On-Base Groundwater AOCs Monitoring Program Former Griffiss Air Force Base Rome, New York

MONITORING REPORT (Annual 2008)



Contract No. F41624-03-D-8601 Delivery Order No. 0027

> Revision 0.0 April 2009



Engineering and Environmental Science



FPM Group, Ltd. FPM Engineering Group. P.C. formerly Fanning, Phillips and Molnar

MEMORANDUM

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Date: April 27, 2009

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From: FPM Group, Ltd.

Re: Monitoring Report On-Base Groundwater AOCs 2008 Annual Former Griffiss Air Force Base, Rome, New York Contract No. F41624-03-D-8601-0027 Revision 0.0 April 2009

On behalf of the Air Force Real Property Agency (AFRPA), through the Air Force Center for Engineering and the Environment (AFCEE) Performance-Based Contract (PBC) for Long-Term Monitoring (LTM) and Remedial Action-Operations (RA-O), FPM Group, Ltd. is pleased to submit the above-referenced report. This report is being distributed in accordance with the attached distribution list.

This version of the report incorporates data through Fall 2008.

If you have any questions or require additional information, please feel free to contact Mark Rabe, AFRPA Project Engineer, at 315-356-0810 ext. 203 or myself at 315-336-7721 ext. 202, or by e-mail at g.atik@fpm-group.com.

Very truly yours,

Gaby A. Atik, P.E. Director, Regional Operations

Enc.

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2008 ANNUAL MONITORING REPORT

Prepared for:

On-Base Groundwater AOCs Former Griffiss Air Force Base Rome, NY

through

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Prepared by:

FPM Group, Ltd. 153 Brooks Road Rome, NY 13441

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LIST OF ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFCEE	Air Force Center for Engineering and the Environmental
AOC	Area of Concern
BADP	Battery Acid Disposal Pit
BADrP	Battery Acid Drainage Pit
bgs	below ground surface
BTOIC	below top of inner casing
COC	Contaminant of Concern
CQCR	Chemical Quality Control Report
DCE	dichloroethylene/dichloroethene
DO	Delivery Order
E&E	Ecology and Environment, Inc.
FPM	FPM Group, Ltd.
FSP	Field Sampling Plan
ft	feet
HRC [®]	Hydrogen Release Compound
HWSA	Hazardous Waste Storage Area
LAW	LAW engineering and environmental services, Inc.
LTM	long term monitoring
LUC	land use control
MDL	method detection limit
mg/kg	milligram per kilogram
MSL	mean sea level
NYSBC	New York State Barge Canal
NYSDEC	New York State Department of Environmental Conservation
OHM ORP	OHM Remediation Services Corporation oxidation reduction potential

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LIST OF ACRONYMS AND ABBREVIATIONS (cont'd.)

PCB	polychlorinated biphenyl
PCE	tetrachloroethylene/perchloroethylene/tetrachloroethene/perchloroethene
POC	Point of compliance
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act of 1976
RI	Remedial Investigation
RL	Reporting Limit
RSCO	Recommended Soil Cleanup Objective
SI	Supplemental Investigation
SVOC	semi-volatile organic compound
TAGM	Technical and Administrative Guidance Memorandum
TCE	trichloroethylene/trichloroethene
TOC	total organic carbon
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VC	Vinyl Chloride
VOC	volatile organic compound
μg/L	micrograms per liter
μg/kg	micrograms per kilogram

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1 INTRODUCTION

FPM Group, Ltd. (FPM), under contract with the Air Force Center for Engineering and the Environment (AFCEE), is conducting a groundwater monitoring program at several sites associated with the On-Base Groundwater Contamination Area of Concern (AOC) at the former Griffiss Air Force Base (AFB), New York (see Figure 1-1 in Appendix A). The monitoring program will be conducted in accordance with provisions of the Basic Contract # F41624-03-D-8601 and Delivery Order (DO) #0027.

The purpose of the program is to monitor the presence of contaminants of concern (COCs), assess the potential for migration of the COCs, identify statistically valid groundwater trends, and establish an early warning, monitoring well system for assuring compliance with potential COC receptors.

Data evaluation and report preparation for the groundwater monitoring program includes semiannual summary updates and a more detailed annual report. The monitoring program will also be reviewed periodically to revise sampling location and/or sampling frequencies for optimal functioning. This annual groundwater monitoring report includes collection, analysis, and reporting of COCs for the following On-Base Groundwater Areas of Concern:

- ST-06: Building 101 AOC
- SS-60: Building 35 AOC

Closure was recommended for the following site in the August 2007 Semi-annual On-base Groundwater AOCs Monitoring Report (FPM, August 2007) and no samples were collected after March 2007:

• FT-30: Fire Protection Training Area

As part of the performance based contract, it should be noted that the following sites were previously sampled under long-term monitoring (LTM), and No Further Sampling was proposed in November 2004 Groundwater Monitoring Report (FPM, November 2004) and sampling has ended.

- SS-23: Building 20 AOC
- DP-12: Building 301 AOC
- SS-17: Lot 69 AOC

The SD-52: Nosedocks/ Apron 2 Chlorinated Plume site is being sampled under another project.

The locations of the On-Base Groundwater AOCs can be viewed in Figure 1-2 in Appendix A.

Groundwater samples were collected from each of the sites listed and analyzed for the respective COCs as identified during previous investigations. Groundwater elevations were measured at well sampling locations to ascertain groundwater flow pattern. Both existing data and the information from new sampling are utilized for overall performance evaluation.

Groundwater samples were collected and analyzed at existing monitoring wells located to sufficiently track the migration and/or attenuation of the COC plume(s).

New monitoring wells were installed according to the protocol described in the Field Sampling Plan (FSP) (FPM, March 2005). Reference is also made to the AFCEE Quality Assurance Project Plan (QAPP), Version 3.1 (AFCEE, August 2001) or later, with project-specific variances. The QAPP together with the FSP form the Sampling and Analysis Plan.

1.1 GROUNDWATER MONITORING APPROACH

1.1.1 Groundwater Monitoring Background

To illustrate how this groundwater monitoring program will operate, the following highlights the overall objectives, components, and constraints of the groundwater monitoring program.

The objectives of groundwater monitoring are:

- 1. To continue refining the conceptual site model for groundwater flow so that the predictions regarding the fate and transport of COCs are accurate;
- 2. To provide data regarding groundwater and surface water elevations needed to evaluate groundwater flow and surface water/groundwater interactions which control the fate and transport of COCs;
- 3. To establish an early warning monitoring system for the protection of potential receptors prior to completion of exposure pathways;
- 4. To evaluate COC degradation due to remedial action or natural attenuation processes; and
- 5. To collect data that support attainment of regulatory requirements and site closure.

Typical components of a groundwater monitoring system include:

- 1. One or more upgradient well(s) representative of background conditions;
- 2. Monitoring wells that track the COC migration or degradation trend; and
- 3. Point-of-compliance (POC) well(s) located downgradient of the plume or contaminated area in unimpacted groundwater (downgradient background).

Constraints associated with a groundwater monitoring system include:

- 1. All monitoring wells must be screened in the same hydrogeologic unit as the COC plume or known/probable groundwater pathway from a potential source;
- 2. Downgradient monitoring wells must be located to detect unexpected variations in groundwater quality as efficiently as possible (i.e., with respect to groundwater migration rates and downgradient flow direction);
- 3. POC wells must be located upgradient from the potential receptors to provide sufficient early warning; and
- 4. Regulatory requirements must be taken into account.

Given the above objectives and constraints, the design of a monitoring system considers the following tasks:

- 1. Selecting water-level observation wells and water quality monitoring wells from existing monitoring wells and piezometers, or selecting locations for new wells, depending on the evaluation of existing data (i.e., well logs, water-level measurements, proximity to natural flow boundaries, trends and uncertainties in the existing data) and the specific intended and distinct role of that monitoring point;
- 2. Providing a statistical evaluation of water-level elevation data for groundwater flow direction, existing COC concentrations, and groundwater chemistry to predict long-term trends;
- 3. Identifying performance evaluation criteria (e.g., statistical tests), including appropriate analysis methods for evaluating data variations or closure attainment;
- 4. Identifying water quality sampling frequency at each monitoring point both for
 - a. understanding the trends of COCs and/or their indicator analytes, and
 - b. minimizing the costs and maximizing the benefits of the program;
- 5. Identify physical and chemical parameters (e.g., transport and attenuation properties) for the COCs; and
- 6. Periodically assessing the groundwater monitoring well network for possible decommissioning of monitoring wells from the program.

1.1.2 Purpose of Groundwater Monitoring Program

The respective groundwater monitoring plans have identified sampling locations that will best detect groundwater COCs that are known to exist at the On-Base Groundwater AOCs, and track their transport over time to support a decision for either continued monitoring, remedial measures, or site closure. The monitoring program will use historic data and new information from annual and quarterly sampling rounds at specified existing and new monitoring wells, and surface water sampling sites.

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2 ENVIRONMENTAL SETTING

2.1 PHYSIOGRAPHY AND TOPOGRAPHY

The former Griffiss AFB is located in the city of Rome in Oneida County, New York (refer to Figure 1-1 in Appendix A). The former Base lies within the Mohawk Valley between the Appalachian plateau and the Adirondack Mountains. A rolling plateau northeast of the former Base reaches an elevation of 1300 feet (ft) above mean sea level (MSL). The New York State Barge Canal (NYSBC) and the Mohawk River valley south of the former Base lie below 430 ft above MSL. The topography across the former Base is relatively flat with elevations ranging from 435 ft above MSL in the southwest portion to 595 ft above MSL in the northwest portion of the former Base.

2.2 GEOLOGY

Unconsolidated sediments at the former Griffiss AFB consist primarily of glacial till with minor quantities of clay and sand and significant quantities of silt and gravel. The thickness of these sediments range from 0 ft in the northeast portion to more than 130 ft in the southern portion of the former Base. The average thickness of the unconsolidated sediments is 25 to 50 ft in the central portion and 100 to 130 ft in the south and southwest portions of the former Base. The bedrock beneath the former AFB generally dips from the northeast to the southwest and consists of Utica Shale, a gray and black carbonaceous unit with a high/medium organic content (LAW engineering and environmental services, Inc. [LAW], December 1996).

2.3 HYDROLOGY

The shallow water table aquifer lies within the unconsolidated sediments, where depth to groundwater ranged from just below ground surface (bgs) to 59 ft bgs during the June 2003 synoptic Basewide water-level measurement of wells. Groundwater across the former Base generally flows from the topographic high in the northeast to the Mohawk River and the NYSBC to the south. Several creeks, drainage culverts, and sewers (mostly acting as drains for shallow groundwater), intercept surface water runoff.

A comprehensive description of regional and local geology, hydrogeology, lithology, and hydrology for the former Griffiss AFB was given in Section 4 of the Baseline Study (FPM, July 2000), in the Remedial Investigation (RI) (LAW, December 1996), and in the Supplemental Investigation (SI) prepared by Ecology and Environment, Inc. [E&E] (E&E, November 1998). Detailed site descriptions and the hydrology for AOCs are presented with each site-specific section.

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2.4 CLIMATE

The former Griffiss AFB experiences a continental climate characterized by warm, humid, moderately wet summers and cold winters with moderately heavy snowfalls. The mean annual precipitation is 45.25 inches, which includes the mean annual snowfall of 97.7 inches. The annual evapotranspiration rate is 23 inches. The average temperature during the winter season is 20 degrees Fahrenheit; temperatures during the spring, summer, and fall vary from 31 to 81 degrees Fahrenheit. The prevailing winds are from the southwest, with an average wind speed of 5 knots.

The former Griffiss AFB is located in a region prone to acid precipitation; the annual average pH of precipitation recorded for 2007 at the three closest stations ranged from 4.54 to 4.63. Fluctuations in pH have an inverse correlation to precipitation, such that lower pH levels correlate with higher amounts of precipitation (NOAA, National Oceanic and Atmospheric Administration, Annual 2007).

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3 BUILDING 101 AOC (ST-06)

3.1 SITE LOCATION AND HISTORY

Building 101 Battery Acid Disposal Pit/Battery Acid Drainage Pit/Yellow Submarine Underground Storage Tank (BADP/BADrP/UST) is located south of Apron 3, in the central portion of the former Base (Figure 1-2 in Appendix A). Figure 3-1 in Appendix A illustrates the building, together with the location of the existing monitoring wells, temporary well, and March 2004 groundwater contours.

The former BADP was located in the central portion of the building in an area designated as the Lead Battery Room. The BADP was in use from the early 1940s until 1985, when it was excavated. The BADP consisted of a pit beneath the concrete floor and was covered with a steel grate. Acids from spent batteries were neutralized with baking soda and poured into the BADP, where the neutralized liquid was allowed to percolate into the underlying soils. A 4-inch overflow pipe ran west from the BADP to the BADrP which was located beyond the west wall of the Lead Battery Room. Following the removal of the BADP, a new 4-inch floor drain was installed and piped to the BADrP. Investigation and remedial activity of the drainage pit was completed during closure activities from June 1997 through January 1998. Remedial activities consisted of the removal of residual sludge from the BADrP with subsequent removal of the drainage pit was backfilled and sealed with concrete (OHM Remediation Services Corp. [OHM], July 1998).

The Yellow Submarine UST, which was located 15 ft from the south edge of Building 101, was used as a holding and dilution tank for plating wastes from a metal plating shop housed in Building 101, until June 1993 when it was excavated (LAW, December 1996).

The Baseline Study (FPM, July 2000) found that the COCs reported in earlier investigations for this site (i.e., chlorinated ethenes and chloroform) had substantially stabilized at levels close to or below NYS Groundwater Standards.

3.2 HYDROGEOLOGICAL SETTING

Building 101, approximately 1,440,000 square feet in area, has a topographic relief of less than 1 foot across the site. The soils below 0.5 ft of asphalt and concrete are characterized by borings as predominantly brown to gray, fine to medium sand with silt and gravel. Subsurface soils encountered range from predominantly gray to brown gravelly sand to gray and brown, fine to coarse sand with variable silt and gravel. Figure 3-2 in Appendix A illustrates the geological cross section A-A' (LAW, December 1996).

The Building 101 AOC is located approximately 3,200 ft north of Three Mile Creek (LAW, December 1996). Runoff from the site is intercepted at the site and conveyed by the storm drains running north-south to Three Mile Creek.

As reported in the Baseline Study (FPM, July 2000), the storm drains intercept the water table along their north-south course. Groundwater contouring in this area (Figure 3-1 in Appendix A) reflects groundwater drainage to the storm drain system. The influence of the storm drains on groundwater flow is as a constant-head line sink. This causes an acute shape to the contour lines in the vicinity of the storm drains. Groundwater discharge to the storm drains may be intermittent and varies in extent because of fluctuations of the water table in relation to the storm drain invert elevation (458.6 ft MSL).

Measurements in the December 1998 Base-wide synoptic indicated groundwater depths adjacent to the Building 101 AOC were fairly level, varying from 14.14 ft bgs in monitoring well 101MW-4 located on the north to 13.63 ft bgs to the south (FPM, July 2000). Subsequently, the groundwater flow at the Building 101 AOC is southwesterly. Water level measurements collected during the March 2005 sampling round indicated the same flow direction (see Figure 3-1 in Appendix A).

The reported average site-specific hydraulic conductivity for the Building 101 AOC was 18.4 feet per day, with a hydraulic gradient of 0.0028 feet per foot. Estimating the porosity to be 20 percent, the groundwater flow was calculated to be 94 feet per year (LAW, December 1996).

3.3 SUMMARY OF PREVIOUS INVESTIGATIONS

BADP Sampling

Soil sampling of the BADP conducted in 1985 by Roy F. Weston Inc. found high concentrations of antimony (193 milligrams per kilograms (mg/kg)), lead (83,000 mg/kg), copper (784 mg/kg), and zinc (262 mg/kg) (101SB-1) (Figure 3-1 in Appendix A). A 1994 analysis at soil sample location 101SB-1 detected various metals as well as tetrachloroethylene (also known as perchloroethylene or tetrachloroethene) (PCE) (0.8 micrograms per kilogram [μ g/kg]), toluene (3 μ g/kg), and polynuclear aromatic hydrocarbon compounds; of these, benzo(a)pyrene, phenol, and six metals (including antimony, arsenic, lead, and mercury) exceeded soil to-be-considereds (LAW, December 1996).

BADrP Closure

During 1997 closure activities of the adjacent BADrP, soil sampling results indicated the presence of several semi-volatile organic compounds (SVOCs) and metals. All of the constituents detected were below their respective New York State Department of Environmental Conservation (NYSDEC) guidance level (according to the Technical and Administrative Guidance Memorandum [TAGM] 3028), with the exception of 1,4-dichlorobenzene at 100 mg/kg. Following additional soil removal and endpoint sampling, 1,4-dichlorobenzene was also

reported below its respective TAGM level of 8.5 micrograms per kilograms (μ g/kg) (OHM, July 1998).

In June 2002, soil and groundwater confirmatory sampling was conducted at the Building 101 BADrP (located inside Building 101; see Figure 3-1 in Appendix A). Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), SVOCs, metals and polychlorinated biphenyls (PCBs). No VOC or PCB exceedances were reported at the seven soil sampling locations. The only SVOC reported at levels exceeding TAGM Recommended Soil Cleanup Objectives (RSCO) was phenol (310 F μ g/kg (F indicating the detection was between the method detection limit [MDL] and the reporting limit [RL]) detected at 101SB-10 (located in the southeast corner of the former BADrP; not shown on map) at the 4 to 6 ft interval. The detected concentration is almost at one order of magnitude of the RSCO (30 μ g/kg) and is below the laboratory reporting limit (330 μ g/kg) (FPM, August 2002).

Five metals were reported at levels exceeding RSCO and/or Background Soil Screening Levels (LAW, December 1996) at two sampling locations (101SB-10 and -12, not on figure but within BADrP): cadmium, mercury and silver were reported in the 4 to 8 ft interval. Each of the five metals exceedances was within one order of magnitude or less of the respective RSCO or site background level. While cadmium and silver were found at levels exceeding their respective RSCOs, the levels measured at the two sample locations are below Environmental Protection Agency (EPA) Region III Residential Risk-Based Concentrations (39 mg/kg and 390 mg/kg, respectively). Mercury slightly exceeds the RSCO, but the mercury level in the deeper sample was below the RSCO (0.03 mg/kg) (FPM, August 2002).

Neither VOCs, SVOCs, nor PCBs were reported above NYSDEC Groundwater Standards in the single temporary groundwater well 101TW-21, located approximately 100 ft south of the BADP. The amount of suspended solids observed during groundwater sample collection is believed to have compromised the integrity of the sample for metals evaluation (FPM, August 2002).

Based on this 2002 confirmation sampling, the 1997 removal action was successful at eliminating the presence of residual soil contamination at levels posing a threat to the human health and the environment.

Yellow Submarine UST

Monitoring well 101MW-1, located near the Yellow Submarine UST, was analyzed three times during the 1992-1993 quarterly groundwater sampling program; PCE, trichloroethylene (TCE), manganese, and zinc were detected at concentrations up to 290 micrograms per liter (μ g/L), 270 μ g/L, 2.44 mg/L, and 0.363 mg/L, respectively. Soil samples from the site of the UST excavation collected in 1993 showed metal and PCE (10 μ g/kg) contamination. The results of the RI (from samples collected in June 1994) reported the PCE concentration in monitoring well 101MW-1 at 7.7 μ g/L, a marked decline from 290 μ g/L (measured in June 1993). Groundwater samples from monitoring well 101MW-2 (also collected in June 1994), located south and

downgradient of Building 101, had concentrations of $130 \,\mu$ g/L of chlorinated solvents, comprised mostly of cis-1,2- dichloroethylene (DCE) ($120 \,\mu$ g/L).

Groundwater Sampling

Groundwater sampling during the SI (E&E, November 1998) reported chloroform concentrations in both wells 101MW-1 and 101MW-3 at 19 μ g/L. TCE was also detected in wells 101MW-1 (where PCE was also found), 101MW-2, 101MW-3, 101TW-5, and 101TW-6. All levels were below cleanup criteria.

Due to construction activities related to the widening of Hangar Road in 1998, monitoring wells 101MW-1 and 101MW-2 were replaced by newly installed wells 101MW-1R and 101MW-2R, respectively. 101MW-2 was rediscovered in 2001 and added to the well sampling list. During the Baseline Study (FPM, July 2000), PCE and TCE were detected in all four rounds in well 101MW-1R below the reporting limit of 1.4 μ g/L and 1 μ g/L, respectively. The PCE results were lower than the 7.7 μ g/L detected in well 101MW-1 during the RI (LAW, December 1996). cis-1,2-DCE was reported at 0.2 F μ g/L in the January 1999 sampling round and was undetected in the following three sampling rounds. TCE was also detected in wells 101MW-2R and 101MW-3, but no samples exceeded the NYS Groundwater Standard or the reporting limit of 1.0 μ g/L.

Samples collected from monitoring wells 101MW-1R and 101MW-3 in the Baseline Study in January 1999, showed decreases in chloroform concentrations from the 19 μ g/L reported during the SI to 4.72 μ g/L and 6.33 μ g/L, respectively. Subsequent sampling for chloroform showed an increase in concentration to 11.4 μ g/L in well 101MW-3 in August 1999.

Concentrations of chloroform in well 101MW-1R generally showed a decrease to a level of about 2 μ g/L for the remainder of 1999 (FPM, July 2000). The chloroform detections are likely to be associated with potable water leaks from a nearby water supply main; potable water commonly contains chloroform (E&E, November 1998).

No VOCs were detected above ARARs in monitoring well 101MW-2R. This result suggests that the TCE plume does not migrate beyond the 42-inch storm drain from the direction of the UST. Chloroform was also detected in well 101MW-2R below the NYS Groundwater Standards. No exceedances were reported for upgradient monitoring well 101MW-4 in any of the Baseline Study sampling rounds.

3.4 BUILDING 101 AOC GROUNDWATER SAMPLING PLAN

The purpose of the sampling at the Building 101 AOC is to monitor the presence and movement of chlorinated hydrocarbon COCs. Sampling is performed quarterly for one monitoring well (101MW-2). The sample is analyzed for VOCs (EPA Method SW8260) for the specified short

list. The original sample analysis summary, which has since been updated / modified, is provided in Table 3-1 in Appendix A.

3.5 GROUNDWATER SAMPLING RESULTS 2001 THROUGH 2008

FPM performed quarterly groundwater sampling from September 2001 through September 2008 (in total, 26 sampling rounds). Monitoring wells 101MW-1R, 101MW-2, and 101MW-2R were sampled in September and December 2001, March, June, September, and December 2002, March, June, September, and December 2003 and March 2004 for the target VOCs. Monitoring Well 101MW-2 was also sampled in June, September, and December 2004, and March, June, September, and December 2005, May, September, and December 2006, April, October, and December 2007, April, and September 2008. Well 101MW-3 was sampled only during the first five sampling rounds (September 2001 through September 2002). Monitoring well 101MW-3 was decommissioned in November 2002 during the removal of the asphalt parking lot where it was located.

The field activities summary table is provided in Table 3-2 in Appendix A. The analytical results are given in Table 3-3 in Appendix A. The daily Chemical Quality Control Reports (CQCRs) are attached in Appendix B. The validated lab data are attached in Appendix C and the raw lab data are attached in Appendix D.

In order to increase the readability of the report, all discussion of past sampling rounds has been eliminated. Only the sampling relevant to this report (December 2007, April 2008, and September 2008 sampling rounds) is discussed in detail. Detailed descriptions of past sampling rounds can be found in the Spring 2007 Monitoring Report (FPM, August 2007). The discussion of site activities has been preserved to inform the reader of pertinent information.

As recommended in the August 2007 monitoring report (FPM, August 2007), an injection of Newman Zone[®] (a proprietary vegetable oil emulsion with lactate) was performed on 19 November 2007 in monitoring well 101MW-2 at the Building 101 AOC. This product is injected in the soil matrix to create an anaerobic aquifer zone to make it (more) conducive to anaerobic degradation of chlorinated solvents. This injection was performed in the monitoring well, due to the difficult utilities layout on the site.

To monitor the effect of the Newman Zone[®] injection, monthly sampling was performed at monitoring well 101MW-2. The first sample was collected two days after injection. Results showed non-detect results for TCE, cis-1,2-DCE, and vinyl chloride (VC) and a chloroform exceedance of 40.8 μ g/L which likely resulted from the use of drinking water as makeup water during the injection (Table 3-3 in Appendix A). High total organic carbon (TOC) was reported as a result of the vegetable oil in the Newman Zone[®] and relatively stable alkalinity. Field measurements showed that the temperature dropped from 20.0 to 8.9 degrees Celcius, likely as a result of injecting the large volume of relatively cool drinking water. The turbidity increase is

likely the result of the injected substrate mix which was milky white in color. The dissolved oxygen increase is likely the result of the large volume of oxygen-rich drinking water. The oxidation reduction potential (ORP) increase is likely the result of the injected substrate mixture.

December 2007:

Only monitoring well 101MW-2 was sampled during this sampling round. No exceedances of the NYS Groundwater Standards were reported.

Subsequent sampling showed that concentrations of chlorinated solvents rebounded within a few months, but that cis-1,2-DCE concentrations rebounded to levels roughly one-half to one-quarter the levels reported before the injection. Bioremediation and field parameters also returned to levels reported before the injection within two to three months.

April 2008:

Only monitoring well 101MW-2 was sampled during this sampling round. No exceedances of the NYS Groundwater Standards were reported.

September 2008:

Only monitoring well 101MW-2 was sampled during this sampling round. No exceedances of the NYS Groundwater Standards were reported.

The groundwater contours for the March 2004 sampling round are depicted in Figure 3-1 in Appendix A. The groundwater flow is in a similar direction as reported in earlier sampling events (southwesterly). The groundwater elevations are reported higher (459.45 - 459.89 ft MSL) than the invert of the storm drain (458.6 ft MSL). This indicates that the storm drain acts as a groundwater drain, which was also reported by E&E in 1998 (E&E, July 1998).

3.5.1 2001 - 2008 Results Summary

In the March 2002 sampling round, all monitoring wells at the Building 101 AOC were sampled for SVOCs and metals, in addition to VOCs. No SVOCs were detected and a few metals exceedances were reported for iron, manganese, sodium and chromium.

VOC samples have been collected from 2001 to 2008 for 26 sampling rounds. The number of exceedances reported at the Building 101 AOC changed little until the Newman Zone[®] injection in November 2007; cis-1,2-TCE has consistently been reported at 2 to 3 times the NYSDEC Groundwater Standard of 5 μ g/L. Several other VOC detections have been reported, but all are significantly below their respective NYS Groundwater Standards.

The sampling results collected after the Newman Zone[®] injection show that the enhancement of the naturally occurring bioremediation on site has had a positive effect on site COC

concentrations; the cis-1,2-DCE concentrations have decreased to levels below the New York State Groundwater Standard of 5 μ g/L.

3.6 CONCLUSIONS AND MONITORING RECOMMENDATIONS

The VOC results reported for samples collected after the Newman Zone[®] injection showed that cis-1,2-DCE concentrations have decreased to level below the New York Groundwater Standard of 5 μ g/L, which is likely caused by the Newman Zone[®] injection.

FPM recommends no further monitoring with Land Use Controls (LUCs) and groundwater restrictions at the Building 101 AOC. Any potential receptors will be protected via the LUCs and the on-site bioremediation processes, which were enhanced via the injection of Newman Zone[®]. The enhanced bioremediation processes will be given time to more completely remediate the site COCs.

Table 3-4 in Appendix A shows the historical and proposed groundwater sampling and analysis plan.

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4 BUILDING 35 AOC (SS-60)

4.1 SITE LOCATION AND HISTORY

Building 35 was located in the southeast-central section of the base (Figure 1-2 in Appendix A), near an area that was used for outside storage of drums and scrap material during the 1940s. An unknown quantity of drums and transformers were also stored in this area during the late 1960s and 1970s. Site closure was a requirement under the Building 35 Resource Conservation and Recovery Act (RCRA) Hazardous Waste Storage permit and the closure activities were performed in the late 1990s (OHM, July 1997).

The former Hazardous Waste Storage Area (HWSA) was located in the southwest corner of Building 35 and was approximately 30 by 50 feet in area. Although a hazardous waste inventory is not available for the area, the area was assumed to contain waste associated with aircraft maintenance activities such as corrosion control painting, degreasing, and routine engine, wheel and tire services. There is no record of any spills at the HWSA.

The former PCB storage area was located in the northwest corner of Building 35 and occupied an approximate area of 37 by 46 feet. Inspection reports indicate that PCB items were stored in the area since at least 1985. Also, a spill in the PCB area was recorded on October 25, 1991, when approximately one quart of transformer oil leaked from a damaged terminal onto part of a wooden pallet and a 2-inch diameter spot on the concrete floor. The oil was tested and was reported below 5 ppm PCBs. Base records also report a small PCB spill on March 16, 1995, which reportedly happened when a PCB-containing transformer was moved from the containment area within Building 35. The spill area, approximately 20 square feet, was properly remediated.

4.2 HYDROGEOLOGICAL SETTING

Building 35, approximately 1 acre in size, is currently a vacant lot originally proposed as the location for the new coal storage facility. The site is unpaved and has a topographic relief of 3 to 4 ft across the site. The soils are predominantly composed of silty, fine to coarse sands with gravel.

Surface water drainage from the site enters a shallow drainage swale, which leads to a drainage ditch informally referred to as Rainbow Creek, and ultimately Six Mile Creek.

During the Building 35 Resource Conservation and Recovery Act (RCRA) closure activities, groundwater elevations were recorded in May and July 1998. The depth to groundwater was approximately 6.9 - 7.2 ft bgs (approximately 456.4 - 456.1 ft MSL). Groundwater contours created during the Building 35 closure report show the groundwater flow direction to be northeast (OHM, April 2000). This groundwater flow direction was confirmed during the March

2002, March 2003, and June 2004 sampling rounds. The latest groundwater contours for the June 2004 sampling round are provided on Figure 4-1 in Appendix A.

4.3 SUMMARY OF PREVIOUS INVESTIGATIONS

Closure activities for the HWSA and PCB areas in association with RCRA NYSDEC Permit #6-3-13-00063/00020-0 were conducted by OHM Remediation Services Corporation in 1996 in accordance with Closure Plans approved by the NYSDEC in 1995. The Closure Plans were designed to ensure that the Building 35 storage areas would require no further maintenance after clean closure, and threats to human health and the environment would be minimized or eliminated. The closure activities included the collection of pre-closure wipe samples from each storage area and surface soil samples (0 to 1 ft bgs) from the outside perimeter of the building. Twelve surface soil samples were analyzed for PCBs, and all twelve samples indicated elevated concentrations of PCBs above the recommended action level of 1 ppm (OHM, July 1997).

An extensive soil investigation was conducted from January to March 1997 to delineate the extent of contaminated soil in the vicinity of Building 35 above cleanup levels, which were established at 1 ppm in surface soil and 10 ppm in subsurface soil to meet EPA and NYSDEC guidelines. A total of 140 Geoprobe[®] borings were installed in both the surface and subsurface soils surrounding Building 35, including three borings conducted underneath the building floor. Soil samples were analyzed for total PCBs in the field using a gas chromatograph with an electron capture detector. In addition, eight groundwater samples were collected during the Geoprobe[®] activities, and were analyzed for total PCBs, VOCs, SVOCs, pesticides, and metals (OHM, July 1997).

Results indicated widespread PCB contamination throughout the subsurface soils and also indicated possible groundwater contamination. Soil detections for PCBs ranged from non-detectable levels to 3,079 ppm. Several hot spots were identified during the investigation, with PCB concentrations above regulatory action levels down to the 6 to 7 ft depth interval. No correlation was found between PCB concentration and sample depth, nor between PCB concentration and distance from the building, indicating that the contamination may have been due to numerous sources, or the result of using fill at the site which potentially contained PCBs (OHM, July 1997).

Of the eight groundwater samples collected, seven indicated PCB concentrations above the PCB action level (0.1 μ g/L). The highest total PCB concentration (210 μ g/L) was reported from sample B035-GW05, located near the southeast corner of Building 35. No VOCs or SVOCs were detected above regulatory action levels, but two pesticides, dieldrin and endrin, and several metals were detected at concentrations above action levels. Two chlorinated VOCs were also reported above detection limits at B035-GW07, total 1,2-DCE at 5 μ g/L, and vinyl chloride at 1 μ g/L. Results indicated that previous waste storage activities had potentially impacted the local groundwater conditions, but were inconclusive because the Geoprobe[®] samples collected were

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characterized with high suspended solids content, which is associated with higher concentrations of pesticides and metals due to the adsorption of these contaminants to fine particulates (OHM, July 1997).

A remedial action was conducted in 1997 to demolish Building 35, excavate, transport, and dispose of PCB-contaminated soil and debris, and backfill the area with clean soil after analysis of confirmation samples. In total, approximately 24,414 tons of PCB-contaminated soil/concrete were removed. An estimated 20,078 tons were disposed of off-site as non-hazardous soil/concrete, and 4,336 tons as hazardous soil (IT, May 1999).

In Spring 1998, OHM installed four groundwater monitoring wells within the Building 35 area to characterize groundwater conditions and to determine the local groundwater flow direction. B035MW-4 is located near the intersection of two storm drains within the site boundaries – one 66-inch storm drain running from the northwest to the southeast near the southwest corner of Building 36 and one 30-inch drain running perpendicular from the southwest to the 66-inch drain – to assess any impacts the storm drains might have on groundwater flow. B035MW-3 is located near the highest concentration of PCBs detected in the soil samples, which was the same location with the highest PCB concentration in groundwater samples collected with the Geoprobe[®]. B035MW-1 and -2 were positioned to monitor areas southwest and north of Building 35, respectively. The total depth of each well is approximately 14 ft bgs.

Two groundwater monitoring rounds were conducted in May and July 1998, when samples were submitted for PCBs, VOCs, SVOCs, pesticides, and metals analyses. Results indicated two VOCs – vinyl chloride and total 1,2-DCE (including both the cis and trans isomers) – at levels above NYS Class GA Groundwater Standards in B035MW-4; total 1,2-DCE only was reported above the NYS Groundwater Standard in B035MW-3 (8 μ g/L). Concentrations were reported up to 6 μ g/L and 42 μ g/L for vinyl chloride and 1,2-DCE, respectively, both in B035MW-4. No PCBs were reported above the detection limit during either sampling round (1 μ g/L [2 μ g/L for arochlor-1221 only] for May 1998 and 0.06 μ g/L for July 1998) (OHM, April 2000).

In addition, during the two groundwater sampling rounds, several metals were reported at levels above NYS Groundwater Standards, including iron, manganese, sodium, lead, antimony, copper, zinc, chromium, arsenic, and thallium. Samples were collected using a disposable bailer and were submitted unfiltered for total metals analysis.

In accordance with the closure requirements under the RCRA Permit for Building 35, threats to human health and the environment have been minimized or eliminated (i.e., source areas have been removed). The Air Force plans to monitor, under the On-Base Groundwater Contamination AOC, residual groundwater contamination for the contaminants of concern on an annual basis with a joint review by NYSDEC, USEPA, and the AFRPA after 5 years; this intention was approved by NYSDEC in a letter dated December 8, 1999 (OHM, April 2000).

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4.4 BUILDING 35 GROUNDWATER SAMPLING PLAN

The original sample analysis summary, which has since been updated / modified, is provided in Table 4-1 in Appendix A. The site features and existing monitoring wells are illustrated in Figure 4-1 in Appendix A.

4.5 GROUNDWATER SAMPLING RESULTS 2002 THROUGH 2008

FPM performed annual groundwater sampling in March 2002, March 2003, June 2004, March 2005, March 2006, April 2007, and April 2008. In March 2002, the groundwater at the Building 35 site was monitored for VOCs (SW8260 AFCEE QAPP 3.1 List), SVOCs (SW8270 AFCEE QAPP 3.1 List), and total and dissolved metals (SW6010 AFCEE QAPP 3.1 List plus lead and mercury). Total metals analysis was performed on groundwater that contained suspended solids and dissolved metals analyses were performed on the groundwater after filtration removed the suspended solids. The recommendations in the July 2004 monitoring report for Building 35 (FPM, July 2004) were implemented during the March 2005 sampling round, and included only one well (B035MW-04) which was sampled for a short list of VOCs only.

The field activities summary table is provided in Table 4-2 in Appendix A. The daily CQCRs are attached in Appendix B. The validated lab data are attached in Appendix C and the raw lab data are attached in Appendix D. The analytical results for compounds detected in the groundwater (GW) at the Building 35 GW operable unit are shown in Table 4-3 in Appendix A. Please note that no SVOCs were reported above the detection limits.

In order to increase the readability of the report, all discussion of past sampling rounds has been eliminated. Only the sampling relevant to this report (April 2008) is discussed in detail. Detailed descriptions of past sampling rounds can be found in the Spring 2007 Monitoring Report (FPM, August 2007). The discussion of site activities has been preserved to inform the reader of pertinent information.

April 2008:

Monitoring well B035MW-4 was the only well sampled in the April 2008 sampling round. Analyses were performed for chlorinated ethenes only. The results were similar to those reported in previous sampling rounds: one exceedance for cis-1,2-DCE at 12.0 μ g/L and detections of PCE, TCE, trans-1,2-DCE, and VC which were all below their respective NYSDEC Class GA Groundwater Standards (Table 4-3 in Appendix A).

• VOC exceedance: 12.0 µg/L for cis-1,2-DCE in monitoring well B035MW-4.

4.6 CONCLUSIONS AND MONITORING RECOMMENDATIONS

The March 2008 sampling round at the Building 35 AOC confirms the results of past sampling rounds: cis-1,2-DCE levels continue to exceed the NYSDEC Class GA Groundwater Standard of 5 μ g/L at downgradient sampling location B035MW-4. It should be noted that all concentrations of detected COCs were lower than those reported in 2007.

Based on the success of the Newman Zone[®] injection at the Building 101 AOC and the similarity of the Building 101 AOC and Building 35 AOC COCs, FPM recommends a similar Newman Zone[®] injection at the Building 35 AOC. Newman Zone[®] is a proprietary emulsion of soybean oil in water with surfactants. The injection will be performed in monitoring well B035MW-4.

Following injection, performance monitoring will be implemented to monitor the effect of the emulsion injection. Frequent sampling will be performed at monitoring well B035MW-4 after the injection. This sampling will continue through the annual LTM sampling event in March 2009. VOCs including PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and VC, anions (chloride, sulfate, and nitrate), TOC, and alkalinity will be analyzed. The results will be evaluated to assess site conditions.

Table 4-4 in Appendix A shows the historical and proposed groundwater sampling and analysis plan.

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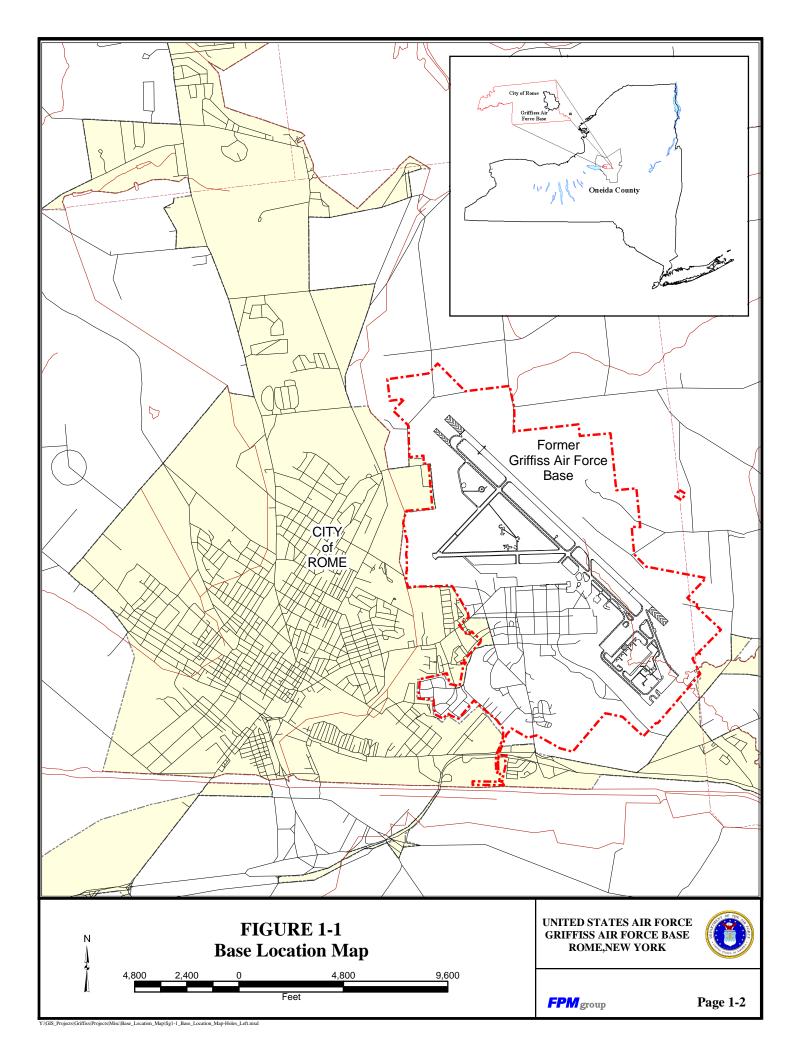
5 REFERENCES

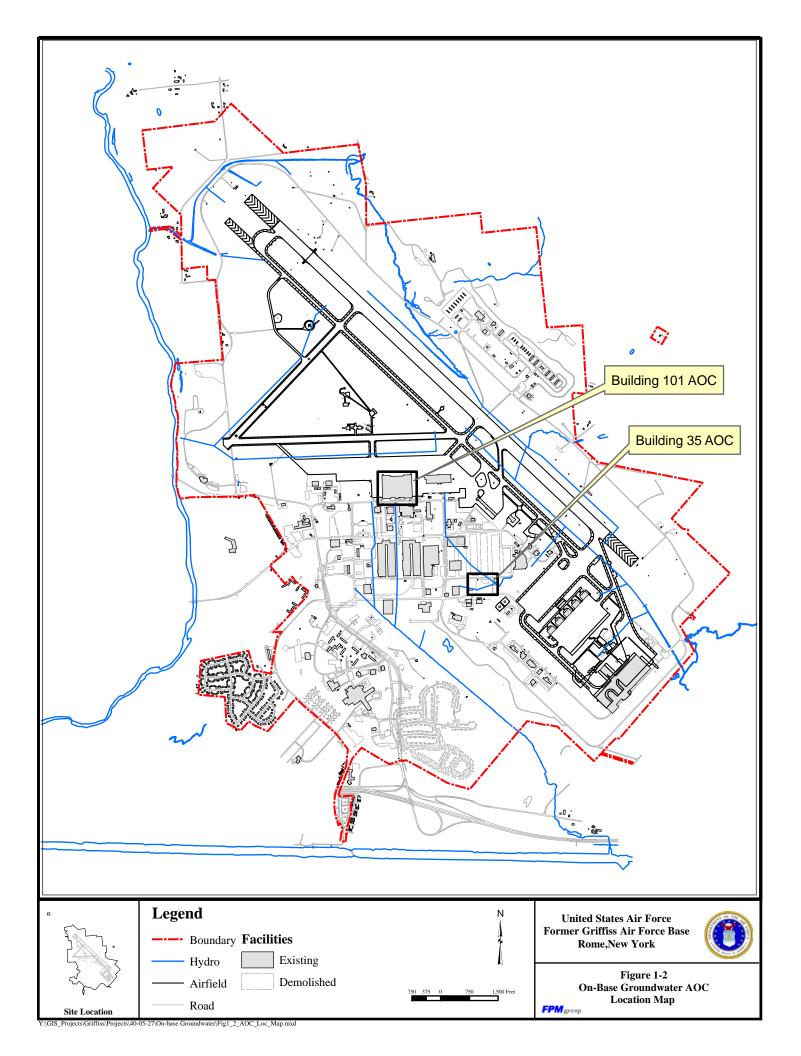
- Air Force Center for Environmental Excellence, Quality Assurance Project Plan, Version 3.1, August 2001.
- Air Force Center for Environmental Excellence, Principles and Practices of Enhanced Anaerobic Bioremediation of Chlorinated Solvents, Final, August 2004.
- Ecology and Environment, Inc., Final Report for Supplemental Investigation of Areas of Concern, Former Griffiss Air Force Base, July 1998 (G-103A).
- FPM Group Ltd., Draft Confirmation Sampling Report, Building 101 Battery Acid Drainage Pit Area of Concern, former Griffiss Air Force Base, Rome, New York, Revision 0.0, August 2002 (G-267).
- FPM Group Ltd., Draft Monitoring Report, On-Base Groundwater AOCs, Revision 1.0, November 2004 (G-353).
- FPM Group, Ltd., Draft Report, AOC Long-Term Monitoring Baseline Study, Griffiss Air Force Base, Revision 1.0, July 2000 (G-208).
- FPM Group Ltd., Field Sampling Plan, Long-Term Monitoring Program, Revision 3.0, March 2005 (G-435).
- FPM Group, Ltd., Monitoring Report, On-Base Groundwater AOCs Monitoring Program, Former Griffiss Air Force Base, Rome, New York, Revision 0.0, August 2005 (G-446).
- FPM Group, Ltd., Monitoring Report, On-Base Groundwater AOCs Monitoring Program, Former Griffiss Air Force Base, Rome, New York, Revision 0.0, August 2006 (G-494).
- FPM Group Ltd., Monitoring Report (Spring 2007), On-Base Groundwater AOCs, Revision 0.0, August 2007 (G-353).
- LAW Engineering and Environmental Services, Inc., Draft Final Primary Report, Remedial Investigation at Griffiss Air Force Base, December 1996 (G-018).
- NOAA National Oceanic and Atmospheric Administration. National Atmospheric Deposition Program/National Trends Network, 2007 Annual & Seasonal Data Summary for site NY52, NY29, NY20. Printed 11/13/2008
- OHM Remediation Services Corp., Closure of Building 101 Battery Acid Drainage Pit: Revised Results and Recommendations Report, July 1998 (G-105).

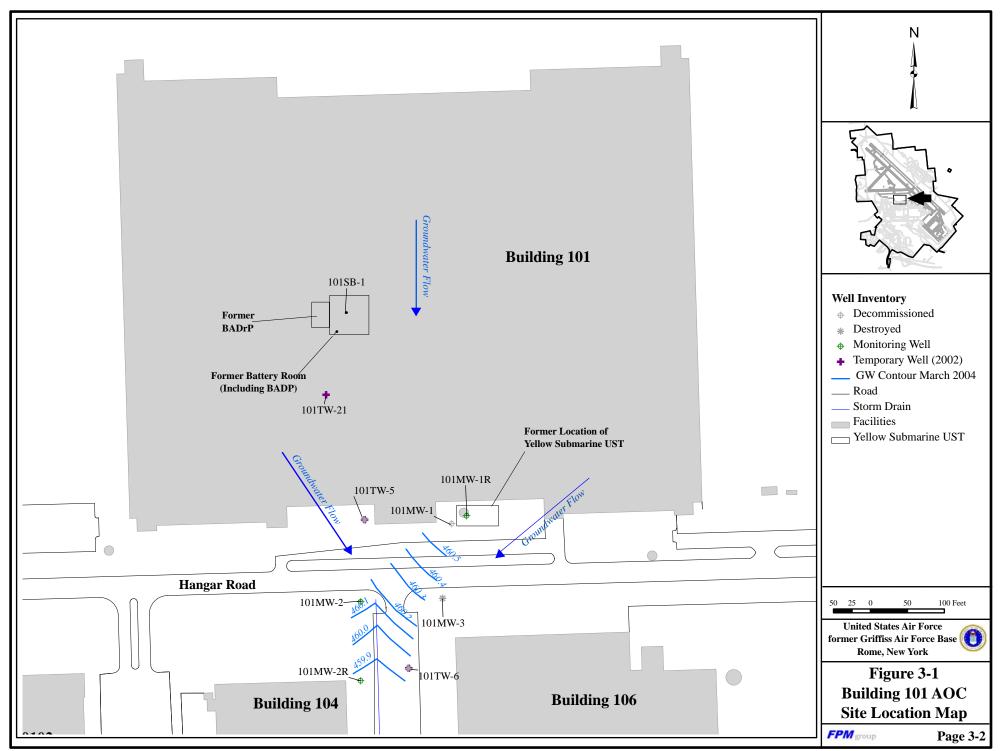
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Appendix A Groundwater Monitoring Sampling Results: Figures and Tables

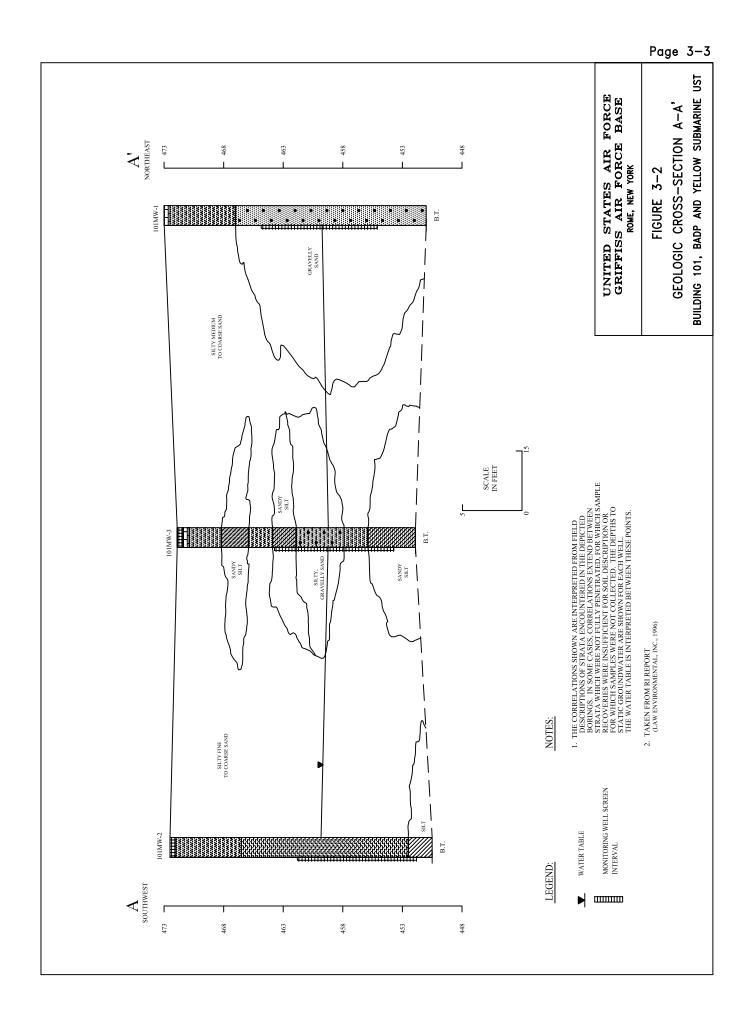
Figures

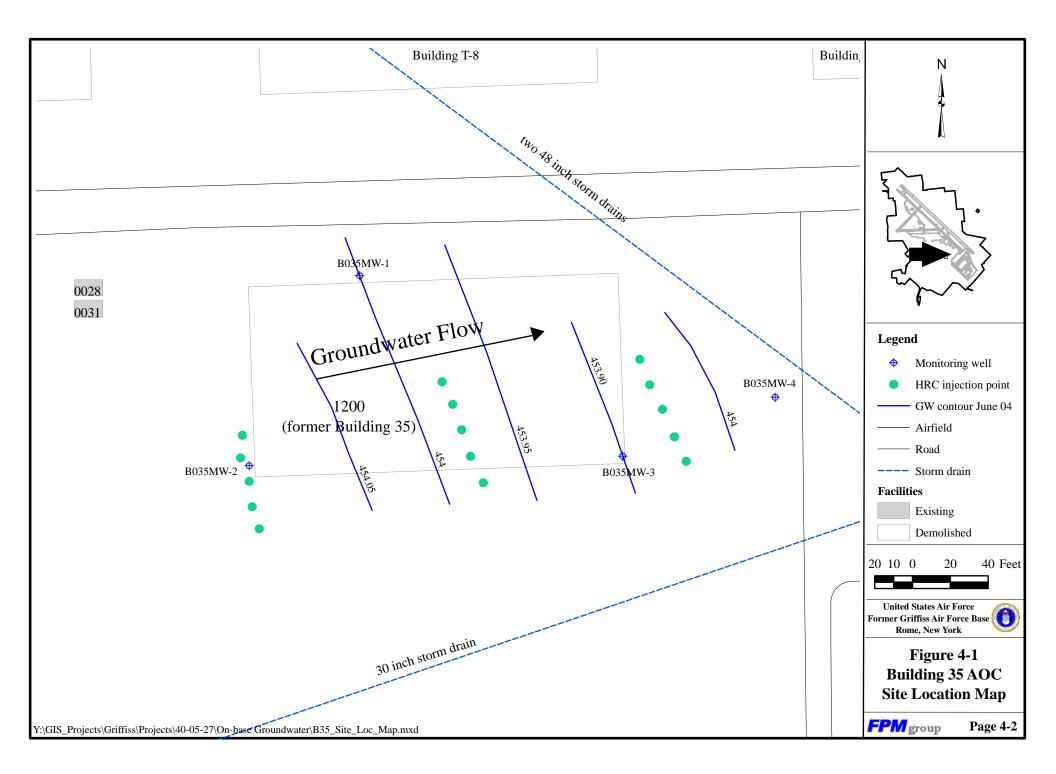






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Tables

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Sampling Locations	Screen Interval Depth (ft MSL)	Sampling Rationale	Target Analytes/ EPA Method Numbers	# of Samples ¹	Sampling Frequency	Evaluation Criteria
101MW-1R ² 101MW-2 101MW-2R ² 101MW-3 ³	463.14' - 453.14' 464.75' - 454.75' 461.87' - 451.87' 463.20' - 453.20'	Downgradient from source Downgradient from plume Downgradient from plume Downgradient from plume	<u>VOCs</u> – (Specified COC Short List) ⁴ / SW8260 <u>COCs</u> - PCE, TCE, cis-1,2-DCE, trans- 1,2-DCE, chloroform.	1	Quarterly	If downgradient wells do not exhibit exceedances of NYS Groundwater Standards or Base background levels for two successive monitoring events, evaluate monitoring frequency and number of wells.

 Table 3-1

 Building 101 AOC Groundwater Monitoring Sample Analysis Summary

Notes:

¹ Please refer to the FSP for details concerning the number of QA/QC samples and their locations. At least one MS/MSD and two field duplicates were collected per SDG; one equipment blank per day and one ambient blank per day; one trip blank per cooler containing VOCs.

² Sampling of monitoring wells 101MW-1R and 101MW-2R was discontinued in the July 2004 sampling round as recommended in the Draft Monitoring Report (FPM, July 2004).

³ Monitoring well 101MW-3 was decommissioned and removed in November 2002 due to construction work at the site.

⁴ During March 2002, samples were analyzed for the complete AFCEE QAPP 3.1 List. In addition, samples were submitted for SVOCs (SW8270, AFCEE QAPP 3.1 List) and Metals (SW6010).

