.7$ ug/kg

Client Sample ID: SB-393-0102

GC Semivolatiles

Lot-Sample #: A7J170253-005 Date Sampled: 10/16/07 09:24 Prep Date: 10/23/07 Prep Batch #: 7205394 Dilution Factor: 1 % Moisture: 5.4		10/17/07	Matrix: SO Final Wgt/Vol.: 10 mL
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	35	ug/kg
Aroclor 1221	ND	35	ug/kg
Aroclor 1232	ND	35	ug/kg
Aroclor 1242	ND .	35	ug/kg
Aroclor 1248	ND	35	ug/kg
Aroclor 1254	ND)	35	ug/kg
Aroclor 1260	∕22 J /	35	ug/kg
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Tetrachloro-m-xylene	104	(10 - 196)	
Decachlorobiphenyl	108	(10 - 199)	

NOTE(S):

J Estimated result. Result is less than RL.

Data File: 022F1601.D

Report Date: 29-Oct-2007 15:05

STL North Canton

Data file : \\cansvr11\DD\chem\GCS\a2hp11.i\71029-1.b\71029-1.b\022F1601.D Lab Smp Id: J86L21AC Client Smp ID: SB-393-0102

Inj Date : 29-OCT-2007 13:59
Operator : Inst ID: a2hp11.i

Smp Info : J86L21AC

Misc Info:

Comment

Method : \\cansvr11\dd\chem\GCS\a2hp11.i\71029-1.b\HP11PCBF.m\HP11PCBr.m

Meth Date: 29-Oct-2007 12:20 hassl Quant Type: ESTD Cal Date : 27-JUN-2007 22:15 Cal File: 038F3801.D

Als bottle: 22

Dil Factor: 1.00000 Integrator: Falcon

Compound Sublist: pcb.sub

Target Version: 4.14 Sample Matrix: SOIL

Processing Host: CANPGCSV30

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF Vt Vo Cpnd Variable	10000.000	Dilution Factor final volume initial volume Local Compound Variable

				CONCENTR			
RT	EXP RT	DLT RT	RESPONSE			TARGET RANGE	RATIO
	======		======	======			
\$ 1	TCMX				CAS #:	877-09-8	
			2143065				
	AROCLOR-1					11104-28-2	
			nt. or Qual. s				
	AROCLOR-1					12674-11-2	
Compou	ınd Not De						
4	AROCLOR-1					11141-16-5	
Compou	nd Not De	tected					

Data File: 022F1601.D Report Date: 29-Oct-2007 15:05

RT	שמ חעם	DLT RT	DECDONGE	CONCENTR ON-COL	FINAL	TARGET RANGE	RATIO
					======		
==== =	=======================================		=======	=======		=======================================	
5 A	ROCLOR-12	242			CAS #:	53469-21-9	
Compoun	d Not Det	ected					
				-			
6 A	ROCLOR-12	248			CAS #:	12672-29-6	
Compoun	d Not Det	ected					
7 A	ROCLOR-12	254			CAS #:	11097-69-1	
Compoun	d Not Det	ected	A)	16:		- 	
8 A	ROCLOR-12	260			CAS #:	11096-82-5	
6.492	6.493	-0.001	180066	0.03490	11.62	80.00- 120.00	100.00(M)
6.773	6.773	0.000	597041	0.10432	34.73	83.32- 138.87	331.57
7.737	7.739	-0.002	143753	0.02967	9.877	69.28- 115.46	79.83
8.073	8.076	-0.003	683209	.07020	23.37	138.14~ 230.23	379.42
8.550	8.550	0.000	476700	0.07022	23.38	94.04- 156.73	264.74
	I	Average of	Peak Concentr	ations =	20.59		
							
м 15 т	OTAL PCB				CAS #:	1336-36-3	
			0	0.06186	20.59		
\$ 9 D						2051-24-3	
9.879	9.880	-0.001	1728227	0.02167	7.212		

QC Flag Legend

M - Compound response manually integrated.

Report Date : 28-Jun-2007 07:57

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 27-JUN-2007 12:58

End Cal Date : 27-JUN-2007 23:32 Quant Method : ESTD Origin : Disabled Target Version : 4.14

Integrator : Falcon
Method file : \\cansvr11\DD\chem\GCS\a2hp11.i\706271C-1.b\HP11PCBF.m\HP1
Last Edit : 28-Jun-2007 07:56 serraa
Curve Type : Average

	0.05000	0.10000	0.20000	0.50000	1.000	2.000		/
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
8 AROCLOR-1260(1)	==== 5619060	5309300	5189900	5273346		'	5159357	6.937
(2)	5982620	5940750	5757505	5897484	5638916	5122596	5723305	5.602
(3)	4976800	4915680	4869605	5034908	4845129	44288 0	4845169	4.448
(4)	9593840	9663650	9685460	10326272	9980749	9147788	9732960	4.064
(5)	6732520	6758720	6799125	7179472	6923776	6338210	6788637	4.051
13 AROCLOR-1262(1)	5304280	5084140	5081400	5144048	4743262	4746378	5017251	4.505
(2)	7289680	7009510	7066455	7244928	6713596	6774967	7016523	3.369
(3)	6766180	6508850	6601355	6813800	6326529	6417589	6572384	2.928
(4)	12436820	12222000	12635460	13322140	12373435	12570904	12593460	3.063
(5)	8707440	8544480	8802440	9189122	8504111	8748166	8749293	2.800
14 AROCLOR-1268(1)	4733460	4524700	4258475	4069628	3887989	4079057	4258885	7.437
(2)	15468840	15157150]	14998095	14945972	13915699	14769228	14875831	3.537
(3)	10833940	10588580	10453835	10442432	9750985	10348368	10403023	3.472
(4)	4204700	4124770	4154730	4131326	3815695	4038651	4078312	3.421
(5)	28220620	27166370	27467175	28172432	25720422	27383993	27355169	3.326
15 TOTAL PCB	+++++	+++++	+++++	+++++	++++	+++++	+++++	+++++ <
				C-=======				
1 TCMX	101900400	101905600	101298600	109250960	105079860	95836250	102545278	4.334
9 DCB	98010000	83298800	83255900	78201080	71147460	64675930	79764862	14.425



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO:

MIKE MARTIN

DATE:

JANUARY 7, 2008

FROM:

THOMAS JACKMAN

COPIES:

DV FILE

SUBJECT:

ORGANIC DATA VALIDATION - BENZO(A)PYRENE/PCBS

LOCKHEED MIDDLE RIVER FACILITY

SAMPLE DELIVERY GROUP (SDG) - 7J17258

SAMPLES:

20/Solid

SB-397-0102	SB-397-0203	SB-397-0405	SB-397-0708
SB-398-0102	SB-398-0203	SB-398-0405	SB-398-0708
SB-399-0102	SB-399-0203	SB-399-0405	SB-399-0708
SB-400-0102	SB-400-0203	SB-400-0405	SB-400-0708
SB-401-0102	SB-401-0203	SB-401-0405	SB-401-0708

Overview

This sample set for the Lockheed Middle River, SDG 7J17258, consists of 20 environmental soil samples. The samples were analyzed for benzo(a)pyrene and polychlorinated biphenyls(PCBs). No field duplicates were included in this data set.

The samples were collected by Tetra Tech NUS, Inc. on October 16, 2007 and analyzed by Test America Laboratories. The samples were analyzed by SW-846 Method 8270C for benzo(a)pyrene and Method 8082 for PCBs.

Summary

The findings in this report are based upon a general review of all available data including: data completeness, system performance, holding times, initial/continuing calibrations, laboratory method blank contamination, surrogate spike, matrix spike/matrix spike duplicate (MS/MSD) results, Laboratory Control Sample (LCS) results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below; documentation supporting these findings is presented in Appendix C. Qualified analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

Major Problems

None.

Minor Problems

• The internal standard area count for perylene-d12 in sample SB-397-0203 was less than the lower acceptance limit. The nondetected result for benzo(a)pyrene in this sample is qualified as estimated "UJ".

MEMO TO: M. MARTIN - PAGE 2 DATE: JANUARY 7, 2008

- The continuing calibration verification %Ds for Aroclor-1016 and Aroclor-1260 were slightly greater than the 15% quality control limit on instrument CLPII on 10/26/07 at 08:59. The positive result for Aroclor-1260 in sample SB-397-0405 is qualified as estimated "J". No validation actions were taken for PCBs in the other associated samples because results for these analytes were nondetects.
- Positive results reported below the reporting limit (RL) but above the method detection limit (MDL) for the organic analyses were qualified as estimated, "J".

Notes

The continuing calibration verification %Ds for Aroclor-1016 and Aroclor-1260 were slightly greater than the 15% quality control limit on instrument CLPI on 10/24/07 at 18:03 and on 10/25/07 at 00:03. No validation actions were taken for PCBs in the samples associated with these CCVs because results for PCBs in these samples were nondetects.

Aroclor-1260 was reported as positively detected in one sample (SB-397-0405) on column CLPII. The laboratory did not confirm this result on a second column as specified by Method 8082. The lack of second column confirmation should not affect the identification of Aroclor-1260 in this sample because PCBs are identified by pattern recognition rather than by retention times. The chromatograms of this sample and associated standards are provided in Appendix C.

Executive Summary

Laboratory Performance: The internal standard area count for one sample was outside of quality control limits in the benzo(a)pyrene analysis. Continuing calibration %Ds for PCBs exceeded the 15% quality control limit specified by SW-846 Method 8082.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "Region III Modifications to the National Functional Guidelines for Organic Data Review" (9/94). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS Thomas Jackman Environmental Scientist

Joseph A. Samchuck Quality Assurance Officer

Attachments:

retra Tech MUS

- 1. Appendix A Qualified Analytical Results
- 2. Appendix B Results as reported by the Laboratory
- 3. Appendix C Support Documentation

MEMO TO: M. MARTIN - PAGE 3 DATE: JANUARY 7, 2008

Data Qualifier Key:

J - Positive result is considered estimated, "J", as a result of technical noncompliances.

U - Nondetected result.

UJ - Nondetected result is considered estimated, "UJ", as a result of technical noncompliances.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination

B = Field Blank Contamination

C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)

C01 = GC/MS Tuning Noncompliance

D = MS/MSD Recovery Noncompliance

E = LCS/LCSD Recovery Noncompliance

F = Lab Duplicate Imprecision

G = Field Duplicate Imprecision

H = Holding Time Exceedance

I = ICP Serial Dilution Noncompliance

J = GFAA PDS - GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance

K = ICP Interference - includes ICS % R Noncompliance

L = Instrument Calibration Range Exceedance

M = Sample Preservation Noncompliance

N = Internal Standard Noncompliance

N01 = Internal Standard Recovery Noncompliance Dioxins

N02 = Recovery Standard Noncompliance Dioxins

N03 = Clean-up Standard Noncompliance Dioxins

O = Poor Instrument Performance (e.g. base-line drifting)

P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)

Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)

R = Surrogates Recovery Noncompliance

S = Pesticide/PCB Resolution

T = % Breakdown Noncompliance for DDT and Endrin

U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC

V = Non-linear calibrations; correlation coefficient r < 0.995

W = EMPC result

X = Signal to noise response drop

Y = Percent solids <30%

Z = Uncertainty at 2 sigma deviation is greater than sample activity

00885

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date

SB-397-0102

10/16/2007

A7J170258001

lab_id qc_type NM UG/KG units

Pct_Solids DUP_OF:

lab_id qc_type

> units Pct_Solids DUP_OF:

nsample SB-397-0203 samp_date

10/16/2007 A7J170258002

NM UG/KG 89.0

nsample

samp_date lab_id qc_type

10/16/2007 A7J170258003 NM

SB-397-0405

UG/KG 95.1

Pct_Solids DUP_OF:

units

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	80	J	Р

95.1

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	UJ	N

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	850		

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: OS

00885

nsample samp_date

lab_id

SB-397-0708

10/16/2007

A7J170258004

qc_type NM units UG/KG Pct_Solids 85.0

DUP_OF:

nsample

lab_id

units

SB-398-0102 samp_date 10/16/2007 A7J170258005

qc_type NM UG/KG Pct_Solids 90.9 DUP_OF:

nsample samp_date

lab_id

qc_type units Pct_Solids DUP_OF:

10/16/2007 A7J170258006 NM

SB-398-0203

UG/KG 86.0

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	29	J	. P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	33	J	P

00885

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date SB-398-0405

10/16/2007 A7J170258007

lab_id qc_type units Pct_Solids

DUP_OF:

NM UG/KG

89.0

nsample

Pct_Solids

DUP_OF:

units

samp_date lab_id qc_type 10/16/2007 A7J170258008 NM

SB-398-0708

UG/KG 86.0 nsample samp_date

lab_id qc_type

units
Pct_Solids

SB-399-0102 10/16/2007 A7J170258009

NM UG/KG 90.8

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.4	U	·

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date lab_id

qc_type

Pct_Solids

DUP_OF:

units

SB-399-0203

10/16/2007

A7J170258010 NM UG/KG

90.0

nsample samp_date lab_id

qc_type

Pct_Solids

DUP_OF:

units

10/16/2007 A7J170258011 NM UG/KG

85.0

SB-399-0405

nsample samp_date lab_id qc_type

Pct_Solids

DUP_OF:

units

A7J170258012 NM UG/KG 83.0

SB-399-0708RE

10/16/2007

Qual Val Parameter Qual Code Result BENZO(A)PYRENE 1.4 U

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	22	J	Р

. Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

00885

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date

SB-400-0102 10/16/2007

nsample samp_date SB-400-0203 10/16/2007

nsample samp_date lab_id

SB-400-0405 10/16/2007

lab_id qc_type units

A7J170258013 NM

lab_id qc_type

A7J170258014 NM

qc_type

A7J170258015 NM

Pct_Solids DUP_OF:

UG/KG 91.6

units Pct_Solids DUP_OF:

UG/KG 92.1

units Pct_Solids DUP_OF:

UG/KG 84.0

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	9.1	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.4	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	Ū	

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date lab_id

qc_type

units

SB-400-0708 10/16/2007

A7J170258016 NM

UG/KG

80.0

lab_id
qc_type
units
Pct_Solids
DUP_OF:

nsample

samp_date

SB-401-0102 10/16/2007 A7J170258017

> NM UG/KG 80.0

nsample samp_date lab_id qc_type units

Pct_Solids

DUP_OF:

SB-401-0203 10/16/2007 A7J170258018

NM UG/KG 88.0

Pct_Solids DUP_OF:

 Parameter
 Result
 Val Qual Qual Code

 BENZO(A)PYRENE
 1.6
 U

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	25	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: OS

nsample

SB-401-0405RE

SB-401-0708

samp_date lab_id

10/16/2007 A7J170258019 samp_date 10/16/2007

qc_type units

NM

lab_id qc_type units

nsample

A7J170258020 NM

Pct_Solids

UG/KG 83.0

Pct_Solids

UG/KG 86.0

DUP_OF:

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-397-0102

10/16/2007 A7J170258001

lab_id qc_type NM units UG/KG Pct_Solids 95.1

DUP_OF:

nsample samp_date lab_id

qc_type

Pct_Solids

DUP_OF:

units

SB-397-0203 10/16/2007 A7J170258002

NM UG/KG

89.0

nsample

samp_date lab_id

qc_type

units Pct_Solids DUP_OF:

SB-397-0405 10/16/2007 A7J170258003

NM UG/KG

95.1

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	Ü	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	-
AROCLOR-1242	35	Ū	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	. 37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	~
AROCLOR-1221	35	U	
AROCLOR-1232	35	Ü	
AROCLOR-1242	35	Ü	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	. 19	J	CP

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id qc_type

units

Pct_Solids

DUP_OF:

SB-397-0708 10/16/2007 A7J170258004

NM UG/KG 85.0 nsample samp_date lab_id qc_type

units

Pct_Solids

DUP_OF:

SB-398-0102 10/16/2007 A7J170258005

NM UG/KG 90.9 nsample samp_date lab_id qc_type SB-398-0203 10/16/2007 A7J170258006

NM UG/KG 86.0

Pct_Solids DUP_OF:

units

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	IJ	
AROCLOR-1242	39	Ú	
AROCLOR-1248	39	U	
AROCLOR-1254	39	Ü	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter .	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date

lab_id

units

qc_type

SB-398-0405

10/16/2007

A7J170258007 samp_

NM UG/KG 89.0

Pct_Solids

DUP_OF:

nsample samp_date

SB-398-0708 ate 10/16/2007 A7J170258008 NM

 qc_type
 NM

 units
 UG/KG

 Pct_Solids
 86.0

DUP_OF:

nsample

samp_date

qc_type
units
Pct_Solids

SB-399-0102 10/16/2007 A7J170258009

NM UG/KG

90.8

DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	Ų.	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	· U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-399-0203

10/16/2007

A7J170258010

lab_id qc_type units

NM UG/KG

90.0

Pct_Solids DUP_OF:

samp_date lab_id qc_type

nsample

units

SB-399-0405 10/16/2007 A7J170258011

NM UG/KG

85.0

nsample

samp_date lab_id

units

DUP_OF:

SB-399-0708 10/16/2007 A7J170258012

qc_type NM Pct_Solids

UG/KG 83.0

Pct_Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	1
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	Ū	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	Ü	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	40	Ü	
AROCLOR-1221	40	U	
AROCLOR-1232	40	U	-
AROCLOR-1242	40	U	
AROCLOR-1248	40	U	
AROCLOR-1254	40	U	
AROCLOR-1260	40	U	

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-400-0102

10/16/2007

lab_id

A7J170258013

qc_type units Pct_Solids NM UG/KG 91.6

DUP_OF:

nsample

samp_date lab_id qc_type

units

Pct_Solids

DUP_OF:

10/16/2007 A7J170258014

SB-400-0203

NM UG/KG

92.1

nsample

samp_date lab_id

SB-400-0405 10/16/2007 A7J170258015

NM

UG/KG 84.0

Pct_Solids DUP_OF:

qc_type

units

Parameter	Resuit	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	Ũ	
AROCLOR-1232	36	Ū	
AROCLOR-1242	36	Ū	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	Ü	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	Ū	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	Ú	
AROCLOR-1260	39	U	

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date

lab_id

units

qc_type

SB-400-0708

NM

80.0

UG/KG

10/16/2007

A7J170258016 lab_id

qc_type units

nsample

samp_date 10/16/2007 A7J170258017 NM UG/KG

SB-401-0102

Pct_Solids 80.0 DUP_OF:

units Pct_Solids A7J170258018 NM

SB-401-0203

10/16/2007

UG/KG 88.0

DUP_OF:

nsample

lab_id

qc_type

samp_date

DUP_OF:

Pct_Solids

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	41	U	
AROCLOR-1221	41	U	
AROCLOR-1232	41	U	
AROCLOR-1242	41	U	
AROCLOR-1248	41	U	
AROCLOR-1254	41	U	
AROCLOR-1260	41	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	41	U	
AROCLOR-1221	41	U	
AROCLOR-1232	41	U	
AROCLOR-1242	41	U	
AROCLOR-1248	41	U	
AROCLOR-1254	41	U	
AROCLOR-1260	41	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	Ų	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

SDG: 7J17258 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-401-0405

10/16/2007

nsample samp_date SB-401-0708

A7J170258019

10/16/2007 A7J170258020

lab_id qc_type units

NM

NM

Pct_Solids

qc_type units

lab_id

UG/KG

Pct_Solids

86.0

DUP_OF:

DUP_OF:

UG/KG

83.0

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	40	U	
AROCLOR-1221	40	U	
AROCLOR-1232	40	U	
AROCLOR-1242	40	U	
AROCLOR-1248	40	U	
AROCLOR-1254	40	U	
AROCLOR-1260	40	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	Ū	
AROCLOR-1232	38	U	
AROCLOR-1242	. 38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Client Sample ID: SB-397-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170258-00 Date Sampled: 10/16/07 10: Prep Date: 10/22/07 Prep Batch #: 7295325 Dilution Factor: 1		.: 10/17/07	Matr	ix: SO
% Moisture: 4.9	Method	.: SW846 8270	C	
PARAMETER	RESULT	REPORTING LIMIT	UNITS	\mathtt{MDL}
Benzo(a)pyrene	80 J	350	ug/kg	
Belizo(a) pyrene	00 0	330	ug/ kg	1.4
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	68	(24 - 112)		
2-Fluorobiphenyl	74	(34 - 110)		•
Terphenyl-d14	78	(41 - 119)		
Phenol-d5	64	(28 - 110)		
2-Fluorophenol	68	(26 - 110)		
2,4,6-Tribromophenol	61	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-397-0203

GC/MS Semivolatiles

Date Sampled: Prep Date: Prep Batch #:	10/16/07 10:20 10/22/07 7295325	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	: SO
Dilution Factor: % Moisture:		Method:	SW846 8270	С	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	370	ug/kg	1.5
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		45	(24 - 112)		
2-Fluorobiphenyl		58	(34 - 110)		
Terphenyl-d14		90 .	(41 - 119)		
Phenol-d5		62	(28 - 110)		
2-Fluorophenol		50	(26 - 110)		
2,4,6-Tribromophe	enol	70	(10 - 118)		
NOTE (S):					

Client Sample ID: SB-397-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170258 Date Sampled: 10/16/07 Prep Date: 10/22/07 Prep Batch #: 7295325 Dilution Factor: 1	10:22 Date Received	d: 10/17/07
% Moisture: 4.9	Method	: SW846 8270C
		REPORTING
PARAMETER	RESULT	LIMIT UNITS MDL
Benzo(a)pyrene	850	350 ug/kg 1.4
	·	
	PERCENT	RECOVERY
SURROGATE	RECOVERY	<u>LIMITS</u>
Nitrobenzene-d5	.42	(24 - 112)
2-Fluorobiphenyl	59	(34 - 110)
Terphenyl-d14	87	(41 - 119)
Phenol-d5	60	(28 - 110)
2-Fluorophenol	47	(26 - 110)
2,4,6-Tribromophenol	62	(10 - 118)

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

Client Sample ID: SB-397-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170258-004 Date Sampled: 10/16/07 10:24 Prep Date: 10/22/07 Prep Batch #: 7295325		10/17/07	Matrix	: SO
Dilution Factor: 1				
% Moisture: 15	Method:	SW846 8270	C	
		REPORTING		,
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5
	DEDGEME	DECOMEDM		
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	41	(24 - 112)		
2-Fluorobiphenyl	37	(34 - 110)		
Terphenyl-d14	73 .	(41 - 119)	,	
Phenol-d5	59	(28 - 110)		
2-Fluorophenol	55	(26 - 110)		
2,4,6-Tribromophenol	60	(10 - 118)		

Results and reporting limits have been adjusted for dry weight.

NOTE (S):

Client Sample ID: SB-398-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170258	3-005 Work Order #	: J86ND1AD	Matr	ix SO
Date Sampled: 10/16/07	10:30 Date Receive	d: 10/17/07		
Prep Date: 10/22/07	Analysis Dat	e: 10/23/07		
Prep Batch #: 7295325				
Dilution Factor: 1				
% Moisture: 9.1	Method	: SW846 827	0C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	\mathtt{MDL}
Benzo(a)pyrene	29 Ј	360	ug/kg	1.4
	PERCENT	RECOVERY	•	
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	58	(24 - 112	<u>)</u>	
2-Fluorobiphenyl	63	(34 - 110)	
Terphenyl-d14	86	(41 - 119)	
Phenol-d5	73	(28 - 110) .	
2-Fluorophenol	68	(26 - 110)	
2,4,6-Tribromophenol	75	(10 - 118)	
MORE (C)				
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-398-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170258-0 Date Sampled: 10/16/07 10 Prep Date: 10/22/07 Prep Batch #: 7295325 Dilution Factor: 1		: 10/17/07	Matr	ix: SO
% Moisture: 14	Method	: SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	33 J	380	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	61	(24 - 112)		
2-Fluorobiphenyl	65 _.	(34 - 110)		
Terphenyl-d14	86	(41 - 119)		
Phenol-d5	67	(28 - 110)		
2-Fluorophenol	67	(26 - 110)		
2,4,6-Tribromophenol	72	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-398-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170258-007 Date Sampled: 10/16/07 10:3 Prep Date: 10/22/07 Prep Batch #: 7295325 Dilution Factor: 1		10/17/07	Matr	ix: SO
% Moisture: 11	Method:	SW846 8270)C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	41	(24 - 112)	,	
2-Fluorobiphenyl	47	(34 - 110)		
Terphenyl-d14	74	(41 - 119)		
Phenol-d5	54	(28 - 110)		
2-Fluorophenol	48	(26 - 110)		
2,4,6-Tribromophenol	48	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-398-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170258 Date Sampled: 10/16/07 Prep Date: 10/22/07 Prep Batch #: 7295325 Dilution Factor: 1		: 10/17/07	Matı	ri x: SO
% Moisture: 14	Method	: SW846 8270	С	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	63	(24 - 112)		
2-Fluorobiphenyl	64	(34 - 110)		
Terphenyl-d14	87	(41 - 119)		
Phenol-d5	74	(28 - 110)		•
2-Fluorophenol	75	(26 - 110)		
2,4,6-Tribromophenol	74	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-399-0102

GC/MS Semivolatiles

Lot-Sample #: A Date Sampled: 10 Prep Date: 10 Prep Batch #: 72 Dilution Factor: 1	0/16/07 10:48 0/22/07		10/17/07	Matrix	: so
% Moisture: 9.	.2	Method:	SW846 8270	C	
•			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	360	ug/kg	1.4
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		60	(24 - 112)		
2-Fluorobiphenyl		60	(34 - 110)		
Terphenyl-d14		85	(41 - 119)		
Phenol-d5		70	(28 - 110)		
2-Fluorophenol		69	(26 - 110)		
2,4,6-Tribromopheno	ol	72	(10 - 118)		
NOTE (S):					

Client Sample ID: SB-399-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170258-010 Date Sampled: 10/16/07 10:50 Prep Date: 10/22/07 Prep Batch #: 7295325 Dilution Factor: 1		10/17/07	Matrix	k: SO
% Moisture: 10	Method:	SW846 8270)C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.4
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	44	$\frac{2111110}{(24 - 112)}$	•	
2-Fluorobiphenyl	46	(34 - 110)		
Terphenyl-d14	74	(41 - 119)		
Phenol-d5	58	(28 - 110)		
2-Fluorophenol	53	(26 - 110)		
2,4,6-Tribromophenol	63	(10 - 118)		

NOTE(S):

Client Sample ID: SB-399-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170258-011 Date Sampled: 10/16/07 10:5 Prep Date: 10/22/07 Prep Batch #: 7295325 Dilution Factor: 1	2 Date Received Analysis Date	: 10/17/07 : 10/23/07	Matrix: So	
% Moisture: 15	Method	: SW846 8270	i C	
PARAMETER Benzo (a) pyrene	RESULT 22 J	REPORTING LIMIT 390	UNITS ug/kg	MDL 1.5
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	29	(24 - 112)		
2-Fluorobiphenyl	43	(34 - 110)		
Terphenyl-d14	73	(41 - 119)		
Phenol-d5	43	(28 - 110)		
2-Fluorophenol	34	(26 - 110)		
2,4,6-Tribromophenol	64	(10 - 118)		
NOTE (S) -	•			

J Estimated result. Result is less than RL.

Client Sample ID: SB-399-0708

GC/MS Semivolatiles

_	362	1: 10/17/07	Matrix: So	
			•	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	400	ug/kg	1.6
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	68	(24 - 112)		
2-Fluorobiphenyl	71	(34 - 110)		
Terphenyl-d14	93	(41 - 119)		
Phenol-d5	73	(28 - 110)		
2-Fluorophenol	68	(26 - 110)		
2,4,6-Tribromophenol	74	(10 - 118)		
NOTE (S) :				

Client Sample ID: SB-400-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170258-0 Date Sampled: 10/16/07 10 Prep Date: 10/22/07 Prep Batch #: 7295325 Dilution Factor: 1		.: 10/17/07	Matr	ix: SO
% Moisture: 8.4	Method	.: SW846 8270	OC .	
PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	9.1 J	360	ug/kg	1.4
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	54	$\frac{24-112}{(24-112)}$	•	
2-Fluorobiphenyl	59	(34 - 110)		
Terphenyl-d14	83	(41 - 119)		
Phenol-d5	65	(28 - 110)		
2-Fluorophenol	62	(26 - 110)		
2,4,6-Tribromophenol	65	(10 - 118)		
NOTE (C).				

J Estimated result. Result is less than RL.

Client Sample ID: SB-400-0203

GC/MS Semivolatiles

Lot-Sample #: A7J1702 Date Sampled: 10/16/0 Prep Date: 10/22/0 Prep Batch #: 7295325 Dilution Factor: 1	D7 11:01 Date Received D7 Analysis Date	: 10/17/07	Matrix:		s SO
% Moisture: 7.9	Method	: SW846 8270	С		
		REPORTING			
PARAMETER	RESULT	LIMIT	UNITS	MDL	
Benzo(a)pyrene	ND	360	ug/kg	1.4	<u> </u>
					•
	PERCENT	RECOVERY			
SURROGATE	RECOVERY	LIMITS			
Nitrobenzene-d5	51	(24 - 112)			
2-Fluorobiphenyl	53	(34 - 110)			
Terphenyl-d14	66	(41 - 119)			
Phenol-d5	58	(28 - 110)			
2-Fluorophenol	57	(26 - 110)			
2,4,6-Tribromophenol	58	(10 - 118)			
NOTE (S):					

Client Sample ID: SB-400-0405

GC/MS Semivolatiles

Lot-Sample #: A Date Sampled: 1 Prep Date: 1 Prep Batch #: 7 Dilution Factor: 1	0/16/07 11:03 0/22/07 295325		10/17/07	Matrix	: SO
% Moisture: 1		Method:	SW846 8270	C	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	390	ug/kg	1.5
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		56	(24 - 112)		
2-Fluorobiphenyl		60	(34 - 110)		
Terphenyl-d14		85	(41 - 119)		
Phenol-d5		72	(28 - 110)		
2-Fluorophenol		71	(26 - 110)		
2,4,6-Tribromophen	ol	74	(10 - 118)		
NOTE(S):					

Client Sample ID: SB-400-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170258-016 Date Sampled: 10/16/07 11:0 Prep Date: 10/22/07 Prep Batch #: 7295325 Dilution Factor: 1		10/17/07	Matri	x: SO
% Moisture: 20	Method:	SW846 8270	С	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	410	ug/kg	1.6
•	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	62	(24 - 112)		
2-Fluorobiphenyl	62	(34 - 110)		
Terphenyl-d14	87	(41 - 119)		
Phenol-d5	74	(28 - 110)		
2-Fluorophenol	73	(26 - 110)		
2,4,6-Tribromophenol	76	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-401-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170258-0 Date Sampled: 10/16/07 11 Prep Date: 10/22/07 Prep Batch #: 7295325		: 10/17/07	Matr	ix SO
Dilution Factor: 1 % Moisture: 20	Method	: SW846 .8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	25 J	410	ug/kg	1.6
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	67	(24 - 112)		
2-Fluorobiphenyl	74	(34 - 110)		
Terphenyl-d14	91	(41 - 119)		
Phenol-d5	69	(28 - 110)		
2-Fluorophenol	65	(26 - 110)		
2,4,6-Tribromophenol	84	(10 - 118)	•	ı
NOTE (S) ·				

J Estimated result. Result is less than RL.