Activity	Building 101 AOC Field Activity Summary Batianala	Analytical
Activity	Rationale	Analytical Parameters
Confirmation of groundwater flow direction.	The groundwater flow direction and elevation was confirmed using existing monitoring wells.	<u>VOCs</u> – (Specified COC Short List) / SW8260
Sampling of four on-site monitoring wells.	Annual sampling was started in September 2001 for VOCs. Sampling was discontinued at monitoring well 101MW-3 due to well destruction during parking lot repaving. Sampling was discontinued in April 2004 at monitoring wells 101MW-1R and -2R due to the lack of detections/exceedances related to the site.	<u>COCs</u> - PCE, TCE, cis-1,2-DCE, trans- 1,2-DCE, VC, and chloroform.
HRC [®] injection at the Building 101 AOC.	Hydrogen Release Compound (HRC [®]) was injected in December 2005 at the Building 101 AOC in a 50-ft wall with 5 injection points. HRC [®] was injected from 20 to 10 ft bgs at a rate of 8 pounds of product per foot.	
2 nd HRC [®] injection at the Building 101 AOC.	HRC [®] was injected in August 2006 at the Building 101 AOC in a 50-ft wall with 5 injection points. HRC [®] was injected from 20 to 10 ft bgs at a rate of 8 pounds of product per foot.	
Newman Zone [®] injection at the Building 101 AOC.	1,000 pounds of Newman Zone [®] (a proprietary vegetable oil emulsion with lactate) was injected on 19 November 2007 in monitoring well 101MW-2 at the Building 101 AOC.	

Table 3-2Building 101 AOC Field Activity Summary

Sample Location								101MW	′-1R				
Sample ID	NYSDEC GW	Results Baseline	101M1R14 EA	101M113 BA	101M01R18 CA	101M01R12 DA	101M01R14 EA	101M0112 DA	101M01R13 EA	101M0113 FA	101M0113 GA	101M01R12 HA	101M01R12 IA
Date of Collection	Standards	Study	9/27/01	12/21/01	3/13/02	6/14/02	9/10/02	12/20/02	3/6/03	6/24/03	9/16/03	11/26/03	4/5/04
Water Depth (ft BTOIC)	(µg/L)	(FPM, 2000)	13.58	13.27	12.24	12.40	13.75	12.47	12.79	12.65	13.18	12.35	11.93
Chlorinated VOCs (µg/L)													
PCE	5*	0.21 F-0.54 F	0.54	0.96	0.33 F	0.50	0.44 F	0.40 F	0.32 F	U	0.8	U	0.65
TCE	5*	0.42 F-0.7 F	0.64	0.79	0.31 F	0.34 F	0.56	0.31 F	0.31 F	U	0.64	3.4	0.32 F
chloroform	7	0.24 F - 11.4	1.7 B	1.1 B	1.3	2.0	1.8	1.2	0.96	1.2	1.2	U	1.9
SVOCs (µg/L)													
All SVOCs			N/A	N/A	U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Metals (µg/L)													
aluminum		**	N/A	N/A	116 F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
barium	1,000	**	N/A	N/A	26.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
calcium		**	N/A	N/A	60,800	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
chromium	50	**	N/A	N/A	65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
iron	300	**	N/A	N/A	415	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
magnesium	35,000	**	N/A	N/A	6,460	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
manganese	300	**	N/A	N/A	31.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
molybdenum		**	N/A	N/A	2.7 F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
nickel	100	**	N/A	N/A	12.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
potassium		**	N/A	N/A	3,010	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
sodium	20,000	**	N/A	N/A	18,800	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3-3 **Building 101 AOC Detected Groundwater Results**

 Source
 20,000

 Notes:
 B - The analyte was detected in a blank.

 F - The analyte was detected above the MDL, but below the RL.

 N/A - The analyte was not analyzed during sampling.

 U - The analyte was undetected.

 * - The principal organic contaminant standard for groundwater applies to this substance.

 ** Analysis was not included in the Baseline Study.

 -- No NYS Groundwater Standard is available for this compound.

 Indicates an exceedance of the NYSDEC GW Standards.

Sample Location						20110111	8_0_120	0 2 0000	0100	iuwater r		1W-2								
Sample ID	- NYSDEC GW	Results Baseline	101M021 7EA	101M021 6BA	101M022 2CA	101M021 6DA	101M021 7EA	101M021 5DA	101M021 6EA	101M021 6FA	101M021 6GA	101M021 6HA	101M021 5IA	101M021 5JA	101M021 5KA	101M021 5LA	101M021 6MA	101M021 6NA	101M021 7OA	101M021 6PA
Date of Collection	Standards (µg/L)	Study (FPM, 2000)	9/27/01	12/21/01	3/13/02	6/14/02	9/10/02	12/20/02	3/6/03	6/24/03	9/16/03	11/26/03	4/5/04	6/16/04	9/10/04	12/29/04	3/29/05	6/23/05	9/9/05	12/30/05
Water Depth (ft BTOIC)	(FB/	(= = =:=; == = =;	16.52	16.34	15.81	15.76	16.77	15.75	15.95	15.85	16.21	15.64	15.33	15.83	15.84	15.35	16.02	16.37	16.74	15.61
Chlorinated VOCs (µg/L)																				
TCE	5*	0.38F-0.43F	1.6	1.3	1.1	0.73	0.39 F	1.0	1.1	0.58	1.1 ♦	0.93	0.82	0.95	U	0.91	0.85	0.88	0.79	1.2
cis-1,2-DCE	5*	0.12U-0.23	20	26 ♦	14	19	U	14	16	12	15	U	8.3	11	U	9.9	7.5	8.5	12	8.1
VC	2	U	U	0.11M	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	7	0.24F - 11.4	U	0.15 M	U	U	U	U	U	U	U	U	1.1	0.56	2 B	0.97	1.8	0.96	0.61	0.73
1,2-DCB	3		N/A	N/A	0.28 F	N/A														
toluene	5*		N/A	N/A	0.59	N/A														
SVOCs (µg/L)				·						·										
All SVOCs			N/A	N/A	U	N/A														
Metals (µg/L)																				
aluminum		**	N/A	N/A	556	N/A														
barium	1,000	**	N/A	N/A	119	N/A														
calcium		**	N/A	N/A	72,900	N/A														
iron	300	**	N/A	N/A	932	N/A														
magnesium	35,000	**	N/A	N/A	13,900	N/A														
manganese	300	**	N/A	N/A	523	N/A														
potassium		**	N/A	N/A	1,330	N/A														
sodium	20,000	**	N/A	N/A	58,500	N/A														
vanadium		**	N/A	N/A	1.8 F	N/A														
zinc	2,000	**	N/A	N/A	5.7 F	N/A														

Table 3-3 (continued) **Building 101 AOC Detected Groundwater Results**

Notes:

DCB - dichlorobenzene, DCE - dichloroethylene, TCE - trichloroethylene, VC - vinyl chloride. F - Analyte was detected above the MDL, but below the RL. M - A matrix effect present.

M - A matrix effect present.
N/A - Analyte was not analyzed during sampling.
U - Analyte analyzed for, but not detected. The associated numerical value is at or below the method detection limit.
* - The principal organic contaminant standard for groundwater applies to this substance.
• - Concentration from the duplicate sample is reported since it is greater than the parent sample concentration.
** Analysis was not included in the Baseline Study.
No NYS Groundwater Standard is available for this compound.
Indicates an exceedance of the NYSDEC GW Standards.

Table 3-3 (continued)
Building 101 AOC Detected Groundwater Results

Sample Location									101MW-	2				
Sample ID	NYSDEC GW Standards	Results Baseline Study	101M0 216PA	101M0 216RA	101M02 16SA	101M0 216TA	101M02 17UA		101M021 6UB	101M02 15VA	101M0 215VB	101M02 16VG	101M021 6WA	101M021 7XA
Date of Collection	(µg/L)	(FPM, 2000)	5/22/06	9/21/06	12/20/06	3/27/07	10/10/07		11/21/07	12/20/07	1/23/08	3/3/08	4/8/08	9/18/08
Water Depth (ft BTOIC)			16.22	16.22	15.77	15.52	17.13	07.	16.19	15.91	15.29	15.56	15.82	16.55
Chlorinated VOCs (µg/L)								2007.						
TCE	5*	0.38F-0.43F	1.7	0.73	0.9 F	0.39 F	0.210 F	November	U	1.88	1.12	0.480 R	0.260 F	U
cis-1,2-DCE	5*	0.12U-0.23	11	15.5	14.1	9.53	9.18	em	U	2.61	3.55	5.48	3.72	4.93
VC	2	U	U	0.33	0.21 F	U	0.110 F	Vov	U	U	U	0.160 F	0.500	U
chloroform	7	0.24F - 11.4	0.58	U	2	U	U	19 N	40.8	0.640	0.210 F	0.280 F	0.470 F	U
Inorganics (mg/L)								on 1						
TOC			-	-	-	-	64	on (5200	-	160	160	89	51
Chloride			-	-	-	-	I	injection	6.1 F	I	66	70	200	78
Sulfate			-	-	-	-	3.2	nje	20 F	-	0.26	U	2.5 F	U
Nitrate			-	-	-	-	0.083 F			-	U	U	0.16 F	U
Alkalinity			-	-	-	-	410	Zone	260	-	370	360	290	440
Field Measurements								lan						
рН (-)	-	-	6.03	6.23	6.36	6.58	8.06	Newman	5.93	6.87	6.72	6.67	6.60	5.90
Conductivity (mS/cm)	-	-	91	15.1	55.1	95.1	120	Ne	58	99.4	82.5	84.7	0.13	0.125
Temperature ©	-	-	14.0	17.8	16.7	13.7	20.0		8.9	16.44	15.12	14.07	12.2	19.49
Turbidity (NTU)	-	-	804	540	112	247	180		>999	759	539	492	136.0	193.0
DO (mg/L)	-	-	4.76	5.09	5.45	4.18	3.67		8.33	0.00	0.00	1.15	4.07	4.72
ORP (mV)	-	-	187	54	-72	-80	-114		314	-56	-52	-51	-27	-105

Notes:

DCB - dichlorobenzene, DCE - dichloroethylene, TCE - trichloroethylene, VC - vinyl chloride.

F - Analyte was detected above the MDL, but below the RL.

U - Analyte analyzed for, but not detected. The associated numerical value is at or below the method detection limit. * - The principal organic contaminant standard for groundwater applies to this substance.

** Analysis was not included in the Baseline Study. <u>No NYS</u> Groundwater Standard is available for this compound.

Indicates an exceedance of the NYSDEC GW Standards.

Sample Location								101MW						
Sample ID	NYSDEC GW	Results Baseline Study	101M2R1 7EA	101M02R 16BA	101M02R2 2CA	101M02R 16DA	101M02R 17EA	101M02R1 6DA	101M02R 16EA	101M02R 16FA	101M02R1 7GA	101M02R1 6HA	101M02R 16IA	of the NYSDEC
Date of Collection	Standards	(FPM,	9/27/01	12/21/01	3/13/02	6/14/02	9/10/02	12/20/02	3/6/03	6/24/03	9/16/03	11/26/03	4/5/04	ΥS
Water Depth	(µg/L)	2000)	16.87	16.34	16.25	16.23	17.10	16.17	16.34	16.22	16.56	16.05	15.81	le N
Chlorinated VOCs	Chlorinated VOCs (µg/L)													oft
PCE	5	0.21F-0.54F	0.33 F	U	U	U	U	U	U	U	U	U	U	ces
TCE	5	0.38F-0.60F	0.31 F	0.51	0.35 F	0.32 F	0.37 F	0.36 F	0.35 F	0.25 F	0.38 F	1.2	0.28 F	of exceedances
chloroform	7	0.24 F-11.4	1.3	U	U	U	U	U	U	U	U	U	U	cee
toluene	5		N/A	N/A	0.89	N/A	N/A	U	U	U	U	U	U	ofex
SVOCs (µg/L)														ĸ,
All SVOCs			N/A	N/A	U	N/A	ue to lack							
Metals (µg/L)														lue t
aluminum		N/A	N/A	N/A	1010	N/A	04 6							
barium	1,000	N/A	N/A	N/A	26.2	N/A	120							
cadmium	5	N/A	N/A	N/A	0.80 F	N/A	April 2004							
calcium		N/A	N/A	N/A	65,700 M	N/A	er A							
iron	300	N/A	N/A	N/A	1,320 M	N/A	l aft							
magnesium	35,000	N/A	N/A	N/A	8,220	N/A	une							
manganese	300	N/A	N/A	N/A	68.1	N/A	was discontinued after April 2004 due to lack							
molybdenum		N/A	N/A	N/A	3.6 F	N/A	lisco							
nickel	100	N/A	N/A	N/A	5.1 F	N/A	as c							
potassium		N/A	N/A	N/A	1,840	N/A	ng w							
sodium	20,000	N/A	N/A	N/A	14,600	N/A	Sampling							
vanadium		N/A	N/A	N/A	2.0 F	N/A	Sam							
zinc	2,000	N/A	N/A	N/A	8.2 F	N/A								

Table 3-3 (continued) **Building 101 AOC Detected Groundwater Results**

Notes:

F - Analyte was detected above the MDL, but below the RL. M - A matrix effect present.

N/A - Analyte was not analyzed during sampling. U - Analyte analyzed for, but not detected. The associated numerical value is at or below the method detection limit. -- No NYS Groundwater Standard is available for this compound. Indicates an exceedance of the NYSDEC GW Standards.

Sample Location					101	MW-3	
Sample ID	NYSDEC		101M0313	101M0312	101M0317	101M0312	101MW03
Sample ID	GW	Results	EA	BA	CA	DA	13EA
Date of Collection	Standards	Baseline Study	9/27/01	12/21/01	03/13/02	06/14/02	9/10/02
Water Depth (ft BTOIC)	(µg/L)	(FPM, 2000)	12.90	12.76	12.52	12.12	13.12
Chlorinated VOCs (µg/L)							
TCE	5	0.38 F-0.92 F	0.68	0.70	0.59	0.45 F	0.68
chloroform	7	0.24 F-11.4	3.4 B	4.3 B	3.4	2.2	3.2
toluene	5		N/A	N/A	0.31 F	N/A	N/A
bromodichloromethane	50		N/A	N/A	0.21 F	N/A	N/A
SVOCs (µg/L)							
All SVOCs			N/A	N/A	U	N/A	N/A
Metals (µg/L)							
aluminum		**	N/A	N/A	634	N/A	N/A
barium	1,000	**	N/A	N/A	14.8	N/A	N/A
cadmium	5	**	N/A	N/A	0.70 F	N/A	N/A
calcium		**	N/A	N/A	48,800	N/A	N/A
chromium	50	**	N/A	N/A	1.9 F	N/A	N/A
iron	300	**	N/A	N/A	921	N/A	N/A
magnesium	35,000	**	N/A	N/A	6,260	N/A	N/A
manganese	300	**	N/A	N/A	131	N/A	N/A
potassium		**	N/A	N/A	1,190	N/A	N/A
sodium	20,000	**	N/A	N/A	14,400	N/A	N/A

Table 3-3 (Continued) **Building 101 AOC Detected Groundwater Results**

Notes:

B - Result is a positive value; however analyte was detected in associated blank at concentration above the RL.

F - Analyte was detected above the MDL, but below the RL.

N/A - Analyte was not analyzed during sampling.

U - Analyte analyzed for, but not detected. The associated numerical value is at or below the method detection limit.

** Analysis was not included in the Baseline Study.
 -- No NYS Groundwater Standard is available for this compound.
 Indicates an exceedance of the NYSDEC GW Standards.

Evaluation Criteria / Sampling **Target Analytes /** Sampling **Sampling Rationale** Modification Locations **Method Numbers** Frequency Justification No further monitoring at the Building 101 Site with LUCs and groundwater restrictions. **Recommended LTM Network Changes** 101MW-2 Downgradient from plume LTM sampling activities <u>VOCs</u> – (Specified None will be suspended and the COC Short List) / SW8260 site will have LUCs and groundwater restrictions. COCs - PCE, TCE, cis-1,2-DCE, vinyl chloride, and chloroform.

Table 3-4Building 101 AOC Proposed Groundwater Sampling and Analysis Plan

	building 101 AOC Proposed C	1 0	anu Analysis Fi	
	Historical I	TM Network Changes		
		May 2006		
	Analysis/	/ Frequency changes		
101MW-2	Downgradient from plume	<u>VOCs</u> – (Specified COC Short List) / SW8260 <u>COCs</u> - PCE, TCE, cis-1,2-DCE, vinyl chloride, and chloroform.	Annually	The sampling frequency is changed from quarterly to annual because no significant changes to the detections/ exceedances in the last 6 sampling rounds.
	No	ovember 2004		
	Removed	Sampling Locations		
101MW-1R 101MW-2R	Downgradient from source Downgradient from plume	Same as above.	Discontinued from quarterly	Discontinued sampling after April 2004 based on no reported exceedances.
101MW-3	Downgradient from plume	Same as above.	basis.	Decommissioned and removed from groundwater monitoring network in November 2002 due to construction work at the site.

Table 3-4 (Continued)Building 101 AOC Proposed Groundwater Sampling and Analysis Plan

Sampling Locations	Screen Interval Depth (ft MSL)	Sampling Rationale	Target Analytes/EPA Method Numbers	# of Samples ¹	Sampling Frequency	Evaluation Criteria
B035MW-1 B035MW-2 B035MW-3 B035MW-4	449.2 - 459.2' 449.2 - 459.2' 449.0 - 459.0' 449.3 - 459.3'	Upgradient Crossgradient Potential Source Area Downgradient of potential source	VOCs – (AFCEE QAPP 3.1 List) / SW8260. SVOCs – (AFCEE QAPP 3.1 List) / SW8270. Total and Dissolved Metals – (AFCEE QAPP 3.1 List) / SW6010.		Annually	If downgradient wells do not exhibit exceedances of NYS Groundwater Standards for two successive monitoring events, evaluate monitoring frequency and number of wells.

 Table 4-1

 Building 35 Groundwater Monitoring Sample Analysis Summary

Notes:

¹ Please refer to the FSP for details concerning the number of QA/QC samples and their locations. At least one MS/MSD and two field duplicates were collected per SDG; one equipment blank per day and one ambient blank per day; one trip blank per cooler containing VOCs

Activity	Rationale	Analytical Parameters
Confirmation of groundwater flow direction.	The groundwater flow direction and elevation was confirmed using the existing and newly installed monitoring wells.	<u>VOCs</u> – (Specified COC Short List) / SW8260
Sampling of four on-site monitoring wells.	Annual sampling was started in March 2002 for VOCs, SVOCs and total and dissolved metals. SVOC and metals sampling was discontinued after July 2004. Three sampling locations (B035MW-01, -02, and -03) were discontinued also due to the lack of detections/exceedances related to the site.	<u>COCs</u> - PCE, TCE, cis-1,2-DCE, trans- 1,2-DCE, and VC.
HRC [®] injection at the Building 35 AOC.	HRC [®] was injected in December 2005 at the Building 35 AOC in a 50-ft wall with 5 injection points. HRC [®] was injected from 20 to 10 ft bgs at a rate of 8 pounds of product per foot.	
2 nd HRC [®] injection at the Building 35 AOC.	HRC [®] was injected in August 2006 at the Building 35 AOC in two 50-ft walls with 5 injection points. HRC [®] was injected from 20 to 10 ft bgs at a rate of 8 pounds of product per foot.	

Table 4-2Building 35 Site Field Activity Summary

Sample Location	NYSDEC			B03	5MW-1		
Sample ID	GW	B035N	/10115AA	B0351	M0115BA	B035N	A0115CA
Date of Collection	Standards	3/	12/02	3/	/11/03	6	/9/04
Sample Depth (ft BTOIC)	(µg/L)		15		15		15
VOCs (µg/L)							
acetone	5		U		U		U
trichloroethylene (TCE)	5	0	.48 F	0	0.48 F	0	.82 F
cis-1,2-dichloroethylene	5		2.2		2.4		3.5
vinyl chloride	2		U	0).33 F	0	.33 F
SVOCs (µg/L)							
No SVOCs were detected.							
Metals (µg/L)		Total	Dissolved	Total	Dissolved	Total	Dissolved
aluminum		233	U	43.0 F	U	U	U
arsenic	25	U	5.4 F	U	U	U	U
barium	1,000	47.6	35.8	33.7 F	33.3 F	78.0	73.2
calcium		122,000	95,600	90,600	94,400 B	188,000	178,000
chromium	50	U	U	U	1.1 F	U	U
copper	200	U	4.5 F	U	1.3 F	3.6 F	U
iron**	300	451	U	42.3 F	U	65.0 F	U
magnesium		10,400	9,660	8,270	8,830 B	19,400	19,000
manganese**	300	2,200	U	1800 B	1,670	3,370	3,220
nickel	100	U	U	U	U	1.8 F	U
potassium		2,120	1,940	1900	1,940 B	2,630 F	2,880 F
selenium	10	U	29.4	U	U	U	U
sodium	20,000	34,100	31,700	29,000	30,700	112,000	111,000
zinc		U	U	U	4.2 F	7.5 F	U

Table 4-3Building 35 Groundwater Sampling ResultsMarch 2002 through June 2004 Sampling Rounds

Notes:

BTOIC - below top of inner casing.

B - The analyte was also reported in a blank associated with this sample.

F - Analyte was positively identified but the associated numerical value is below the RL.

M - Matrix effect was present.

U - Analyte analyzed for, but not detected. The associated numerical value is at or below the method detection limit.

-- Indicates no NYS GA Groundwater Standard.

** - The NYS Groundwater Standard of 500 µg/L applies to the sum of iron and manganese.

- Indicates an exceedance of the NYS Groundwater Standard.

Sample Location	NYSDEC			- U	5MW-2		
Sample ID	GW	B0351	M0215AA	B035N	A0215BA	B035	M0215CA
Date of Collection	Standards	3/	/12/02	3/	11/03	6	6/9/04
Sample Depth (ft BTOIC)	(µg/L)		15		15		15
VOCs (µg/L)							
acetone	5		U		U		1.4 F
trichloroethylene (TCE)	5	().48 F	0	.33 F		U
cis-1,2-dichloroethylene	5		0.58		0.73		1.2
vinyl chloride	2	U		U			U
SVOCs (µg/L)							
No SVOCs were detected.							
Metals (µg/L)		Total	Dissolved	Total	Dissolved	Total	Dissolved
aluminum		238	U	58.5 F	U	57.4 F	U
arsenic	25	U	4.9 F	U	U	U	U
barium	1,000	38.1	21.5	27.1 F	20.0 F	26.2 F	19.5 F
calcium		83,200	68,300	80,400	83,000 B	75,400	69,600
chromium	50	U	U	U	1.0 F	U	U
copper	200	U	2.8 F	1.9 F	4.2 F	4.2 F	2.8 F
iron**	300	515	U	168 F	U	U	U
magnesium		6,790	6,640	6,790	7,250 B	7,920	7,660
manganese**	300	3,530	615	2,990 B	1,510	2,340	423
nickel	100	U	1.9 F	U	U	1.8 F	U
potassium		1,660	1,570	1,490	1,540 B	1,440	1,290
selenium	10	U	25.4	U	U	U	U
sodium	20,000	89,100	86,800	65,700	71,200	47,200	36,600
zinc		U	U	U	3.1 F	U	U

Table 4-3 (Continued)Building 35 Groundwater Sampling ResultsMarch 2002 through June 2004 Sampling Rounds

Notes:

BTOIC - below top of inner casing.

B - The analyte was also reported in a blank associated with this sample.

F - Analyte was positively identified but the associated numerical value is below the RL.

M - Matrix effect was present.

U - Analyte analyzed for, but not detected. The associated numerical value is at or below the method detection limit. -- Indicates no NYS GA Groundwater Standard.

** - The NYS Groundwater Standard of 500 µg/L applies to the sum of iron and manganese.

- Indicates an exceedance of the NYS Groundwater Standard.

Sample Location	NYSDEC			· · ·	5MW-3		
Sample ID	GW	B035N	M0315AA	B0351	M0315BA	B0351	M0315CA
Date of Collection	Standards	3/	/12/02	3/	/11/03	6	/9/04
Sample Depth (ft BTOIC)	(µg/L)		15		15		15
VOC (µg/L)							
acetone	5		U		U		U
tetrachloroethylene (PCE)	5		U		U		U
trichloroethylene (TCE)	5		U		U		U
cis-1,2-dichloroethylene	5	0	.23 F	0	0.54 ♦	0	.88 F
trans-1,2-dichloroethylene	5	U		U			U
vinyl chloride	2	U		0.24 F♦			U
SVOCs (µg/L)							
No SVOCs were detected.							
Metals (µg/L)		Total	Dissolved	Total	Dissolved	Total	Dissolved
aluminum		1,280	U	259 ♦	U	277	U
arsenic	25	U	U	U	U	U	U
barium	1,000	42.0	15.2	24.7 F	19.8 F♦	32.9 F	29.6 F
calcium		31,300	31,000	37,600	38,600 B♦	52,000	53,200
chromium	50	2.2 F	U	U	U	U	U
copper	200	U	2.6 F	U	2.5 F♦	4.2 F	3.0 F
iron**	300	1,400	U	255 ♦	U	324	U
magnesium		3,290	3,040	4,000	4180 B♦	5,640	5,900
manganese**	300	2,080	1.1 F	339 B	0.60 F♦	227	11.3
molybdenum		U	U	U	1.9 F	U	U
nickel	100	1.6 F	U	U	U	U	U
potassium		871	437 F	703 F	628 F♦	941 F	801 F
selenium	10	U	7.4 F	U	5.3 F	U	U
sodium	20,000	4,950	4,860	6,150	6,310 ♦	11,300	11,500
vanadium		3.4 F	U	U	U	0.90 F	U
zinc		8.5 F	U	8.5 F	1.1 F	U	U

Table 4-3 (Continued) **Building 35 Groundwater Sampling Results** March 2002 through June 2004 Sampling Rounds

Notes:

BTOIC - below top of inner casing.

B - The analyte was also reported in a blank associated with this sample.

F - Analyte was positively identified but the associated numerical value is below the RL.

M - Matrix effect was present.

U - Analyte analyzed for, but not detected. The associated numerical value is at or below the method detection limit.

-- Indicates no NYS GA Groundwater Standard.

♦ - Concentrations are from duplicate sample, which was greater than the original sample.

** - The NYS Groundwater Standard of 500 μ g/L applies to the sum of iron and manganese. — Indicates an exceedance of the NYS Groundwater Standard.

Table 4-3 (Continued) **Building 35 Groundwater Sampling Results** March 2002 through April 2007 Sampling Rounds

Sample Location	NYSDEC						I	B035MW-4			
Sample ID	GW	B035M	[0415AA	B03M	0415BA	B035N	10415CA	B035M0415DA	B035M0415EA	B035M0416FA	B035M0416GA
Date of Collection	Standards	3/1	2/02	3/1	1/03	6/	'9/04	3/29/05	3/24/06	4/18/07	4/8/08
Sample Depth (ft BTOIC)	(µg/L)		15	1	15		15	15	15	16	16
VOC (µg/L)		L				ł		,			
acetone	5		U	-	U	1	.8 F	N/A	N/A	N/A	N/A
tetrachloroethylene (PCE)	5	0	.84	0	.82	0.	.81 F	0.63	0.66	0.42 F	0.320 F
trichloroethylene (TCE)	5	0.	75 ♦	0	.55	0.	.97 F	0.28 F	0.35 F	0.35 F	0.250 F
cis-1,2-dichloroethylene	5		21		18		32	7.8	9.3	13.9	12.0
trans-1,2-dichloroethylene	5	0.3	7 F♦	0.2	22 F	0.	.69 F	U	U	0.39 F	0.310 F
vinyl chloride	2	0	.75	0	.54		1.1	0.45 F	0.55	0.88 F	0.560 F
SVOCs (µg/L)											
No SVOCs were detected.							N/S	N/S	N/S	N/S	N/S
Metals (µg/L)		Total	Dissolved	Total	Dissolved	Total	Dissolved				
aluminum		143 F	U	215	U	U	N/S	N/S	N/S	N/S	N/S
arsenic	25	U	6.9 F♦	U	U	U	N/S	N/S	N/S	N/S	N/S
barium	1,000	211	174	96.0	92.6	394	N/S	N/S	N/S	N/S	N/S
calcium		93,100♦	60,600 M	90,900	91,200 B	81,000	N/S	N/S	N/S	N/S	N/S
chromium	50	U	U	U	U	U	N/S	N/S	N/S	N/S	N/S
copper	200	U	2.3 F	U	1.6 F	5.7 F	N/S	N/S	N/S	N/S	N/S
iron**	300	187	U	242	U	80.0 F	N/S	N/S	N/S	N/S	N/S
magnesium		9,250	9,000	7,540	7,840 B	12,100	N/S	N/S	N/S	N/S	N/S
manganese**	300	625	U	364 B	11.9	1,170	N/S	N/S	N/S	N/S	N/S
molybdenum		U	U	U	U	U	N/S	N/S	N/S	N/S	N/S
nickel	100	U	U	U	U	U	N/S	N/S	N/S	N/S	N/S
potassium		1,130	1,110	1,280	1200 B	1,380	N/S	N/S	N/S	N/S	N/S
selenium	10	U	25.4 ♦	U	U	U	N/S	N/S	N/S	N/S	N/S
sodium	20,000	42,000	40,600	25,000	25,700	22,000	N/S	N/S	N/S	N/S	N/S
vanadium		U	U	U	U	U	N/S	N/S	N/S	N/S	N/S
zinc		U	U	4.5 F	U	U	N/S	N/S	N/S	N/S	N/S

Notes:

BTOIC - below top of inner casing.

B - The analyte was also reported in a blank associated with this sample.F - Analyte was positively identified but the associated numerical value is below the RL.

M - Matrix effect was present.

N/A - Not analyzed.

N/S - Not sampled.

U - Analyte analyzed for, but not detected. The associated numerical value is at or below the method detection limit.

-- Indicates no NYS GA Groundwater Standard.

• - Concentrations are from duplicate sample, which was greater than the original sample. ** - The NYS Groundwater Standard of 500 μ g/L applies to the sum of iron and manganese.

- Indicates an exceedance of the NYS Groundwater Standard.

Sampling Locations	Sampling Rationale	Target Analytes / Method Numbers	Sampling Frequency	Evaluation Criteria / Modification Justification
B035MW-4	Downgradient of potential source	<u>VOCs</u> – (Specified COC Short List) / SW8260 <u>COCs</u> - PCE, TCE, cis-1,2-DCE, trans- 1,2-DCE, and VC.	Annual	Sampling frequency was temporarily increased to monitor the effectiveness of the Newman Zone injection. Additional natural attenuation parameters were also collected. Continue in the monitoring network to verify the cis-1,2- DCE attenuation. Analysis for VOCs (chlorinated ethenes short list only) will occur annually, after which the results will be evaluated to assess future monitoring frequency.
	Recommended	l LTM Network Chang	ges	
		None		

 Table 4-4

 Building 35 Proposed Groundwater Sampling and Analysis Plan

	Historical L	TM Network Changes	•	
		July 2004		
	Analysis	/ Frequency Changes		
B035MW-4	Downgradient of potential source	<u>VOCs</u> – (Specified COC Short List) / SW8260 <u>COCs</u> - PCE, TCE, cis-1,2-DCE, trans- 1,2-DCE, and VC.	Annual	Continue in the monitoring network to verify the attenuation of cis-1,2-DCE. Analysis for VOCs (chlorinated ethenes shortlist only) will occur for four rounds, after which the results will be evaluated to assess future monitoring frequency. Discontinue sampling for SVOCs since no detections have been reported in any sampling round. Discontinue metals sampling at the Building 35 Site since none of the reported exceedances can be attributed specifically to the site.
	Removed	l Sampling Location		
B035MW-1	Upgradient		Discontinued	Discontinue sampling based
B035MW-2	Crossgradient		from annual	on no reported exceedances.
B035MW-3	Potential Source Area		basis.	

Table 4-4 (Continued)Building 35 Proposed Groundwater Sampling and Analysis Plan

Appendix B Daily Chemical Quality Control Reports This page is intentionally left blank.

Daily Chemical Quality Control Report

Project/Delivery Order Number: F41624-03-D-8601-0027 Date: 1/23/08

Project Name/Site Number: Griffiss Petroleum Spills Sites sampling (Building 101).

Weather conditions: Temperature: 26 Barometric reading: 29.95 Wind direction and speed: West-northwest 2.8 mph Significant wind changes: None.

General description of tasks completed: Bailer sampling at Site Building 101 (101MW-2).

Explain any departures from the SAP or deviations from approved procedures during the day's field activities: None.

Explain any technical problems encountered in the field or field equipment/field analytical instrument malfunction: None.

Corrective actions taken or instructions obtained from AFCEE personnel: No corrective actions necessary.

Sampling shipment completed: √ Yes □ No LSL Courier.

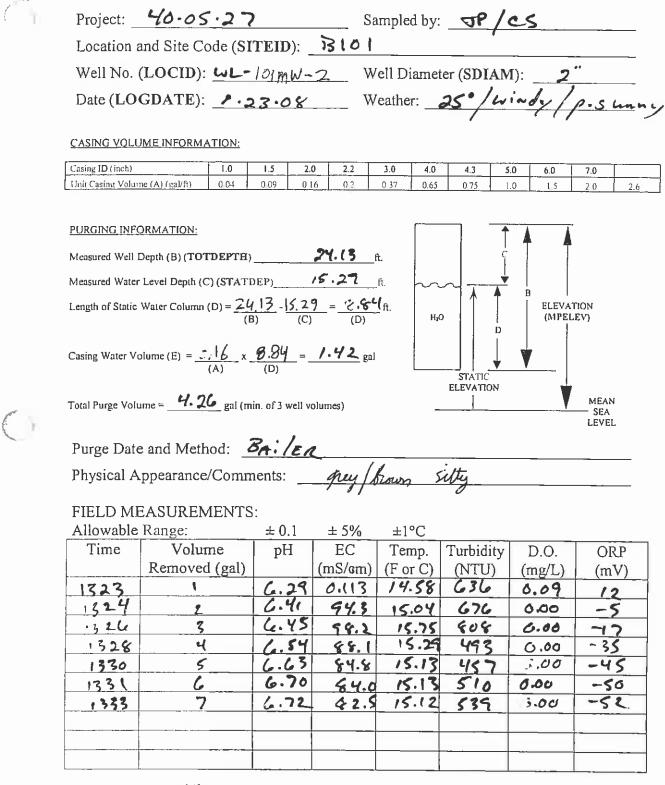
DCQCR Prepared by: Niels van Hoesel, FOM

Date: 24 January 2008

tou Horal Date: 1/27/08 COCC Signature:

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
	✓ Field sampling forms
	✓ Equipment Calibration Log
V	✓ Copies of COCs
	✓ SDG Table (See accompanying COCs)
	✓ Daily Health and Safety Meeting Form



Sample Time: 1345 Sample ID: BIOMO2 ISVB

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Equipment Calibration Log

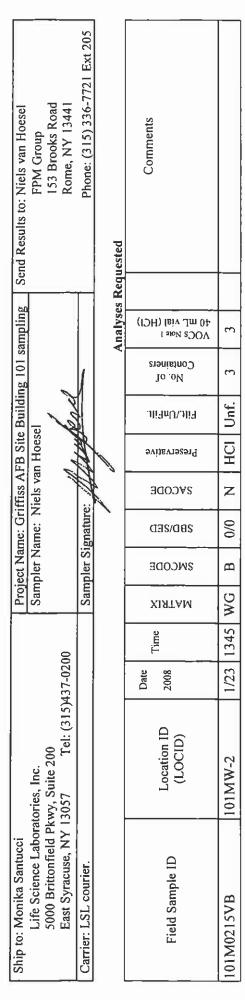
Instrument Name: Horiba 4-22 Model Number: FPM 42

Date	First Standard Concentration	First Standard Reading	Second Standard Concentration	Second Standard Reading	Comments
6-19	4.00	3.91	4.00	4.00	
6/20	4.00	4.00	4.00		
6/21	4.00	3.99			
622	4.00	4,00			
6/25	4,00	4,00			
12-6	4,00	3,98			
12-10	4.00	3.78	4.	3.99	
1 23	4.00	3,95	4.00	4,00	
– –					
	_				

2008

CHAIN OF CUSTODY RECORD AFCEE

COC#: _1_ SDG#: _174_ Cooler ID: _A_



Sample Condition Upon Receipt at Laboratory:	Cooler Temperature:
Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0	
Note 1: VOC: method SW 8260: Target COCs: PCE, TCE, DCE, Vinyl Chloride and Chloroform.	

			A 1 N				
#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	month	Date: 1/23/08		#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM (Growth Lyd	Time: 13	Time: 13:55	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 1/5/08	#2 Received by: (Sig)	au Poulo	Date: ()	24/08	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 10200	Company Name:	131	Time: /	1:00	Company Name	Time:

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WQ = Water Quality Control Matrix und water SO = Soil

NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split spoon G = Grab (only for EB). $\frac{SMCODE}{B = Bailer}$

AB = Ambient Blank N = Normal Sample TB = Trip Blank **SACODE**

EB = Equipment Blank FD = Field Duplicate

MS = Matrix Spike SD = Matrix Spike Duplicate

Daily Health and Safety Meeting Form
Date: 1223/08 Time : 13'00
Location: FPM office (garage)
Weather Conditions: 205 SMW Windy
Meeting Type: Daily Health and Safety
Personnel Present:
Caleb Smith Jake Pratt
•
Visitors Present:
Visitor Training:
PPE Required: Modified D
Possible risks, injuries, concerns:
Slip trip fall, hypothermia, post bite
Anticipated Releases to Environment (if so, describe and detail response action/control measures
implemented):
None
Property Damage:
Description (include sequence of events describing step by step how incident happened):
Analysis for, and Implementation of Corrective/Preventative Procedure to Prevent Future
Occurrences (to be formulated by SSHO + FOM, approved by PM, and SSHO implemented):
De la la Mi
Report made by (Name): Not Van House

SSHP Organization Title: Site Safety and Health Officer_

Daily Chemical Quality Control Report

Project/Delivery Order Number: F41624-03-D-8601-0027 Date: 12/20/07

Project Name/Site Number: Griffiss Petroleum Spills Sites sampling (Building 781 and 101).

Weather conditions: Temperature: 33 Barometric reading: 30.15 Wind direction and speed: North-northwest 1.4 mph Significant wind changes: None.

General description of tasks completed: Bailer sampling at Site Building 781 (781MW-4, -5, -6, -8, -13, -16, -17, -18, -19, -20, and -21) and Site Building 101 (101MW-2).

Explain any departures from the SAP or deviations from approved procedures during the day's field activities: Monitoring well 781MW-13 could not be sampled due to the presence of free product in the well.

Explain any technical problems encountered in the field or field equipment/field analytical instrument malfunction: None.

Corrective actions taken or instructions obtained from AFCEE personnel: No corrective actions necessary.

Sampling shipment completed: $\sqrt{\text{Yes}}$ \square No LSL Courier.

DCQCR Prepared by: Niels van Hoesel, FOM

Date: 21 December 2007

West. Horsel Date: 12/27/07 COCC Signature:

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
	✓ Field sampling forms
	✓ Equipment Calibration Log
V	✓ Copies of COCs
	✓ SDG Table (See accompanying COCs)
<u> </u>	✓ Daily Health and Safety Meeting Form

Page	of	•

	40-05-	<u> </u>	Sa	ampled	by: <u>NV</u>	N _1	ω		
Location a	and Site Code (SI	TEID):	_ B 3	81	_	_			
Well No.	(LOCID): 19	1mw-1	4W	ell Diar	neter (SD)	IAM):	21	1	_
Date (LO	GDATE): 12/2	20/07	W	eather:	305	de	udur		
		1			<u> </u>		1		_
CASING VOLU	JME INFORMATION:		-						
Casing ID (inch)	10		22		40 4.3	5.0	6.0	70	
Unit Casing Volur	ne (A) (gal/ft) 0.04	0 09 0	16 02	0 37	0 65 0 75	10	_15	20	26
PURGING INFO	ORMATION:			Г					
Measured Well	Depth (B) (TOTDEPTH)	67	38	0					
	Level Depth (C) (STATI	_		Ĥ L					
	Water Column (D) = 62 (E						ELEVAT	10N	
	(E	I) (C) (D)		H2O	D	(MPEL		
Casing Water Vo	plume (E) = 0 (b) x	10Ø5 _	116 ga				,		
	(24)	(1.7)		L	STATI				
Minimum Purge	Volume = 4,82 ga	al (3 well volu	umes)		ELEVAT			MEAN	
								SEA LEVEL	
Purge Date	e and Method: _	12/20	107 (here	Volor .				_
Dhusical A	ppearance/Comn	nents:	den -	silling	ofre	·			_
Filysical A	11			V					
	EASUREMENTS	: ± 0.1	± 5%	±1°C	7				
FIELD MI	EASUREMENTS Range: Volume		EC	Temp	o. Turbio	~	D.O.	ORF	-
FIELD MI Allowable Time	EASUREMENTS Range:	± 0.1	EC (mS/@m)	Temp (F or (o. Turbio C) (NTU	נ <mark>) (</mark> נ	mg/L)	(mV	
FIELD MI Allowable Time	EASUREMENTS Range: Volume	± 0.1 pH 78 5	EC (mS/qm) 75.4	Temp (F or 6 4.80	D. Turbia C) (NTU 384	J) (J	mg/L)	(mV)
FIELD MI Allowable Time	EASUREMENTS Range: Volume Removed (gal)	± 0.1	EC (mS/qm) 75.4	Temp (F or (4.80 6.53	0. Turbio C) (NTU 385 799	J) (J	mg/L)	(mV -64 -75)
FIELD MI Allowable Time 15:38 15:41 15:45 15:49	EASUREMENTS Range: Volume Removed (gal)	± 0.1 pH 785 7.90 7.90	EC (mS/(m)) 75,4 74.5 76.3 74,9	Temp (F or 6 4.80	D. Turbia C) (NTU 384	() (L 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	mg/L) 172 144 146	(mV -64 -75 -80)
FIELD MI Allowable Time 15:38 15:41 15:45	EASUREMENTS Range: Volume Removed (gal)	± 0.1 pH 785 4.85 7.70	EC (mS/qm) 75.4 74.5 76.3	Temp (F or 0 4.80 6.53 6.18	5. Turbio C) (NTU 385 799 799 799	ن) (ل 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	mg/L)	(mV -64 -75)
FIELD MI Allowable Time 15:38 15:41 15:45 15:49	EASUREMENTS Range: Volume Removed (gal)	± 0.1 pH 785 7.90 7.90 7.90	EC (mS/(m)) 75,4 74,5 76.3 74,9 75,7	Temp (F or (4.80 6.53 8.18 9.15 9.15	5. Turbio C) (NTU 385 799 799 799	ن) (ل 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	mg/L) 1.72 1.44 1.46 1.60	(mV -64 -75 -80 -80)
FIELD MI Allowable Time 15:38 15:41 15:45 15:49	EASUREMENTS Range: Volume Removed (gal)	± 0.1 pH 785 7.90 7.90 7.90	EC (mS/(m)) 75,4 74.5 76.3 74,9	Temp (F or (4.80 6.53 8.18 9.15 9.15	5. Turbio C) (NTU 385 799 799 799	ن) (ل 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	mg/L) 1.72 1.44 1.46 1.60	(mV -64 -75 -80 -80)
FIELD MI Allowable Time 15:38 15:41 15:45 15:49	EASUREMENTS Range: Volume Removed (gal)	± 0.1 pH 785 7.90 7.90 7.90	EC (mS/(m)) 75,4 74,5 76.3 74,9 75,7	Temp (F or (4.80 6.53 8.18 9.15 9.15	5. Turbio C) (NTU 385 799 799 799	ن) (ل 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	mg/L) 1.72 1.44 1.46 1.60	(mV -64 -75 -80 -80)
FIELD MI Allowable Time 15:38 15:41 15:45 15:49	EASUREMENTS Range: Volume Removed (gal) 1 2 3 4 5 5 5 5	± 0.1 pH 785 7.90 7.90 7.90 7.90	EC (mS/(m)) 75,4 74,5 76.3 74,9 75,7	Temp (F or (4.80 6.53 8.18 9.15 9.15	5. Turbio C) (NTU 385 799 799 799	ن) (ل 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	mg/L) 1.72 1.44 1.46 1.60	(mV -64 -75 -80 -80)

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project: _	40-05-2	12	Sa	ampled by:	_NVH	$\gamma \omega$	
Location a	and Site Code (SI	TEID):	B 78			-0	
Well No.	(LOCID): 18 [mH-5	W	ell Diamet	er (SDIAN	I): 2 ^N	
	GDATE):				Bos de		
,	·						
CASING VOLU	JME INFORMATION:	_					
Casing ID (inch)	1.0	15 2.	╺┼┽╾╼╼	30 4.0		0 60	70
Unit Casing Volur	ne (A) (gal/ft) 0.04	0.09 0.1	02	0.37 0.65	0 75 1	0 15	20 26
PURGING INF							
	Depth (B) (TOTDEPTH)	La	14-		Ţ	▲	
	· Level Depth (C) (STATE						
						B ELEVA:	Nov
Length of Static	Water Column (D) = 68	3) (C)	(D)	_ пн	o	ELEVA (MPEL	
Casing Water V	$\Delta = \frac{1}{2} \left(\frac{1}{2} - \frac{1}{2} \right)$	¥ 97 -	143				
Castilg water vi	olume (E) = $\frac{\partial \cdot \ _{A}}{(A)} x$	(D)	gal		STATIC		
Minimum Duroa	Volume = <u>4.29</u> g	al (2 well welv			ELEVATION	, t	MEAN
Minimum Purge		ai (3 well volu	imes)	-			SEA LEVEL
Purge Date	e and Method:	12/20	107	checke .	aba		
Physical A	e and Method:	nents:	sitter / a	eta ada			
	-pp-united 00mm		<u>, , , , , , , , , , , , , , , , , , , </u>				
	EASUREMENTS		1				
Allowable Time	Volume	± 0.1	± 5% EC	<u>+1°C</u> Temp.	Turbidity	D.O.	ORP
	Removed (gal)		(mS/cm)	(F or C)	(NTU)	(mg/L)	(mV)
1503	0.75	7.15	.267	6.82	140.0	5.06	-65
1506	1.5	7.29	. 294	9.21	114.0	2.03	- 96
1511	2.25		.299	9.38	131,6	0.51	-11/
1516	3	7.44	, 299	9.03	97.8	0.00	-115
1520	3.75	7.44	.297_	9.62	165.0	0.48	-115
							<u> </u>
					<u> </u>		
							<u>├</u>
Comple Tim	e: 15 30 Sami	1. 10	79140	5-91 \A			

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

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Troject	40-05-27	<u> </u>	Sa	mpled by:	MH ?	<u>w</u>	
Location a	and Site Code (SI '	TEID):	-				
Well No. ((LOCID): <u>19/</u>	mw -6	W	ell Diamet	er (SDIAN	D: 211	
	GDATE):						
Date (DO		<u>ri zolo</u>			05 0	noy	
CASING VOLU	ME INFORMATION:						
Casing ID (inch)	10	15 2.0		30 40	43 5		
Unit Casing Volun		0.09 01		0 37 0 65		0 60	70 20 2
		C					
PURGING INFO	DRMATION:			Γ-			
Measured Well I	Depth (B) (TOTDEPTH)	til.	59	ì		T T	
	Level Depth (C) (STATE					r -	
						B	
Length of Static	Water Column (D) = $66.$ (B)) (C)	(D)	_ h. 		ELEVAT (MPEL	
	014	1 10	0/				
Casing Water Vo	plume (E) = $\frac{0.16}{(A)} \mathbf{x}$	(D) =	0.06 gal				
					STATIC ELEVATION	4	
Minimum Purge	Volume = 2.58 ga	il (3 well volu	mes)	-			MEAN — SEA
			-				LEVEL
Purge Date	e and Method: _	12/20	07	cheele us	lore		
	ppearance/Comm			tro p	cho Odor		
Filysical A	ppcarance/comm						
				-			
FIELD MI	EASUREMENTS	-		. 100			
FIELD MI Allowable	EASUREMENTS Range:	± 0.1	± 5%	±1°C	Turbidity	DO	OPP
FIELD MI	EASUREMENTS Range: Volume	-	EC	Temp.	Turbidity (NTU)	D.O.	ORP (mV)
FIELD MI Allowable Time	EASUREMENTS Range:	± 0.1 pH	EC (mS/m)	Temp. (F or C)	(NTU)	(mg/L)	(mV)
FIELD MI Allowable Time	EASUREMENTS Range: Volume Removed (gal)	± 0.1 pH 7.01	EC	Temp.		(mg/L) 7.3 7	(mV) -33
FIELD MI Allowable Time 14:32 14:33 14:33	EASUREMENTS Range: Volume Removed (gal) 0,75 1,5 1,5	± 0.1 pH 7.01 7.14 7.22	EC (\$\$S/em) 0.327 8.282 0.272	Temp. (F or C) 9,14 999 9,90	(NTU) 711 300 290	(mg/L)	(mV) -33 -32 -32
FIELD MI Allowable Time 14:32 14:33 14:33 14:34 14:35	EASUREMENTS Range: Volume Removed (gal) 0,75 1,5 1,5	± 0.1 pH 7.01 7.14 7.22 7.30	EC (\$\$S/em) 0.327 8.282 0.232 0.248	Temp. (F or C) 9,14 9,99 9,90 10:26	(NTU) 711 300 290 285	(mg/L) 7.37 1.73 0.03	(mV) -33 -32 -87 -100
FIELD MI Allowable Time 14:32 14:33 14:33 14:35 14:35	EASUREMENTS Range: Volume Removed (gal) 0,75 1,5 1,5 2.25 3 3 375	± 0.1 pH 7.01 7.14 7.22 7.30 7.29	EC (mS/m) 0.327 0.282 0.282 0.248 0.248	Temp. (F or C) 9,14 9,99 9,90 10:26 10:25	(NTU) 711 300 290 285 284	(mg/L) 7.37 1.73 0.03 0.03 0.00	(mV) -33 -72 -87 -100 -106
FIELD MI Allowable Time 14:32 14:33 14:33 14:33 14:35 14:35 14:37	EASUREMENTS Range: Volume Removed (gal) 0,75 1,5 2.25 3 3.75 4.5	± 0.1 pH 7.01 7.14 7.22 7.30 7.29 7.46	EC (\$\$/\$m) 0.377 9.282 0.249 0.249 0.237 0.220	Temp. (F or C) 9,14 9,99 9,90 10:26 10:35 7,00	(NTU) 711 300 290 285 284 284 210	(mg/L) 7.37 1.73 0.03 0.03 0.00 6.41	(mV) -33 -32 -87 -100 -106 -106
FIELD MI Allowable Time 14:32 14:33 14:33 14:35 14:35 14:35 14:37	EASUREMENTS Range: Volume Removed (gal) 0,75 1,5 2.25 3 3 375 4.5 5.25	± 0.1 pH 7.01 7.14 7.22 7.30 7.29 7.46 7.44	EC (\$\$/m) 0.327 8.282 0.248 0.248 0.237 0.220 0.220 0.220	Temp. (F or C) 9,14 9,98 9,90 10:26 10:26 10:35 9,00 10:42	(NTU) 711 300 290 285 284 210 189	(mg/L) 7.37 1.73 0.03 0.03 0.00 6.41 6.41	(mV) -33 -32 -87 -100 -106 -106 -107
FIELD MI Allowable Time 14:32 14:33 14:33 14:33 14:35 14:35 14:37	EASUREMENTS Range: Volume Removed (gal) 0,75 1,5 2.25 3 3.75 4.5	± 0.1 pH 7.01 7.14 7.22 7.30 7.29 7.46	EC (\$\$/\$m) 0.377 9.282 0.249 0.249 0.237 0.220	Temp. (F or C) 9,14 9,99 9,90 10:26 10:35 7,00	(NTU) 711 300 290 285 284 284 210	(mg/L) 7.37 1.73 0.03 0.03 0.00 6.41	(mV) -33 -32 -87 -100 -106 -106
FIELD MI Allowable Time 14:32 14:33 14:33 14:35 14:35 14:35 14:37	EASUREMENTS Range: Volume Removed (gal) 0,75 1,5 2.25 3 3 375 4.5 5.25	± 0.1 pH 7.01 7.14 7.22 7.30 7.29 7.46 7.44	EC (\$\$/m) 0.327 8.282 0.248 0.248 0.237 0.220 0.220 0.220	Temp. (F or C) 9,14 9,98 9,90 10:26 10:26 10:35 9,00 10:42	(NTU) 711 300 290 285 284 210 189	(mg/L) 7.37 1.73 0.03 0.03 0.00 6.41 6.41	(mV) -33 -32 -87 -100 -106 -106 -107

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Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project:	41-05-7	2	Sa	mpled by:	NW4	JW		
Location a	nd Site Code (SI	FEID):	BI	91	,			
	(LOCID): 78				er (SDIAM). 		
					•			
Date (LOG	GDATE): 2	20107	We	eather:	305 0	andy		
CASING VOLU	ME INFORMATION:							
Casing ID (inch) Unit Casing Volum	10 ne (A) (gal/fl) 004	15 (20 009 (0)		3 0 4.0 0 37 0.65	43 50 075 1		70	7
Unit Casing Volum	Re (A) (gal/II) [0 04]		0 02	0.57 0.65	075 1	<u>0 15</u>	20 26	
PURGING INFO	VPM ATION:			r		A		
		1.			Ţ	≜ ≜		
	Depth (B) (TOTDEPTH)			1				
	Level Depth (C) (STATE	-		n pr		B		
Length of Static	Water Column (D) = 65	<u>52</u> - <u>55</u>	96 = <u>9.66</u>	ft. H ₂ C	, , , , , , , , , , , , , , , , , , , ,	ELEVAT (MPELI		X
					D			\mathbf{i}
Casing Water Vo	plume (E) = 0.16 x	1.58 =	1.53 gal			▼		
	(A)	(D)	-	L	STATIC	<u> </u>		
Minimum Purge	Volume = 4.59 ga	al (3 well volu	imes)	_			MEAN	
	0		,	_			— SEA LEVEL	
Purge Date	e and Method:	12/20	102	baile.				
_	ppearance/Comn			1 1 1				
r fiystear A	rppearance/Comm	ients	Sneen p	0041 0041	CILAT			
FIELD MI	EASUREMENTS	:						
Allowable		± 0.1	± 5%	<u>±1°C</u>	<u> </u>			_
Time	Volume	pН	EC /	Temp.	Turbidity	D.O.	ORP	
LAMO	Removed (gal)		(mS/cm)	(F or C)	(NTU)	(mg/L)	(mV)	
1044	1.0	6.66	.2/14	12.55	58.0	\$4.20	-91	-
1045	3.0	6.98 7.14	. 223	12.48	<u>69.8</u> <u>59.8</u>	3,22	- 104	-
1049	4.0	7.20		12.64	181.0	4.9Z	-108	-
1052	5.0	7.28	. 274	12.66	404.0	3.95	-104	-
1058	6.0	7.33	.224	17.18	223.0	1.78	- 106]
1058	7.0	7.38	.222	12.22	325.0	5.35	-/06	
	······		·					-
								-
		I	-			I		
Sample Time	e: //66 Samj	ple ID: _	Trimor	56WA				

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2*} , CH_4 , H_2S) parameters should be sampled first.

Project: _	40-05-27		Sa	mpled by:	NW.	16	
Location a	and Site Code (SI	reid): _	18781	ł	_		
Well No.	(LOCID): 18	MW- 1	3 W	ell Diamet	er (SDIAN	1): 2''	
Date (LO	GDATE): 12/2	107			as cla		
						· · · ·	
CASING VOLU	IME INFORMATION:	6					
Casing ID (inch) Unit Casing Volum	10 nc (A) (gal/ft) 0.04	1.5 2 .0 0 0 0 1		3.0 40	++	0 6.0	70
Chin Casing Volu			<u>6 02</u>	0 37 0 65	0.75	0 1.5	20 26
PURGING INFO	ORMATION:		•	Г			
Measured Well	Depth (B) (TOTDEPTH)	56.9	9 heep	rodut		- † – †	
	Level Depth (C) (STATD						
	Water Column (D) =(B			ft		B ELEVAT	
	(B) (C)	(D)	H ₂	D	(MPEL	EV)
Casing Water Vi	olume (E) = x (A)	=	gal			▼	
	(A)	(D)			STATIC		
Minimum Purge	Volume =ga	i (3 well volu	mes)	-			MEAN — SEA
							LEVEL
•	e and Method:		10 2				
Physical A	ppearance/Comm	ients:	vo yau	upre col	leited.		
	EASUREMENTS						
Allowable Time	Range: Volume	± 0.1 pH	± 5% EC	±1°C	Truchidian		
Time	Removed (gal)	рп	(mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
						<u>(b</u> .~/)	
			0.44	In 1	2. 2.	. 40	· · · · · · · · · · · · · · · · · · ·
			0.44	1 7	her prod		
					,		
							<u> </u>
				<u> </u>		L	
Sample Time	e: Samp	le ID:					
		0.5.11					

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project:	40-050	27	Sa	mpled by:	NUH	JW	
Location a	and Site Code (SI	ΓEID):	8	781			
Well No. ((LOCID): _78	my -	-	-): 2"	
Date (LO	GDATE): <u>וא</u>	20/07	W	eather:	305 0	loudy	
		, ,				7	
<u>CASING VOLU</u>	ME INFORMATION:		•				
Casing ID (inch)	10	15 2		30 40	43 5		70
Unit Casing Volun	ne (A) (gal/ft) 0.04	0.09 0	16 02	0.37 0.65	0 75 1	0 15	20 26
PURGING INFO	ORMATION:			[
	Depth (B) (TOTDEPTH)	CR.	20	A		↑ ↑	
	Level Depth (C) (STATD						
Length of Static	Water Column (D) =	32 . SI.	15 = 6.57			B ELEVAT	TION
Conger of State	(B) (C) (D)	_ H2C		(MPEL	
Casing Water Vo	$blume(E) = \underbrace{\mathbf{O}, I}_{A} x_{B}$	6.57 =	1.05				
cump trace it	(A)	(D)	gai		STATIC	<u> </u>	
Minimum Purge	Volume = 3.15 ga	l (3 well volt	imes)		ELEVATION		MEAN
winning in the		ii (5 weii vuit	inics)	-			SEA LEVEL
Purge Date	e and Method:	12/	20/07	chern	walve.		
	ppearance/Comm		den	chech slight o	do.		
-							
	EASUREMENTS		1 50/	1100			
Allowable Time	Volume	± 0.1	± 5% EC	±1°C Temp.	Turbidity	D.O.	ORP
Time	Removed (gal)		(mS/•m)	-	(NTU)	(mg/L)	(mV)
14:06	0.75	7.01	259	275	34.5	10.00	193
14:08	1.5	6.95	22.1	7.94	69.5	7.90	193
14:10	225	312	26.5	B.23	78.0	7.77	190
14.14	.3	7,24	26.9	8.33	92.1	7.24	187
14:16	3.25	7.20	25.8	8.50	233	6.52	19)
			+				
		1 1-		·			L
Sample Time	e: 14:20 Samp	ne ID:	10 mil	>>ZWH			

ī

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2*} , CH_4 , H_2S) parameters should be sampled first.

Project:	40-05-5	11	Sa	mpled by:	_ WH	JW		
Location a	and Site Code (SI	TEID):	B	181				
Well No.	(LOCID): _ 78	mw-1	a	ell Diamet	er (SDIAM): <u>2</u> "		
Date (LO	GDATE):	120/07			305 0			
CASING VOLU	IME INFORMATION:	6						
Casing ID (inch)	10	15 20		30 40	4.3 5.		70	
Unit Casing Volun	ne (A) (gal/ft) 0 04	0.09 0.1		0.37 0.65	0 75 1	0 1.5	20	2.6
PURGING INFO								
	Depth (B) (TOTDEPTH)	10. UT	z .		Ţ	. ♣ . ♣		
	Level Depth (C) (STATD				Ì			
						B		
Length of Static	Water Column (D) = 68 (B)) (C)	(D)	. ft. н ₂ с	D	ELEVA: (MPEL		
	-16	0.0.	164					
Casing Water Vo	plume (E) = $\underbrace{0.16}_{(A)} x$	(D)	gal					
					STATIC ELEVATION			
Minimum Purge	Volume = 4.35 ga	i (3 weil volu	mes)			T	MEAN	
				-			SEA	
		121-		- 			LEVEL	
Purge Date	e and Method:	12/20	107	check c	volve			
Purge Date Physical A	e and Method:	12[20] nents:	107	Check i / Alz 5	olve odor			
Physical A	ppearance/Comm	ents:	107	check i	odor			
Physical A	appearance/Comm EASUREMENTS	ents:	107	<u>chech (</u> / <u>Hz 5</u> ±1°C	olve.			
Physical A FIELD MI	Appearance/Comm EASUREMENTS Range: Volume	nents:	Clear,	/ H25	Turbidity	D.O.		 _P]
Physical A FIELD MI Allowable	ppearance/Comm EASUREMENTS Range:	nents:	07 <i>Clear</i> ± 5%	<u>+1°C</u>	odor	(mg/L)	LEVEL	
Physical A FIELD MI Allowable Time	Appearance/Comm EASUREMENTS Range: Volume Removed (gal)	hents: ± 0.1 pH 7.60	•	±1°C Temp. (F or C)	Turbidity (NTU)	(mg/L) (0·9)	LEVEL	V)
Physical A FIELD MI Allowable	Appearance/Comm EASUREMENTS Range: Volume	ents:	• 5% EC (mS/cm)	±1°C Temp. (F or C) 9, 3 4.5	Turbidity (NTU)	(mg/L) 10·91 9.70	LEVEL	V)
Physical A FIELD MI Allowable Time	Appearance/Comm EASUREMENTS Range: Volume Removed (gal)	hents: ± 0.1 pH 7.60	07 <i>Clear</i> ± 5% EC (mS/cm) 26.0 25.0 24.9	±1°C Temp. (F or C) 9, 34 9.69	Turbidity (NTU)	(mg/L) 10.91 9.70 10.12	OR (m) 76 77	
Physical A FIELD MI Allowable Time 11:20 N:24 II:26 II:28	Appearance/Comm EASUREMENTS Range: Volume Removed (gal)	hents: ± 0.1 pH 7.60	26.0 24.5	+1°C Temp. (F or C) 9, 34 8.69 9, 24	Turbidity (NTU) 45.6 26.8 72.7 17.4	(mg/L) 10.91 9.70 10.12 9.96	LEVEL OR (m) 72 72	
Physical A FIELD MI Allowable Time	Appearance/Comm EASUREMENTS Range: Volume Removed (gal)	hents: ± 0.1 pH 7.60	07 <i>Clear</i> ± 5% EC (mS/cm) 26.0 25.0 24.9	±1°C Temp. (F or C) 9, 34 9.69	Turbidity (NTU) 45.6 26.9	(mg/L) 10.91 9.70 10.12	DR (m) 74 72 72	
Physical A FIELD MI Allowable Time 11:20 N:24 II:26 II:28	Appearance/Comm EASUREMENTS Range: Volume Removed (gal)	hents: ± 0.1 pH 7.60	26.0 24.5	+1°C Temp. (F or C) 9, 34 8.69 9, 24	Turbidity (NTU) 45.6 26.8 72.7 17.4	(mg/L) 10.91 9.70 10.12 9.96	LEVEL OR (m) 72 72	
Physical A FIELD MI Allowable Time 11:20 N:24 II:26 II:28	Appearance/Comm EASUREMENTS Range: Volume Removed (gal)	hents: ± 0.1 pH 7.60	26.0 24.5	+1°C Temp. (F or C) 9, 34 8.69 9, 24	Turbidity (NTU) 45.6 26.8 72.7 17.4	(mg/L) 10.91 9.70 10.12 9.96	LEVEL OR (m) 72 72	
Physical A FIELD MI Allowable Time 11:20 N:24 II:26 II:28	Appearance/Comm EASUREMENTS Range: Volume Removed (gal)	hents: ± 0.1 pH 7.60	26.0 24.5	+1°C Temp. (F or C) 9, 34 8.69 9, 24	Turbidity (NTU) 45.6 26.8 72.7 17.4	(mg/L) 10.91 9.70 10.12 9.96	LEVEL OR (m) 72 72	
Physical A FIELD MI Allowable Time 11:20 N:24 II:26 II:28	Appearance/Comm EASUREMENTS Range: Volume Removed (gal)	hents: ± 0.1 pH 7.60	26.0 24.5	+1°C Temp. (F or C) 9, 34 8.69 9, 24	Turbidity (NTU) 45.6 26.8 72.7 17.4	(mg/L) 10.91 9.70 10.12 9.96	LEVEL OR (m) 72 72	
Physical A FIELD MI Allowable Time 11:20 N:24 II:26 II:28	Appearance/Comm EASUREMENTS Range: Volume Removed (gal)	ents: ± 0.1 pH 7.60 7.57 7.7% 7.7% 7.75	26.0 24.5	±1°C Temp. (F or C) 9, 3 9, 6 9, 2 9, 2 9, 2 9, 2 9, 2 9, 2 9, 2 9, 2	Turbidity (NTU) 45.6 26.9 72.7 17.4 17.4	(mg/L) 10.91 9.70 10.12 9.96	LEVEL OR (m) 72 72	

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2^+} , CH_4 , H_2S) parameters should be sampled first.

Project:	40-05-5	27	Sa	mpled by:	NVH	ĴΨ	
Location a	and Site Code (SI	ГЕІD):	B 3	BI			
Well No.	(LOCID): _ 78 1	<u>mw- 1</u>	8 W	ell Diamet	er (SDIAM	I): 211	
	GDATE):					Cloudy	
		,				<u> </u>	
CASING VOLU	<u>JME INFORMATION;</u>		_				
Casing ID (inch)	1.0	15 2		30 40	4 3 5	0 60	70
Unit Casing Volur	ne (A) (gal/ft) 0.04	0 09 0	0.2	0.37 0.65	0.75 1	0 1.5	20 26
DUDGING IND	ODMATION						
PURGING INF		<i>c</i> 9			Ţ	`♠ ♠	
	Depth (B) (TOTDEPTH)				Ĭ		
	r Level Depth (C) (STATD	-			∼┤┰╌┰┸	B	
Length of Static	Water Column (D) = 59 (B)	<u>72 52</u>) (C	<u>.63</u> <u>= 5.59</u>)	_ft		ELEVA (MPEI	
		_			D		
Casing Water V	olume (E) = 0.16 x	<u>5.59</u> =	0.89 gal			V	
	(71)				STATIC ELEVATION		
Minimum Purge	Volume = 2.68 ga	il (3 well volu	imes)	_			MEAN — SEA
							LEVEI.
Purge Dat	e and Method:	Ch.	h volo	e 17	2/20/07		
Physical A	e and Method:	nents:	clean	sitty		poto (m	ul
						/	
	EASUREMENTS	: ± 0.1	± 50/	1100			
Allowable Time	Volume	± 0.1	<u>± 5%</u> EC	±1°C Temp.	Turbidity	D.O.	ORP
1 mile	Removed (gal)	pri	(mS/em)	(F or C)	(NTU)	(mg/L)	(mV)
11:45	25.0	736	13.1	8.59	551	10.74	128
11:42	1.5	7.46	12.9	939	7999	9.11	121
11:49	2.25	7.34	13.0	9.47	>997	1036	120
<u>n:50</u>	3	7.59	12.9	9.66	7999	10.34	118
11:52	3.75	7.65	12,8	9.87	7999	10,09	119
11:54	4.5	7.67	12.7	9,77	<u>7999</u>	10.53	123
	+ 0 40 44	100 H					
	+ 0,50 gal	, , , , , , , , , , , , , , , , ,	myren				<u>+</u>
						-	
	11.00		10.				·

Sample Time: 11:55 Sample ID: 78/m185318

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project:	40-05-	27_	S	ampled by:	NVH	SW	
	and Site Code (SI						
	(LOCID):				er (SDIAM	[): 2 ^[]	
	GDATE): 12						
,	/					~~~~~	
CASING VOLU	IME INFORMATION:						
Casing ID (mch)	10	15 20		30 4.0	43 5	0 60	70
Unit Casing Volum	ne (A) (gal/ft) 0.04	0 09 0 1	6 02	0.37 0.65	0.75 1	0 15	20 26
BUDGNIG NE							
PURGING INFO		C 1	(1 ⁻)			▲ ▲	
	Depth (B) (TOTDEPTH)			-	Ì		
	Level Depth (C) (STAT					В	
Length of Static	Water Column (D) = <u>Sl</u>	B) (C)	.82= <u>6.6</u>	<u>S</u> ft н _з с	D I	ELEVA (MPEL	
	- 17		1-0				
Casing Water Vo	plume (E) = 0.16 (A)	<u>(D)</u> = <u>(D)</u>	1.39 gi	al			
	ll to				STATIC ELEVATION		,
Minimum Purge	Volume = 4.15 g	al (3 well volu	imes)	-	1		MEAN SEA LEVEL
Duran Date	and Mathadi		1	-			1,1, ¥ 1.1.
Purge Date	e and Method: _	0.04	NA UTON		4 70 01		
Physical A	- ppearance/Comr	ments:	Cean				
FIELD MI	EASUREMENT	S:					
Allowable		± 0.1					
Time	Volume	pН	EC	Temp.	Turbidity	D.O.	ORP
13:40	Removed (gal)	7.24	(mS/Am) 27.2		(NTU) 27.7	(mg/L)	(mV)
13:42	2	7.27	303	8.58	24.5	B.5 5.07	182
13:44	2 3	7.24	31.1	8.76	39.0	5.36	180
13:46	Ч	1.30	30.9	8.70	48.2	5.52	179
	1000						
	T 0,25	gol boil	ea.	<u>+</u>			
		ļ					
Sample Time	e: 13:48 Sam	nle ID:	781mw	19421	A		

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

).

Project: _	40-05-2	<u> </u>	Sa	mpled by:	NVH)W	
	and Site Code (SI						
Well No.	(LOCID): _ 78	1 mw- 2	o W	ell Diamet	er (SDIAM	D: 2 ¹¹	
	GDATE): 12				305		
(-					<u>,,,,</u>	Cloudy	
ASING VOL	ME INFORMATION:	_					
Tasing ID (inch)	10	15 2.0	0 22	30 40	43 5.	0 60	70
Jnit Casing Volui	me (A) (gal/ft) 0.04	0.09 0.1	02	0.37 0.65	0 75 1	0 15	20 26
				F			
<u>PURGING INF</u>					Ĩ	. ▲ . ▲	
	Depth (B) (TOTDEPTH)						
	r Level Depth (C) (STATD				~~	B	
ength of Static.	Water Column (D) = $\frac{43}{(B)}$	<u>.62 - 39</u>	<u>#= 6.58</u>	ft. н.		ELEVAT (MPEL	
	(D) (C)	(D)		D		
	01/	6<0	1.05			. ↓	
asing Water V	olume (E) = V, 10 x_	<u>v•20</u> = _	gar			.	
asing Water V	olume (E) = 0.16 x _ (A)	(D)	gar		STATIC	<u> </u>	
		(1)			STATIC ELEVATION	 	MEAN
	olume (E) = $\frac{0.10}{(A)}$ x _	(1)		-			MEAN —— SEA LEVEL
Ainimum Purge	e Volume = <u>3.16</u> ga	ll (3 well volu	mes)	_	ELEVATION	V	SEA
Ainimum Purge	e Volume = <u>3.16</u> ga	ll (3 well volu	mes)	_	ELEVATION		SEA
Ainimum Purge		ll (3 well volu	mes)	_	ELEVATION	. Sheen	SEA
Ainimum Purge Purge Date Physical A	e Volume = <u>3.16</u> ga	ا (3 well volu اکاک nents:	mes)	_	ELEVATION	/sheen	SEA
Ainimum Purge Purge Date Physical A	e and Method: Appearance/Comm	ا (3 well volu اکاک nents:	mes)	_	ELEVATION	/sheen	SEA
Ainimum Purge Purge Date Physical A FIELD Mi	volume = <u>3.16</u> ga e and Method: Appearance/Comm EASUREMENTS e Range: Volume	(b) il (3 well volu 	mes) 0 0 7 light ± 5% EC	boile	ELEVATION	. /sheen D.O.	SEA
Ainimum Purge Purge Date Physical A FIELD MI Allowable	volume = <u>3.16</u> ga e and Method: Appearance/Comm EASUREMENTS e Range:	$\frac{12}{2}$ il (3 well volu 12 2 inents: = 0.1 pH	mes) 0 0 7 <u>light</u> ± 5%	boile hour ±1°C	ELEVATION		SEA LEVEL
Ainimum Purge Purge Date Physical A FIELD MI Allowable Time 9:33	volume = <u>3.16</u> ga e and Method: Appearance/Comm EASUREMENTS Range: Volume Removed (gal)	13 well volu 1212 nents: ± 0.1 pH 5.68	mes) ○ ○ 7 light ± 5% EC (mS/ 4 m) 3 ▷.S	<u>boile</u> <u>hour</u> <u>±1°C</u> Temp. (F or C) 11.4	Turbidity (NTU)	D.O.	ORP (mV)
Ainimum Purge Purge Date Physical A FIELD Mi Allowable Time 9:37	e and Method: appearance/Comm EASUREMENTS Range: Volume Removed (gal) 0.35	13 well volu 13 well volu $12 J_2$ nents: ± 0.1 pH 5.88 5.96	mes) ○ ○ 7 Light ± 5% EC (mS/4m) 3 ▷.5 3 5.7	Loide hour ±1°C Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L) J.A.O] J.D.O]	ORP
Ainimum Purge Purge Date Physical A FIELD MI Allowable Time 9:37 9:39 9:40	volume = <u>3.16</u> ga e and Method: Appearance/Comm EASUREMENTS Range: Volume Removed (gal) 9.75 1.5 7.25	$\frac{1212}{12}$ if (3 well volu 1212 if (3 well volu 1212 if (3 well volu if (3 well volu 1212 if (3 well volu if (3 w	mes) o o o 7 light ± 5% EC (mS/4m) 30.0	<u>boile</u> <u>hour</u> <u>±1°C</u> Temp. (F or C) <u>11.4</u> <u>11.7</u> <u>11.1</u>	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
Ainimum Purge Purge Date Physical A FIELD MI Allowable Time 9:37 9:40 9:40 9:42	Volume = 3.16 ga e and Method:	$\frac{12}{2}$ il (3 well volu 12/2 nents: = ± 0.1 pH 5.88 5.96 5.95 5.92	mes) o o o 7 Light ± 5% EC (mS/em) 30.5 35.7 30.0 29.9	<u>boile</u> <u>hoten</u> <u>±1°C</u> Temp. (F or C) <u>11.4</u> <u>11.7</u> <u>11.1</u>	Turbidity (NTU) 512 437 558 710	D.O. (mg/L) J.A.O] J.D.O]	ORP (mV) 236 281
Ainimum Purge Purge Date Physical A FIELD MI Allowable Time 9:37 9:39 9:40 9:42 9:43	Volume = 3.16 ga e and Method:	$\frac{12}{2}$ if (3 well volu 12]2 ients: = = = 0.1 pH 5.88 5.96 5.85 5.72 5.73	mes) o o o 7 light ± 5% EC (mS/4m) 30.0	<u>boile</u> <u>hour</u> <u>±1°C</u> Temp. (F or C) <u>11.4</u> <u>11.7</u> <u>11.1</u>	ELEVATION	D.O. (mg/L) [0.0] [0.0] 9.6]	ORP (mV) 236 281 298
Ainimum Purge Purge Date Physical A FIELD MI Allowable Time 9:37 9:39 9:40 9:42 9:43 9:43 9:43	Volume = 3.16 ga e and Method:	$\frac{12}{2}$ if (3 well volu 12]2 ients: = = = 0.1 pH 5.88 5.96 5.85 5.72 5.73	mes) o o o 7 Light ± 5% EC (mS/em) 30.5 35.7 30.0 29.9	<u>boile</u> <u>hour</u> <u>±1°C</u> Temp. (F or C) <u>11.4</u> <u>11.7</u> <u>11.1</u> <u>11.1</u> <u>10.9</u>	ELEVATION	D.O. (mg/L) [0.0] [0.0] 9.6] 9.54	ORP (mV) 276 281 298 309
Ainimum Purge Purge Date Physical A FIELD MI Allowable Time 9:39 9:40 9:40 9:42 9:43 9:43 9:43	Volume = 3.16 ga e and Method:	$\frac{12}{3} \text{ well volu}$ $\frac{12}{2}$ nents: $\frac{\pm 0.1}{\text{pH}}$ $\frac{5.88}{5.96}$ $\frac{5.85}{5.72}$ $\frac{5.74}{5.74}$	mes) o 0 7 Light ± 5% EC (mS/am) 30.0 29.9 28.5 31.0 30.3	<u>boile</u> <u>hown</u> <u>±1°C</u> Temp. (F or C) <u>11.4</u> <u>11.7</u> <u>11.1</u> <u>11.1</u> <u>10.9</u>	ELEVATION	D.O. (mg/L) 10.01 10.01 9.61 9.54 9.89	ORP (mV) 276 281 298 309 314
Ainimum Purge Purge Date Physical A FIELD MI Allowable Time 9:37 9:39 9:40 9:42 9:43 9:43 9:43	Volume = 3.16 ga e and Method:	$\frac{12}{2}$ if (3 well volu 12]2 ients: = = = 0.1 pH 5.88 5.96 5.85 5.72 5.73	mes) o o 7 light ± 5% EC (mS/4m) 30.0 29.9 28.5 31.0	<u>boile</u> <u>hour</u> <u>±1°C</u> Temp. (F or C) <u>11.4</u> <u>11.7</u> <u>11.1</u> <u>11.1</u> <u>10.9</u>	ELEVATION	D.O. (mg/L) 12.01 12.01 9.61 9.54 9.89 9.89	ORP (mV) 236 281 298 309 314 318
Ainimum Purge Purge Date Physical A FIELD MI Allowable Time 9:39 9:40 9:40 9:42 9:43 9:43 9:43	Volume = 3.16 ga e and Method:	$\frac{12}{3} \text{ well volu}$ $\frac{12}{2}$ nents: $\frac{\pm 0.1}{\text{pH}}$ $\frac{5.88}{5.96}$ $\frac{5.85}{5.72}$ $\frac{5.74}{5.74}$	mes) o 0 7 Light ± 5% EC (mS/am) 30.0 29.9 28.5 31.0 30.3	<u>boile</u> <u>froturn</u> <u>±1°C</u> Temp. (F or C) <u>11.9</u> <u>11.1</u> <u>11.1</u> <u>11.1</u> <u>10.9</u> <u>10.9</u> <u>10.8</u>	ELEVATION	D.O. (mg/L) 10.01 10.01 9.61 9.54 9.89 9.89 9.43 10.18	ORP (mV) 276 281 298 309 314 318 317

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project:	40-05-2	٦	Sa	mpled by:	NVH	<u><u><u></u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>			
Location a	und Site Code (SI	reid): _							
Well No. ((LOCID):	Imw-	21 W	ell Diamet	er (SDIAM	(): 2n			
	GDATE): 17				<u>ios</u> c		_		
		· · · · ·				T			
CASING VOLU	ME INFORMATION:								
Casing ID (inch)	10	1.5 2.0	22	30 40	4.3 5	0 60	70		
Unit Casing Volun	ne (A) (gal/ft) 0.04	0.09 0.1	6 02	0.37 0.65	0.75 1	0 15	20 26		
PURGING INFO						A I			
	Depth (B) (TOTDEPTH)			i.	Ċ				
Measured Water	Level Depth (C) (STATD	EP) 79	.16	n. h	~				
	Water Column (D) = 32			ft		B ELEVA1			
	(B) (C)	(D)	HaC		(MPEL	EV)		
Casing Water Vo	blume (E) = 0.16 x	9.24 =	1.49			↓			
cusing water w	(A)	(D)	Bar		STATIC	<u> </u>			
		104	1.0	1.00					
Purge Date	e and Method:	147	10 04	Daves	1				
Physical A	e and Method:	ents:	light b	worn /sil	ty no	open /4	len		
	EASUREMENTS		•		•				
Allowable		± 0.1	± 5%	±1°C					
Time	Volume	pН	EC	Temp.	Turbidity	D.O.	ORP		
	Removed (gal)		(mS/(m)	(F or C)	(NTU)	(mg/L)	(mV)		
10:07		5.98	11.4	10.21	254	9,91	355		
10:10	2	5.97	11.5	10.80	550	10,21	350		
10:12	3 4	6-11	14.0	10.81	568	10.03	378		
10:11	5	6.23	15.2	10.82	620	10.08	332		
10:19	6	6.32. 6.27	1 <u>3,5</u> 14.4	10.77	713 UKO	<u> 9.81</u>	333		
10:21	7	6.30	16.1	10.83 10.80	469 484	10.05 9.94	333		
10:26	В	6.35	15.0	10.73	503	10.08	332 232		
10:28	9	6.37	14.6	10.55	532	10.80	370		
						<u> </u>			
			1010 -	-01 10					

Sample Time: 10:30 Sample ID: 78112128 VA

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, $Fe^{2^{+}}$, CH_4 , H_2S) parameters should be sampled first.

Project:	40-05-2	7	Sa	mpled by:	MM	W	
Location a	nd Site Code (SI	FEID):	B 101				
Well No. (LOCID):	1 mm -	• W	ell Diamet	er (SDIA)	小· フ/	N
Deta (LO(CDATE: la	10-1-2	, , , , , , , , , , , , , , , , , , ,			llondy.	
Date (LOC	GDATE): <u>12</u>	12010 4	<u> </u>	eather:	<i>40ς</i>	londy.	
	ME INFORMATION:					,	
			<u></u>		+		
Casing ID (inch) Unit Casing Volum	1 0 le (A) (gal/ft) 0.04	15 20 0 09 0 1	-/-/	30 40 037 065	+	50 60 1.0 15	70 20 26
			/				
PURGING INFC	RMATION:			Γ			
	Depth (B) (TOTDEPTH)	~	471			L 🛉 🕴	
Measured Water	Level Depth (C) (STATD	EP)(n. p~	~ 1	B	
Length of Static	Water Column (D) = $\frac{24}{(B)}$	<u>70 - 151</u>	<u> 11 = 8.45</u>	ft. H ₂ C		ELEVAT (MPEL	
		,	,		D D		
Casing Water Vo	$for equation (E) = \frac{p_1 b_1 x_1}{(A)} $	<u>8.45 =</u>	1.35 gal			V	
	(A)	(D)			STATIC		
Minimum Purge	Volume = <u>406</u> ga	l (3 well volu	mes)	_			MEAN
C.	L	•	,	-			SEA LEVEL
Purge Date	e and Method:	12	120/02		ane		
	.ppearance/Comm						
Filysical A	ppearance/Comm.	iems					
FIELD MI	EASUREMENTS	•					
Allowable		± 0.1	<u>± 5%</u>	±1°C			
Time	Volume	pН	EC	Temp.	Turbidity		ORP
11.0	Removed (gal)	6.97	(mS/m)		(NTU) 974	(mg/L)	(mV)
16:23	1.75	6.98	88.8	15.58		1.21	124
16:29	2.9	6.93	91,4	16.36	792 744	0.00 0.00	-42 -48
16:29	3.25	6.90	95.0 97.8	1652	769	0,00	-63
16:50	y	6.87	99.4	16.44	759	0.00	-53 -56
						+	
			1				

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Equipment Calibration Log

Instrument Name: _	Touba	
Model Number:	#	

First Standard Concentration	First Standard Reading	Second Standard Concentration	Second Standard Reading	Comments
4.00	3.99			
4.00	3.93	4.00	4.00	
4.00	4.00			
1.00	· /	4.00	4,00	
4.00	3.99			
4.00	400			
4.00	400			
4.00	3.97			
	3.99			
4	399			
4,00	3.99			
			_	
		-	·	
			1	
	$ \begin{array}{c} Concentration \\ $	$\begin{array}{c c} Concentration & Reading \\ \hline 4.00 & 3.99 \\ \hline 4.00 & 3.93 \\ \hline 4.00 & 4.00 \\ \hline 4.00 & 4.00 \\ \hline 4.00 & 3.99 \\ \hline 4.00 & 3.99 \\ \hline 4.00 & 4.00 \\ \hline 4.00 & 4.00 \\ \hline 4.00 & 3.97 \\ \hline 3.99 \\ \hline 4 & 3.99 \end{array}$	Concentration Reading Concentration 4.00 3.99 4.00 3.93 4.00 4.00 3.93 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 3.99 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 3.97 4.00 4.00 3.97 4.00 4.00 3.97 4.00 4.00 3.97 4.00	Concentration Reading Concentration Reading 4.00 3.99 4.00 4.00 4.00 3.93 4.00 4.00 4.00 4.00 4.00 4.00 4.00 3.99 4.00 4.00 4.00 3.99 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 3.97 4.00 4.00 4.00 3.97 4.00 4.00 4.00 3.99 4.00 4.00 4.00 3.99 4.00 4.00 4.00 3.99 4.00 4.00 4.00 3.99 4.00 4.00 4.00 3.99 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00

Ship to: Monika Santucci				Project Name:	Vame: C	Griffiss AFB Building 781 sampling	VFB Bu	uilding .	781 sam	pling		Send Results to:	ults to: Niels van Hoesel
Life Science Laboratories, Inc. 5000 Brittonfield Pkwv. Suite 200	pratories, Inc. Pkwv. Suite 200		<u></u>	ampler	Name:	Sampler Name: Niels van Hoesel	an Hoe	sel		0			FPM Group 153 Brooks Road
East Syracuse, NY 13057	Y 13057 Tel: (3.	Tel: (315)437-0200				1	0.	Ken	/				Rome, NY 13441
Carrier: LSL courier.				ampler	Sampler Signature	ure: //							Phone: (315) 336-7721 ext 205
										V.	Analyses	Analyses Requested	ted
Field Sample ID	Location ID (LOCID)	CID) 2007	Time 07	5 	2WCODE	CERD/SED	SACODE	Preservative	Pilt/UnFilt.	No. of Containers	VOCs Xote 1 40 mL vial (HCI)	j L aimder SVOCs ngie 2	Comments
781M0457WA	WL-781MW4		12/20 1600	00 WG	B	0/0	z	HCI	Unf.	3	3	•	
781M0559WA	WL-781MW5		12/20 1530	30 WG	G B	0/0	N	HCI	Unf.	ß	3	1	
781M0661WA	WL-781MW6		12/20 1440	40 WG	G B	0/0	N	HCI	Unf.	3	3	ı	
781M0856WA	WL-781MW8		12/20 1100	00 MG	B	0/0	N	HCI	Unf.	3	3	ı	
781M1652WA	WL-781MW16		12/20 1420	20 WG	B	0/0	Ņ	HCI	Unf.	3	3	ı	
781M1760WA	WL-781MW17		12/20 1134	34 WG	C B	0/0	N	HCI	Unf.	ε	3	ı	
781M1853WA	WL-781MW18		12/20 1155	55 WG	G B	0/0	N	HCI	Unf.	m	3		
781M1943WA	WL-781MW19		12/20 1348	48 WG	G B	0/0	N	HCI	Unf.	3	3	1	
781M2039WA	WL-781MW-20		12/20 950	0 WG	G B	0/0	N	HCI	Unf.	3	3	1	
781M2128WA	WL-781MW-21		12/20 1030	30 WG	B	0/0	Z	HCI	Unf.	m	e	1	
122007WE	FIELDQC		12/20 1630	30 WQ	B	0/0	EB	HCL	JuU	-	3	ı	
122007WF	FIELDQC		12/20 955	5 WQ	AN C	0/0	AB	HCL	Unf	m	С	•	
122007WR	FIELDQC		12/20 855	5 WQ	AN S	0/0	TB	HCL	Unf		~	-	
Samule Condition Upon Receipt at Laboratory:	Receipt at Laboratory											Cooler te	Cooler temperature:
Special Instructions/Comments: Analyses to be conducted in complian Note 1: VOCs: method SW 8260 (AFCEE QAPP 4.0 List). Note 2: SVOCs: method SW 8270 (AFCEE QAPP 4.0 List).	nments: Analyses to SW 8260 (AFCEE QA SW 8270 (AFCEE Q	be conducted in APP 4.0 List). APP 4.0 List).	compli	ance wi	th AFC	ce with AFCEE QAPP 4.0	P 4.0						
						1 1	11						
#1 Released by (Sig)		Date:	#2 Relea	leased by: (Sig)	(Sig)	a ror U	A Ser	-	Date: 12/7	12/20/07	#3 Rele	#3 Released by: (Sig)	(g) Date:
Company Name:		Time:	Comp	Company Name: FPM		Greenp Ltd	Ltd	E -	Time: 7	OLE	Compan	Company Name:	Time:
						1			1				

CHAIN OF CUSTODY RECORD AFCEE

Date: Time:

#3 Received by: (Sig) Company Name:

Date: 12-24-07 Time: 9:45

#2 Received by: (Sig) Bir Onderen Company Name: Life Science Laks

Date: 12/5/07 Time: 1000

#1 Received by: (Sig) Niels van Hoesel Company Name: FPM Group Ltd

MATRIX WG = Ground water WQ = Water Quality Control Matrix SO = Soil WS = Surface water

SMCODE B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split Spoon

SACODE N = Normal Sample AB = Ambient Blank TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike

CHAIN OF CUSTODY RECORD AFCEE

COC#: _4_ SDG#: _174_ Cooler ID: _A_

Ship to: Monika Santucci				Proje	ct Nam	le: Grifi	fiss AF	Project Name: Griffiss AFB Site Building 101 sampling	3uilding	101 sar	npling	Send Results to: Niels van Hoesel
Life Science Laboratories, Inc.	tories, Inc.			Samp	iler Nai	me: Ni	els van	Sampler Name: Niels van Hoesel				FPM Group
5000 Brittonfield Pkwy, Suite 200	cwy, Suite 200											153 Brooks Road
East Syracuse, NY 13057	13057 Tel: (315)437-0200	137-020	0					1	1			Rome, NY 13441
Carrier: LSL courier.				Samp	Sampler Signature:	nature:	M.	alla	ļ			Phone: (315) 336-7721 Ext 205
						1	Ĺ					
										A	alyses I	Analyses Requested
Field Sample ID	Location ID (LOCID)	Date 2007	 ДіЩе	ХІЯТАМ	SMCODE	CES/CES	SACODE	Preservative	ali9nU\ali9	No. of Containers	VOCs voie 1 40 mL vial (HCl)	Comments
101M0216VA	101MW-2	12/20 1635	1635	ЪМ	В	0/0	Z	HCI 1	Unf.	3	3	

					_
		Date:	Time:	Date:	Time:
		Date: 12/20/07 #3 Released by: (Sig)	Company Name:	#3 Received by: (Sig)	Company Name:
		Date: 12/20/07	Time: 1710 Company Name:	Date: 12-24-07	Time: の・ひて Company Name:
CE, Vinyl Chloride and Chloroform.	, Lak	#2 Released by: (Sig) //A./	Company Name: FPM Group Ltd	#2 Received by: (Sig) PLZ OTALIZA Date: 12-2407 #3 Received by: (Sig)	Company Name: / : C C / ./c
Cs: PCE, TCE, D		Date:	Time:	Date: 12/5/07	Trime- 10200
Note 1: VOC: method SW 8260: Target COCs: PCE, TCE, DCE, Vinyl Chloride and Chloroform.		#1 Released by: (Sig)	Company Name:	#1 Received by: (Sig) Niels van Hoesel	Company Name: FPM Groun Ltd

Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0

Sample Condition Upon Receipt at Laboratory:

Cooler Temperature:

2	F	
#3 Received by: (Sig)	Company Name:	A CODE Nemol Samle
Date: 12-2407	Time: 9:45	SACODE N = Normal
#2 Received by: (Sig) Bill Onalian	Company Name: Life Ericana Lalas	SMCODE D - Doilor
Date: 12/5/07	Time: 10200	SMG
#I Received by: (Sig) Niels van Hoesel	Company Name: FPM Group Ltd	MATRIX

		Ç
	tter	litv
	Ground water	= Water Ouality (
	pur	L.
Z	loi	Vate
MATRIX	U U	2
	^z DM	NO N
Σ	3	3

wQ = Water Quality Control Matrix SO = Soil

NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split spoon B = Bailer G = Grab (only for EB).

TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike Duplicate AB = Ambient Blank N = Normal Sample

Daily Health and Safety Meeting Form

Date: 12/20/07 Time: 8:30
Location: FPM office (garage)
Weather Conditions: <u>30 < Avudy</u>
Meeting Type: Daily Health and Safety
Personnel Present:
Caled Smith Josh Wensel Niels van Hoesel
Visitors Present:
Visitor Training:
PPE Required: Modified D
Possible risks, injuries, concerns:
slip trip fall. Frost bite, host items in snow.
Anticipated Releases to Environment (if so, describe and detail response action/control measures
implemented):
hone
Property Damage:
pore
Description (include sequence of events describing step by step how incident happened):
Analysis for, and Implementation of Corrective/Preventative Procedure to Prevent Future
Occurrences (to be formulated by SSHO + FOM, approved by PM, and SSHO implemented):
Cocurrences (10 be jor matured by 55110 + 1 Ow, approved by 1 W, and 55110 implemented):
Report made by (Name): Niels Van Hoesel
SSHP Organization Title: Site Safety and Health Officer

Daily Chemical Quality Control Report

Project/Delivery Order Number: F41624-03-D-8601-0027 Date:

Date: 2/04/08

Project Name/Site Number: Griffiss Petroleum Spills Sites sampling (Building 101).

Weather conditions: Temperature: 33 Barometric reading: 30.25 Wind direction and speed: southeast 2.0 mph Significant wind changes: None.

General description of tasks completed: Bailer sampling at Site Building 101 (101MW-2).

Explain any departures from the SAP or deviations from approved procedures during the day's field activities: None.

Explain any technical problems encountered in the field or field equipment/field analytical instrument malfunction: None.

Corrective actions taken or instructions obtained from AFCEE personnel: No corrective actions necessary.

Sampling shipment completed: √ Yes □ No LSL Courier.

DCQCR Prepared by: Niels van Hoesel, FOM

Date: 4 February 2008

Local Date: 02/07/08_ COCC Signature: 10 .1 9

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
	✓ Field sampling forms
V	✓ Equipment Calibration Log
V	✓ Copies of COCs
	✓ SDG Table (See accompanying COCs)
	✓ Daily Health and Safety Meeting Form

Project:	40-05-25			Sa	mpled by:	Jo/c	5	
Location	and Site Code	e (SITEID):					
	(LOCID): <u>1-</u> IGDATE): <u>2</u>				ell Diame	ter (SDIA)	M): 2.	h
Date (LO	GDATE): 2	1.4.08		w	eather	25-20	11:11	
(**			/ //54/	> ~~ ~
CASING VOL	<u>UME INFORMATIO</u>	<u>DN:</u>						
Casing ID (mch)		0 15	2 0	22	30 40	43	5.0 60	70
Unit Casing Volu	ime (A) (gal/ft) 0	04 0 09	016	02	0.37 0.65	++	10 1.5	20 26
PURGING INF	ORMATION:							
Measured Well	Depth (B) (TOTDE	ртн) У	1.13	, 1	ì		i I T	
Measured Wate	r Level Depth (C) (8	TATDEP)	5.5	1	n h			
Length of Static	e Water Column (D)	=		= 9.62	fi		B ELEVA	TION
		(B)	(C)	(D)	H ₂ 4		(MPEL	
Casing Water Volume (E) = (A) x (D) = 2.38 gal STATIC								
ELEVATION								
Minimum Purge	e Volume = 7.17	gal (3 well	volume	es)	-			MEAN — SEA
Purge Dat	e and Method	: 3n l	er					LEVEL
Physical A	Appearance/C	omments:	_5	silty	grey			
	EASUREME	NTS:			ŗ			
Allowable		<u>± 0.</u>	1	± 5%	±1°C			
Time	Volume			EC	Temp.	Turbidity	D.0.	ORP
	Removed (g			mS/cm)	(F or C)	(NTU)	(mg/L)	(mV)
1113		5.91		.102	14.81	345	.10	22
1114	2	61		89.5	14.57	412	0.00	-12
1116	<u> </u>	6.3		86.5	<u>/5.11</u> /5.11	473	0.00	-36
11.19	5	6.5		64.5	19.94	406	0.53	-47
1/22	6	<u> </u>		\$3.9		374	0.63	-54
1124	2	6.6		\$3.3	14.45	175 416	0.12	-57
					(1)		1000	
			+					
								i

Sample Time: 1130 Sample ID: 101 M0215UB

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, $Fe^{2^{\circ}}$, CH_4 , H_2S) parameters should be sampled first.

Equipment Calibration Log

Instrument Name: <u>Horiba</u> U-22 Model Number: <u>FIM 42</u>

Date	First Standard Concentration	First Standard Reading	Second Standard Concentration	Second Standard Reading	Comments
6-19	4.00	3.91	4.00	4.00	
6/20	4.00	4.00	4.00		
6/21	4.00	3.99 4,00			
622	4.00	4,00			
6/25	4.00	4,00			
12-6	4,00	3.98			
12-10	4.00	3.78	<u> </u>	3.99	
:2.23	4,00	3.95	4.00	4,00	
2-34	4.00	4.06	4.00	3.99	
	_				

AFCEE CHAIN OF CUSTODY RECORD

COC#: _1_ SDG#: _174_ (Open/Closed) Cooler 1D#: _A_

Ship to: Monika Santucci	intucci				Γ	Proje	ect Name: Griffiss AFB B101Sampling	Griff	ISS A	FB B1	01Sam	pling			Sei	Send Results to: Niels van Hoesel	sults to	o: Niels	s van ł	Hoesel	
Life Scienc 5000 Britte East Svraci	Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Svracuse. NY 13057 Te	200 Tel: (3)0 Tel: (315)437-0200	7-020		Samp	npler Name: Niels van Hoese	e: Nie	els va	n Hoe					1			FPM 153 Rom	FPM Group Ltd. 153 Brooks Roa	FPM Group Ltd. 153 Brooks Road Rome NV 13441	
Carrier: LSL courier.	er.					Samp	Sampler Signature:	ature:		1 and	and	J			Т			Phon	ie: (31	5) 336-7	Phone: (315) 336-7721 Ext. 205
										0											
								ſ			<	Nnaly	ses rec	Analyses requested							
Field Sample ID	LocID	Date	Time	XIATAM	SMCODE	SACODE	2BD/3ED	# of Containers	VOCs ^{notel} (HCI) 40mL vials (HCI)	Metals, Hardness note 2	250 mL poly (HNO ₃) Metals المنف ^ع ک20 mL poly (HNO ₃)	bCB ² uote 1	Phenols ^{note5}	8 oz amber (H ₂ SO ₄) Anions, ^{nole 6}	NH3, COD, TKN nole ⁷ ک30 mL poly	(LOS2H) ylog Jm 221	TOC notes	^{9 aıon} əbinsy (HOaV) yloq zo 8	ן ך bojλ BOD [,] _{ווסופ וס}	Alkalinity ^{note 11} 8 oz glass (zero headspace)	Comments
101M0215VB	WL-101MW-2	2/4	1130	1130 WG	В	z	0/0	4	•	<u>'</u>	'	-	'				5		1	-	
Sample Condition I Special Instructions Note 1: VOCs: 82601	Sample Condition Upon Receipt at Laboratory: Special Instructions/Comments: Parameter List: (According to AFCEE QAPP 4.0) Note 1: VOCs: 8260B AFCEE QAPP 4.0 List.	oratory: eter List	t: (Acc	cordin	ig to A	FCEE	QAPP	4.0)								Coole	ir tem	Cooler temperature.	6		
Note 2: Metals: SW6010 Note 3: Metals: SW6010 Note 4: PCBs: SW8082.	Note 2: Metals: SW6010 AFCEE QAPP 4.0 List (Total), Hardness: 130.2. Note 3: Metals: SW6010 AFCEE QAPP 4.0 List (Dissolved) Note 4: PCBs: SW8082.	0 List (1 0 List (L	fotal), F Dissolve	Hardne sd)	ss: 13(.2.															

Time: Date: Time: Date: #3 Received by: (Sig) #3 Released by: (Sig) Company Name: Company Name: Date: 2-4-08 Time: /3/2 Time: 11 : 45 111112200 Date: 2/4/08 Company Name: Life Science Labs #2 Received by: (Sig) Kut Ton allan Company Name: FPM Groop Ltd. #2 Released by: (Sig) Date: 9/03/07 Time: 1000 Time: Date: #1 Received by: (Sig) Niels van Hoesel Company Name: FPM Group Ltd. Note 11: Alkalinity: 310.1. #1 Released by: (Sig) Company Name:

Note 5: Phenols: SW9065. Note 6: Anions: SW9056 CHLORIDE, SULFATE AND NITRATE ONLY

Note 7: NH3: 350.1, COD: 410.4, TKN: 351.2. Note 8: TOC: SW9060. Note 9: Cyanide: SW9012. Note 10: BOD: 405.1.

MATRIX WG = Ground water WQ = Water Quality Control Matrix SO = Soil

SMCODE B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split Spoon

SACODE N = Normal Sample AB = Ambient Blank TB = Trip Blank EB = Equipment Blank ED = Field Duplicate MS = Matrix Spike SD = Matrix Spike

Daily Health and Saf	ety Meeting Form
Date: 2/4/08	Time :!00
Location: FPM office (garage)	
Meeting Type: Daily Health and Safety	
Personnel Present:	
Johe Pratt Cales Smith	
Visitors Present:	
Visitors Present:	
PPE Required: Modified D	
Possible risks, injuries, concerns:	
slip trip fall. post file	
· · · · · · · · · · · · · · · · · · ·	
Anticipated Releases to Environment (if so, describe	and detail response action/control measures
implemented):	
proce	
Property Damage:	
Departmention (include any operation of mental departments)	
Description (include sequence of events describing st	ep by slep how incident happened):
Analysis for, and Implementation of Corrective/Preva	entative Procedure to Prevent Future
Occurrences (to be formulated by SSHO + FOM, app	proved by PM, and SSH() implemented):
Report made by (Name): Niels Von Kasel	
SSHP Organization Title: Site Safety and Health Off	<u>iicer</u>

Daily Chemical Quality Control Report

Project/Delivery Order Number: F41624-03-D-8601-0027 Date: 3/3/08

Project Name/Site Number: Griffiss Petroleum Spills Sites sampling (Building 101).

Weather conditions: Temperature: 40 Barometric reading: 29.90 Wind direction and speed: South 5.5 mph Significant wind changes: None.

General description of tasks completed: Bailer sampling at Site Building 101 (101MW-2).

Explain any departures from the SAP or deviations from approved procedures during the day's field activities: None.

Explain any technical problems encountered in the field or field equipment/field analytical instrument malfunction: None.

Corrective actions taken or instructions obtained from AFCEE personnel: No corrective actions necessary.

Sampling shipment completed: √ Yes □ No LSL Courier.

DCQCR Prepared by: Niels van Hoesel, FOM

Date: 4 March 2008

Lozal Date:03/07/08_ CQCC Signature:

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
V	✓ Field sampling forms
V	✓ Equipment Calibration Log
\sim	✓ Copies of COCs
	✓ SDG Table (See accompanying COCs)
	✓ Daily Health and Safety Meeting Form

Project:	40-05.27		Sa	mpled by:	Je/cs	5		
Location a	and Site Code (SI	TEID):			7			
Well No.	(LOCID): 101 ^	. w _ 2	w w	ell Diamet	er (SDIAM	[): 2 `		
Date (LO	GDATE): 3.3.	08	W	eather: o	er (SDIAM J84CA51	- /35-	40 *	
				<u> </u>		/		
CASING VOLU	IME INFORMATION:							
Casing ID (inch)	10	1.5 2.0	2.2	30 4.0	43 5	0 60	7.0	
Unit Casing Volum	ne (A) (gal/ft) 0.04	009_01	6 02	0.37 0.65	0.75 1	0 15	2.0 2.6	
DUDGING INF	OD MATION.							
PURGING INFO			-		T T	▲ ▲		
	Depth (B) (TOTDEPTH)		<u> </u>		Í	г -		
	Level Depth (C) (STATI				~~~*	В		
Length of Static	Water Column (D) =(I		_= <u>8,35</u>	ft.	, IÎ T	ELEVAT (MPEL)		
	(1	3) (C)	(D)	112			C * }	
Casing Water Vo	olume (E) = x	=	.346 gal			★ 1		
Casing Water Volume (E) = (A) x (D) = (A) gal $STATIC STATIC$								
Minimum Purge Volume = 4.038 gal (3 well volumes)								
SEA LEVEL								
Purge Date and Method: 3. (ca.								
	appearance/Comm		A 750	is de	and a			
i nysiour i	ippeurunee, com	<u>.</u>	FICE	<u> </u>	ag /		~	
FIELD MI	EASUREMENTS	S:						
Allowable		± 0.1	<u>± 5%</u>	±1°C				_
Time	Volume	pH	EC	Temp.	Turbidity	D.O.	ORP	
	Removed (gal)	1 .	(mS/cm)		(NTU)	(mg/L)	(mV)	4
1145	2	6.31	.109	14.2	564	6.32	-7	$\left\{ \right.$
1146	3	6.48	90.5	14.19 14.17	645	5.91	-30	-
1149	4	6.55	87.8	14.09	523	7.38	- 45	-
4500					The	5.27	-45-	9
11 50	25	6.60	85.6	14.01	472	7.44	-47]
1152	6	6.61	84.0	14.35		10.27	-48	
1153	7	6.64	84.6	14.02	744	3.20	-51	_
1155	8	6.67	84.7	14.07	492	1.15	-51	-
	<u> </u>							

Sample Time: 1200 Sample ID: \$101 M0216VG-

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Equipment Calibration Log

Instrument Name: <u>Horiba</u> U-22 Model Number: <u>FIM 42</u>

Date	First Standard Concentration	First Standard Reading	Second Standard Concentration	Second Standard Reading	Comments
6-19	4.00	3.91	4.00	4.00	<u></u>
6/20	4.00	4.00	4.00		
6/21	4.00	3.99 4,00			
6/22	4.00	4,00			
6/25	4.00	4,00			
12-6	4,00	3,98			
12-10	4.00	3.98	4.	3.99	
:2.23	4,00	3,95	4.00	4,00	
2-04	4.00	4.06	4.00	3.99	
3-3	4,00	3.98	4.00	4,00	
_					

	ODY RECORD
AFCEE	OF CUSTODY
	CHAIN C

COC#: _1_ SDG#: _176_ Cooler ID: _A_

Ship to: Monika Santucci					Pro	oject N	ame: G	riffiss A	Project Name: Griffiss AFB Site Building 101 sampling	Juilding	101 s	ampli		d Results	Send Results to: Niels van Hoesel
Life Science Laboratories, Inc.	oratories, Inc.				Sai	mpler]	Vame:	Niels v	Sampler Name: Niels van Hoesel	1					FPM Group
East Symmetry N	uite 2(12157	100 22	ç											153 Brooks Road
CUCL TN SUBSCUSS, N LOUCI V		1017-104(CIC) :191	170-1 64		_			11	ALI IN	non de			_		Kome, NY 13441
Carrier: LSL courier.					Sal	mpler S	Sampler Signature	TC: A	alant		1				Phone: (315) 336-7721 Ext 205
											1	Analy	Analyses Requested	ested	
Field Sample ID	Location ID (LOCID)	Date 2008	Time	XIATAM	SMCODE	CIERCO CIERCO	SACODE	Preservative Filt./UnFilt.	No. of Containers	VOCs Note I 40 mL vial (HCI)	Anions, ^{note 2} 250 mL poly	TOC ^{note3} 40 mL vials (HCL)	Alkalinity ^{note 4} 8 oz glass (zero headspace)		Comments
101M0216VG	101MW-2	3/3 1	3/3 1200 WG		B	0/0	H N	HCI Unf.	f. 7	e	-	2	-		

Sample Condition Upon Receipt at Laboratory:	Cooler Temperature:
Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0	
Note 1: VOC: method SW 8260: Target COCs: PCE, TCE, DCE, Vinyl Chloride and Chloroform.	
Note 2: Anions: SW9056 CHLORIDE, SULFATE AND NITRATE ONLY	
Note 3: TOC: SW9060.	
Note 4: Alkalinity: 310.1.	

		1. A			
#1 Released by: (Sig)	Date:	#2 Released by: (Sig) /// Lunder	-Date: 3/3/08	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name FPM Group Ltd	Time:]2;50	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/22/08	#2 Received by: (Sig) /S. M. Omollan	Date: 3-3-69	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 10200	Company Name: LIFE Science Labs	Time 1575	Company Name	Time

ì

<u>SMCODE</u> B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split spoon

SACODE N = Normal Sample AB = Ambient Blank TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike Duplicate

Daily Health and Safety Meeting Form
Date: 3-3-08 Time: 10'30
Location: FPM office (garage)
Weather Conditions: 45° Summy
Meeting Type: Daily Health and Safety
Personnel Present: Johe Pratt Caleb Smith
Visitors Present:
Visitor Training:
PPE Required: Modified D
Possible risks, injuries, concerns: Lip trip fall
Anticipated Releases to Environment (if so, describe and detail response action/control measures
implemented):
hore
Property Damage:
Description (include sequence of events describing step by step how incident happened):
Analysis for, and Implementation of Corrective/Preventative Procedure to Prevent Future
Occurrences (to be formulated by SSHO + FOM, approved by PM, and SSHO implemented):
Report made by (Name): Wils van Nocel
SSHP Organization Title: Site Safety and Health Officer

Daily Chemical Quality Control Report

Project/Delivery Order Number: F41624-03-D-8601-0027 Date: 4/8/08

Project Name/Site Number: Griffiss Landfill sampling (Landfill 6) and Building 35, 101, and Tank Farms 1 and 3.

Weather conditions: Temperature: 66 Barometric reading: 30.21 Wind direction and speed: Southeast 4.6 mph Significant wind changes: None.

General description of tasks completed: Bladder pump sampling at Site Landfill 6 (LF6VMW-22, 775VMW-20R, and TMC-USGS-2) and Site Building 35 (B035MW-4). Bailer sampling at Site Building 101 (101MW-2) and Site Tank Farms 1 and 3 (TF3MW-191R and -121R). Wetland water sampling at Site Landfill 6 (LF6WT-1). Leachate water sampling at Site Landfill 6 (LF6LH-1 and -2).