Client Sample ID: SB-401-0203

GC/MS Semivolatiles

Date Sampled: Prep Date: Prep Batch #:	10/16/07 11:24 10/22/07 7295325	Work Order #: Date Received: Analysis Date:	10/17/07		: SO
Dilution Factor: % Moisture:	-	Method:	SW846 8270	С	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	370	ug/kg	1.5
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		49	(24 - 112)		
2-Fluorobiphenyl		56	(34 - 110)	•	
Terphenyl-d14		82	(41 - 119)		
Phenol-d5		67	(28 - 110)	•	
2-Fluorophenol		60	(26 - 110)		
2,4,6-Tribromophe	enol	75	(10 - 118)		
NOTE (S):					

Client Sample ID: SB-401-0405

GC/MS Semivolatiles

Date Sampled: Prep Date: Prep Batch #:	10/16/07 11:26 10/25/07 7298390	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	so
Dilution Factor:	_				
% Moisture:	17	Method:	SW846 8270	С	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND	400	ug/kg	1.6
•			•		
		PERCENT	RECOVERY		
SURROGATE	·	RECOVERY	LIMITS		
Nitrobenzene-d5		56	(24 - 112)		
2-Fluorobiphenyl		57	(34 - 110)		
Terphenyl-d14		96	(41 - 119)		
Phenol-d5		66	(28 - 110)		
2-Fluorophenol		64	(26 - 110)		
2,4,6-Tribromophe	enol	83	(10 - 118)		
NOTE (S):					

Client Sample ID: SB-401-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170258-02 Date Sampled: 10/16/07 11: Prep Date: 10/22/07 Prep Batch #: 7295325 Dilution Factor: 1		: 10/17/07	Matr	ix: SO
% Moisture: 14	Method	: SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	24	(24 - 112)		
2-Fluorobiphenyl	36	(34 - 110)		
Terphenyl-d14	69	(41 - 119)		
Phenol-d5	39	(28 - 110)		
2-Fluorophenol	32	(26 - 110)		
2,4,6-Tribromophenol	59	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-397-0102

GC Semivolatiles

Lot-Sample #: A Date Sampled: 1 Prep Date: 1 Prep Batch #: 7	.0/16/07 10:18 .0/22/07 295324	Work Order #: Date Received: Analysis Date:	10/17/07	Matri	*	50
Dilution Factor: 1 % Moisture: 4		<pre>Initial Wgt/Vol:</pre>		Final	Wgt/Vol: 1	lO mL
1 11 10 10 10 11 11 11	• 5	Method:	SW846 8082			
D2D21			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS		
Aroclor 1016		ND	35	ug/kg	-	
Aroclor 1221		ND	35	ug/kg		
Aroclor 1232		ND	35	ug/kg		
Aroclor 1242	i	ND .	35			
Aroclor 1248		ND	35	ug/kg		
Aroclor 1254		ND		ug/kg		
Aroclor 1260			35	ug/kg	•	
11200101 1200	1	ND .	35	ug/kg		
ČIIDDOCA III	1	PERCENT	RECOVERY			•

LIMITS

(10 - 196)

(10 - 199)

RECOVERY

113

128

NOTE(S):

SURROGATE

Results and reporting limits have been adjusted for dry weight.

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-397-0203

GC Semivolatiles

Lot-Sample #:	A7J170258-002	Work Order #:	J86M71AC	Matrix SO
Date Sampled:	10/16/07 10:20	Date Received:	10/17/07	macrix
Prep Date:	10/22/07	Analysis Date:		
Prep Batch #:	7295324	1	10,21,0,	
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30 03 a	Final West/Wal . 10 .
% Moisture:	11	Method:		Final Wgt/Vol: 10 mL
			REPORTING	
PARAMETER		RESULT	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	~ =	ug/kg
Aroclor 1254		ND	11	uq/kq
Aroclor 1260		ND		ug/kg

RECOVERY

(10 - 196)

(10 - 199)

LIMITS

PERCENT

87

114

RECOVERY

NOTE (S):

SURROGATE

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-397-0405

GC Semivolatiles

Lot-Sample #: A/J170258-003	Work Order #:	J86M81AC	Matrixso
Date Sampled: 10/16/07 10:22	Date Received:	10/17/07	
Prep Date: 10/22/07	Analysis Date:		
Prep Batch #: 7295324			
Dilution Factor: 1	Initial Wgt/Vol:	30.05 a	Final Wgt/Vol: 10 mL
% Moisture: 4.9	Method		rinar nge, vor 10 mil
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	35	ug/kg
Aroclor 1221	ND	35	ug/kg
Aroclor 1232	ND	35	ug/kg
Aroclor 1242	ND	35	ug/kg
Aroclor 1248	ND	35	ug/kg
Aroclor 1254	ND	35	ug/kg
Aroclor 1260	19 Ј	35	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
	103	(10 - 196)	
Decachlorobiphenyl	136	(10 - 199)	
NOTE (S):			

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Client Sample ID: SB-397-0708

GC Semivolatiles

Lot-Sample #:	A7J170258-004	Work Order #:	J86NC1AC	Matrixso
Date Sampled:	10/16/07 10:24	Date Received:	10:/17/07	Hactix50
Prep Date:	10/22/07	Analysis Date:		
Prep Batch #:	7295324	Jaco Daco	10/24/07	
Dilution Factor:		Initial Wgt/Vol:	30 06 ~	Final Nat/Wal 10 -
% Moisture:	15	Method:		Final Wgt/Vol: 10 mL
			REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Aroclor 1016		ND	39	ug/kg
Aroclor 1221		ND .	39	ug/kg
Aroclor 1232		ND	39	ug/kg
Aroclor 1242		ND	39	ug/kg
Aroclor 1248		ND		ug/kg
Aroclor 1254		ND		ug/kg
Aroclor 1260		ND		ug/kg
G11D 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		PERCENT	RECOVERY	
SURROGATE		RECOVERY	LIMITS	

(10 - 196)

(10 - 199)

78

102

NOTE (S):

Results and reporting limits have been adjusted for dry weight.

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-398-0102

GC Semivolatiles

Prep Batch #:	10/16/07 10:30 10/22/07 7295324	Work Order #: Date Received: Analysis Date:	10/17/07	<u>M</u> atri	x	SO
Dilution Factor:		<pre>Initial Wgt/Vol:</pre>	30.14 g	Final	Wgt/Vol:	10 mT.
% Moisture:	9.1	Method:	SW846 8082			LO MID
			REPORTING			
PARAMETER		RESULT	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		ND	36	ug/kg		
Aroclor 1260		ND	36	ug/kg		
		PERCENT	RECOVERY		•	
SURROGATE			LIMITS			
Tetrachloro-m-xyl		98	$\frac{\text{LIMITS}}{(10 - 196)}$			
Decachlorobipheny	_	120	(10 - 199)			

NOTE(S):

Client Sample ID: SB-398-0203

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 10:32 10/22/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matri	x:	SO
Dilution Factor: % Moisture:	1	<pre>Initial Wgt/Vol: Method:</pre>		Final	Wgt/Vol:	10 mL
PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260		RESULT ND ND ND ND ND ND ND ND ND ND ND	REPORTING LIMIT 38 38 38 38 38 38 38 38 38	UNITS ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	- -	
SURROGATE Tetrachloro-m-yulo]	DECOTION	RECOVERY LIMITS			

(10 - 196)

(10 - 199)

106

121

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-398-0405

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date:	10/16/07 10:34		10/17/07	Matrix	x:	SO
Prep Batch #:	7295324		·			
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.01 g	Final	Wgt/Vol:	10 mL
% Moisture:	11	Method:	SW846 8082			
			REPORTING			
PARAMETER		RESULT	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		ND	37	ug/kg		
Aroclor 1260		ND	37	ug/kg		
	•	PERCENT .	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xyl	ene	108	(10 - 196)			
Decachlorobipheny	1	110	(10 - 199)			
NOTE (S):		TIPLE				

Client Sample ID: SB-398-0708

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 10:36 10/22/07 7295324	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SO
Dilution Factor: % Moisture:	Ξ.	<pre>Initial Wgt/Vol: Method:</pre>		Final Wgt/Vol: 10 mL
PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260		RESULT ND ND ND ND ND ND ND ND ND	REPORTING LIMIT 38 38 38 38 38 38 38 38 38	UNITS ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg
SURROGATE Tetrachloro-m-xyle	ene :	DEGOTIER	RECOVERY LIMITS (10 - 196) (10 - 199)	

NOTE(S):

Client Sample ID: SB-399-0102

GC Semivolatiles

Prep Batch #:	10/16/07 10:48 10/22/07 7295324	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix SO
Dilution Factor: % Moisture:		<pre>Initial Wgt/Vol: Method:</pre>	30.07 g SW846 8082	Final Wgt/Vol: 10 mL
PARAMETER			REPORTING	
Aroclor 1016		RESULT ND	LIMIT 36	UNITS
Aroclor 1221		ND	36	ug/kg ug/kg
Aroclor 1232 Aroclor 1242		ND	36	ug/kg
Aroclor 1248		ND ND	36 36	ug/kg
Aroclor 1254 Aroclor 1260		ND	36	ug/kg ug/kg
		ND	36	ug/kg
SURROGATE Tetrachloro-m-xyle Decachlorobipheny	ene	DEGOTIEDA	RECOVERY LIMITS (10 - 196) (10 - 199)	•
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

Client Sample ID: SB-399-0203

GC Semivolatiles

Lot-Sample #: A7J170258-010 Date Sampled: 10/16/07 10:50 Prep Date: 10/22/07 Prep Batch #: 7295324		10/17/07	Matrix SO
Dilution Factor: 1 % Moisture: 10	<pre>Initial Wgt/Vol: Method:</pre>		Final Wgt/Vol: 10 mL
100	method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	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	ND	37	ug/kg
Aroclor 1260	ND .	37	ug/kg
SURROGATE Tetrachloro-m-xylene Decachlorobiphenyl	PERCENT RECOVERY 97 109	RECOVERY LIMITS (10 - 196) (10 - 199)	

$\underline{\text{NOTE}}(S)$:

Client Sample ID: SB-399-0405

GC Semivolatiles

Lot-Sample #:	A7J170258-011	Work Order #:	J86NK1AC	Matrix SO
Date Sampled:	10/16/07 10:52	Date Received:	10/17/07	Mactix
Prep Date:	10/22/07	Analysis Date:		
Prep Batch #:	7295324		10/24/07	
Dilution Factor:		Initial Wgt/Vol:	30 00 ~	TI' 1 57 . 452 2
% Moisture:	15	Method:		Final Wgt/Vol: 10 mL
			REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Aroclor 1016	-, -	ND	39	ug/kg
Aroclor 1221	•	ND	39	ug/kg
Aroclor 1232		ND	39	ug/kg
Aroclor 1242		ND	39	
Aroclor 1248		ND	11	ug/kg
Aroclor 1254		ND	-	ug/kg
Aroclor 1260		ND	2.0	ug/kg ug/kg
CHDDOCAMA		PERCENT	RECOVERY	•

<u>LIMIT</u>S

(10 - 196)

(10 - 199)

RECOVERY

93

104

NOTE (S):

SURROGATE

Results and reporting limits have been adjusted for dry weight.

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-399-0708

GC Semivolatiles

Lot-Sample #: A7J170258-0 Date Sampled: 10/16/07 10 Prep Date: 10/22/07 Prep Batch #: 7295324		10/17/07	Matrix SO
Dilution Factor: 1 % Moisture: 17	<pre>Initial Wgt/Vol: Method</pre>	30.1 g SW846 8082	Final Wgt/Vol: 10 mL
PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260		40	UNITS ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg

RECOVERY

(10 - 196)

(10 - 199)

LIMITS

PERCENT

SURROGATE RECOVERY
Tetrachloro-m-xylene 101
Decachlorobiphenyl 117

NOTE (S):

Client Sample ID: SB-400-0102

GC Semivolatiles

Date Sample #: A7J170258-013 Date Sampled: 10/16/07 10:59 Prep Date: 10/22/07 Prep Batch #: 7295324 Dilution Factor: 1 % Moisture: 8.4	Work Order #: Date Received: Analysis Date: Initial Wgt/Vol: Method:	10/17/07 10/24/07 30.03 g	Matrix: SO Final Wgt/Vol.: 10 mL
PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260	RESULT ND ND ND ND ND ND ND ND	36	UNITS ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg

RECOVERY

(10 - 196)

(10 - 199)

LIMITS

PERCENT

119

118

RECOVERY

NOTE(S):

SURROGATE

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-400-0203

GC Semivolatiles

Lot-Sample #: A7J170258-01 Date Sampled: 10/16/07 11: Prep Date: 10/22/07 Prep Batch #: 7295324	Work Order #: 01 Date Received: Analysis Date:	10/17/07	Matrix SO
Dilution Factor: 1 % Moisture: 7.9	<pre>Initial Wgt/Vol: Method:</pre>	30.16 g SW846 8082	Final Wgt/Vol: 10 mL
PARAMETER	RESULT	REPORTING	VIVVIII a
Aroclor 1016	ND	LIMIT 36	UNITS
Aroclor 1221	ND	36	ug/kg
Aroclor 1232	ND	36	ug/kg
Aroclor 1242	ND	36	ug/kg
Aroclor 1248	ND		ug/kg
Aroclor 1254	ND	36	ug/kg
Aroclor 1260	ND	36 36	ug/kg ug/kg
SURROGATE Tetrachloro-m-xylene Decachlorobiphenyl	PERCENT RECOVERY 116 102	RECOVERY <u>LIMITS</u> (10 - 196) (10 - 199)	

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

Client Sample ID: SB-400-0405

GC Semivolatiles

Lot-Sample #:		Work Order #:	J86NR1AC	Matrixso
Date Sampled:	10/16/07 11:03	Date Received:	10/17/07	
Prep Date:	10/22/07	Analysis Date:		
<pre>Prep Batch #:</pre>	7295324	-		
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.02 a	Final Wgt/Vol: 10 mL
% Moisture:	16	Method:		Timal nge, vol 10 mm
			REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Aroclor 1016		ND	39	ug/kg
Aroclor 1221		ND	39	ug/kg
Aroclor 1232		ND	39	ug/kg
Aroclor 1242		ND	39	ug/kg
Aroclor 1248		ND	39	ug/kg
Aroclor 1254		ND	39	ug/kg
Aroclor 1260		ND	39	ug/kg

RECOVERY

(10 - 196)

(10 - 199)

LIMITS

PERCENT

RECOVERY

89

96

NOTE(S):

SURROGATE

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-400-0708

GC Semivolatiles

Prep Date: Prep Batch #:	10/16/07 11:05 10/22/07 7295324	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	: SO
Dilution Factor: % Moisture:		<pre>Initial Wgt/Vol: Method:</pre>		Final Wgt/Vo	1: 10 mL
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	
Aroclor 1016		ND	41	ug/kg	
Aroclor 1221		ND	41	ug/kg	
Aroclor 1232		ND	41		•*
Aroclor 1242		ND	41	ug/kg	
Aroclor 1248		ND	41	ug/kg	
Aroclor 1254		ND		ug/kg	
Aroclor 1260			41	ug/kg	
11100101 1200		ND	41	ug/kg	
CHDDOCAMD			RECOVERY		
SURROGATE			LIMITS	•	
Tetrachloro-m-xyl		66	(10 - 196)		
Decachlorobipheny.	1	108	(10 - 199)		

NOTE(S):

Client Sample ID: SB-401-0102

GC Semivolatiles

Lot-Sample #: A7J170258-017 Date Sampled: 10/16/07 11:2 Prep Date: 10/22/07 Prep Batch #: 7295324 Dilution Factor: 1 % Moisture: 20		10/17/07 10/26/07 30.01 g	Matrix: SO Final Wgt/Vol.: 10 mL
PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260	RESULT ND ND ND ND ND ND ND ND ND	REPORTING LIMIT 41 41 41 41 41 41 41 41 41	UNITS ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg
SURROGATE Tetrachloro-m-xylene Decachlorobiphenyl	PERCENT RECOVERY 109 135	RECOVERY LIMITS (10 - 196) (10 - 199)	

NOTE (S):

Client Sample ID: SB-401-0203

GC Semivolatiles

Lot-Sample #: A7J170258-018 Date Sampled: 10/16/07 11:24			Matrix SO
Prep Date: 10/22/07	Analysis Date:		
Prep Batch #: 7295324	X	207,20707	
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.02 g	Final Wgt/Vol: 10 mL
% Moisture: 12	Method:		rinar nge/vor 10 mb
		2010 0002	
		REPORTING	
PARAMETER	RESULT	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	ND	37	uq/kq
Aroclor 1260	ND	37	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	81	$\frac{\text{LIMITS}}{(10 - 196)}$	
Decachlorobiphenyl	92 ,	·	
	<i>J</i>	(10 - 199)	

NOTE(S):

Client Sample ID: SB-401-0405

GC Semivolatiles

Lot-Sample #: A7J170258-019	Work Order #:	J86N11AC	Matrixso
Date Sampled: 10/16/07 11:26	Date Received:	10/17/07	
Prep Date: 10/22/07	Analysis Date:		
Prep Batch #: 7295324	-		
Dilution Factor: 1	Initial Wgt/Vol:	30.06 a	Final Wgt/Vol: 10 mL
% Moisture: 17	Method:		111101 WgC, VOI 10 Mil
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	40	ug/kg
Aroclor 1221	ND	40	ug/kg
Aroclor 1232	ND ·	40	ug/kg
Aroclor 1242	ND	40	ug/kg
Aroclor 1248	ND ·	40	ug/kg
Aroclor 1254	ND	40	ug/kg
Aroclor 1260	ND	40	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	96	(10 - 196)	
Decachlorobiphenyl	120	(10 - 199)	
NOTE (S):	<u> </u>		

Client Sample ID: SB-401-0708

GC Semivolatiles

Lot-Sample #: A/J170258-020	Work Order #:	J86N21AC	Matrix SO
Date Sampled: 10/16/07 11:28	Date Received:	10/17/07	
Prep Date: 10/22/07	Analysis Date:		
Prep Batch #: 7295324	_	•	
Dilution Factor: 1	Initial Wgt/Vol:	30.06 a	Final Wgt/Vol.: 10 mL
% Moisture: 14	Method:		12.11d1 11ge/ VOI 10 11th
		010 0002	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38	ug/kg
Aroclor 1232	ND	38	ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	ND	38	uq/kq
			ug/ 11g
	PERCENT	RECOVERY	•
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	64	(10 - 196)	
Decachlorobiphenyl	104	(10 - 199)	
	, ,	,	•

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

APPENDIX C

SUPPORT DOCUMENTATION

CASE NARRATIVE

7J17258

The following report contains the analytical results for twenty solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112C00885. The samples were received October 17, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7J170258.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 3.6, 3.8, and 4.9°C.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The internal standard areas were outside acceptance limits for sample(s) SB-397-0203 due to matrix effects. (Refer to IS report following this Case Narrative for additional detail.)

POLYCHLORINATED BIPHENYLS-8082

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

For batch(es) 7295324, the CCV exceeded method criteria on the high side. Since the sample(s) results were below the requested reporting limit, the results have been accepted.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

Chain of Custody Record



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Chain of Custody Record

STL-4124 (0901)



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PCS	%	SB-400-0203	A7J170258014	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
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PCS	%	SB-399-0708	A7J170258012	NM	10/16/2007	10/23/2007	10/24/2007	7	1	8
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OS	%	SB-399-0405	A7J170258011	NM	10/16/2007	10/22/2007	10/23/2007	6	1	7
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os	%	SB-398-0102	A7J170258005	NM	10/16/2007	10/22/2007	10/23/2007	6	. 1	7
os	%	SB-397-0708	A7J170258004	NM	10/16/2007	10/22/2007	10/23/2007	6	1	7
os	%	SB-397-0203	A7J170258002	NM	10/16/2007	10/22/2007	10/23/2007	6	1	7
os	%	SB-400-0102	A7J170258013	NM	10/16/2007	10/22/2007	10/23/2007	6	' . 1	7
os	%	SB-397-0405	A7J170258003	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
os	UĠ/KG	SB-401-0203	A7J170258018	NM	10/16/2007	10/22/2007	10/23/2007	6	1	7
)S	UG/KG	SB-399-0405	A7J170258011	NM	10/16/2007	10/22/2007	10/23/2007	6	1	7
S.	UG/KG	SB-399-0708RE	A7J170258012	NM	10/16/2007	10/24/2007	10/28/2007	8	4	12
S	UG/KG	SB-400-0102	A7J170258013	NM	10/16/2007	10/22/2007	10/23/2007	6	1	
S	UG/KG	SB-400-0203	A7J170258014	NM	10/16/2007	10/22/2007	10/23/2007	6	r	7 7
S	UG/KG	SB-400-0405	A7J170258015	NM	10/16/2007	10/22/2007	10/23/2007	. 6	1	
S	UG/KG	SB-401-0102	A7J170258017	NM	10/16/2007	10/22/2007	10/23/2007	6	1	7
S	UG/KG	SB-398-0203	A7J170258006	NM	10/16/2007	10/22/2007	10/23/2007	6	1	7
Š.	UG/KG	SB-401-0405RE	A7J170258019	NM	10/16/2007	10/25/2007	10/26/2007	9		7
3	UG/KG	SB-400-0708	A7J170258016	NM	10/16/2007	10/22/2007	10/23/2007	6	1 .	. 10
3	UG/KG	SB-399-0203	A7J170258010	· NM	10/16/2007	10/22/2007	10/23/2007	6	1	7 7

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP DATE	EVTD DATE		•		
os	UG/KG	SB-399-0102	A7J170258009	NM	10/16/2007	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANI
os	UG/KG	SB-398-0405	A7J170258007	NM	10/16/2007	10/22/2007	10/23/2007 10/23/2007	6	1	7
os	UG/KG	SB-398-0102	A7J170258005	NM	10/16/2007	10/22/2007	10/23/2007	6	1	7 7
OS	UG/KG	SB-397-0708	A7J170258004	NM	10/16/2007	10/22/2007	10/23/2007	6	1	7
os	UG/KG	SB-397-0405	A7J170258003	NM	10/16/2007	10/22/2007	10/25/2007	6	3	9
OS	UG/KG	SB-397-0203	A7J170258002	NM	10/16/2007	10/22/2007	10/23/2007	6	1	7
OS	UG/KG	SB-397-0102	A7J170258001	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
OS	UG/KG	SB-401-0708	A7J170258020	NM	10/16/2007	10/22/2007	10/23/2007	6		7
OS .	UG/KG	SB-398-0708	A7J170258008	NM	10/16/2007	10/22/2007	10/23/2007	6	1	, 7
CB	%	SB-399-0405	A7J170258011	NM ·	10/16/2007	10/22/2007	10/24/2007	6	2	8
CB	%	SB-400-0708	A7J170258016	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
СВ	%	SB-399-0102	A7J170258009	NM	10/16/2007	10/22/2007	10/24/2007	6	2	. 8
CB	%	SB-397-0102	A7J170258001	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
CB	%	SB-401-0708	A7J170258020	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
CB	%	SB-401-0405	A7J170258019	NM	10/16/2007	10/22/2007	10/24/2007	6	2.	8
CB	%	SB-401-0102	A7J170258017	NM	10/16/2007	10/22/2007	10/26/2007	6	4	10
CB	%	SB-400-0405	A7J170258015	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
В	%	SB-400-0203	A7J170258014	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	OHD EVER		
PCB	%	SB-400-0102	A7J170258013	NM	10/16/2007	10/22/2007	10/24/2007	SMP_EXTR 6	EXTR_ANL	STATE OF THE STATE
PCB	%	SB-397-0405	A7J170258003	NM	10/16/2007	10/22/2007	10/26/2007	6	2 4	8 10
PCB	%	SB-401-0203	A7J170258018	NM ·	10/16/2007	10/22/2007	10/26/2007	6	4	10
PCB	%	SB-397-0203	A7J170258002	NM	10/16/2007	10/22/2007	10/24/2007	6	2	
PCB	. %	SB-399-0708	A7J170258012	NM	10/16/2007	10/22/2007	10/24/2007	· 6		8
PCB	%	SB-397-0708	A7J170258004	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
PCB	%	SB-398-0102	A7J170258005	NM	10/16/2007	10/22/2007	10/26/2007		2	8 .
PCB	%	SB-398-0203	A7J170258006	NM	10/16/2007	10/22/2007	10/26/2007	6	4	10
PCB	%	SB-398-0405	A7J170258007	NM	10/16/2007	10/22/2007		6	4	10
PCB	%	SB-398-0708	A7J170258008	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
PCB	%	SB-399-0203	A7J170258010	NM	10/16/2007		10/24/2007	6	2	8
PCB	UG/KG	SB-399-0708	A7J170258012	NM		10/22/2007	10/24/2007	6	2	8
PCB	UG/KG	SB-397-0102			10/16/2007	10/22/2007	10/24/2007	6	2	8
		30-397-0102	A7J170258001	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
PCB	UG/KG	SB-401-0405	A7J170258019	NM	10/16/2007	10/22/2007	10/24/2007	6	2	. 8
PCB	UG/KG	SB-401-0203	A7J170258018	NM	10/16/2007	10/22/2007	10/26/2007	6	4	10
PCB	UG/KG	SB-401-0102	A7J170258017	NM	10/16/2007	10/22/2007	10/26/2007	6	4	
PCB	UG/KG	SB-400-0708	A7J170258016	NM	10/16/2007	10/22/2007	10/24/2007			10
РСВ	UG/KG	SB-400-0405	A7J170258015	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
Monday	Novemba	12/2007					10/24/2007	6	2 Pa	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	CMD EVED		
PCB	UG/KG	SB-400-0203	A7J170258014	NM	10/16/2007	10/22/2007		SMP_EXTR	EXTR_ANL	SMP_ANL
PCB	UG/KG	SD 400 0100	•		10/10/2007	10/22/2007	10/24/2007	6	2	8
105	od/Rd	SB-400-0102	A7J170258013	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
PCB	. UG/KG	SB-401-0708	A7J170258020	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
PCB	UG/KG	SB-399-0405	A7J170258011	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
PCB	UG/KG	SB-399-0203	A7J170258010	NM	10/10/0007			Ÿ	2	0
	•		A70170230010	INIVI	10/16/2007	10/22/2007	10/24/2007	6	2	8
PCB	UG/KG	SB-399-0102	A7J170258009	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
PCB	UG/KG	SB-398-0708	A7J170258008	NM ·	10/16/2007	10/22/2007	10/24/2007	6	2	8
PCB	UG/KG	SB-398-0405	A7J170258007	NM	10/16/2007	10/22/2007	10/04/0007	-		
PCB	HOWO	OF 000 0000				10/22/2007	10/24/2007	6	2	8
rob	UG/KG	SB-398-0203	A7J170258006	· NM	10/16/2007	10/22/2007	10/26/2007	6	· 4	10
PCB	UG/KG	SB-398-0102	A7J170258005	NM	10/16/2007	10/22/2007	10/26/2007	6	4	10
PCB	UG/KG	SB-397-0708	A7J170258004	NM	10/16/2007	10/00/0007				10
DOD					10/10/2007	10/22/2007	10/24/2007	6	2	8.
PCB	UG/KG	SB-397-0203	A7J170258002	NM	10/16/2007	10/22/2007	10/24/2007	6	2	8
PCB	UG/KG	SB-397-0405	A7J170258003	NM	10/16/2007	10/22/2007	10/26/2007	6	4	10
								-	. 1	I V

8C SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17258

Lab File ID (Standard): 7SMH1023 Date Analyzed: 10/23/07

Instrument ID: A4HP7 Time Analyzed: 1559

		IS4 (PHN)		IS5 (CRY)	T	IS6 (PRY)	1
		AREA #	RT	AREA #	RT	AREA #	RT
	========	========	======	========	=====	========	======
	12 HOUR STD	537061	6.70	477206	8.67	399841	10.06
		=========	=====	=========	=====	========	=====
	UPPER LIMIT	1074122	7.20	954412	9.17	799682	10.56
	LOWER LIMIT	268531	6.20	238603	8.17	199921	2=====
		200551	======	236603	0.1/	199921	9.56
	EPA SAMPLE						
	NO.						
		========	=====	========	=====	=======	=====
01	J9J49BLK	454070	6.70	425703	8.66	360275	10.06
02	J9J49CHK	374965	6.70	326911	8.66	278739	10.06
03	SB-397-0203	290982	6.70	241710	8.66	197513*	10.06
04	SB-397-0708	477072	6.70	429686	8.66	347820	10.06
05	SB-398-0203	329651	6.70	314886	8.65	258689	10.05
06 07	SB-398-0405	342761	6.70	305584	8.66	259687	10.06
• •	SB-398-0708	493616	6.70	436215	8.65	352763	10.05
80	SB-399-0102	434506	6.70	387114	8.65	330810	10.05
09	SB-399-0203	415293	6.70	381082	8.65	316761	10.05
10	SB-399-0405	357253	6.70	314605	8.64	260312	10.04
11	SB-400-0102	393340	6.70	342615	8.64	293224	10.05
12	SB-400-0405	506369	6.70	433462	8.65	359730	10.05
13	SB-400-0708	368179	6.70	325297	8.64	275172	10.05
14	SB-401-0203	385481	6.70	363691	8.64	292586	10.04
15	SB-401-0708	396522	6.70	366167	8.65	309253	10.05
	SB-398-0102	330623	6.70	298264	8.65	259954	10.05
17	SB-400-0203	391847	6.70	315051	8.64	273759	10.05
18	SB-401-0102	279103	6.70	240979	8.65	223517	10.06
19							
20							
21							
22	l	.					

IS4 (PHN) = Phenanthrene-d10 IS5

(CRY) = Chrysene-d12 = Perylene-d12 (PRY)

UPPER LIMIT = +100%

of internal standard area.

LOWER LIMIT = - 50%

of internal standard area.

Column used to flag internal standard area values with an asterisk.

page 1 of 1

IS6

FORM VIII SV-2

1/87 Rev.