Explain any departures from the SAP or deviations from approved procedures during the day's field activities: None.

Explain any technical problems encountered in the field or field equipment/field analytical instrument malfunction: None.

Corrective actions taken or instructions obtained from AFCEE personnel: No corrective actions necessary.

Sampling shipment completed: $\sqrt{\text{Yes}}$ \square No LSL Courier.

DCQCR Prepared by: Niels van Hoesel, FOM

Date: 15 April 2008

CQCC Signature: <u>Concordia van Hesel</u> Date: <u>4/17/08</u>

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
V	✓ Field sampling forms
	✓ Equipment Calibration Log
V	✓ Copies of COCs
	✓ SDG Table (See accompanying COCs)
	✓ Daily Health and Safety Meeting Form

Project:	40.05.27			Sa	mpled	by: _	30				_
	nd Site Code (
	נוסבי (LOCID): <u>רר</u>										
Date (LO	GDATE): <u> </u>	8.08		W	eather:	54	<u>~~y</u>		556		-
<u>CASING VOLU</u>	ME INFORMATION	1									
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0 8	.0
Unit Casing Volum	ne (A) (gal/ft) 0.04	0.09	0.16	0.2	0.37	0.65	0,75	1.0	1.5	2.0	2.6
PURGING INFO	DRMATION:					[_	+		Г	
Measured Well De	pth (B) (TOTDEPTH)			B (ontion	nal)				• •		
Mancured Water L	evel Depth (C) (STATDE	. 63	. 31	п. (орион	101 <i>)</i>			Ĭ			
	ater Column (D) =(B)				otional)	~	$\overline{1}$			ATION	
Pump Intake Depth	(A): 10					H ₂ C	'	 D	(MPE	LEV)	
	ng/Sampling:			ft					4		
		-	-			L	 STAT	TIC			
Comments (re: De	pth during purging/sampl	ing):					ELEVAT	TION	1	MEAN	
						-				SEA LEVEL	
Purge Date	e and Method:	BLAD	DER	PUMP						LE ¥ EL	
-						. /			-		_
	ppearance/Cor										-
Dissolved	Ferrous Iron (r	ng/L):									_
FIELD MI	EASUREMEN	TS									
Allowable).1	± 3%			± 10%		±10%	± 10m	V
Time	Depth to Wat	er p	H	EC	Tem	р. 7	[urbidi	ty	D.O.	ORP	
	(ft BTOC)			(mS/cm)	<u> </u>		(NTU))	(mg/L)	(mV)	(mL/min)
1524	63.34	6.	92	59.6	T	<u>.53</u>	<u>155</u>		10.18	28	3 100
1528		<u> </u>	<u>53</u>	64.2		3	160		3.54	285	5 100
1538		<u> </u>	<u>56</u>	64.7	1	.27	159	3	0.92	268	
·1536		6	<u>65</u>	66.3		.19	156	2	0.21	249	
1538	<u> </u>	-6	<u>.71</u>	67.9	12	·31	159		0.00	73.	3 150
1541		(2	59	<u> </u>	2	43	156		0.00	jąc	5 150
1945		6.	<u>94</u>	67.6	-12	2.36	145	4	6.00		3 (50
1548			Ωİ∣	<u>68.3</u>	12	28	155		0.00	14	150
1551			06	68.6		<u>.35</u>	<u> 120</u>		0.00	12	
1554		14	<u>o</u> l†	68.3		27	150		0:00		3 150
Sample Time		_ [.		67.9 5v-2		42	150	2	0.00	85	190_

Project: <u>40-05.27</u>	Sampled by: <i>o</i>	
Location and Site Code (SITEID):	LFG	
	20 K Well Diameter (SDIAM): 2"	
	Weather: Survey /65"	
CASING VOLUME INFORMATION:		
Casing ID (inch) 1.0 1.5 2	2.2 3.0 4.0 4.3 5.0 6.0 7.0 8.0	
Unit Casing Volume (A) (gal/ft) 0.04 0.09 0.	6 0.2 0.37 0.65 0.75 1.0 1.5 2.0 2.6	
Measured Water Level Depth (C) (STATOEP)	(D) fl. (optional) (D) fl. (optional) (D) fl (MPELEV)	
Dissolved Ferrous Iron (mg/L):		
FIELD MEASUREMENTS: Allowable Range: ± 0.1 Time Depth to Water pH (ft BTOC)	$\begin{array}{cccc} \pm 3\% & \pm 10\% & \pm 10\% & \pm 10mV \\ \hline EC & Temp. & Turbidity & D.O. & ORP & Flo \end{array}$	w Rate L/min)
1601 63.34 7.20	67.7 12.52 50 0.00 63 15	50
1604 1 7.24	67.7 12.54 190 000 50 67.9 17.59 152 0.00 38	1
1607 7.29	67.9 17.59 152 0.00 38 67.8 12.44 144 0.00 33	+
1610 7.29 1613 7.31	67.8 12.44 144 0.00 33 67.8 12.51 145 0.60 29	1-
		V—

Sample Time: 1635 Sample ID: 775VM20R/10HA

Project:	40.05.27		Sa	mpled by:	50				
Location a	nd Site Code (SI	ГЕID): _	LFG						
	LOCID): ul-L								
	GDATE): <u>יאי</u> א						_		
CASING VOLU	MEINFORMATION:								
Casing ID (inch)	1.0	1.5 2.0	2.2	3.0 4.0	4.3 5.0	0 6.0	7.0 8.0		
Unit Casing Volum	ie (A) (gal/ft) 0 04	0.09 0.1	6 0.2	0.37 0.65	0.75 1.	0 1.5	2.0 2.6		
	ORMATION; oth (B) (TOTDEPTH) evel Depth (C) (STATDEP) _			al)	~		Ī		
Length of Static Wa	ater Column (D) =		fl. (op	tional)		B ELEVA	ATION		
Pump Intake Depth	(fi):			1	H ₂ O	(MPE	LEV)		
Depth during Purgi	ng/Sampling:(pm	vide range)	î			V			
	pth during purging/sampling):				STATIC ELEVATION	· · · · · · · · · · · · · · · · · · ·			
	31 5 5 1 5						MEAN		
							SEA LEVEL		
Purge Date	Purge Date and Method: BLADDER PUMP								
Physical Appearance/Comments:									
Dissolved Ferrous Iron (mg/L):									
Allowable	EASUREMENTS Range	: ± 0.1	± 3%		±10%	± 10%	± 10mV		
Time	Depth to Water	-	EC	Temp.	Turbidity		ORP	Flow Rate	
	(ft BTOC)	F	(mS/cm)		-	(mg/L)	(mV)	(mL/min)	
1203	12.84	6.97	48.3	9.14	10.7	7.68	331	200	
1205	1	٦.0 9	76.3	9.01	23.6	6.23	330	1	
1207		7.15	25.6	9.27	13.2	5.53	733		
1209	•	7.12	25.8	5.30	6.2	5.05	334		
1211		7.05	26.4		3.5	4.83	335		
1213		706		1.21	2,2	4.57	335		
1215		7.08		7.25	0.4	4.48	334		
1217		7.06	29.0		6.6	4.36			
1219		7.06	29.4	5.26	6.0	4.30	333		
(22)		7.06	03029.	9.23	0.0	4.27	332		

Sample Time: 1270 Sample ID: LF6Vm3235HA/C

Project:	40.05.27			Sa	mpled by:	(TP			
Location a	and Site Cod	de (SI)	TEID):						
Well No. ((LOCID):	Tr-L-I	nses -	2 W	ell Diamet	er (SDIAM	l): 2 "		
	GDATE):					many /	-		
CASING VOLU	IME INFORMAT	<u>rion:</u>							
Casing ID (inch)		1.0	1.5	2.0 2.2	3.0 4.0	4.3 5.	.0 6.0	7.0 8.0	7
Unit Casing Volun	ne (A) (gal/ft)	0.04	0.09 0	.16 0.2	0.37 0.65	0.75 1	0 1.5	2.0 2.6	
PURGING INFO	ORMATION:				[↑ ▲ /	7	
Measured Well De	pth (B) (TOTDEP)	ГН)		ft. (option	ual)		ς Τ		
Measured Water L	evel Depth (C) (ST	ATDEP)_	3.20	fl,			↓		
Length of Static W	ater Column (D) =	(B)	(C) =	(D) ft. (op			B ELEV/	ATION (LEV)	
Pump Intake Depth	n (fl):27								
Depth during Purg	ing/Sampling:		<u></u>	n					
		_	_		L	STATIC	· · · · · · · · · · · · · · · · · · ·		
Comments (re: De	pth during purging/	sampring):				ELEVATIO	N	MEAN	
Physical A	e and Metho Appearance/ Ferrous Iro	Comm	ents: _	cloudy/f	0004 AE	دلهمج ک	av ada	SEA LEVEL	
	EASUREM								
Allowable	— <u> </u>		± 0.1	± 3%	1	± 10%	± 10%	$\pm 10 mV$	
Time	Depth to V		pН	EC	Temp.	Turbidity		ORP	Flow Rate (mL/min)
	(ft BTC		113	(mS/cm) 43.7		(NTU)	(mg/L)	(mV)	. ,
1006	03/	phage	5.23	43.7	6.07	372	2.09	360	100
1010		_	5.46		7.23	245	0.00	357 351	
1015		_	5.58	Y4-8	7.11	242	6.00	746	V
1022			5.78	41.6	7.19	195	0.00	379	
1026		-	5.96	445	7.26	192	0.00	333	
1630			6.16	44.2		118	6.00	326	
1034			6.27			198	0.00	521	
10 58	,		4.57	41.2	7.44		0.00	315	
1042			6.46			220	0.00	309	
1046			6.52	41.6	7.59	206	0.00	704	
Sample Tim	e:	Samp	ole ID: 1	incumo?	27HA				

Project:	40.05.27			Sa	ampled	l by:	T	p				
	and Site Code											
	(LOCID): <u></u>		-		ell Dia	amet	er (SDIA	M):	2,			
	GDATE):											
						·						
CASING VOLU	<u>JME INFORMATIO</u>	<u>N:</u>										
Casing ID (inch) Unit Casing Volu	1,0 me (A) (gal/ft) 0.0		2.0 0.16	0.2	3.0 0.37	4.0 0.65	4.3 0.75	5.0	6.0 1.5	7.0 2.0	8.0	7
Comt casing voiu	nie (A) (gavit) 0.0	9 0.07	0,10	0.2	0.37	0.05	1 0.75 1	1.0	1.2	2,0	2.0	
PURGING INF	ORMATION:							-		<u> </u>		
		-	s	ft. (optio	nal)				1	•		
Measured Water I	epth (B) (TOTDEPTH) Level Depth (C) (STATI Vater Column (D) =	DEPLY			,			ļ				
Length of Static V	Vater Column (D) =(B)		_=	îl. (o D)	ptional)	r	$\sim $	Ť	B I FIFN	 /ATION		
	(B)		(1	D)			H ₂ O			ELEV)		
• •				ß				D 				
Departmenting Fung	ging/Sampling:	(provide ran	ge)	^			STAT					
Comments (re: D	epth during purging/sam	pling):					ELEVAT			¥.	(EAN	
							I			 :	SEA EVEL	
Purge Dat	te and Method	: BLAD	DER	PUMP							61.55	
Physical A	Appearance/Co	mments			درب	<u>ب ر</u>						
	Ferrous Iron (•								
DISSUIVED		(mg/L).										
FIELD M	EASUREME											
Allowable	1	± (± 3%			± 10%		± 10%	-	10mV	
Time	Depth to Wa (ft BTOC	-	H	EC (mS/cm)	Ten (For		Turbidi (NTU)	~	D.O.		DRP	Flow Rate (mL/min)
1050	63/Pmax 8	· · · · · · · · · · · · · · · · · · ·	<u> </u>	<u>(113/CIII)</u> 41.6	7.0		210	, 	(mg/L) 0.00		mV) S9	100
						- /				-		
											-	Y .
								_		+	_	
											_	
L							-					
Sample Tin	ne: 1(0	Sample ID	<u> </u>	Mehm	022	7 +(<u>A</u>					

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Project: _	40-05-27	I	Sa	mpled by:	_) w/c	S		
	and Site Code (8		۵F	6		-		
	(LOCID): <u></u>							
	GDATE): 4		-		Sun/45			
CASING VOLU	JME INFORMATION:				- (-
Casing ID (mch)	10	15 2	0 22	30 40	43 5	0 60	70 80	
Unit Casing Volu	ne (A) (gal/ft) 0.04	0.09 0	16 0.2	0.37 0.65	0 75 1	0 15	20 26	
PURGING INF	ORMATION:			—		+	Γ	
Measured Well De	pib (B) (TOTDEPTH)		ft(option	al)		s T A		
	evel Depth (C) (STATDE					↓		
Length of Static W	/ater Column (D)(B)	- (C)	(D) Î (op	tional)			ATION (LEV)	
Pump Intake Dept	h (ft)	_						
Depth during Purg	ang Sampling.	provide range)	î			. 🔶 🗌		
	epth during purging sampli				STATIC			
			_				MEAN SEA	
							LEVEL	
	e and Method:				-			
Physical A	Appearance/Con	iments: _	clear	/no ode	×			
Dissolved	Ferrous Iron (n	ng/L):	l		_			
EIELD M	EASUREMEN	r e ,						
Allowable		± 0.1	± 3%		± 10%	± 10%	$\pm 10 \text{mV}$	
Time	Depth to Wate	1	EC	Temp.	Turbidity		ORP	Flow Rate
-	(ft BTOC)		(mS/cm)	<u> </u>		(mg/L)	(mV)	(mL/min)
0931	-	6.02	47	40	8.5	5.01	292	
	+							
<u> </u>								
						<u> </u>		İ
Sample Tim	e: 0935 Sa	mple ID:	LF6 WT	oiolHf	A Contraction of the second se			

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						mpled by							
Project: <u>46-65-27</u> Location and Site Code (SITEID): Well No. (LOCID): <u>ev-cf6c4-(</u>													
	GDATE):		•										
	GDATE).	<u> </u>				eather:	Sua	41 -					
<u>CASING VOLU</u>	ME INFORMA	TION:											
Casing ID (inch)		10	15	20	2.2	3.0 4.0	4.3	5.0	60	70	8.0		
Unit Casing Volum	ne (A) (gal/ft)	0.04	0.09	0.16	02	0 37 0 6	<u>0</u> 75	10	15	20	2.6		
	NEX 4 (1917) XXX					_							
PURGING INFO								Ť	A	k – –			
	pth (B) (TOTDEP					al)							
	evel Depth (C) (ST					h.	$\sim _{}$	*	B				
ength of Static Wa	ater Column (D) -	(B)	(C)	=	ft (or	tional)	н,о	`T	ELEV	/ATION ELEV)			
ump Intake Depth	1(ft)	-					110	D	(sate				
Septh during Purgr	mg Sampling		nude range)	_	_ft				•				
	pih during purging					L		ATIC	· · · · ·				
connicitto (re 196	փու ցույրե խուեաբ	, շատթողը,											
	e and Meth		LADD	ER P	UMP		 b	ATION		ME/ SE/ LEV	A		
Physical A	e and Meth Appearance Ferrous Irc	/Comn	LADD) nents:	ER P	UMP		 b			SE.	A		
Physical A Dissolved	Appearance Ferrous Irc	/Comn on (mg	LADD nents: /L):	ER P	UMP		 b			SE.	A		
Physical A Dissolved	Appearance. Ferrous Irc EASUREM	/Comn on (mg	LADD nents: /L):	ER P	UMP		 b	lon	± 10%	SE.	A EL 		
Physical A Dissolved FIELD MI	Appearance. Ferrous Irc EASUREM	/Comm on (mg 1ENTS	LADD ments: f/L): S: ± 0.1	ER P	UMP		= >= / = ± 109	lon		SE. I.EV	A EL 		
Physical A Dissolved FIELD MI Allowable	Appearance, Ferrous Irc EASUREM Range:	/Common (mg 1ENTS Water	LADD ments: f/L): S: ± 0.1		UMP	Temp. (F or C)	 × / sh ± 109 Turbic	60	± 10%	± 10	A EL DmV RP V)		
Physical A Dissolved FIELD MI Allowable Time	Appearance Ferrous Irc EASUREM Range: Depth to	/Common (mg 1ENTS Water	LADD ments: (/L): S: ± 0.1 pH		UMP <u>+ 3%</u> EC mS/cm)	Temp. (F or C	± 109 Turbic (NTU	Concord //o lity J)	± 10% D.O. (mg/L)	± 10 OF (m)	A EL DmV XP V)		
Physical A Dissolved FIELD MI Allowable	Appearance Ferrous Irc EASUREM Range: Depth to	/Common (mg 1ENTS Water	LADD ments: f/L): S: ± 0.1		UMP <u>+ 3%</u> EC mS/cm)	Temp. (F or C)	± 109 Turbic (NTU	Concord //o lity J)	± 10% D.O.	± 10	A EL DmV XP V)		
Physical A Dissolved FIELD MI Allowable Time	Appearance Ferrous Irc EASUREM Range: Depth to	/Common (mg 1ENTS Water	LADD ments: (/L): S: ± 0.1 pH		UMP <u>+ 3%</u> EC mS/cm)	Temp. (F or C	± 109 Turbic (NTU	Concord //o lity J)	± 10% D.O. (mg/L)	± 10 OF (m)	A EL DmV XP V)		
Physical A Dissolved FIELD MI Allowable Time	Appearance Ferrous Irc EASUREM Range: Depth to	/Common (mg 1ENTS Water	LADD ments: (/L): S: ± 0.1 pH		UMP <u>+ 3%</u> EC mS/cm)	Temp. (F or C	± 109 Turbic (NTU	Concord //o lity J)	± 10% D.O. (mg/L)	± 10 OF (m)	A EL DmV XP V)		
Physical A Dissolved FIELD MI Allowable Time	Appearance Ferrous Irc EASUREM Range: Depth to	/Common (mg 1ENTS Water	LADD ments: (/L): S: ± 0.1 pH		UMP <u>+ 3%</u> EC mS/cm)	Temp. (F or C	± 109 Turbic (NTU	Concord //o lity J)	± 10% D.O. (mg/L)	± 10 OF (m)	A EL DmV XP V)	Flow Ra (mL/mi	
Physical A Dissolved FIELD MI Allowable Time	Appearance Ferrous Irc EASUREM Range: Depth to	/Comm on (mg 1ENTS Water	LADD ments: (/L): S: ± 0.1 pH		UMP <u>+ 3%</u> EC mS/cm)	Temp. (F or C	± 109 Turbic (NTU	Concord //o lity J)	± 10% D.O. (mg/L)	± 10 OF (m)	A EL DmV XP V)		
Physical A Dissolved FIELD MI Allowable Time	Appearance Ferrous Irc EASUREM Range: Depth to	/Comm on (mg 1ENTS Water	LADD ments: (/L): S: ± 0.1 pH		UMP <u>+ 3%</u> EC mS/cm)	Temp. (F or C	± 109 Turbic (NTU	Concord //o lity J)	± 10% D.O. (mg/L)	± 10 OF (m)	A EL DmV XP V)		
Physical A Dissolved FIELD MI Allowable Time	Appearance Ferrous Irc EASUREM Range: Depth to	/Comm on (mg 1ENTS Water	LADD ments: (/L): S: ± 0.1 pH		UMP <u>+ 3%</u> EC mS/cm)	Temp. (F or C	± 109 Turbic (NTU	Concord //o lity J)	± 10% D.O. (mg/L)	± 10 OF (m)	A EL DmV XP V)		
Physical A Dissolved FIELD MI Allowable Time	Appearance Ferrous Irc EASUREM Range: Depth to	/Comm on (mg 1ENTS Water	LADD ments: (/L): S: ± 0.1 pH		UMP <u>+ 3%</u> EC mS/cm)	Temp. (F or C	± 109 Turbic (NTU	Concord //o lity J)	± 10% D.O. (mg/L)	± 10 OF (m)	A EL DmV XP V)		

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	40-05-	27	Sa	mpled by:	Junc.	2		
	nd Site Code (S							
					er (SDIAM			
	GDATE): Y	1-08		eather:	Jun/	13		
CASING VOLU	ME INFORMATION:							
Casing ID (inch)	1.0	1.5	20 22	30 40		0 6.0	70 80]
Unit Casing Volum	ie (A) (gal/ît) 0.04	0.09	0.16 0.2	0.37 0.65	0.75 1	0 15	2.0 2.6	
Measured Water Le	oth (B) (TOTDEPTH) evel Depth (C) (STATDE)	n	A	~				
	ater Column (D) =(B)		(D)		H,O		ATION (LEV)	
	(fi)							
Depth during Purga	ng Sampling(provide range)	ĥ					
Comments (re Dep	pth during purging sampli	ig)			STATIC ELEVATIO	N		
				(L		MEAN SEA LEVEL	
	e and Method:							
Physical A	ppearance/Con	nments:	<u> </u>	el slist	nt petro	ada		
Dissolved	Ferrous Iron (m	1g/L):		ι				
FIELD ME		re.						
	EASUREMENT	rs: ± 0.1	± 3%		± 10%	± 10%	± 10mV	
FIELD ME Allowable Time	EASUREMENT	± 0.1		Temp.	± 10% Turbidity	± 10%	± 10mV ORP	Flow Rate
Allowable Time	EASUREMENT Range:	± 0.1 er pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)		1	Flow Rate (mL/min)
Allowable	EASUREMENT Range: Depth to Wate	± 0.1	EC (mS/cm)	Temp.	Turbidity	D.O.	ORP	
Allowable Time	EASUREMENT Range: Depth to Wate (ft BTOC)	± 0.1 er pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	(mL/min)
Allowable Time	EASUREMENT Range: Depth to Wate (ft BTOC)	± 0.1 er pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	(mL/min)
Allowable Time	EASUREMENT Range: Depth to Wate (ft BTOC)	± 0.1 er pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	(mL/min)
Allowable Time	EASUREMENT Range: Depth to Wate (ft BTOC)	± 0.1 er pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	(mL/min)
Allowable Time	EASUREMENT Range: Depth to Wate (ft BTOC)	± 0.1 er pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	(mL/min)
Allowable Time	EASUREMENT Range: Depth to Wate (ft BTOC)	± 0.1 er pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	(mL/min)
Allowable Time	EASUREMENT Range: Depth to Wate (ft BTOC)	± 0.1 er pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	(mL/min)
Allowable Time	EASUREMENT Range: Depth to Wate (ft BTOC)	± 0.1 er pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	(mL/min)

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Project:	40-05 -27		Sai	npled by:	ار	ics	
Location a	<u>רע- אט-טא אל</u> nd Site Code (SI	TEID):	TE	3 Ta	nk Far	ms 13	3
	LOCID):			+			
	GDATE): <u>4</u>						
Duit (LOC						<u> </u>	·
CASING VOLU	ME INFORMATION:	~					
Casing ID (inch)	1.0	1.5 2.0	2.2	3.0 4,0	4.3 5.	0 6.0	7.0
Unit Casing Volum	e (A) (gal/ft) 0.04	0.09 0.1	6 0.2	0.37 0,65	0.75 1.	0 1.5	2.0 2.6
		\bigcirc	/				
<u>PURGING INFO</u>	RMATION:						
	Depth (B) (TOTDEPTH)				¢		
Measured Water	Level Depth (C) (STATD	EP) 11.4	0	i. h	~ *	B	
Length of Static	Water Column (D) =(B		= 6.8	Л. н ₂ С	, I î T	ELEVAT	
	(В) (C)	(D)	1120	D		ыт)
Casing Water Vo	$lume(E) = \underbrace{0.16}_{(A)} x_{-}$	<u>6.8</u> =	.088 gal			★	
	(A)	(D)			STATIC ELEVATION	<u> </u>	
Minimum Purge	Volume = 3.26 ga	ıl (3 well volu	mes)	_			MEAN — SEA
-							LEVEL
Purge Date	and Method:	Boi	ler				
Physical A	ppearance/Comm	nents:	- low	1 / ner	tro ada	- / Fe	¥ = Z.5
	FF 1	· · · ·		1/1		7.0	
	EASUREMENTS			. 100		/	
Allowable Time	Range: Volume	1	± 5% EC	±1°C Temp.	Turbidity	D.O.	ORP
Inne	Removed (gal)	pH	(mS/cm)	(F or C)	-	(mg/L)	(mV)
1312	.75	6.90	0-16	12.0	245	3.91	/87
1313	1.50	6.90	0.15	10.8	341	3.12	159
1314	2.25	7.05	0.15	10.6	389	5.20	128
1315	3.00	7.09	0.15	10.6	261	3.78	<u>98</u> 73
1316	3.75	17.11	0.15	10.5	282	4.26	73
	· · · · · · · · ·						
		,					
0 1 5	: <u>1317</u> Samp	la ID. 🛨	P2	AZIO			

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Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project:	40-05-25	>	Sa	mpled by:	Jw/c	5	
Location a	nd Site Code (SI						
Well No. ((LOCID): <u>66-7</u>	F3MW-	IZIQ We	ell Diameto	er (SDIAM): <u> </u>	
Date (LOC	GDATE): <u>4</u> .	8-08	We	eather:	sun/So	•	
					/		
CASING VOLU	ME INFORMATION:						
Casing ID (inch)	1.0	1.5 2.0	++ +-	3.0 4.0	4.3 5.		7.0
Unit Casing Volum	ne (A) (gal/ft) 0.04	0.09 0.1	6 0.2	0.37 0.65	0.75 1.	0 1.5	2.0 2.6
PURGING INFO	DRMATION:			[- ·	A	
	Depth (B) (TOTDEPTH)	17.0) fi		¢	T T	
	Level Depth (C) (STATE			8			
						้ย่ะ ELEVA	TION
Lengui or Static	Water Column (D) =(B) (C)	(D)	н. н ₂ с		(MPEL	
Coning Water M	- A.I.L	6 44 -1	0.944 ml		Ī		
Casing water vt	$blume(E) = \frac{0.16}{(A)} x_{-}$	(D)	gai		STATIC	V	
	Volume = 2. P9 ga	1 (2)	>		ELEVATION	V	MEAN
-				-	I		SEA LEVEL
Purge Date	e and Method:	Ra	iler				
Physical A	nnearance/Comm	SiA	y brown	1 44 5	JAM /	5.24	-04
I IIysical A	appearance/Comm	iems	57	/ //0 00	201		00.1
FIELD MI	EASUREMENIS				/		
Allowable	<u> </u>	± 0.1	± 5%	±1°C	The states of		000
Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1336	. <u>.</u>	7.26	0.13	13.7	655	4.30	201
1337	1.0	7.09	0.12	13.6		3.36	210
1338	1.5	7.05	012	135	975	4.02	215
1339	2.0	7.06	0.12	13.6	571	403	215
1346	·2.5	7.05	0.12	13.6	532	5.95	210
1341	3.0	7.04	0.12	13.6	647	5.06	215
							+

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project:	40-05	,-27	r Sai	mpled by:	(5/	JW	
	nd Site Code (SI		BIC	Ň			
			-2 We	ell Diameto	er (SDIAM): 2	in
	GDATE): 4-				SUM		<u>'S</u>
CASING VOLUI	ME INFORMATION:		n				
Casing ID (inch) Unit Casing Volume	1.0 e (A) (gal/ft) 0.04	1.5 2. 0 0.09 0 .1	0 2.2 16 0.2	3.0 4.0 0.37 0.65	4.3 5.0 0.75 1.0		7.0 2.0 2.6
PURGING INFO	<u>RMATION:</u>		0.0		_ _	A A	
	epth (B) (TOTDEPTH)			**	Ċ		
	Level Depth (C) (STATE			n		В	
Length of Static	Water Column (D) = $\frac{24}{(B)}$; % - <u>\\$4</u> ;) (C)	62= <u>78.54</u> (D)	ћ. но		ELEVAT (MPEL	
Casing Water Vo	$lume(E) = \frac{0.16}{(A)} x$	(D) =	-3664a1			<u>▼</u>]	
Minimum Purge	Volume = 4.09 gr	ıl (3 well volu	imes)	-	ELEVATION		MEAN —— SEA LEVEL
Purge Date	and Method:	Bail	еГ				
	 ppearance/Comn			bidend	ation odo		Al.
				,			
	EASUREMENTS	$5: \pm 0.1$	± 5%	±1°C			
Allowable Time	Volume		EC	Temp.	Turbidity	D.O.	ORP
THIC	Removed (gal)		(mS/cm)	(F or C)	(NTU)	(mg/L)	(mV)
1124		6.42	0.12	12.7	168.0	157	12
1126	2	6.46	0.12	17.8	260.0	4.20	D
1128	3	6.54	0.13	12.3	188.0	5.88	-13
(130	Ч	6.53	0.13	12.6	M3.0	1.32	-22
_1132	-5	6.60	0.13	12.2	136.0	4.07	-2'/
			+				+

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

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Project:	40-05-Z	Sa	Sampled by: B 35 Well Diameter (SDIAM):Z ``								
Location ar	nd Site Code (SI)	63	<u>B 35</u>								
Well No. (I	LOCID): BOSS	riwo4		Well Diameter (SDIAM): Z [*]							
	DATE): <u>4-8</u>		5un/s								
	•										
CASING VOLUN	<u>ME INFORMATION:</u>										
Casing ID (inch) Unit Casing Volume	(A) (gal/ft) 0.04	15 20 0.09 01		3 0 4.0 0.37 0.65	435 0751	0 60	7.0 8.0 2.0 2.6	-			
Child Cashing Volume		007 01		0.00	0,2 1	×					
PURGING INFO	RMATION:					* • •	-				
	h (B) (TOTDEPTH)		lì (option	al)							
	el Depth (C) (STATDEP)										
	er Column (D)			otional)							
			(D)		H ₂ O	(MPI	ATION ELEV) I				
	ñ) 16		0			' 🔟					
Depin during Purgm	g Sampling(pro	vide range)									
Comments (re. Dep	th during purging sampling).			-	STATIC ELEVATIO	N	N.T. IN				
						,	MEAN SEA LEVEL				
Purge Date	and Method: BI	LADDER	PUMP				F10.4101				
-	ppearance/Comm			1-2-2	IN C						
Dissolved	Ferrous Iron (mg	/L):		·							
FIELD ME	ASUREMENTS	5:									
Allowable		± 0.1	± 3%		± 10%	± 10%	± 10mV	[]			
Time	Depth to Water	pH	EC	Temp.	Turbidity		ORP	Flow Rate (mL/min)			
14.29	(ft BTOC)	7.41	(mS/cm)	(F or C) 9 .6	(NTU) 15.9	(mg/L) 2.2 1	(mV) ZY7	200			
HSI		7.38	82	9.3	19.9	1.73	247				
1433	.1	7.31	19	9.0	218	1.30	256				
1435	· ·	733	78	8.8	17.3	603	247				
1437		7.33	78	8.8	18.9	0.72	246	r			
1439		7.34	27	8.8	19.8	0.47	242	-			
1441		7 37	25 73	8.8	13 8	0.05	244 238				
1773		2'39	1 <u>5</u>	9.0	10.7	0.00	237				
1447		7.40	71	9.0	9.2	0.60	236				
1449		7.41	7	9.0	8.3	8.00	284				
Sample Time	1451 Sam	nle ID: R	PUW 224	661			-				

Equipment Calibration Log

4.4 Instrument Name: $) \alpha$ tť 1 Rental # n' Model Number:

Date	First Standard Concentration	First Standard Reading	Second Standard	Second Standard Reading	Comments
4.8.65	4.60	3.97	4.00	4.00	Rented
460	4.00	3.95	4.00	349	FPM 1
48.03	4.00	3.97	4.00	4.00	Rental
4.5.08	4.00	3.90	4.00	4.00	EPM1
4.9.02	4.00	3.97	4.00	4.00	Kental
4.9.08	4.60	3.96	4.00	3.99	FPMI
4.15.08	4.00	3.99	4.00	400	FPW1
					<u> </u>
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				·	
		·			
	·				

AFCEE CHAIN OF CUSTODY RECORD

COC#: _1_ SDG#: _183_ (Open/Closed) Cooler ID#: _A_

	_			-									
L L	Phone: (313) 336-1/21 EXt. 205	Comments											
cesel Ltd. Road 3441	11-955	Cyanide ^{note 9} 8 oz poly (NaOH)	-	-	1	1	1	1	-	-	1	•	
Send Results to: Niels van Hoesel FPM Group Ltd. 153 Brooks Road Rome, NY 13441	<u>(c1c) :ər</u>	Alkalinity ^{Note 8} 8 oz glass (no headspace)	1	1	1	1	1	1	1			,	
FPN FPN 153 Rom	IOUA	ВОD ^{Иок 7}	1	1	1	1	1	1	1	1	•		Cooler temperature: leters)
Kesults		TOC ^{مورد و} 40 mL vial (HCL)	1	1	1	1	1	1	1	-	-	,	cooler te
	- p	ן געשר אסןא (H₂SO₄) 125 mL poly (H₂SO₄) 173 mL poly (H2SO4)	-	1	1	1	1	1	I	Ţ	ı		e Parame
	Analyses requested	Anions, TDS, color ^{note 4} 500 mL poly	1	1	1	1	1	1	1		1	•	Coole CEE QAPP 4.0 and NYSDEC Landfill Part 360 Baseline Parameters Parameters. URY (total), Hardness: 130.2.
$\left \right\rangle$	Analyses	Pbenols ^{note 3} I L amber (H ₂ SO ₄)	1	1	1	1	1	1	1	1	•	•	Part 360
		Metals ^{note 10} 250 mL poly (HUO3)	-	1	1	1	1	1	1		1	ı	Landfill
Jamann		Metals, Hardness ^{aoe 2} 250 mL poly (HUO ₃)	-	1	1	1	1	1	1	1	•	1	(SDEC1
Justin Damann		40mL vials (HCl)	3	3	3	3	3	3	3	3	3	3) and NY
	Sampler Signatur	# of Containers	12	12	12	12	12	12	12	11	3	3	P 4.(
oject Ivanie. ampler Name	er vi	ZBD/ZED	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	QAF neters (total
Sampler Name:	samp	ZYCODE	z	z	FD	z	z	z	z	EB	AB	Ê	CEE Para
		ZWCODE	ВР	BP	BP	BP	υ	υ	G	BP	NA	NA	to AF seline MERC
-0200		XIATAM	ÐM	WG	ЪМ	ЪМ	ЪМ	ЪМ	МG	ΜQ	ΜQ	МQ	ording 360 Ba
00 Tel: (315)437-0200		Time	1630	1230	1230	1100	0935	0959	1017	1700	1457	0060	t: (Acco IYS Part BORON
.00 Tel: (3		Date 2008	4/8	4/8	4/8	4/8	4/8	4/8	4/8	4/8	4/8	4/8	oratory: eter Lisi List + N 0 List +
Monika Santucci Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 To	er.	LocID	775VMW-20R	WL-LF6VMW-22	WL-LF6VMW-22	TMC-USGS-2	WT-LF6WT-1	RV-LF6LH-1	RV-LF6LH-2	FIELDQC	FIELDQC	FIELDQC	Sample Condition Upon Receipt at Laboratory: Special Instructions/Comments: Parameter List: (According to AFCEE QAPP 4.0 and NYSD Note 1: VOCs: SW8260 AFCEE QAPP 4.0 List + NYS Part 360 Baseline Parameters. Note 2: Metals: SW6010 AFCEE QAPP 4.0 List + BORON AND MERCURY (total), Hardness: 130.2 Note 3: Phenols: SW9056, TDS: 160.1. Note 4: Anions: SW9056, TDS: 160.1. Note 5: NH3: 350 2 COD: 410.4 TKN: 351 2
Life Science Lab Life Science Lab 5000 Brittonfield East Syracuse, N	Carrier: LSL courier.	Field Sample ID	775VM20R110HA	LF6VM2235HA	LF6VM2235HC	TMCUM0227HA	LF6WT0101HA	LF6LH0101HA	LF6LH0201HA	040808HE	040808HF	040808HR	Sample Condition Upon I Special Instructions/Com Note 1: VOCs: SW8260 AI Note 2: Metals: SW6010 A Note 3: Phenols: SW9056, Note 4: Anions: SW9056, Note 5: NH3: 350.2 COD,

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80	Alk	ð	Σ
		<u>.</u>	ö
6	80	e 9	ы
Note 7: BOD: 405.1.	Note 8: Alkalinity: 310.1	Note 9: Cyanide: SW9012.	Note 10: Metals: SW6010 AFCEE QAPP 4.0 List + BORON AND MERCURY (Dissolve
-	~	_	~

			Γ
Date:	Time:	Date:	Time:
#3 Released by: (Sig)	Company Name:	Date: $H/g/O B$ #3 Received by: (Sig)	Company Name:
Date: 4/8/08	Time: 179 0,	Date: 4/8/08	Time: /) au
19	14 0	J.X	١
X	up Jud		2
#2 Released by: (Sig)	Company Name PINGree	#2 Received by: (Sig) </td <td>Company Name:</td>	Company Name:
Date;	Time:	Date:: 2/20/07 #2 Received b	Time: 1000
#1 Released by: (Sig)	Company Name:	#1 Received by: (Sig) Niels van Hoesel	Company Name: FPM Group Ltd

<u>SMCODE</u> <u>B</u> = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split Spoon

SACODE N = Normal Sample AB = Ambient Blank TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike

AFCEE CHAIN OF CUSTODY RECORD

COC#: _2_ SDG#: _183_ Cooler ID: _A_

Ship to: Monika Santucci	ucci			Proj	ect Nam	le: Griff	iss AFB	TF 1 and	Project Name: Griffiss AFB TF 1 and 3 Sampling	1g	Send F	tesults to	: Niels va	Send Results to: Niels van Hoesel		
Life Science l	Life Science Laboratories, Inc.			Sam	pler Nau	Sampler Name: David Forse	vid Fors	je je		1			FPM Group	roup		
5000 Brittonfield Pkwy, S Fast Swacuse, NY 13057	uite 20	0 Tel: (315)437-0200	0200			V		(100	(153 Bro Rome, 1	153 Brooks Road Rome, NY 13441		
Carrier: LSL courier.				Sam	Sampler Signature:	mature:	1	and	Pro	are			Phone: (315)		336-7721 Ext. 205	1
									Anal	Analyses Requested	lested			i		-
Field Sample ID	Location ID (LOCID)	Date 2008	Time	MATRIX	ZWCODE	ZBD/2ED	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	Ргезегуайуе Fik./UnFik.	Yuc.om nc. No. of Containers	VOC ^{note I} 40 mL vials (HCI)	I L attider SVOCs ^{nole 2}	Total Alkalinity ^{note 3} (sero headspace)	Vitrogen (Nitrate) ^{note 4} I 6 oz poly	Total Sulfide ^{Note 5} I 6 oz poly (ZAAC and HaOH)	Comments	
TF3M119R11SA	WL-TF3MW-119R	4/8	1317	ВМ	Ē	0/0	H	HCI Unf.	ıf. 3	я	•		-	1		
TF3M121R11SA	WL-TF3MW-121R	4/8	1343	MG	B	0/0	H N	HCI Unf.	ıf. 3	3	1	'	1	1		
												Conlar Tamerofire	erotine.			
Sample Condition Up	Sample Condition Upon Receipt at Laboratory:	ory: be conduc	ted in co	maliance	- with A	iance with AFCFF OAPP 4.0	APP 4	0			200		noraruto.			-
Note 1 VOCs: SW82	Special line uccounts/comments. Autaryses to us of Note 1. VOCs: SW8260 AFCFE 0APP 4.0 List.	o oc conuuc I List.	יונים זוו כר	Ameridan				ò								
Note 2: SVOCs: SW8	Note 2: SVOCs: SW8270, AFCEE QAPP 4.0 List.	.0 List.														-
Note 3: Total Alkalinity, 310.2.	ity, 310.2.															
Note 4: Nitrogen: 353.2, Nit Note 5: Total Sulfide: 376.2.	Note 4: Nitrogen: 353.2, Nitrate: Automated. Note 5: Total Sulfide: 376.2.															
41 B -1 1 L /6()		Datas	#	#7 Delenced hur (Sm)	have (Star)		100		0/10/V	43 F#	#3 Released hv. (Sig)	(Sio)			Date:	5
#I released by: (Sig)		Date.	È I	MARCHANNE 7	107. (UIE)	1 cert	10		alc. +/ 0/ 00		· for monutor	19.2				Т
Company Name:		Time:	0	Company Name: FPM Group	ame: FPI	M Grou	in Lud	T	Time: 17190		Company Name:			F	Time	- 1
#1 Received by: (Sig) Niels van Hoesel	els van Hoesel	Date: 2/20/07	_	#2 Received by: (Sig)	l by: (Sig)	76	" Ya		Date 4/25/	18 #3 Re	#3 Received by: (Sig)	(Sig)		ă	Date	1
Company Name: FPM Group Ltd	Group Ltd	Time: 1000		Company Name:	ame:	5	25	Г	Time: Dow	Comp	Company Name:			4	Time:	
						ĺ										

MATRIX WG = Ground water WQ = Water Quality Control Matrix S0 = Soil

<u>SMCODE</u> B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump

SACODE N = Normal Sample AB = Ambient Blank TB = Trip Blank EB = Equipment Blank

BP = Bladder Pump SP = Submersible Pump SS = Split Spoon

FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike Duplicate

CHAIN OF CUSTODY RECORD AFCEE

COC#: _1_ SDG#: _183_ Cooler ID: _A_

Ship to: Monika Santucci	Project Name: Griffiss AFB Site Building 101 sampling Send Results to: Niels van Hoesel	Send Results to: Niels van Hoesel
Life Science Laboratories, Inc.	Sampler Name: Niels van Hoesel	FPM Group
5000 Brittonfield Pkwy, Suite 200		153 Brooks Road
East Syracuse, NY 13057 Tel: (315)437-0200	to have	Rome, NY 13441
Carrier: LSL courier.	Sampler Signature: // WW Pro-	Phone: (315) 336-7721 Ext 205
	11	
	Analyses Requested	lequested

Comments	
headspace)	
8 oz Elass (zero	1
40 mL vials (HCL) Alkalinity ^{note 4}	
	-
LOC note3 200 mC boly	
Anions, ^{note 2}	
40 mL vial (HCI)	ю
No. of Containers	9
ר/טםדווו.	Unf.
Ргезегуаціче	HCI
ZYCODE	z
ZBD/ZED	0/0
SMCODE	m
XIATAM	4/8 1133 WG
Time	1133
Date 2008	4/8
Location ID (LOCID)	101MW-2
Field Sample ID	101M0216WA

	Ē
Sample Condition Upon Receipt at Laboratory:	Cooler Lemperature:
Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0	
Note 1: VOC: method SW 8260: Target COCs: PCE, TCE, DCE, Vinyl Chloride and Chloroform.	
Note 2: Anions: SW9056 CHLORIDE, SULFATE AND NITRATE ONLY	
Note 3: TOC: SW9060.	
Note 4: Alkalinity: 310.1.	

		hered -			
#1 Released by: (Sig)	Date:	#2 Released by: (Sig) Mund	Date: 4/8/08	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Growh Ltd/	Time: 17,00	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/28/08	#2 Received by: (Sig) and Man	Date: 4/8/08	Date: 4/8/08 #3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 10200	Company Name:	Time: Mo	Company Name:	Time:

<u>SMCODE</u> B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split spoon

SACODE N = Normal Sample AB = Ambient Blank TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike Duplicate

AFCEE CHAIN OF CUSTODY RECORD

COC#: _2_ SDG#: _183_ Cooler ID: _A_

Ship to: Monika Santucci	Project Nam	Project Name: Griffiss AFB Site Building 35 sampling	Site Buildi	ng 35 sampling	Send Results to: Niels van Hoesel
Life Science Laboratories, Inc.	Sampler Nai	Sampler Name: Niels van Hoesel	Ioesel		FPM Group
5000 Brittonfield Pkwy, Suite 200					153 Brooks Road
East Syracuse, NY 13057 Tel: (315)437-0200		10	1		Rome, NY 13441
Carrier: LSL courier.	Sampler Signature:	nature: ////	andar	h	Phone: (315) 336-7721 Ext 205
		11	A		
				Analys	Analyses Requested
Date	E X	E	ive ilt.	HCI) II2	Comments

Comments		
(IDH	VOCs Note I 40 ELL vial (I	m
SJ	No. of Container	3
١٢	ifaU\.Jif	Unf.
۹v	HCI	
Э	z	
c	0/0	
Э	BP	
3	UATAM	MG
Ë		4/8 1451 WG
Date	2008	4/8
	Location ID (LOCID)	B035MW04
	Field Sample ID	B035M0416GA

Sample Condition Upon Receipt at Laboratory:	ory:				Cooler Temperature:	
Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0	to be conducted in	compliance with AFCEE Q.	APP 4.0			
Note 1: VOC: method SW8260: Target COCs: PCE, TCE, cis- and trans 1,2-DCE, and VC.	Cs: PCE, TCE, cis	- and trans 1,2-DCE, and V(ci.			
		W.	1			
#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	y eer l	. Date: 4/8/08	(1) Date: 4/8/08 #3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: PPM Group	Ltd,	Time: 17,00 Company Name:	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/28/08	#2 Received by: (Sig)	dut	Date: 4/4/0X	Date: 4/4/0Y #3 Received by: (Sig)	Date:

Company Name:	Time:	Company Name: PPM GroupLth	Time: 17,00 Company Name:	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/28/08	#2 Received by: (Sig) M (Mu K	Date: 4/8/08	Date: 4/8/0X #3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 1000	Company Name:	Time: 17 au	Company Name:	Time:
			•		

MATRIX	WG = Ground water	<pre>WQ = Water Quality Control Matrix</pre>	SO = Soil
M	Ň	M	SO

<u>SMCODE</u> B = Bailer	G = Grab (only for EB).	NA = Not Applicable (only for AB/TB)	PP = Peristaltic Pump	BP = Bladder Pump	SP = Submersible Pump	SS = Split spoon
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Daily Health and Safety Meeting Form

Date: 4.8.08 Time : 6900
Location: FPM office (garage)
Weather Conditions: 45° - 60°
Meeting Type: Daily Health and Safety
Personnel Present:
John Prett, Wiels Van Horsel, Juil Wenzel Caleb Smith
Caleb Smith
Visitors Present:
Visitor Training:
PPE Required: Modified D
Possible risks, injuries, concerns:
Dring Harands, prakinglak ek mud-insects
suburn -
Anticipated Releases to Environment (if so. describe and detail response action/control measures
implemented):

Property Damage:

1

Description (include sequence of events describing step by step how incident happened):

Analysis for, and Implementation of Corrective/Preventative Procedure to Prevent Future Occurrences (to be formulated by SSHO + FOM, approved by PM, and SSHO implemented):

			<u>A</u>	
Report made by (Name):	John J.	Pritt	ACC	
SSHP Organization Title:	Site Safety and Hea	lth Officer	\mathcal{O}	

Daily Chemical Quality Control Report

Project/Delivery Order Number: F41624-03-D-8601-0027 Date: 9/18/08

Project Name/Site Number: Griffiss Landfills and AOCs Sites sampling (Landfill 2/3, 1, Building 15, and 101).

Weather conditions: Temperature: 63 Average barometric reading: 30.2 Wind direction and speed: North 3.5 mph. Significant wind changes: None.

General description of tasks completed: Bailer sampling at Site Landfill 2/3 (LF2MW-100), Landfill 1 (LF1MW-14, -103, and MWSAR03), Site Building 15 (B15MW-12), and Building 101 (101MW-2). Bladder pump sampling at Site Landfill 1 (LF1MW-5, -6, LF1P-2, -3, and -5). Surface water sampling at Site Landfill 1 (LF1SW-1, -2SMC, and -3).

Explain any departures from the SAP or deviations from approved procedures during the day's field activities: None.

Explain any technical problems encountered in the field or field equipment/field analytical instrument malfunction: None.

Corrective actions taken or instructions obtained from AFCEE personnel: No corrective actions necessary.

Sampling shipment completed: √ Yes □ No LSL Courier.

DCQCR Prepared by: Niels van Hoesel, FOM	Date: 19 September 2008
CQCC Signature: Correction Run Hoesel Date	:

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
	✓ Field sampling forms
	✓ Equipment Calibration Log
	✓ Copies of COCs
	✓ SDG Table (See accompanying COCs)
	✓ Daily Health and Safety Meeting Form

Page ___ of ___

WELL PURGING & SAMPLING FORM

Project:	40-05-	2.7	Sa	mpled by:	CS	10F		
Location a	and Site Code (S	(TEID):	LF 2					
Well No.	(LOCID): <u> </u>	2 MW	-100 w	ell Diamet		M): Z	in	
	GDATE): 9	11710		eather:				
Date (DO	(DATE)	1110	VV		01	JUNIY		
CASING VOLU	IME INFORMATION:		`					
Casing ID (inch)	1.0	15 2	0 2.2	30 40	43	5.0 6.0	70	
Unit Casing Volur	ne (A) (gal/ft) 0 04	0 09 01	6 02	0 37 0 65	0.75	10 15	20	2.6
PURGING INF	ORMATION.				<u> </u>		-	
	Depih (B) (TOTDEPTH	(92			Ţ 🖡 🕴		
				ì.				
	Level Depth (C) (STAT		_ 55.4			B		
Lengin of Static	Water Column (D) =(B) (C)		n. H ₂ C		ÉLEVA (MPE		
Ostas Marsa M			9 9752					
Casing Water Volume (E) = (A) (D) = $\frac{9.8752_{gal}}{(D)}$								
Minimum Purge Volume = 26.62gal (3 well volumes)								
Minimum Purge		ai (3 well volu	mes)	-			SEA LEVEI	
Purge Date	e and Method:	Bail	est					
-	ppearance/Com	ments:	m.'(kr.,	na od	4			
	-FF							
	EASUREMENT							
Allowable Time	Kange: Volume	± 0.1 pH	$\pm 5\%$ EC	±1°C Temp.	Turbidity			
1 mile	Removed (gal)		(mS/cm)	(F or C)	(NTU)	D.O. (mg/L)	OF (m	
1330	4	7.87	7.93	11.93	30.5			3
1340	<u> </u>	7.75	7.75	0.95	23.7	8.59	10	6
1352	12	7.61	9.7	12.26	869	3.16	3	6
1401		7.26	10.2	10.7	576	8.20	1-1	
	12/101	20	1 0		0.0			
	1341101	UT	4 41		सम	it ons	•	
		<u> </u>						
·		·	ETH					
	e: <u>/0/0</u> Sam	ple ID:	T / W	00/10				

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

1

WELL]	PURGIN (LC	G & SA DW FLO		LING	FOR	RM	Page_	of
Project: $\frac{10-05-27}{10-05-27}$ Sampled by: $C5/JW$								
Location and Site Code (SITEII	D):	FI			<u> </u>			
Well No. (LOCID):	N-5	Well D	iamete	r (SDIA	AM):	2), ,	
Date (LOGDATE): 9-18-08- Weather: Sun/45								
CASING VOLUME INFORMATION:				_/_				
Casing ID (inch) 1.0 1.5	2.0 2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft) 0.04 0.09	0.16 0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6
PURGING INFORMATION: Measured Well Depth (B) (TOTDEPTH) Measured Water Level Depth (C) (STATDEP) Length of Static Water Column (D) = (B) (C) Pump Intake Depth (ft): Depth during Purging/Sampling: (C) (C) (C) (C) (D) (D) (E) (C) (D) (C) (C) (C) (D) (C) (C) (C) (C) (C) (C) (D) (D)	9 4ft. ft. ft ft	l. (optional)	H ₂	STAT ELEVA			ATION ELEV) ME/	A
Purge Date and Method: BLAD Physical Appearance/Comments:	DER PUMF)	9-18	-08			LEV	CL,
Physical Appearance/Comments:	c c	ker/	in a	36				
Dissolved Ferrous Iron (mg/L):		/		· · ·				
	<u> </u>							

6

FIELD MEASUREMENTS:

Allowable	Range:	± 0.1	± 3%		±10%	±10%	$\pm 10 \text{mV}$	
Time	Depth to Water	pH	EC	Temp.	Turbidity	D.O.	ORP	Flow Rate
	(ft BTOC)		(mS/cm)	(F or C)	(NTU)	(mg/L)	(mV)	(mL/min)
1145	4.03	6.78	. 576	12.66	8.3	5.76	-82	ZSONIA
1147	4.02	6.76	.575	12.71	7.0	6.23	- 83	
1149	4.03	6.74	574	12.73	8.0	5.66	-84	
115(403	6.73	.574	12.75	7.3	5-26	-85	
1153	4.02	6.71	.574	17.79	7.2	5.04	-87	
1153	4.12	6.70	.573	13.04	60	477	- 66	
1157	4.02	6.70	.574	13.12	6.2	4.65	- 89	
1159	4.03	6.70	.574	13.23	5.Z.	458	- 98	
1201	4.03	6.70	.575	13.35	7.0	4.53	-91	
Sample Time	: 1205 Samp	ole ID:	LFI MOS.	26QA				

)

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Note: Maintain a flow rate of 200-500 mL/min during purging. Purge a minimum of 1L between readings. Collect samples at a flow rate between 100-250 mL/min. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Page	of
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(LOW FLOW)

Project:	40-1	05-27	_	Sampled	by:	DB /	₽~	
			SID): Sampled by: DB / PC Landfill /					
	(LOCID): <u></u>			Wall D:				
Date (1 (()GDATE):		1 10					
Date (De	(GDATE):					sun /	60	
<u>CASING VOL</u>	UME INFORMATIO	N: 7	-18-08					
Casing ID (inch)		1.5	20 2.2	2 30	40 43	5.0 6.0		
Unit Casing Volu	ume (A) (gal/ft) 0.0-	4 0.09	0.16 0.2		0 65 0.75	5.0 60 1.0 1.5	2.0 2	
Length of Statue V Pump Intake Dept Depth during Purg Comments (re Dat Purge Dat Physical A	EORMATION: Depth (B) (TOTDEPTH) Level Depth (C) (STATD Water Column (D) =	(C) (provide range ling) BLADD mments:		fl (optional)	ELEV		MEAN SEA LEVEL	
	EASUREMEN	TS:		 ,	_ }			
Time	Depth to Wat	<u>+ 0.1</u> er pH			$\pm 10\%$			
	(ft BTOC)		(mS/ci				0.11	Flow Rate (mL/min)
0913	3.12	5.4	58.9) (mg/L) 6.65		
0916		5,3	58.5			4.60		150
0919		5,38		[13.1	6 34.7	7 2.24		
0922		5.43				2.10	-18	
0925	V	5.47				1.15		
0131		5.49						
09.34		5,53						
0137		5,56						
			3 58.6	12.9	5 14.6	1.66	-54	
Sample Time	: 0940 Sat	mple ID:	IFIN	10620	R.		_ <u>_</u>	

Note: Maintain a flow rate of 200-500 mL/min during purging. Purge a minimum of 1L between readings. Collect samples at a flow rate between 100-250 mL/min. VOC and gas sensitive (e.g. alkalinity, Fe^{2^+} , CH_4 , H_2S) parameters should be sampled first.

Page	of

	40-05-				D!	3 / PC	
Location a	nd Site Code (SI	TEID): _		Land	thill	<u> </u>	
	(LOCID): اسمالها	_			er (SDIAM); 2	
	GDATE): <u>9</u>				Sim		
	/						
CASING VOLU	ME INFORMATION:						
Casing ID (inch)	1.0	1.5 2.0	2.2	3.0 4.0	4.3 5.	0 6.0	7.0
Unit Casing Volum	ne (A) (gal/ft) 0.04	0.09 0.10	6 0.2	0.37 0.65	0.75 1.	0 1.5	2.0 2
<u>PURGING INFC</u> Measured Well I		15.6	50 _1	t.			
Measured Water	Depth (B) (TOTDEPTH) Level Depth (C) (STATI	DEP) 🛃	. 11.90	ft.			
Length of Static	Water Column (D) =(-	= 3.7	ft.		B ELEVAT	ION
5	(1	B) (C)	(D)	- H ₂ C		(MPEL)	EV)
Casing Water Ve	$blume(E) = \underline{\qquad} x$	=	0.590				
Chang water ve	(A)	(D)	_ <u>///</u> gui		STATIC	V	
	Volume = /.8 g				ELEVATION	V	MEAN
Minimum Purge	Volume = <u> </u>	al (3 well volu	mes)	_	I		SEA LEVEL
Durgo Date	and Mathadi		baile		19-15	2-00	
	e and Method:		ou ar		<u> 9-18</u> no		
Physical A	.ppearance/Comr	nents:	Cl	car /	10	oder	-
FIELD MI	EASUREMENTS	5:					
Allowable		± 0.1	± 5%	±1°C			
Time	Volume	pH	EC	Temp.	Turbidity	D.O.	ORP
1957	Removed (gal)		(mS/cm)	(F or C)	(NTU)	(mg/L)	(mV)
1856	0.5	6.65	18.8	13.67	189.0	9.97	(87
1858	1.0	6.35	17.9	12.90	500.0	7.78 7.66	143
91900	2.0	6.27	17.0		516.0	6.83	198
1202			<u> </u>	12.83	010.0	<u>v</u> a + o	
1302							
1302				(0.0)			
1902							
<u>1902</u>					**		
1302					Ч [.] В		

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project: <u>40-05.27</u> Sampled by: <u>CS/JW</u>	
Location and Site Code (SITEID):	
Well No. (LOCID): Well Diameter (SDIAM): 2"	
Date (LOGDATE): 9-18-08 Weather: Sun/ 40	
CASING VOLUME INFORMATION:	
Casing ID (inch) 10 15 20 22 30 40 4.3 5.0 60 70 Unit Casing Volume (A) (gal/fi) 0.04 0.09 0.16 0.2 0.37 0.65 0.75 1.0 1.5 2.0 2.6	
PURGING INFORMATION: Measured Well Depth (B) (TOTDEPTH) 35.23 ft.	
Measured Water Level Depth (C) (STATDEP) [7,5] ft.	
Length of Static Water Column (D) = = = (C) = (D) = _	
Casing Water Volume (E) = (A) x (D) = 2.83 gal	
(A) (D) STATIC ELEVATION	
Minimum Purge Volume = 8, 5 gal (3 well volumes) MEAN	
Purge Date and Method: <u>Bailer 9-18-08</u> Physical Appearance/Comments: <u>clear no ador</u>	
Purge Date and Method:	
Physical Appearance/Comments:Clear/ no coor	
FIELD MEASUREMENTS:	
Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^{\circ}C$ TimeVolumepHECTemp.TurbidityD.O.ORP	
Removed (gal) (mS/cm) (F or C) (NTU) (mg/L) (mV)	
0934 7 11.92 1.23 11.60 86.4 13.12 75	
0937 4 11.71 0.99 9.85 187.0 11.64 63	
Beiled Dry at 4.75 gal	
Sample Time: 1715 Sample ID: LFIMIO333QA - 2 VOA'S - Tohi Ma - Poz Boston (4 contau	etal
Sample 1 ime: (() Sample 1D: LET (ALID 3 3 S DAR	
- Poz Rasha (4 contau	2 14

volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

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WELL PURGING & SAMPLING FORM (LOW FLOW)

Project: <u>40-0</u>	5	Sample	d by:		s/J	5					
Project: $40-05-27$ Sampled by: $(5/)$ W Location and Site Code (SITEID): $2F/$											
Well No. (LOCID): LFIP-2 Well Diameter (SDIAM):											
Date (LOGDATE):	9	- 18	08		Weathe	r:	sun/	60			
CASING VOLUME INFORM	TION:										
Casing ID (inch)	1,0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	26
PURGING INFORMATION: Measured Well Depth (B) (TOTDE Measured Water Level Depth (C) (S Length of Static Water Column (D) Pump Intake Depth (ft): Depth during Purging/Sampling: Comments (re: Depth during purging	(B)	- <u>6.0</u> - <u>(C)</u> rovide rang	25 (D) (43 (20)	ft. ((optional)	Hyt	STA ELEVA		(MF	VATION VELEV)	A
Purge Date and Meth	od: E	BLADI	DER P	UMP_	9	-18-	20				
Purge Date and Meth Physical Appearance	/Com	ments:		clear	1	-l	- 0 -				
D' 1 1D -					/ no 0	aor_					
Dissolved Ferrous Ire	on (mį	g/L): _									

FIELD MEASUREMENTS:

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Allowable		± 0.1	± 3%		±10%	±10%	$\pm 10 \text{mV}$	
Time	Depth to Water	pH	EC	Temp.	Turbidity		ORP	Flow Rate
	(ft BTOC)		(mS/cm)	(F or C)	(NTU)	(mg/L)	(mV)	(mL/min)
1003	6.43.	7.04	.703	13.62	2.5	6.28	-106	100ml/mm
1007	6.410	6.92	.707	13.65	2.9	5.88	-106	1
1011	6.40	6.87	710	13.69	3.7	5.51	-107	
1015	6.43	6.84	1711	13.70	19	5.19	-107	
1019	6.43	6.82	.712	13.47	1.6	5.02	-108	
1023	6.43	6.81	.712	13.66	1.6	4.82	-107	
L	1020							

Sample Time: 1027 Sample ID: LEIPOZIZQA

Note: Maintain a flow rate of 200-500 mL/min during purging. Purge a minimum of 1L between readings. Collect samples at a flow rate between 100-250 mL/min. VOC and gas sensitive (e.g. alkalinity, Fe^{2^+} , CH_4 , H_2S) parameters should be sampled first.

Page	0	of
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	W PLOW)	
Project: Location and Site Code (SITEID):	Sampled by:	DB/PC
Location and Site Code (SITEID):	La	adfill 1
Well No. (LOCID): WL-LFIP-3	Well Diameter (SDIA	M): 2//
	Weather:	
CASING VOLUME INFORMATION:		
Casing ID (inch) 10 15 20 2.2	3.0 4.0 4.3	50 60 70 80
Unit Casing Volume (A) (gal/ft) 0 04 0 09 0 16 0 2	0 37 0 65 0.75	10 15 20 26
Measured Well Depth (B) (TOTDEPTII) $(opt Measured Water Level Depth (C) (STATDEP) (f, f)Length of Static Water Column (D) = (f, f)Pump Intake Depth (fi) (f)Depth during Purging/Sampling (f, f)(provide range)Comments (re: Depth during purging/sampling):$	(optional)	ION MEAN
Purge Date and Method: BLADDER PUMP_ Physical Appearance/Comments:	9-18-	08
Physical Appearance/Comments:	No Odor	
Dissolved Ferrous Iron (mg/L):		
FIELD MEASUREMENTS: Allowable Range: ± 0.1 ± 3%	+ 10%	+ 10% + 10

Allowable		± 0.1	<u> </u>		$\pm 10\%$	±10%	$\pm 10 mV$	
Time	Depth to Water	pH	EC	Temp.	Turbidity	D.O.	ORP	Flow Rate
	(ft BTOC)		(mS/cm)	(F or C)	(NTU)	(mg/L)	(mV)	(mL/min)
1057	4.77	5.85	67.1	12.53	53.1	4.21	170	300
1059	<u> </u>	5.77	67.3	12.15	50.6	3.10	102	
1101		<u>S.73</u>	67.5	11.94	46.9	2.8>	78	
1103		5.70	67.5	11.82	42.1	2.38	89	
1105		5.70	67.5	11.75	38.2	2.07	42	
1107		5.70	67.5	11.23	33.3	1.80 .	36	
1101		5.71	67.5	11.73	31.5	1.79	30	
1111		5.71	67.6	11.70	30.4	171	28	
	~							
Sample Time	: ///6 Samm	le ID: L	F110317	RA				

Note: Maintain a flow rate of 200-500 mL/min during purging. Purge a minimum of 1L between readings. Collect samples at a flow rate between 100-250 mL/min. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

WELL PURGIN	G & SAMPL DW FLOW)	ING FOR	М	Page _	of
Project: 40-05-27	Sampled by: _	_cs/ju	2		
Location and Site Code (SITEID):	LFJ				
Well No. (LOCID):	Well Diameter	(SDIAM):	41		
Date (LOGDATE): 9-/8-08	Weather:	Sun/7	8°		
CASING VOLUME INFORMATION:		*			
Casing ID (inch) 1.0 1.5 2.0 2.2	3.0 4.0	4.3 5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft) 0.04 0.09 0.16 0.2	0.37 0.65	0.75 1.0	1.5	2.0	2.6
PURGING INFORMATION: Measured Well Depth (B) (TOTDEPTH) ft. (ft.) Measured Water Level Depth (C) (STATDEP) 6. ft. Length of Static Water Column (D) = (B) - (C) (B) - (C) Pump Intake Depth (ft): Z (provide range) Comments (re: Depth during purging/sampling):	t. (optional)	C C D D STATIC ELEVATION	B ELEVA (MPE)		
Purge Date and Method: BLADDER PUMI	9-18-	58		LEVI	-
Physical Appearance/Comments:	lear/ no oc	lar			
Dissolved Ferrous Iron (mg/L):					

FIELD MEASUREMENTS:

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Allowable	Range:	± 0.1	± 3%		±10%	±10%	± 10mV	
Time	Depth to Water	pH	EC	Temp.	Turbidity	D.O.	ORP	Flow Rate
	(ft BTOC)		(mS/cm)	(F or C)	(NTU)	(mg/L)	(mV)	(mL/min)
1445	6.23	7.26	.583	17.01	4.9	8.41	-135	ZSO mL/min
1447	6.25	7.25	. 594	11.88	5.3	7.65	-137	
1449	6.24	7.21	.602	11.94	3.8	6.72	-139	
1456	6.23	7.21	.606	12.13	3.9	6:35	-129	
1453	6.23	7.19	60	12.17	3.8	6.23	-139	
1455	6.23	7.19	.615	12.09	3.3	6.23	-139	
1451	(a.23	7.1 T	.614	11.88	3.4	6.17	-139	
								V-
Comple Time	11100	1 100	FID AT			•	<u> </u>	

Sample Time: 1459 Sample ID: LF/P05250A

Note: Maintain a flow rate of 200-500 mL/min during purging. Purge a minimum of 1L between readings. Collect samples at a flow rate between 100-250 mL/min. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project:	40-05-	27	Sa	mpled by:	<i>C</i> ²	5/5	AC		
	nd Site Code (SI'		LAI			t			
	locid): <u>Mu</u>			ell Diamet		М/).	2.		
		-	-				<u></u>	<u>1</u> 20	
Date (LOC	GDATE): <u>1</u>	100	W	eather:	3 UNI	\mathbb{V}_{+}		1	
CARINIC HOLD						1.			
	ME INFORMATION.							_	
Casing ID (inch) Unit Casing Volume	1 0 c (A) (gal/ft) 0 04	15 /20	× + ~ +	30 40 0.37 0.65	4.3 0.75	50 10	60	70	
Chit Caning Volum				0.37 0.05	1 0.75		1.5	2.0	26
PURGING INFO	RMATION:					* •			
Mensured Well D	epih (B) (TOTDEPTH)	74	6				₽		
	Level Depth (C) (STATD	<u> </u>	<u>, </u>						
			21	n		B			
Length of Static V	Water Column (D) =(B) - (C)	=_ <u>(</u> D)	й. На	o III		ELEVAT		
Casing Water Vol	lume(E) = (A) x	(D)	A JO gal						
					STATIC ELEVATION				
Minimum Purge V	Volume = 1.74 ga	l (3 well volu	mes)	-				MEAN — SEA	ł
		Ω	C	/				LEVEI	-
Purge Date	and Method:	Bail	21		9-14.	-08	>		
Physical A	ppearance/Comm	ents:	sille	1 oran	ne /	ne	·		
					0				
	ASUREMENTS			. 100					
Allowable Time	Volume	<u>± 0.1</u>	<u>± 5%</u> EC	±1°C Temp.	Turbidit		.0.		
	Removed (gal)	pm	(mS/cm)	(F or C)	(NTU)		.0. g/L)	OF (m	
1523	• 5	7.59	0376	14.58	· · · · · · · · · · · · · · · · · · ·		10	-10	<u> </u>
1525	1	7.10	0.343	12.74		-	.67	-13	14
1527	1.5	6.93	0.325	12.09	455	ic).29	-1	6
1528	2	6.78	0.313	1).8/	199	4	80		21
1530	2.5	6.66	0.304	1.64	7444	10	-26	~8	9
	ि ।	\mathbf{N}	· · · ·		0			\vdash	
	Vait	EJ (VIV	91	2.7	5	99		
						75	<u> </u>		
Sample Time:	. 1030 Samp	le ID:	MUSAR	0324	24				

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

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Project:	40-05	5-27	Sa	mpled by:		DB / 1	20	
Location a	<u>40-05</u> nd Site Code (SI	FEID):		L	andhi	11		
	LOCID): <u>SL</u> -							
	GDATE): 9			eather:	sun	- 1 6	ð	
,								
<u>CASING VOLUI</u>	ME INFORMATION:							
Casing ID (inch)	1.0	1.5 2.0		3.0 4.0		.0 6.0	7.0	
Unit Casing Volume	e (A) (gal/fi) 0.04	0.09 0.1	6 0.2	0.37 0.65	0.75 1	.0 1.5	2.0 2.6]
PURGING INFO	RMATION:			[A		
	eqth (B) (TOTDEPTH)		7	0		A		
	Level Depth (C) (STATE	/		ft, hoo				
	Water Column (D) =			fl.		B ELEVA	TION	
	(FE	(C)	(D)	— H10	D C	(MPEL	LEV)	
Casing Water Vo	lume (E)	=	gal	1				
	(A)	(D)		L	STATIC			
Minimum Purge	∕ Volume ≔ ga	al (3 well volu	mes)	_	ELEVATION	V	MEAN SEA	
-				/		n	LEVEL	
Purge Date	and Method:		670	5	1 9	0 al	08	
Physical A	e and Method:	nents:	clo	moly	<u> </u> a	o al	<u> </u>	ganie
				0			L	
	EASUREMENTS Range:		± 5%	±1°C				
Time	Volume	pH	EC	Temp.	Turbidity	D.O.	ORP	7
	Removed (gal)		(mS/cm)		(NTU)	(mg/L)	(mV)	_
		6.11	0.124	14.3	88.2	8.09	60	-
								-
								_
				1				-
				ļ				
								_
	12112]] ,	El Cr.			<u> </u>		
Sample Time	: 1240 Sam	ple ID:	JE I OW		LA .			

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project: _	- 40-1	5-20	'		Sa	umpled by	: <u> </u>	ງພ			
	and Site Co						1				
Well No.	(LOCID):	52.	CFIS	<u>u - 2</u>	z w	ell Diame	ter (SDIA	. M):			
	GDATE):							. —			
,	-		• •		_		/				_
CASING VOL	UME INFORM/	<u>ATION;</u>									
Casing ID (inch)		10	15	2.0	22	30 40			60	7.0	
Unit Casing Volu	me (A) (gal/II)	0.04	0 09	0.16	02	0.37 0.65	5 075	10	15	20	26
PURGING INF	ORMATION:					r		* *			
	Depth (B) (TO)	I DEPTH	\bigwedge			n l		ç T	1		
	r Level Depth (//	+ .	,	fi.		↓			
Length of Static	water Column				=	_A.			 Elevat		
		Λ^{0}	3) ((C)	(D)	н	30 		(MPEL	EV)	
Casing Water V	/olume (E) =	<u> </u>	· · · · ·	=	gal						
		(A)	(D)			L	STATIC	<u> </u>	-1		
Minimum Purge	e Volume =	e	al (3 well vo	olumes	i)					MEAN SEA	1
					/	1				LEVE	L
Purge Dat	e and Meth	hod: _			(Taj	2	<u> </u>				
Physical A	Appearance	e/Comr	nents:	2		he odd	Fron	flak .	n wa	<i>iter</i>	
FIELD M	EASUREN	AENTS	S:		•	A	//				
Allowable			± 0.1		± 5%	±1°C					
Time	Volu		pH		EC	Temp.	Turbidit	۳ I	0.		RP
1031	Removed	u (gai)	7.06		mS/cm) 705	(F or C)	(NTU) 33.4	(mg	<u>g/L)</u>	(m -/0	<u>V)</u>
									/		<u> </u>
						·				-	
	<u> </u>		+						1		
									+		
				+							
			1								
Sample Tim	e: 1631	Sam	nle ID:	1		147 CM	1010				

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project: _	40-05-	27	Sa	mpled by:		DB / Pa	0
Location	and Site Code (SIT	TEID):			Landfi	ul I	
Well No.	(LOCID): S-I	LFISW.	- <u>3</u> w	ell Diamet	er (SDIAM):y	(
	GDATE): <u>9</u>				sun		
CASING VOLU	UME INFORMATION:						
Casing ID (inch) Unit Casing Volut	1.0 me (A) (gal/ft) 0.04	1.5 2.0 0.09 0.1		3.0 4.0 0.37 0.65	4.3 5.0 0.75 1.0		7.0
Unit Casing Volu.	me (A) (garn)	0.07 0.1	0 0.2	0.37 1 0.83		0 1.5	2.0 2.6
PURGING INF	ORMATION:			[
Measured Well	Depth (B) (TOTDEPTH)	[i	ñ.	L C	Î Î	
Measured Wate	r Level Depth (C) (STATD	EP)		.ft.			
Length of Static	Water Column (D) =	<u>_</u>	_ =	_ft.		B I ELEVAT	
) (C)	(D)	- H ¹ ((MPEL)	EV)
Casing Water V		==	gal			V	
	(A)	(D)		<u> </u>	STATIC ELEVATION		
Minimum Purge	e Volume = ge	l (3 well volu	mes)	-		V	MEAN
	C.			\sim /	G		LEVEL
Purge Dat	te and Method:		0	ins clear	/	- 18 - 1	28
Physical A	Appearance/Comm	ents:		Clear	/ no	ohor	
FIELD M	EASUREMENTS	•					
Allowable	· · · · · · · · · · · · · · · · · · ·	± 0.1	± 5%	±1°C	_		
Time	Volume Removed (ccl)	pН	EC	Temp.	Turbidity	D.O.	ORP
	Removed (gal)	5.84	(mS/cm) 48.7	(F or C) 15.98	(NTU) 35. 2	(mg/L) 7.6	(mV) 480
				10.10			400
						_	
			<u> </u>				
0	ne: 1430 Samp		IEISW	03016	A		

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

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Project:	40-05	-27			Sa	mpled	l by:	Þ	B	I PC		
Location a	nd Site Co	de (SI	TEID):			B	15			_		
											211	
Well No. (Date (LOC	DATE):	9.	18-08	<u>e</u>	w	eather				1 1.1	\$	
Duit	<i>301112)</i> .		.0_00			outifoi	· —			/ 60		
CASING VOLU	ME INFORMA	<u>TION:</u>										
Casing ID (inch)]	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volum	ne (A) (gal/ft)	0. 04	0.09 0	.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6
PURGING INFO			10						Î	A A		
Measured Well I									C 			
Measured Water							ha		*			
Length of Static	Water Column ((D) =		=	<u>7.34</u>	_ ft.		. ↑	Ī	ELEVA1		
		(1	B) ((C)	(D)		H ₁ C	,] D	(MPEL	EV)	
Casing Water Vo	hume(E) =	Y	=	1.	/ "					\		
Cushing marker we		(A)	(D)		6u		L	STATIC	*	<u>v</u>		
Minimum Purge		5	1 (Q 1)					ELEVATIC Ì	N	Ý	MEA	N
Minimum Purge	Volume = _	g	al (3 well vo	lumes)			_	11			SEA LEVE	
Purge Date	e and Meth	od		R	25	l.	/	9-	18.	-00		
Purge Date Physical A							_/	1.1		- 8	/	0
Physical A	ppearance	/Comr	nents:		513	20	5	<u>/</u> 5h	en	1 pe	no .	<u>od</u> r
FIELD MI	EASUREN	IENTS	5:									
Allowable	Range:		± 0.1	±	5%	±1	°C					
Time	Volu		pH		EC	1	np.	Turbid	-	D.O.	Ō	RP
11/20	Removed				S/cm)	<u> </u>	<u>r C)</u>			(mg/L)	(11	IV)
1429	0.		5.95		155		<u>89</u> _	382		5.80	-7	
1430	/.5	7	5.94		157	12.	28	390.		4.54	-/	
1431 1432	3.0	$\frac{0}{2}$	5.95		<u>154</u> 151	17.	<u>10</u> 94	503.		5.61	-//	
1434	3.7		5.97			16.		460.0		5,1 <u>3</u> 4,86	- <i>11</i> -11	3
1	,		5.97	-						1.00		
					_			·				
Sample Time	. <u> 440</u>	Sam	ple ID:	BIS	MIG	108	<u>77</u>					

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Project:	40.05-	27	Sa	mpled by:	D	BIA	E
Location a	nd Site Code (SI	TEID): _		1	3 101		
	LOCID): ML-		2 W	ell Diamet	B 101 er (SDIAM	l):	2″
Date (LOC	GDATE):	-18-08	3 w	eather:	See	<u>n/6</u>	Ο
CASING VOLU	ME INFORMATION:						
Casing ID (inch)	1.0	1.5 2.0		3.0 4.0	4.3 5	0 6.0	7.0
Unit Casing Volung	ie (A) (gal/ft) 0.04	0.09 0.10	6 0.2	0.37 0.65	0,75 1	0 1.5	_2.0 2.6
				[<u></u>	<u> </u>	
PURGING INFC		2	1 211		Ī	A A	
	Depth (B) (TOTDEPTH)						
Measured Water	Level Depth (C) (STATI	DEP)	6.35	ft		в	
Length of Static	Water Column (D) =(I		_= <u>?.7</u>	A. H ₁ 0		ELEVAT (MPEL)	
	(1	a) (C)	(D)				~.)
Casing Water Vo	(E) = (A)	=_	1.25 gal			V	
	(A)	(D)		L	STATIC ELEVATION		
Minimum Purge	Volume =g	al (3 well volur	nes)			V	MEAN
				-			— SEA LEVEL
Purge Date	e and Method:		Bai	ler	/ 4	7-18-6	8
Physical A	e and Method: .ppearance/Comr	nents:	clas	~ 1		-	1~
T Hystodi Ti	ppouraneo, com	<u> </u>	- 420	<u>.</u>	- guar	<u>c</u> va	
FIELD MI	EASUREMENTS	S:					
	Range:		± 5%		·		
Time	Volume	pH	EC	Temp.	Turbidity	D.O.	ORP
1355	Removed (gal)		(mS/cm)		- ` -	(mg/L)	(mV)
1357	2	6.13	0.119 0.124	19.46	171.0	5.32	-105
1359	3	5.97 5.93		19.44		4.59	-102 -104
1400	Ŭ Ŭ	5.90			193.0		-105
			·				
L	e: 1400 Sam	ple ID:	INIMA?	17 X A		1	· · · · · · · · · · · · · · · · · · ·

Note: Attempt to get at least 5 sets of field measurements during purging. Sample may be collected after 3 to 5 well volumes have been removed and parameters have stabilized. Sample may be collected after 6 well volumes if parameters do not stabilize. VOC and gas sensitive (e.g. alkalinity, Fe^{2+} , CH_4 , H_2S) parameters should be sampled first.

Page ____ of ____

Equipment Calibration Log

Instrument Name: Moniba FPM #1

Model Number:

First Standard Concentration	First Standard Reading	Second Standard Concentration	Second Standard Reading	Comments
4	3.99	<u> </u>		
4.00				
4.00	3.19			
4.60	4,00	4.00	4.00	FPM1_
4,00	3.97	4.00	4.00	
>				-
4.00	3.99			
4.00	3.99			
4.00	4.00			
		>		
	-			
				· · · · · ·
				<u> </u>
<u> </u>	-			
	Concentration 4.00 4.00 4.60 4.60	Concentration Reading 4 3.99 4.00 3.99 4.00 3.99 4.00 3.99 4.00 3.99 4.00 3.99 4.00 3.99 4.00 3.99 4.00 3.99	Concentration Reading Concentration $4'$ 3.99 - 4.00 3.99 - 4.00 3.99 - 4.00 3.99 - 4.00 3.99 - 4.00 3.97 - 4.00 3.99 - 4.00 3.99 - 4.00 3.99 - 4.00 4.00 - 4.00 4.00 - 4.00 4.00 - 4.00 4.00 -	Concentration Reading Concentration Reading $4'$ 3.99 - - 4.00 3.99 - - 4.00 3.99 - - 4.60 4.00 4.00 4.00 4.60 4.00 4.00 4.00 4.60 3.99 - - 4.00 3.99 - - 4.00 3.99 - - 4.00 4.00 - - 4.00 4.00 - - 4.00 4.00 - - 4.00 4.00 - -

Equipment Calibration Log

Instrument Name: US Environmental # 1 9-16-08 Model Number: U-22 Howber delivered

					1
				_	
		· · · · ·			
	00'h	to	20.2	00%	61-6
			00%	QQ'h	51-5
Rental	20.H	h	20'h		b 1-b
FPMI	99.5	'n	85.5	h	b -9
76	65-2	- h	66 2		81-6
апэтноЭ	Second Standard	Second Standard Concentration	First Standard Reading	Eust Standard Concentration	Date
	<u> </u>			·····	

AFCEE CHAIN OF CUSTODY RECORD

COC#: _2_ SDG#: _194 (Open/Closed) Cooler ID#: _A_

Ship to: Monika Santucci	antucci			4	roject N	lame: Gi	riffiss A	FB LF	Project Name: Griffiss AFB LF 2/3 LTM sampling	sampling		Send F	cesults t	o: Niels	Send Results to: Niels van Hoese	esel	
Life Scient 5000 Britte East Syraci	Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 To	200 Tel: (31:)0 Tel: (315)437-0200	L	ampler	Sampler Name: Justin Damann	lustin Dama	amann A	Hoened 7	h				FPM 153 F	FPM Group Ltd. 153 Brooks Road Rome NV 13441	Ltd. Road	
Carrier: LSL courier.	er.			Π	ampler	Sampler Signature:	e: //	MMBI	- n					Phon	e: (315)	336-772	Phone: (315) 336-7721 Ext. 205
							-			Anal	Analyses requested	uested					
Field Sample ID	LocID	Date 2008	Time	XIATAM	ZWCODE	2ACODE	# of Containers	VOCs note 1 40mL vials (HCl)	Metals, Hardness note ² 250 mL poly (HNO ₅)	Metals ^{note 3} 250 mL poly (HNO ₃).	Anion 20T , 200 A کا0 مال کار کار	ן גא ארא ארא ארא ארא ארא ארא ארא ארא ארא	Cyanide ^{nole 6} B oz poly (NaOH)	TOC ^{مادد ۲} 40 mL vial (HCL)	ا لـ poly BOD ^{Note 8}	Alkalinity ^{Note 9} 8 oz glass (no headspace)	Comments
LF2M100110A	WL-LF2MW-100	9/18	1010	ŊŴ	m	0 2	0/0	'		-		-	·	-	-	-	
I -ojtiP-outo U-mos	In the second for the											C					
Sample Condition	sample Condition Upon Receipt at Laboratory.	oratory:										Š	Cooler temperature:	perature			
Note 1: VOCs: 8260	Special Instructions/Comments: Parameter List: (According to AFCEE QAPP 4.0 and NYSDEC Landfill Part 360 Baseline Parameters) Note 1: VOCs: 8260B AFCEE QAPP 4.0 List + NYS Part 360 Baseline Parameters.	ist + NYS	Part 360 B	Ing to AF laseline P	CEE QA	АРР 4.0 5.	and NY	SDEC	Landfill F	'art 360 l	Jaseline	aramete	rs)				
Note 2: Metals: 5WI	Note 2: Metals: Swould AFCEE QAPP 4.0 List (10tal), Hardness: 130.2. Note 3: Metals: SW6010 AFCEE QAPP 4.0 List (Dissolved).	0 List (Dis 0 List (Dis	al). Hardn solved).	ess: 130.2													
Note 4: Anions: SW9056, TDS: 160.1 Note 5: NH3: 350 1 COD: 410.4 TK3	Note 4: Anions: SW9056, TDS; 160.1. Note 5: NH3: 350 1 COD: 410.4 TKN: 351.2	1 2															
Note 6: Cyanide: SW9012.	9012.	į															
Note 7: TOC: SW9060.	50.																
Note 8: BOD: 405.1. Note 9: Alkalinity: 310.1	10.1																
#1 Released by: (Sig)		Date:		#2 Released by: (Sig)	sed by: (Sig)	WILLA	I	Date: 9/18/08	/18/08	#3 Rel	#3 Released by: (Sig)	(Sig)			Date:	
Company Name:		Time:		Company	y Name: FPM		Group Ltd	1.	Time:/7	526	Compa	Company Name:				Time:	
#1 Received by: (Sig) Niels van Hoesel	Niels van Hoesel	Date: 9/12/08	2/08	#2 Receiv	ved by: (Sig)	Sig)	5	R	Date:	8961	#3 Rec	#3 Received by: (Sig)	(Sig)			Date:	
Company Name: FPM Group Ltd	A Group Ltd	Time: 1000	00	Company	y Name:		25	1	Time:	930	Compa	Company Name:				Time:	

MATRIX WG = Ground water WQ = Water Quality Control Matrix SO = Soil

<u>SMCODE</u> B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB)

<u>SACODE</u> N = Normal Sample AB = Ambient Blank TB = Trip Blank

PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split Spoon

EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike Duplicate

AFCEE CHAIN OF CUSTODY RECORD	
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COC#: _1_ SDG#: _194&195_ (Open/Closed) Cooler ID#: _A_

·											_			-		-	
	Phone: (315) 336-7721 Ext. 205		Comments														
oesel Ltd. Road 13441) 336-7		Alkalinity ^{note 11} 8 oz glass (sero headspace)	-	1	1	1	1	-			-		-	-	1	
Niels van Hoesel FPM Group Ltd. 153 Brooks Road Rome, NY 13441	с, г.т. le: (315		Γ Γ bolλ BOD' μοιε 10	-	-	1	1	1	1	1	-	-	-		-	ı	1
0: Niels FPM 153 Rom	Phor		^{9 sund} sbinsvO (HOrV) vloq so 8	ı	1	ı	1	,	•	1	,	1		,	1	•	•
sults t			TOC ^{noie8} 40 mL vials (HCL)	-	-	_	-	-	1	1		-	-		-		-
Send Results to: Niels van Hoesel FPM Group Ltd. 153 Brooks Road Rome. NY 1344			IZ2 шГ bojλ (H ⁵ ZO†) ИН3' COD' LKИ ^{воје} 2	-	-	1		-	1	-	1	_	-	-	-		
	Π	sted	Anions, TDS ^{nole 6} 250 mL poly	-	-	1	-	-	1	1	-	-	-	,	-	,	,
<u>ක</u>		Analyses requested	Phenols notes (H ₂ SO,) 8 oz amber (H ₂ SO,)		1	-	1	1	•	•	,	,		1	1	L	•
		alyses	I Г ятрес bCB ² _{иоке 4}	•	•	•	1	ı	-	•	1		,	•	t	-	
1 LTMS	$\langle \rangle$	An	250 mL роју (НИО ₃) Хо mL роју (НИО ₃)		,	1	-		1	1	1		,		ı		•
amann	ralar	-	Metals, Hardness ^{note 2}	-	~		-	-	-	1	1	-	~	-	1		
Justin Dar	4	T	VOCs ^{nokel} 40mL vials (HCl)	m	£	ε	3	3	3	3	3	3	ŝ	2	3	3	e
Te: Jus	lature:		# of Containers	6	6	10	10	10	10	10	6	6	6	4	6	3	3
Project Name: Griffiss AFB LF1 LTM Sampling Sampler Name: Justin Damann Purb. Van. Yur. A	ler Signature:		ZBD/SED	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Proje Samp	Sampl		SACODE	z	z	z	z	z	z	z	z	z	z	z	EB	AB	TB
	Π		ZWCODE	вР	ВР	В	В	G	U	G	BP	вР	ВР	В	ΒР	NA	NA
7-020(XIATAM	WG	ЪМ	WG	WG	WG	MG	WG	WG	WG	WG	WG	МG	_	
)0 Tel: (315)437-0200			Time	1027	1116	1304	1030	1240	1031	1320	1459	1205	0940	1715	1510 WG	1450 WG	0830 WG
200 Tel: (3			Date 2008	81/6	81/6	9/18	9/18	81/6	9/18	9/18	9/18	9/18	9/18	9/18	9/18	9/18	9/18
oratories, Inc. Pkwy, Suite 2(Y 13057	LocID	LF1P2	LF1P3	WL-LFIMW-14	MWSAR03	SL-LFISW-1	SL-LF1SW-2	SL-LF1SW-3	LF1P5	LF1MW-5	LF1MW-6	WL-LFIMW-103	FIELDQC	FIELDQC	FIELDQC		
Ship to: Monika Santucci Life Science Lab 5000 Brittonfield East Syracuse, N	Carrier: LSL courier.		Field Sample ID	LF1P0213QA	LF1P0317QA	LFIM1412QA	MWSAR0324QA	LF1SW0101QA	LF1SW02SMC01QA	LF1SW0301QA	LF1P0525QA	LF1M0526QA	LF1M0620QA	LF1M10333QA	091808QE	091808QF	091808QR

Sample Condition Upon Receipt at Laboratory: Special Instructions/Comments: Parameter List: (According to AFCEE QAPP 4.0 and NYSDEC Landfill Part 360 Baseline Parameters) Note 1: VOCs: 8260B AFCEE OAPP 4.0 List + NYS Part 360 Baseline Parameters	oratory: eter List: (Accor ist + NYS Part 36(ding to AFCEE QAPP 4 I Baseline Parameters	0 and NYSDEC L	andfill Part 360 E	Cooler temperature: aseline Parameters)	ö	
Note 2: Metals: SW6010 AFCEE QAPP 4.0 List (Total), Hardness: 130.2. Note 3: Metals: SW6010 AFCEE QAPP 4.0 List (Dissolved) Note 4: PCBs: SW8082.	0 List (Dissolved)	iness: 130.2.					
Note 5: Phenols: SW9065. Note 6: Anions: SW9056. TDS: 160.1. Note 7: NH3: 350.1, COD: 410.4, TKN: 351.2.	1.2.						
Note 8: TOC: SW9060. Note 9: Cyanide: SW9012. Note 10: BOD: 405.1. Note 11: Alkalinity: 310.1.							
			/ /				
#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Indar	Date: 9/18/08	#3 Released by: (Sig)	Date:	
Company Name:	Time:	Company Name: FPM Group Ltd.	Group Ltd. /	Time: / 7 2 3	Company Name:	Time:	
#1 Received by: (Sig) Niels van Hocsel	Date: 9/15/08	#2 Received by: (Sig)	apply ap	Date: 9/9/08	#3 Received by: (Sig)	Date:	
Company Name: FPM Group Ltd.	Time: 1000	Company Name:	. 707	Time: 8 29	 Company Name: 	Time:	
<u>MATRIX</u> WG = Ground water WQ = Water Quality Control Matrix SO = Soil	i,	SMCODE B = Bailer G = Grab (only for EB). NA = Nol Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split Spoon	r AB/TB)	SACODE N = Nomma AB = Amb AB = Trip EB = Equi FD = Field Matr SD = Matr	SACODE N = Normal Sample AB = Ambient Blank TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike Duplicate		

COC#: _4_ SDG#: _194_ Cooler ID: _A_ Phone: (315) 336-7721 ext. 205 Time: Time: Date: Date: 53 Brooks Road Rome, NY 13441 Send Results to: Niels van Hoesel Comments FPM Group Cooler temperature: #3 Received by: (Sig) #3 Released by: (Sig) Company Name: Company Name: Analyses Requested siədmA J I ı Z NOC Note 2 ¢0 mL Vials (ICI) \mathbf{c} VOCs Note 1 Project Name: GriffIss AFB Building 15 Sampling Date: 9/19/63 Time: 8 25 -Date: 9/19/08 Time: 1230 Containers 3 10.0V AB = Ambient Blank <u>SACODE</u> N = Normal Sample Unf. File/UnFile HCI Sampler Name: Niels van Hoesel Preservative Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 3.1 Group Lin Ċ SACODE Z in 0/0 2 Sampler Signature: 28D/2ED Company Name: FPIN #2 Received by: (Sig) #2 Released by: (Sig) NA = Not Applicable (only for AB/TB) SMCODE B Company Name: WG XIATAM <u>SMCODE</u> B = Bailer G = Grab (only for EB). Note 1: VOCs: SW 8260 analysis for STARS List including MTBE. 1440 Time Tel: (315)437-0200 Date: 9/10/08 9/18 2008 Date Time: 1000 Note 2: SVOCs: SW 8270 analysis for STARS List. Date: Time: WL-B15MW-12 Sample Condition Upon Receipt at Laboratory: Location ID (LOCID) 5000 Brittonfield Pkwy, Suite 200 WQ = Water Quality Control Matrix Life Science Laboratories, Inc. #1 Received by: (Sig) Niels van Hoesel East Syracuse, NY 13057 Company Name: FPM Group Ltd <u>MATRIX</u> WG = Ground water Ship to: Monika Santucci B15M1208TA Carrier: LSL courier. SO = Soil Field Sample ID #1 Released by: (Sig) Company Name:

EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike Duplicate

BP = Bladder Pump SP = Submersible Pump SS = Split Spoon

PP = Peristaltic Pump

WS = Surface water

TB = Trip Blank

CHAIN OF CUSTODY RECORD (WO)

AFCEE

AFCEE CHAIN OF CUSTODY RECORD

COC#: _3_ SDG#: _194_ (Open/Closed) Cooler ID#: _A_

	1				
	Phone: (315) 336-7721 Ext. 205		Comments		
Send Results to: Niels van Hoesel FPM Group Ltd. 153 Brooks Road Rome, NY 13441	5) 336		Alkalinity note 11 8 oz glass (zero headspace)		
rook Srook	() ()		ا ت ومای		
viels PM 53 E Kome	hon		BOD' uore 10		ature
I I I I I I I I I I I I I I I I I I I			^{е зов} ^{9 мов 9} 8 ог роly (NOBN)		Cooler temperature:
Kesult			40 mL vials (HCL)	e	ooler ti
Send			ן 23 וויך אסןא (H ₂ SO4) ארוזי כסםי דגא _{וויוין}	•	
		ested	nionA ، م ^{مود 6} کام L poly	-	
		Analyses requested	8 oz amber (H ₂ SO4) Phenols ^{note5}	•	
5.0		lyses	l L amber		
	Λ	Ana	PCBs note 4 250 mL poly (HNO3)		
Il San	$\left \right $		Metals ^{note 3}	•	
Hoese			Metals, Hardness ^{note 2} , 250 mL poly (HNO3)	6	
Arb van F			40mL vials (HCI)		
iels			VOCs note1	ς.	
	lature		# of Containers	∞	4.0)
Project Name: Griffiss AFB B101Sampling Sampler Name: Niels van Hoesel	Sampler Signature:		CISCO CONTRACTOR CONTR	0/0	CEE QAPP 4.0) LY
Samp	Samp		SACODE	z	FCEE 2. NLY
			SMCODE	В	; to A :: 130. TE O
0200		i	ХІЯТАМ	WG	rding ()
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0 Tel: (315)437-0200			Date 2008	9/18	atory: er List: List (Dis List (Dis FATE A 2.
oratories, Inc. Pkwy, Suite 20 Y 13057			LociD	WL-101MW-2	n Receipt at Labor mments: Paramet CEE QAPP 4.0 Lis AFCEE QAPP 4.0 AFCEE QAPP 4.0 AFCEE QAPP 4.0 S. CHLORIDE, SUL 351
Life Science Laboratories 5000 Brittonfield Pkwy, S East Syracuse, NY 13057	Carrier: LSL courier.		Field Sample ID	101M0217XA	 Sample Condition Upon Receipt at Laboratory: Special Instructions/Comments: Parameter List: (According to AFNote 1: VOCs: 8260B AFCEE QAPP 4.0 List. Note 2: Metals: SW6010 AFCEE QAPP 4.0 List (Total), Hardness: 130.2 Note 3: Metals: SW6010 AFCEE QAPP 4.0 List (Dissolved) Note 4: PCBs: SW8082. Note 5: Phenols: SW9065. Note 5: Phenols: SW9065. Note 6: Anions: SW9065. Note 7: NH3: 350.1, COD: 410.4, TKN: 351.2. Note 9: Cyanide: SW9012. Note 10: BOD: 405.1.

Time: Time: Date: Date: #3 Released by: (Sig) #3 Received by: (Sig) Company Name: Company Name: Date: 9/19/08 + Date: 9/19/08 Time: /235 Time: Company Name: FPM Group Led. Ś) #2 Received by: (Sig) #2 Released by: (Sig) Company Name: Date: 9/12/08 Time: 1000 Time: Date: #1 Received by: (Sig) Niels van Hoesel Company Name: FPM Group Ltd. #1 Released by: (Sig) Company Name:

MATRIX WG = Ground water WQ = Water Quality Control Matrix SO = Soil

SMCODE B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split Spoon

SACODE N = Normal Sample AB = Ambient Blank TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike Duplicate

Date: 911810	8	Time :	8:15
Location: FPM offic	e (garage)		
Weather Conditions:	60 summy		
Meeting Type: Daily	v		
Personnel Present: Colub Smith	Josh Wennel	Daniel Ballyga	Peter Conigliono III
visitors Present:			
PPE Required: Mod	ified D		
^p ossible risks, injurie			
			ail response action/control measures
Anticipated Releases			
Anticipated Releases mplemented):			
Anticipated Releases mplemented):			ail response action/control measures
Anticipated Releases mplemented): hore Property Damage: hore	to Environment (if so	o, describe and det	
Anticipated Releases mplemented): hore Property Damage: hore Description (include	to Environment (if so sequence of events do	o, describe and det	ail response action/control measures
Anticipated Releases mplemented): hore Property Damage: hore Description (include	to Environment (if so sequence of events do elementation of Corre	o, describe and det escribing step by su escrive/Preventative	ail response action/control measures

Report made by (Name): _ Miles van Hoverel

SSHP Organization Title: Site Safety and Health Officer_

Appendix C Validated Data This page is intentionally left blank.

FPM-GROUP Data Verification and Usability Report GRIFFISS AIR FORCE BASE Site Griffiss AFB Building 101 Water Sampling Contract No. F41624-03-D-8601

FPM Project No. 40-05-27

LSL Job # 0712141

Laboratory:	Life Sciences Laboratories, Inc.
Sample Matrix:	Water
Number of Samples:	1
Analytical Protocol:	AFCEE QAPP, Version 4.0, with AFCEE-approved lab variances
Data Reviewer:	Connie van Hoesel
Sample Date:	December 20, 2007

LIST OF DATA VERIFICATION SAMPLES

This verification report pertains to the following environmental samples and corresponding QC samples:

Sample ID	Date	QC Samples	Date
101M0216VA	12/20/07		

Notes:

Refer to attached chain-of-custody for detailed sampling information and sample specific analyses requested. VA – Primary environmental sample

DELIVERABLES

The data deliverable report was per requirements of the AFCEE QAPP 4.0 and approved variances. The report consisted of the following major sections: lab attachment letter, case narrative, chain-of-custody, lab qualifier definitions, analytical results (sheet 2) based on analytical batch, calibration summaries, method blank summaries, laboratory control sample summaries, matrix spike/matrix spike duplicate summaries, holding time forms, performance checks, surrogate and internal standard recoveries, as applicable.

ANALYTICAL METHODS

The analytical test methods and QA/QC requirements used for the soil sample analysis was per methods as specified in the AFCEE Quality Assurance Project Plan, Version 4.0 and AFCEE approved laboratory variances. The analytical method employed included SW-846: Volatile Organic Compounds (VOCs) by Method SW8260B (short list).

VERIFICATION GUIDANCE

The analytical work was performed by Life Sciences Laboratories, Inc. in accordance with the Air Force Center for Environmental Excellence (AFCEE), Quality Assurance Project Plan (QAPP), Version 4.0, with AFCEE-approved laboratory variances. The data was verified according to the protocols and QC requirements of the respective analytical methods and of the QAPP Version 4.0. For data usability purposes all values were further evaluated, including positive and non-detect results that were qualified "Q" according to the QAPP. The data usability analysis was based on the reviewer's professional judgment and on an assessment of how this data would fare with respect to the U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for Organic (and Inorganic) Data Review (February 1994), and the AFCEE QAPP, Version 4.0.

QA/QC CRITERIA

The following QA/QC criteria were reviewed, as applicable and available:

- Method detection limits and reporting limits (MDL, RL)
- Holding times, sample preservation and storage
- MS tune performance
- Initial and Continuing calibration summaries
- Second source calibration verification summary
- Method blanks
- Ambient, equipment, and trip blanks (as applicable)
- Field duplicate results
- Surrogate spike recoveries
- Internal standard areas counts and retention times
- Laboratory control samples (LCS)
- Results reported between MDL and RL (F-flag)
- Sample storage and preservation

- Data system printouts
- Qualitative and quantitative compound identification
- Chain-of-custody (COC)
- Case narrative and deliverables compliance

The items listed above were in compliance with AFCEE QAPP and USEPA criteria and protocols <u>with exceptions discussed in the text below</u>. The data have been verified according to the procedures outlined above and qualified accordingly.

GENERAL NOTES:

MISSING SAMPLES

None. All samples documented on the chain of custody were received by the laboratory.

BLANKS

Whenever blanks, including method, ambient, equipment, and trip, contained low levels of contaminants (between MDL and RL), the laboratory and/or data verifier qualified the subject results with an "F" flag. Since no qualification of associated field samples are required for blanks less than half the RL, no further action was taken in such instances.

VOLATILE ORGANIC COMPOUNDS (VOCs)

• There were no exceedances for VOCs.

DATA USABILITY RESULTS

VOCs

Based on the evaluation of all information in the analytical data groups, the results of the samples for VOCs are highly usable with the data qualifiers as noted. Using the verification approach as presented above, the results for all above samples are 100% usable.

AFCEE SUMMARY

All data in Job # 0712141 are valid and usable with qualifications as noted in the data review.

Signed: Concordia van Hoesel

Date: <u>2/18/</u>08_

ATTACHMENTS

- Chain-of-Custody
- Laboratory's Case Narrative
- Definition of AFCEE Data Qualifiers
- Definition of USEPA Data Qualifiers
- Qualified final data verification results on annotated Lab Sheet 2s

Analytical Results

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AFCEE ORGANIC ANALYSES DATA PACKAGE

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12463</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

Eleksande D	Leo Sample D. L.
101M0216VA	0712141-001A

Comments:

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

- .-.

. . . .

Signature:	Monika Danqueei	Name:	Monika Santucci	
Date:	1/21/08	Title:	Project Manager	
QAPP 4.0	AFCEE FOR	RM O-1	Page 1 of 1	

AFCEE ORGANIC ANALYSES DATA SHEET 2 RESULTS

Analytical Method: SW8260B		Preparatory Method:	:	AAB #:	<u>R12463</u>
Lab Name: Life Science	Laboratories, Inc.	Contract #:			
Field Sample ID: 101M0216V	8	Lab Sample ID:	0712141-001A	Matrix:	Groundwater
% Solids: <u>0</u>		Initial Calibration ID:	<u>1155</u>	File ID:	<u>M4146.D</u>
Date Received: <u>21-Dec-07</u>		Date Extracted:		Date Analyzed:	<u>30-Dec-07</u>
Concentration Units (ug/L or m	g/Kg dry weight):	<u>µg/L</u>		Sample Size:	<u>25 mL</u>

Chloroform	0.0290	0.500	0.640	1	anfim Qualifie
cis-1,2-Dichloroethene	0.0320	1.00	2.61	1	
Tetrachloroethene	0.0300	1.00	0.0300	1	U
trans-1,2-Dichloroethene	0.0270	1.00	0.0270	1	<u>_</u>
Trichloroethene	0.0270	1.00	1.88	1	
Vinyl chloride	0.0380	1.00	0.0380	1	

Surrogate	Recovery	Gontrol Emilis	Qualifie
1,2-Dichloroethane-d4	109	72 - 119	19411111thtribidetrift
4-Bromofluorobenzene	108	76 - 119	
Dibromofluoromethane	104	85 - 115	
Toluene-dB	107	81 - 120	· · · · · · · · · · · · · · · · · · ·

2/18/08

Internal Std	Area Cours	Area Court Emils
1,4-Dichlorobenzene-d4	1819140	884964 - 3539854
Chlorobenzene-d5	2008877	1065947 - 4263788
Fluorobenzene	3816531	2014170 - 8056682

Comments:

QAPP 4.0 AFCEE FORM 0-2 Page 1 of 1

Quality Control Results

FPM-GROUP Data Verification and Usability Report GRIFFISS AIR FORCE BASE Site Griffiss AFB Building 101 Water Sampling Contract No. F41624-03-D-8601

FPM Project No. 40-05-27

LSL Job # 0804057

Laboratory:	Life Sciences Laboratories, Inc.
Sample Matrix:	Water
Number of Samples:	1
Analytical Protocol:	AFCEE QAPP, Version 4.0, with AFCEE-approved lab variances
Data Reviewer:	Connie van Hoesel
Sample Date:	April 8, 2008

LIST OF DATA VERIFICATION SAMPLES

This verification report pertains to the following environmental samples and corresponding QC samples:

Sample ID	Date	QC Samples	Date
101M0216WA	4/8/08		

Notes:

Refer to attached chain-of-custody for detailed sampling information and sample specific analyses requested. WA – Primary environmental sample

DELIVERABLES

The data deliverable report was per requirements of the AFCEE QAPP 4.0 and approved variances. The report consisted of the following major sections: lab attachment letter, case narrative, chain-of-custody, lab qualifier definitions, analytical results (sheet 2) based on analytical batch, calibration summaries, method blank summaries, laboratory control sample summaries, matrix spike/matrix spike duplicate summaries, holding time forms, performance checks, surrogate and internal standard recoveries, as applicable.

ANALYTICAL METHODS

The analytical test methods and QA/QC requirements used for the soil sample analysis was per methods as specified in the AFCEE Quality Assurance Project Plan, Version 4.0 and AFCEE approved laboratory variances. The analytical method employed included SW-846: Volatile Organic Compounds (VOCs) by Method SW8260B (short list), Total Organic Carbon by Method SW9060, Anions (including chloride, nitrate, and sulfate) by Method 9056, and Total Alkalinity by EPA Method 310.1.

VERIFICATION GUIDANCE

The analytical work was performed by Life Sciences Laboratories, Inc. in accordance with the Air Force Center for Environmental Excellence (AFCEE), Quality Assurance Project Plan (QAPP), Version 4.0, with AFCEE-approved laboratory variances. The data was verified according to the protocols and QC requirements of the respective analytical methods and of the QAPP Version 4.0. For data usability purposes all values were further evaluated, including positive and non-detect results that were qualified "Q" according to the QAPP. The data usability analysis was based on the reviewer's professional judgment and on an assessment of how this data would fare with respect to the U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for Organic (and Inorganic) Data Review (February 1994), and the AFCEE QAPP, Version 4.0.

QA/QC CRITERIA

The following QA/QC criteria were reviewed, as applicable and available:

- Method detection limits and reporting limits (MDL, RL)
- Holding times, sample preservation and storage
- MS tune performance
- Initial and Continuing calibration summaries
- Second source calibration verification summary
- Method blanks
- Ambient, equipment, and trip blanks (as applicable)
- Field duplicate results
- Surrogate spike recoveries
- Internal standard areas counts and retention times
- Laboratory control samples (LCS)

- Results reported between MDL and RL (F-flag)
- Sample storage and preservation
- Data system printouts
- Qualitative and quantitative compound identification
- Chain-of-custody (COC)
- Case narrative and deliverables compliance

The items listed above were in compliance with AFCEE QAPP and USEPA criteria and protocols <u>with exceptions discussed in the text below</u>. The data have been verified according to the procedures outlined above and qualified accordingly.

GENERAL NOTES:

MISSING SAMPLES

None. All samples documented on the chain of custody were received by the laboratory.

BLANKS

Whenever blanks, including method, ambient, equipment, and trip, contained low levels of contaminants (between MDL and RL), the laboratory and/or data verifier qualified the subject results with an "F" flag. Since no qualification of associated field samples are required for blanks less than half the RL, no further action was taken in such instances.

SAMPLE PRESERVATION

It was noted that sample 101M0216WA required the addition of 1:1 HCl to meet the required pH sample preservation requirements for TOC analysis. No further action was deemed necessary.

VOLATILE ORGANIC COMPOUNDS (VOCs)

• There were no exceedances for VOCs.

WET CHEMISTRY ANALYSES

• According to the case narrative, sample 101M0216WA required a 1:10 dilution for anions analysis. The dilution results only are reported and are used in data verification as representing original results.

DATA USABILITY RESULTS

VOCs

Based on the evaluation of all information in the analytical data groups, the results of the samples for VOCs are highly usable with the data qualifiers as noted. Using the verification approach as presented above, the results for all above samples are 100% usable.

Wet Chemistry

Based on the evaluation of all information in the analytical data groups, the wet chemistry results are highly usable with the data qualifiers as noted. Using the verification approach as presented above, the results for all above samples are 100% usable.

AFCEE SUMMARY

All data in Job # 0804057 are valid and usable with qualifications as noted in the data review.

Signed: Concordia van Hoesel

Date:_5/21/08_

ATTACHMENTS

- Chain-of-Custody
- Laboratory's Case Narrative
- Definition of AFCEE Data Qualifiers
- Definition of USEPA Data Qualifiers
- Qualified final data verification results on annotated Lab Sheet 2s

AFCEE ORGANIC ANALYSES DATA PACKAGE

.