FORM 8 SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: TESTAMERICA-NORTH CANTON Contract:

SAS No.: Lab Code: TALCAN Case No.: SDG No.: 7J17258

GC Column: RESTEK PEST CLPI ID: 0.53 (mm) Init. Calib. Date(s): 06/27/07 10/19/0

Instrument ID: A2HP4

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURRO	GATE RT FROM :	INITIAL CAL	IBRATION	1	
	S1 : 1.57	S2 :	8.07			
						·
	CLIENT	LAB	DATE	TIME	S1	S2 "
	SAMPLE NO.	SAMPLE ID	ANALYZED	ANALYZED	RT #	RT #
01		7170	30/04/05	1200	7	
01 02	SB-397-0102	E178 J86M51AC	10/24/07	1329	1.57	8.07
02		J86M71AC	10/24/07 10/24/07	1638 1655	1.57	8.07
04		J86M71AE	10/24/07	1712	1.57 1.57	8.07
05		J86M71AF	10/24/07	1729	1.57	8.07 8.07
06	135-391-0203	E178	10/24/07	1803	1.57	8.07
07	SB-397-0708	J86NC1AC	10/24/07	1837	1.57	8.07
08	SB-398-0405	J86NF1AC	10/24/07	1929	1.57	8.07
09	SB-398-0708	J86NGLAC	10/24/07	1946	1.57	8.07
10	SB-399-0102	J86NH1AC	10/24/07	2003	1.57	8.07
11	SB-399-0203	J86NJ1AC	10/24/07	2020	1.57	8.07
12	SB-399-0405	J86NKLAC	10/24/07	2037	1.57	8.07
13	SB-399-0708	J86NL1AC	10/24/07	2054	1.57	8.07
	SB-400-0102	J86NN1AC	10/24/07	2112	1.57	8.07
15	SB-400-0203	J86NQ1AC	10/24/07	2129	1.57	8.07
16	SB-400-0405	J86NR1AC	10/24/07	2146	1.57	8.07
17	SB-400-0708	J86NT1AC	10/24/07	2203	1.57	8.07
18	SB-401-0405	J86N11AC	10/24/07	2254	1.57	8.07
19	SB-401-0708	J86N21AC	10/24/07	2311	1.57	8.07
20	J9J5DBLK	J9J5D1AA	10/24/07	2329	1.57	8.07
21	J9J5DCHK	J9J5D1AC	10/24/07	2346	1.57	8.07
22		E178	10/25/07	0003	1.57	8.07
23			, ,			
24						
25						
26						
27						
28						
29						•
30						
31						
32						

S1 = TCMX

QC LIMITS (+/- 0.10 MINUTES) (+/- 0.10 MINUTES)

page 1 of 1

FORM VIII SV

[#] Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

Data File: \\cansvr11\dd\chem\GCS\a2hp4.i\71024-1.b\036B3601.D

Report Date: 24-Oct-2007 18:16

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp4.i

Lab File ID: 036B3601.D

Injection Date: 24-OCT-2007 18:03
Init. Cal. Date(s): 27-JUN-2007 19-OCT-2007
Init. Cal. Times: 15:36 02:34
Quant Type: ESTD

Analysis Type:

Lab Sample ID: E178 Method: \\cansvr11\dd\chem\GCS\a2hp4.i\71024-1.b\HP4PCBF.m

	I	1	MIN	1	MAX	1
COMPOUND	RRF /	AMOUNT	RF0.500 RRF	%D / %DRIFT %D	/ %DRIFT C	CURVE TYPE
		===== ==		======= ==	=======================================	
\$ 1 TCMX	41	686727	53801000 0.010	-29.06027	15.00000	Averaged) <
3 AROCLOR-1016(1)	1	674885	824048 0.010	-22.10196	15.00000	Averaged <
(2)	1	075356	1314588 0.010	-22.24681	15.00000	Averaged <
(3)	1	7496971	2121234 0.010	-21.234341	15.00000	Averaged <
(4)	1	931520	1114846 0.010	-19.680371	15.00000	Averaged!<
(5)	1	8553661	942802 0.010	-10.22208	15.00000	Averaged
8 AROCLOR-1260(1)	1	442350	1721690 0.010	-19.36698	15.00000	Averaged <
(2)	2	293064	2847758 0.010	-24.19011	15.00000	Averaged <
(3)	1	874912	2366526 0.010	-26.220641	15.00000	Averaged <
(4)	3	5356261	4675906 0.010	-32.25114	15.00000	Averaged <
(5)	1	649174	2115186 0.010	-28.25730	15.00000	Averaged <
\$ 12 DCB	28	984152	35216440 0.010	-21.50240	15.00000	Averaged <
	ı	1	1 1	1	1	1

CUPI

Data File: \\cansvr11\dd\chem\GCS\a2hp4.i\71024-1.b\057B5701.D

Report Date: 25-Oct-2007 00:16

STL North Canton

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: a2hp4.i

Injection Date: 25-OCT-2007 00:03

Lab File ID: 057B5701.D

Init. Cal. Date(s): 27-JUN-2007 19-OCT-2007 Init. Cal. Times: 15:36 02:34

Analysis Type:

Lab Sample ID: E178 Quant Type: ESTD

Method: \\cansvr11\dd\chem\GCS\a2hp4.i\71024-1.b\HP4PCBF.m

	l	MIN	MAX	1
COMPOUND	RRF / AMOUNT	RF0.500 RRF %D / %I	ORIFT %D / %DRIFT	CURVE TYPE!
\$ 1 TCMX	41686727	53892040 0.010 -29.2	27866 15.00000	Averaged!<
3 AROCLOR-1016(1)	674885	841896 0.010 -24.7	74656 15.00000	Averaged!<
(2)	1075356	1337652 0.010 -24.3	39159 15.00000	Averaged <
(3)	1749697	2186166[0.010] -24.9	94539 15.00000	Averaged <
. (4)	931520	1145524 0.010 -22.9	7370 15.00000	Averaged <
(5)	855366	958898(0.010) -12.3	15.00000	Averaged
8 AROCLOR-1260(1)	1442350	1735400 0.010 -20.3	31752 15.00000	Averaged <
(2)	2293064	2888176 0.010 -25.9	95273 15.00000	Averaged <
(3)	1874912	2399252 0.010 -27.9	96611 15.00000	Averaged <
(4)	3535626	4787572 0.010 -35.4	10945 15.00000	Averaged <
(5)	1 1649174	2194262 0.010 -33.0	05218 15.00000	Averaged <
\$ 12 DCB	28984152	33729280 0.010 -16.3	37146 15.00000	Averaged <
	1	1 1	1 1	1

FORM 8 SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J17258

GC Column: RESTEK PEST CLPII ID: 0.53 (mm) Init. Calib. Date(s): 06/27/07 10/19/

Instrument ID: A2HP4

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURROO S1 : 2.09	SATE RT FROM S2 :	NITIAL CAL 9.71	BRATION		
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	SAMPLE NO. ========= SB-397-0405	SAMPLE ID ===================================	ANALYZED	ANALYZED 0859 1025 1042 1059 1116 1133 1150	RT # 2.09 2.10 2.10 2.09 2.09 2.09 2.09	RT # 9.71 9.71 9.71 9.71 9.71 9.71 9.71 9.7
28 29 30 31 32						

QC LIMITS

S1 = TCMX

(+/- 0.10 MINUTES) (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits.

page 1 of 1

FORM VIII SV

Data File: 002B0201.D

Report Date: 26-Oct-2007 09:13

STL North Canton

CAT

CONTINUING CALIBRATION COMPOUNDS

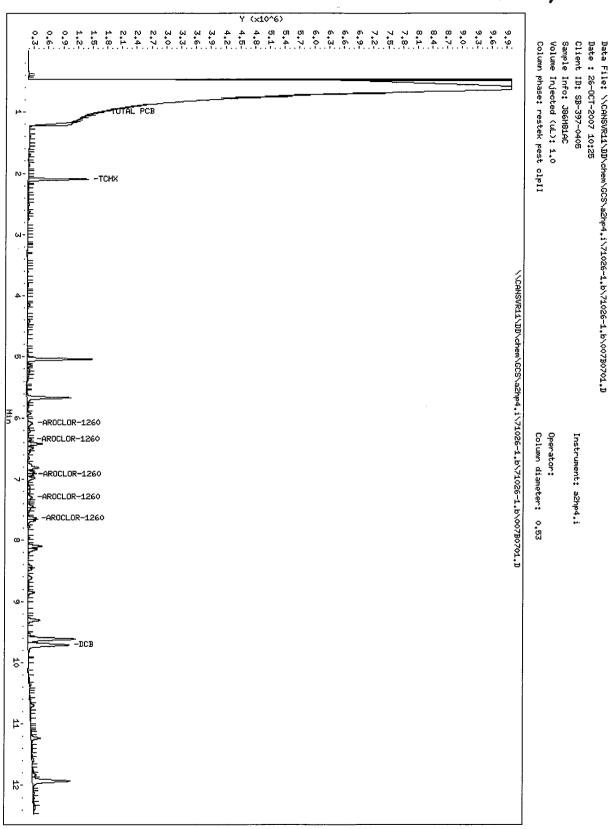
Instrument ID: a2hp4.i

Injection Date: 26-OCT-2007 08:59
Init. Cal. Date(s): 27-JUN-2007 19-OCT-2007
Init. Cal. Times: 15:36 02:34
Quant Type: ESTD

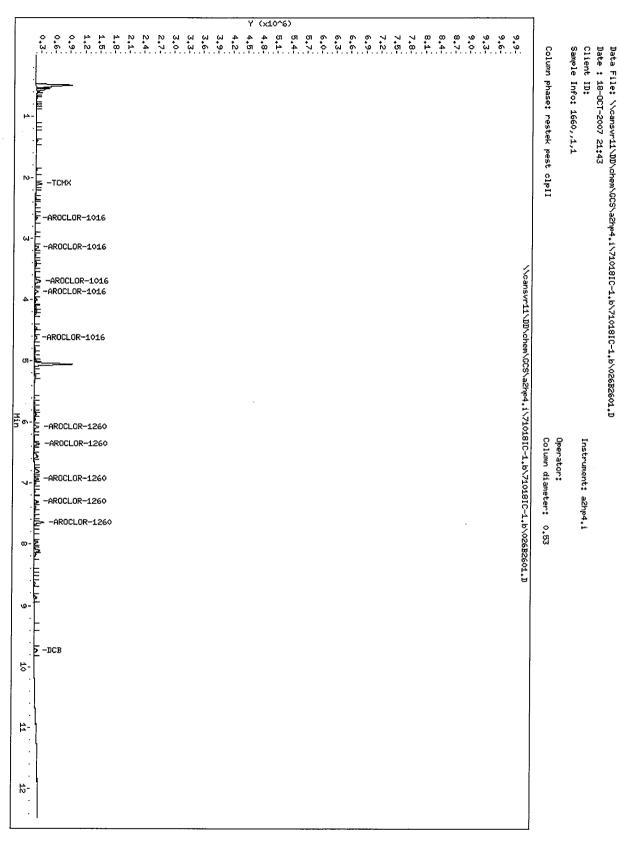
Lab File ID: 002B0201.D Init. Cal. Date(s): 27-JUN-2007 19-OCT-2
Analysis Type: Init. Cal. Times: 15:36 02:34
Lab Sample ID: 1660 Quant Type: ESTD
Method: \\cansvr11\\dd\\chem\\GCS\\a2hp4.i\\71026-1.b\\HP4PCBF.m\\HP4PCBR.m

	I I	MIN	MAX	ļ
COMPOUND	RRF / AMOUNT	RF0.500 RRF %D /	&DRIFT &D / &DRIFT CUI	RVE TYPE
		====== ==== ====	===== ===== ===	
1 TCMX	102659388	143758500 0.010 -40	.03444 15.00000 2	Averaged
3 AROCLOR-1016(1)	1766935	2058960 0.010	52721 15.000001 2	Averaged
(2)	3351808	3986648 0.010 -18	.94024 15.00000 1	Averaged
(3)	7131990	8223756 0.010 -15	.30801 15.00000 2	Averaged
(4)	3193722	3612922 0.010 -13	.12575 15.00000 1	Averaged
(5)	3254612	3336260 0.010 -2	50869 15.00000 2	Averaged
3 AROCLOR-1260(1)	46754541	5452922 0.010 -16	.62871 15.000001 2	Averaged
(2)	5377152	6155860 0.010 -14	.48180 15.00000 7	Averaged
(3)	43294031	506606210.0401 -17	.01526 15.00000 2	Averaged
(4)	4865735	5581620 0.010 -14	.71278 15.00000 2	Averaged
(5)	10051689	11790748 0.010 -17	.30117] 15.000001 2	Averaged
12 DCB	94531163	123575850 0.010 -30	.72499 15.00000 2	Averaged
	1 1	1 1	1 1	

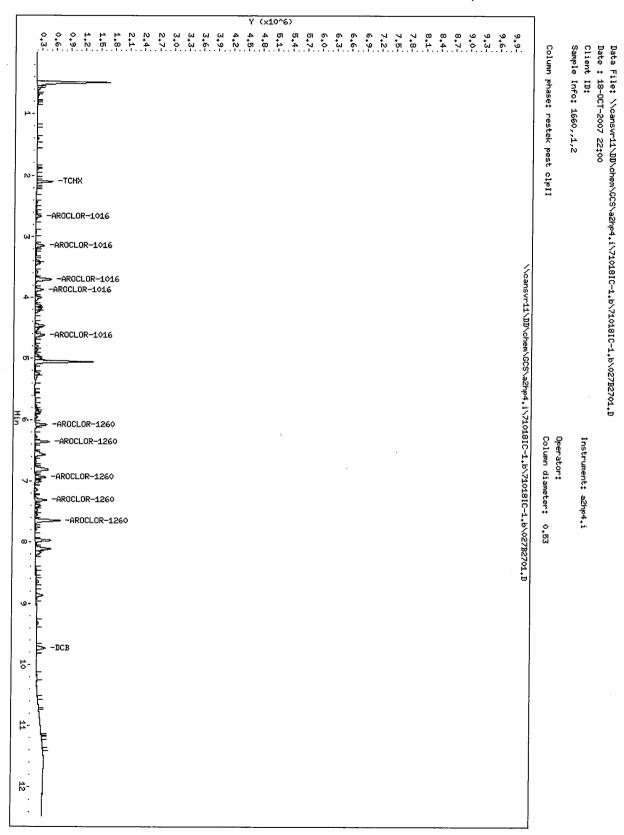
SAMPLE



GARRAD



STAND AD



CALCULATION WORKSHEET

Page 1 of 1

CLIENT:	SDG No.
LOCKHEED MIDDLE RIVER	7J17258
SUBJECT:	
EXAMPLE CALCULATION - BENZ	ZO(A)PYRENE - SOIL
BY:	DATE:
T. JACKMAN	11/30/07

Sample ID = SB-397-0405	Benzo(a)pyrene
Concentration = 850 ug/kg	

EQUATION:

$$C_{s} = \frac{A_{x} \times Is \times Vt \times Df}{Ais \times RRF \times V_{i} \times W_{s} \times D}$$

Where:

C _s	=	analyte concentration in soil		ug/kg
A_{x}	=	analyte response	=	1127459
ls	=	amount of internal standard	=	2 ng
V_{t}	=	volume of final extract	=	2000 uL
Df	=	dilution factor	=	1
Ais	=	response of internal standard	=	325294
RRF	=	response factor of compound	=	1.1349
V_{i}	=	volume injected	=	0.5 uL
Ws	=	sample weight	=	30.13 g
D	=	percent solids	=	0.951

Therefore: benzo(a)pyrene concentration in soil =

1127459 x 2ng x 2000uL x 1 325294 x 1.1349 x 0.5uL x 30.13g x 0.951

$C_s =$	853	ug/kg

Client Sample ID: SB-397-0405

GC/MS Semivolatiles

Lot-Sample 4	ŧ -	A7J170258-003	Work Order	# •	.T86M81AD	Matrix	• 90
TO C DOMINATE A	<i>T</i>	A/UI/UZJU UUJ	MOTY OTGET	T	0.0.0110.TVD	Hatita.	17(/

Date Sampled...: 10/16/07 10:22 Date Received..: 10/17/07

Prep Date....: 10/22/07 Analysis Date..: 10/25/07

Prep Batch #...: 7295325

Final Wgt/Vol. 2 mL Initial Wgt/Vol: (30.13 g) Dilution Factor: % Moisture....

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzo(a)pyrene	850 850		uq/kq
			3 3
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Nitrobenzene-d5	42	(24 - 112)	

SURROGATE	RECOVERY	LIMITS
Nitrobenzene-d5	42	(24 - 112)
2-Fluorobiphenyl	. 59	(34 - 110)
Terphenyl-d14	87	(41 - 119)
Phenol-d5	60	(28 - 110)
2-Fluorophenol	47	(26 - 110)
2,4,6-Tribromophenol	62	(10 - 118)

NOTE(S):

Data File: \\cansvr11\\dd\chem\MSS\a4hp7.i\71025a.b\J86M81AD.D Page 1

Report Date: 26-Oct-2007 13:18

STL North Canton

Semivolatile REPORT SW-846 Method 8270

Data file: \\cansvr11\dd\chem\MSS\a4hp7.i\\71025a.b\J86M81AD.D
Lab Smp Id: j86m81ad Client Smp ID: SB-397Inj Date: 25-OCT-2007 21:18
Operator: 001710 Inst ID: a4hp7.i
Smp Info: j86m81ad,71025a.b,8270p,bap.sub

Client Smp ID: SB-397-0405

Misc Info:

Comment

Method : \\cansvr11\dd\chem\MSS\a4hp7.i\71025a.b\8270P.m Meth Date: 26-Oct-2007 13:15 gruberj Quant Type: ISTD Cal Date : 23-OCT-2007 15:59 Cal File: 7SMH1023.D

Als bottle: 36

Dil Factor: 1.00000 Integrator: HP RTE

Compound Sublist: bap.sub

Target Version: 4.14

Processing Host: CANPMSSV01

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws *) * CpndVariable

Name	Value	Description
DF Uf Vt Vi Ws Cpnd Variable	1.000 2000.000 0.50000	Dilution Factor ng unit correction factor Volume of final extract (uL)(1000 low, 2 Volume injected (uL) Weight of sample extracted (g) Local Compound Variable

					CONCENTR	ATIONS
	QUANT SIG				ON-COLUMN	FINAL
Compounds	MASS	RT	EXP RT REL RT	RESPONSE	(NG)	(ug/kg)
	8888	====		= ======		
* 1 1,4-Dichlorobenzene-d4	152	3.315	3.311 (1.000)	114555	2.00000	(QM)
* 2 Naphthalene-d8	136	4.203	4.205 (1.000)	501270	2.00000	
* 3 Acenaphthene-d10	164	5.465	5.462 (1.000)	276278	2.00000	
* 4 Phenanthrene-d10	188	6.546	6.542 (1.000)	459027	2.00000	
* 5 Chrysene-dl2	240	8.487	8.505 (1.000)	382370	2.00000	(H)
* 6 Perylene-dl2	264	9.782	9.799 (1.000)	325294	2.00000	
146 Benzo(a)pyrene	252	9.723	9.741 (0.994)	1127459	6.10799	(810.88)
\$ 154 Nitrobenzene-d5	82	3.689	3.691 (0.878)	319330	2.08935	277.38
\$ 155 2-Fluorobiphenyl	172	4.962	4.959 (0.908)	483193	2.92630	388.49
\$ 156 Terphenyl-d14	244	7.680	7.681 (0.905)	727370	4.33318	575.26
\$ 157 Phenol-d5	99	3.042	3.033 (0.918)	617134	4.52943	601.32
\$ 158 2-Fluorophenol	112	2.475	2.450 (0.747)	287694	3.50674	465.55
\$ 159 2,4,6-Tribromophenol	330	6.037	6.034 (1.105)	82009	4.66020	618.68
\$ 186 2-Chlorophenol-d4	132	3.165	3.162 (0.955)	271440	3.76785	500.21
\$ 187 1,2-Dichlorobenzene-d4	152	3.422	3.424 (1.032)	59024	1.27284	168.98(Q)

QC Flag Legend

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 23-OCT-2007 13:20
End Cal Date : 23-OCT-2007 15:59
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\cansvr11\\dd\chem\MSS\a4hp7.i\71023a.b\8270P.m
Last Edit : 23-Oct-2007 16:14 gruberj
Curve Type : Average

0.05000 0.55000 0.50000 1.000 2.500 5.000										-
1.000 12.500 1.000 12.500		0.05000	0.25000	0.50000	1.000	2.500	5.000	l	l	1
1.25425 1.02756 1.05502 1.08595 1.08027 1.13511 1.13490 7.553 1.0264 1.02707 1.2318 0.93426 0.93555 0.93359 0.98735 1.02564 1.02707 7.671 1.02667 1.04274 1.11850 1.02471 1.02476	Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD	i
Level 7 Level 8 Level 9						l		1	I	1
144 Hexachlorophene	•	7.500	10.000	12.500	!		1		İ	
146 Hexachlorophene	I	Level 7	Level 8	Level 9	1	1	1	1	1	1
145 Rexachlorophene product	======================================				=======	} -			=========	-
145 Rexachlorophene product	144 Hexachlorophene	+++++	+++++	+++++	+++++	+++++	++++	l	-	1
1.25425 1.02756 1.05502 1.08027 1.13511 1.13490 7.553 1.13630 1.16137 1.27824 1.13490 7.553 7.553 7.		+++++	+++++	+++++	1	I	[+++++	+++++	<
1.25425 1.02756 1.05502 1.08027 1.13511 1.13490 7.553 1.13630 1.16137 1.27824 1.13490 7.553 7.553 7.]] 	-
1.25425 1.02756 1.08595 1.08027 1.13511	145 Hexachlorophene product	+++++	+++++	+++++	+++++	+++++	+++++	1	1	1
1.13630 1.16137 1.27824 1.13490 7.553 1.48 3-Methylcholanthrene		+++++	+++++	+++++	Ī	1	Ì	+++++	+++++	<
1.13630 1.16137 1.27824 1.3490 7.553 1.48 3-Methylcholanthrene]]		-
1.13630 1.16137 1.27824 1.13490 7.553 1.48 3-Methylcholanthrene	146 Benzo(a)pyrene	1.25425	1.02756	1.05502	1.08595	1.08027	1.13511	i		İ
148 3-Methylcholanthrene		•	1.16137	1.27824	i	İ	I	1.13490	<i>)</i> 7.553	i
+++++								(· /	·i
+++++	148 3-Methylcholanthrene	, 1 +++++	! ! +++++	1 +++++	, +++++	! ! +++++	, +++++	i	I	i
149 Indeno(1,2,3-cd) pyrene						1	l	, +++++	, +++++	اح
149 Indeno(1,2,3-cd)pyrene 1.33079 1.12538 1.09238 1.18024 1.14554 1.20245						! ! 	ı I 		, 	.
1.21438 1.24271 1.33338 1.20747 6.987	149 Indeno(1 2 3-cd) purene	1 1 22070	1 12520	!	I I 1 19024	1 1 114554	I I 1 20245	!	; 	i
150 Dibenz (a, h) anthracene	145 Indeno(1,2,5-cd,pylene	•		•	•	1 2.24354	1 1.20213	•	1 6927	
150 Dibenz (a,h) anthracene		1.21430			! !	 	l 	1	0.507 	. [
1.03664 1.06750 1.16029 1.02707 7.671	150 Dibons (n. h) anthrogono	1 12200			^ 0E220	0 00735	1 02564	 	 	1
151 Benzo(g,h,i)perylene 1.20041 0.90775 0.93379 0.95488 0.97160 0.99480	130 Dibenz (a, n) anchracene					1 0.98735	1.02504	•	l 7 671	!
1.00267 1.04274 1.11850 1.01413 9.224		1.03664	1.06/50	1.16029] 	 	1.02707	1.671	1
1.00267 1.04274 1.11850 1.01413 9.224	451 Daniel D. S. Januari and		0 00000		0 05400	0 07160	0.00400			1
230 2-Chloroacetophenone	151 Benzo(g,n,1)perylene					0.9/160	, 0.99480	•		1
+++++		1.00267	1.04274	1.11850				1.01413	9.224	: J
+++++										ŀ
199 3-Picoline	230 2-Chloroacetophenone				+++++	+++++	+++++			!
+++++	!	+++++	+++++	+++++				+++++	+++++	<-
+++++										!
200 N,N-Dimethylacetamide	199 3-Picoline	+++++	++++	+++++	+++++	+++++	+++++			!
200 N,N-Dimethylacetamide	1	+++++	+++++	+++++				+++++	+++++	<-
+++++ +++++ +++++										1
201 Quinoline +++++ +++++ +++++ +++++ +++++	200 N,N-Dimethylacetamide	+++++	++++	+++++	+++++	+++++	+++++			1
	i	+++++	++++	++++			ļ ,	+++++	+++++	<-
										1
+++++ +++++ +++++ <-	201 Quinoline	++++	++++	++++	+++++	+++++	+++++			
	l	+++++	+++++	+++++	ĺ			+++++	+++++	<-
·										1
				[1			l		.!

CALCULATION WORKSHEET

Page 1 of 1

CLIENT:	SDG No.	
LOCKHEED MIDDLE RIVER	7J17258	
SUBJECT:		
EXAMPLE CALCULATION - AROCLO	DR-1260 - SOIL	
BY:	DATE:	

Sample ID = SB-397-0405 Concentration = 19 ug/kg

Arocior-1260

EQUATION:

$$C_{W} = \frac{A_{X} \times V_{t} \times Df}{CF \times V_{i} \times W_{s} \times D}$$

Where:

C _s	=	analyte concentration in soil		ug/kg
A _x	=	analyte response	=	297379.8
V _t	=	volume of final extract	=	10000 uL
Df	=	dilution factor	=	1
CF	=	calibration factor	=	5859887
V_{i}	=	volume injected	=	1 uL
Ws	=	sample weight	=	30.05 g
D	=	percent solids	=	0.951

Therefore: Aroclor-1260 concentration in soil =

C_s = 17.8 ug/kg

Client Sample ID: SB-397-0405

GC Semivolatiles

Lot-Sample #: A7J170258-003 Date Sampled: 10/16/07 10:22 Prep Date: 10/22/07 Prep Batch #: 7295324 Dilution Factor: 1 % Moisture: 4.9		10/17/07 10/26/07 30.05 g	Matrix: SO Final Wgt/Vol 10 mL
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	35	ug/kg
Aroclor 1221	ND	35	ug/kg
Aroclor 1232	ND	35	ug/kg
Aroclor 1242	ND	35	ug/kg
Aroclor 1248	ND	35	ug/kg
Aroclor 1254	ND	35	ug/kg
Aroclor 1260	19 J	35	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	103	(10 - 196)	
Decachlorobiphenyl	136	(10 - 199)	

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

NOTE(S):

Data File: 007B0701.D

Report Date: 29-Oct-2007 10:12

STL North Canton

Data file : \\CANSVR11\DD\chem\GCS\a2hp4.i\71026-1.b\\71026-1.b\\007B0701.D

Lab Smp Id: J86M81AC Client Smp ID: SB-397-0405

Inj Date : 26-OCT-2007 10:25

Operator : Smp Info : J86M81AC Misc Info : Inst ID: a2hp4.i

Comment

Method : \\cansvr11\\dd\chem\GCS\a2hp4.i\\71026-1.b\\HP4PCBF.m\\HP4PCBR.m\\Meth Date : 26-Oct-2007 12:04 Quant Type: ESTD Quant Type: ESTD Cal Date : 19-OCT-2007 01:08 Cal File: 038B3801.D

Als bottle: 1

Dil Factor: 1.00000

Integrator: Falcon Compound Sublist: pcb.sub

Target Version: 4.14 Sample Matrix: SOIL

Processing Host: CANSVR10

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value \	Description
DF Vt Vo Cpnd Variable	10000.000 30.050	Dilution Factor final volume initial volume Local Compound Variable

CONCENTRATIONS

			ON-COL	FINAL		
RT EXP RT	DLT RT	RESPONSE	(ng)	(ug/kg)	TARGET RANGE	RATIO
	*=====	=======			==========	=====
\$ 1 TCMX					877-09-8	
2.095 2.094	0.001	2107312	0.02053	6.831		
2 AROCLOR-1	221			CAS #:	11104-28-2	
Compound Not De						
3 AROCLOR-1					12674-11-2	
Compound Not De	•					
4 AROCLOR-1					11141-16-5	
Compound Not De	tected					

Data File: 007B0701.D

Report Date: 29-Oct-2007 10:12

CONCENTRATIONS

			ON-COL		
RT	EXP RT	DLT RT	RESPONSE (ng)	•	E RATIO
==== :			======= ======	**************************************	= =====
5 1	AROCLOR-1	242		CAS #: 53469-21-9	
Compour	nd Not De				
6 2	AROCLOR-1:			CAS #: 12672-29-6	
Compour	nd Not De				
7 2	AROCLOR-1:			CAS #: 11097-69-1	
Compour	nd Not De	tected			
8 7	AROCLOR-1	260		CAS #: 1096-82-5	
6.083	6.070	0.013	396272 0.08476	28.20 80.00- 120.0	0 100.00(M)
6.351	6.348	0.003	185281 0.03446	11.47 85.40- 142.3	3 46.76
6.922	6.921	0.001	240807 0.05562	18.51 71.21- 118.6	9 60.77
7.295	7.296	-0.001	287573 0.05910	19.67 78.04- 130.0	7 72.57
7.632	7.631	0.001	376966 0.03750	12.48 168.62- 281.0	4 95.13
	1	Average of	Peak Concentrations =	18.06	
\$ 12 [CB			CAS #: 2051-24-3	
9.711	9.709	0.002	2577708 0.02727	9.074	
M 11 T	OTAL PCB			CAS #: 1336-36-3	
			297380 0.05429	18.06	

QC Flag Legend

 ${\tt M}$ - Compound response manually integrated.

Report Date : 06-Nov-2007 10:39

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 27-JUN-2007 15:36
End Cal Date : 19-OCT-2007 02:34
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14

Integrator : Falcon
Method file : \CANSVR11\DD\chem\GCS\a2hp4.i\71018IC-1.b\HP4PCBF.m\HP4PC
Last Edit : 21-Oct-2007 15:48 serraa
Curve Type : Average

	0.05000	0.10000	0.20000	C.50000	1.000	2.000		i
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	* RSD
8 AROCLOR-1260(1)	4300300	====================================		4707070	4555300	4349700	-	2
• •	4329700	'		'	4665790		4675454	8.289
(2)	4797540	,	•	- 1	5112956	4849743	<i>!</i> :	10.897
(3)	3496740	4948940	4918175	4393384	4222864	3996315		12.861
(4)	4215300	5496840	5452090	4888414	4675030	4466737	4865735	10.723
(5)	8447960	11359640	11312840	10200374	9607243	938207	10051689	11.379
9 AROCLOR-1262(1)	5846040	4773780	4027065	4154068	3935838	3671210	4401334	18.111
(2)	8902340	7474280	6370720	6914330	6521168	6118206	7050174	14.519
(3)	8614360	7204290	6071470	6419510	6059167	5713237	6680339	16.087
(4)	16686600	14182190	11946965	12743810	12100616	11463127	13187218	14.830
(5)	12540200	10446350	8817785	9317142	8826884	8365044	9718901	16.000
10 AROCLOR-1268(1)	3397040	2818070	2855035	2820440	2852430	2490264	2872213	10.182
(2)	5177600	4862930	4186915	4059544	4103814	3550863	4323611	13.699
(3)	18481040	17728990	15621710	15442430	15629551	13999912	16150606	10.212
(4)	17352020	16923110	15068205	15081040	15514614	13955108	15649016	8.119
(5)	42197740	41905830	38036925j	37453458	38248248	34967037	38801540	7.159
11 TOTAL PCB	+++++	+++++	+++++ [+++++	+++++	+++++	+++++	+++++
	±							=======
1 TCMX	79285200	109076400	112736600	125365450	98500440	90992240	102659388	16.054
12 DCB	75138800	100446800	103649900	115933800	85204600	86813080	94531163	15.682



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO:

MIKE MARTIN

DATE:

JANUARY 7, 2008

FROM:

THOMAS JACKMAN

COPIES:

DV FILE

SUBJECT:

ORGANIC DATA VALIDATION - BENZO(A)PYRENE/PCBS

LOCKHEED MIDDLE RIVER FACILITY

SAMPLE DELIVERY GROUP (SDG) - 7J17283

SAMPLES:

20/Solid

SB-402-0102 SB-402-0203 SB-402-0405 SB-402-0708 SB-403-0102 SB-403-0203 SB-403-0405 SB-403-0708 SB-404-0102 SB-404-0203 SB-404-0405 SB-404-0708 SB-405-0102 SB-405-0203 SB-405-0405 SB-405-0708 SB-406-0102 SB-406-0203 SB-406-0405 SB-406-0708

Overview

This sample set for the Lockheed Middle River, SDG 7J17283, consists of 20 environmental soil samples. The samples were analyzed for benzo(a)pyrene and polychlorinated biphenyls(PCBs). No field duplicates were included in this data set.

The samples were collected by Tetra Tech NUS, Inc. on October 16, 2007 and analyzed by Test America. The samples were analyzed by SW-846 Method 8270C for benzo(a)pyrene and Method 8082 for PCBs.

Summary

The findings in this report are based upon a general review of all available data including: data completeness, system performance, holding times, initial/continuing calibrations, laboratory method blank contamination, surrogate spike, matrix spike/matrix spike duplicate (MS/MSD) results, Laboratory Control Sample (LCS) results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below; documentation supporting these findings is presented in Appendix C. Qualified analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

Major Problems

None.

Minor Problems

 Positive results reported below the reporting limit (RL) but above the method detection limit (MDL) for the organic analyses were qualified as estimated, "J". MEMO TO: M. MARTIN - PAGE 2 DATE: JANUARY 7, 2008

In the analysis of benzo(a)pyrene, matrix spike/matrix spike duplicate RPDs were outside quality criteria for sample SB-406-0405MS/MSD. No data were qualified on the basis of the MS/MSD results because benzo(a)pyrene was not one of the spiked compounds.

In the analysis of benzo(a)pyrene, matrix spike/matrix spike duplicate recoveries and RPDs were outside quality criteria for the batch MS/MSD used by the laboratory. No data were qualified on the basis of the MS/MSD results because benzo(a)pyrene was not one of the spiked compounds.

In the PCB analysis, the surrogate recovery for one surrogate (decachlorobiphenyl) in sample SB-405-0203 was high. No data were qualified on the basis on the surrogate recovery because no PCBs were positively detected in this sample.

Aroclor-1260 was reported as positively detected in one sample (SB-406-0203) on column CLPII. The laboratory did not confirm this result on a second column as specified by Method 8082. The lack of second column confirmation should not affect the identification of Aroclor-1260 in this sample because PCBs are identified by pattern recognition rather than by retention times. The chromatograms of this sample and associated standards are provided in Appendix C.

Executive Summary

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "Region III Modifications to the National Functional Guidelines for Organic Data Review" (9/94). The text of this report has been formulated to address only those problem areas affecting data quality.