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R13266</u>
Lab Name:	Life Science Laboratories. Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

Field Sample ID	
	0804057-001A

Comments:

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

Signature:	Monte Januar	Name:	Monika Santucci	
Date:	4/28/08	Title:	Project Manager	
QAPP 4.0	AFCEE F	ORM O-1	Page 1 of 1	

AFCEE ORGANIC ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	<u>SW8260B</u>	Preparatory Method:	:	AAB #:	<u>R13266</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:			
Fleid Sample ID:	101M0216WA	Lab Sample ID:	0804057-001A	Matrix:	<u>Groundwater</u>
% Solids:	Q	Initial Calibration ID:	1221	File ID:	<u>M4887.D</u>
Date Received:	<u>Q9-Apr-08</u>	Date Extracted:		Date Analyzed:	<u>10-Apr-08</u>
Concentration Unit	s (ug/L or mg/Kg dry weight):	<u>µg/L</u>		Sample Size:	<u>25 ml.</u>

Chloroform	0.100	0.500		0.470		1	F
is-1,2-Dichloroethene	0.160	1.00	•	3.72	ŧ	1	
etrachloroethene	0.100	1.00	1	0.100		1	U
rans-1,2-Dichloroethene	0.160	1.00		0.160	1	1	U
richloroethene	0.100	1.00		0.260		1	F
Vinyl chloride	0.500	1.00		0.500		1	

Surrogale /	Recovery	eronne samtes	Qualifier
1,2-Dichloroethane-d4	107	72 - 119	
4-Bromofluorobenzene	112	76 - 119	
Toluene-d8	106	81 - 120	

WA 5/21/08	
51211	

internal Stu	A Line Brown	Area Count Limits
1,4-Dichlorobenzene-d4	1486093	811362 - 3245448
Chlorobenzene-d5	2202836	1119858 - 4479430
Fluorobenzene	3875691	1972798 - 7891190

Comments:

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Page 1 of 1

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R13249</u>
Lab Name:	<u>Life Science Laboratories, Inc.</u>	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

101M0216WA	0804057-001B

Comments:

....

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

Signature:	Morika Sonquei	Name:	Monika Santucci	
Date:	4/28/08	Title:	Project Manager	
D 4 0				D

QAPP 4.0

AFCEE FORM W-1

Page 1 of 1

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9056		AAB #:	R13249		
Lab Name:	Life Science Laboratories,	Inc. Co	ntract #:			
Field Sample ID:	101M0216WA	Lab Sample ID:	0804057-0	001B	Matrix:	Groundwater
% Solids:	0	Initial Calibration ID:	1226			
Date Received:	09-Apr-08	Date Prepared:		I	Date Analyzed:	09-Apr-08
Concentration Units	(mg/L or mg/kg dry weight): mg/L				

非可能与非正常。在这个学校就会的。 在1991年前,在1991年前,在1991年前,在1991年前,在1991年前,在1991年前,在1991年前,在1991年前,在1991年前,在1991年前,在1991年前,在199			Concentration	Diutoniti	art for the
Chloride	0.99	10	200	10	The Product Street Branching
Nitrate (as N)	0.15	1.0	0.16	10	F
Sulfate (as SO4)	2.0	10	2.5	10	F

s/21/08

Comments:

- - - - - -QAPP 4.0

AFCEE FORM W-2

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16

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13328A</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

er e Bassan	
101M0216WA	0804057-001C

Comments:

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

Signature:	Moriles Lenducci	Name:	Monika Santucci	
Date:	4/28/08	Title:	Project Manager	
QAPP 4.0		I W-1		Page 1 of 2

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13348</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

	Labertrole ID.
101M0216WA DL	0804057-001CDL

Comments:

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

Signature:	Monika Farther	Name:	Monika Santucci
Dale:	4/28/08	Title:	Project Manager

QAPP 4,0

AFCEE FORM W-1

Page 2 of 2

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9060		AAB #:	R1332	28A	
Lab Name:	Life Science Laboratories	, Inc. Co	ntract #:			
Field Sample 1D:	101M0216WA	Lab Sample ID:	0804057-	001C	Matrix:	Groundwater
% Solids:	0	initial Calibration ID:	1249			
Date Received:	09-Apr-08	Date Prepared:			Date Analyzed:	16-Apr-08
Concentration Units	(mg/L or mg/kg dry weigh	t): mg/L				
				· · · · · · · · · · · · · · · · · · ·		
Total Organic Car	hon	84DL 0.40	RL 1.0	2011 (C	BC SC	10 + X
i stat organio our						

* leavet transferred from Juliin sample 101 MOZILOWA (1:10)

421/02

Comments:

Page 1 of 2

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9060		AAB #:	R13348			
Lab Name:	Life Science Laboratories, I	Inc.	Contract #:				
Field Sample ID:	101M0216WA DL	Lab Sample ID:	0804057-00	D1CDL	Matrix:	Groundwater	
% Solids:	0	Initial Calibration I	ID: 1250				
Data Received:	09-Apr-08	Date Prepared:		Da	ate Analyzed:	17-Apr-08	
Concentration Units (mg/L or mg/kg dry weight);	ma/L					

Organic Carbon 4.0 10 89 10 4.0			· 不可以我们的第一个。如何在				
4	A H	Total Organic Carbon		10	And a state of the	10	1:14
							4 V

Kleouet transferred from original sample 101M0216WA (1:1)

Comments:

42108

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>E310.1</u>	AAB #:	<u>R13324</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

Eineld Sarright Hold	
101M0216WA	0804057-001D
101M0216WA	0804057-001DDUP

Comments:

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

				Duran 4 and 4	
Date:	4/20/08	Title:	Project Manager		
Signature:	Moules Londuce	Name:	Monika Santucci		

QAPP 4.0

AFCEE FORM W-1

Page 1 of 1

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	E310.1		AAB #:	R13324	1	
Lab Name:	Life Science Laboratories	, Inc. C	ontract #:			
Field Sample ID:	101M0216WA	Lab Sample ID:	0804057-	-001D	Matrix:	Groundwater
% Solids:	0	Initial Calibration ID:	0			
Date Received:	09 -Ap r-08	Date Prepared:			Data Analyzed:	16-Apr-08
Concentration Units	(mg/L or mg/kg dry weigh	l): mg/L				

Analyte Analyte		RL	of sector and the sector of th		
Alkalinity, as CaCO3	10	10	290	1	

WA 5/2/08

Comments:

Page 1 of 1

FPM-GROUP Data Verification and Usability Report GRIFFISS AIR FORCE BASE Site Griffiss AFB Building 101 Water Sampling Contract No. F41624-03-D-8601

FPM Project No. 40-05-27

LSL Job # 0809134

Laboratory:	Life Sciences Laboratories, Inc.
Sample Matrix:	Water
Number of Samples:	1
Analytical Protocol:	AFCEE QAPP, Version 4.0, with AFCEE-approved lab variances
Data Reviewer:	Connie van Hoesel
Sample Date:	September 18, 2008

LIST OF DATA VERIFICATION SAMPLES

This verification report pertains to the following environmental samples and corresponding QC samples:

Sample ID	Date	QC Samples	Date
101M0217XA	9/18/08		

Notes:

Refer to attached chain-of-custody for detailed sampling information and sample specific analyses requested. XA – Primary environmental sample

DELIVERABLES

The data deliverable report was per requirements of the AFCEE QAPP 4.0 and approved variances. The report consisted of the following major sections: lab attachment letter, case narrative, chain-of-custody, lab qualifier definitions, analytical results (sheet 2) based on analytical batch, calibration summaries, method blank summaries, laboratory control sample summaries, matrix spike/matrix spike duplicate summaries, holding time forms, performance checks, surrogate and internal standard recoveries, as applicable.

ANALYTICAL METHODS

The analytical test methods and QA/QC requirements used for the soil sample analysis was per methods as specified in the AFCEE Quality Assurance Project Plan, Version 4.0 and AFCEE approved laboratory variances. The analytical method employed included SW-846: Volatile Organic Compounds (VOCs) by Method SW8260B (short list), Total Organic Carbon by Method SW9060, Anions (including chloride, nitrate, and sulfate) by Method SW9056, and Total Alkalinity by Method SM 2320 B.

VERIFICATION GUIDANCE

The analytical work was performed by Life Sciences Laboratories, Inc. in accordance with the Air Force Center for Environmental Excellence (AFCEE), Quality Assurance Project Plan (QAPP), Version 4.0, with AFCEE-approved laboratory variances. The data was verified according to the protocols and QC requirements of the respective analytical methods and of the QAPP Version 4.0. For data usability purposes all values were further evaluated, including positive and non-detect results that were qualified "Q" according to the QAPP. The data usability analysis was based on the reviewer's professional judgment and on an assessment of how this data would fare with respect to the U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for Organic (and Inorganic) Data Review (February 1994), and the AFCEE QAPP, Version 4.0.

QA/QC CRITERIA

The following QA/QC criteria were reviewed, as applicable and available:

- Method detection limits and reporting limits (MDL, RL)
- Holding times, sample preservation and storage
- MS tune performance
- Initial and Continuing calibration summaries
- Second source calibration verification summary
- Method blanks
- Ambient, equipment, and trip blanks (as applicable)
- Field duplicate results
- Surrogate spike recoveries
- Internal standard areas counts and retention times
- Laboratory control samples (LCS)

- Results reported between MDL and RL (F-flag)
- Sample storage and preservation
- Data system printouts
- Qualitative and quantitative compound identification
- Chain-of-custody (COC)
- Case narrative and deliverables compliance

The items listed above were in compliance with AFCEE QAPP and USEPA criteria and protocols <u>with exceptions discussed in the text below</u>. The data have been verified according to the procedures outlined above and qualified accordingly.

GENERAL NOTES:

MISSING SAMPLES

The chain of custody indicated that three bottles for Total Organic Carbon were sent. The laboratory received only one. The chain of custody was incorrect.

BLANKS

Whenever blanks, including method, ambient, equipment, and trip, contained low levels of contaminants (between MDL and RL), the laboratory and/or data verifier qualified the subject results with an "F" flag. Since no qualification of associated field samples are required for blanks less than half the RL, no further action was taken in such instances.

VOLATILE ORGANIC COMPOUNDS (VOCs)

• Laboratory performance on individual samples is established by means of spiking all samples prior to analysis with surrogate compounds and assessing the percent recoveries. The following table summarizes QC exceedances for surrogate recoveries. The sample ID, percent recovery, and QC limits are listed.

Sample ID	Surrogate	%Rec	AFCEE QC Limits (%)	Flag Applied	Rationale
MB-14876	4-Bromofluorobenzene	120	76-119	None	%Rec > upper control limit; associated results
					non-detect

If the surrogate recovery is outside AFCEE control limits, corrective action shall be implemented: the sample shall be reextracted and reanalyzed. If the corrective action is ineffective in resolving the exceedance, then all analytes associated with the surrogate in that sample are qualified. For samples with surrogate recoveries greater than the upper control limit, positive sample results are considered estimated (flagged "J"). For samples with surrogate recoveries greater than 10% but less than the lower control limit, positive results are considered estimated (flagged "J"). For samples with surrogate recoveries less than 10%, the results are rejected for the analytes. However, using professional judgment, no corrective action and/or flagging is required for minimal exceedances (i.e., within 1% of the control limits).

<u>Corrective Action</u>: For the 4-bromofluorobenzene exceedance, no flags were applied, since recoveries were greater than the upper control limit and associated results were non-detect. An AFCEE-approved variance allows this exceedance without qualification and/or further corrective action.

WET CHEMISTRY ANALYSES

- According to the case narrative, sample 101M0217XA required a 1:2 dilution for anions analysis. The dilution results only are reported and are used in data verification as representing original results.
- According to the case narrative, a lower RL for nitrate was used due to the increased sensitivity of the instrument. No corrective action was taken, and none is deemed necessary.

DATA USABILITY RESULTS

VOCs

Based on the evaluation of all information in the analytical data groups, the results of the samples for VOCs are highly usable with the data qualifiers as noted. Using the verification approach as presented above, the results for all above samples are 100% usable.

Wet Chemistry

Based on the evaluation of all information in the analytical data groups, the wet chemistry results are highly usable with the data qualifiers as noted. Using the verification approach as presented above, the results for all above samples are 100% usable.

AFCEE SUMMARY

All data in Job # 0809134 are valid and usable with qualifications as noted in the data review.

Signed: Concordia van Hoesel

Date:_10/14/08_____

ATTACHMENTS

- Chain-of-Custody
- Laboratory's Case Narrative
- Definition of AFCEE Data Qualifiers
- Definition of USEPA Data Qualifiers
- Qualified final data verification results on annotated Lab Sheet 2s

AFCEE ORGANIC ANALYSES DATA PACKAGE

Base/Command:		Prime Contractor:	FPM Group
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R14876</u>

Field Samples	Participation of the second second second second second second second second second second second second second
101M0217XA	0809134-001C

Comments:

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

.

Signature:	Monikas Landucci	Name:	Monika Santucci
Date:	10 3 08	Title:	Project Manager
QAPP 4.0	AFCEE	FORM O-1	Page 1 of 1

AFCEE ORGANIC ANALYSES DATA SHEET 2 RESULTS

Analytical Method: <u>SW8260B</u>	Preparatory Method:	AAB #:	<u>R14876</u>
Lab Name: Life Science Laboratories	s. Inc. Contract #:		
Fleid Sample ID: <u>101M0217XA</u>	Lab Sample ID: 0809134-001C	Matrix:	Groundwater
% Solids: <u>0</u>	Initial Calibration ID: <u>1351</u>	File ID:	<u>J7191.D</u>
Date Received: <u>19-Sep-08</u>	Date Extracted:	Date Analyzed:	24-Sep-08
Concentration Units (ug/L or mg/Kg dry we	lght): <u>ug/L</u>	Sample Size:	<u>10 mL</u>

Chloroform	0.100	0.500	Concentration 0.100	1 1	U
cis-1,2-Dichloroethene	0.160	1.00	4.93	1	
Tetrachloroethene	0.100	1.00	0.100	1	U
rans-1,2-Dichloroethene	0.160	1.00	D.160	1	i U
Гrichloroethene	0.100	1.00	0.100	1	U
Vinyl chloride	0.500	1.00	0.500	1	

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	113	72 - 119	
4-Bromofluorobenzene	111	76 - 119	
: Toluene-da	97	81 - 120	

	X	- 1
N	14	656

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	217124	151542 - 606166	
Chlorobenzene-d5	436520	220117 - 880468	91
Fluorobenzene	1123195	574706 - 2298826	

Comments:

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Page 1 of 1

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R14837</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

Contraction of the second second second second second second second second second second second second second s	
101M0217XA	0809134-001B

Comments:

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

Signature:	Monka Enducci Name:		Monika Santucci	
Date:	10 9 08	Title:	Project Manager	
QAPP 4.0	AFCEE FORM W-1			Page 1 of 1

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9056		AAB #:	R14837	
Lab Name:	Life Science Laboratorie	s, Inc. Q	Contract #:		
Fleid Sample ID:	101M0217XA	Lab Sample ID:	0809134-0	001B Matrix:	Groundwater
% Solids:	0	Initial Calibration ID	: 1357		
Date Received:	19-Sep-08	Date Prepared:		Date Analyzed:	19-Sep-08
Concentration Units	Concentration Units (mg/L or mg/kg dry weight): mg/L				

	in the second states of the second states of the second states of the second states of the second states of the	RL PL			
Chloride	0.20	2.0	78	2	
Nitrate (as N)	0.030	0.20	0.030	2	U
Sulfate (as SO4)	0.40	2.0	0.40	2	U

10114/08

Comments:

QAPP 4.0

Page 1 of 1

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SM 2320 B</u>	AAB #:	<u>R14921</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

FIGIC Sauge de ID	1.40 Sample D.
101M0217XA	0809134-001A

Comments:

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

D 4 0				Dece 4 of 4	
Date:	10/9/08	Title:	Project Manager		
Signature:	Monte Antuci	Name:	Monika Santucci		

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SM 2320 B		AAB #:	R1492 1		
Lab Name:	Life Science Laboratories,	Inc.	Contract #:			
Field Sample ID:	101M0217XA	Lab Sample (D:	0809134-0	001A	Matrix:	Groundwater
% Solids:	0	Initial Calibration I	D: 0			
Data Received:	19-Sep-08	Date Prepared:		1	Date Analyzed:	27-Sep-08
Concentration Units (mg/L or mg/kg dry weight)	: ma/L				

Analyto	MDL		Dencemention	Dilution	
Ikalinity, as CaCO3	10	10	440	1	

curst 10/14/08

Comments:

QAPP 4.0

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Page 1 of 1

AFCEE WET CHEM ANALYSES DATA PACKAGE

Base/Command:		Prime Contractor:	FPM Group
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Analytical Method:	<u>SW9060</u>	AAB #:	<u>R15086</u>

Field Sample 12	
101M0217XA	0809134-001D
101M0217XA DL	0809134-001DDL

Comments:

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

Signature:	Montes tintucci	Name:	Monika Santucci
Date:	10 9 08	Title:	Project Manager

QAPP 4.0

AFCEE FORM W-1

Page 1 of 1

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9060		AAB #:	R15086		
Lab Name:	Life Science Laboratories,	Inc. (Contract #:			
Field Sample ID:	101M0217XA	Lab Sample ID:	0809134-0	001D	Matrix:	Groundwater
% Solids:	0	Initial Calibration II): 1376			
Date Received:	19-Sep-08	Date Prepared:			Date Analyzed:	08-Oct-08
Concentration Units	(mg/L or mg/kg dry weight): mg/L				

	0.40	10	50- C 1	+ 12	-12
otal Organic Carbon	0.40	1.0		= 5	

A Result transferred from dilution sample 101M0217 XA DL (1:5)

Comments:

QAPP 4.0

Page 1 of 2

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9060		AAB #:	R1508	6	
Lab Name:	Life Science Laboratories,	, Inc. Cor	ntract #:			
Field Sample ID:	101M0217XA DL	Lab Sample ID:	0809134-(001DDL	Matrix:	Groundwater
% Solids:	0	Initial Calibration ID:	1376			
Date Received:	19-Sep-08	Date Prepared:			Date Analyzed:	08-Oct-08
Concentration Units	(mg/L or mg/kg dry weight	t): mg/L				

Analyto			Concernation	Dilution	
Total Organic Carbon	2.0	5.0	51	5	*

10/14/08

+ lesult transferred to original sample 101M0217XA (1:1)

Comments:

QAPP 4.0

Page 2 of 2

Quality Control Results

Appendix D Raw Lab Data This page is intentionally left blank.



Tuesday, January 22, 2008

Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441

TEL:

Project:GRIFFISS AFB - BUILDING 101RE:Analytical Result

Order No.: 0712141

Dear Niels van Hoesel:

Life Science Laboratories, Inc. received 1 sample(s) on 12/21/2007 for the analyses presented in the following report.

Very truly yours, Life Science Laboratories, Inc.

) ta Juca Non

Monika Santucci Project Manager

Laboratory Report

Project Management Case Narrative

INTRODUCTION/ANALYTICAL RESULTS

This report summarizes the laboratory results for samples from FPM, for the Griffiss AFB-Building 101 - Rome, NY project.

CONDITION UPON RECEIPT/CHAIN OF CUSTODY

The cooler(s) were received intact. When the cooler(s) were received by the laboratory, the sample custodian(s) opened and inspected the shipment(s) for damage and custody inconsistencies. Chains of custody documenting receipt are presented in the chain of custody section. Each sample was assigned a unique laboratory number and a custody file created. The samples were placed in a secured walk-in cooler and signed in and out by the chemists performing the tests. The sign out record, or lab chronicle, is presented in the chain of custody section.

There were no discrepancies noted upon receipt. The temperature of the cooler was 4.4°C.

METHODOLOGY

The following methods were used to perform the analyses:

PARAMETER	METHOD	REFERENCE
Volatile Organics	SW8260B	1

1) <u>Test Methods for Evaluating Solid Wastes</u>, SW-846 Third Edition, Final Update III, December 1996 (including the QC requirements specified in AFCEE 4.0 + variances).

QUALITY CONTROL

QA/QC results are summarized in the Laboratory Report.

RAW DATA

The raw data is not requested for this report. Life Science Laboratories, Inc. will keep the raw data on file.

Total # of pages in this report:

GC/MS Volatile Organics Case Narrative

Client: Project/Order: Work Order #: Methodology: FPM Griffiss AFB – Building 101 0712141 8260B

Analyzed/Reviewed by (Initials/Date):

QK 1/16/08

XX 1/21/08

Supervisor/Reviewed by (Initials/Date): MT 11803

QA/QC Review (Initials/Date):

File Name:

G:\Narratives\MSVoa\0712141msvnar.doc

GC/MS Volatile Organics

The GC/MS Volatile instruments used a Restek Rtx-502.2, 105 m x 0.53 mm ID capillary column and a Vocarb 3000 trap.

There were no excursions to note. All QC results were within established control limits.

Holding Times and Sample Preservation

All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements. Samples had a pH of ≤ 2 .

Laboratory Control Sample

All spike recoveries met method and/or project specific QC criteria.

Surrogate Standards

All surrogate standard recoveries met method and/or project specific QC criteria.

Internal Standards

All internal standard areas met method and/or project specific QC criteria.

Calibrations

All initial calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks

All preparation blanks met method and/or project specific QC criteria.

Life Science Laboratories, Inc.

CLIENT: FPM Group Project: Griffiss AFB - Building 101 Work Order Sample Summary Lab Order: 0712141 **Client Sample ID** Lab Sample ID **Tag Number Collection Date Date Received** 0712141-001A 101M0216VA 101MW-2 12/20/2007 12/21/2007

Date: 22-Jan-08

Lab Order:	0712141					
Client: Project:	FPM Group Griffiss AFB - Building 101	lding 101			DATES REPORT	r.
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date Pren Date	Anslveis Da
0712141-001A	101M0216VA	12/20/2007 4:35:00 PM	Groundwater	Volatile Organic Compounds by GC/MS		12/30/2007
					Pa	Page 1 of 1

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Chain of Custody

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External Chain of Custody

			Ŭ	CHA	0 N	F CU	AN OF CUSTODY RECORD	DYR	ECO	RD		COC#: 4 SDC#: 174 Cooler ID: A	ooler ID- A
Ship to: Monika Santucci				Proje	set Narr	ie: Grif	Project Name: Griffiss AFB Site Building 101 sampling	3 Site B	uilding	101 sar	mpling	Send Results to: Niels van Hoesel	
Life Science Laboratories, Inc.	ories, Inc.			Sam	oler Na	me: Ni	Sampler Name: Niels van Hoesel	Hoesel				FPM Group	
5000 Brittonfield Pkwy, Suite 200	y, Suite 200											153 Brooks Road	
East Syracuse, NY 13057	057 Tel: (315)437-0200	437-020	0				`	~	¢,			Rome, NY 13441	
Carrier: LSL courier.				Sam	oler Sig	Sampler Signature:	wd	india	J			Phone: (315) 336-7721 Ext 205	721 Ext 205
										A	Analyses Requested	squested	
Field Sample ID	Location ID (LOCID)	Date 2007	Time	MATRIX	SMCODE	CERD/SED	SACODE	Preservative	.JiiTaU\.JiiT	No. of Containers	40 mF vial (HCl) 40 mF vial (HCl)	Comments	
101M0216VA	101MW-2	12/20 1635	1635	МG	в	0/0	z	HCI U	Unf.	3	3		
Sample Condition Upon Receipt at Laboratory:	ipt at Laboratory: /	2 mar		Č	witedy	505		したよい	5			Cooler Temperature: 4.4° (C BN ICE
Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0 Note 1: VOC: method SW 8260: Taroet COCs: PCF_TCF_DCF_Vinvl Chloride and Chloroform	ts: Analyses to be co	F TCF	in com		with A	FCEE (ie with AFCEE QAPP 4.0 Chloride and Chloroform	0. E					
	00. 1 aigu COCa. 1 C	1	F S				Len						
#1 Released by: (Sig).	Date:		#2 R	#2 Released by: (Sig)	oy: (Sig)	ANT -			Date: 12/20/07	2/20/07		#3 Released by: (Sig) fait and and Da	Date: 12-24-00
Company Name:	Time:		Corr	npany Na	me: FPN	Company Name: FPM Group Ltd	p Ltd		Time: 1710	016	Compa	5	Time: 1445
#1 Received by: (Sig) Niels van Hoesel	Date:	12/5/07	#2 R	teceived	by: (Sig)	Bill	#2 Received by: (Sig) Bull Ognallan.	, es	Date: 12-2407	-24-07			Date: 12/1/07
Company Name: FPM Group Ltd		Time: 10200	Col	npany Na	me: $\zeta_{\overline{1}}$	لو يحيد	Company Name: Life Science Labos	50	Time: P.45	:42	Compa	Company Name: \dot{cSC} Ti	Time: 1445

AFCEE

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WG = Ground water WQ = Water Quality Control Matrix SO = Soil

SMCODE B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristatic Pump BP = Bladder Pump SP = Submersible Pump SS = Split spoon

TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike Duplicate SD = Matrix Spike Duplicate <u>SACODE</u> N = Normal Sample AB = Ambient Blank

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: FPM		Date and Time Received:	12/21/2007 2:45:00 PM
Work Order Number 0712141		Received by: ads	
Checklist completed by:	12/21/37 Date	Reviewed by:	12/26/07 Date
Matrix: Carr	rier name: <u>Courier</u>		
Shipping container/cooler in good condition?	Yes 🗹	No 🗌 Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗸	No Not Present	
Custody seals intact on sample bottles?	Yes	No 🗌 Not Present	$\mathbf{\Sigma}$
Chain of custody present?	Yes 🗹	Νο	
Chain of custody signed when relinquished and received?	?Yes 🗹	No 🛄	
Chain of custody agrees with sample labels?	Yes 🗹	No	
Samples in proper container/bottle?	Yes 🖌	No 🗋	
Sample containers intact?	Yes 🗹	No 🗀	
Sufficient sample volume for indicated test?	Yes 🖌	No	
All samples received within holding time?	Yes 🗹	No	
Container/Temp Blank temperature in compliance?	Yes 🗹	No	
Water - VOA vials have zero headspace?	Yes 🗹	No 🗌 🛛 No VOA vials sub	omitted
Water - pH acceptable upon receipt?	Yes 🗌	No Not Applicable	

Comments:

Corrective Action::

Sample ID Frac Client Sample ID Removed Date and Time Removed Analysis Date and Time Removed CO1 C C C C C C C C C CO1 C			Sar	nole Cc	introl Record		
ANG 121271177 13:45 82000	Sample ID	Frac	Client Samp	Removed By	Date and Time Removed		Date and Time Returned
	100	đ		DWB	LAILTRI		NC
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Client/Project_

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Analytical Results

AFCEE ORGANIC ANALYSES DATA PACKAGE

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12463</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

Field Sample ID	Lab Sample ID
101M0216VA	0712141-001A

Comments:

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

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Signature:	Monika Sanifue	د. Name:	Monika Santucci
Date:	1/21/08	Title:	Project Manager
QAPP 4.0		CEE FORM O-1	Page 1 of 1

AFCEE ORGANIC ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	<u>SW8260B</u>	Preparatory Method:		AAB #:	<u>R12463</u>	
Lab Name:	Life Science Laboratories, Inc.	Contract #:				
Field Sample ID:	101M0216VA	Lab Sample ID:	<u>0712141-001A</u>	Matrix:	Groundwater	
% Solids:	<u>0</u>	Initial Calibration ID:	<u>1155</u>	File ID:	<u>M4146.D</u>	
Date Received:	<u>21-Dec-07</u>	Date Extracted:		Date Analyzed:	<u>30-Dec-07</u>	
Concentration Unit	s (ug/L or mg/Kg dry weight):	<u>µg/L</u>		Sample Size:	<u>25 mL</u>	

Analyte	MDE	RL	Concentration	Dilution	Confirm Qualifier
Chloroform	0.0290	0.500	0.640	1	
cis-1,2-Dichloroethene	0.0320	1.00	2.61	1	
Tetrachloroethene	0.0300	1.00	0.0300	1	U
trans-1,2-Dichloroethene	0.0270	1.00	0.0270	1	U
Trichloroethene	0.0270	1.00	1.88	1	
Vinyl chloride	0.0380	1.00	0.0380	1	U

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	109	72 - 119	
4-Bromofluorobenzene	108	76 - 119	
Dibromofluoromethane	104	85 - 115	
Toluene-d8	107	81 - 120	

Internal Std	Area Counts	Area Count Limits Qualifier
1,4-Dichlorobenzene-d4	1819140	884964 - 3539854
Chlorobenzene-d5	2008877	1065947 - 4263788
Fluorobenzene	3816531	2014170 - 8056682

Comments:

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QAPP 4.0

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Quality Control Results

GC/MS Volatile Organics Data

AFCEE ORGANIC ANALYSES DATA SHEET 3 INITIAL MULTIPOINT CALIBRATION-GC/MS ANALYSIS

Analytical Method:8260BAAB #:Lab Name: Life Science Laboratories, Inc.Contract #:Instrument ID: HP5970 GCMS#2Date of Initial Calibration: 28DEC07Initial Calibration ID: 1155Concentration Units (ug/L or mg/kg): ug/L

SEE ATTACHED

Comments:

AFCEE FORM O-3

Response Factor Report #2MS12

		•	estek) 0 14:0	RTX-50 9:18 2	2.2, 0		x 105m		df	
	0.5	bration Files =M4111.D 1.0 =M4114.D 20		4112.D 4115.D		2.0 30	=M411 =M411			
		Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD
2) 3) 5) 6) 7) 8) 9) 11) 12) 13) 15) 13) 12) 13) 13) 13) 13) 13) 13) 13) 13	P CP P CP S S M M	Fluorobenzene Dichlorodifluoromet Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluorometh Acetone Acrolein 1,1-Dichloroethene Methyl iodide 1,1,2-Trichloro-1,2 Methyl acetate Acrylonitrile Methylene chloride Carbon disulfide trans-1,2-Dichloroe Methyl tert-Butyl e 1,1-Dichloroethane Vinyl acetate 2-Butanone cis-1,2-Dichloroeth Bromochloromethane Chloroform 2,2-Dichloropropane Cyclohexane Dibromofluoromethan 1,2-Dichloroethane 1,1,1-Trichloroetha 1,1,1-Trichloroetha 1,1,2-Dichloropropene Carbon tetrachlorid Benzene Trichloroethene Dibromomethane Methylcyclohexane 1,2-Dichloropropane Bromodichloromethan 2-Chloroethylvinyl	0.603 0.201 0.142 0.156 0.021 0.026 0.021 0.026 0.226 0.0349 0.622 0.085 0.016 0.287 0.263 0.263 0.345 0.327 0.327 0.327 0.327 0.3639 0.364 0.364 0.364 0.365 0.365 0.365 0.364 0.365 0.365 0.365 0.365 0.365 0.365 0.365 0.364 0.365 0.529 0.68	0.576 0.187 0.178 0.178 0.178 0.190 0.22 0.550 0.024 0.013 0.208 0.306 0.306 0.274 0.268 0.274 0.268 0.274 0.268 0.375 0.201 0.274 0.268 0.375 0.309 0.162 0.356 0.356 0.316 0.221 0.250 0.376 0.221 0.250 0.376 0.221 0.250 0.2250 0.356 0.316 0.221 0.250 0.2550 0.2250 0.356 0.3268 0.2250 0.356 0.356 0.221 0.250 0.2550 0.2250 0.2550 0.2250 0.250 0.2250 0.2550 0.2550 0.2250 0.2550 0.2550 0.2550 0.2550 0.2550 0.2550 0.2550 0.2550 0.250 0.250 0.250 0.250 0.250 0.250 0.250 0.250 0.250 0.2680 0.287 0.5455 0.064	0.644 0.195 0.220 0.198 0.124 0.629 0.021 0.014 0.246 0.355 0.025 0.021 0.293 0.293 0.293 0.559 0.292 0.370 0.575 0.221 0.355 0.293 0.575 0.221 0.370 0.338 0.183 0.709 0.356 0.244 0.355 0.292 0.370 0.338 0.183 0.356 0.2444 0.2444 0.24644 0.2444 0.2465 0.2444 0.275 0.416 0.484 0.403 0.292 0.323 0.403 0.292 0.325 0.416 0.484 0.292 0.325 0.292 0.325 0.416 0.403 0.292 0.325 0.642 0.325 0.642 0.325 0.642 0.325 0.642 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.292 0.325 0.642 0.075	- ISTD- 0.768 0.239 0.265 0.251 0.152 0.758 0.024 0.015 0.281 0.442 0.754 0.107 0.281 0.442 0.754 0.107 0.25 0.315 0.769 0.344 0.407 0.663 0.273 0.205 0.273 0.205 0.777 0.486 0.417 0.264 0.303 0.488 0.417 0.264 0.303 0.488 0.466 0.327 0.360 0.360 0.806 0.088	0.794 0.252 0.246 0.260 0.159 0.766 0.023 0.766 0.023 0.744 0.106 0.253 0.744 0.106 0.025 0.311 0.810 0.347 0.413 0.295 0.522 0.374 0.295 0.522 0.374 0.295 0.522 0.374 0.295 0.522 0.374 0.295 0.522 0.374 0.295 0.521 0.295 0.522 0.374 0.295 0.501 0.260 0.304 0.304 0.633 0.493 0.463 0.324 0.324 0.304 0.304 0.324 0.304 0.304 0.324 0.304 0.324 0.260 0.304 0.324 0.407 0.356 0.828 0.089	0.781 0.270 0.270 0.267 0.157 0.736 0.022 0.015 0.276 0.586 0.712 0.025 0.300 0.309 0.338 0.406 0.651 0.291 0.050 0.367 0.198 0.760 0.490 0.404 0.6291 0.298 0.2398 0.298 0.356 0.819 0.086		$\begin{array}{c} 13.41\\ 15.56\\ 22.85\\ 20.53\\ 15.71\\ 12.18\\ 5.78\\ 14.17\\ 12.04\\ 26.48\\ 9.58\\ 8.01\\ 17.09\\ 4.83\\ 23.51\\ 12.09\\ 6.74\\ 10.02\\ 18.33\\ 12.24\\ 8.08\\ 9.20\\ 6.74\\ 10.02\\ 18.33\\ 12.24\\ 8.08\\ 9.20\\ 6.32\\ 15.08\\ 11.34\\ 6.33\\ 6.39\\ 7.56\\ 14.55\\ 11.44\\ 18.07\\ 7.17\\ 11.24\\ 8.25\\ 15.36\\ 8.50\\ 18.83\\ 13.46\end{array}$
40) 41) 42) 43)		4-Methyl-2-pentanon cis-1,3-Dichloropro Toluene-d8 Toluene	0.277 0.702	0.293 0.686	0.351 0.757	0.178 0.464 0.870 0.573	0.487 0.861	0.490 0.840	0.406 0.790	12.18 23.58 9.56 10.36

(#) = Out of Range ### Number of calibration levels exceeded format MD28VOCW.M Wed Jan 02 11:38:12 2008

Page 1 Response Factor Report #2MS12

	Meth	od : C:\HPCHEM	\ 1 \MET	HODS/M		W M (R	ፐፑ ፐከተ	egrato	r)	
	Titl	e : VOC's w/R	estek (RTX-50	2.2, 0	.53mm	x 105m	, 3.0	df	
		Update : Sun Dec 3 onse via : Initial C			007					
	кевр	Unse via , inicial c	aribia	CTOII						
		bration Files								
	0.5 10	=M4111.D 1.0 =M4114.D 20		4112.D 4115.D		2.0 30	=M411 =M411			
	TO		=1•1•	4115.D		50	=M4 T T	0.0		
		Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD
44)		trans-1,3-Dichlorop	0.175	0.181	0.225	0.309	0.336	0.345	0.274	28.24
45)		1,1,2-Trichloroetha	0.192	0.193						9.80
46)		2-Hexanone			0.076	0.094	0.099	0.098	0.093	10.43
47)	I	Chlorobenzene-d5				-ISTD-				
48)		1,2-Dibromoethane							0.695	
49)		1,3-Dichloropropane								6.96
50)		Dibromochloromethan								
51) 52)		Tetrachloroethene 1-Chlorohexane							1.010 0.655	6.94 13.25
- 52) 53)		1,1,1,2-Tetrachloro								9.57
-	PM	Chlorobenzene							1.306	4.43
	CP	Ethylbenzene	1.878	1.723	1.947	1.995	1.854	1.772	1.861	
56)		(m+p)-Xylene o-Xylene	0.672	0.634	0.707	0.762	0.724	0.703	0.711	6.76
57)			0.651	0.645	0.716	0.805	0.782	0.736	0.733	9.10
58)		Styrene							1.082	10.19
59) 60)		Bromoform Bromofluorobenzene								28.59
607	5	Bromorraoropenzene	1.249	1.089	1.109	1.224	1.137	1.110	1.1/3	5.00
61)		1,4-Dichlorobenzene								
62)		trans-1,4-Dichloro-								
63)		1,1,2,2-Tetrachloro								8.63 10.39
64) 65)		Isopropylbenzene 1,2,3-Trichloroprop								10.39
66)		Bromobenzene				0.974				5.59
67)		n-Propylbenzene				3.295				9.39
68)		2-Chlorotoluene	1.992	1.754	2.083	2.302	2.317	2.261	2.085	10.51
69)		4-Chlorotoluene				2.302				7.93
70)		1,3,5-Trimethylbenz								9.48
71) 72)		tert-Butylbenzene 1,2,4-Trimethylbenz				2.119				9.79 9.79
73)		sec-Butylbenzene				3.082				10.80
74)		1,3-Dichlorobenzene								6.15
75)		p-Isopropyltoluene								12.77
76)		1,4-Dichlorobenzene	1.369	1.288	1.429	1,518	1.527	1.488	1.443	6.06
77)		n-Butylbenzene				2.010				14.71
78)		1,2-Dichlorobenzene								7.48
79) 80)		1,2-Dibromo-3-chlor 1,2,4-Trichlorobenz								<u>30.02</u> 11.26
80) 81)		Hexachlorobutadiene								11.20 11.12
82)		Naphthalene				0.571				9.53
83)		1,2,3-Trichlorobenz								12.80
			н (¹							

(#) = Out of Range ### Number of calibration levels exceeded format ### MD28VOCW.M Wed Jan 02 11:38:16 2008 Page 2

		I	Response	Fac	tor Re	eport	#2MS	512			
	Last	od : C:\HPCHEN e : VOC's w/H Update : Wed Jan (onse via : Initial (Restek R)2 11:51	TX-5	02.2,						
		bration Files									
	40	=M4119.D =	=		· .		=				
		-	-				_				
		Compound	40							Avg	%RSD
1)						IST	'D		— — — ` _ —		-
2)		Dichlorodifluoromet									
3) 4)		Chloromethane Vinyl chloride	0.272					1			
±) 5)		—	0.202								
6)		Chloroethane									
7)		Trichlorofluorometh									
8)		Acetone	0.023								
9)		Acrolein	0.015								
10)		1,1-Dichloroethene									
11)		Methyl iodide									
12) 13)		1,1,2-Trichloro-1,2 Methyl acetate									
14)		Acrylonitrile									
15)		Methylene chloride									
16)		Carbon disulfide									
17)		trans-1,2-Dichloroe									
18)		Methyl tert-Butyl e									
19)		1,1-Dichloroethane									
20)		Vinyl acetate									
21)		2-Butanone	0.049								
22) 23)		cis-1,2-Dichloroeth Bromochloromethane									
24)	CP	Chloroform	0.735								
25)		2,2-Dichloropropane									
26)		Cyclohexane	0,391								
27)	S	Dibromofluoromethan									
28)	S	1,2-Dichloroethane-									
29)		1,2-Dichloroethane	0.291								
30) 31)		1,1,1-Trichloroetha 1,1-Dichloropropene	· · · · ·								
32)		Carbon tetrachlorid									
33)	М	Benzene	0.851								
34)	М	Trichloroethene	0.430								
35)		Dibromomethane	0.309								
36)	~~	Methylcyclohexane	0.391								
37)	CP	1,2-Dichloropropane									
38) 39)		Bromodichloromethan 2-Chloroethylvinyl	0.795		• •			· •			
40)		4-Methyl-2-pentanon						-			
41)		cis-1,3-Dichloropro									
42)	S	Toluene-d8	0.814								
43)		Toluene	0.553								

MD28VOCW.M

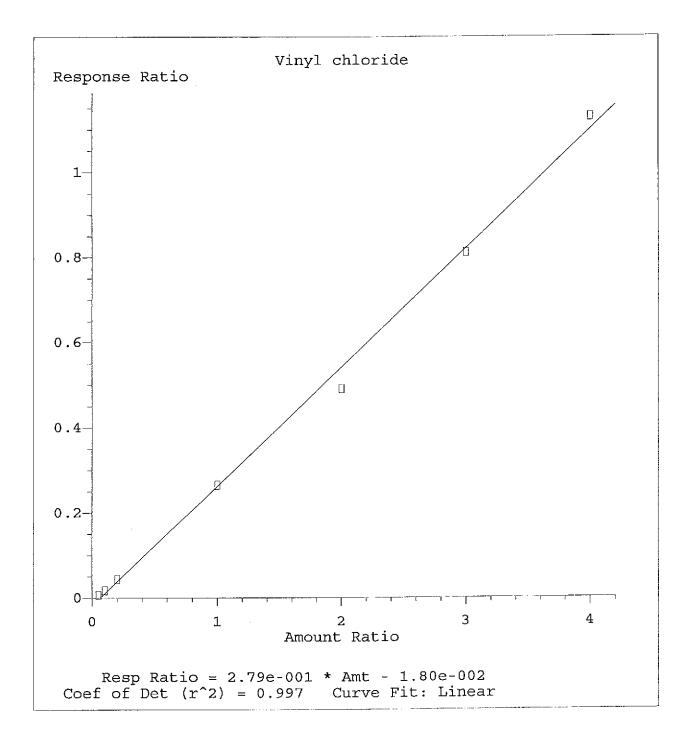
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(#) = Out of Range ### Number of calibration levels exceeded format Wed Jan 02 11:53:20 2008

Page 1

	Last Resp	od : C:\HPCHEM e : VOC's w/R Update : Wed Jan 0 onse via : Initial C bration Files	estek RTX-5 2 11:51:27	MD28VOCW.M (H 02.2, 0.53mm 2008	RTE Integra x 105m, 3.	tor) 0 df	
	40	=M4119.D	=		=		
		Compound	40			Avg	%RSD
44) 45) 46)		trans-1,3-Dichlorop 1,1,2-Trichloroetha 2-Hexanone	0.229 0.099		i	, . , 1 , 1	
47) 48) 50) 51) 52) 53) 55) 55) 55) 57) 58) 59) 60)	I PM CP S	o-Xylene Styrene	0.780 0.739 1.214 1.081 0.760 0.814 1.330 1.862 0.771 0.799 1.204 0.736	ISTD-			
61) 62) 63) 65) 66) 67) 68) 70) 71) 72) 73) 72) 73) 75) 75) 76) 77) 80) 81) 82) 83)	I	1,4-Dichlorobenzene trans-1,4-Dichloro- 1,1,2,2-Tetrachloro Isopropylbenzene 1,2,3-Trichloroprop Bromobenzene n-Propylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,3,5-Trimethylbenz tert-Butylbenzene 1,2,4-Trimethylbenz sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenz Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenz	0.054 0.865 2.337 0.414 0.907 3.007 1.889 2.433 1.856 1.986 1.772 2.813 1.573 2.137 1.483 2.050 1.396 0.130 0.854 0.796 0.570	ISTD-			- -

(#) = Out of Range ### Number of calibration levels exceeded format ### MD28VOCW.M Wed Jan 02 11:53:23 2008 Page 2



Method Name: C:\HPCHEM\1\METHODS\MD28VOCW.M Calibration Table Last Updated: Mon Dec 31 10:36:15 2007

AFCEE ORGANIC ANALYSES DATA SHEET 4 SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12455</u>
Lab Name:	Life Science Laboratories, In	Contract Number:	
Instrument ID:	<u>MS02 12</u>	Initial Calibration ID:	<u>1155</u>
Second Source ID:	ICV-12455	Concentration Units (mg/L or mg/kg):	<u>µg/L</u>

Analyte	Expected	Found	%D	Q
1,1,1,2-Tetrachloroethane	10	11.4	-13.9	
1,1,1-Trichloroethane	10	12.2	-22.0	
1,1,2,2-Tetrachloroethane	10	11	-9.5	
1,1,2-Trichloro-1,2,2-trifluoroethane	10	11.9	-19.2	
1,1,2-Trichloroethane	10	11.8	-18.3	
1,1-Dichloroethane	10	11.5	-14.9	
1,1-Dichloroethene	10	11.8	-17.9	
1,1-Dichloropropene	10	12	-19.5	
1,2,3-Trichlorobenzene	10	11	-10.4	
1,2,3-Trichloropropane	10	11.2	-12.3	
1,2,4-Trichlorobenzene	10	11.2	-12.0	
1,2,4-Trimethylbenzene	10	11.2	-12.0	
1,2-Dibromo-3-chloropropane	10	9.8	2.0	
1,2-Dibromoethane	10	11.1	-10.8	
1,2-Dichlorobenzene	10	11.1	-11.0	
1,2-Dichloroethane	10	11.3	-12.8	
1,2-Dichloroethane-d4	10	10.8	-8.0	
1,2-Dichloropropane	10	11.7	-17.2	
1,3,5-Trimethylbenzene	10	11.3	-13.1	
1,3-Dichlorobenzene	10	10.9	-9.0	
1,3-Dichloropropane	10	10.8	-8.2	
1,4-Dichlorobenzene	10	11.1	-11.1	
1-Chlorohexane	10	11.5	-15.1	
2,2-Dichloropropane	10	10.7	-6.6	
2-Butanone	20	20.3	-1.5	
2-Chloroethylvinyl ether	10	12.1	-21.1	
2-Chlorotoluene	10	12	-20.1	
2-Hexanone	20	21.7	-8.6	
4-Bromofluorobenzene	10	10.1	-0.6	
4-Chlorotoluene	10	11	-9.5	
4-Methyl-2-pentanone	20	23.8	-19.0	
Acetone	20	21.4	-6.9	
Acrylonitrile	50	55.1	-10.1	
Benzene	10	11.5	-15.3	
Bromobenzene	10	11.1	-11.1	

Comments:

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AFCEE ORGANIC ANALYSES DATA SHEET 4 SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12455</u>
Lab Name:	Life Science Laboratories, In	Contract Number:	
Instrument ID:	<u>MS02_12</u>	Initial Calibration ID:	<u>1155</u>
Second Source ID:	ICV-12455	Concentration Units (mg/L or mg/kg):	<u>µд/L</u>

Analyte	Expected	Found	%D	Q
Bromochloromethane	10	11.9	-18.9	
Bromodichloromethane	10	11	-9.9	
Bromoform	10	10.1	-1.2	-
Bromomethane	10	11.9	-19.2	
Carbon disulfide	10	10.6	-5.6	
Carbon tetrachloride	10	11.1	-11.0	
Chlorobenzene	10	11.1	-11.2	
Chloroethane	10	11.1	-10.6	
Chloroform	10	11.4	-14.5	
Chloromethane	10	11.4	-14.4	
cis-1,2-Dichloroethene	10	11.6	-15.8	
cis-1,3-Dichloropropene	10	10.6	-6.4	
Cyclohexane	10	12.2	-21.8	
Dibromochloromethane	10	10.2	-2.3	
Dibromofluoromethane	10	10.8	-8.1	
Dibromomethane	10	11.7	-16.8	
Dichlorodifluoromethane	10	11.9	-19.2	
Ethylbenzene	10	11.4	-14.5	
Hexachlorobutadiene	10	11.4	-14.4	
Isopropylbenzene	10	11.6	-16.1	
Methyl acetate	10	11.7	-16.9	
Methyl iodide	10	10	0	
Methyl tert-butyl ether	10	11.7	-16.9	
Methylcyclohexane	10	10.9	-8.9	
Methylene chloride	10	11.3	-12.8	
n-Butylbenzene	10	11.3	-13.3	
n-Propylbenzene	10	11.5	-15.3	
Naphthalene	10	11	-9.7	
p-Isopropyltoluene	10	11.3	-13.0	
sec-Butylbenzene	10	11	-10.4	
Styrene	10	11.4	-14.4	
tert-Butylbenzene	10	11.3	-12.6	
Tetrachloroethene	10	11.1	-10.7	
Toluene	10	11.8	-18.2	
Toluene-d8	10	11.2	-11.6	

Comments:

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AFCEE ORGANIC ANALYSES DATA SHEET 4 SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12455</u>
Lab Name:	Life Science Laboratories, In	Contract Number:	
Instrument ID:	<u>MS02 12</u>	Initial Calibration ID:	<u>1155</u>
Second Source ID:	ICV-12455	Concentration Units (mg/L or mg/kg):	µg/L

Anatyte	Expected	Found	%D C	1
trans-1,2-Dichloroethene	10	12	-19.7	
trans-1,3-Dichloropropene	10	10.5	-5.0	
trans-1,4-Dichloro-2-butene	10	9.38	6.2	
Trichloroethene	10	12.3	-23.3	
Trichlorofluoromethane	10	12.1	-20.8	
Vinyl acetate	10	8.65	13.5	
Vinyl chloride	10	10.8	-8.0	
Xylenes (total)	30	34.4	-14.6	

Comments:

QAPP 4.0

AFCEE FORM 0-4

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Page 3 of 3

AFCEE ORGANIC ANALYSES DATA SHEET 5 CALIBRATION VERIFICATION

Analytical Method: 8260B

AAB #:

Lab Name: Life Science Laboratories, Inc.