Terra Tech NUS Thomas Jackman Environmental Scientist

Terra Tech NUS Joseph A. Samchuck Quality Assurance Officer

Attachments:

- 1. Appendix A Qualified Analytical Results
- 2. Appendix B Results as reported by the Laboratory
- Appendix C Support Documentation

Data Qualifier Key:

- J Positive result is considered estimated, "J", as a result of technical noncompliances.
- U Nondetected result.
- UJ Nondetected result is considered estimated, "UJ", as a result of technical noncompliances.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination

B = Field Blank Contamination

C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)

C01 = GC/MS Tuning Noncompliance

D = MS/MSD Recovery Noncompliance

E = LCS/LCSD Recovery Noncompliance

F = Lab Duplicate Imprecision

G = Field Duplicate Imprecision

H = Holding Time Exceedance

I = ICP Serial Dilution Noncompliance

J = GFAA PDS - GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance

K = ICP Interference - includes ICS % R Noncompliance

L = Instrument Calibration Range Exceedance

M = Sample Preservation Noncompliance

N = Internal Standard Noncompliance

N01 = Internal Standard Recovery Noncompliance Dioxins

N02 = Recovery Standard Noncompliance Dioxins

N03 = Clean-up Standard Noncompliance Dioxins

O = Poor Instrument Performance (e.g. base-line drifting)

P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)

Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)

R = Surrogates Recovery Noncompliance

S = Pesticide/PCB Resolution

T = % Breakdown Noncompliance for DDT and Endrin

U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC

V = Non-linear calibrations; correlation coefficient r < 0.995

W = EMPC result

X = Signal to noise response drop

Y = Percent solids <30%

Z = Uncertainty at 2 sigma deviation is greater than sample activity

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date

lab_id

units

qc_type

SB-402-0102

10/16/2007

samp_date A7J170283001 lab_id

nsample

units

Pct_Solids

DUP_OF:

A7J170283002 qc_type NM

10/16/2007 samp_date lab_id UG/KG

A7J170283003 qc_type NM UG/KG units Pct_Solids 84.0 DUP_OF:

nsample

Pct_Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	37	J	Р

NM

80.0

UG/KG

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	Ū	

85.0

SB-402-0203

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

SB-402-0405

10/16/2007

00885

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: OS

nsample SB-402-0708 nsample SB-403-0102 nsample SB-403-0203 samp_date 10/16/2007 samp_date 10/16/2007 samp_date 10/16/2007 lab_id A7J170283004 lab_id A7J170283005 lab_id A7J170283006 qc_type NM qc_type NM qc_type NM units UG/KG UG/KG units UG/KG units Pct_Solids 84.0 Pct_Solids 89.0 Pct_Solids 88.0 DUP_OF: DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	Ü	

DUP_OF:

00885

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date lab_id

qc_type

SB-403-0405 10/16/2007

A7J170283007 NM

UG/KG

85.0

units
Pct_Solids
DUP_OF:

nsample samp_date lab_id

DUP_OF:

lab_id qc_type units Pct_Solids SB-403-0708 10/16/2007 A7J170283008

NM UG/KG 84.0 nsample samp_date lab_id qc_type

 lab_id
 A7J170283009

 qc_type
 NM

 units
 UG/KG

 Pct_Solids
 87.0

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.5	U	

SB-404-0102

10/16/2007

00885

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: OS

nsample SB-404-0203 samp_date 10/16/2007 lab_id A7J170283010 qc_type NM UG/KG

units Pct_Solids 81.0 DUP_OF:

nsample samp_date

lab_id qc_type units Pct_Solids

DUP_OF:

SB-404-0405 10/16/2007 A7J170283011 NM

UG/KG 78.0

nsample samp_date lab_id qc_type

A7J170283012 NM units UG/KG Pct_Solids 77.0

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	18	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	72	J	P

SB-404-0708

10/16/2007

00885

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date lab_id

qc_type

SB-405-0102 10/16/2007

A7J170283013 NM

UG/KG units Pct_Solids 91.3 DUP_OF:

nsample

samp_date lab_id

10/16/2007 A7J170283014 NM qc_type

units Pct_Solids DUP_OF:

nsample

samp_date lab_id

qc_type units

NM UG/KG 83.0

SB-405-0405

A7J170283015

10/16/2007

Pct_Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	36	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.4	U	

SB-405-0203RE

UG/KG

90.3

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	330	J	Р

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: OS

00885

nsample samp_date lab_id SB-405-0708 10/16/2007

10/16/2007 samp_date A7J170283016 lab_id

lab_id
qc_type
units
Pct_Solids

DUP_OF:

nsample

10/16/2007 A7J170283017 NM

UG/KG

87.0

SB-406-0102

83017

nsample samp_date lab_id qc_type units

Pct_Solids

DUP_OF:

SB-406-0203 10/16/2007 A7J170283018 NM

NM UG/KG 87.0

Pct_Solids DUP_OF:

qc_type

units

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	230	J	Р

NM

77.0

UG/KG

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	510		

Parameter	Result	Val Qual	Quai Code
BENZO(A)PYRENE	320	J	Р

00885

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: OS

nsample

SB-406-0405

nsample samp_date SB-406-0708

samp_date lab_id

10/16/2007 A7J170283019

lab_id

10/16/2007 A7J170283020

qc_type units

NM UG/KG qc_type units

NM UG/KG

Pct_Solids

80.0

Pct_Solids DUP_OF:

78.0

DUP_OF:

Val Qual Parameter Result Qual Code BENZO(A)PYRENE 62 Р J

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	.85	J	Р

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id qc_type SB-402-0102 10/16/2007

A7J170283001

NM UG/KG 80.0 samp_date
lab_id
qc_type
units
Pct_Solids

DUP_OF:

nsample

SB-402-0203 10/16/2007 A7J170283002

NM UG/KG 85.0 samp_date lab_id qc_type units Pct_Solids

DUP_OF:

nsample

10/16/2007 A7J170283003

SB-402-0405

NM UG/KG 84.0

Pct_Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	41	U	······
AROCLOR-1221	41	U	
AROCLOR-1232	41	U	
AROCLOR-1242	41	U	
AROCLOR-1248	41	U	
AROCLOR-1254	41	U	
ABOCI OB-1260	41	П	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	•
AROCLOR-1260	39	Ū	

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id

qc_type

units

SB-402-0708 10/16/2007

A7J170283004

NM UG/KG 84.0

Pct_Solids 8
DUP_OF:

/KG

nsample samp_date lab_id qc_type units Pct_Solids

DUP_OF:

SB-403-0102 10/16/2007 A7J170283005

NM UG/KG 89.0 nsample samp_date lab_id qc_type

10/16/2007 A7J170283006

SB-403-0203

NM UG/KG 88.0

Pct_Solids DUP_OF:

		Val	Qual
Parameter	Result	Qual	Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	. 39	Ü	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	Ų	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Result	Val Qual	Qual Code
37	U	
37	U	
37	U	
37	U	
37	U	
37	Ū	
37	U	
	37 37 37 37 37 37	Result Qual

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id

SB-403-0405

10/16/2007 A7J170283007

NM UG/KG

85.0

nsample samp_date lab_id

qc_type

Pct_Solids

DUP_OF:

units

10/16/2007 A7J170283008

SB-403-0708

NM UG/KG 84.0

nsample samp_date lab_id qc_type

10/16/2007 A7J170283009 NM

SB-404-0102

UG/KG 87.0

Pct_Solids DUP_OF:

units

Pct_Solids DUP_OF:

qc_type

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	Ü	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	40	U	
AROCLOR-1221	40	U	
AROCLOR-1232	40	U	
AROCLOR-1242	40	U	
AROCLOR-1248	40	U	
AROCLOR-1254	40	U	
AROCLOR-1260	40	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	Ü	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	•
AROCLOR-1260	38	Ú	

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id

SB-404-0203 10/16/2007

A7J170283010

qc_type NM UG/KG units Pct_Solids 81.0

DUP_OF:

nsample samp_date

SB-404-0405 10/16/2007 A7J170283011

lab_id NM qc_type UG/KG units Pct_Solids 78.0

DUP_OF:

nsample

samp_date lab_id

qc_type units Pct_Solids

NM UG/KG 77.0

SB-404-0708

A7J170283012

10/16/2007

DUP_OF:

Davamatar	Result	Val Qual	Qual Code
Parameter	nesuit	Quai	Code
AROCLOR-1016	41	U	
AROCLOR-1221	41	U	
AROCLOR-1232	41	U	
AROCLOR-1242	41	U	
AROCLOR-1248	41	U	
AROCLOR-1254	41	Ū	
AROCLOR-1260	41	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	42	U	
AROCLOR-1221	42	υ	
AROCLOR-1232	42	Ü	
AROCLOR-1242	42	U	
AROCLOR-1248	42	U	
AROCLOR-1254	42	U	
AROCLOR-1260	42	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	43	U	
AROCLOR-1221	43	U	
AROCLOR-1232	43	U	
AROCLOR-1242	43	Ū	
AROCLOR-1248	43	U	
AROCLOR-1254	43	U	
AROCLOR-1260	43	U	

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-405-0102 10/16/2007

nsample samp_date lab_id

SB-405-0203 10/16/2007 A7J170283014 nsample samp_date lab_id

SB-405-0405 10/16/2007 A7J170283015

lab_id qc_type units

A7J170283013 NM UG/KG

qc_type units Pct_Solids

NM UG/KG 90.3

qc_type units Pct_Solids NM UG/KG 83.0

Pct_Solids DUP_OF:

91.3

DUP_OF:

DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	40	U	
AROCLOR-1221	40	U	
AROCLOR-1232	40	U	
AROCLOR-1242	40	U	
AROCLOR-1248	40	U	
AROCLOR-1254	40	·U	
AROCLOR-1260	40	U	

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id

SB-405-0708

10/16/2007

A7J170283016 NM UG/KG

77.0 Pct_Solids

DUP_OF:

qc_type

units

nsample samp_date lab_id

qc_type units

Pct_Solids DUP_OF:

SB-406-0102

10/16/2007 A7J170283017

NM UG/KG

87.0

nsample

samp_date lab_id

10/16/2007 A7J170283018

SB-406-0203

qc_type NM UG/KG Pct_Solids 87.0

DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	43	U	
AROCLOR-1221	43	U	
AROCLOR-1232	43	U	
AROCLOR-1242	43	U	
AROCLOR-1248	43	U	
AROCLOR-1254	43	U	
AROCLOR-1260	43	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	Ų	
AROCLOR-1221 ·	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	·
AROCLOR-1221	38	Ų	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	21	j	Р

SDG: 7J17283 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-406-0405

nsample samp_date SB-406-0708

10/16/2007 A7J170283019 lab_id

lab_id

1.0/16/2007 A7J170283020

NM qc_type UG/KG units

qc_type units

NM UG/KG

Pct_Solids 80.0

Pct_Solids

78.0

DUP_OF:

DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	41	U	
AROCLOR-1221	41	U	
AROCLOR-1232	41	U	
AROCLOR-1242	41	U	
AROCLOR-1248	41	U	
AROCLOR-1254	41	U	
AROCLOR-1260	41	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	42	U	
AROCLOR-1221	42	U	
AROCLOR-1232	42	U	
AROCLOR-1242	42	U	
AROCLOR-1248	42	U	
AROCLOR-1254	42	U	
AROCLOR-1260	42	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Client Sample ID: SB-402-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170283-00 Date Sampled: 10/16/07 11: Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1		10/17/07	Matri	x: SO
% Moisture: 20	Method:	SW846 8270	С	
PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo (a) pyrene	37 J	410	ug/kg	1.6
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	56	(24 - 112)		
2-Fluorobiphenyl	64	(34 - 110)		
Terphenyl-d14	74	(41 - 119)		
Phenol-d5	62	(28 - 110)		
2-Fluorophenol	65	(26 - 110)		
2,4,6-Tribromophenol	77	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-402-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170283-002 Date Sampled: 10/16/07 11:33 Prep Date: 10/23/07 Prep Batch #: 7295396		10/17/07	Matrix	so so
Dilution Factor: 1 % Moisture: 15	Method	SW846 8270	C	
V Morbeater 1111 19	neemour	511010 0270	Ŭ	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	58	(24 - 112)		
2-Fluorobiphenyl	63	(34 - 110)		
Terphenyl-d14	77	(41 - 119)	•	
Phenol-d5	67	(28 - 110)		
2-Fluorophenol	64	(26 - 110)		
2,4,6-Tribromophenol	77	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-402-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170283-003 Date Sampled: 10/16/07 11:3 Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1		10/17/07	Matrix	k SO
% Moisture: 16	Method:	SW846 8270)C	
PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.6
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	55	$\frac{-}{(24 - 112)}$	•	
2-Fluorobiphenyl	61	(34 - 110)		
Terphenyl-d14	73	(41 - 119)		
Phenol-d5	64	(28 - 110)		
2-Fluorophenol	60	(26 - 110)		
2,4,6-Tribromophenol	74	(10 - 118)		•
NOTE (S):				

Client Sample ID: SB-402-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170283-0 Date Sampled: 10/16/07 11 Prep Date: 10/23/07 Prep Batch #: 7295396		.: 10/17/07	Matr	ix: SO
Dilution Factor: 1	,			
% Moisture: 16	Method: SW846 8270C			
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	\mathtt{MDL}
Benzo(a)pyrene	ND	390	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	55	(24 - 112)		
2-Fluorobiphenyl	60	(34 - 110)	,	
Terphenyl-d14	71	(41 - 119)		
Phenol-d5	62	(28 - 110)		
2-Fluorophenol	59	(26 - 110)		
2,4,6-Tribromophenol	76	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-403-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170283-005 Date Sampled: 10/16/07 11:4 Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1		10/17/07	Matrix	so so
% Moisture: 11	Method:	SW846 8270	С	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.5
	DDDGDNM	DEGOVERN		
GUDD OG I III	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	53	(24 - 112)		
2-Fluorobiphenyl	60	(34 - 110)		
Terphenyl-d14	69	(41 - 119)		
Phenol-d5	60	(28 - 110)		
2-Fluorophenol	54	(26 - 110)		
2,4,6-Tribromophenol	78	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-403-0203

GC/MS Semivolatiles

Lot-Sample #: A7J1 Date Sampled: 10/1 Prep Date: 10/2 Prep Batch #: 7295	.6/07 11:47 Date 23/07 Analy		10/17/07	Matrix	so
Dilution Factor: 1 % Moisture: 12	Metho	od:	SW846 8270	C ,	
			REPORTING		
PARAMETER	RESUI	LT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND		370	ug/kg	1.5
	PERCE	ENT	RECOVERY		
SURROGATE	RECOV	/ERY	LIMITS		
Nitrobenzene-d5	37		(24 - 112)		
2-Fluorobiphenyl	40		(34 - 110)		
Terphenyl-d14	66		(41 - 119)		
Phenol-d5	45		(28 - 110)		
2-Fluorophenol	41		(26 - 110)		
2,4,6-Tribromophenol	70		(10 - 118)		•
NOTE (S):					

Client Sample ID: SB-403-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170283-00 Date Sampled: 10/16/07 11: Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1	_	: 10/17/07	Matr	ix so
% Moisture: 15	Method	: SW846 8270	C	•
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	390	ug/kg	1.5
	•			
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	59	(24 - 112)		
2-Fluorobiphenyl	60	(34 - 110)		
Terphenyl-d14	76	(41 - 119)		
Phenol-d5	62	(28 - 110)		
2-Fluorophenol	62	(26 - 110)		
2,4,6-Tribromophenol	76	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-403-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170283-008 Date Sampled: 10/16/07 11:5 Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1		10/17/07	Matr:	ix: SO
% Moisture: 16	Method:	SW846 8270	C	
		REPORTING		
PARAMÈTER	RESULT	LIMIT	UNITS	\mathtt{MDL}
Benzo(a)pyrene	ND	400	ug/kg	1.6
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	54	(24 - 112)		
2-Fluorobiphenyl	57	(34 - 110)		
Terphenyl-d14	72	(41 - 119)		
Phenol-d5	57	(28 - 110)		
2-Fluorophenol	58	(26 - 110)		
2,4,6-Tribromophenol	69	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-404-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170283-00 Date Sampled: 10/16/07 14: Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1		10/17/07	Matr	ix: SO
% Moisture: 13	Method:	SW846 8270	C .	
		REPORTING		•
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	380	ug/kg	1.5
	PERCENT	RECOVERY	*	
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	53	(24 - 112)	-	
2-Fluorobiphenyl	58	(34 - 110)		
Terphenyl-d14	70	(41 - 119)		
Phenol-d5	58	(28 - 110)		
2-Fluorophenol	57	(26 - 110)		
2,4,6-Tribromophenol	68	(10 - 118)		
NOTE (S):	·		**************************************	

Client Sample ID: SB-404-0203

GC/MS Semivolatiles

Lot-Sample #: A7J1702 Date Sampled: 10/16/0 Prep Date: 10/23/0 Prep Batch #: 7295396	77 14:21 Date Received 77 Analysis Date	: 10/17/07	Matr	ix: SO
Dilution Factor: 1			_	
% Moisture: 19	Method	: SW846 8270	C	
		REPORTING		•
PARAMETER	RESULT	LIMIT	UNITS	\mathtt{MDL}
Benzo(a)pyrene	ND	410	ug/kg	1.6
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	37	(24 - 112)		
2-Fluorobiphenyl	46	(34 - 110)		
Terphenyl-d14	62	(41 - 119)		
Phenol-d5	47	(28 - 110)		
2-Fluorophenol	42	(26 - 110)		
2,4,6-Tribromophenol	65	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-404-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170283-011 Date Sampled: 10/16/07 14:2 Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1	==	10/17/07	Matr	ix: SO
% Moisture: 22	Method:	SW846 8270	C	
222112		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	18 J	420	ug/kg	1.7
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	54	(24 - 112)		
2-Fluorobiphenyl	60	(34 - 110)		
Terphenyl-d14	68	(41 - 119)		
Phenol-d5	61	(28 - 110)		
2-Fluorophenol	59	(26 - 110)	•	
2,4,6-Tribromophenol	76	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-404-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170283-0 Date Sampled: 10/16/07 14 Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1	•	.: 10/17/07	Matr	i x: SO
% Moisture: 23	Method	.: SW846 8270	С	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	72 J	430	ug/kg	1.7
	777 C7117	DD 60111D11		
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	56	(24 - 112)		
2-Fluorobiphenyl	62	(34 - 110)		
Terphenyl-d14	71	(41 - 119)		
Phenol-d5	60	(28 - 110)		
2-Fluorophenol	58	(26 - 110)		
2,4,6-Tribromophenol	74	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-405-0102

GC/MS Semivolatiles

Lot-Sample #: A7J1 Date Sampled: 10/1 Prep Date: 10/2 Prep Batch #: 7295	6/07 14:49 Date Re 3/07 Analysi		/07	Matrix:	SO
Dilution Factor: 1 8.7	Method.	SW846	8270C		
PARAMETER Benzo (a) pyrene	RESULT 36 J	REPOR 			
SURROGATE	PERCENT RECOVER	RECOV Y LIMIT			
Nitrobenzene-d5	52	(24 -			
2-Fluorobiphenyl	54	(34 -	•	•	
Terphenyl-d14	62	(41 -	•		
Phenol-d5	56	(28 -	110)		
2-Fluorophenol	52	(26 -	110)		
2,4,6-Tribromophenol	65	(10 -	118)		
NOTE (S):	•				

NOTE (2):

J Estimated result. Result is less than RL.

Client Sample ID: SB-405-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170283-0 Date Sampled: 10/16/07 14 Prep Date: 10/29/07 Prep Batch #: 7302363 Dilution Factor: 1		: 10/17/07	Matr	ix: SO
% Moisture: 9.7	Method	: SW846 8270	OC	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	370	ug/kg	1.4
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	68	(24 - 112)		
2-Fluorobiphenyl	68	(34 - 110)		
Terphenyl-d14	98	(41 - 119)		
Phenol-d5	71	(28 - 110)		
2-Fluorophenol	70	(26 - 110)		
2,4,6-Tribromophenol	76	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-405-0405

GC/MS Semivolatiles

Lot-Sample #: A7J170283-0 Date Sampled: 10/16/07 14 Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1		.: 10/17/07	Matr	ix: SO
% Moisture: 17	Method	.: SW846 8270)C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	330 J	400	ug/kg	1.6
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	52	(24 - 112)		
2-Fluorobiphenyl	59	(34 - 110)		
Terphenyl-d14	66	(41 - 119)		
Phenol-d5	63	(28 - 110)		
2-Fluorophenol	61	(26 - 110)		
2,4,6-Tribromophenol	71	(10 - 118)		
NOTE (S):				

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Client Sample ID: SB-405-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170283- Date Sampled: 10/16/07 1- Prep Date: 10/23/07 Prep Batch #: 7295396		.: 10/17/07	Matr	ix: SO
Dilution Factor: 1				
% Moisture: 23	Method	.: SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo (a) pyrene	230 J	430	uq/kq	
benzo (a) pyrene	230 0	430	ug/kg	1.7
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	54	(24 - 112)		
2-Fluorobiphenyl	57	(34 - 110)		
Terphenyl-d14	66	(41 - 119)		
Phenol-d5	62	(28 - 110)		
2-Fluorophenol	63	(26 - 110)		
2,4,6-Tribromophenol	68	(10 - 118)		
NOTE (S):	·			

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Client Sample ID: SB-406-0102

GC/MS Semivolatiles

_	10/16/07 15:16 10/20/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	: SO
Dilution Factor:	-				
% Moisture:	13	Method:	SW846 8270	C	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		510	380	ug/kg	1.5
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		48	(24 - 112)		
2-Fluorobiphenyl		59	(34 - 110)		
Terphenyl-d14		83	(41 - 119)		
Phenol-d5		53	(28 - 110)		
2-Fluorophenol		53	(26 - 110)		
2,4,6-Tribromophe	enol	53	(10 - 118)	· ·	
NOTE (S):					

Client Sample ID: SB-406-0203

GC/MS Semivolatiles

Lot-Sample #: A7J170283-03 Date Sampled: 10/16/07 15 Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1		: 10/17/07	Matr	ix: SO
% Moisture: 13	Method	: SW846 8270)C	
PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	320 J	380	ug/kg	1.5
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	_	
Nitrobenzene-d5	56	(24 - 112)	_	
2-Fluorobiphenyl	60	(34 - 110)		
Terphenyl-d14	65	(41 - 119)		
Phenol-d5	58	(28 - 110)		
2-Fluorophenol	54	(26 - 110)		
2,4,6-Tribromophenol	72	(10 - 118)		
NOTE (S):			····	

J Estimated result. Result is less than RL.

Client Sample ID: SB-406-0405

GC/MS Semivolatiles

Date Sampled: Prep Date: Prep Batch #:	10/16/07 15:20 10/20/07 7292538	Work Order #: Date Received: Analysis Date:	10/17/07	Matri	x SO
Dilution Factor: % Moisture:		Method:	SW846 8270	С	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		62 J	410	ug/kg	1.6
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Nitrobenzene-d5		43	(24 - 112)		
2-Fluorobiphenyl		55	(34 - 110)		
Terphenyl-d14		76	(41 - 119)		
- -		53	(28 - 110)		
Phenol-d5					
Phenol-d5 2-Fluorophenol		56	(26 - 110)		

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Client Sample ID: SB-406-0708

GC/MS Semivolatiles

Lot-Sample #: A7J170283-020 Date Sampled: 10/16/07 15:: Prep Date: 10/23/07 Prep Batch #: 7295396 Dilution Factor: 1		10/17/07	Matrix	x: SO
% Moisture: 22	Method:	SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	85 J	420	ug/kg	1.7
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	57	$\frac{-1}{(24 - 112)}$		
2-Fluorobiphenyl	61	(34 - 110)		•
Terphenyl-d14	73	(41 - 119)		
Phenol-d5	63	(28 - 110)		
2-Fluorophenol	63	(26 - 110)		
2,4,6-Tribromophenol	81	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-402-0102

GC Semivolatiles

Lot-Sample #: A7J170283-001	Work Order #:	J86WR1AC	Matrix SO
Date Sampled: 10/16/07 11:31	Date Received:	10/17/07	
Prep Date: 10/23/07	Analysis Date:	10/29/07	
Prep Batch #: 7295395	_		
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	12.21 q	Final Wgt/Vol: 10 mL
% Moisture: 20	Method:		
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	41	ug/kg
Aroclor 1221	ND	41	ug/kg
Aroclor 1232	ND	41	ug/kg
Aroclor 1242	ND	41	ug/kg
Aroclor 1248	ND .	41	ug/kg
Aroclor 1254	ND .	41	ug/kg
Aroclor 1260	ND	41	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	73	(10 - 196)	
Decachlorobiphenyl	66	(10 - 199)	
NOTE (C).			

NOTE(S):

Client Sample ID: SB-402-0203

GC Semivolatiles

Lot-Sample #:	A7J170283-002	Work Order #:	J86WX1AC	Matrix SO
Date Sampled:	10/16/07 11:33	Date Received:	10/17/07	
Prep Date:		Analysis Date:		
Prep Batch #:	7295395	-		
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30 a	Final Wgt/Vol: 10 mL
% Moisture:	15	Method:	_	3
			REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Aroclor 1016		ND	39	ug/kg
Aroclor 1221		ND	39	ug/kg
Aroclor 1232		ND	39	ug/kg
Aroclor 1242		ND	39	ug/kg
Aroclor 1248		ND	39	ug/kg
Aroclor 1254		ND	39	ug/kg
Aroclor 1260		ND	39	ug/kg
		PERCENT	RECOVERY	
SURROGATE		RECOVERY	LIMITS	
Tetrachloro-m-xyl	ene	125	(10 - 196)	

125 109 (10 - 196) (10 - 199)

NOTE(S):

Decachlorobiphenyl

Client Sample ID: SB-402-0405

GC Semivolatiles

Lot-Sample #: A7J170283-003	Work Order #:	J86W01AC	Matrix SO
Date Sampled: 10/16/07 11:35	Date Received:	10/17/07	
Prep Date: 10/23/07	Analysis Date:	10/29/07	
Prep Batch #: 7295395			•
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.19 g	Final Wgt/Vol: 10 mL
% Moisture: 16	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	39	ug/kg
Aroclor 1221	ND	39	ug/kg
Aroclor 1232	ND	39	ug/kg
Aroclor 1242	ND	39	ug/kg
Aroclor 1248	ND	39	ug/kg
Aroclor 1254	ND	39	ug/kg
Aroclor 1260	ND	39	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	53	(10 - 196)	
Decachlorobiphenyl	35	(10 - 199)	
	*		

NOTE(S):

Client Sample ID: SB-402-0708

GC Semivolatiles

Lot-Sample #: A7J170283-004	Work Order #:	J86W11AC	Matrix SO
Date Sampled: 10/16/07 11:37	Date Received:	10/17/07	
Prep Date: 10/23/07	Analysis Date:	10/25/07	
Prep Batch #: 7295395			
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30 g	Final Wgt/Vol: 10 mL
% Moisture: 16	Method:		
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND .	39	ug/kg .
Aroclor 1221	ND	39	ug/kg
Aroclor 1232	ND	39	ug/kg
Aroclor 1242	ND	39	ug/kg
Aroclor 1248	ND	39	ug/kg
Aroclor 1254	ND	39	ug/kg
Aroclor 1260	ND	39	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	93	(10 - 196)	•
Decachlorobiphenyl	106	(10 - 199)	
NOTE (S):			

Client Sample ID: SB-403-0102

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 11:45 10/23/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix	: SO
Dilution Factor:		<pre>Initial Wgt/Vol:</pre>	30.07 g	Final W	Wgt/Vol: 10 mL
% Moisture:	11	Method:			.ge/ vox 10 min
D3.D3.145			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	
Aroclor 1016		ND	37	ug/kg	
Aroclor 1221		ND	37	ug/kg	
Aroclor 1232		ND	37	ug/kg ug/kg	
Aroclor 1242		ND ·	37	J. J.	
Aroclor 1248		ND	37	ug/kg	
Aroclor 1254		ND		ug/kg	
Arcalor 1260		MD	37	ug/kg	

37

ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	113	$\frac{100 - 196}{100 - 196}$
Decachlorobiphenyl	97	(10 - 199)

ND

NOTE(S):

Aroclor 1260

Client Sample ID: SB-403-0203

GC Semivolatiles

Lot-Sample #: A Date Sampled: 10 Prep Date: 10 Prep Batch #: 72	0/16/07 11:47 0/23/07 295395	Analysis Date:	10/17/07 10/25/07	Matrix	<:	SO
Dilution Factor: 1 % Moisture: 12		<pre>Initial Wgt/Vol:</pre>	30.04 g	Final	Wgt/Vol:	10 mL
12		Method:	SW846 8082			
PARAMETER		RESULT	REPORTING	INITES		
Aroclor 1016		ND	LIMIT 37	UNITS	-	
Aroclor 1221		ND	37	ug/kg		
Aroclor 1232		ND	37	ug/kg ug/kg		
Aroclor 1242]	ND	37	ug/kg ug/kg		
Aroclor 1248	1	ND	37	ug/kg		
Aroclor 1254	1	ND .	37	ug/kg		
Aroclor 1260	I	ND	37	ug/kg		
SURROGATE			RECOVERY LIMITS			
Tetrachloro-m-xylene		33	$\frac{11M115}{(10 - 196)}$			
Decachlorobiphenyl	3	34	(10 - 199)			

NOTE(S):

Client Sample ID: SB-403-0405

GC Semivolatiles

Lot-Sample #:	A7J170283-007	Work Order #.	.: J86W41AC	Matrix SO

Date Sampled...: 10/16/07 11:49 Date Received..: 10/17/07 Prep Date....: 10/23/07 Analysis Date..: 10/25/07

Prep Batch #...: 7295395

Dilution Factor: 1 Initial Wgt/Vol: 30.09 g Final Wgt/Vol.: 10 mL

% Moisture....: 15 Method.....: SW846 8082

		REPORTING	G
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	39	ug/kg
Aroclor 1221	ND	39	ug/kg
Aroclor 1232	ND	39	ug/kg
Aroclor 1242	ND	39	ug/kg
Aroclor 1248	ND	39	ug/kg
Aroclor 1254	ND	39	ug/kg
Aroclor 1260	ND	39	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	93	(10 - 196	5)
Decachlorobiphenyl	95	(10 - 199	9)

NOTE(S):

Client Sample ID: SB-403-0708

GC Semivolatiles

Lot-Sample #: A7J170283-008	Work Order #: J86W51AC	Matrix SO
Date Sampled: 10/16/07 11:51		

Date Sampled...: 10/16/07 11:51 Date Received..: 10/17/07 Prep Date....: 10/23/07 Analysis Date..: 10/25/07

Prep Batch #...: 7295395

Dilution Factor: 1 Initial Wgt/Vol: 30.16 g Final Wgt/Vol.: 10 mL % Moisture....: 16 Method.....: SW846 8082

PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260	RESULT ND ND ND ND ND ND ND ND ND N	REPORTING LIMIT 40 40 40 40 40 40 40 40 40	UNITS ug/kg ug/kg ug/kg ug/kg ug/kg
ALOCIOI 1280	ND	40	ug/kg

SURROGATE Tetrachloro-m-xylene Decachlorobiphenyl	PERCENT RECOVERY 98 108	RECOVERY LIMITS (10 - 196) (10 - 199)
		(10 100)

NOTE (S):

Client Sample ID: SB-404-0102

GC Semivolatiles

Lot-Sample #: A Date Sampled: 10 Prep Date: 10 Prep Batch #: 72	0/16/07 14:19 D 0/23/07 A	Tork Order #: Date Received: Malysis Date:	10/17/07	Matri	к:	SO
Dilution Factor: 1		nitial Wgt/Vol:		Final	Wgt/Vol:	10 mL
% Moisture: 13	3 M o	ethod:	SW846 8082			
			REPORTING			
PARAMETER	RI		LIMIT	UNITS		
Aroclor 1016	NI	D	38	ug/kg	-	
Aroclor 1221	NI	D .	38 -	ug/kg		
Aroclor 1232	NI	D	38	ug/kg		
Aroclor 1242	NI	D .	38	ug/kg		
Aroclor 1248	NI	D	38	uq/kq		
Aroclor 1254	NI	D	38	ug/kg		
Aroclor 1260	NI	D	38	ug/kg		
SURROGATE Tetrachloro-m-xylendocachlorobiphenyl	RE	ECOVERY	RECOVERY LIMITS (10 - 196) (10 - 199)			

NOTE(S):

Client Sample ID: SB-404-0203

GC Semivolatiles

Prep Batch #:	10/16/07 14:21 10/23/07 7295395	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix SO
Dilution Factor: % Moisture:		<pre>Initial Wgt/Vol:</pre>		Final Wgt/Vol: 10 mL
o Hoistute:	19	Method:	SW846 8082	2
			REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Aroclor 1016		ND	41	ug/kg
Aroclor 1221		ND	41	ug/kg
Aroclor 1232		ND	41	ug/kg
Aroclor 1242		ND	41	
Aroclor 1248		ND	41	ug/kg
Aroclor 1254		ND		ug/kg
Aroclor 1260		ND	41	ug/kg
		ND	41	ug/kg
SURROGATE		DD0011	RECOVERY LIMITS	•
Tetrachloro-m-xyl		96		
Decachlorobipheny	-	106	(10 - 196)	
	_	±,00	(10 - 199)	

NOTE(S):

Client Sample ID: SB-404-0405

GC Semivolatiles

Lot-Sample #: A7J170283-011 Date Sampled: 10/16/07 14:23	Work Order #: J86W91AC	Matrix SO
Prep Date: 10/23/07	Analysis Date.: 10/17/07	
Prep Batch #: 7295395 Dilution Factor: 1	<pre>Initial Wgt/Vol: 30.1 q</pre>	Final Wgt/Vol: 10 mL
% Moisture: 22	Method: SW846 8082	Timal wgc/voi 10 mb

		REPORTIN	IG
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	42	ug/kg
Aroclor 1221	ND	42	ug/kg
Aroclor 1232	ND	42	ug/kg
Aroclor 1242	ND	42	ug/kg
Aroclor 1248	ND	42	ug/kg
Aroclor 1254	. ND	42	ug/kg
Aroclor 1260	ND	42	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	111	(10 - 19	 6)
Decachlorobiphenyl	86	(10 - 199	,

NOTE(S):

Client Sample ID: SB-404-0708

GC Semivolatiles

Lot-Sample #: A7J170283-012 Date Sampled: 10/16/07 14:25 Prep Date: 10/23/07 Prep Batch #: 7295395	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SO
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.09 q	Final Wgt/Vol: 10 mL
% Moisture: 23	Method:		
PARAMETER	RESULT	REPORTING LIMIT	INTEG
Aroclor 1016	ND	43	UNITS ug/kg
Aroclor 1221	ND	43	ug/kg
Aroclor 1232	ND	43	ug/kg
Aroclor 1242	ND	43	ug/kg
Aroclor 1248	ND	43	ug/kg
Aroclor 1254	ND	43	ug/kg
Aroclor 1260	ND	43	ug/kg
	PERCENT	RECOVERY	
SURROGATE		LIMITS	
Tetrachloro-m-xylene	89	$\frac{111113}{(10 - 196)}$	
Decachlorobiphenyl		(10 - 199)	

NOTE(S):

Client Sample ID: SB-405-0102

GC Semivolatiles

Lot-Sample #.	: A7J170283-013	Work Order	#: J86XC1AC	Matrix SO
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Date Sampled...: 10/16/07 14:49 Date Received..: 10/17/07 Prep Date....: 10/23/07 Analysis Date..: 10/25/07

Prep Batch #...: 7295395

Dilution Factor: 1 Initial Wgt/Vol: 30.11 g Final Wgt/Vol.: 10 mL

% Moisture....: 8.7 Method.....: SW846 8082

		REPORTIN	I G
PARAMETER	RESULT	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	ND	36	ug/kg
Aroclor 1260	ND	36	ug/kg
	PERCENT	RECOVERY	•
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	105	(10 - 19	16)
Decachlorobiphenyl	113	(10 - 19	19)

NOTE(S):

Client Sample ID: SB-405-0203

GC Semivolatiles

Lot-Sample #: A7J170283-014 Date Sampled: 10/16/07 14:51 Prep Date: 10/23/07 Prep Batch #: 7295395		10/17/07	Matrix: SO
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.08 g	Final Wgt/Vol: 10 mL
% Moisture: 9.7	Method:	SW846 8082	J = , 1 = = 11
		DEDODETNO	
PARAMETER	RESULT	REPORTING LIMIT	IMITAL
Aroclor 1016	ND	37	UNITS ug/kg
Aroclor 1221	ND	37	ug/kg
Aroclor 1232	ND	37	ug/kg
Aroclor 1242	ND	37	ug/kg
Aroclor 1248	ND		·ug/kg
Aroclor 1254	ND	37	ug/kg
Aroclor 1260	ND	37	ug/kg
	PERCENT	RECOVERY	
CUDDOCAMD	RECOVERY	LIMITS	
III 1 3 7	96	$\frac{111113}{(10 - 196)}$	
D 13 111 2	207 *	(10 - 199)	•

NOTE(S):

^{*} Surrogate recovery is outside stated control limits.