Instrument ID: HP5970 GCMS#2

ICV ID: ICV-12455

Contract #:

Initial Calibration -ID: 1155

CCV #1 ID: CCV-12463

SEE ATTACHED

Comments:

AFCEE FORM O-5

	Evaluate Continui	ng Calibr.	ation Repo	ort	
Acq Samp Misc	File : C:\HPCHEM\1\DATA\M413 On : 30 Dec 2007 13:26 le : CCV-12463 : CCV ,8260WAF_40CAL, ntegration Params: RTEINT.P	35.D		Operator	: #2MS12
Titl Last Resp	Update : Thu Jan 03 08:49:0 onse via : Multiple Level Cal	(-502.2, t)3 2008 Libration	J.53mm X IV	Jun, 5.0 (
Min. Max.	RRF : 0.050 Min. Rel RRF Dev : 20% Max. Rel	. Area : . Area : 2	50% Max. 200%	R.T. Dev	0.50min
	Compound	AvgRF	CCRF	%Dev A	rea% Dev(min)
1 I 2 CP 3 4 5 CP 6 S 7 S 8 M 9 S	Fluorobenzene Vinyl chloride trans-1,2-Dichloroethene cis-1,2-Dichloroethene Chloroform Dibromofluoromethane 1,2-Dichloroethane-d4 Trichloroethene Toluene-d8	0.229 0.314 0.348 0.733 0.673 0.243	1.000 0.250 0.337 0.357 0.729 0.693 0.245 0.449 0.839	-9.2 -7.3 -2.6 0.5	$\begin{array}{cccc} 90 & 0.00 \\ 93 & 0.00 \\ 90 & 0.00 \\ 90 & 0.00 \\ 92 & 0.00 \\ 89 & 0.00 \\ 92 & 0.00 \\ 92 & 0.00 \\ 92 & 0.00 \end{array}$
10 I 11 12 S	Chlorobenzene-d5 Tetrachloroethene Bromofluorobenzene	1.000 1.010 1.173	1.000 1.120 1.224	0.0 -10.9 -4.3	$\begin{array}{ccc} 95 & 0.00 \\ 96 & 0.00 \\ 94 & 0.00 \end{array}$

1.000 1.000 0.0 96 0.00

(#) = Out of Range M4135.D MD28SHOR.M

1,4-Dichlorobenzene-d4

Ι

SPCC's out = 0 CCC's out = 0 //Thu Jan 03 08:50:01 2008

13/08

Page 1

		Evaluate Continui:	ng Calib	ration Repo	rt		
	Acq (Samp] Misc	File : C:\HPCHEM\1\DATA\M413 Dn : 30 Dec 2007 13:26 le : CCV-12463 : CCV ,8260WAF_40CAL, ntegration Params: RTEINT.P	5.D		Via Operato Inst Multipl	: #2	MS12
	Title Last	od : C:\HPCHEM\1\METHODS e : VOC's w/Restek RTX Update : Thu Jan 03 08:49:03 onse via : Multiple Level Cal:	-502.2, 3 2008	0.53mm x 10	ntegrato 5m, 3.0	r) df	
	Min. Max.	RRF : 0.050 Min. Rel. RRF Dev : 20% Max. Rel.	Area : Area :	50% Max. 200%	R.T. Dev	0.5	Omin
		Compound	Amount	Calc.	%Dev A	rea%	Dev(min)
2 3 4 5 6 7 8	СР		10.000 10.000 10.000 10.000	10.000 9.583 10.747 10.256 9.958 10.294 10.071 10.704 10.622	-7.5 -2.6 0.4 -2.9 -0.7 -7.0 -6.2	93 90 90 92 89 92 92	0.00 0.00 0.00 0.00 0.00 0.00 0.00
10 11 12		Chlorobenzene-d5 Tetrachloroethene Bromofluorobenzene	10.000 10.000 10.000	10.000 11.088 10.432	0.0 -10.9 -4.3	95 96 94	0.00 0.00 0.00
	I	1,4-Dichlorobenzene-d4	10.000	10.000	0.0	96	0.00

(#) =Out of Range SPCC's out = 0 CCC's out = 0 /4 M4135.D MD28SHOR.M Thu Jan 03 08:50:09 2008

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13/08

AFCEE ORGANIC ANALYSES DATA SHEET 7 BLANKS

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12463</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Units:	<u>µg/L</u>	Method Blank ID:	<u>MB-12463</u>
Initial Calibration ID:	<u>1155</u>	File ID:	<u>M4139.D</u>

Analyte	Method Blank	RL.	a
Chloroform	0.0290	0.500	U
cis-1,2-Dichloroethene	0.0320	1.00	U
Tetrachloroethene	0.0300	1.00	U
trans-1,2-Dichloroethene	0.0270	1.00	U
Trichloroethene	0.0270	1.00	U
Vinyl chloride	0.0380	1.00	U

Surrogate Recovery Control Limits Qualifier			
1,2-Dichloroethane-d4	109	72 - 119	
4-Bromofluorobenzene	109	76 - 119	
Dibromofluoromethane	105	85 - 115	
Toluene-d8	108	81 - 120	

Internal Std Area Counts Area Count Limits Qualifier			
1,4-Dichlorobenzene-d4	1837001	884964 - 3539854	
Chlorobenzene-d5	2060293	1065947 - 4263788	
Fluorobenzene	3966481	2014170 - 8056682	

Comments:

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AFCEE ORGANIC ANALYSES DATA SHEET 8 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12463</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCS-12463	Initial Calibration ID:	<u>1155</u>
Concentration Units	(mg/L or mg/kg): <u>ug/L</u>	File ID:	<u>M4136.D</u>

Analyte	Expected	Found	%R	Control Limits	Q
Chloroform	10	10.6	106	69 - 128	
cis-1,2-Dichloroethene	10	10.8	108	72 - 126	
Tetrachloroethene	10	11.2	112	66 - 128	
trans-1,2-Dichloroethene	10	11.3	113	63 - 137	
Trichloroethene	10	11.3	113	70 - 127	
Vinyl chloride	10	10.4	104	50 - 134	

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	101	72 - 119	
4-Bromofluorobenzene	106	76 - 119	
Dibromofluoromethane	106	85 - 115	
Toluene-d8	108	81 - 120	

Internal Std	Area Counts	Area Count Limits Qualifier
1,4-Dichlorobenzene-d4	1677360	884964 - 3539854
Chlorobenzene-d5	1920474	1065947 - 4263788
Fluorobenzene	3670784	2014170 - 8056682

Comments:

AFCEE ORGANIC ANALYSES DATA SHEET 8 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12463</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCSD-12463	Initial Calibration ID:	<u>1155</u>
Concentration Units	(mg/L or mg/kg): <u>µg/L</u>	File ID:	<u>M4137.D</u>

Analyte Expected Found %R Control Limits Q Chloroform 109 69 - 128 10 10.9 cis-1,2-Dichloroethene 10 11.2 112 72 - 126 Tetrachloroethene 10 112 66 - 128 11.2 trans-1,2-Dichloroethene 63 - 137 10 114 11.4 Trichloroethene 10 11.6 116 70 - 127 Vinyl chloride 10 10.5 105 50 - 134

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	105	72 - 119	
4-Bromofluorobenzene	106	76 - 119	
Dibromofluoromethane	108	85 - 115	
Toluene-d8	110	81 - 120	

Internal Std	Area Counts	Area Count Limits Qualifier
1,4-Dichlorobenzene-d4	1750153	884964 - 3539854
Chlorobenzene-d5	2017124	1065947 - 4263788
Fluorobenzene	3741912	2014170 - 8056682

Comments:

AFCEE ORGANIC ANALYSES DATA SHEET 9 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLE RECOVERY

Analytical Method:	<u>SW8260B</u>		AAB #:	<u>R12463</u>
Lab Name:	Life Science Lab	oratories, Inc.	Contract #:	
Concentration Units (mg/L	or mg/kg):	<u>µg/L</u>	% Solids:	Q
Parent Field Sample ID:	LCSD-12463	MS ID: <u>LC</u>	S-12463	MSD ID: LCSD-12463

Calibration ID: 1155

Analyte Parent Sample Rësult	Spike Added	Spiked Sample Result	%R	Duplicate Spiked Sample Result	%R	%RPD	Control Limits %R	Control Limits %RPD	Q
Chloroform	10.0	10.6	106	10.9	109	3	69 - 128	20	
cis-1,2-Dichloroethene	10.0	10.8	108	11.2	112	3	72 - 126	20	
Tetrachloroethene	10.0	11.2	112	11.2	112	0	66 - 128	20	
trans-1,2-Dichloroethene	10.0	11.3	113	11.4	114	1	63 - 137	20	
Trichloroethene	10.0	11.3	113	11.6	116	3	70 - 127	20	
Vinyl chloride	10.0	10.4	104	10.5	105	2	50 - 134	20	

Comments:

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AFCEE ORGANIC ANALYSES DATA SHEET 10 HOLDING TIMES

Analytical Method:	<u>SW8260B</u>			AAB #	!:	<u>R12463</u>	1			
Lab Name:	Life Science Labo	oratories, Inc.	<u>.</u>	Contra	act #:					
Field Sample ID	Lab Sample IB			Date Extracled	Holding		Date Analyzed	Holding	:	Q
101M0216VA 07	'12141-001A	20-Dec-07	21-Dec-07	30-Dec-07			30-Dec-07	14	10.2	

Comments:

QAPP 4.0

AFCEE FORM O-10

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Page 1 of 1

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AFCEE ORGANIC ANALYSES DATA SHEET 11 INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method:	<u>SW8260B</u>		AAB#:		
Lab Name:	<u>Life Science Laboratories, In</u>	<u>c.</u>	Contract #:		
Instrument ID #:	MS02_12		Calibration ID:	<u>1155</u>	
Field Sample ID/Std ID/	i Labrelle (Labrelle) Sample ID	Date Analysis Started	Time Analysis Started	Date Analysis Completed	Time Analysis Completed
Blank ID/GC Sample ID		28-Dec-07	7:23	28-Dec-07	8:42
TB122807A2	TB122807A2	28-Dec-07	8:42	28-Dec-07	9:21
ICAL 0.5 PPB	ICAL 0.5 PPB		9:21	28-Dec-07	9:59
ICAL 1.0 PPB	ICAL 1.0 PPB	28-Dec-07	9:59	28-Dec-07	10:37
ICAL 2.0 PPB	ICAL 2.0 PPB	28-Dec-07	10:37	28-Dec-07	11:14
ICAL 10 PPB	ICAL 10 PPB	28-Dec-07	11:14		11:52
ICAL 20 PPB	ICAL 20 PPB	28-Dec-07		28-Dec-07	13:43
ICAL 30 PPB	ICAL 30 PPB	28-Dec-07	11:52	28-Dec-07	15:22
ICV-12455	ICV-12455	28-Dec-07	13:43	28-Dec-07	15:22
ICAL 40 PPB	ICAL 40 PPB	28-Dec-07	15:22		13:26
TB123007A2	TB123007A2	30-Dec-07	12:50	30-Dec-07	
· · · · · · · · · · · · · · · · · · ·	CCV-12463	30-Dec-07	13:26	30-Dec-07	14:05
CCV-12463	LCS-12463	30-Dec-07	14:05	30-Dec-07	14:41
LCS-12463	LCSD-12463	30-Dec-07	14:41	30-Dec-07	15:56
LCSD-12463		30-Dec-07	15:56	30-Dec-07	20:13
MB-12463 101M0216VA	MB-12463 0712141-001A	30-Dec-07	20:13	30-Dec-07	20:13

Comments:

QAPP 4.0

AFCEE FORM O-11

Page 1 of 1

AFCEE ORGANIC ANALYSES DATA SHEET 12 INSTRUMENT PERFORMANCE CHECK (BFB or DFTPP)

Analytical Method:	<u>SW8260B</u>	AAB #:	MS02 12 071228C
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
Instrument ID:	<u>MS02 12</u>	Injection Date/Time:	12/28/2007 7:23:00 AM
Initial Calibration ID:	<u>1155</u>	File ID:	C:\HPCHEM\1\DATA\M4109.D
Compound:	<u>SW8260B</u>	Sample ID:	TB122807A2
	Ion Abundance Cr	llaria	% Relative

Mass	Ion Abundance Criteria	Abundance Q
50	15 - 40% of m/z 95	22.6
75	30 - 60% of m/z 95	50.8
95	Base peak, 100% relative abundance	100
96	5 - 9% of m/z 95	6.1
173	Less than 2% of m/z 174	0
174	Greater than 50% of m/z 95	72.3
175	5 - 9% of m/z 174	6.9
176	Greater than 95% but less than 101% of m/z 174	97.3
177	5 - 9% of m/z 176	6.2

AFCEE ORGANIC ANALYSES DATA SHEET 12 INSTRUMENT PERFORMANCE CHECK (BFB or DFTPP)

Analytical Method:	SW8260B	AAB #:	MS02_12_071230B
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
Instrument ID:	<u>MS02_12</u>	Injection Date/Time:	12/30/2007 12:50:00 P
Initial Calibration ID:	<u>1155</u>	File ID:	C:\HPCHEM\1\DATA\M4134.D
Compound:	<u>SW8260B</u>	Sample ID:	TB123007A2

Mass	Ion Abundance Criteria	% Relative Abundance Q
50	15 - 40% of m/z 95	22.5
75	30 - 60% of m/z 95	51.7
95	Base peak, 100% relative abundance	100
96	5 - 9% of m/z 95	6.0
173	Less than 2% of m/z 174	0
174	Greater than 50% of m/z 95	73.2
175	5 - 9% of m/z 174	6.4
176	Greater than 95% but less than 101% of m/z 174	99.8
177	5 - 9% of m/z 176	5.9



Thursday, January 31, 2008

Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441

TEL:

Project: GRIFFISS AFB - BUILDING 101 RE: Analytical Result

Order No.: 0801104

Dear Niels van Hoesel:

Life Science Laboratories, Inc. received 1 sample(s) on 1/24/2008 for the analyses presented in the following report.

Very truly yours, Life Science Laboratories, Inc.

Montes fartures

Monika Santucci Project Manager

Laboratory Report

Project Management Case Narrative

INTRODUCTION/ANALYTICAL RESULTS

This report summarizes the laboratory results for samples from FPM, for the Griffiss AFB-Building 101 - Rome, NY project.

CONDITION UPON RECEIPT/CHAIN OF CUSTODY

The cooler(s) were received intact. When the cooler(s) were received by the laboratory, the sample custodian(s) opened and inspected the shipment(s) for damage and custody inconsistencies. Chains of custody documenting receipt are presented in the chain of custody section. Each sample was assigned a unique laboratory number and a custody file created. The samples were placed in a secured walk-in cooler and signed in and out by the chemists performing the tests. The sign out record, or lab chronicle, is presented in the chain of custody section.

There were no discrepancies noted upon receipt. The temperature of the cooler was 1.2°C.

METHODOLOGY

The following methods were used to perform the analyses:

PARAMETER	METHOD	REFERENCE
Volatile Organics	SW8260B	1

1) <u>Test Methods for Evaluating Solid Wastes</u>, SW-846 Third Edition, Final Update III, December 1996 (including the QC requirements specified in AFCEE 4.0 + variances).

QUALITY CONTROL

QA/QC results are summarized in the Laboratory Report.

RAW DATA

The raw data is not requested for this report. Life Science Laboratories, Inc. will keep the raw data on file.

Total # of pages in this report: _____

GC/MS Volatile Organics Case Narrative

Client: Project/Order: Work Order #: Methodology:

FPM Griffiss AFB - Building 101 0801104 8260B

Analyzed/Reviewed by (Initials/Date):

QA/QC Review (Initials/Date);

1-31 OR Supervisor/Reviewed by (Initials/Date): KT G:\Narratives\MSVoa\0801104msvnar.doc

File Name:

GC/MS Volatile Organics

The GC/MS Volatile instruments used a Restek Rtx-502.2, 105 m x 0.53 mm ID capillary column and a Vocarb 3000 trap.

There were no excursions to note. All QC results were within established control limits.

Holding Times and Sample Preservation

All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements. Samples had a pH of < 2.

Laboratory Control Sample

All spike recoveries met method and/or project specific QC criteria.

Surrogate Standards

All surrogate standard recoveries met method and/or project specific QC criteria.

Internal Standards

All internal standard areas met method and/or project specific QC criteria.

Calibrations

All initial calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks

All preparation blanks met method and/or project specific QC criteria.

Miscellaneous

Dibromofluoromethane is no longer being manufactured in the United States and is therefore no longer available for use as a surrogate. Surrogates 1,4-Dichloroethane-d4, 4-Bromofluorobenzene and Toluene-d8 are reported as recommended by method 8260C.

Life Science Laboratories, Inc.

CLIENT: FPM Group **Project:** Griffiss AFB - Building 101 Work Order Sample Summary Lab Order: 0801104 Lab Sample ID **Client Sample ID Tag Number Collection Date Date Received** 0801104-001A 101M0215VB 101MW-2 1/23/2008 1/24/2008

Date: 31-Jan-08

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31-Jan-08

Lab Order:	0801104					
Client:	FPM Group				DATES REPORT	
Project:	Griffiss AFB - Building 101	ing 101				
Sample ID	Client Sample ID	Collection Date	Matrix	Matrix Test Name	TCLP Date Prep Date	Analysis Date
0801104-001A	101M0215VB	1/23/2008 1:45:00 PM	Groundwater	Groundwater Volatile Organic Compounds by GC/MS		1/25/2008

Page I of 1

Chain of Custody

External Chain of Custody

			-	CHA	O Z	AFCEE DF CUST	JEE JSTC	YQQ	REC	AFCEE CHAIN OF CUSTODY RECORD			COC#: _1_SDG#: _174_ Cooler ID: _A	
Ship to: Monika Santucci Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Te	es, Inc. , Suite 200 57 Tel: (00 Tel: (315)437-0200	8	Proj	ect Nar pler Na	Project Name: Griffiss AFB Site Sampler Name: Niels van Hoese	iels var	A Hoese	Buildin	1g 101 s	Project Name: Griffiss AFB Site Building 101 sampling Sampler Name: Niels van Hoesel	Sei	Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441	
Carrier: LSL courier.				Sam	pler Si	Sampler Signature:		the second second			Analyses Requested	Requ	Phone: (315) 336-7721 Ext 205 tested	2
Field Sample ID	Location ID (LOCID)	Date 2008	Time	XIATAM	SMCODE	SBD/SED	SACODE	Preservative	Filt./UnFilt.	No. of Containers	VOCs Noie 1 40 mL viâl (HCl)		Comments	
101M0215VB 10	101MW-2	1/23	1345	ÐM	m	0/0	z	HCI	Unf.	6	3			
Sample Condition Upon Receipt at Laboratory: Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0 Note 1: VOC: method SW 8260: Target COCs: PCE, TCE, DCE, Vinyl Chloride and Chloroform.	t at Laboratory Analyses to 1 3. Target COC	: e conducte : PCE, TCI	d in con	Vinyl	with Chlorid	AFCEE le and C	(QAPP	4.0 orm.					Cooler Temperature: 1.2 °C	
#1 Dalassond hur (Sio)		Date	#3	#2 Relcased bv: (Sig)	bv: (Sig		And And		Date:	Date: 1/23/08		eleased	#3 Released by: (Sig) - A and Part (Sig) - Parts (Sig) - Parts	٦.
#1 Noteaseu vy. (21g) Company Name:		Time:		Company Name: FPM	ame: FF	M Group	pt 1 da		Time:	13:5		Company Name:	Time:	
#1 Received by: (Sig) Niels van Hoesel Company Name: FPM Group Ltd		Date: 1/5/08 Time: 10200		#2 Received by: (Sig) Company Name:	l by: (Sig ame:	1 Jant	Plant		Date: Time:	00 //		#3 Received by: Company Name:	#3 Received by: (Sig) Company Name: 15, 6, 6, 11 Time: 13/3	
MATRIX WG = Ground water WQ = Water Quality Control Matrix	Control Matrix		<u>SMCODE</u> B = Bailer G = Grab (only for EB).	er er o (only f	or EB).					SACODE N = Norma AB = Amt	SACODE N = Normal Sample AB = Ambient Blank	mplc Blank		

ching wishedy seal present

WQ = Water Quality Control Matrix SO = Soil

G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split spoon

TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike Duplicate

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: FPM		Date and Time Re	ceived: 1/	24/2008 1:13:00 PM
Work Order Number 0801104		Received by:	AC	
Checklist completed by:	2 1/24/02 Date	Reviewed by:	MS nitials	125/08 Date
Matrix:	Carrier name: <u>Courier</u>			
Shipping container/cooler in good condition?	Yes 🗹	No 🗍 🛛 Not I	Present	
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌 🛛 Not I	Present	
Custody seals intact on sample bottles?	Yes	No 🗌 🛛 Not I	Present 🗹	
Chain of custody present?	Yes 🗹	No		
Chain of custody signed when relinquished and receiption	ived? Yes 🗹	No 🗌		
Chain of custody agrees with sample labels?	Yes 🔽	No 🗔		
Samples in proper container/bottle?	Yes 🗹	No		
Sample containers intact?	Yes 🖌	No 🗔		
Sufficient sample volume for indicated test?	Yes 🖌	No		
All samples received within holding time?	Yes 🗹	No 🛄		
Container/Temp Blank temperature in compliance?	Yes 🗹	No 🗔		
Water - VOA vials have zero headspace?	Yes 🖌	No 🗌 🛛 No VC	A vials submitted	
Water - pH acceptable upon receipt?	Yes	No 🗌 🛛 Not /	Applicable 🗹	

Comments:

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FPW - 0501104

Client/Project_

G:\QAQC\forms\GeneralLaboratory\Sign out.xls

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Analytical Results

AFCEE ORGANIC ANALYSES DATA PACKAGE

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12648</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

101M0215VB	0801104-001A
Field Sample ID	Lab Sample ID

Comments:

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

Signature:	Monika tensle	ഡ് Name:	Monika Santucci	
Date:	1/31/08	Title:	Project Manager	
QAPP 4.0	•	AFCEE FORM O-1	Page 1 of 1	

AFCEE ORGANIC ANALYSES DATA SHEET 2 RESULTS

Analytical Method: <u>SW8260B</u>		Preparatory Method	:	AAB #:	<u>R12648</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:			
Field Sample ID:	<u>101M0215VB</u>	Lab Sample ID:	<u>0801104-001A</u>	Matrix:	Groundwater
% Solids:	<u>0</u>	Initial Calibration ID	: <u>1155</u>	File ID:	<u>M4445.D</u>
Date Received:	<u>24-Jan-08</u>	Date Extracted:		Date Analyzed:	<u>25-Jan-08</u>
Concentration Units (ug/L or mg/Kg dry weight):		<u>ug/L</u>		Sample Size:	<u>_mL</u>

Analyte	MDL	RL	Concentration	Dilution Cor	nfirm Qualifier
Chioroform	0.0290	0.500	0.210	1	F
cis-1,2-Dichloroethene	0.0320	1.00	3.55	1	
Tetrachloroethene	0.0300	1.00	0.0300	1	U
trans-1,2-Dichloroethene	0.0270	1.00	0.0270	1	U
Trichloroethene	0.0270	1.00	1.12	1	
Vinyl chloride	0.0380	1.00	0.0380	1	U

.

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	110	72 - 119	
4-Bromofluorobenzene	112	76 - 119	
Toluene-d8	111	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	1524590	884964 - 3539854	
Chlorobenzene-d5	1651568	1065947 - 4263788	
Fluorobenzene	2977367	2014170 - 8056682	

Comments:

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QAPP 4.0

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AFCEE FORM 0-2

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Page 1 of 1

Quality Control Results

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GC/MS Volatile Organics Data

AFCEE ORGANIC ANALYSES DATA SHEET 3 INITIAL MULTIPOINT CALIBRATION-GC/MS ANALYSIS

Analytical Method: 8260B

AAB #:

Lab Name: Life Science Laboratories, Inc.

Instrument ID: HP5970 GCMS#2

Initial Calibration ID: 1155

Contract #:

Date of Initial Calibration: 28-DEC-07

Concentration Units (ug/L or mg/kg): ug/L

SEE ATTACHED

Comments:

AFCEE FORM O-3

	Title Last	od : C:\HPCHEM e : VOC's w/Re Update : Sun Dec 3 onse via : Initial Ca	estek 1 0 14:0	RTX-50 9:18 2	2.2, 0		x 105m		df	
	0.5	Dration Files =M4111.D 1.0 =M4114.D 20		4112.D 4115.D		2.0 30	=M411 =M411			
		Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD
1) 2)	Ι	Fluorobenzene Dichlorodifluoromet								 1 <u>3.41</u>
	CP	Chloromethane Vinyl chloride Bromomethane	0.142	0.178	0.220	0.265	0.246	0.270	0.229	15.56 22.85 20.53
6) 7)		Chloroethane Trichlorofluorometh	0.107 0.626	0.122 0.550	0.124 0.629	0.152 0.758	0.159 0.766	0.157 0.736	0.140	$\frac{15.71}{12.18}$
8) 9) 10)	CPM	Acetone Acrolein 1,1-Dichloroethene	0.010 0.226	0.013 0.208	0.014 0.246	0.015 0.281	0.015 0.283	0.015 0.276	0.014# 0.258	14.17 12.04
11) 12) 13)		Methyl iodide 1,1,2-Trichloro-1,2 Methyl acetate Acrylonitrile	0.622	0.581	0.652	0.754	0.744	0.712	0.451 0.683 0.100	9.58
14) 15) 16)		Acrylonitrile Methylene chloride Carbon disulfide	0.287	0.274	0.293	0.315	0.311	0.300	0.022# 0.298 0.679	4.83 23.51
17) 18) 19)		trans-1,2-Dichloroe Methyl tert-Butyl e 1,1-Dichloroethane	0.345 0.549	0.375 0.518	0.370 0.575	0.407 0.663	0.413 0.673	0.406 0.651	0.390 0.608	12.09 6.74 10.02
20) 21) 22)		Vinyl acetate 2-Butanone cis-1,2-Dichloroeth	0.198 0.047	0.201 0.037	0.221 0.039	0.273 0.048	0.295 0.052	0.291 0.050	0.255 0.046#	18.33 12.24 8.08
23)	CP	Bromochloromethane Chloroform 2,2-Dichloropropane	0.171 0.715	0.162 0.650	0.183 0.709	0.205 0.777	0.207 0.782	0.198 0.760	0.189 0.733	9.20 6 <u>.3</u> 2
26) 27)	S	Cyclohexane Dibromofluoromethan	0.327 0.639	0.316 0.610	0.356 0.646	0.417 0.717	0.418 0.721	0.404 0.699	0.375 0.673	11.34 6.33
28) 29) 30)	S	1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroetha	0.262 0.460	0.250 0.447	0.275 0.513	0.303 0.613	0.304 0.633	0.298 0.622	0.283 0.557	6.39 7.56 14.55
31) 32) 33)	М	1,1-Dichloropropene Carbon tetrachlorid Benzene	0.419 0.803	0.425 0.729	0.484 0.807	0.618 0.894	0.635 0.893	0.626 0.874	0.545 0.836	11.44 18.07 7.17
34) 35) 36)	М	Trichloroethene Dibromomethane Methylcyclohexane	0.271	0.268	0.292	0.327	0.324	0.453 0.319 0.398	0.302	11.24 8.25 15.36
37) 38) 39)	CP	1,2-Dichloropropane Bromodichloromethan 2-Chloroethylvinyl	0.305 0.529 0.068	0.287 0.545 0.064	0.325 0.642 0.075	0.360 0.806 0.088	0.356 0.828 0.089	0.356 0.819 0.086	0.333 0.709 0.077	8.50 18.83 13.46
40) 41) 42)	S	4-Methyl-2-pentanon cis-1,3-Dichloropro Toluene-d8	0.277	0.293	0.351	0.464	0.487		0.406	12.18 23.58 9.56
43)		Toluene						0.564		10.36

(#) = Out of Range ### Number of calibration levels exceeded format ### MD28VOCW.M Wed Jan 02 11:38:12 2008 MD28VOCW.M Wed Jan 02 11:38:12 2008

Page 1

	Response	Factor	Report	#2MS12
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		•	estek 0 14:0	RTX-50 9:18 2	2.2, 0					
	0.5	oration Files =M4111.D 1.0 =M4114.D 20		4112.D 4115.D		2.0 30	=M411 =M411			
		Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD
44) 45) 46)		trans-1,3-Dichlorop 1,1,2-Trichloroetha 2-Hexanone			0.220	0.243	0.242		0.222	28.24 9.80 10.43
47) 48) 50) 51) 52) 53) 54) 55) 56) 57) 58) 59) 60)	CP P	Chlorobenzene-d5 1,2-Dibromoethane 1,3-Dichloropropane Dibromochloromethan Tetrachloroethene 1-Chlorohexane 1,1,1,2-Tetrachloro Chlorobenzene Ethylbenzene (m+p)-Xylene o-Xylene Styrene Bromoform Bromofluorobenzene	0.617 0.611 0.718 0.961 0.567 0.645 1.292 1.878 0.672 0.651 0.967 0.328	$\begin{array}{c} 0.606\\ 0.630\\ 0.730\\ 0.899\\ 0.533\\ 0.644\\ 1.221\\ 1.723\\ 0.634\\ 0.645\\ 0.920\\ 0.374 \end{array}$	0.653 0.667 0.890 0.982 0.604 0.707 1.326 1.947 0.707 0.716 1.033 0.481	$\begin{array}{c} 0.761 \\ 0.725 \\ 1.121 \\ 1.098 \\ 0.725 \\ 0.801 \\ 1.399 \\ 1.995 \\ 0.762 \\ 0.805 \\ 1.178 \\ 0.643 \end{array}$	$\begin{array}{c} 0.736\\ 0.703\\ 1.117\\ 1.045\\ 0.709\\ 0.776\\ 1.323\\ 1.854\\ 0.724\\ 0.782\\ 1.161\\ 0.660 \end{array}$	$\begin{array}{c} 0.708\\ 0.678\\ 1.103\\ 1.001\\ 0.688\\ 0.750\\ 1.254\\ 1.772\\ 0.703\\ 0.736\\ 1.109\\ 0.649 \end{array}$	0.985 1.010 0.655 0.734 1.306 1.861 0.711 0.733 1.082 0.553	$ \begin{array}{r} 10.03 \\ 6.96 \\ 20.65 \\ 6.94 \\ 13.25 \\ 9.57 \\ 4.43 \\ 5.04 \\ 6.76 \\ 9.10 \\ 10.19 \\ 28.59 \\ 5.06 \\ \end{array} $
61) 62) 63) 65) 66) 67) 68) 70) 72) 72) 72) 72) 72) 72) 73) 75) 75) 75) 78) 80) 82) 82)	I	1,4-Dichlorobenzene trans-1,4-Dichloro- 1,1,2,2-Tetrachloro Isopropylbenzene 1,2,3-Trichloroprop Bromobenzene n-Propylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,3,5-Trimethylbenz tert-Butylbenzene 1,2,4-Trimethylbenz sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dibromo-3-chlor 1,2,4-Trichlorobenz Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenz	0.025 0.734 2.041 0.373 0.871 2.678 1.992 1.906 1.661 1.748 1.558 2.484 1.521 1.735 1.369 1.507 1.274 0.065 0.721 0.667 0.472	0.038 0.756 1.946 0.301 0.833 2.564 1.754 2.338 1.504 1.637 1.442 2.353 1.452 1.629 1.288 1.452 1.629 1.288 1.466 1.197 0.635 0.467	0.076 0.833 2.238 0.396 0.913 2.883 2.083 2.414 1.737 1.861 1.652 2.708 1.554 1.554 1.429 1.632 1.331 0.083 0.758 0.741 0.521	0.038 0.926 2.567 0.406 0.974 3.295 2.302 2.302 1.958 2.119 1.882 3.082 1.713 2.221 1.518 2.010 1.479 0.123 0.904 0.856 0.571	0.048 0.904 2.539 0.446 0.969 3.253 2.317 2.386 1.954 2.121 1.869 3.163 1.711 2.239 1.527 2.045 1.458 0.132 0.914 0.838 0.585	0.874 2.431 0.432 0.938 3.121 2.261 2.238 1.908 2.057 1.818 2.966 1.643 2.190 1.488 1.993 1.411 0.131 0.880 0.803 0.578	0.842 2.300 0.395 0.915 2.971 2.085 2.288 1.797 1.933 1.713 2.796 1.595 2.000 1.443 1.815 1.364 0.104 0.817 0.762 0.538	34.44 8.63 10.39 12.12 5.59 9.39 10.51 7.93 9.48 9.79 9.79 10.80 6.15 12.77 6.06 14.71 7.48 30.02 11.26 11.12 9.53 12.80

(#) = Out of Range ### Number of calibration levels exceeded format ### MD28VOCW.M Wed Jan 02 11:38:16 2008 Page 2

			Response	e Factor R	eport	#2MS12			
			Restek H 02 11:53	RTX-502.2, 1:27 2008					
		bration Files							
	40	≃M4119.D				= .			
		=	=			=			
. -		Compound	40					Avg	%RSD
1)	I	Fluorobenzene			таль	,			
2)		Dichlorodifluoromet			191L]			-
	Р	Chloromethane	0.272	*	ł	•	J		
4)		Vinyl chloride							
5)			*						
6)		Chloroethane							
7) 8)		Trichlorofluorometh							
8) 9)		Acetone Acrolein	0.023 0.015						
10)	CPM	1,1-Dichloroethene							
11)		Methyl iodide	0.598						
12)		1,1,2-Trichloro-1,2							
13)		Methyl acetate	0.105						
14)		Acrylonitrile							
15) 1 6)		Methylene chloride Carbon disulfide							
17)		trans-1,2-Dichloroe	0.829						
18)		Methyl tert-Butyl e							
19)	Р	1,1-Dichloroethane							
20)		Vinyl acetate							
21)		2-Butanone	0.049						
22)		cis-1,2-Dichloroeth							
23)	CP	Bromochloromethane Chloroform	0.195						
24) 25)	CF	2,2-Dichloropropané	0,735						
26)		Cyclohexane	0.391						
27)	S	Dibromofluoromethan							
28)	S	1,2-Dichloroethane-							
29)		1,2-Dichloroethane	0.291						
30)		1,1,1-Trichloroetha							
31) 32)		1,1-Dichloropropene Carbon tetrachlorid							
33)	М	Benzene	0.851						
34)	М	Trichloroethene	0.430						
35)		Dibromomethane	0.309						
36)	25	Methylcyclohexane	0.391						
37)	CP	1,2-Dichloropropane							
38) 39)		Bromodichloromethan 2-Chloroethylvinyl	0.069						
40)		4-Methyl-2-pentanon							
41)		cis-1,3-Dichloropro							
42)	S	Toluene-d8	0.814						
43)	СРМ	Toluene	0.553						

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(#) = Out of Range ### Number of calibration levels exceeded format ### MD28VOCW.M Wed Jan 02 11:53:20 2008

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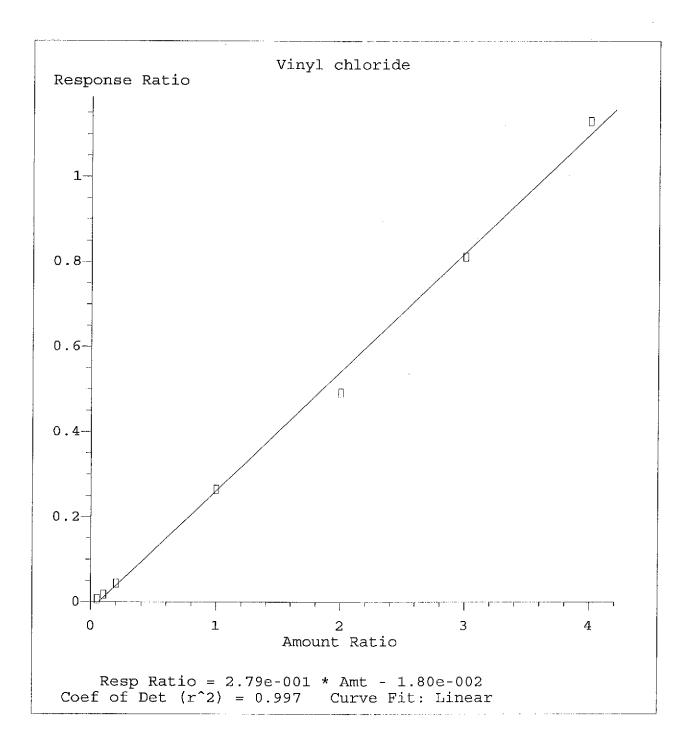
Page 1

	Last	nod : C:\HPCHEN le : VOC's w/H : Update : Wed Jan (ponse via : Initial (Restek F 02 11:51	RTX-502.2, (L:27 2008			
	Cali 40	bration Files =M4119.D =	=		=		
		Compound	40			Avg	%RSD
44) 45) 46)		trans-1,3-Dichlorop 1,1,2-Trichloroetha 2-Hexanone				 , . . (. (
47) 48) 50) 51) 52) 53) 55) 55) 55) 55) 57) 58) 59) 60)	PM CP P	Chlorobenzene-d5 1,2-Dibromoethane 1,3-Dichloropropane Dibromochloromethan Tetrachloroethene 1,Chlorohexane 1,1,1,2-Tetrachloro Chlorobenzene Ethylbenzene (m+p)-Xylene o-Xylene Styrene Bromoform Bromofluorobenzene	0.780 1.214 1.081 0.760 0.814 1.330 1.862 0.771 0.799 1.204 0.736		-ISTD		_
61) 62) 63) 64) 65) 66) 67) 68) 70) 71) 72) 73) 75) 75) 75) 75) 75) 75) 78) 81) 82) 83)		1,2,3-Trichloroprop	0.054 0.865 2.337 0.414 0.907 3.007 1.889 2.433 1.856 1.986 1.772 2.813 1.573 2.137 1.483 2.050 1.396 0.130 0.854 0.796 0.570		- ISTD		·

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(#) = Out of Range ### Number of calibration levels exceeded format ### MD28VOCW.M Wed Jan 02 11:53:23 2008 Page

Page 2



Method Name: C:\HPCHEM\1\METHODS\MD28VOCW.M Calibration Table Last Updated: Mon Dec 31 10:36:15 2007

AFCEE ORGANIC ANALYSES DATA SHEET 4 SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12455</u>
Lab Name:	Life Science Laboratories, In	Contract Number:	
Instrument ID:	<u>MS02_12</u>	Initial Calibration ID:	<u>1155</u>
Second Source ID:	ICV-12455	Concentration Units (mg/L or mg/kg):	<u>uq/L</u>

Analyte	Expected	Found	%D Q
1,2-Dichloroethane-d4	10	10.8	-8.0
4-Bromofluorobenzene	10	10.1	-0.6
Chloroform	10	11.4	-14.5
cis-1,2-Dichloroethene	10	11.6	-15.8
Tetrachloroethene	10	11.1	-10.7
Toluene-d8	10	11.2	-11.6
trans-1,2-Dichloroethene	10	12	-19.7
Trichloroethene	10	12.3	-23.3
Vinyl chloride	10	10.8	-8.0

Comments:

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AFCEE FORM 0-4

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Page 1 of 1

AFCEE ORGANIC ANALYSES DATA SHEET 5 CALIBRATION VERIFICATION

Analytical Method: 8260B

AAB #:

Lab Name: Life Science Laboratories, Inc.

Instrument ID: HP5970 GCMS#2

ICV ID: ICV-12455

Contract #:

Initial Calibration -ID: 1155

CCV #1 ID: CCV-12648

SEE ATTACHED

Comments:

AFCEE FORM O-5

		Evaluate Continui	ng Calib	ration Repo	ort	. .
	Acq Samp Misc	File : C:\HPCHEM\1\DATA\M443 On : 25 Jan 2008 7:59 le : CCV-12648 : CCV ,8260WAF_40CAL, ntegration Params: RTEINT.P	2.D ·		Operato Inst	l: 2 pr: DMB : #2MS12 r: 1.00
			-502.2, 8 3 2008	0.53mm x 10		
	Min. Max.	RRF : 0.050 Min. Rel. RRF Dev : 20% Max. Rel.			R.T. Dev	0.50min
		Compound	AvgRF	CCRF	%Dev A	rea% Dev(min)
2 3 4 5 6 7 8 9	CP S S M S	Vinyl chloride trans-1,2-Dichloroethene cis-1,2-Dichloroethene Chloroform Dibromofluoromethane 1,2-Dichloroethane-d4 Trichloroethene Toluene-d8	0.314 0.348 0.733 0.673 0.243 0.419 0.790	0.270 0.350 0.367 0.746 0.000# 0.262 0.468 0.858	-17.9 -11.5 -5.5 -1.8 100.0# -7.8 -11.7 -8.6	73 -0.05 72 -0.05
10 11 12		Chlorobenzene-d5 Tetrachloroethene Bromofluorobenzene	1.000 1.010 1.173	1.000 1.182 1.316	-17.0	70 -0.05 76 0,00 76 -0.08
· •	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	72 -0.08

· 1.

(#) = Out of Range M4432.D MD28SHOR.M

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SPCC's out = 0 CCC's out Mon Jan 28 09:04:04 2008

0 1 128105 128105

	Evaluate Continuing Calibration Report							
	Acq Samp Misc	File : C:\HPCHEM\1\DATA\M443 On : 25 Jan 2008 7:59 le : CCV-12648 : CCV ,8260WAF_40CAL, ntegration Params: RTEINT.P	2.D		Operato	: #	MB 2MS12	
	Method : C:\HPCHEM\1\METHODS\MD28SHOR.M (RTE Integrator) Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df Last Update : Thu Jan 03 08:49:03 2008 Response via : Multiple Level Calibration							
	Min. Max.	RRF : 0.050 Min. Rel. RRF Dev : 20% Max. Rel.			R.T. Dev	0.	50min	
		Compound	Amount	Calc.	%Dev A:	rea%	Dev(min)	
2 3 4 5 6 7 8	CP S S M	Vinyl chloride trans-1,2-Dichloroethene cis-1,2-Dichloroethene Chloroform Dibromofluoromethane 1,2-Dichloroethane-d4 Trichloroethene	$10.000 \\ 10.000 \\ 10.000 \\ 10.000 \\ 10.000 \\ 10.000 \\ 10.000 \\ 10.000 \\ 10.000 $	10.000 10.313 11.157 10.531 10.183 0.000 10.779 11.152	-3.1 -11.6 -5.3 -1.8 100.0# -7.8 -11.5	75 74 71 70 0 73 73	-0.08 -0.05 -0.05 -0.05 -13.01# -0.05 -0.05	
9 10	s I	Toluene-d8 Chlorobenzene-d5	10.000	10.869 10.000	-8.7 0.0	72 70	-0.05 -0.05	
11 12	S	Tetrachloroethene Bromofluorobenzene	10.000 10.000	11.702 11.216	-17.0 -12.2	76 76	0.00 -0.08	
j	Ι	1,4-Dichlorobenzene-d4	10.000	10.000	0.0	72	-0.08	

(#) = Out of Range M4432.D MD28SHOR.M SPCC's out = 0 CCC's out = 0 Mon Jan 28 09:04:10 2008

4.5

= 0 Double My let Page 1

AFCEE ORGANIC ANALYSES DATA SHEET 7 BLANKS

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12648</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Units:	<u>ug/L</u>	Method Blank ID:	<u>MB-12648</u>
Initial Calibration ID:	<u>1155</u>	File ID:	<u>M4436,D</u>

Vinyl chloride	0.0380	1.00	U
Trichloroethene	0.0270	1.00	U
trans-1,2-Dichloroethene	0.0270	1.00	U
Tetrachloroethene	0.0300	1.00	U
cis-1,2-Dichloroethene	0.0320	1.00	U
Chloroform	0.0290	0.500	U
Analyte	Method Blank	RL	Q

Surrogate Recovery Control Limits Qualifier								
1,2-Dichloroethane-d4	110	72 - 119						
4-Bromofluorobenzene	111	76 - 119						
Toluene-d8	112	81 - 120						

Internal Std Area Counts Area Count Limits Qualifier							
1,4-Dichlorobenzene-d4	1535799						
Chlorobenzene-d5	1660090	1065947 - 4263788					
Fluorobenzene	3079850	2014170 - 8056682					

Comments:

AFCEE ORGANIC ANALYSES DATA SHEET 8 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW8260B</u>		AA	AB #:		<u>R12648</u>	
Lab Name:	Life Science Labora	<u>tories, Inc.</u>	Contract #:				
LCS ID:	LCS-12648		Initial Calibration ID:		<u>1155</u>		
Concentration Units	(mg/L or mg/kg):	<u>µg/L</u>	Fil	e ID:		M4433.D	
	Analyte		Expected	Found	%R	Control Limits	Q
Chloroform			10	10.4	104	69 - 128	
cis-1,2-Dich	loroethene		10	11.2	112	72 - 126	
Tetrachloro	ethene		10	11.2	112	66 - 128	
trans-1,2-Di	ichloroethene		10	11.2	112	63 - 137	
Trichloroeth	ene		10	11.3	113	70 - 127	·····
Vinyl chloric	je		10	8.69	87	50 - 134	
	Surrogate		Recover	/ C	ontrol Li	mits Qua	lifier
1,2-Dic	hloroethane-d4		103		72 - 119)	
4-Brom	ofluorobenzene		107		76 - 11)	
Toluen	e-d8		108		81 - 120)	
	Internal Std	Area	Counts	Area	Count Li	nits C)ualifier
1,4-Dic	hlorobenzene-d4		1311305	8849	64 - 3539	854	
Chloro	benzene-d5		1500049	10659	947 - 4263	3788	
Fluoro	penzene		2829862	2014	170 - 8056	682	

Comments:

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AFCEE ORGANIC ANALYSES DATA SHEET 8 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R12648</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCSD-12648	Initial Calibration ID:	<u>1155</u>
Concentration Units	(mg/L or mg/kg): <u>µg/L</u>	File ID:	<u>M4434.D</u>

Analyte	Expected F	ound	%R	Control Limits	Q
Chloroform	10	10.4	104	69 - 128	
cis-1,2-Dichloroethene	10	11.0	110	72 - 126	
Tetrachloroethene	10	11.3	113	66 - 128	
trans-1,2-Dichloroethene	10	11.2	112	63 - 137	
Trichloroethene	10	11.4	114	70 - 127	
Vinyl chloride	10	9.10	91	50 - 134	

Surrogate	Recovery	Control Limits Qu	Jalifier
1,2-Dichloroethane-d4	101	72 - 119	
4-Bromofluorobenzene	109	76 - 119	
Toluene-d8	107	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	1319044	884964 - 3539854	
Chlorobenzene-d5	1523136	1065947 - 4263788	
Fluorobenzene	2908392	2014170 - 8056682	

Comments:

AFCEE FORM O-8

AFCEE ORGANIC ANALYSES DATA SHEET 9 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLE RECOVERY

Analytical Method:	<u>SW8260B</u>		AAB #:	<u>R12648</u>
Lab Name:	Life Science Lab	oratories, Inc.	Contract #:	
Concentration Units (mg/L	or mg/kg):	<u>µg/L</u>	% Solids:	<u>0</u>
Parent Field Sample ID:	LCSD-12648	MS ID: <u>L(</u>	CS-12648	MSD ID: LCSD-12648

Calibration ID: 1155

Analyte	Parent Sample Result	Spike Added	Spiked Sample Result	******	Duplicate Spiked Sample Result	%R	%RPD	Control Limits %R	Control Limits %RPD	Q
Chloroform		10.0	10.4	104	10.4	104	1	69 - 128	20	
cis-1,2-Dichloroethene		10.0	11.2	112	11.0	110	2	72 - 126	20	
Tetrachloroethene	· · · ·	10.0	11.2	112	11.3	113	0	66 - 128	20	
trans-1,2-Dichloroethene		10.0	11.2	112	11.2	112	1	63 - 137	20	
Trichloroethene		10.0	11.3	113	11.4	114	1	70 - 127	20	
Vinyl chloride		10.0	8.69	87	9.10	91	5	50 - 134	20	

Comments:

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AFCEE FORM O-9

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AFCEE ORGANIC ANALYSES DATA SHEET 10 HOLDING TIMES

Analytical Method:	<u>SW8260B</u>		AAB #:	<u>R12648</u>			
Lab Name:	Life Science Labora	<u>atories, Inc.</u>	Contract #:				
Field Sample ID	Lab Sample ID	Date Date Collected Receive	Max. Date Holding ed Extracted Time E	•>> < •== < •= < •= < •= < •= < • < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < •= < = <		Time Held Anal.	
101M0215VB 08	801104-001A 2	23-Jan-08 24-Jan-0)8 25-Jan-08	25-Jan-08	14	2.1	90031900019

Comments:

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AFCEE ORGANIC ANALYSES DATA SHEET 11 INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method:	<u>SW8260B</u>		AAB#:		
Lab Name:	Life Science Laboratories,	Inc.	Contract #:		
Instrument ID #:	<u>MS02 12</u>		Calibration ID:	<u>1155</u>	÷
Field Sample ID/Std ID/ Blank ID/QC Sample ID	Lab Sample ID	Date Analysis Started	Time Analysis Started	Date Analysis Completed	Time Analysis Completed
TB122807A2	TB122807A2	28-Dec-07	7:23	28-Dec-07	8:42
ICAL 0.5 PPB	ICAL 0.5 PPB	28-Dec-07	8:42	28-Dec-07	9:21
ICAL 1.0 PPB	ICAL 1.0 PPB	28-Dec-07	9:21	28-Dec-07	9:59
ICAL 2.0 PPB	ICAL 2.0 PPB	28-Dec-07	9:59	28-Dec-07	10:37
ICAL 10 PPB	ICAL 10 PPB	28-Dec-07	10:37	28-Dec-07	11:14
ICAL 20 PPB	ICAL 20 PPB	28-Dec-07	11:14	28-Dec-07	11:52
ICAL 30 PPB	ICAL 30 PPB	28-Dec-07	11:52	28-Dec-07	13:43
ICV-12455	ICV-12455	28-Dec-07	13:43	28-Dec-07	15:22
ICAL 40 PPB	ICAL 40 PPB	28-Dec-07	15:22	28-Dec-07	15:22
TB012507A2	TB012507A2	25-Jan-08	7:31	25-Jan-08	7:59
CCV-12648	CCV-12648	25-Jan-08	7:59	25-Jan-08	8:47
LCS-12648	LCS-12648	25-Jan-08	8:47	25-Jan-08	9:25
LCSD-12648	LCSD-12648	25-Jan-08	9:25	25-Jan-08	10:38
MB-12648	MB-12648	25-Jan-08	10:38	25-Jan-08	16:29
101M0215VB	0801104-001A	25-Jan-08	16:29	25-Jan-08	16:29

Comments:

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AFCEE ORGANIC ANALYSES DATA SHEET 12 INSTRUMENT PERFORMANCE CHECK (BFB or DFTPP)

Analytical Method:	<u>SW8260B</u>	AAB #:	MS02_12_071228C
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
Instrument ID:	<u>MS02_12</u>	Injection Date/Time:	<u>12/28/2007 7:23:00 AM</u>
Initial Calibration ID:	<u>1155</u>	File ID:	C:\HPCHEM\1\DATA\M4109.D
Compound:	<u>SW8260B</u>	Sample ID:	TB122807A2

Mass	Ion Abundance Criteria	% Relative Abundance
50	15 - 40% of m/z 95	22.6
75	30 - 60% of m/z 95	50.8
95	Base peak, 100% relative abundance	100
96	5 - 9% of m/z 95	6.1
173	Less than 2% of m/z 174	0
174	Greater than 50% of m/z 95	72.3
175	5 - 9% of m/z 174	6.9
176	Greater than 95% but less than 101% of m/z 174	97.3
177	5 - 9% of m/z 176	6.2

AFCEE ORGANIC ANALYSES DATA SHEET 12 INSTRUMENT PERFORMANCE CHECK (BFB or DFTPP)

Analytical Method:	SW8260B	AAB #:	MS02 12 080125B
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
Instrument ID:	<u>MS02 12</u>	Injection Date/Time:	1/25/2008 7:31:00 AM
Initial Calibration ID:	<u>1155</u>	File ID:	C:\HPCHEM\1\DATA\M4431.D
Compound:	<u>SW8260B</u>	Sample ID:	TB012507A2
100 FB 100 FB 100 FB 100 FB 100 FB 100 FB 100 FB 100 FB 100 FB 100 FB 100 FB 100 FB 100 FB 100 FB 100 FB 100 FB			

Mass	Ion Abundance Criteria	% Relative Abundance Q
50	15 - 40% of m/z 95	24.3
75	30 - 60% of m/z 95	50.3
95	Base peak, 100% relative abundance	100
96	5 - 9% of m/z 95	6.6
173	Less than 2% of m/z 174	0
174	Greater than 50% of m/z 95	71.5
175	5 - 9% of m/z 174	6.4
176	Greater than 95% but less than 101% of m/z 174	98.4
177	5 - 9% of m/z 176	6.6



Tuesday, February 12, 2008

Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441

TEL:



Project: GRIFFISS AFB - BLDG 101

RE: Analytical Results

Order No.: 0802004

Dear Niels van Hoesel:

Life Science Laboratories, Inc. received 1 sample(s) on 2/4/2008 for the analyses presented in the following report.

Very truly yours, Life Science Laboratories, Inc.

Montes Anducci

Monika Santucci Project Manager

Life Science Laboratories, Inc. 5000 Brittonfield Parkway, Suite 200

Analytical Results

East Syrac	use, NY 13057 (31	5) 437-0200		S	tateCertNo	: 10155
CLIENT: FPM Gro Project: Griffiss	oup AFB - Bldg 101		Lab ID: Client Sa		0802004-0 1 <i>01M021</i>	
	DWATER		Collection Date Reco	eived:	02/04/08 11 02/04/08 14	
Inst. ID: IC ColumnID: Revision: 02/06/08	Sample Siz %Moisture 13:08 TestCode:		PrepDate BatchNo: FileID:	: 1	R12727 1-SAMP-	
Col Type:			MDI	T T •4		Dede Arrele A
Analyte INORGANIC ANIONS		ual PQL	MDL	Units SW9	<u>DF</u> 056	Date Analyzed
Chloride	65 E	1.0	0.099	mg/L	1	02/05/08 11:12
Nitrate (as N)	ND	1.0	0.015	mg/L	1	02/05/08 11:12
Sulfate (as SO4)	0.26 J	1.0	0.15	mg/L	1	02/05/08 11:12

Oualifiers:	*	Value exceeds Maximum Contaminant Level	В	Analyte detected in the associated Method Blank
	Е	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

Life Science Laboratories, Inc.



1-DL-

500	0 Pritton Gold	Dorlawow	Suite 200
31 7 1 300	0 Brittonfield	галкиау,	Suite 200

Revision: 02/06/08 13:08

E	Cast Syracuse, NY 1305	7 (315) 437-0200	5	StateCertNo: 10155
CLIENT:	FPM Group	1	Lab ID:	0802004-001ADL
Project:	Griffiss AFB - Bldg 10		Client Sample ID:	101M0215VB
W Order:	0802004		Collection Date:	02/04/08 11:30
Matrix:	GROUNDWATER		Date Received:	02/04/08 14:55
Inst. ID: ColumnID:	IC	Sample Size: NA %Moisture:	PrepDate: BatchNo:	R12727

TestCode: 9056WAF

Col Type:						
Analyte	Result Qu	al PQL	MDL	Units	DF	Date Analyzed
INORGANIC ANIONS BY IC				SW90	56	
Chloride	66	2.0	0.20	mg/L	2	02/05/08 9:55

FileID:

Qualifiers:	*	Value exceeds Maximum Contaminant Level	В	Analyte detected in the associated Method Blank
*	Е	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

Life Science Laboratories, Inc.

Analytical Results

I	East Syracuse, NY 13	057 (315)	437-0200		S	stateCertNo:	10155
CLIENT: Project:	FPM Group Griffiss AFB - Bldg 1	01		Lab ID: Client Sam	ple ID:	0802004-00 101M0215	
W Order: Matrix: Inst. ID: ColumnID: Revision: Col Type:	0802004 GROUNDWATER TOC-5000A : 02/11/08 14:21	Sample Size %Moisture: TestCode:		Collection Date Receiv PrepDate: BatchNo: FileID:		02/04/08 11: 02/04/08 14: R12762 1-SAMP-	
Analyte		Result Qu	al PQL	MDL	Units	DF	Date Analyzed
TOTAL OR Total Organic	GANIC CARBON Carbon	160	10	4.0	SW9 mg/L	9 060 10	02/11/08 12:57

Oualifiers:	+	Value exceeds Maximum Contaminant Level	В	Analyte detected in the associated Method Blank
	Ε	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

Life Science Laboratories, Inc. 5000 Brittonfield Parkway, Suite 200



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	E000 Deither field	d Danluman	S
E // 7 E	5000 Brittonfiel	u rarkway,	Suite 200

E	last Syracuse, NY 130)57 (315	5) 437-0200		8	stateCertNo:	10155
CLIENT: Project:	FPM Group Griffiss AFB - Bldg 1	01		Lab ID: Client Sam	ple ID:	0802004-00 101M0215	
W Order: Matrix: Inst. ID: ColumnID: Revision: Col Type:	0802004 GROUNDWATER Buret Type A 02/11/08 9:53	Sample Size %Moisture TestCode:		Collection I Date Receiv PrepDate: BatchNo: FileID:		02/04/08 11: 02/04/08 14: R12758 1-SAMP-	
Analyte		Result Q	ual PQL	MDL	Units	DF	Date Analyzed
ALKALINIT Alkalinity, as (Y, AS CACO3 CaCO3	370	10	10	EP# mg/L	310.1 1	02/11/08

Oualifiers:	*	Value exceeds Maximum Contaminant Level	В	Analyte detected in the associated Method Blank
200000	E	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

AFCEE CHAIN OF CUSTODY RECORD

COC#: _1_ SDG#: _174_ (Open/Closed) Cooler ID#: _A_

	Niels van Hoesel FPM Group Ltd. 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext 205		Comments		U	201 70					11 C	1)ale: 7-4-08	Time: 1455	"Date: 2/4/06	Time: 1455
	besel Ltd. Road 3441		Alkalinity ^{nole 11} 8 oz glass (zero headspace)	-	9	0					²				
	Niels van Hoesel FPM Group Ltd. 153 Brooks Road Rome, NY 13441 Phone: (315) 336		ן ד bojy BOD, ^{note 10}		- 00							meler	clop		
	o: Niels FPM 153 E Rome Phon		Cyanide ^{Kole 9} 8 oz poly (NaOH)	'	Cooler temperature:						<	101 101	Sick		k
	ssults to		40 mL vials (HCL)	2	ler tem						1.10	C (BIC	25	Sig	>
	Send Results to: Niels van Hoesel FPM Group Ltd. 153 Brooks Roac Rome, NY 1344 Phone: (315) 336		אר מאר אין אין אין אין אין אין אין אין אין אין		Co						A Loss	#5 Keleased by: (Sig)	Company Name:	#3 Received by: (Sig	v Name:
ł		ted	noie 6 ⁶ ، مانوند کام اس 250 کار	-							1.1.0	FJ Kelea	Company	3 Recei	Company Name:
		Analyses requested	Phenols ^{note5} (H ₂ SO4)	,	2						ŀ	1		~	
	gui j	alyses	ן ך פוווקבע bCB ⁸ _{עסוב ז}	,		i.						à.	: 11 : 45	50-6-2	Time: /3/2
	Samp	A A	Metals ^{note 3}) ک50 mL poly (HNO ₃)	,	Ū	Ì					4	- Date:	Time: //	Date:Z	Time
	Hoese	A	Metals, Hardness ^{note 2} 250 mL poly (HNO ₃)	•	Thrac						194			Lan	Laks
	iss AF		VOCs ^{notel} 40mL vials (HCI)	1									p Ltd.	10mal	ience
	e: Griff ne: Nic ature:		# of Containers	4	3	4.0)					the second		d Grodi	Bell	いとそ
	Project Name: Griffiss AFB B101Sampling Sampler Name: Niels van Hoesel Samnler Signature:		SBD/SED	0/0	ut hel	FCEE QAPP 4.0) ?					1.01	#2 Keleased by: (Sig)	Company Name: FFM Group Ltd	#2 Received by: (Sig) /Sell Donal	Company Name: Life Science Laks
	Projec Samp		SACODE	z] []		1	NLY				eased	any Na	ceived	any Na
ľ		1	SMCODE	В] từ	ig to A	101.56	ATE (1	#2 Kc	Comp	#2 Re	Comp
	-020		XIATAM	MG		cordir	d)	NITR			ľ	1	1		
)0 Tel: (315)437-0200		Time	1130		t: (Acc	otati, r Dissolve	AND						Date: 9/03/07	Time: 1000
	200 Tel: (3		Date 2008	2/4	oratory:	eter Lis Jist.	0 List (I	JLFATE 1.2.				Date:	Time:	Date:	Time:
	Monika Santucci Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Te LSL courier.		LociD	WL-101MW-2	pon Receipt at Lab	Comments: Param AFCEE QAPP 4.0 L	010 AFCEE QAPP 4. 010 AFCEE QAPP 4. 82.	9065. 056 CHLORIDE, SU 20D: 410.4. TKN: 35	0. 012.	10.1.				Niels van Hoesel	Group Ltd.
	Ship to: Monika Santucci Life Science Lab 5000 Brittonfield East Syracuse, N Carrier LSL courrier.		Field Sample ID	01M0215VB	Sample Condition Upon Receipt at Laboratory:	Special Instructions/Comments: Parameter List: (According to AF Note 1: VOCs: 8260B AFCEE QAPP 4.0 List. Note 2: Marches: SW60D AFCFE OADD 4.0 List. (Total) Hardnesser 130.2	Note 2: Metals: 5 W0010 AFCEE QAPP 4.0 List (Dissolved) Note 3: Metals: SW6010 AFCEE QAPP 4.0 List (Dissolved) Note 4: PCBs: SW8082.	Note 5: Phenols: SW9065. Note 6: Anions: SW9056 CHLORIDE, SULFATE AND NITRATE O Note 7: NH3: 350.1. COD: 410.4. TKN: 351.2.	Note 8: TOC: SW9060. Note 9: Cyanide: SW9012. Note 10: BOD: 405.1	Note 11: Alkalinity: 310.1		# I Keleased by: (Sig)	Company Name:	#1 Received by: (Sig) Niels van Hoesel	Company Name: FPM Group Ltd.