Client Sample ID: SB-405-0405

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 14:53 10/23/07	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix SO
Dilution Factor:	•	<pre>Initial Wgt/Vol:</pre>	30.14 g	Final Wgt/Vol: 10 mL
% Moisture:	17	Method:		
PARAMETER Aroclor 1016		RESULT ND	REPORTING LIMIT 40	UNITS ug/kg
Aroclor 1221		ND	40	ug/kg
Aroclor 1232		ND	40	ug/kg
Aroclor 1242	•	ND	40 .	ug/kg
Aroclor 1248		ND	40	ug/kg
Aroclor 1254		ND	40	ug/kg
Aroclor 1260		ND	40	ug/kg
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS	
Tetrachloro-m-xyl	ene	81	(10 - 196)	

(10 - 199)

151

NOTE(S):

Decachlorobiphenyl

Client Sample ID: SB-405-0708

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 14:55 10/23/07		10/17/07	Matri	x:	SO
Dilution Factor: % Moisture:		<pre>Initial Wgt/Vol: Method:</pre>		Final	Wgt/Vol:	10 mL
PARAMETER		RESULT	REPORTING LIMIT	UNITS		
Aroclor 1016		ND	43	ug/kg	-	
Aroclor 1221		ND	43	ug/kg		
Aroclor 1232		ND	43	ug/kg		
Aroclor 1242		ND	43	ug/kg		
Aroclor 1248		ND	43	ug/kg		
Aroclor 1254		ND	43	ug/kg		
Aroclor 1260		ND	43	ug/kg		
SURROGATE Tetrachloro-m-xylopecachlorobipheny	ene		RECOVERY LIMITS (10 - 196) (10 - 199)			

NOTE(S):

Client Sample ID: SB-406-0102

GC Semivolatiles

Date Sampled: Prep Date: Prep Batch #:	10/16/07 15:16 10/23/07 7295392	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix SO
Dilution Factor: % Moisture:		<pre>Initial Wgt/Vol:</pre>		Final Wgt/Vol: 10 mL
· Mondedic	13	Method:	SW846 8082	
			REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Aroclor 1016		ND	38	ug/kg
Aroclor 1221		ND	38	ug/kg
Aroclor 1232		ND	38	ug/kg
Aroclor 1242		ND	38	ug/kg
Aroclor 1248		ND	38	ug/kg
Aroclor 1254		ND	38	ug/kg
Aroclor 1260		ND	38	ug/kg
SURROGATE Tetrachloro-m-xyl Decachlorobipheny	ene	DD0011	RECOVERY LIMITS (10 - 196) (10 - 199)	

NOTE(S):

Client Sample ID: SB-406-0203

GC Semivolatiles

Lot-Sample #: A7J170283-018 Date Sampled: 10/16/07 15:18 Prep Date: 10/23/07 Prep Batch #: 7295395	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SO
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>		Final Wgt/Vol.: 10 mL
% Moisture: 13	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38	ug/kg
Aroclor 1232	ND	38	ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	21 Ј	38	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	101	(10 - 196)	
Decachlorobiphenyl	106	(10 - 199)	
NOTE(S):			

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Client Sample ID: SB-406-0405

GC Semivolatiles

Lot-Sample #: A7J170283-019 Date Sampled: 10/16/07 15:20 Prep Date: 10/23/07 Prep Batch #: 7295395	Work Order #: Date Received: Analysis Date:	10/17/07	Matrix: SO
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30 g	Final Wgt/Vol: 10 mL
% Moisture: 20	Method:	SW846 8082	12.101 mgc, vol 10 mil
PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	41	ug/kg
Aroclor 1221	ND	41	ug/kg
Aroclor 1232	ND	41	ug/kg
Aroclor 1242	ND	41	ug/kg
Aroclor 1248	ND	41	ug/kg
Aroclor 1254	ND	41	ug/kg
Aroclor 1260	ND	41	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	82	(10 - 196)	
Decachlorobiphenyl	104	(10 - 199)	

NOTE (S):

Client Sample ID: SB-406-0708

GC Semivolatiles

Lot-Sample #: A7J170283- Date Sampled: 10/16/07 1 Prep Date: 10/23/07 Prep Batch #: 7295395	-020 Work Order #: J86XK1AC 15:22 Date Received: 10/17/07 Analysis Date: 10/29/07	Matrix SO
Dilution Factor: 1 % Moisture: 22	<pre>Initial Wgt/Vol: 30.05 g Method SW846 8082</pre>	Final Wgt/Vol: 10 mL

_		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	42	ug/kg
Aroclor 1221	ND	42	ug/kg
Aroclor 1232	ND	42	ug/kg
Aroclor 1242	ND	42	ug/kg
Aroclor 1248	ND	42	ug/kg
Aroclor 1254	ND	42	ug/kg
Aroclor 1260	ND	42	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	67	(10 - 196)	-)
Decachlorobiphenyl	70	(10 - 199)	

NOTE(S):

APPENDIX C

SUPPORT DOCUMENTATION

CASE NARRATIVE

7J17283

The following report contains the analytical results for twenty solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc from the LMC MR Site, project number 112IC00885. The samples were received October 17, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7J170283.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on November 07, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 3.6, 3.8, and 4.9°C.

GC/MS SEMIVOLATILES

There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for SB-406-0405 had RPD's outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The matrix spike/matrix spike duplicate(s) for batch(es) 7302363 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The internal standard areas were outside acceptance limits for sample(s) SB-402-0102 (MS/MSD), SB-405-0405, and SB-406-0708 due to matrix effects. (Refer to IS report following this Case Narrative for additional detail.)

POLYCHLORINATED BIPHENYLS-8082

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

For sample(s) SB-405-0203, the recovery for one surrogate compound is outside acceptance criteria. Since the method criterion is that one of two surrogate compounds must meet acceptance criteria, no corrective action was required.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

Chain of Custody Record



Severn Trent Laboratories, Inc.

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Chain of Custody Record



Severn Trent Laboratories, Inc.

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Chain of Custody Record



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		NM			10/31/2007	7	8	. 15
SB-406-0405	A7 14700000		10/16/2007	10/23/2007	10/31/2007	7	8	15
· · · · · · · · · · · · · · · · · · ·	A7J170283019	NM	10/16/2007	10/20/2007	10/23/2007	4	3	7
SB-406-0203	A7J170283018	NM	10/16/2007	10/23/2007	10/31/2007	7	8 .	15
SB-406-0102	A7J170283017	NM	10/16/2007	10/20/2007	10/23/2007	4	3	. 7
SB-405-0708	A7J170283016	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
SB-405-0405	A7J170283015	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
SB-405-0203RE	A7J170283014	NM ·	10/16/2007	10/29/2007	11/1/2007	13	3	16
SB-402-0102	A7J170283001	NM	10/16/2007	10/23/2007	10/31/2007	7		15
SB-404-0203	A7J170283010	NM	10/16/2007	10/23/2007	10/31/2007	7		15
SB-404-0102	A7J170283009	NM	10/16/2007	10/23/2007	10/31/2007			15
	A7J170283008	NM ·	10/16/2007	10/23/2007	10/31/2007			15
	SB-404-0203	SB-404-0203 A7J170283010 A7J170283009	SB-404-0203 A7J170283010 NM SB-404-0102 A7J170283009 NM	SB-404-0203 A7J170283010 NM 10/16/2007 SB-404-0102 A7J170283009 NM 10/16/2007 SB-403-0708 A7J170283008 NM 10/16/2007	SB-404-0203 A7J170283010 NM 10/16/2007 10/23/2007 SB-404-0102 A7J170283009 NM 10/16/2007 10/23/2007 SB-403-0708 A7J170283008 NM 10/16/2007 10/23/2007	SB-404-0203 A7J170283009 NM 10/16/2007 10/23/2007 10/31/2007 SB-403-0708 A7J170283009 NM 10/16/2007 10/23/2007 10/31/2007	SB-404-0203 A7J170283010 NM 10/16/2007 10/23/2007 10/31/2007 7 SB-404-0102 A7J170283009 NM 10/16/2007 10/23/2007 10/31/2007 7 SB-403-0708 A7J170283008 NM 10/16/2007 10/23/2007 10/31/2007 7	SB-404-0203 A7J170283010 NM 10/16/2007 10/23/2007 10/31/2007 7 8 SB-404-0102 A7J170283009 NM 10/16/2007 10/23/2007 10/31/2007 7 8 SB-403-0708 A7J170283008 NM 10/16/2007 10/23/2007 10/31/2007 7 8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	SB-403-0405	A7J170283007	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
os ·	%	SB-403-0203	A7J170283006	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
os	%	SB-403-0102	A7J170283005	NM [°]	10/16/2007	1.0/23/2007	10/31/2007	7	8	15
OS	%	SB-402-0708	A7J170283004	· NM	10/16/2007	10/23/2007	10/31/2007	7	8 .	15
OS	%	SB-402-0203	A7J170283002	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	%	SB-405-0102	A7J170283013	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	%	SB-402-0405	A7J170283003	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	UG/KG	SB-406-0203	A7J170283018	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	UG/KG	SB-404-0405	A7J170283011	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	UG/KG	SB-404-0708	A7J170283012	NM .	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	UG/KG	SB-405-0102	A7J170283013	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	UG/KG	SB-405-0203RE	A7J170283014	NM	10/16/2007	10/29/2007	11/1/2007	13	3	16
OS	UG/KG	SB-405-0405	A7J170283015	NM	10/16/2007	10/23/2007	10/31/2007	. 7	8	15
OS	UG/KG	SB-406-0102	A7J170283017	NM	10/16/2007	10/20/2007	10/23/2007	4	3	7
OS	UG/KG	SB-403-0203	A7J170283006	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	UG/KG	SB-406-0405	A7J170283019	NM	10/16/2007	10/20/2007	10/23/2007	4	3	7
OS	UG/KG	SB-405-0708	A7J170283016	NM	10/16/2007	10/23/2007	10/31/2007	7	. 8	15
OS	UG/KG	SB-404-0203	A7J170283010	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15

Tuesday, November 13, 2007

SORT	UNITS	NSAMPLE	LABID	00 71/77						
OS	eli di masilista di memberah di seba		LAB ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL DATE	SMP_EXTR	EXTR_ANL	SMP ANL
03	UG/KG	SB-404-0102	A7J170283009	NM	10/16/2007	10/23/2007	10/31/2007	. 7	8	15
OS	UG/KG	SB-403-0405	A7J170283007	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
os	UG/KG	SB-403-0102	A7J170283005	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	UG/KG	SB-402-0708	A7J170283004	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	UG/KG	SB-402-0405	A7J170283003	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	UG/KG	SB-402-0203	A7J170283002	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
os	UG/KG	SB-402-0102	A7J170283001	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
OS	UG/KG	SB-406-0708	A7J170283020	NM	10/16/2007	10/23/2007	10/31/2007	7	8 .	15
OS	UG/KG	SB-403-0708	A7J170283008	NM	10/16/2007	10/23/2007	10/31/2007	7	8	15
PCB	%	SB-404-0405	A7J170283011	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-405-0708	A7J170283016	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-404-0102	A7J170283009	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	%	SB-402-0102	A7J170283001	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-406-0708	A7J170283020	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-406-0405	A7J170283019	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	%	SB-406-0102	A7J170283017	NM	10/16/2007	10/23/2007	10/26/2007	7	3	10
PCB	%	SB-405-0405	A7J170283015	NM	10/16/2007	10/23/2007	10/25/2007	7	. 2	9
PCB	%	SB-405-0203	A7J170283014	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
Tuesday	Novembe	T-12 2007							-	3

Tuesday, November 13, 2007

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR DATE	ANAL DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCB	% .	SB-405-0102	A7J170283013	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	%	SB-402-0405	A7J170283003	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-406-0203	A7J170283018	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	%	SB-402-0203	A7J170283002	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-404-0708	A7J170283012	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-402-0708	A7J170283004	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	%	SB-403-0102	A7J170283005	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	%	SB-403-0203	A7J170283006	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	%	SB-403-0405	A7J170283007	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	%	SB-403-0708	A7J170283008	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	%	SB-404-0203	A7J170283010	*NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	UG/KG	SB-404-0708	A7J170283012	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-402-0102	A7J170283001	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13 .
PCB	UG/KG	SB-406-0405	A7J170283019	NM .	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	UG/KG	SB-406-0203	A7J170283018	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	UG/KG	SB-406-0102	A7J170283017	NM	10/16/2007	10/23/2007	10/26/2007	7	3	10
PCB	UG/KG	SB-405-0708	A7J170283016	NM	10/16/2007	10/23/2007	10/29/2007	. 7	6	13
PCB	UG/KG	SB-405-0405	A7J170283015	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
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Tuesday, November 13-2007

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	CMD AND
PCB	UG/KG	SB-405-0203	A7J170283014	NM	10/16/2007	10/23/2007.	10/25/2007	7	2	SMP_ANL
PCB	ÚG/KG	SB-405-0102	A7J170283013	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB .	UG/KG	SB-406-0708	A7J170283020	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-404-0405	A7J170283011	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-404-0203	A7J170283010	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB .	UG/KG	SB-404-0102	A7J170283009	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	UG/KG	SB-403-0708	A7J170283008	NM	10/16/2007	10/23/2007	10/25/2007	. 7	2	9
PCB	UG/KG	SB-403-0405	A7J170283007	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	UG/KG	SB-403-0203	A7J170283006	NM	10/16/2007	. 10/23/2007	10/25/2007	7	2	9
PCB	UG/KG	SB-403-0102	A7J170283005	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB	UG/KG	SB-402-0708	A7J170283004	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	UG/KG	SB-402-0203	A7J170283002	NM	10/16/2007	10/23/2007	10/29/2007	. 7	6	13
PCB	UG/KG	SB-402-0405	A7J170283003	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13

SW846 8270C MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17283

Matrix Spike ID: SB-406-0405

Lot #: A7J170283

WO #: J86XJ1AM BATCH: 7292538

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD		QC I	LIMITS REC		OUAL
=======================================	=======	=======	=====	=====	==	====	======	==	========
1,2,4-Trichlorobenzene	830	490	59	1.4		30	33 - 1	.10	
Acenaphthene	830	1000	103	0.50		30	10- 2	00	
2,4-Dinitrotoluene	830.	520	63	18	_	30	42- 1	18	
Pyrene	830	1100	100	0.42		30	10- 2	00	
N-Nitrosodi-n-propylamine	830	550	66	44	*	30	30- 1	21	p
1,4-Dichlorobenzene	830	390	48	3.9	_	30	26- 1	10	
Pentachlorophenol	830	280	34	41	*	30	10- 1	82	р
Phenol	830	540	65	24	_ i	30	10- 1	44	
2-Chlorophenol	830	520	63	19	\equiv i	30	32- 1	10	
4-Chloro-3-methylphenol	830	540	65	11		30	32- 1	17	
4-Nitrophenol	830	550	67	11	_	30	10- 1	25	

NOTES(S):

Results and reporting limits have been adjusted for dry weight.

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 2 out of 11 outside limits

Spike Recovery: ___0 out of __11 outside limits

COMMENTS:

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

SW846 8270C MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17283

Matrix Spike ID: LAB MS/MSD

Level: (low/med) LOW

Lot #: A7J250272

WO #: J9VG91A0 -BATCH: 7302363

	SPIKE ADDED	SAMPLE CONCENT.	MS CONCENT.	MS %	LIMITS	
COMPOUND	(ug/kg)	(ug/kg)	(ug/kg)	REC	REC	QUAL
	=======	=======		=====	========	
1,2,4-Trichlorobenzene	740	ND	560	75	33- 110	DIL
Acenaphthene	740	530	1200	91	10- 200	DIL
2,4-Dinitrotoluene	740	ND	730	98	42- 118	DIL
Pyrene	740	8200	13000	646*	10- 200	DIL a
N-Nitrosodi-n-propylamine	740	ND	540	73	30- 121	DIL
1,4-Dichlorobenzene	740	ND	510	69	_ 26- 110	DIL
Pentachlorophenol	740	ND	1000	142	10- 182	DIL .
Phenol	740	ND	570	78	10- 144	DIL
2-Chlorophenol	740	ND	530	72	32- 110	DIL
4-Chloro-3-methylphenol	740	ND	520	70	32- 117	DIL
4-Nitrophenol	740	ND	0.0	0*	10- 125	DIL a

NOTES(S):

DIL 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.

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 2 out of 11 outside limits

COMMENTS:

FORM III

a Spiked analyte recovery is outside stated control limits.

SW846 8270C MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17283

Matrix Spike ID: LAB MS/MSD

Level: (low/med) LOW

Lot #: A7J250272

WO #: J9VG91A1 BATCH: 7302363

	SPIKE ADDED	MSD CONCENT.	MSD %	8	OC 1	LIMITS	
COMPOUND	(ug/kg)	(ug/kg)	REC	RPD	RPD	REC	QUAL
=======================================	=======	========	=====		====	========	=======
1,2,4-Trichlorobenzene	740	460	62	18	30	33- 110	DIL
Acenaphthene	740	1400	122	18	30	10- 200	DIL
2,4-Dinitrotoluene	740	680	92	6.8	30	42- 118	DIL
Pyrene	740	15000	974*	17	30	10- 200	DIL a
N-Nitrosodi-n-propylamine	740	440	60	19	30	30- 121	DIL
1,4-Dichlorobenzene	740	430	59	17	30	26- 110	DIL
Pentachlorophenol	740	970	130	8.1	30	10- 182	DIL
Phenol	740	510	69	12	30	10- 144	DIL
2-Chlorophenol	740	460	61	15	30	32- 110	DIL
4-Chloro-3-methylphenol	740	430	58	18	30	32- 117	DIL
4-Nitrophenol	740	0.0	0*	0.0	30	10- 125	DIL a

NOTES(S):

DIL 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.

a Spiked analyte recovery is outside stated control limits.

 $\ensuremath{\sharp}$ Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: ___0 out of __11 outside limits

Spike Recovery: 2 out of 11 outside limits

COMMENTS:

FORM III

SW846 8082 SURROGATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J17283

Lot #: A7J170283

Extraction: XXA63QH01

	CLIENT ID.	SRG01	SRG02	TOT OU	T
		- ======	======	=====	= İ
	SB-402-0102	73	66	1 00	j
	SB-402-0203	125	109	00	-¦
	SB-402-0405	53	35	00	-¦
	SB-402-0708	93	106	00	-i
	SB-403-0102	113	97	00	-¦
	SB-403-0203	33	34	00	-
	SB-403-0405	93	95	00	-
08	SB-403-0708	98	108	00	-
09	SB-404-0102	102	104	00	-¦
10	SB-404-0203	96	106	00	-
11	SB-404-0405	111	86	00	-
1.2	SB-404-0708	89	53	00	-
13	SB-405-0102	105	113	00	-
14	SB-405-0203	96	207*	01	. [
15	SB-405-0405	81	151	0.0	ŀ
16	SB-405-0708	97	82	00	.[
17	SB-406-0102	40	61	00	1
18	SB-406-0203	101	106	00]
19	SB-406-0405	82	104	00	ļ.
20	SB-406-0708	67	70	00	[i
21	METHOD BLK. J9KCL1AA	33	32	00	!
	METHOD BLK. J9KCT1AA	44	48	00	1
23	LCS J9KCL1AC	137	138		1
24	LCS J9KCT1AC	115	135	00	
25	SB-406-0405 D	79	104	00	
	SB-406-0405 S	86		00	
			107	00	

SURROGATES

SRG01 = Tetrachloro-m-xylene SRG02 = Decachlorobiphenyl QC LIMITS (10-196)

(10-199)

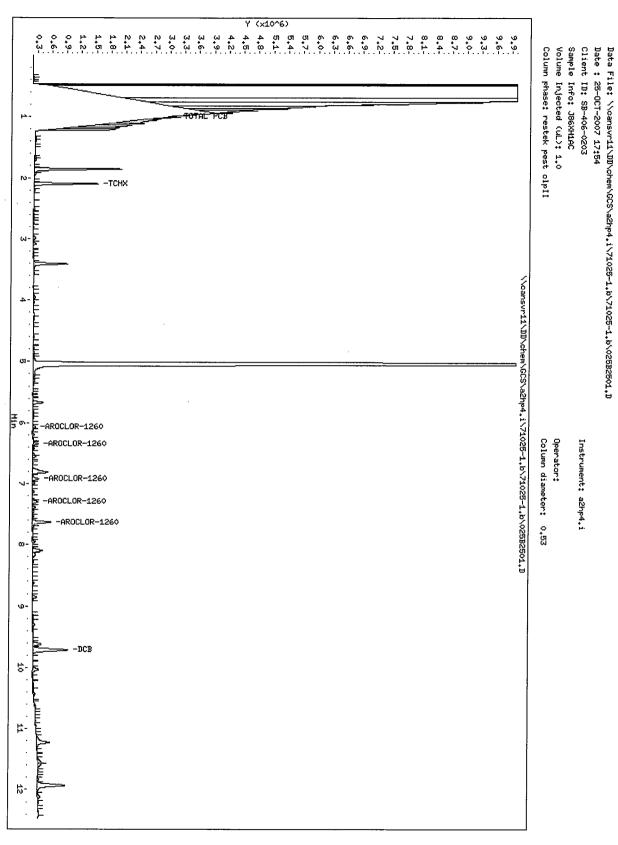
FORM II

[#] Column to be used to flag recovery values

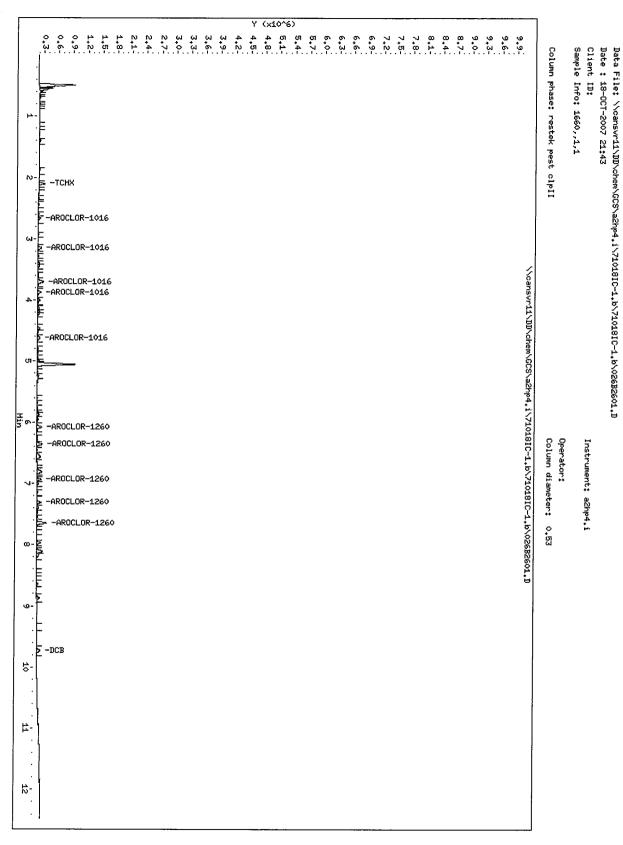
^{*} Values outside of required QC Limits

D System monitoring Compound diluted out

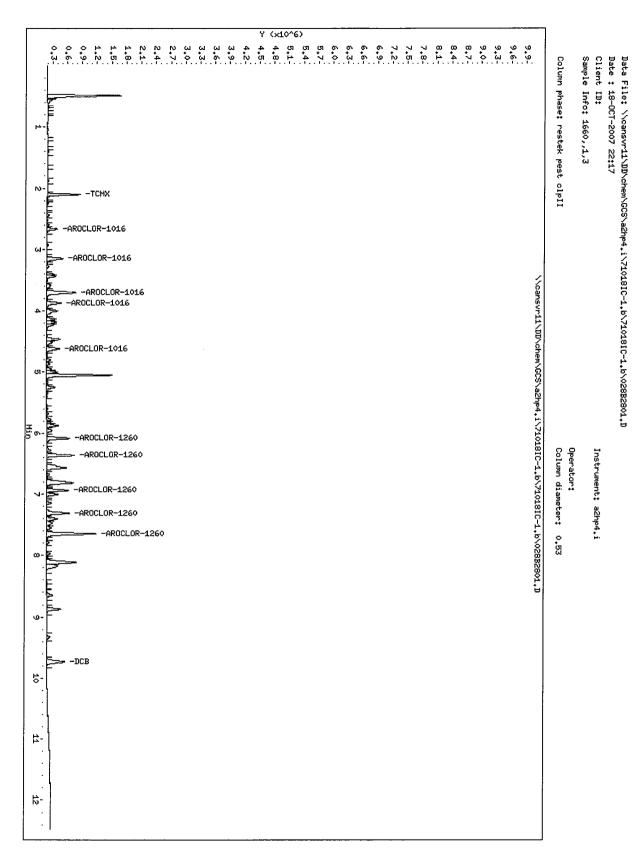
SAMPLE



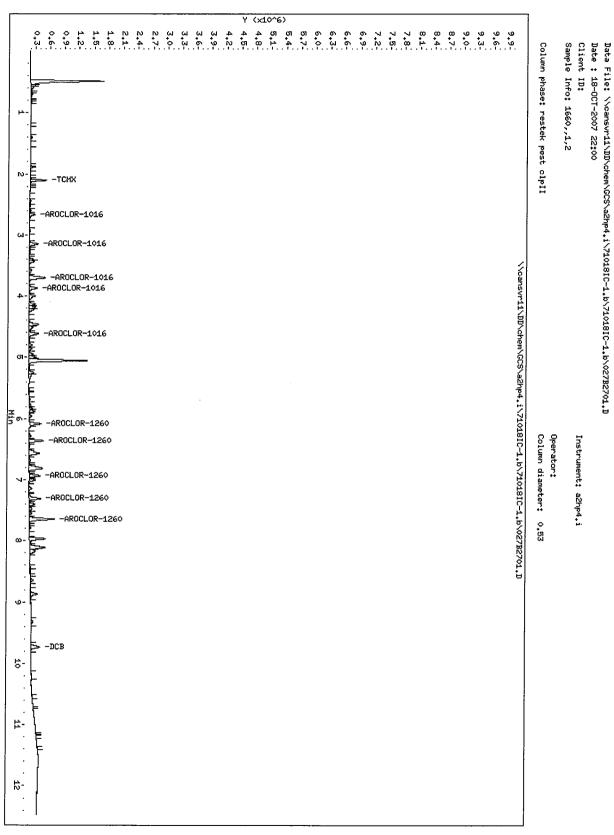
STANDARD



STANDARD



STANDARD



CALCULATION WORKSHEET

Page 1 of 1

CLIENT:	SDG No.	
LOCKHEED MIDDLE RIVER	7J17283	
SUBJECT:		
EXAMPLE CALCULATION - BENZO(A)	PYRENE - SOIL	
BY:	DATE:	
T. JACKMAN	12/01/07	

Sample ID = SB-406-0102	Benzo(a)pyrene
Concentration = 510 ug/kg	

EQUATION:

$$C_s = \frac{A_x \times Is \times Vt \times Df}{Ais \times RRF \times V_i \times W_s \times D}$$

Where:

C _s	=	analyte concentration in soil		ug/kg
A _x	=	analyte response	=	1122720
ls	=	amount of internal standard	=	2 ng
V _t	=	volume of final extract	=	2000 uL
Df	=	dilution factor	=	1
Ais	=	response of internal standard	=	642344
RRF	=	response factor of compound	=	1.04094
V _i	=	volume injected	=	0.5 uL
Ws	=	sample weight	=	30.13 g
D	=	percent solids	=	0.87

Therefore: benzo(a)pyrene concentration in soil =

1122720 x 2ng x 2000uL x 1 642344 x 1.04094 x 0.5uL x 30.13g x 0.87

C _s =	512	ug/kg	

Tetra Tech NUS, Inc

Client Sample ID: SB-406-0102

GC/MS Semivolatiles

Lot-Sample #: A7J170283-017	Work Order #: J86XG1AF	Matrix SO
Date Sampled: 10/16/07 15:16	Date Received: 10/17/07	
Prep Date: 10/20/07	Analysis Date: 10/23/07	
Prep Batch #: 7292538		
Dilution Factor: 1	Initial Wgt/Vol 30.13 g	Final Wgt/Vol: 2 mL
% Moisture:13	Method: SW846 8270C	

REPORTING

PARAMETER	REŞULT	LIMIT	UNITS
Benzo(a)pyrene	510	380	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	_
Nitrobenzene-d5	48	(24 - 112)
2-Fluorobiphenyl	59	(34 - 110))
Terphenyl-d14	83	(41 - 119)
Phenol-d5	53	(28 - 110)
2-Fluorophenol	53	(26 - 110)
2,4,6-Tribromophenol	53	(10 - 118)	}

Results and reporting limits have been adjusted for dry weight.

Data File: $\c MSS\a4ag2.i\71023A.b\J86XG1AF.D$ Page 3 Report Date: 24-Oct-2007 09:49

					CONCENTRA	ATIONS
	QUANT SIG				ON-COLUMN	FINAL
Compounds	MASS	RT	EXP RT REL RT	RESPONSE	(NG)	(ug/kg)
######################################	====	====			3302355	2222022
136 Benzo(a)Anthracene	228	8.698	8.686 (0.999)	484706	1.21898	161.83(QM)
137 Chrysene	228	8.727	8.715 (1.002)	811710	2.25198	298.97
139 bis(2-ethylhexyl)Phthalate	149	8.627	8.615 (0.991)	53532	0.22972	30.497(Q)
140 Di-n-octylphthalate	149	Com	pound Not Detecte	ed.		
141 Benzo(b)fluoranthene	252	9.692	9.662 (0.956)	2060434	5.46313	725.27(M)
142 Benzo(k)fluoranthene	252	9.715	9.692 (0.959)	- 68991 0	1.79019	237.66(QM)
146 Benzo(a)pyrene	252	10.074	10.039 (0.994)	1122720	3.35820	445.83(H)
149 Indeno(1,2,3-cd)pyrene	276	11.709	11.645 (1.156)	1354977	3.54169	470.19
150 Dibenz(a,h)anthracene	278	11.703	11.650 (1.155)	358626	1.08639	144.23(H)
151 Benzo(g,h,i)perylene	276	12.203	12.115 (1.204)	1547827	4.81972	639.86
198 1,4-Dioxane	88	Con	pound Not Detecte	ed.		
232 2-Methylcyclohexanone	68	Com	pound Not Detecte	ed.		
233 3-Methylcyclohexanone	69	Com	pound Not Detecte	ed.		
\$ 154 Nitrobenzene-d5	82	3.869	3.863 (0.883)	213029	2.41172	320.18
\$ 155 2-Fluorobiphenyl	172	5.139	5.139 (0.909)	623967	2.92618	388.47
\$ 156 Terphenyl-d14	244	7.892	7.880 (0.906)	1132428	4.14462	550.23
\$ 157 Phenol-d5	99	3.210	3.192 (0.921)	450762	3.97443	527.64
\$ 158 2-Fluorophenol	112	2.651	2.610 (0.760)	334136	3.96263	526.07
\$ 159 2,4,6-Tribromophenol	330	6.227	6.221 (1.102)	128346	3.94317	523.49
\$ 186 2-Chlorophenol-d4	132	3.339	3.333 (0.958)	361306	3.91643	519.94
\$ 187 1,2-Dichlorobenzene-d4	152	3.598	3.592 (1.032)	115760	1.88452	250.18
M 195 Cresols, total	100	Com	pound Not Detecte	ed.		

QC Flag Legend

Q - Qualifier signal failed the ratio test.
 M - Compound response manually integrated.
 H - Operator selected an alternate compound hit.

Data File: \\cansvr11\\dd\chem\MSS\a4ag2.i\\71023A.b\\J86XG1AF.D Page 1

Report Date: 24-Oct-2007 09:49

STL North Canton

Semivolatile REPORT SW-846 Method 8270

Data file: \\cansvr11\dd\chem\MSS\a4ag2.i\\71023A.b\\J86XG1AF.D Lab Smp Id: J86FG1AF Client Smp ID: SB-406-Client Smp ID: SB-406-0102

Inst ID: a4ag2.i

Misc Info:

Comment

: \\cansvr11\dd\chem\MSS\a4ag2.i\71023A.b\8270p.m Method Meth Date: 24-Oct-2007 09:46 hulat Quant Type: ISTD Cal Date : 20-OCT-2007 11:28 Cal File: 2AL1020.D

Als bottle: 38

Dil Factor: 1.00000 Integrator: HP RTE

Compound Sublist: TCLLCSD.SUB

Target Version: 4.14

Processing Host: CANPMSSV04

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws) * CpndVariable

Name	Value Description	
DF Uf Vt Vi Ws Cpnd Variable	1.000 Dilution Factor 1.000 ng unit correction factor 2000.000 Volume of final extract (uL)(1000 low, 0.50000 Volume injected (uL) 30.130 Weight of sample extracted (g) Local Compound Variable	2

		CONCENTRATIONS
	QUANT SIG	ON-COLUMN FINAL
Compounds	MASS	RT EXP RT REL RT RESPONSE (NG) (ug/kg)
	2532	==== ======= ======= ==================
* 1 1,4-Dichlorobenzene-d4	152	3.486 3.486 (1.000) 147913 2.00000 (Q)
* 2 Naphthalene-d8	136	4.380 4.380 (1.000) 502809 2.00000
* 3 Acenaphthene-d10	164	5.651 5.651 (1.000) 338621 2.00000
* 4 Phenanthrene-d10	188	6.745 6.739 (1.000) 591403 2.00000
* 5 Chrysene-d12	240	8.709 8.692 (1.000) 667273 2.00000
* 6 Perylene-d12	264	10.133 10.098 (1.000) (642344) 2.00000 (H)
9 Pyridine	79	Compound Not Detected.
10 N-Nitrosodimethylamine	74	Compound Not Detected.
209 Benzaldehyde	77	Compound Not Detected.
21 Aniline	93	Compound Not Detected.
22 Phenol	94	Compound Not Detected.
23 bis(2-Chloroethyl)ether	93	Compound Not Detected.
24 2-Chlorophenol	128	Compound Not Detected.
26 1,3-Dichlorobenzene	146	Compound Not Detected.
27 1,4-Dichlorobenzene	146	Compound Not Detected.
28 1,2-Dichlorobenzene	146	Compound Not Detected.
29 Benzyl Alcohol	108	Compound Not Detected.
30 2-Methylphenol	108	Compound Not Detected.

Report Date : 18-Oct-2007 07:05

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 17-OCT-2007 15:56 End Cal Date : 17-OCT-2007 18:14

: ISTD Quant Method Origin : Disabled Target Version : 4.14 Integrator : HP RTE

: \\cansvr11\dd\chem\MSS\a4ag2.i\71017A.b\8270p.m : 17-Oct-2007 19:56 a4ag2.i Method file

Last Edit Curve Type

: Average

	0.05000	0.25000	0.50000	1.000	2.500	5.000	l	[
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
	7.500	10.000	12.500		 	 	! 	i
	Level 7	Level 8	Level 9	ĺ	İ	ļ	į	İ
annessessessessessessessessessessessesses	+++++	+++++		+++++	+++++	+++++	== ====== 	========
·	+++++	+++++	+++++		İ		+++++	+++++
145 Hexachlorophene product	-	+++++	+++++	 +++++	 +++++	 +++++	[
123 Howard Drogge	+++++	+++++	+++++				+++++	+++++
	1.00424	 0.88190	0.91626	0.97379	1.00679	1.05025		
140 Belizo (a) pyrene	1.10613				1	(1.04094	11.82
	- +++++	 +++++	+++++	+++++		+++++		
	+++++	+++++	+++++		[· [++++	r ++++
140 Tadono/1 0 2 ad/mmono	1.13657	 1.02575	1.06722	1.11865	1.16012	 1.19746		
149 Indeno(1,2,3-cd)pyrene	1.25757	1.30840		1.11005	1.10012	1.15740	1.19120	10.97
.50 Dibenz(a,h)anthracene	0.99470	0.87348	0.91515	0.95809	0.98795	1.03019	 	-
.50 Dibenz(a,n)anthracene	1.09278			0.95609	0.36733	1.03019	1.02783	11.67
	-					0.99340		
.51 Benzo(g,h,i)perylene	1.03594	0.85698 1.08103	0.89845	0.93815	0.95740 	0.99340	 0.99991	 10.37!
	-							
.99 3-Picoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	! +++++
	-] [
200 N,N-Dimethylacetamide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	 +++++
	- ji							
201 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++ 	+++++	++++
	-							
02 Diphenyl	+++++	+++++	+++++	+++++	+++++ 	+++++	 +++++	+++++
	-				 	 		

CALCULATION WORKSHEET

Page 1 of 1

CLIENT:	SDG No.
LOCKHEED MIDDLE RIVER	7J17283
SUBJECT:	
1	
EXAMPLE CALCULATION - AROC	CLOR-1260 - SOIL
EXAMPLE CALCULATION - AROCE BY:	CLOR-1260 - SOIL DATE:

Sample ID = SB-406-0203 Concentration = 21 ug/kg Aroclor-1260

EQUATION:

$$C_{W} = \frac{A_{X} \times V_{t} \times Df}{CF \times V_{i} \times W_{s} \times D}$$

Where:

C _s	=	analyte concentration in soil		ug/kg
A _x	=	analyte response	=	354576.6
V_{t}	=	volume of final extract	=	10000 uL
Df	=	dilution factor	=	1
CF	=	calibration factor	=	5859887
V _i	=	volume injected	=	1 uL
Ws	=	sample weight	=	30.02 g
D	=	percent solids	=	0.87

Therefore: Aroclor-1260 concentration in soil =

354576.6 x 10000uL x 1 5859886.6 x 1uL x 30.02g x 0.87

C_s = 23.2 ug/kg

Tetra Tech NUS, Inc

Client Sample ID: SB-406-0203

GC Semivolatiles

Lot-Sample #...: A7J170283-018 Work Order #...: J86XH1AC Matrix.....: S0

Date Sampled...: 10/16/07 15:18 Date Received..: 10/17/07

Prep Date....: 10/23/07 Analysis Date..: 10/25/07

Prep Batch #...: 7295395

Dilution Factor: 1 Initial Wgt/Vol: 30.02 g Final Wgt/Vol.: 10 mL Method....: 5W846 8082

		REPORTIN	IG
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38	ug/kg
Aroclor 1232	ND	38	ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	21 J	38	ug/kg
	PERCENT	RECOVERY	•
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	101	(10 - 19	(6)
Decachlorobiphenyl	106	(10 - 19	9)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Data File: 025B2501.D

Report Date: 26-Oct-2007 08:50

STL North Canton

Data file : $\c SCS\a2hp4.i\71025-1.b\71025-1.b\025B2501.D$ Lab Smp Id: J86XH1AC Client Smp ID: SB-406-0203

Inj Date: 25-OCT-2007 17:54
Operator:
Smp Info: J86XH1AC
Misc Info: Inst ID: a2hp4.i

Comment

: \\cansvr11\dd\chem\GCS\a2hp4.i\71025-1.b\HP4PCBF.m\HP4PCBR.m Method

Meth Date: 25-Oct-2007 19:50 Quant Type: ESTD Cal Date : 19-OCT-2007 01:08 Cal File: 038B3801.D

Als bottle: 1

Dil Factor: 1.00000

Compound Sublist: pcb.sub Integrator: Falcon

Target Version: 4.14 Sample Matrix: SOIL

Processing Host: CANSVR10

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	<u>Value</u>	Description
DF Vt Vo Cpnd Variable	/ 10000.000	Dilution Factor final volume initial volume Local Compound Variable

						(CONCEN	TRÆ	ATIONS		
						(ON-COL		FINAL		
RT	EXP RT	DL	r RT		RESPONS	E	(ng)	(ug/kg)	TARGET RANGE	RATIO
				:		= :		=			=====
\$ 1	TCMX								CAS #:	877-09-8	
					207012						
	AROCLOR-									11104-28-2	
Compo	und Not I	Detec									
3	AROCLOR-	-1016								12674-11-2	
Peaks	not dete	ected	for	Quant.	or Qual.	si	ignal(s).			
4	AROCLOR-									11141-16-5	_
Peaks	not dete	cted	for	Quant.	or Qual.	si	ignal(s).			

Data File: 025B2501.D

Report Date: 26-Oct-2007 08:50

	r DLT RT == =======	CONCENTRA ON-COL RESPONSE (ng)		
5 AROCLO	R-1242		CAS #: 53469-21-9	
Peaks not det	ected for Quant.	or Qual. signal(s).		
6 AROCLO	R-1248		CAS #: 12672-29-6	
Peaks not det	ected for Quant.	or Qual. signal(s).	,	
7 AROCLO	R-1254		CAS #: 11097-69-1	
Compound Not	Detected			
8 AROCLO			CAS #: 11096-82-5	
6.071 6.07	72 -0.001	109753 0.02347	7.820 80.00- 120.0	0 100.00(M)
6.347 6.34	19 -0.002	227814 0.04237	14.11 86.81- 144.6	8 207.57
6.922 6.92		312284 0.07213		
7.298 7.29		1 L	17.80 77.56- 129.2	
7.632 7.63	0.000		28.60 169.21- 282.0	2 786.38
	Average of Pea	k Concentrations =	18.47	

\$ 12 DCB CAS #: 2051-24-3 9.712 9.712 0.000 1999100 0.02115 7.044

M 11 TOTAL PCB CAS #: 1336-36-3

354577 0.05545 18.47

QC Flag Legend

 $\ensuremath{\mathtt{M}}$ - Compound response manually integrated.

FORM 8 SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.:

GC Column: RESTEK PEST CLPII ID: 0.53 (mm) Init. Calib. Date(s): 06/27/07 10/19/

SDG No.: 7J17283

Instrument ID: A2HP4

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURRO	GATE RT FROM .	INITIAL CAL	IBRATION		
	S1 : 2.09	S2 :	9.71			
	OT TEATH	T 7\T	DATE	TIME	S1	S2
	CLIENT SAMPLE NO.	LAB SAMPLE ID	ANALYZED	ANALYZED	RT #	RT #
	SAMPLE NO.				101 #	========
01		1660	10/25/07	1051	2.09	9.71
02	SB-402-0708	J86W11AC	10/25/07	1337	2.09	9.71
03	SB-403-0203	J86W31AC	10/25/07	1411	2.09	9.71
-	SB-403-0405	J86W41AC	10/25/07	1428	2.09	9.72
	SB-403-0708	J86W51AC	10/25/07	1445	2.09	9.71
	SB-404-0102	J86W71AC	10/25/07	1502	2.09	9.71
	SB-404-0203	J86W81AC	10/25/07	1520	2.09	9.71
08	J9KCTBLK	J9KCT1AA	10/25/07	1554	2.10	9.71
09	GD 40F 0100	E178	10/25/07	1611 1645	2.09 2.09	9.71 9.71
10 11	SB-405-0102 SB-405-0203	J86XCLAC J86XDLAC	10/25/07 10/25/07	1702	2.09	9.71
12	SB-405-0405	J86XE1AC	10/25/07	1720	2.10	9.71
13	SB-406-0203	J86XH1AC	10/25/07	1754	2.09	9.71
14	SB-406-0405	J86XJ1AC	10/25/07	1811	2.09	9.71
15	SB-406-0405	J86XJ1AN	10/25/07	1828	2.10	9.71
	SB-406-0405	J86XJ1AP	10/25/07	1845	2.09	9.71
17	J9KCTCHK	J9KCT1AC	10/25/07	1919	2.09	9.71
18		E178	10/25/07	1936	2.09	9.71
19						
20						
21						
22						
23				· · · · · · · · · · · · · · · · · · ·		
24 25						
26						
27					·	 [
28						
29						
30						
31	"		-			
32						

QC LIMITS

S1 = TCMXS2 = DCB

(+/- 0.10 MINUTES) (+/- 0.10 MINUTES)

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

page 1 of 1

FORM VIII SV

Report Date : 06-Nov-2007 10:39

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 27-JUN-2007 15:36
End Cal Date : 19-OCT-2007 02:34
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : Falcon
Method file : \\CANSVR11\DD\chem\GCS\a2hp4.i\71018IC-1.b\HP4PCBF.m\HP4PC
Last Edit : 21-Oct-2007 15:48 serraa
Curve Type : Average

	0.05000	0.10000 0.20000	0.50000	1.000	2.000	l l	
Compound	Level 1	Level 2 Level 3	Level 4	Level 5	Level 6	RRF	% RSD
			-		======		======================================
8 AROCLOR-1260(1)	4329700	4552910 537833	5 4783232	4665790	4342780	4675454	8.289
(2)	4797540	6203710 596664	0 5332322	5112956	4849743	5377152	10.897
(3)	3496740	4948940 491817	5 4393384	4222864	3996319	4329403	12.861
(4)	4215300	5496840 545209	0 4888414	4675030	446673	4865735	10.723
(5)	8447960	11359640 1131284	0 10200374	9607243	9382074	10051689	11.379
9 AROCLOR-1262(1)	5846040	4773780 402706	5 4154068	3935838	3671210	4401334	18.111
(2)	8902340	7474280 637072	0 6914330	6521168	6118206	7050174	14.519
(3)	8614360	7204290 607147	0 6419510	6059167	5713237	6680339	16.087
(4)	16686600	14182190 1194696	5 12743810	12100616	11463127	13187218	14.830
(5)	12540200	10446350 881778	5 9317142	8826884	8365044	9718901	16.000
10 AROCLOR-1268(1)	3397040	2818070 285503	5 2820440	2852430	2490264	2872213	10.182
(2)	5177600	4862930 418691	5 4059544	4103814	3550863	4323611	13.699
(3)	18481040	17728990 1562171	0 15442430	15629551	13999912	[16150606]	10.212
(4)	17352020	16923110 1506820	5 15081040	15514614	13955108	15649016	8.119
(5)	42197740	41905830 3803692	5 37453458	38248248	34967037	38801540	7.159
11 TOTAL PCB	+++++	+++++	1 +++++ 1	++++	++++	+++++	+++++
				' 			=======
1. TCMX	79285200	109076400 11273660	0 125365450	98500440	90992240	102659388	16.054
12 DCB	75138800	100446800 10364990	0 115933800	85204600	86813080	94531163	15.682
_	1			,		, l 1	



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO:

MIKE MARTIN

DATE:

JANUARY 8, 2008

FROM:

THOMAS JACKMAN

COPIES:

DV FILE

SUBJECT:

ORGANIC DATA VALIDATION - BENZO(A)PYRENE/PCBS

LOCKHEED MIDDLE RIVER FACILITY

SAMPLE DELIVERY GROUP (SDG) - 7J18324

SAMPLES:

18/Solid

SB-407-0102	SB-407-0203	SB-407-0405	SB-407-0708
SB-408-0102	SB-408-0203	SB-408-0405	SB-408-0708
SB-409-0102	SB-409-0203	SB-409-0405	SB-409-0708
SB-489-0102	SB-489-0203	SB-489-0405	SB-489-0708
OD 400 040E	00 400 0000		

SB-490-0405 SB-490-0708

Overview

This sample set for the Lockheed Middle River, SDG 7J18324, consists of 18 environmental soil samples. The samples were analyzed for benzo(a)pyrene and polychlorinated biphenyls(PCBs). No field duplicates were included in this data set.

The samples were collected by Tetra Tech NUS, Inc. on October 16 and 17, 2007 and analyzed by Test America. The samples were analyzed by SW-846 Method 8270C for benzo(a)pyrene and Method 8082 for PCBs.

Summary

The findings in this report are based upon a general review of all available data including: data completeness, holding times, GC/MS tuning, initial/continuing calibrations, laboratory method blank contamination, surrogate spike, matrix spike/matrix spike duplicate (MS/MSD) results, Laboratory Control Sample (LCS) results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below; documentation supporting these findings is presented in Appendix C. Qualified analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

Major Problems

None.

Minor Problems

Positive results reported below the reporting limit (RL) but above the method detection limit (MDL) for the organic analyses were qualified as estimated, "J".

MEMO TO: M. MARTIN - PAGE 2 DATE: JANUARY 8, 2008

In the analysis of benzo(a)pyrene, matrix spike/matrix spike duplicate RPDs were outside quality criteria for samples SB-407-0102 MS/MSD and SB-407-0708 MS/MSD. No data were qualified on the basis of the MS/MSD results because benzo(a)pyrene was not one of the spiked compounds.

Aroclor-1260 was reported as positively detected in one sample (SB-408-0405) on column CLPII. The laboratory did not confirm this result on a second column as specified by Method 8082. The lack of second column confirmation should not affect the identification of Aroclor-1260 in this sample because PCBs are identified by pattern recognition rather than by retention times. The chromatograms of this sample and associated standards are provided in Appendix C.

Executive Summary

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "Region III Modifications to the National Functional Guidelines for Organic Data Review" (9/94). The text of this report has been formulated to address only those problem areas affecting data quality.

etra Tech NUS

Thomas Jackman

Environmental Scientist

Tetra Tech NUS

Joseph A. Samchuck

Quality Assurance Officer

Attachments:

- Appendix A Qualified Analytical Results
- 2. Appendix B Results as reported by the Laboratory
- 3. Appendix C Support Documentation

Data Qualifier Key:

- J Positive result is considered estimated, "J", as a result of technical noncompliances.
- U Nondetected result.
- UJ Nondetected result is considered estimated, "UJ", as a result of technical noncompliances.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination

B = Field Blank Contamination

C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)

C01 = GC/MS Tuning Noncompliance

D = MS/MSD Recovery Noncompliance

E = LCS/LCSD Recovery Noncompliance

F = Lab Duplicate Imprecision

G = Field Duplicate Imprecision

H = Holding Time Exceedance

I = ICP Serial Dilution Noncompliance

J = GFAA PDS - GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance

K = ICP Interference - includes ICS % R Noncompliance

L = Instrument Calibration Range Exceedance

M = Sample Preservation Noncompliance

N = Internal Standard Noncompliance

N01 = Internal Standard Recovery Noncompliance Dioxins

N02 = Recovery Standard Noncompliance Dioxins

N03 = Clean-up Standard Noncompliance Dioxins

O = Poor Instrument Performance (e.g. base-line drifting)

P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)

Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)

R = Surrogates Recovery Noncompliance

S = Pesticide/PCB Resolution

T = % Breakdown Noncompliance for DDT and Endrin

U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC

V = Non-linear calibrations; correlation coefficient r < 0.995

W = EMPC result

X = Signal to noise response drop

Y = Percent solids <30%

Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 00885

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date

SB-407-0102 10/16/2007 nsample samp_date

SB-407-0203 10/16/2007 nsample samp_date lab_id SB-407-0405 10/16/2007

lab_id

A7J180324001 NM lab_id A7J180324002 qc_type NM

qc_type

A7J180324003 NM

qc_type units Pct_Solids

UG/KG 79.0 units Pct_Solids

DUP_OF:

UG/KG 78.0

units
Pct_Solids
DUP_OF:

UG/KG 74.0

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	130	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	190	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	110	J	Р

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date lab_id

SB-407-0708 10/16/2007

A7J180324004

qc_type NM units UG/KG 73.0 Pct_Solids

DUP_OF:

nsample

lab_id qc_type units

samp_date 10/16/2007 A7J180324005 NM UG/KG Pct_Solids 82.0

DUP_OF:

nsample

samp_date lab_id

qc_type units Pct_Solids

NM UG/KG 84.0

SB-408-0203

A7J180324006

10/16/2007

DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	30	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	87	J	Р

SB-408-0102

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	50	J	Р

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date lab_id SB-408-0405 10/16/2007 A7J180324007 nsample samp_date lab_id qc_type SB-408-0708 10/16/2007 A7J180324008 nsample samp_date lab_id qc_type SB-409-0102 10/16/2007 A7J180324011

qc_type units Pct_Solids

NM UG/KG 86.0

units
Pct_Solids
DUP_OF:

NM UG/KG 81.0

units
Pct_Solids
DUP_OF:

UG/KG 78.0

NM

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	12	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRÉNE	39	J	Р

00885

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date

10/16/2007

A7J180324012

lab_id qc_type units

NM UG/KG 82.0

Pct_Solids DUP_OF:

SB-409-0203

nsample samp_date lab_id

qc_type units

BENZO(A)PYRENE

10/16/2007 A7J180324013 NM UG/KG 78.0

SB-409-0405

Pct_Solids DUP_OF:

Parameter

nsample

samp_date

lab_id qc_type units

Pct_Solids

DUP_OF:

Qual

Code

Ρ

Val

Qual

J

Result

67

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.8	U	

SB-409-0708

A7J180324014

10/16/2007

NM

73.0

UG/KG

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.6	U	

00885

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date lab_id

qc_type

Pct_Solids

DUP_OF:

units

SB-489-0102 10/16/2007 A7J180324015

A7J1803240 NM UG/KG 80.0 samp_date lab_id qc_type units Pct_Solids DUP_OF:

nsample

SB-489-0203 10/16/2007 A7J180324016 NM UG/KG 76.0 nsample samp_date lab_id qc_type units Pct_Solids

10/16/2007 A7J180324017 NM UG/KG 79.0

SB-489-0405

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	9.6	J	Р

	Parameter	Result	Val Qual	Qual Code
]	BENZO(A)PYRENE	260	J	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	9.8	J	Р

00885

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: OS

nsample samp_date SB-489-0708 10/16/2007 nsample samp_date lab_id SB-490-0405 10/17/2007 A7J180324009 nsample samp_date lab_id SB-490-0708 10/17/2007 A7J180324010

lab_id qc_type units A7J180324018 NM UG/KG

qc_type units

NM UG/KG

79.0

qc_type units Pct_Solids NM UG/KG 87.0

Pct_Solids DUP_OF:

73.0

Pct_Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	21	J	P

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	110	J ·	Р

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	31	J	Р

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date

lab_id

qc_type

Pct_Solids

DUP_OF:

units

SB-407-0102

10/16/2007

A7J180324001

NM UG/KG

79.0

A7J180324002 qc_type NM UG/KG Pct_Solids 78.0

DUP_OF:

nsample

lab_id

units

samp_date

nsample

samp_date lab_id

SB-407-0405 10/16/2007 A7J180324003

qc_type units

NM UG/KG

Pct_Solids DUP_OF:

74.0

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	42	U	
AROCLOR-1221	42	U	
AROCLOR-1232	42	U	
AROCLOR-1242	42	U	
AROCLOR-1248	42	U	
AROCLOR-1254	42	U	
AROCLOR-1260	42	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	42	U	
AROCLOR-1221	42	U	
AROCLOR-1232	42	Ų	
AROCLOR-1242	42	U	
AROCLOR-1248	42	Ü	-
AROCLOR-1254	42	U	
AROCLOR-1260	42	U	

SB-407-0203

10/16/2007

· · · · · · · · · · · · · · · · · · ·			
Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	45	U	
AROCLOR-1221	45	U	
AROCLOR-1232	45	Ų	
AROCLOR-1242	45	U	
AROCLOR-1248	45	U	
AROCLOR-1254	45	U	
AROCLOR-1260	45	U	

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id SB-407-0708

10/16/2007 A7J180324004

qc_type NM
units UG/KG
Pct_Solids 73.0

DUP_OF:

nsample samp_date lab_id

qc_type

units

SB-408-0102 10/16/2007 A7J180324005

NM UG/KG 82.0

Pct_Solids DUP_OF:

nsample samp_date lab_id

SB-408-0203 10/16/2007

qc_type
units
Pct_Solids

A7J180324006 NM UG/KG

84.0

Parameter	Result	Val Qual	Qual Code	
AROCLOR-1016	45	U		
AROCLOR-1221	45	U		
AROCLOR-1232	45	U		
AROCLOR-1242	45	U		
AROCLOR-1248	45	U	<u> </u>	
AROCLOR-1254	45	U		
AROCLOR-1260	45	U		

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	40	U	
AROCLOR-1221	40	U	
AROCLOR-1232	40		
AROCLOR-1242	40	U	
AROCLOR-1248	40	IJ	
AROCLOR-1254	40	U	
AROCLOR-1260	40	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	Ü	
AROCLOR-1260	39	U	

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date

SB-408-0405

10/16/2007

lab_id qc_type A7J180324007

 qc_type
 NM

 units
 UG/KG

 Pct_Solids
 86.0

DUP_OF:

nsample samp_date lab_id qc_type units

SB-408-0708 10/16/2007 A7J180324008

NM UG/KG 81.0

Pct_Solids DUP_OF: nsample samp_date lab_id qc_type

SB-409-0102 10/16/2007 A7J180324011

qc_type NM units UG/KG Pct_Solids 78.0

Parameter	Result	Val Quai	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	Ü	<u> </u>
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	Ū	
AROCLOR-1260	15	J	P

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	41	U	<u></u>
AROCLOR-1221	41	U	
AROCLOR-1232	41	U	
AROCLOR-1242	41	U	
AROCLOR-1248	41	U	
AROCLOR-1254	41	U	
AROCLOR-1260	41	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	43		
AROCLOR-1221	43	U	
AROCLOR-1232	43	U	
AROCLOR-1242	43	U	<u> </u>
AROCLOR-1248	43	U	
AROCLOR-1254	43	U	
AROCLOR-1260	43	Ū.	

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-409-0203

10/16/2007

A7J180324012

lab_id qc_type units

NM UG/KG 82.0

Pct_Solids DUP_OF:

nsample samp_date lab_id

DUP_OF:

10/16/2007 A7J180324013 NM

SB-409-0405

UG/KG

78.0

qc_type units Pct_Solids

nsample

samp_date

SB-409-0708 10/16/2007 A7J180324014

qc_type units Pct_Solids

NM UG/KG 73.0

		Val	Qual
Parameter	Result	Qual	Code
AROCLOR-1016	40	U	· · · · · ·
AROCLOR-1221	40	U	
AROCLOR-1232	40	U	
AROCLOR-1242	40	U	
AROCLOR-1248	40	U	
AROCLOR-1254	. 40	U	
AROCLOR-1260	40	Ų	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	42	U.	
AROCLOR-1221	42	U	
AROCLOR-1232	42	U	
AROCLOR-1242	42	U	
AROCLOR-1248	42	U	
AROCLOR-1254	42	U	
AROCLOR-1260	42	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	45	U	
AROCLOR-1221	45	U	
AROCLOR-1232	45	Ū	
AROCLOR-1242	45	Ū	
AROCLOR-1248	45	U	
AROCLOR-1254	45	U	
AROCLOR-1260	45	U	

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date lab_id

SB-489-0102 10/16/2007

A7J180324015

qc_type NM units UG/KG Pct_Solids 80.0

DUP_OF:

nsample samp_date lab_id

units

qc_type

Pct_Solids

DUP_OF:

SB-489-0203 10/16/2007 A7J180324016

NM UG/KG 76.0

units Pct_Solids

nsample

lab_id

qc_type

samp_date

SB-489-0405

10/16/2007 A7J180324017

NM UG/KG 79.0

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	41	U	
AROCLOR-1221	41	Ü	
AROCLOR-1232	41	Ū	
AROCLOR-1242	41	Ü	
AROCLOR-1248	41	U	
AROCLOR-1254	41	U	
AROCLOR-1260	41	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	43	· U	
AROCLOR-1221	43	U	
AROCLOR-1232	43	U	
AROCLOR-1242	43	U	
AROCLOR-1248	43	U	
AROCLOR-1254	43	U	
AROCLOR-1260	43	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	42	Ū	
AROCLOR-1221	42	Ū	
AROCLOR-1232	42	U	
AROCLOR-1242	42	U	
AROCLOR-1248	42	Ü	
AROCLOR-1254	42	Ü	
AROCLOR-1260	42	Ū	

SDG: 7J18324 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample samp_date SB-489-0708

10/16/2007

lab_id qc_type units

A7J180324018 NM UG/KG

Pct_Solids DUP_OF:

73.0

lab_id qc_type units

nsample

samp_date 10/17/2007 A7J180324009 NM UG/KG Pct_Solids 79.0

DUP_OF:

nsample samp_date lab_id

SB-490-0708 10/17/2007

qc_type units

A7J180324010 NM UG/KG

87.0

Pct_Solids DUP_OF:

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	45	U	
AROCLOR-1221	45	U	
AROCLOR-1232	45	U	
AROCLOR-1242	45	ΰ	
AROCLOR-1248	45	U	
AROCLOR-1254	45	U	
AROCLOR-1260	45	· U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	42	U	
AROCLOR-1221	42	U	
AROCLOR-1232	42	U	
AROCLOR-1242	42	Ü	
AROCLOR-1248	42	Ü	
AROCLOR-1254	42	U	
AROCLOR-1260	42	U	

SB-490-0405

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Client Sample ID: SB-407-0102

GC/MS Semivolatiles

Lot-Sample #: A7J180324-001 Date Sampled: 10/16/07 16:0 Prep Date: 10/23/07 Prep Batch #: 7296354 Dilution Factor: 1		10/18/07	Matri	x: SO
% Moisture: 21	Method:	SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	130 J	420	ug/kg	1.7
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	61	(24 - 112)		
2-Fluorobiphenyl	64	(34 - 110)		
Terphenyl-d14	93	(41 - 119)		
Phenol-d5	71	(28 - 110)		
2-Fluorophenol	67	(26 - 110)		
2,4,6-Tribromophenol	80	(10 - 118)		
NOTE (S):				

 $^{{\}bf J}_{}$ Estimated result. Result is less than RL.

Client Sample ID: SB-407-0203

GC/MS Semivolatiles

Lot-Sample #: A7J180324-0 Date Sampled: 10/16/07 16 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		.: 10/18/07	Matr	ix: SO
% Moisture: 22	Method	.: SW846 8270	OC .	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	190 J	420	ug/kg	1.7
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS	_	
Nitrobenzene-d5	45	(24 - 112)	•	
2-Fluorobiphenyl	58	(34 - 110)		
Terphenyl-d14	104	(41 - 119)		
Phenol-d5	70	(28 - 110)		
2-Fluorophenol	57	(26 - 110)		
2,4,6-Tribromophenol	89	(10 - 118)		
NOTE (S):				

Results and reporting limits have been adjusted for dry weight. $J \quad \hbox{Estimated result. Result is less than RL.}$

Client Sample ID: SB-407-0405

GC/MS Semivolatiles

Lot-Sample #: A7J180324-003 Date Sampled: 10/16/07 16:0 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		10/18/07	Matr	ix: SO
% Moisture: 26	Method:	SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	110 J	450	ug/kg	1.8
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	64	(24 - 112)		
2-Fluorobiphenyl	73	(34 - 110)		
Terphenyl-d14	90	(41 - 119)		
Phenol-d5	79	(28 - 110)		
2-Fluorophenol	72	(26 - 110)		
2,4,6-Tribromophenol	83	(10 - 118)		
NOTE (S):				

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Client Sample ID: SB-407-0708

GC/MS Semivolatiles

Lot-Sample #: A7J180324-004 Date Sampled: 10/16/07 16:0 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		10/18/07	· Matrix	so so
% Moisture: 27	Method:	SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	30 Ј	450	ug/kg	1.8
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	60	(24 - 112)		
2-Fluorobiphenyl	65	(34 - 110)		
Terphenyl-d14	92	(41 - 119)		
Phenol-d5	70	(28 - 110)		
2-Fluorophenol	65	(26 - 110)	•	
2,4,6-Tribromophenol	78	(10 - 118)		
NOTE(S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-408-0102

GC/MS Semivolatiles

Lot-Sample #: A7J180324-005 Date Sampled: 10/16/07 16:4 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		10/18/07	Matrix	s so
% Moisture: 18	Method:	SW846 8270	С	
PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Benzo(a)pyrene	87 J	400	ug/kg	1.6
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	60	(24 - 112)		
2-Fluorobiphenyl	63	(34 - 110)		
Terphenyl-d14	88	(41 - 119)		
Phenol-d5	70	(28 - 110)		
2-Fluorophenol	65	(26 - 110)		
2,4,6-Tribromophenol	77	(10 - 118)		
NOTE (S):				

Results and reporting limits have been adjusted for dry weight.

 $[\]boldsymbol{J}$ - Estimated result. Result is less than RL.

Client Sample ID: SB-408-0203

GC/MS Semivolatiles

Lot-Sample #: A7J180324-0 Date Sampled: 10/16/07 16 Prep Date: 10/23/07 Prep Batch #: 7296339		.: 10/18/07	Matr	ix: SO
Dilution Factor: 1 % Moisture: 16	Method	.: SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	50 J	390	ug/kg	1.6
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	46	(24 - 112)		
2-Fluorobiphenyl	64	(34 - 110)		
Terphenyl-d14	106	(41 - 119)		
Phenol-d5	66	(28 - 110)		
2-Fluorophenol	55	(26 - 110)		
2,4,6-Tribromophenol	91	(10 - 118)		
NOTE (S):	•			

J Estimated result. Result is less than RL.

Client Sample ID: SB-408-0405

GC/MS Semivolatiles

Lot-Sample #: A7J180324-007 Date Sampled: 10/16/07 16:5 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		10/18/07	Matr	ix SO
% Moisture: 14	Method:	SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	12 Ј	380	ug/kg	1.5
	PERCENT	RECOVERY	·	
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	57	(24 - 112)	•	
2-Fluorobiphenyl	66	(34 - 110)		
Terphenyl-d14	100	(41 - 119)		
Phenol-d5	68	(28 - 110)		
	64	(26 - 110)		
2-Fluorophenol				

J Estimated result. Result is less than RL.

Client Sample ID: SB-408-0708

GC/MS Semivolatiles

Date Sampled: Prep Date: Prep Batch #:	10/16/07 16:53 10/23/07 7296339	Work Order #: Date Received: Analysis Date:	10/18/07	Matrix	s so
Dilution Factor: % Moisture:	7	Method:	SW846 8270	C	
			REPORTING		
PARAMETER		RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene		ND .	410	ug/kg	1.6
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5		43	(24 - 112)		
2-Fluorobiphenyl		49	(34 - 110)		
Terphenyl-d14		109	(41 - 119)		
Phenol-d5		55	(28 - 110)		
2-Fluorophenol		50	(26 - 110)		
2,4,6-Tribromophe	enol	91	(10 - 118)		
NOTE (S):					

Client Sample ID: SB-409-0102

GC/MS Semivolatiles

Lot-Sample #: A7J180324 Date Sampled: 10/16/07 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		: 10/18/07	Matr	ix	: SO
% Moisture: 22	Method	: SW846 8270)C		
PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL	
Benzo(a)pyrene	39 J	430	ug/kg	1.7	
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS			
Nitrobenzene-d5	31	(24 - 112)			
2-Fluorobiphenyl	48	(34 - 110)			
Terphenyl-d14	92	(41 - 119)			
Phenol-d5	51	(28 - 110)			
2-Fluorophenol	36	(26 - 110)			
2,4,6-Tribromophenol	78	(10 - 118)			
NOTE(S):				•	

J Estimated result. Result is less than RL.

Client Sample ID: SB-409-0203

GC/MS Semivolatiles

Lot-Sample #: A7J180324- Date Sampled: 10/16/07 1 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		: 10/18/07	Matr	ix: SO
% Moisture: 18	Method	.: SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	ND	400	ug/kg	1.6
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	32	(24 - 112)		
2-Fluorobiphenyl	45	(34 - 110)		
Terphenyl-d14	89	(41 - 119)		
Phenol-d5	50	(28 - 110)		
2-Fluorophenol	40	(26 - 110)		
2,4,6-Tribromophenol	69	(10 - 118)		
NOTE (S):				

Client Sample ID: SB-409-0405

GC/MS Semivolatiles

Lot-Sample #: A7J180324-013 Date Sampled: 10/16/07 17:04 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		10/18/07	Matrix	so
% Moisture: 22	Method:	SW846 8270	С	
		REPORTING		·
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a) pyrene	67 J	420	ug/kg	1.7
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	67	(24 - 112)		,
2-Fluorobiphenyl	74	(34 - 110)		
Terphenyl-d14	102	(41 - 119)		
Phenol-d5	77	(28 - 110)		
2-Fluorophenol	73	(26 - 110)		
2,4,6-Tribromophenol	91	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-409-0708

GC/MS Semivolatiles

Lot-Sample #: A7J180324-01 Date Sampled: 10/16/07 17: Prep Date: 10/23/07 Prep Batch #: 7296339		: 10/18/07	Matr	ix: SO
Dilution Factor: 1	Method	. CMOA6 9270)C	
% Moisture: 27	method	: SW040 02/0		
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a) pyrene	ND	450	ug/kg	1.8
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	_	
Nitrobenzene-d5	53	(24 - 112)	-	
2-Fluorobiphenyl	53	(34 - 110)		
Terphenyl-d14	101	(41 - 119)		
Phenol-d5	68	(28 - 110)		
2-Fluorophenol	64	(26 - 110)		
2,4,6-Tribromophenol	79	(10 - 118)		

Results and reporting limits have been adjusted for dry weight.

NOTE (S):

Client Sample ID: SB-489-0102

GC/MS Semivolatiles

Lot-Sample #: A7J180324 Date Sampled: 10/16/07 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		: 10/18/07	Matr	ix: SO
% Moisture: 20	Method	: SW846 827	oc	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	9.6 J	410	ug/kg	1.6
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	44	(24 - 112)	_ 	
2-Fluorobiphenyl	47	(34 - 110)	1	
Terphenyl-d14	98	(41 - 119))	
Phenol-d5	66	(28 - 110))	
2-Fluorophenol	59	(26 - 110))	
2,4,6-Tribromophenol	79	(10 - 118)	•	•
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-489-0203

GC/MS Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #: Dilution Factor:	10/16/07 17:19 10/23/07 7296339	Date		10/18/07	Matrix	: SO
% Moisture:	24	Metho	d:	SW846 8270	C	
		•		REPORTING		
PARAMETER		RESUL	T	LIMIT	UNITS	MDL
Benzo(a)pyrene		260 J	Ī	430	ug/kg	1.7
		PERCE	NT	RECOVERY		
SURROGATE		RECOV	ERY	LIMITS		
Nitrobenzene-d5		65		(24 - 112)		
2-Fluorobiphenyl		69		(34 - 110)		
Terphenyl-d14		104		(41 - 119)		
Phenol-d5		75		(28 - 110)		
2-Fluorophenol		73		(26 - 110)		•
2,4,6-Tribromopher	nol	90		(10 - 118)		
NOTE (S):					· · · · · · · · · · · · · · · · · · ·	

J Estimated result. Result is less than RL.

Client Sample ID: SB-489-0405

GC/MS Semivolatiles

Lot-Sample #: A7J180324- Date Sampled: 10/16/07 1 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		1: 10/18/07	Matr	ix: SO
% Moisture: 21	Method	: SW846 827	OC	
		REPORTING		•
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo (a) pyrene	9.8 Ј	420	ug/kg	1.6
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS	_	
Nitrobenzene-d5	43	(24 - 112)	_	
2-Fluorobiphenyl	66	(34 - 110)		
Terphenyl-d14	107	(41 - 119)		
Phenol-d5	62	(28 - 110)		
2-Fluorophenol	50.	(26 - 110)		
2,4,6-Tribromophenol	86	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-489-0708

GC/MS Semivolatiles

<pre>Date Sampled: 10/16/ Prep Date: 10/23/ Prep Batch #: 729633</pre>	-	: 10/18/07	Mati	rix: SO
Dilution Factor: 1 % Moisture: 27	Method	: SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo (a) pyrene	21 J	450	ug/kg	1.8
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	57	(24 - 112)		
2-Fluorobiphenyl	57	(34 - 110)		
Terphenyl-d14	86	(41 - 119)		
Phenol-d5	66	(28 - 110)		
2-Fluorophenol	64	(26 - 110)		
2,4,6-Tribromophenol	73	(10 - 118)		
NOTE (S):				

J Estimated result. Result is less than RL.

Client Sample ID: SB-490-0405

GC/MS Semivolatiles

Lot-Sample #: A7J180324-009 Date Sampled: 10/17/07 08:1 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		10/18/07	Matr	ix: SO
% Moisture: 21	Method	SW846 8270	C	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	110 J	420	ug/kg	1.6
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Nitrobenzene-d5	63	(24 - 112)	-	
2-Fluorobiphenyl	70	(34 - 110)		
Terphenyl-d14	87	(41 - 119)		
Phenol-d5	72	(28 - 110)		
2-Fluorophenol	66	(26 - 110)		
2,4,6-Tribromophenol	80	(10 - 118)		
NOTE (S):				• .

J Estimated result. Result is less than RL.

Client Sample ID: SB-490-0708

GC/MS Semivolatiles

Lot-Sample #: A7J180324- Date Sampled: 10/17/07 0 Prep Date: 10/23/07 Prep Batch #: 7296339 Dilution Factor: 1		: 10/18/07	Matr	six: SO
% Moisture: 13	Method	: SW846 8270	С	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	MDL
Benzo(a)pyrene	31 Ј	380	ug/kg	1.5
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	67	(24 - 112)		
2-Fluorobiphenyl	77	(34 - 110)		
Terphenyl-d14	105	(41 - 119)		
Phenol-d5	76	(28 - 110)		
2-Fluorophenol	72	(26 - 110)		
2,4,6-Tribromophenol	97	(10 - 118)		
NOTE (S):				

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Client Sample ID: SB-407-0102

GC Semivolatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 16:00 10/23/07	Work Order #: Date Received: Analysis Date:	10/18/07	Matri	x:	SO
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.15 a	Final	Wgt/Vol:	1∩ m⊺
% Moisture:	21	Method:			gc/ 101	TO IIID
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS		
Aroclor 1016		ND	42	ug/kg	_	
Aroclor 1221		ND	42	ug/kg		
Aroclor 1232		ND	42	ug/kg		
Aroclor 1242		ND	42	ug/kg	•	
Aroclor 1248		ND	42	ug/kg		
Aroclor 1254		ND	42	ug/kg		
Aroclor 1260		ND	42	ug/kg		
		•		9 , 9		
•	,	PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Make 1- 3						

(10 - 196)

(10 - 199)

94

110

NOTE (S):

Results and reporting limits have been adjusted for dry weight.

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-407-0203

GC Semivolatiles

Lot-Sample #: A7J180324-002	Work Order #:	J9APC1AC	Matrixso
Date Sampled: 10/16/07 16:02	Date Received:	10/18/07	
Prep Date: 10/23/07	Analysis Date:		
Prep Batch #: 7296360	-		
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.17 α	Final Wgt/Vol: 10 mL
% Moisture: 22	Method:		
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	42	ug/kg
Aroclor 1221	ND	42	ug/kg
Aroclor 1232	ND	42	ug/kg
Aroclor 1242	ND .	42	ug/kg
Aroclor 1248	ND	42	ug/kg
Aroclor 1254	ND	42	ug/kg
Aroclor 1260	ND	42	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	82	(10 - 196)	
Decachlorobiphenyl	100	(10 - 199)	

NOTE(S):

Client Sample ID: SB-407-0405

GC Semivolatiles

Lot-Sample #: A7J180324-003	Work Order #:	J9APD1AC	Matrix SO
Date Sampled: 10/16/07 16:04	Date Received:	10/18/07	
Prep Date: 10/23/07	Analysis Date:		
Prep Batch #: 7296360	•	, ,	
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.11 a	Final Wgt/Vol: 10 mL
% Moisture: 26	Method:	SW846 8082	11Ma1 Mgc, VOI 10 Mil
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	45	ug/kg
Aroclor 1221	ND	4.5	ug/kg
Aroclor 1232	ND	45	ug/kg
Aroclor 1242	ND	45	ug/kg
Aroclor 1248	ND	45	ug/kg
Aroclor 1254	ND	45	ug/kg
Aroclor 1260	ND .	45	ug/kg
	PERCENT	RECOVERY	
	RECOVERY	LIMITS	
Tetrachloro-m-xylene	68	(10 - 196)	
Decachlorobiphenyl	84	(10 - 199)	
NOTE (S):			

Client Sample ID: SB-407-0708

GC Semivolatiles

Lot-Sample #:	A7J180324-004	Work Order #:	J9APF1AC	Matri	K	SO
Date Sampled:	10/16/07 16:06	Date Received:	10/18/07	-144-01-22		50
Prep Date:	10/23/07	Analysis Date:				
Prep Batch #:	7296360					
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.01 a	Final	Wgt/Vol:	10 mT
% Moisture:	27	Method:		1 11101	ngc/ voi	TO HIT
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS	•	
Aroclor 1016		ND	45	ug/kg	-	
Aroclor 1221		ND	45	ug/kg ug/kg		
Aroclor 1232		ND	45	ug/kg		
Aroclor 1242		ND	45	ug/kg		
Aroclor 1248		ND	4.5			
Aroclor 1254		ND	45	ug/kg		
Aroclor 1260		ND	45	ug/kg ug/kg		
		PERCENT	RECOVERY			
CHDDOCATE			TUDOOVERT			

LIMITS

(10 - 196)

(10 - 199)

RECOVERY

79

91

NOTE(S):

SURROGATE

Results and reporting limits have been adjusted for dry weight.

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-408-0102

GC Semivolatiles

Lot-Sample #: A7J180324-005	Work Order #:	J9APX1AC	Matrix SO
Date Sampled: 10/16/07 16:47	Date Received:	10/18/07	
Prep Date: 10/23/07	Analysis Date:		
Prep Batch #: 7296360	•	_ , _ , , , ,	
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.09 a	Final Wgt/Vol: 10 mL
% Moisture: 18	Method:		rinar ngc/voi: 10 mil
		2.010 0002	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	40	ug/kg
Aroclor 1221	ND	40	ug/kg
Aroclor 1232	ND	40	ug/kg
Aroclor 1242	ND	40	ug/kg
Aroclor 1248	ND	40	ug/kg
Aroclor 1254	ND	40	ug/kg
Aroclor 1260	ND	40	ug/kg
			497 kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	90	(10 - 196)	
Decachlorobiphenyl	98	(10 - 199)	•
	•	,=: 233)	
NOTE(S):			•

Client Sample ID: SB-408-0203

GC Semivolatiles

Lot-Sample #: A7J180324-0 Date Sampled: 10/16/07 16 Prep Date: 10/23/07 Prep Batch #: 7296360		.: 10/18/07	Matrix: SO
Dilution Factor: 1	Initial Wgt/Vol	l: 30.06 g	Final Wgt/Vol: 10 mL
% Moisture: 16	Method	.: SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	39	ug/kg
Aroclor 1221	ND	39	ug/kg
Aroclor 1232	ND	39	ug/kg
Aroclor 1242	ND	39	uq/kq
Aroclor 1248	ND	39	ug/kg
Aroclor 1254	ND	39	ug/kg .
Aroclor 1260	ND	39	ug/kg
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Tetrachloro-m-xylene	73	$\frac{\text{LIMITS}}{(10 - 196)}$	
<u> </u>	. 5	(10 100)	•

130

(10 - 199)

NOTE(S):

Decachlorobiphenyl

Client Sample ID: SB-408-0405

GC Semivolatiles

Lot-Sample #:	A7J180324-007	Work Order #:	J9ATD1AC	Matri	x:	SO
Date Sampled:	10/16/07 16:51	Date Received:	10/18/07			
Prep Date:	10/23/07	Analysis Date:	10/29/07			
Prep Batch #:	7296360					
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.07 g	Final	Wgt/Vol:	10 mL
% Moisture:	14	Method:	SW846 8082	•	_	
			REPORTING			
PARAMETER		RESULT	LIMIT	UNITS		
Aroclor 1016		ND	38	ug/kg	_	
Aroclor 1221		ND	38	ug/kg		
Aroclor 1232		ND	38	ug/kg		
Aroclor 1242		ND	38	ug/kg		
Aroclor 1248		ND	38	ug/kg		
Aroclor 1254		ND	38	ug/kg		
Aroclor 1260		15 J	38	ug/kg		
,		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS			
Tetrachloro-m-xyl	ene	82	(10 - 196)			
Decachlorobipheny	1	84	(10 - 199)			
NOTE (S):						٠

J Estimated result. Result is less than RL.

Client Sample ID: SB-408-0708

GC Semivolatiles

Lot-Sample #: A7J180324-008	Work Order #:	J9ATF1AC	Matrix SO
Date Sampled: 10/16/07 16:53	Date Received:	10/18/07	
Prep Date: 10/23/07	Analysis Date:	10/29/07	
Prep Batch #: 7296360			
Dilution Factor: 1	<pre>Initial Wgt/Vol:</pre>	30.13 g	Final Wgt/Vol: 10 mL
% Moisture: 19	Method:	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	41	ug/kg
Aroclor 1221	ND .	41	ug/kg
Aroclor 1232	ND	41	ug/kg
Aroclor 1242	ND	41	ug/kg
Aroclor 1248	ND	41	ug/kg
Aroclor 1254	ND	41	ug/kg
Aroclor 1260	ND	41	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	68	(10 - 196)	
Decachlorobiphenyl	71	(10 - 199)	
NOTE (S):			

Client Sample ID: SB-409-0102

GC Semivolatiles

Lot-Sample #:	A7J180324-011	Work Order #:	J9ATL1AC	Matrix SO
Date Sampled:	10/16/07 17:00	Date Received:	10/18/07	
Prep Date:	10/23/07	Analysis Date:	10/28/07	
Prep Batch #:	7296359			
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.17 g	Final Wgt/Vol: 10 mL
% Moisture:	22	Method:	SW846 8082	=
	•		REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Aroclor 1016		ND	43	ug/kg
Aroclor 1221		ND	43	ug/kg

			37 3	
Aroclor 1221	ND	43	ug/kg	
Aroclor 1232	ND	43	ug/kg	
Aroclor 1242	ND	43	ug/kg	
Aroclor 1248	ND	43	ug/kg	
Aroclor 1254	ND	43	ug/kg	
Aroclor 1260	ND	43	ug/kg	
	PERCENT	RECOVERY	<u></u>	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	101	(10 - 19	96)	
Decachlorobiphenyl	107	(10 - 19)	99)	

NOTE(S):

Client Sample ID: SB-409-0203

GC Semivolatiles

Lot-Sample #: A7J180324-012 Date Sampled: 10/16/07 17:0	Work Order #:	J9ATM1AC	Matrix SO
Prep Date: 10/23/07			
Prep Batch #: 7296359	Analysis Date:	10/28/07	
Dilution Factor: 1			•
	<pre>Initial Wgt/Vol:</pre>		Final Wgt/Vol: 10 mL
% Moisture: 18	Method:	SW846 8082	
DI Dilliano		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	40	ug/kg
Aroclor 1221	ND	40	ug/kg
Aroclor 1232	ND	40	ug/kg
Aroclor 1242	ND	40	ug/kg
Aroclor 1248	ND	40	ug/kg
Aroclor 1254	ND	40	ug/kg
Aroclor 1260	ND	40	2 2
	112	40	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	94	$\frac{-211215}{(10 - 196)}$	
Decachlorobiphenyl	101	(10 - 199)	
		120)	
NOTE (C).			

 $\underline{\text{NOTE}(S)}$:

Client Sample ID: SB-409-0405

GC Semivolatiles

Lot-Sample #: A7J18	0324-013 Work Order	#: J9ATN1AC	Matrix so

Date Sampled...: 10/16/07 17:04 Date Received..: 10/18/07 Prep Date....: 10/23/07 Analysis Date..: 10/28/07

Prep Batch #...: 7296359

Dilution Factor: 1 Initial Wgt/Vol: 30.09 g Final Wgt/Vol.:: 10 mL

% Moisture....: 22 Method.....: SW846 8082

		REPORTIN	G
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	42	ug/kg
Aroclor 1221	ND	42	ug/kg
Aroclor 1232	ND	42	ug/kg
Aroclor 1242	ND	42	ug/kg
Aroclor 1248	ND	42	ug/kg
Aroclor 1254	ND	42	ug/kg
Aroclor 1260	ND	42	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	85	(10 - 196	 6)
Decachlorobiphenyl	102	(10 - 199	9)

NOTE(S):

Client Sample ID: SB-409-0708

GC Semivolatiles

	Lot-Sample #:	A7J180324-014	Work Order #:	J9ATP1AC	Matrix:	SO
	Date Sampled:	10/16/07 17:06	Date Received:	10/18/07		20
	Prep Date:	10/23/07	Analysis Date:	10/28/07		
	Prep Batch #:	7296359				
	Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.01 q	Final Wgt/Vol:	10 mT.
:	Moisture:	27	Method:		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	20 1112

		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	45	ug/kg
Aroclor 1221	ND	45	ug/kg
Aroclor 1232	ND	45	ug/kg
Aroclor 1242	ND	45	ug/kg
Aroclor 1248	. ND	45	ug/kg
Aroclor 1254	ND	45	uq/kq
Aroclor 1260	ND	45	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	81	(10 - 196)	•
Decachlorobiphenyl	107	(10 - 199)	

NOTE (S):

Results and reporting limits have been adjusted for dry weight.

Client Sample ID: SB-489-0102

GC Semivolatiles

Lot-Sample #:	A7J180324-015	Work Order #:	J9ATR1AC	Matrixso
Date Sampled:	10/16/07 17:17	Date Received:	10/18/07	
Prep Date:		Analysis Date:		
Prep Batch #:	7296359	-		
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.06 a	Final Wgt/Vol: 10 mL
% Moisture:	20	Method:	_	1111d1 11ge/ 1011 10 IIII
			REPORTING	
PARAMETER		DECLIE		
	· · · · · · · · · · · · · · · · · · ·	RESULT	LIMIT	UNITS
Aroclor 1016		ND	41 .	ug/kg
Aroclor 1221		ND	41	ug/kg
Aroclor 1232		ND	41	ug/kg
Aroclor 1242		ND	41	ug/kg
Aroclor 1248		ND	41	ug/kg
Aroclor 1254				
		ND	41	ug/kg
Aroclor 1260		ND	41	ug/kg

RECOVERY

(10 - 196) (10 - 199)

LIMITS

PERCENT

89

105

RECOVERY

NOTE (S):

SURROGATE

Results and reporting limits have been adjusted for dry weight.

Tetrachloro-m-xylene

Decachlorobiphenyl

Client Sample ID: SB-489-0203

GC Semivolatiles

Date Sampled: Prep Date: Prep Batch #: Dilution Factor: % Moisture:	10/16/07 17:19 10/23/07 7296359 1	Work Order #: Date Received: Analysis Date: Initial Wgt/Vol: Method	10/18/07 10/28/07 30.12 g	Final	wgt/Vol:	
PARAMETER Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260		RESULT ND ND	REPORTING LIMIT 43 43 43 43 43 43 43 43	UNITS ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	-	
SURROGATE Tetrachloro-m-xyle Decachlorobiphenyl	ene	PERCENT RECOVERŸ 102 112	RECOVERY LIMITS (10 - 196) (10 - 199)			

Client Sample ID: SB-489-0405

GC Semivolatiles

	Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	10/16/07 17:21 10/23/07 7296359	Work Order #: Date Received: Analysis Date:	10/18/0	07	Matrix	·	SO
	Dilution Factor:		<pre>Initial Wgt/Vol:</pre>			Final	Wgt/Vol:	10 mL
	% Moisture:	21	Method:	SW846 8	3082			
	Danawana			REPORTI	ING			
	PARAMETER		RESULT	LIMIT	1	UNITS		
	Aroclor 1016	•	ND	42		ug/kg		
	Aroclor 1221		ND	42		ug/kg		
	Aroclor 1232		ND	42		ug/kg		
	Aroclor 1242		ND	42		ug/kg		
	Aroclor 1248		ND	42				
	Aroclor 1254		ND	42		ug/kg		
	Aroclor 1260		ND	42		ug/kg		
			110	42	ι	ıg/kg		
			PERCENT	RECOVERY	Y			
-	SURROGATE		RECOVERY	LIMITS				
	retrachloro-m-xyl		93	(10 - 19)	96)			
]	Decachlorobipheny	1	100	(10 - 19)	•			
			•		/			

Results and reporting limits have been adjusted for dry weight.

NOTE(S):

Client Sample ID: SB-489-0708

GC Semivolatiles

Lot-Sample #:	A7J180324-018	Work Order #:	J9ATW1AC	Matrix SO
Date Sampled:	10/16/07 17:23	Date Received:	10/18/07	
Prep Date:		Analysis Date:		
Prep Batch #:	7296359			
Dilution Factor:	1	<pre>Initial Wgt/Vol:</pre>	30.08 g	Final Wgt/Vol: 10 mL
% Moisture:	27	Method:		
			REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Aroclor 1016		ND	45	ug/kg
Aroclor 1221		ND	45	ug/kg
Aroclor 1232		ND	45	ug/kg
Aroclor 1242		ND	45	ug/kg
Aroclor 1248		ND	45	ug/kg
Aroclor 1254		ND	45	ug/kg
Aroclor 1260		ND	45	ug/kg

	PERCENT	RECOVERY
SURROGATE	RECOVERY	LIMITS
Tetrachloro-m-xylene	83	(10 - 196)
Decachlorobiphenyl	104	(10 - 199)

NOTE(S):

Client Sample ID: SB-490-0405

GC Semivolatiles

Lot-Sample #:	A7J180324-009	Work Order #: J9ATH1AC	Matrix SO
Date Sampled:	10/17/07 08:13	Date Received: 10/18/07	
Prep Date:	10/23/07	Analysis Date: 10/29/07	
Prep Batch #:	7296360		

Dilution Factor: 1 Initial Wgt/Vol: 30.02 g Final Wgt/Vol..: 10 mL % Moisture....: 21 Method....: SW846 8082

		REPORTIN	IG
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	42	ug/kg
Aroclor 1221	ND	42	ug/kg
Aroclor 1232	ND	42	ug/kg
Aroclor 1242	ND	42	ug/kg
Aroclor 1248	ND	42	ug/kg
Aroclor 1254	ND	42	ug/kg
Aroclor 1260	ND	42	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	77	(10 - 19	6)
Decachlorobiphenyl	167	(10 - 19	9)

NOTE(S):

Client Sample ID: SB-490-0708

GC Semivolatiles

rot-samble #:	A/J180324-010	Work Order #: J9ATK1AC	Matrix SO
Date Sampled:	10/17/07 08:15	Date Received: 10/18/07	50,

Prep Date....: 10/23/07 Analysis Date..: 10/29/07

Prep Batch #...: 7296360

Dilution Factor: 1 Initial Wgt/Vol: 30 g Final Wgt/Vol.: 10 mL

% Moisture....: 13 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38	ug/kg
Aroclor 1232	ND	38	ug/kg ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	ND	38	ug/kg
•	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	73	(10 - 196	<u>,</u>
Decachlorobiphenyl	73	(10 - 199)	,)

NOTE (S):

APPENDIX C

SUPPORT DOCUMENTATION

CASE NARRATIVE

7J18324

The following report contains the analytical results for eighteen solid samples submitted to TestAmerica North Canton by Tetra Tech NUS Inc. from the LMC MR Site, project number 112IC00885. The samples were received October 18, 2007, according to documented sample acceptance procedures.

This SDG consists of (1) laboratory ID's: A7J180324.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dev Murali, John Poremba, and Michael Martin on October 31, 2007. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Patrick J. O'Meara, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 4.1 and 5.3°C.

See TestAmerica's Cooler Receipt Form for additional information.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

POLYCHLORINATED BIPHENYLS-8082

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for SB-407-0102 and SB-407-0708 had RPD's outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

Chain of Custody Record



Severn Trent Laboratories, Inc.

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Chain of Custody Record



Severn Trent Laboratories, Inc.

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PCS	%	SB-490-0708	A7J180324010	NM	10/17/2007	10/24/2007	10/25/2007	7	1	8
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PCS	%	SB-407-0203	A7J180324002	NM	10/16/2007	10/24/2007	10/25/2007	8	1	9
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PCS	%	SB-409-0708	A7J180324014	NM	10/16/2007	10/24/2007	10/25/2007	8	1	9
PCS	%	SB-409-0405	A7J180324013	·NM	10/16/2007	10/24/2007	10/25/2007	8	1	9
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OS	%	SB-489-0708	A7J180324018	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
OS	%	SB-489-0405	A7J180324017	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
OS	%	SB-489-0203	A7J180324016	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
OS	%	SB-489-0102	A7J180324015	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
OS	%	SB-407-0102	A7J180324001	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
OS	%	SB-409-0102	A7J180324011	NM	10/16/2007	10/23/2007	10/25/2007	. 7	2	9
os	%	SB-408-0708	A7J180324008	NM	10/16/2007	10/23/2007	10/25/2007	7 .	2	9
OS	%	SB-408-0405	A7J180324007	NM	10/16/2007	10/23/2007	10/25/2007	. 7	2	9
OS	%	SB-408-0203	A7J180324006	NM	10/16/2007	.10/23/2007	10/25/2007	7	2	9
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os	%	SB-407-0203	A7J180324002	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
os	%	SB-407-0405	A7J180324003	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
os	UG/K	G SB-489-0708	A7J180324018	NM	10/16/2007	10/23/2007	10/25/2007	7	2	. 9
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os	UG/K	G SB-409-0405	A7J180324013	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
os	UG/K	G SB-409-0708	A7J180324014	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
os	UG/K	SB-489-0102	A7J180324015	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
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os	· UG/KG	SB-408-0203	A7J180324006	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
os	UG/KG	SB-490-0405	A7J180324009	NM	10/17/2007	10/23/2007	10/25/2007	6	2	8
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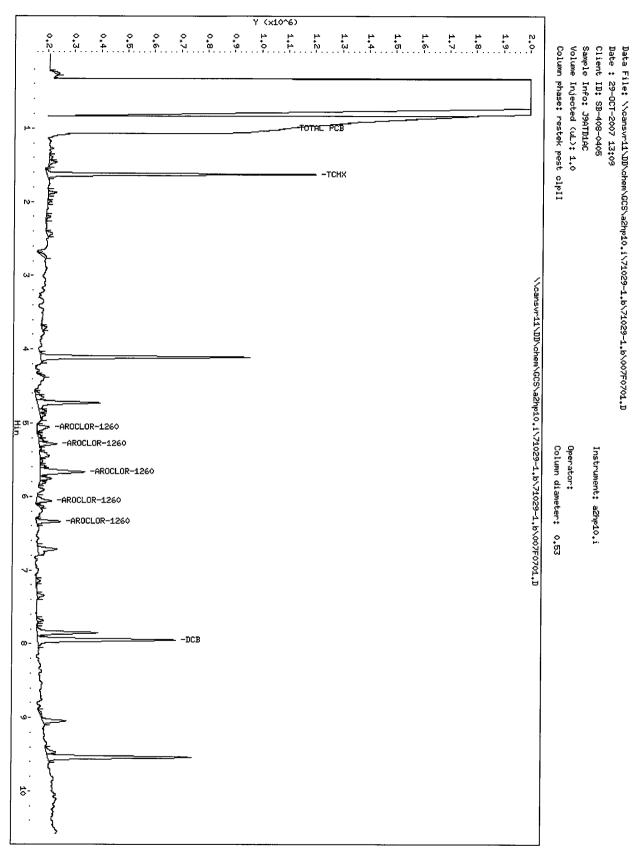
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OS	UG/KG	SB-490-0708	A7J180324010	NM	10/17/2007	10/23/2007	10/25/2007	6	2	8
OS	UG/KG	SB-408-0708	A7J180324008	NM	10/16/2007	10/23/2007	10/25/2007	7	2	9
PCB	%	SB-409-0203	A7J180324012	NM	10/16/2007	10/23/2007	10/28/2007	7.	5	12
PCB	%	SB-489-0405	A7J180324017	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	. %	SB-408-0708	A7J180324008	NM	10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB .	%	SB-407-0102	A7J180324001	NM ·	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	%	SB-490-0708	A7J180324010	NM	10/17/2007	10/23/2007	10/29/2007	6	6	12
PCB	%	SB-489-0708	A7J180324018	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	%	SB-489-0203	A7J180324016	NM ,	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	%	SB-489-0102	A7J180324015	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	%	SB-409-0708	A7J180324014	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	%	SB-407-0405	Á7J180324003	NM	10/16/2007	10/23/2007	10/28/2007	7	5	. 12
PCB	%	SB-490-0405	A7J180324009	NM	10/17/2007	10/23/2007	10/29/2007	6	6	12
PCB	%	SB-407-0203	A7J180324002	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	%	SB-409-0405	A7J180324013	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	%	SB-407-0708	A7J180324004	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	%	SB-408-0102	A7J180324005	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
Monday.	November	12, 2007							Pa	•

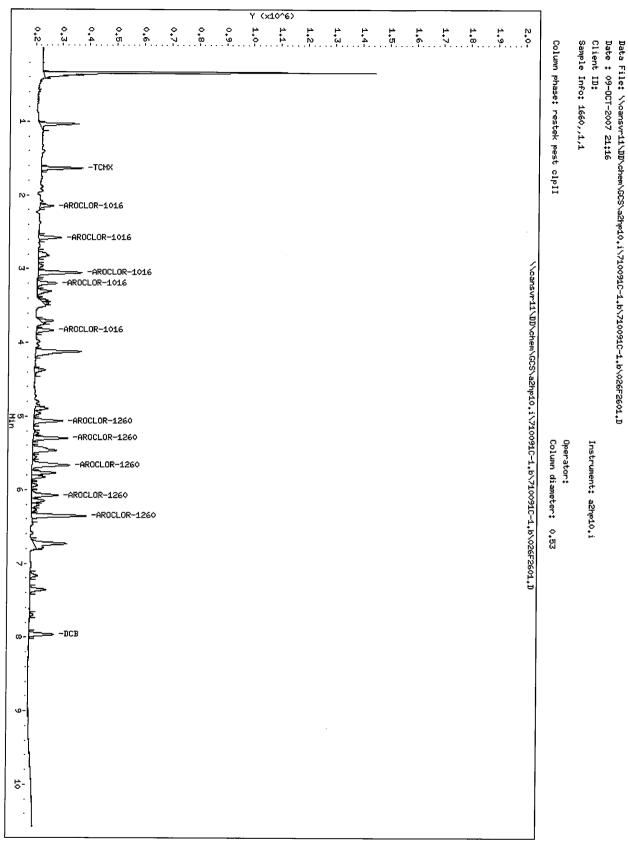
SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL DATE			
PCB	%	SB-408-0203	A7J180324006	NM	10/16/2007	10/23/2007	ANAL DATE 10/28/2007	SMP_EXTR	EXTR ANL	THE PARTY OF THE P
PCB	%	SB-408-0405	A7J180324007	NM	10/16/2007	10/23/2007	10/29/2007	7 7	5 6	12
PCB	%	SB-409-0102	A7J180324011	NM	10/16/2007	10/23/2007	10/28/2007	7	. 5	13
PCB	UG/KG	SB-409-0405	A7J180324013	NM	10/16/2007	10/23/2007	10/28/2007	7		
PCB	UG/KG	SB-407-0102	A7J180324001	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	UG/KG	SB-490-0405	A7J180324009	NM	10/17/2007	10/23/2007	10/29/2007		5	12
PCB	UG/KG	SB-489-0708	A7J180324018	NM	10/16/2007	10/23/2007	10/28/2007	6	6	12
PCB	UG/KG	SB-489-0405	A7J180324017	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	UG/KG	SB-489-0203	A7J180324016	NM	10/16/2007	10/23/2007	10/28/2007	7 -·	. 5	12
PCB	UG/KG	SB-489-0102	A7J180324015	NM	10/16/2007	10/23/2007		7.	5	12
PCB	UG/KG	SB-409-0708	A7J180324014	NM	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	UG/KG	SB-490-0708	A7J180324010	NM	10/17/2007		10/28/2007	7	5	12
PCB	UG/KG	SB-409-0203	A7J180324012	NM	10/16/2007	10/23/2007	10/29/2007	6	6	12
PCB	UG/KG	SB-409-0102	A7J180324011			10/23/2007	10/28/2007	7	5	12
PCB	UG/KG	SB-408-0708	A7J180324008		10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	UG/KG	SB-408-0405	A7J180324007		10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB		SB-408-0203			10/16/2007	10/23/2007	10/29/2007	7	6	13
PCB			A7J180324006		10/16/2007	10/23/2007	10/28/2007	7	5	12
	lovember	SB-408-0102	A7J180324005	NM ·	10/16/2007	10/23/2007	10/28/2007	7	5	12

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	040 EVES		
PCB	UG/KG	SB-407-0708	A7J180324004	NM				SMP_EXTR	EXTR ANL	SMP_ANL
			0 10002 1004	INIV	10/16/2007	10/23/2007	10/28/2007	7	5	12
PCB	UG/KG	SB-407-0203	A7J180324002	NM	10/16/2007	10/23/2007	10/00/0007			
PCB	110/1/0	05.45			75, 75,2501	10/23/2007	10/28/2007	. 7	5	12
гов	UG/KG	SB-407-0405	A7J180324003	NM	10/16/2007	10/23/2007	10/28/2007	7	_	
							10/20/2007	. /	5	12

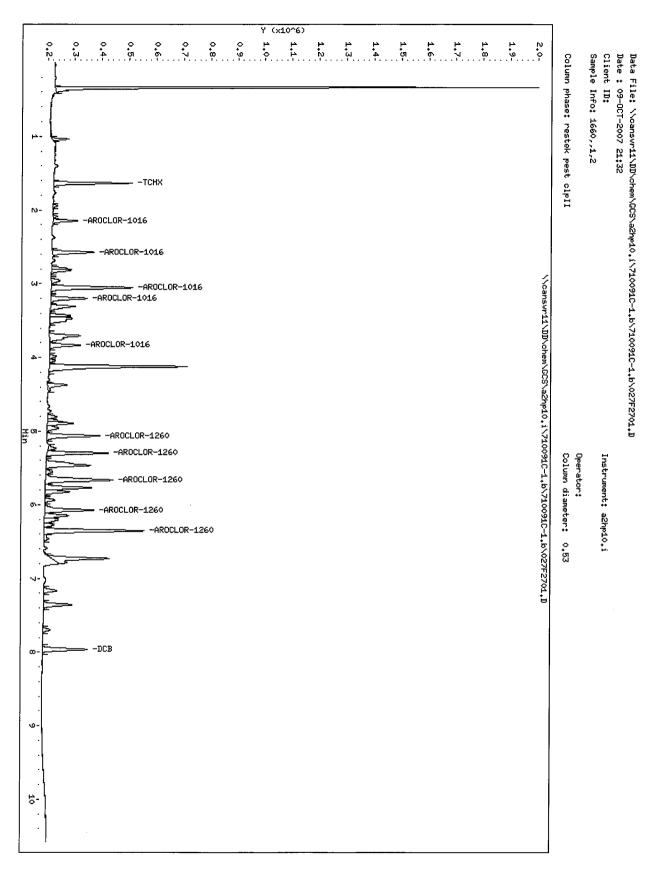
SAMPLE











SW846 8082 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J18324

Matrix Spike ID: SB-407-0708

Lot #: A7J180324

WO #: J9APF1AH BATCH: 7296360

 COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC	% RPD	QC LI	MITS REC		QUAL
Aroclor 1016 Aroclor 1260	4 6 0 4 6 0	======= 400	88 85	32 *	301		199 <u> </u> 199 <u> </u>	·

NOTES (S):

p Relative percent difference (RPD) is outside stated control limits. Results and reporting limits have been adjusted for dry weight.

# Column to be used * Values outside of	to QC	flag recovery and RPD values with an asterisk limits
RPD: 2 out of Spike Recovery:	0	<pre>2 outside limits out of 2 outside limits</pre>
COMMENTS:		

FORM III

SW846 8082 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Laboratories, Inc.

Client: Tetra Tech NUS, Inc

Lab Code: TALCAN

SDG No: 7J18324

Matrix Spike ID: SB-407-0102

Lot #: A7J180324

WO #: J9AN91AH BATCH: 7296359

SPIKE	MSD	MSD	-			i .
ADDED	CONCENT.	%	용	QC L	IMITS	i
(ug/kg)	(ug/kg)	REC	RPD	RPD	REC	QUAL
1420	1200	==	======	==== =	=======	== ======:
1420	1280	65	$\sqrt{\frac{36}{34}} - \frac{*}{*}$	$\frac{301}{301}$		991 <u>p</u> 991p
			7	<i>-</i>		<u> </u>
	ADDED (ug/kg) ===== ===============================	ADDED CONCENT. (ug/kg) (ug/kg) ===== ===============================	ADDED CONCENT. % (ug/kg) (ug/kg) REC ===== ====== ===== ===== ====== ====== ====	ADDED CONCENT. % % (ug/kg) (ug/kg) REC RPD ===================================	ADDED CONCENT. % % QC L (ug/kg) (ug/kg) REC RPD RPD ===== ==============================	ADDED CONCENT. % % QC LIMITS (ug/kg) (ug/kg) REC RPD RPD REC ===== ======= ====== ===== ===== ======

NOTES	(S)	
-------	-----	--

# Column to be used to flag recovery and RPD values with an asterisk $*$ Values outside of QC limits	
RPD: 2 out of 2 outside limits Spike Recovery: 0 out of 2 outside limits	
COMMENTS:	

FORM III

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

Results and reporting limits have been adjusted for dry weight.

CALCULATION WORKSHEET

Page 1 of 1

CLIENT:	SDG No.			
LOCKHEED MIDDLE RIVER	7J18324			
SUBJECT:				
EXAMPLE CALCULATION - BENZO(A)PYRENE - SOIL				
BY:	DATE:			
T. JACKMAN	12/01/07			

Sample ID = SB-407-0102
Concentration = 130 ug/kg
Benzo(a)pyrene

EQUATION:

$$C_{s} = \frac{A_{x} \times ls \times Vt \times Df}{Als \times RRF \times V_{i} \times W_{s} \times D}$$

Where:

Cs	=	analyte concentration in soil		ug/kg
A_{x}	=	analyte response	=	294180
Is	=	amount of internal standard	=	2 ng
V_{t}	=	volume of final extract	=	2000 uL
Df	=	dilution factor	=	1
Ais	=	response of internal standard	=	729976
RRF	=	response factor of compound	=	1.01996
V _i	=	volume injected	=	0.5 uL
Ws	=	sample weight	=	30.04 g
D	=	percent solids	=	0.79

Therefore: benzo(a)pyrene concentration in soil =

294180 x 2ng x 2000uL x 1 729976 x 1.01996 x 0.5uL x 30.04g x 0.79

C_s = 133 ug/kg

Client Sample ID: SB-407-0102

GC/MS Semivolatiles

Lot-Sample #: A7J180324-001	Work Order #: J9AN91AD	Matrix SO
Date Sampled: 10/16/07 16:00	Date Received: 10/18/07	
<pre>Prep Date: 10/23/07</pre>	Analysis Date: 10/28/07	
Prep Batch #: 7296354		
Dilution Factor:	Initial Wgt/Vol 30.04 g	Final Wgt/Vol: 2 mL
Dilution Factor: 1 % Moisture21	Method SW846 8270C	

REPORTING

PARAMETER	BESULT	LIMIT	UNITS
Benzo(a)pyrene	130 J	420	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Nitrobenzene-d5	61	(24 - 112)	
2-Fluorobiphenyl	64	(34 - 110)	
Terphenyl-d14	93	(41 - 119)	
Phenol-d5	71	(28 - 110)	
2-Fluorophenol	67	(26 - 110)	
2,4,6-Tribromophenol	80	(10 - 118)	

NOTE(S):

J Estimated result. Result is less than RL.

Data File: \\cansvr11\dd\chem\MSS\a4hp9.i\71028a.b\J9AN91AD.D Page 1

Report Date: 29-Oct-2007 17:55

STL North Canton

Semivolatile REPORT SW-846 Method 8270

Data file : $\c \m \MSS\a4hp9.i\71028a.b\J9AN91AD.D$

Lab Smp Id: j9an91ad Client Smp ID: SB-407-0102

Inj Date : 28-OCT-2007 16:25

Operator: 001574 Inst ID: a4hp9.i

Smp Info : j9an91ad,71028a.b,8270p,1-827042d.sub

Misc Info : Comment :

Method : \\cansvr11\\dd\\chem\\MSS\\a4hp9.i\\71028a.b\\8270p.m Meth Date : 29-Oct-2007 17:55 ulmanm Quant Type: ISTD Cal Date : 26-OCT-2007 23:02 Cal File: 9AHHH026.D

Als bottle: 14
Dil Factor: 1.00000

Integrator: HP RTE Compound Sublist: 1-827042d.sub

Target Version: 4.14
Processing Host: CANSVR11

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws *) * CpndVariable

Name	Value	Description
DF Uf Vt Vi Ws Cpnd Variable	1.000	Dilution Factor ng unit correction factor Volume of final extract (uL)(1000 low, 2 Volume injected (uL) Weight of sample extracted (g) Local Compound Variable

			CONCENTRATIONS	
		QUANT SIG	ON-COLUMN FINAL	
Compo	unds	MASS	RT EXP RT REL RT RESPONSE (NG) (ug/kg)	
=====		====		
* 1	1,4-Dichlorobenzene-d4	152	3.916 3.919 (1.000) 152943 2.00000	(Q)
* 2	Naphthalene-d8	136	4.878 4.880 (1.000) 641085 2.00000	
* 3	Acenaphthene-d10	164	6.176 6.178 (1.000) 364801 2.00000	
* 4	Phenanthrene-d10	188	7.271 7.268 (1.000) 672683 2.00000	
* 5	Chrysene-d12	240	9.248 9.261 (1.000) 747825 2.00000	
* 6	Perylene-d12	264	10.743 10.757 (1.000) 729976 2.00000	
9	Pyridine	79	Compound Not Detected.	
10	N-Nitrosodimethylamine	74	Compound Not Detected.	
11	Ethyl methacrylate	69	Compound Not Detected.	
12	3-Chloropropionitrile	54	Compound Not Detected.	
13	Malononitrile	66	Compound Not Detected.	
209	Benzaldehyde	77	Compound Not Detected.	
21	Aniline	93	Compound Not Detected.	
22	Phenol	94	Compound Not Detected.	
23	bis(2-Chloroethyl)ether	93	Compound Not Detected.	
24	2-Chlorophenol	128	Compound Not Detected.	
26	1,3-Dichlorobenzene	146	Compound Not Detected.	
27	1,4-Dichlorobenzene	146	Compound Not Detected.	

Data File: \\cansvr11\dd\chem\MSS\a4hp9.i\71028a.b\J9AN91AD.D Page 3 Report Date: 29-Oct-2007 17:55

		CONCENTRATIONS
	QUANT SIG	ON-COLUMN FINAL
Compounds	MASS	RT EXP RT REL RT RESPONSE (NG) (ug/kg)
=======================================	====	
115 Phenanthrene	178	7.287 7.290 (1.002) 133246 0.36591 48.723
116 Anthracene	178	7.325 7.327 (1.007) 31894 0.08983 11.961
119 Carbazole	167	Compound Not Detected.
120 Di-n-Butylphthalate	149	Compound Not Detected.
123 Fluoranthene	202	8.158 8.166 (1.122) 304284 0.78534 104.57
124 Benzidine	184	Compound Not Detected.
125 Pyrene	202	8.334 8.342 (0.901) 304928 0.74885 99.714
131 Butylbenzylphthalate	149	Compound Not Detected.
133 3,3'-Dimethoxybenzidine	244	Compound Not Detected.
135 3,3'-Dichlorobenzidine	252	Compound Not Detected.
136 Benzo(a)Anthracene	228	9.237 9.250 (0.999) 216764 0.48664 64.799
137 Chrysene	228	9.269 9.282 (1.002) 389143 0.93831 124.94
138 4,4'-Methylene bis(o-chloroan	231	Compound Not Detected.
139 bis(2-ethylhexyl)Phthalate	149	9.162 9.175 (0.991) 23992 0.10267 13.671
140 Di-n-octylphthalate	149	Compound Not Detected.
141 Benzo(b) fluoranthene	252	10.273 10.292 (0.956) 562393 1.29666 172.66
142 Benzo(k)fluoranthene	252	10.300 10.324 (0.959) 194591 0.44246 58.916(M)
146 Benzo(a)pyrene	252	10.674 10.693 (0.994) 294180 0.79023 105.22
149 Indeno(1,2,3-cd)pyrene	276	12.384 12.413 (1.153) 332347 0.83663 111.40
150 Dibenz(a,h)anthracene	278	12.389 12.429 (1.153) 69931 0.24016 31.979
151 Benzo(g,h,i)perylene	276	12.896 12.926 (1.200) 355506 0.99932 133.06
198 1,4-Dioxane	88	Compound Not Detected.
\$ 154 Nitrobenzene-d5	82	4.328 4.330 (0.887) 532530 3.06300 407.86
\$ 155 2-Fluorobiphenyl	172	5.658 5.660 (0.916) 728801 3.20940 427.35
\$ 156 Terphenyl-d14	244	8.414 8.417 (0.910) 1394013 4.66235 620.82
\$ 157 Phenol-d5	99	3.596 3.588 (0.918) 839072 5.31614 707.88
\$ 158 2-Fluorophenol	112	2.976 2.909 (0.760) 535702 5.00986 667.09
\$ 159 2,4,6-Tribromophenol	330	6.753 6.755 (1.093) 202308 5.96616 794.43
\$ 186 2-Chlorophenol-d4	132	3.745 3.742 (0.956) 492654 5.13576 683.86
\$ 187 1,2-Dichlorobenzene-d4	152	4.034 4.036 (1.030) 160576 2.47668 329.78
M 195 Cresols, total	100	Compound Not Detected.
101 Diphenylamine	169	Compound Not Detected.

QC Flag Legend

 $^{{\}tt Q}$ - Qualifier signal failed the ratio test. ${\tt M}$ - Compound response manually integrated.

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 26-OCT-2007 17:21 End Cal Date : 26-OCT-2007 23:02

Quant Method : ISTD : Disabled Origin Target Version : 4.14

Integrator : HP RTE

Method file : \\cansvr11\\dd\chem\MSS\a4hp9.i\71026a.b\8270p.m

Last Edit : 28-Oct-2007 11:22 ulmanm

Curve Type : Average

		•							
Compound	0.05000	0.25000 Level 2	0.50000 Level 3	1.000 Level 4	2.500 Level 5	5.000 Level 6	 RRF	l l % RSD	1
									i
	7.500	10.000	12.500	į	İ	I	İ	İ	İ
	Level 7	Level 8	Level 9	1	!	l	1	l	1
							******		•
144 Hexachlorophene	+++++	+++++	+++++	+++++	+++++	+++++]	!	1
	+++++	+++++	+++++ 	 	 	 	+++++	+++++ 	< .
145 Hexachlorophene product	+++++		+++++	+++++	, +++++	+++++		 	1
	+++++	+++++	+++++	, 	i		++++	+++++	, <
	·	 	 				<u></u>		·
146 Benzo(a)pyrene	0.82242	0.86812	0.88042	0.99971	1.06496	1.08195	,	۱)	1
	1.08269	1.12415	1.25518		[! (1.01996	13.776	; <u> </u>
140 2 Markhallah alambhanan									1
148 3-Methylcholanthrene	0.49893	0.34532	- /		0.43177	0.46357	l 0.44738	 15.186	! :!-
		0.50350	0.54715	 	 	 		15.160	· 1 ~
149 Indeno(1,2,3-cd)pyrene	0.88033	0.90525		 1.01115	1.20656	1.19263	!]) 	1
· · · · · · · · · · · · · · · · · · ·	1.20634	1.27469	1.39702	· [1.11836	15.896	ij
									1
150 Dibenz(a,h)anthracene	0.72403	0.73304	0.77054	0.82641	0.93302	0.93574	 	ĺ	
	0.99202	1.03801	1.14672				0.89995	16.282	:
751 Banas (a la Sanasana ana							 	 	1
151 Benzo(g,h,i)perylene	0.93708	0.82003 1.04139			1.02023	1.00865	 0.97469	! 10.090	1
			1.14/1/	 	 		0.37 4 05 		i.
230 2-Chloroacetophenone	+++++	0.55040	0.63824	0.67093	0.66163	0.71387	ĺ		i
-	0.73812	0.75027	0.81188		İ	İ	0.69192	11.546	<
							[ĺ
199 3-Picoline	+++++	1.57245	1.79989	1.79874	1.76363	1.91933	l i		
	1.96657	1.97569	2.24643			į	1.88034	10.514	<
200 N N Dimothylanotanida	[0.763.001	0.000001	0.01075	0.00000	0 04400	 		1
200 N,N-Dimethylacetamide	[+++++] 0.96407	0.76103 0.96819	0.86033 1.09307	0.91015	0.88009	0.94499	 0.9227 4	10.467	ا ا -
			1.03307			ا اا	0.522/4 		1,
201 Quinoline	+++++	+++++]	+++++	+++++ [+++++	+++++			ì
	+++++	+++++]	+++++	i	į	į	+++++	+++++	<
									ſ
	ll			I					

CALCULATION WORKSHEET

Page 1 of 1

CLIENT:	SDG No.				
LOCKHEED MIDDLE RIVER	7J18324				
SUBJECT:					
EXAMPLE CALCULATION - AROCLOR-1260 - SOIL					
BY:	DATE:				
T. JACKMAN	12/01/07				

Sample ID = SB-408-0405 Aroclor-1260
Concentration = 15 ug/kg

EQUATION:

$$C_{W} = \frac{A_{X} \times V_{t} \times Df}{CF \times V_{i} \times W_{s} \times D}$$

Where:

Cs	=	analyte concentration in soil		ug/kg
A _x	=	analyte response	=	231619.2
V_{t}	=	volume of final extract	=	10000 uL
Df	=	dilution factor	=	1
CF	=	calibration factor	=	5732459
V _i	=	volume injected	=	1 uL
Ws	=	sample weight	=	30.07 g
D	=	percent solids	=	0.86

Therefore: Aroclor-1260 concentration in soil =

C_s = 15.6 ug/kg

Client Sample ID: SB-408-0405

GC Semivolatiles

Lot-Sample #: A7J180324-007	Work Order #:	J9ATD1AC	Matrix SO
Date Sampled: 10/16/07 16:51	Date Received:	10/18/07	
Prep Date: 10/23/07	Analysis Date:	10/29/07	
Prep Batch #: 7296360			
Dilution Factor: 1	Initial Wgt/Vol	30.07 g	Final Wgt/Vol. (: 10 mL)
% Moisture14	Method	SW846 8082	
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Aroclor 1016	ND	38	ug/kg
Aroclor 1221	ND	38	ug/kg
Aroclor 1232	ND	38	ug/kg
Aroclor 1242	ND	38	ug/kg
Aroclor 1248	ND	38	ug/kg
Aroclor 1254	ND	38	ug/kg
Aroclor 1260	15 J	38	ug/kg
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
Tetrachloro-m-xylene	82	(10 - 196)	
Decachlorobiphenyl	84	(10 - 199)	
NOTE(S):			

J Estimated result. Result is less than RL.

Data File: 007F0701.D

Report Date: 30-Oct-2007 07:38

STL North Canton

Data file: \\cansvr11\DD\chem\GCS\a2hp10.i\71029-1.b\71029-1.b\007F0701.D Lab Smp Id: J9ATD1AC Client Smp ID: SB-408-0405

Inj Date : 29-OCT-2007 13:09

Operator : Smp Info : J9ATD1AC Inst ID: a2hp10.i

Misc Info:

Comment:

Method: \CANSVR11\dd\chem\GCS\a2hp10.i\71029-1.b\PCB10.m\PCB10R.m

Meth Date: 30-Oct-2007 00:15 Quant Type: ESTD

Cal Date: 10-OCT-2007 01:35 Cal File: 043F4301.D

Als bottle: 7

Dil Factor: 1.00000

Integrator: Falcon Compound Sublist: pcb.sub

Sample Matrix: SOIL

Target Version: 4.14
Processing Host: CANPGCSV30

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF Vt Vo Cpnd Variable	1.000 10000.000 30.070	Dilution Factor final volume initial volume Local Compound Variable

COMCENSEDABLONG

	CONCENTRA	TIONS		
	ON-COL	FINAL		
RT EXP RT DLT RT	RESPONSE (ng)	(ug/kg)	TARGET RANGE	RATIO
==== ==================================	=======================================	======		
\$ 1 TCMX		CAS #:	877-09-8	
1.628 1.628 0.000	1684610 0.01632	5.428		
2 AROCLOR-1221		CAS #:	11104-28-2	
Compound Not Detected				
2 22222 2016				
3 AROCLOR-1016		CAS #:	12674-11-2	
Darlie and detected for Owner	0 .1 .1 1/ 1/			
Peaks not detected for Quant	. or Qual. signal(s).			
4 AROCLOR-1232			11141-16-5	
. 121002011 1202		οπο π.	11111 10-5	
Peaks not detected for Quant	or Oual. signal(s).			
and the second second second	2 019101 (0//			

Data File: 007F0701.D

Report Date: 30-Oct-2007 07:38

CONCENTRATIONS

ON-COL	FINAL
ON-COL	FINAL

RT EXP RT DLT RT RESPONSE (ng) (ug/kg) TARGET RANGE RATIO

5 AROCLOR-1242

CAS #: 53469-21-9

Peaks not detected for Quant. or Qual. signal(s).

6 AROCLOR-1248

CAS #: 12672-29-6

Peaks not detected for Quant. or Qual. signal(s).

7 AROCLOR-1254

CAS #: 11097-69-1

Compound Not Detected

			<u>-</u>		
8 A	ROCLOR-12	260		CAS #: 11096-82-5	
5.053	5.052	0.001	142646 0.03263	10.85 80.00- 120.00	100.00(M)
5.285	5.288	-0.003	148537 0.03108	10.33 83.56- 139.27	104.13
5.667	5.653	0.014	511395 0.07320	24.34 118.31- 197.19	358.51
6.062	6.063	-0.001	155749 0.03646	12.12 70.86- 118.10	67.38
6.341	6.343	-0.002	199769 0.02421	8.050 147.98- 246.63	140.05
	F	Average of D	Peak Concentrations =	13.14	
\$ 12 D	св		···	CAS #: 2051-24-3	
7.948	7.948	0.000	1254290 0.01680	5.588	
м 11 т	OTAL PCB			CAS #: 1336-36-3	
			0 0.03951	13.14	

QC Flag Legend

M - Compound response manually integrated.

FORM 8 SEMIVOLATILE ANALYTICAL SEQUENCE

Lab Name: TESTAMERICA-NORTH CANTON Contract:

Lab Code: TALCAN Case No.: SAS No.: SDG No.: 7J18324

GC Column: RESTEK PEST CLPII ID: 0.53 (mm) Init. Calib. Date(s): 09/14/07 10/10/07

Instrument ID: A2HP10

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	MEAN SURRO	GATE RT FROM S2:	INITIAL CAL	IBRATION	 	
	CLIENT	LAB	DATE	TIME	, S1	I
	SAMPLE NO.	•	ANALYZED		RT #	RT #
	•	=========	•	•		
01	'	E142	10/29/07	•	1.63	7.95
02	SB-408-0405	•		1309	1.63	7.95
03		E178	10/29/07	1511	1.63	7.95
04		İ	1		1	1
05						·i
06				·	· · _	·
07					i	
08					i .	·
09		1			i .	
10					i	
11					ii	1
12					1	
13		1	1			
14		1	!i		i i	
15		I	11		f	
16			11		l <u></u> l_	
17		<u> </u>	li		l1 _	1
18			l f		l	
19		l			lI_	I
20					l, l _	
21			l!		l!_	
22		1			ll_	
23		l	l			
24			lI		l l _	
25]		l	11			
26					ll_	
27			l		l l _	
28			[]		ll_	
29					ll_	l
30		l	11		<u></u>	1
31		l	11		l <u></u> l_	
32			lI		!_	1

QC LIMITS

S1 = TCMX

(+/- 0.10 MINUTES)

S2 = DCB

(+/- 0.10 MINUTES)

[#] Column used to flag retention time values with an asterisk.

^{*} Values outside of QC limits.

Report Date : 10-Oct-2007 14:28

STL North Canton

INITIAL CALIBRATION DATA

Start Cal Date : 14-SEP-2007 15:17 End Cal Date : 10-OCT-2007 01:35 Quant Method : ESTD

Origin : Disabled Target Version : 4.14

Integrator : Falcon
Method file : \\cansvrll\DD\chem\GCS\a2hp10.i\710091C-1.b\PCB10.m\PCB10R
Last Edit : 10-Oct-2007 14:28 serraa

Last Edit

Curve Type : Average

				 .				
· !	0.05000	0.10000	0.20000	0.50000	1.000	2.000		
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
=25 **==================================							=======	
8 AROCLOR-1260(1)	502792	4623400	4437980	4272906	4029296	3837015	/4371420	9.766
(2)	5432560	4944740	4921635	4743170	4406696	4230553	4779892	8.953
(3)	8052660	7269660	7074815	6858120	6465863	6199190	6986718	9.346
(4)	4831646	4542140	4313965	4225558	3944907	3773494	4271951	9.039
(5)	9052760	8567530	8010535	8292570	7935642	7654845	8252314	6.077
9 AROCLOR-1262(1)	1653800	1663830	1467575	1443636	1338960	1352173	1486662	9.581
(2)	2631740	2594410	2319490	2315338	2167916	2196971	2370977	8.333
(3)	2484000	2454140	2192045	2207158	2091605	2104722	2255612	7.618
(4)	4442400	4471350	4014370	4252102	3978083	4100241	4209758	5.075
(5)	2953340	3056560	2706215	2812478	2607532	2661742	2799644	6.278
10 AROCLOR-1268(1)	1129160	1015340	920815	927020	899012	837041	954731	10.781
(2)	5361480	5230190	4731135	5067826	4832178	4581272	4967347	6.091
(3)	4656740	4545960	4129805	4439632	4318850	4072240	4360538	5.294
(4)	4312200	4147740	3756600	4014430	3920629	3667368	3969828	6.069
(5)	12217060	12359620	11120805	12179740	11703023	10993278	11762254	5.021
M 11 TOTAL PCB	. ++++	+++++	+++++	+++++	+++++	+++++	. +++++	++++
	, 						· 	
\$ 1 TCMX	104204800	99770000	101095400	125844650	95717980	92637310	103211690	11.444
\$ 12 DCB	84602000	76189400	74746000	85629350	64738700	62010080	74652588	13,124
		<u>.ji</u>						

APPENDIX E - ADMINISTRATIVE REQUIREMENTS

Written Agreement Block F Soil Response Action Plan Lockheed Martin Middle River Complex, Middle River, Maryland

APR-14-2008 11:39 From:

To:5032211789 P.2/3

WRITTEN AGREEMENT

If the Response Action Plan is approved by the Maryland Department of the Environment, Lockheed Martin Corporation agrees, subject to the withdrawal provisions of Section 7-512 of the Environment Article, to comply with the provisions of the Response Action Plan. Lockheed Martin Corporation understands that if Lockheed Martin Corporation fails to implement and complete the requirements of the approved plan and schedule, the Maryland Department of the Environment may reach an agreement with Lockheed Martin Corporation to revise the schedule of completion in the approved Response Action Plan or, if an agreement cannot be reached, the Department may withdraw approval of the plan.

Director Environmental
Title Keinedlation

4/14/08

Zoning Certification Block F Soil Response Action Plan Lockheed Martin Middle River Complex, Middle River, Maryland

Sent by: JetFax N5

APR-14-2008 11:39 From:

To: 5032211789 P.3/3

ZONING CERTIFICATION

Lockheed Martin Corporation hereby certifies that the property meets all applicable county and municipal zoning requirements.

Lockheed Martin Corporation acknowledges that there are significant penalties for falsifying any information required by the Maryland Department of the Environment under Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland, and that certification is required to be included in a response action plan for the Voluntary Cleanup Program pursuant to Title 7, Subtitle 5 of the Environment Article, Annotated Code of Maryland.

Brad W. Owens

Printed Name

Director, Environmental

Penadia han

4/14/08

Date