<u>MATRIX</u> WG = Ground water WQ = Water Quality Control Matrix SO = Soil

SMCODE B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split Spoon

SACODE N = Normal Sample AB = Ambient Blank TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: FPM			Date and Ti	ime Received:	2	2/4/2008 2:55:00 PM
Work Order Number 0802004			Received by	y: ads		
Checklist completed by:	2/ Date	14/08	Reviewed	by: MS	• · · · · · · · · · · · · · · · · · · ·	2/1/08 Date
Matrix:	Carrier name:	Courier				
Shipping container/cooler in good condition?		Yes 🔽	No	Not Present		
Custody seals intact on shipping container/cooler?		Yes 🗹	No	Not Present		
Custody seals intact on sample bottles?		Yes 🗌	No 🗌	Not Present	\checkmark	
Chain of custody present?		Yes 🗹	No			
Chain of custody signed when relinquished and recei	ived?	Yes 🗹	No			
Chain of custody agrees with sample labels?		Yes 🗹	No			
Samples in proper container/bottle?		Yes 🗹	No			
Sample containers intact?		Yes 🔽	No 🗌			
Sufficient sample volume for indicated test?		Yes 🔽	No 🗔			
All samples received within holding time?		Yes 🔽	No			
Container/Temp Blank temperature in compliance?		Yes 🗹	No 🗔			
Water - VOA vials have zero headspace?		Yes	No	No VOA vials su	bmitted	V
Water - pH acceptable upon receipt?		Yes 🔽	No	Not Applicable		

<u>pH</u>	Preservative	pH Acceptable	Sample ID
>12	NaOH	Yes 🗍 N 🗐 NA 🔽	
<2	HNO3	Yes 🗋 N 🗌 NA 🗹	
<2	HSO4	Yes 🗌 N 🗌 NA 🔽	
<2	1:1 HCL	Yes 🗹 N 🗆 NA 🗌 TO	bc
5-9	Pest/PCBs (608/8081)	Yes 🗌 N 🗋 NA 🗹	

Volume of Preservative added in Lab.

Comments:

Monika Santucci

From: van Hoesel, Niels [n.vanhoesel@fpm-group.com]

Sent: Monday, February 04, 2008 3:56 PM

To: Monika Santucci

Subject: RE: Bldg 101

NO AFCEE just results

Niels D.L. van Hoesel Field Operations Manager

FPM group 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 ext. 205 Fax: (315) 336-7722

From: Monika Santucci [mailto:santuccim@lsl-inc.com] Sent: Monday, February 04, 2008 3:55 PM To: van Hoesel, Niels Subject: RE: Bldg 101

Todays samples.

From: van Hoesel, Niels [mailto:n.vanhoesel@fpm-group.com] Sent: Monday, February 04, 2008 3:48 PM To: Monika Santucci Subject: RE: Bldg 101

Is this for todays sample?

If so, then it is not AFCEE. If it is VOCs, then it is.

Thanks

Niels D.L. van Hoesel Field Operations Manager *FPM* group 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 ext. 205 Fax: (315) 336-7722

From: Monika Santucci [mailto:santuccim@lsl-inc.com] Sent: Monday, February 04, 2008 3:45 PM To: van Hoesel, Niels Subject: Bldg 101

Niels,

Is this a full AFCEE report or a results only?

Monika Santucci Project Manager Life Science Laboratories, Inc. Brittonfield Lab 5000 Brittonfield Parkway

2/4/2008



Tuesday, April 29, 2008

Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441

TEL:

Project: GRIFFISS AFB - BUILDING 101 RE: Analytical Result

Order No.: 0804057

Dear Niels van Hoesel:

Life Science Laboratories, Inc. received 1 sample(s) on 4/9/2008 for the analyses presented in the following report.

Very truly yours, Life Science Laboratories, Inc.

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Monika Santucci Project Manager

Laboratory Report

Project Management Case Narrative

INTRODUCTION/ANALYTICAL RESULTS

This report summarizes the laboratory results for samples from FPM, for the Griffiss AFB-Building 101-Rome, NY project.

CONDITION UPON RECEIPT/CHAIN OF CUSTODY

The cooler(s) were received intact. When the cooler(s) were received by the laboratory, the sample custodian(s) opened and inspected the shipment(s) for damage and custody inconsistencies. Chains of custody documenting receipt are presented in the chain of custody section. Each sample was assigned a unique laboratory number and a custody file created. The samples were placed in a secured walk-in cooler and signed in and out by the chemists performing the tests. The sign out record, or lab chronicle, is presented in the chain of custody section.

There were no discrepancies noted upon receipt. The temperatures of the coolers ranged from -1.8°C to 2.4°C.

METHODOLOGY

The following methods were used to perform the analyses:

PARAMETER	METHOD	REFERENCE
Volatile Organics	SW8260B	1
Anions	SW9056	1
TOC	SW9060	1
Total Alkalinity	EPA 310.1	2

- 1) <u>Test Methods for Evaluating Solid Wastes</u>, SW-846 Third Edition, Final Update III, December 1996 (including the QC requirements specified in AFCEE 4.0 + variances).
- 2) Methods for Chemical Analysis of Water and Wastes, EPA---600/4-79-020, 1983.

QUALITY CONTROL

QA/QC results are summarized in the Laboratory Report.

RAW DATA

The raw data is not requested for this report. Life Science Laboratories, Inc. will keep the raw data on file.

Total # of pages in this report:

Client: Project/Order: Work Order #: Methodology: FPM Griffiss AFB – Building 101 0804057 8260B

Analyzed/Reviewed by (Initials/Date):

Supervisor/Reviewed by (Initials/Date):

QA/QC Review (Initials/Date):

File Name:

G:\Narratives\MSVoa\0804057msvnar.doc

GC/MS Volatile Organics

The GC/MS Volatile instruments are equipped with a Restek Rtx-VMS, 40 m x 0.18 mm ID capillary column (MS01 & MS03), Restek Rtx-502.2, 105 m x 0.53 mm ID capillary column (MS02), and Restek Rtx-VMS, 60 m x 0.25mm ID capillary column (MS04), and a Vocarb 3000 adsorbent trap.

There were no excursions to note. All QC results were within established control limits.

Holding Times and Sample Preservation

All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements. Sample had a pH of < 2.

Laboratory Control Sample

All spike recoveries met method and/or project specific QC criteria.

Surrogate Standards

All surrogate standard recoveries met method and/or project specific QC criteria.

Internal Standards

All internal standard areas met method and/or project specific QC criteria.

Calibrations

All initial calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks

All preparation blanks met method and/or project specific QC criteria.

Wet Chemistry Case Narrative

Client ID:	FPM
Project/Order:	Griffis AFB – Building 101
Work Order #:	0804057
Methodology:	Anions - Ion Chromatography - SW9056
	TOC – SW9060
	Total Alkalinity – EPA 310.1
Analyzed/Reviewed by (Date/Initials):	#-22-03 mj
Supervisor/Reviewed by (Date/Initials):	4-22-08 mg
QA/QC Review (Date/Initials):	4/24/08 Ole

Wet Chemistry

Holding Times

All samples were prepared and analyzed within the method and/or QAPP specified holding times.

Laboratory Control Sample

All spike recoveries met method and/or project specified QC criteria.

Sample Duplicate

All sample duplicate RPD data met method and/or project specific QC criteria.

Calibrations

All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks

All preparation blanks met method and/or project specific QC criteria.

Miscellaneous

Lower RLs were used for nitrate due to the increased sensitivity of the instrument.

Life Science Laboratories, Inc.

Date: 29-Apr-08

CLIENT: Project: Lab Order:	FPM Group Griffiss AFB - Building 101 0804057	_	Work Order Sa	mple Summary
Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0804057-001A	101M0216WA	101MW-2	4/8/2008	4/9/2008
0804057-001B	101M0216WA	101MW-2	4/8/2008	4/9/2008
0804057-001C	101M0216WA	101MW-2	4/8/2008	4/9/2008
0804057 -001D	101M0216WA	101MW-2	4/8/2008	4/9/2008

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29-Apr-08

Lab Order:	0804057					
Client:	FPM Group			· ·	DATES REPORT)RT
Project:	Griffiss AFB - Building 101	ng 101				
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date Prep Date	Analysis Date
0804057-001A	101M0216WA	4/8/2008 11:33:00 AM	Groundwater	Volatile Organic Compounds by GC/MS		4/10/2008
0804057-001B				Inorganic anions by IC		4/9/2008
0804057-001C				Total Organic Carbon		4/17/2008
				Total Organic Carbon		4/16/2008
0804057-001D				Alkalinity, as CaCO3		4/16/2008

Page 1 of 1

Chain of Custody

External Chain of Custody

CHAIN OF CUSTODY RECORD AFCEE

COC#: _1_ SDG#: _183_ Cooler ID: _A_

Ship to: Monika Santucci	1				² roject	Name:	Griffis	s AFB (Project Name: Griffiss AFB Site Building 101 sampling	ding 10	1 samp		Send Resu	Send Results to: Niels van Hoesel
Life Science Laboratories, Inc.	ooratories, Inc.			<u> </u>	Sample	Sampler Name: Niels van Hoesel	: Niels	van H(esel					FPM Group
5000 Brittonfield Pkwy, Su East Syracuse, NY 13057	lite 2	00 Tel: (315)437-0200	-0200					Ň						153 Brooks Koad Rome, NY 13441
Carrier: LSL courier.					Sample	Sampler Signature:	ture:			₽				Phone: (315) 336-7721 Ext 205
											Anal	yses Re	Analyses Requested	
Field Sample ID	Location ID (LOCID)	Date Time 2008	ਨ XIATAM	SMCODE	CERD/CED	ZYCODE	Preservative	Fit./UnFit.	VOCs Note 1 Containers	40 mL vial (HCl) Anions, ^{noe 2}	200 mr boly 200 mr boly	40 mL vials (HCL) Alkalinity ^{nore 4} 8 oz glass (zero	headspace)	Comments

Sample Condition Upon Receipt at Laboratory:	ory:			Cooler Tem	Cooler Temperature: - 8, 3,4, - \.4, -),4	24-14-14
Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0	to be conducted i	1 compliance with AFCEE QAPP 4.0	-		1	
Note 1: VOC: method SW 8260: Target COCs: PCE, TCE, DCE, Vinyl Chloride and Chloroform.	Cs: PCE, TCE, I	DCE , Vinyl Chloride and Chloroform.			everndu se	evertude seats intoch
Note 2: Anions: SW9056 CHLORIDE, SULFATE AND NITRATE	ULFATE AND 	VITRATE ONLY			-	
Note 3: TOC: SW9060.						
Note 4: Alkalinity: 310.1.						
					0 /1 /	
#1 Released by: (Sig)	Date:	#2 Released by: (Sig) Drug Co	Date: 4/8/08	#3 Released by: (Sig)	h m	Date: 4/09/05
Company Name:	Time:	Company Name: FPM Group Atd/	Time: T, 05 Company Name:	Company Name:	707	Time: /

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4/8 1133 WG

101MW-2

101M0216WA

<u>MATRIX</u> WG = Ground water WQ = Water Quality Control Matrix SO = Soil

SMCODE B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split spoon

AB = Ambient Blank TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike Duplicate SD = Matrix Spike Duplicate <u>SACODE</u> N = Normal Sample

Date: 419/02 Time: 073D

#3 Received by: (Sig) A

0

Date: 4 Time:

#2 Received by: (Sig) 🗠

Date: 2/28/08 Time: 10200

#1 Received by: (Sig) Niels van Hoesel Company Name: FPM Group Ltd

Company Name:

Company Name:

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: FPM		Date and Time Received:	4/9/2008 7:30:00 AM
Work Order Number 0804057		Received by: kac	
Checklist completed by:	4/9/08 Dete	Reviewed by: MS	4/9/08
Matrix: Carrier r	name: <u>Çourier</u>		
Shipping container/cooler in good condition?	Yes 🗹	No 🗌 Not Present 🗌	
Custody seals intact on shipping container/cooler?	Yes 🔽	No 🗌 Not Present 🗌	
Custody seals intact on sample bottles?	Yes 🗌	No 🗌 Not Present 🗹	
Chain of custody present?	Yes 🗹	No 🗔	
Chain of custody signed when relinquished and received?	Yes 🗸	No 🗌	
Chain of custody agrees with sample labels?	Yes 🔽	No 🗔	
Samples in proper container/bottle?	Yes 🔽	No 🗀	
Sample containers intact?	Yes 🔽	No 🗌	
Sufficient sample volume for indicated test?	Yes 🔽	No 🗌	
All samples received within holding time?	Yes 🔽	No 🗔	
Container/Temp Blank temperature in compliance?	Yes 🔽	No	
Water - VOA vials have zero headspace?	Yes 🔽	No III No VOA vials submit	ted 🗌
Water - pH acceptable upon receipt?	Yes 🗌	No 🗹 🛛 Not Applicable 🗌	

рH	Preservative	pH Acceptable	Sample ID
>12	NaOH	Yes 🗌 N 🛄 NA 🗹	
<2	HNO3	Yes 🗌 N 🗌 NA 🗹	
<2	HSO4	Yes 🗌 N 🛄 NA 🗹	
<2	1:1 HCL	Yes 🗹 N 🗌 NA 🛄 T	DC
5-9	Pest/PCBs (608/8081)	Yes 🗋 N 🗔 NA 🗹	

Volume of Preservative added in Lab.

Comments:

		Sar	nple Cc	Sample Control Record			
Sample ID	Frac	Frac Client Sample ID	Removed By	Date and Time Removed	Analysis	Date and Time Returned	
0804057	0	101 moz le wA	£	4/2/08 845	9056	4/9/18 1536	
Ū Q	¥		PA	4 10 00 14: 50	Sino	NR	
100 - 2.51holo			NU	U/16/08 \$ 931	AIK	NU1668 1237	
0204051-001	J		W.	4/16/05 9, 50	Tar	4/10/05 16:2	
100 - LSAMOR:	S	-	AN	4/18/68 830	700		
	·						
				-			
	, , ,		·				
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G:\QAQC\forms\GeneralLaboratory\Sign out.xls	atorySiç	gn out.xls	• •				
				-			

Client/Project FPM 6804057

Analytical Results

AFCEE ORGANIC ANALYSES DATA PACKAGE

Base/Command:		Prime Contractor:	FPM Group
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R13266</u>

Field Sample ID	Lab Sample ID
101M0216WA	0804057-001A

Comments:

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

Signature:	Montes Janducei	Name:	Monika Santucci	
Date:	4/28/08	Title:	Project Manager	
QAPP 4.0	AFCEE FOR	RM O-1	Page 1 of 1	

AFCEE ORGANIC ANALYSES DATA SHEET 2 RESULTS

Analytical Method	SW8260B	Preparatory Method	:	AAB #:	<u>R13266</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:			
Field Sample ID:	101M0216WA	Lab Sample ID:	<u>0804057-001A</u>	Matrix:	Groundwater
% Solids:	Q	Initial Calibration ID	: <u>1221</u>	File ID:	<u>M4887.D</u>
Date Received:	<u>09-Apr-08</u>	Date Extracted:		Date Analyzed:	<u>10-Apr-08</u>
Concentration Uni	ts (ug/L or mg/Kg dry weight):	<u>µg/L</u>		Sample Size:	<u>25 mL</u>

Analyte	MDL	RL	Concentration	Dilution	Confirm Qualifier
Chloroform	0.100	0.500	0.470	1	F
cis-1,2-Dichloroethene	0.160	1.00	3.72	1	
Tetrachloroethene	0.100	1.00	0.100	1	U
trans-1,2-Dichloroethene	0.160	1.00	0.160	1	U
Trichloroethene	0.100	1.00	0.260	1	F
Vinyl chloride	0.500	1.00	0.500	1	U

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	107	72 - 119	
4-Bromofluorobenzene	112	76 - 119	
Toluene-d8	106	81 - 120	

Internal Std	Area Counts	Area Count Limits Qualifier
1,4-Dichlorobenzene-d4	1486093	811362 - 3245448
Chlorobenzene-d5	2202836	1119858 - 4479430
Fluorobenzene	3875691	1972798 - 7891190

Comments:

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QAPP 4.0

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Page 1 of 1

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AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R13249</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

Field Sample ID	Lab Sample ID
101M0216WA	0804057-001B

Comments:

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

Signature:	Morika Sonfuer	Name:	Monika Santucci	
Date:	4/28/08	Title:	Project Manager	
	•			

QAPP 4.0

AFCEE FORM W-1

Page 1 of 1

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9056		AAB #:	R13249	Ð	
Lab Name:	Life Science Laboratories,	Inc. C	Contract #:			
Field Sample ID:	101M0216WA	Lab Sample ID:	0804057-	001B	Matrix:	Groundwater
% Solids:	0	Initial Calibration ID	: 1226			
Date Received:	09-Apr-08	Date Prepared:			Date Analyzed:	09-Apr-08
Concentration Units ((mg/L or mg/kg dry weight)	: mg/L				

Analyte Analyte	MDL MDL	RL	Concentration	Dilution	Qualifi
Chloride	0.99	10	200	10	
litrate (as N)	0.15	1.0	0.16	10	F
Sulfate (as SO4)	2.0	10	2.5	10	F

Comments:

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QAPP 4.0

Page 1 of 1

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13328A</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

Field Sample ID	Lab Sample ID
101M0216WA	0804057-001C

Comments:

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

Signature:	Moriles Landucci	Name:	Monika Santucci	
Date:	4/28/08	Title:	Project Manager	
B 4 0	1 1			D 4 - 10

QAPP 4.0

AFCEE FORM W-1

Page 1 of 2

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13348</u>
Lab Name:	Life Science Laboratories. Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

Field Sample ID	Lab Sample ID
101M0216WA DL	0804057-001CDL

Comments:

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

Signature:	Monika Intucci	Name:	Monika Santucci	
Date:	4/28/08	Title:	Project Manager	
				

AFCEE FORM W-1

Page 2 of 2

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9060		AAB #:	R1332	8A	
Lab Name:	Life Science Laboratories	Inc. Co	ontract #:			
Field Sample ID:	101M0216WA	Lab Sample ID:	0804057-0	001C	Matrix:	Groundwater
% Solids:	0	Initial Calibration ID:	1249			
Date Received:	09-Apr-08	Date Prepared:			Date Analyzed:	16 -Apr- 08
Concentration Units	(mg/L or mg/kg dry weight	:): mg/L				

Analyte	MDL	RL	Concent	ration Dilution	Qualifier
Total Organic Carbon	0.40	1.0	84	1	J

Comments:

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QAPP 4.0

AFCEE FORM W-2

Page 1 of 2

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9060		AAB #:	R13348	\$	
Lab Name:	Life Science Laboratories,	Inc. C	Contract #:			
Field Sample ID:	101M0216WA DL	Lab Sample ID:	0804057-(001CDL	Matrix:	Groundwater
% Solids:	0	Initial Calibration ID	: 1250			
Date Received:	09-Apr-08	Date Prepared:			Date Analyzed:	17 -Apr-08
Concentration Units	mg/L or mg/kg dry weight): mg/L				

Anatyte	MDL	RL	Concentration	Dilution	Qualifier
Total Organic Carbon	4.0	10	89	10	

Comments:

QAPP 4.0

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>E310.1</u>	AAB #:	<u>R13324</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

Field Sample ID	Lab Sample ID
101M0216WA	0804057-001D
101M0216WA	0804057-001DDUP

Comments:

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

Signature:	Morileo Londuce	Name:	Monika Santucci	
Date:	4/28/08	Title:	Project Manager	
			Deep 1 of 1	

QAPP 4.0

Page 1 of 1

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	E310.1		AAB #:	R13324	4	
Lab Name:	Life Science Laboratories,	Inc. C	Contract #:			
Field Sample ID:	101M0216WA	Lab Sample ID:	0804057-	001D	Matrix:	Groundwater
% Solids:	0	Initial Calibration ID): 0			
Date Received:	09-Apr-08	Date Prepared:			Date Analyzed:	16-Apr-08
Concentration Units	(mg/L or mg/kg dry weight)	: mg/L				

Analyte	MDL	RL	Concentration	Dilution	Qualifier
Alkalinity, as CaCO3	10	10	290	1	

Comments:

QAPP 4.0

Quality Control Results

GC/MS Volatile Organics Data

AFCEE ORGANIC ANALYSES DATA SHEET 3 INITIAL MULTIPOINT CALIBRATION-GC/MS ANALYSIS

Analytical Method: 8260B

AAB #:

Lab Name: Life Science Laboratories, Inc.

Instrument ID: HP5970 GCMS#2

Initial Calibration ID: 1221

Contract #:

Date of Initial Calibration: 07APR08

Concentration Units (ug/L or mg/kg): ug/L

SEE ATTACHED

Comments:

AFCEE FORM O-3

Response Factor Report #2MS12

ICAL # 1221

08

		R	сарона	e ract	or Keb		211012				
	Titl Last	od : C:\HPCHEM e : VOC's w/R Update : Tue Apr 0 onse via : Initial C	estek 8 10:2	RTX-50 5:42 2	2.2. 0	W.M (R .53mm	TE Int x 105m	egrato , 3.0	r) df		
	Cali	bration Files									
	0.5	=M4820.D 1.0 =M4823.D 20	=M =M	4824.D 4826.D		2.0 30	=M482 =M482	5.D 7.D			
		Compound	0.5	1.0	2.0	10	20	30	Avg	*RSI)
1)		Fluorobenzene									
	T	Dichlorodifluoromet									
+		Chloromethane	0,710	0,704	0.000	0.000	0.322	0.325	0.010	7 51	
	ĊP	Chloromethane Vinyl chloride District	0.277	0.330	0.204	0.313	0.332	0.320	0.373	11 42	
5)	CF	Bromomethane	0.200	0.200	0.250	0.303	0.334	0.333	0.299	24.23	
6)		Bromomethane State	0.120	0.109	0.141	0.130	0.200	0.220	0.161	Contractory of the local division of the loc	
7)		Trichlorofluorometh								13.79	
8)		Acrolein									
9)		1,1,2-Trichloro-1,2	0 488	0.000	0.004	0.642	0.633	0.640	0.579	11.81	
10)		Acetone	0.100	0 032	0 021	0.026	0.025	0.024	0.025#	14.76	
11)	ODM	1 1 Diablemeethere		A 101	A 1/1	0 000	0 200	0 222	0 100	10 10	
12)		Methvl acetate	•••••	0.072	0.066	0.084	0.080	0.077	0.077	8.51	
13)		Methyl iodide	0.322	0.221	0.308	0.598	0.628	0.641	0.477	38.57	
		Methyl acetate Methyl iodide Methylene chloride Acrylonitrile Carbon disulfide	0.384	0.484	0.363	0.298	0.299	0.301	0.346	20.46	
15)		Acrylonitrile		0.017	0.018	0.022	0.025	0.025	0.022#	15.35	•
16)		Carbon disulfide	0.775	0.857	0.715	0.951	1.044	1.056	0.914	14.67	
17)		Methyl tert-Butylee	0.342	0.388	0.362	0.382	0.402	0.398	0.382	5.85	
3)		trans-1,2-Dichloroe									
19)											
20)	P	Vinyl acetate 1,1-Dichloroethane	0.498	0.548	0.472	0.584	0.606	0.614	0.559	9.89	
21)		2-Butanone	(x_1)	0.038	0.037	0.041	0.046	0.044	0.042#	9.39	
22)		2,2-Dichloropropane	0.313	0.382	0.339	0.446	0.450	0.453	0.403	14.46	
23)		cis-1,2-Dichloroeth	0.277	0.303	0.271	0.326	0.336	0.326	0.309	8.29	
	· CP	Chloroform								6.40	
25)		Bromochloromethane								8.09	
26)		1,1,1-Trichloroetha								16.23	
27)		Cyclohexane						0.350		17.90	
28)	-	1,1-Dichloropropene								14.55	
29)	S	1,2-Dichloroethane-								$\frac{7.55}{15.24}$	
30)		Carbon tetrachlorid								15.24	
31)	ъź	1,2-Dichloroethane								9.53 9.51	
32)	M							0.878		12.51	
33) 34)	Μ	Trichloroethene Methylcyclohexane								(20.58)	
35)	CP	1,2-Dichloropropane								6.93	
35)	CP	Bromodichloromethan								11.47	
36)		Dibromomethane								9.30	
38)		2-Chloroethylvinyl	0.076	0.088	0.083	0.106	0.096	0.093	0.091	10.52	
39)		4-Methyl-2-pentanon			0.155	0.137	0.124	0.137	0.138	_7.92	
40)		cis-1,3-Dichloropro								17.67	
41)	CPM	Toluene	0.454	0.490	0.453	0.569	0.590	0.593	0.533	12.15	
42)		trans-1,3-Dichlorop	0.178	0.229	0.226	0.309	0.325	0.330	0.276	23.00	
·3)		2-Hexanone		0.070	0.066	0.094	0.093	0.092	0.085	15.90	
-		1777 - 黄子 有1777 - 建金属于							1	illa	
		•							M	And	1

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(#) = Out of Range ### Number of calibration levels exceeded format/ M407VOCW.M Tue Apr 08 10:26:06 2008 Response Factor Report #2MS12

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		-				"				
	Meth									
	Titl	e : VOC's w/R	estek 1	RTX-502	2.2, 0	.53mm	x 105m	, 3.0 (df	
		Update : Tue Apr 0	8 [%] 10:2	5:42 20						
	Resp	onse via : Initial C	alibra	tion	,					
		bration Files								
	0.5	=M4820.D 1.0		4824.D			=M482			
	10	=M4823.D 20	=M-	4826.D		30	=M482	7.D		
	-						~ ~	~ ~	-	
		Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD
44)		1,1,2-Trichloroetha		 0 200		 0 237	 0 237	0 233	0 220	9.32
44)					• *					
45)	Т	Chlorobenzene-d5				-ISTD-				
46)		Toluene-d8							1.490	
47)		1,3-Dichloropropane								
48)		Tetrachloroethene								11.12
49)		Dibromochloromethan	0:763	0.881	0.854	1.025	1.086	1.111	0.976	14.55
50)		1,2-Dibromoethane	0.575	0.573	0.562	0.672	0.695	0.709	0.644	11.07
51)		1-Chlorohexane	0.448	0.521	0.495	0.631	0.690	0.720	0.601	18.56
52)	\mathbf{PM}	Chlorobenzene								4.89
53)		1,1,1,2-Tetrachloro	0.603	0.696	0.616	0.762	0.762	0.764	0.710	10.33
-	CP	Ethylbenzene	1.744	1.888	1.645	2.077	1,908	1.915	1.865	7.36
55)		(m+p)-Xylene o-Xylene	0.558	0.621	0.557	0.747	0.705	0.722	0.662	12.29
56)		o-Xylene	0.567	0.603	0.561	0.682	0.741	0.760	0.667	13.31
57)		Styrene	0.879	0.968	0.973	1.159	1.213	1.243	1.098	14.04
58)	Р	Bromoform	0.393	0.416	0.447	0.584	0.608	0.616	0.529	20.03
	Ŧ	1,4-Dichlorobenzene	ھ			TOWD				
59)						-15TD- 		 	2.597	11.55
))		Isopropylbenzene 1,1,2,2-Tetrachloro								7.65
62)		Bromofluorobenzene								5.53
63)		1,2,3-Trichloroprop								_7.23
64)		trans-1,4-Dichloro-								39.76
65)		n-Propylbenzene								14.55
66)		Bromobenzene	0.847	0.982	0.954	1.054	1.034	1.011	0.983	6.97
67)		1,3,5-Trimethylbenz								15.47
68)		2-Chlorotoluene						2.564		6.56
69)		4-Chlorotoluene	2.032	2.359	2,227	2.542	2,467	2.526	2.375	7.86
70)		tert-Butylbenzene						2.165		15.44
71)		1,2,4-Trimethylbenz								19.23
72)								3.037		17.74
73)		p-Isopropyltoluene								20.02
74)		1,3-Dichlorobenzene								8.61
75)		1,4-Dichlorobenzene	1,272	1.453	1.290	1.504	1.553	1.520	1.443	7.92
76)		n-Butylbenzene	1.048	1.267	1.220	1.742	1.927	1.952	1.582	24.59
77)		1,2-Dichlorobenzene								8.40 12.76
78)		1,2-Dibromo-3-chlor								$\begin{bmatrix} 12.78\\ 22.68 \end{bmatrix}$
79) 80)		1,2,4-Trichlorobenz Hexachlorobutadiene	0.410	0.304 0 676	V.5∠3 0 ⊑27	0.004	0.749	0.757	0.621	13.12
81)		Naphthalene		0.270	0 121	0.451	0.510	0.528	0.448	25.02
82)		1,2,3-Trichlorobenz								25.20
521			с. <u>д</u> оо	0.000	· · · · · · · · · · · · · · · · · · ·					
			- ,		1					11 -

(#) = Out of Range ### Number of calibration levels exceeded format ### M407VOCW.M Tue Apr 08 10:26:10 2008 Hage 2 Als 00 2

Cali 40	bration Files =M4828.D	-			=	
	=	≓,				
	Compound	40				·
) I	Fluorobenzene			ISTD		
)	Dichlorodifluoromet	0.879				
Р		0.323				
CP	Vinyl chloride	•				
i		0.231				
	Chloroethane Atto Trichlorofluorometh	0.181				
	Acrolein	0.005				
	1,1,2-Trichloro-1,2					
	Acetone	0.024				
	1,1-Dichloroethene					
		0.082				
		0.623				
	Methylene chloride					
	Acrylonitrile Carbon disulfide					
	Methyl tert-Butyl e					
	trans-1,2-Dichloroe					
	Vinyl acetate					
Р		0.591				
	2-Butanone					
	2,2-Dichloropropane					
	cis-1,2-Dichloroeth					
CP	Chloroform Bromochloromothana	0.718				
	Bromochloromethane 1,1,1-Trichloroetha	0.188				
	Cyclohexane	0.339				
	1,1-Dichloropropene					
S	1,2-Dichloroethane-	0.232				
	Carbon tetrachlorid					
	1,2-Dichloroethane	0.294				
	Benzene <u>utation</u> (*	0.860				
	Trichloroethene	0.445				
	Methylcyclohexane 1,2-Dichloropropane	0.354	,			
ΞĒ	Bromodichloromethan	0.340				
	Dibromomethane, magni	0.303				
	2-Chloroethylvinyl					
	4-Methyl-2-pentanon					
	cis-1,3-Dichloropro					
	Toluene	0.582				
	trans-1,3-Dichlorop			· •		
	2-Hexanone	0.097				

(#) = Out of Range #####Number of calibration levels exceeded format M407VOCW.M Tue Apr 08 10:35:16 2008

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Response Factor Report #2MS12

		: :	Respon	se factor Report #2MS12	:
	Titl Last	nod : C:\Hi e : VOC's Update : Tue 2 ponse via : Initi	w/Restek		ntegrator) m, 3.0 df
	Cali	bration Files	į.		
	40	=M4828.D	=	,	
		=		=	
		Compound	40		
44)		1,1,2-Trichloro	etha 0.23	3	
45)	I	Chlorobenzene-d	.5	ISTD	
46)		Toluene-d8			
47)		1,3-Dichloropro	pane 0.72	L	
48)		Tetrachloroethe	ne 0.930	5	
49)		Dibromochlorome	than 1.114	e e e e e e e e e e e e e e e e e e e	
50)		1,2-Dibromoetha	ne 0.72	8	-
51)		1-Chlorohexane	0.705	\$	
-	ΡM		1.35		
53)		1,1,1,2-Tetrach			
	CP				
55)		(m+p)-Xylene	0.722		
		o-Xylene	0.754		
57) 58)		Styrene Bromoform	1.254 		
50)	F	BIOMOLOTIM	(1994) 0.64 2 ,		
-9)	I	1.4-Dichloroben	zene-d	ISTD	
J)	-	Isopropylbenzen			Ý
61)	Р	1,1,2,2-Tetrach	· · ·		
62)		Bromofluorobenze			
63)		1,2,3-Trichlore	orop 0.457	4	
64)		trans-1,4-Dichl	0.075		
65)		n-Propylbenzene	3.321		
66)		Bromobenzene			
67)		1,3,5-Trimethyll			
68)		2-Chlorotoluene	2.514		
69)		4-Chlorotoluene	2.476		
70)		tert-Butylbenzer			
71) 72)		1,2,4-Trimethylk			
72) 73)		sec-Butylbenzéné p-Isopropyltolue			
74)		1,3-Dichlorobens			
75)		1,4-Dichlorobenz	•		
76)		n-Butylbenzene			
77)		1,2-Dichlorobenz			
78)		1,2-Dibromo-3-cl			
79)		1,2,4-Trichlorok			
80)		Hexachlorobutadi			
81)		Naphthalene	0.571	, n.	
82)		1,2,3-Trichlorob	enz 0.614		-
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(#) = Out of Range ###ENumber of calibration levels exceeded format ### M407VOCW.M _____Tue Apr 08 10:35:19 2008 Page 2

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AFCEE ORGANIC ANALYSES DATA SHEET 4 SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	SW8260B	AAB #:	<u>R13190</u>
Lab Name:	Life Science Laboratories, In	Contract Number:	
Instrument ID:	<u>MS02 12</u>	Initial Calibration ID:	<u>1221</u>
Second Source ID:	2SRC-13190	Concentration Units (mg/L or mg/kg):	<u>µg/L</u>

Analyte	Expected	Found	%D Q
1,2-Dichloroethane-d4	10	9.76	2.4
4-Bromofluorobenzene	10	10.7	-7.2
Chloroform	10	9.77	2.3
cis-1,2-Dichloroethene	10	10.4	-3.6
Tetrachloroethene	10	10.6	-6.5
Toluene-d8	10	10.9	-9.4
trans-1,2-Dichloroethene	10	10.9	-9.3
Trichloroethene	10	10.2	-1.5
Vinyl chloride	10	9.99	0.1

Comments:

QAPP 4.0

AFCEE FORM O-4

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Page 1 of 1

AFCEE ORGANIC ANALYSES DATA SHEET 5 CALIBRATION VERIFICATION

Analytical Method: 8260B

AAB #:

Lab Name: Life Science Laboratories, Inc.

Instrument ID: HP5970 GCMS#2

ICV ID: ICV-13190

Contract #:

Initial Calibration -ID: 1221

CCV #1 ID: CCV-13266

SEE ATTACHED

Comments:

AFCEE FORM O-5

Data File : C:\HPCHEM\1\DATA\M4878.D Acq On : 10 Apr 2008 13:05 Op Sample : CCV-13266 In Misc : CCV ,8260WAF 40CAL, Mu MS Integration Params: RTEINT.P Method : C:\HPCHEM\1\METHODS\M407P360.M (RTE Integrated)	egrator)
Method : C:\HPCHEM\1\METHODS\M407P360.M (RTE Inte	egrator) , 3.0 df
Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, Last Update : Fri Apr 11 14:15:41 2008 Response via : Multiple Level Calibration	
Min. RRF : 0.050 Min. Rel. Area : 50% Max. R. Max. RRF Dev : 20% Max. Rel. Area : 200%	
enate (e) Compound a AvgRF CCRF १	≵Dev Area% Dev(min)
1 I Fluorobenzene 1.000 1.000 2 Dichlorodifluoromethane 0.818 0.815 3 P Chloromethane 0.313 0.271 1 4 CP Vinyl chloride 0.299 0.283 5 Bromomethane 0.167 0.166 1 6 Chloroethane 0.161 0.156 7 Trichlorofluoromethane 0.025 0.024# 9 CPM 1,1-Dichloroethene 0.192 0.176 10 Methyl iodide 0.477 0.349 2 11 Methylene chloride 0.022 0.020# 13 Carbon disulfide 0.914 0.830 14 Methyl tert-Butyl ether 0.382 0.359 trans-1,2-Dichloroethene 0.239 0.238 17 P 1,1-Dichloroethane 0.042 0.037# 18 2-Butanone 0.042 0.37# 1 19 2,2-Dichloropropane 0.403 0.386	0.0 106 0.00 0.4 98 0.00 L3.4 91 0.00 5.4 99 0.00 L1.2 117 0.00 3.1 89 0.00
7 Trichlorofluoromethane 0.712 0.702 8 Acetone 0.025 0.024# 9 CPM 1,1-Dichloroethene 0.192 0.176 10 Methyl iodide 0.477 0.349 2 11 Methylene chloride 0.346 0.255 2 12 Acrylonitrile 0.022 0.020# 13 Carbon disulfide 0.914 0.830	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
14 Methyl tert-Butyl ether 0.382 0.359 trans-1,2-Dichloroethene 0.266 0.244 16 Vinyl acetate 0.239 0.238 17 P 1,1-Dichloroethane 0.559 0.509 18 2-Butanone 0.042 0.037# 1	6.0 100 0.00 8.3 95 0.00 0.4 98 0.00 8.9 92 0.00 1.9 97 0.00
20 CIS-1,2-Dichloroethene 0.309 0.280 21 CP Chloroform 0.716 0.626 1 22 Bromochloromethane 0.177 0.159 1 23 1,1,1-Trichloroethane 0.517 0.479	12.6 90 0.00 10.2 88 0.00 7.4 90 0.00
26 Carbon tetrachloride 0.522 0.487 27 1,2-Dichloroethane 0.288 0.257 1 28 M Benzene 0.812 0.714 1	9.8 87 0.00 1.0 85 0.00 6.7 90 0.00 .0.8 83 0.00 .2.1 87 0.00
29 M Irichloroetheneyer dank 0.411 0.367 1 30 CP 1,2-Dichloropropane 0.331 0.285 1 31 Bromodichloromethane 0.732 0.663 32 Dibromomethane 0.286 0.256 1 33 4-Methyl-2-pentanone 0.138 0.114 1 34 cis-1,3-Dichloropropene 0.421 0.380	0.7 89 0.00 3.9 88 0.00 9.4 89 0.00 0.5 88 0.00 7.4 89 0.00 9.7 88 0.00
36 trans-1,3-Dichloropropene 0,276 0.253 37 2-Hexanone 0.085 0.075 1 38 1,1,2-Trichloroethane 0.220 0,197 1	0.7 89 0.00 8.3 87 0.00 1.8 85 0.00 0.5 88 0.00
<pre> I Chlorobenzene-d5</pre>	0.0 99 0.00 9.1 89 0.00 Hipella Patrallal 9/1/08

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		Evaluate Continui	ng Calil	bration Repo	ort		
- - - - -	Acq Samp Misc MS I	<pre>File : C:\HPCHEM\1\DATA\M487 On : 10 Apr 2008 13:05 le : CCV-13266</pre>			Operato Inst Multipl	: #2 Lr: 1.	5 2MS12
	Titl Last	od : C:\HPCHEM\1\METHOD e : VOC's w/Restek RTX Update : Fri Apr 11 14:15:4 onse via : Multiple Level Cal	-502.2, 1 2008	0.53mm x 10	Integrato 05m, 3.0)r) df	
		RRF : 0.050 Min. Rel. RRF Dev : 20% Max. Rel.	Area :	200%	R.T. Dev	r 0.5	50min
		Compound	AvgRF	CCRF			Dev(min)
41		1,3-Dichloropropane	0.652	0.609	6.6	90	0.00
42		Tetrachloroethene	0.853	0.792	7.2		0.00
43		Dibromochloromethane					0.00
44		1,2-Dibromoethane				88	0.00
45		1-Chlorohexane	0.601	0.577	4.0	90	0.00
46	PM	Chlorobenzene PEAKCERALES				85	0.00
47		1,1,1,2-Tetrachloroethane	0.710	0.676	4.8	88	0.00
	CP	Ethylbenzene				83	0.00
49		(m+p)-Xylene (space) a set				83	0.00
50		o-Xylene	0.667	0.638		92	0.00
51		Styrene Black Black	1.098	1.060		90	0.00
52	Ρ	Bromoform	0.529	0.537	-1.5	91	0.00
- - -	-				<u> </u>	101	0 00
53	T	1,4-Dichlorobenzene-d4				101	0.00
ъ¢	ъ		2.597			91	0.00
55 56		1,1,2,2-Tetrachloroethane					0.00
57	3	Bromofluorobenzene	1.714			91 93	0.00 0.00
57		1,2,3-Trichloropropane	0.477	0.440 0.056		93 88	0.00
59		trans-1,4-Dichloro-2-butene	0.055	2,923	3.9	88	0.00
60		n-Propylbenzene Bromobenzene				90	0.00
61		Bromobenzene 1,3,5-Trimethylbenzene	1 015	1 719	5.3	87	0.00
62		2-Chlorotoluono	7 E96	1.713 2.403		90	0.00
63		2-Chlorotoluene 4-Chlorotoluene	2.020	2.403	4.3	91	0.00
64		tert-Butylbenzene	1 994	1.843	2.7	90	0.00
65		1,2,4-Trimethylbenzene	1 601	1 564		89	0.00
66		sec-Butylbenzene				90	0.00
67		p-Isopropyltoluene	1 833	1.766		90	0.00
68		p-Isopropyltoluene 1,3-Dichlorobenzene	1.570	1.529	2.6	92	0.00
69		1,4-Dichlorobenzene	1.443	1.418	1.7	95	0.00
70		n-Butylbenzene		1.550		90	0.00
71		1,2-Dichlorobenzene		1.350		93	0.00
72		1,2-Dibromo-3-chloropropane				99	0.00
73		1,2,4-Trichlorobenzene				94	
74		Hexachlorobutadiene	0,621	0.618	0.5	93	0.00
75		Naphthalene	0.448	0.438	2.2	98	0.00
76		1.2.3-Trichlorobenzene	0 489	0.501	-2.5	95	0.00
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		u de lasse Palles en com Autor de la composition					
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 $(M_{\rm eff}) = \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{\rm eff}} + \frac{1}{2} \frac{\partial (M_{\rm eff})}{\partial M_{$

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AFCEE ORGANIC ANALYSES DATA SHEET 7 BLANKS

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Analytical Method:	<u>SW8260B</u>	AAB #:	R13266
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Units:	ug/L	Method Blank ID:	<u>MB-13266</u>
Initial Calibration ID:	<u>1221</u>	File ID:	<u>M4882.D</u>

Analyte	Method Blank	RL	Q
Chloroform	0.100	0.500	U
cis-1,2-Dichloroethene	0.160	1.00	U
Tetrachloroethene	0.100	1.00	U
trans-1,2-Dichloroethene	0.160	1.00	. U
Trichloroethene	0.100	1.00	U
Viny! chloride	0.500	1.00	U

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	113	72 - 119	
4-Bromofluorobenzene	115	76 - 119	
Toluene-d8	106	81 - 120	

Internal Std	a Counts	Area Count Limits Qualifier
1,4-Dichlorobenzene-d4	1477374	811362 - 3245448
Chlorobenzene-d5	2271803	1119858 - 4479430
Fluorobenzene	4066265	1972798 - 7891190

Comments:

AFCEE FORM 0-7

AFCEE ORGANIC ANALYSES DATA SHEET 8 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW8260B</u>		A	AB #:		<u>R13266</u>	
Lab Name:	Life Science Laborator	<u>ies, Inc.</u>	c	ontract #:			
LCS ID:	LCS-13266		łr	nitial Calib	ration ID:	<u>1221</u>	
Concentration Units	s (mg/L or mg/kg):	ug/L	F	ile ID:		<u>M4879.D</u>	
	Analyte		Expected	Found	%R	Control Lin	nits Q
Chloroform			10	9.48	95	69 - 128	
cis-1,2-Dic	hloroethene		10	10.1	101	72 - 126	
Tetrachloro	bethene		10	9.61	96	66 - 128	
trans-1,2-D	lichloroethene		10	10.2	102	63 - 137	
Trichloroet	hene		10	9.60	96	70 - 127	
Vinyl chlori	de		10	10.4	104	50 - 134	
	Surrogate		Recover	ny 🤤 🦸	Sontrol Li	mits C	lualifier
1,2-Di	chloroethane-d4	Lag().j.,	102	()** () <i>**</i> () <i>**</i>	72 - 11	9	
4-Bror	nofluorobenzene		108		76 - 11	9	
Toluer	ne-d8		107		81 - 12	0	
	Internal Std	Area	Counts	Area	Count Li	mits	Qualifier
1,4-Di	chlorobenzene-d4	<u> </u>	1546693	811:	362 - 3245	448	
Chlore	benzene-d5		2128402	1119	858 - 4479	9430	
Fluoro	benzene		3908570	1972	798 - 7891	190	

Comments:

AFCEE ORGANIC ANALYSES DATA SHEET 8 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW8260B</u>		A/	AB #:		<u>R13266</u>	
Lab Name:	Life Science Laborate	ories, Inc.	Co	ontract #:			
LCS ID:	LCSD-13266		In	itial Calibr	ation ID:	<u>1221</u>	
Concentration Units	(mg/L or mg/kg):	<u>µq/L</u>	Fi	le iD:		M4880.D	
	Analyte		Expected	Found	%R	Control Limits	Q
Chloroform			10	9.95	100	69 - 128	
cis-1,2-Dichl	oroethene		10	10.4	104	72 - 126	
Tetrachloroe	thene		10	10.3	103	66 - 128	
trans-1,2-Dic	hloroethene		10	10.6	106	63 - 137	
Trichloroethe	ene		10	10.3	103	70 - 127	
Vinyl chloride	8		10	10.5	105	50 - 134	
	Surrogate		Recover	y C	ontrol Li	mits Qua	difier
1,2-Dict	nloroethane-d4		102		72 - 11	9	
4-Brome	ofluorobenzene		106		76 - 11	9	
Toluene	e-d8		107		81 - 12	0	-
	Internal Std	Area	Counts	Area	Count Li	mits d	Qualifier
1,4-Dict	1lorobenzene-d4		1565441	8113	62 - 3245	448	
Chlorob	enzene-d5		2157996	11198	358 - 4479	9430	
Fluorob	enzene		3959588	19727	798 - 7891	190	

Comments:

AFCEE ORGANIC ANALYSES DATA SHEET 9 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLE RECOVERY

Analytical Method:	<u>SW8260B</u>		AAB #:	<u>R13266</u>	
Lab Name:	Life Science Labor	atories, Inc.	Contract #:		
Concentration Units (mg/L	or mg/kg):	ug/L	% Solids:	<u>0</u>	
Parent Field Sample ID:	LCSD-13266	MS ID: <u>LC</u>	<u>S-13266</u>	MSD ID:	LCSD-13266

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Calibration ID: 1221

Analyte	Parent Sample Result	Spike Added	Spiked Sample Result	%R	Duplicate Spiked Sample Result	%R	%RPD	Limits %R	Control Limits Q %RPD
Chloroform		10.0		95	9.95	100	5	69 - 128	20
cis-1,2-Dichloroethene		10.0	10.1	101	10.4	104	3	72 - 126	20
Tetrachloroethene		10.0	9.61	96	10.3	103	7	66 - 128	20
trans-1,2-Dichloroethene		10.0	10.2	102	10.6	106	4	63 - 137	20
Trichloroethene		10.0	9.60	96	10.3	103	7	70 - 127	20
Vinyl chloride		10.0	10.4	104	10.5	105	2	50 - 134	20

Comments:

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AFCEE FORM O-9

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AFCEE ORGANIC ANALYSES DATA SHEET 10 HOLDING TIMES

Analytical Method	I: <u>SW8260B</u>			AAB #	#:	<u>R1326</u>	<u>6</u>			
Lab Name:	Life Science Labo	oratories, Inc.	<u>.</u>	Contr	act #:					
Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Max. Holding Time E	*******************	Date	Max. Holding Time A	Held	Q
101M0216WA	0804057-001A	08-Арг-08	09-Apr-08	10-Apr-08			10-Apr-08	14	2.3	

Comments:

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AFCEE ORGANIC ANALYSES DATA SHEET 11 INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method:	<u>SW8260B</u>		AAB#:		
Lab Name:	Life Science Laboratorie	<u>s, Inc.</u>	Contract #:		
Instrument ID #:	<u>MS02 12</u>		Calibration ID:	<u>1221</u>	
Field Sample ID/Std ID/ Blank ID/QC Sample ID	Lab Sample (D	Date Analysis Started	Time Analysis Started	Date Analysis Completed	Time Analysis Completed
TB040708A2	TB040708A2	07-Apr-08	11:43	07-Apr-08	13:13
ICAL 0.5 PPB	ICAL 0.5 PPB	07-Apr-08	13:13	07-Apr-08	15:16
ICAL 10 PPB	ICAL 10 PPB	07-Apr-08	15:16	07-Apr-08	16:44
ICAL 1.0 PPB	ICAL 1.0 PPB	07-Apr-08	16:44	07-Apr-08	17:23
ICAL 2.0 PPB	ICAL 2.0 PPB	07-Apr-08	17:23	07-Apr-08	18:03
ICAL 20 PPB	ICAL 20 PPB	07-Apr-08	18:03	07-Apr-08	18:42
ICAL 30 PPB	ICAL 30 PPB	07-Apr-08	18:42	07-Apr-08	19:21
ICAL 40 PPB	ICAL 40 PPB	07-Apr-08	19:21	08-Apr-08	14:34
2SRC-13190	2SRC-13190	08-Apr-08	14:34	08-Apr-08	14:34
TB041008A2	TB041008A2	10-Apr-08	12:35	10-Apr-08	13:59
LCS-13266	LCS-13266	10-Apr-08	13:59	10-Apr-08	14:38
LCSD-13266	LCSD-13266	10-Apr-08	14:38	10-Apr-08	15:57
MB-13266	MB-13266	10-Apr-08	15:57	10-Apr-08	19:53
101M0216WA	0804057-001A	10-Apr-08	19:53	10-Apr-08	19:53

Comments:

AFCEE FORM 0-11

Page 1 of 1

AFCEE ORGANIC ANALYSES DATA SHEET 12 INSTRUMENT PERFORMANCE CHECK (BFB or DFTPP)

Analytical Method:	<u>SW8260B</u>	AAB #:	MS02_12_080407A
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
Instrument ID:	<u>MŞ02_12</u>	Injection Date/Time:	4/7/2008 11:43:00 AM
Initial Calibration ID:	<u>1221</u>	File ID:	C:\HPCHEM\1\DATA\M4818.D
Compound:	<u>SW8260B</u>	Sample ID:	TB040708A2

Mass	Ion Abundance Criteria	% Relative Abundance Q
50	15 - 40% of m/z 95	22.1
75	30 - 60% of m/z 95	46.2
95	Base peak, 100% relative abundance	100
96	5 - 9% of m/z 95	6.8
173	Less than 2% of m/z 174	0
174	Greater than 50% of m/z 95	58.2
175	5 - 9% of m/z 174	6.6
176	Greater than 95% but less than 101% of m/z 174	98.7
177	5 - 9% of m/z 176	5.5

AFCEE ORGANIC ANALYSES DATA SHEET 12 INSTRUMENT PERFORMANCE CHECK (BFB or DFTPP)

Analytical Method:	<u>SW8260B</u>	AAB #:	MS02_12_080410B
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
Instrument ID:	<u>MS02_12</u>	Injection Date/Time:	4/10/2008 12:35:00 PM
Initial Calibration ID:	<u>1221</u>	File ID:	C:\HPCHEM\1\DATAW4877.D
Compound:	<u>SW8260B</u>	Sample ID:	TB041008A2

Mass	Ion Abundance Criteria	% Relative Abundance Q
50	15 - 40% of m/z 95	23.7
75	30 - 60% of m/z 95	50.5
95	Base peak, 100% relative abundance	100
96	5 - 9% of m/z 95	6.1
173	Less than 2% of m/z 174	0
174	Greater than 50% of m/z 95	56.2
175	5 ~ 9% of m/z 174	5.8
176	Greater than 95% but less than 101% of m/z 174	99.2
177	5 - 9% of m/z 176	6.3

Wet Chemistry Data

	AB#: Tife Science Laboratories Inc	##: 	<u>R13249</u>
<u> </u>		contract #: Date of Initial Calibration:	-
1226		Concentration Units (mg/L or mg/kg):	Ш <mark>а/Г</mark>

σ			
L. L.	0.99999	0.99987	0.99999
STD 10	0	0	0
STD 9	0	0	0
STD 8	40	0	40
STD 7	20	2	20
STD 6	5	-	6
STD 5	ъ	0.5	S.
STD 4	÷	0.1	-
STD 3	0.5	0.05	0.5
STD 2	0.2	0.02	0.2
STD 1	0	0	0
Analyte	0	(as N)	lfate (as SO4)
	Chloride	Nitrate (Sulfate

r = correlation coefficient

Comments:

Analytical Method:	<u>SW9056</u>		AAB #:		<u>R13249</u>	
Lab Name:	Life Science Laboratories.	Inc.	Contract #:			
Instrument ID:	<u>IC</u>		Initial Calibration	n ID:		<u>1226</u>
2nd Source ID: 23	<u>s cv</u>	CCV #1 ID: IC\	<u>′</u>	CCV #2 ID:	<u>CCV1</u>	

Analyte		urce Calibrer Calibrer Calibrer Calibrer Calibrer Calibrer Calibrer Calibrer Calibrer Calibrer Calibrer Calibre	ation		Continuing	Calibration	Verification		Q
Chloride	Expected 5.00	Found 4.96	-% D -0.9	Expected 10.0	Found 1	22	Found 2	%D	
Nitrate (as N)	0.500	0.508	1.6	1.00	1.03	3.0	1.03		
Sulfate (as SO4)	5.00	4.87	-2.7	10.0	10.1	1.1	10.0	0.4	

Comments:

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Analytical Method:	<u>SW9056</u>		AAB #:		<u>R13249</u>	
Lab Name:	Life Science Laboratories,	Inc.	Contract #:			
Instrument ID:	<u>IC</u>		Initial Calibration	ID:		<u>1226</u>
2nd Source ID: 2	<u>s cv</u>	CCV #1 ID:	<u>CCV2</u>	CCV #2 ID:	CCV3	

Analyte	2nd Sou	rce Calibrati rification Found			ntinuing Ca ound 1			
Chloride	5.00	4.96	-0.9	10.0	10.0	0.3	10.1	0.7
Nitrate (as N)	0.500	0.508	1.6	1.00	1.03	2.7	1.03	2.7
Sulfate (as SO4)	5.00	4.87	-2.7	10.0	10.0	0.1	10.0	0.4

Comments:

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AFCEE FORM W-4

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AFCEE WET CHEM ANALYSES DATA SHEET 5 BLANKS

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R13249</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	(mg/L or mg/kg): mg/L		
Calibraton Blank ID:	<u>ICB</u>	Initial Calibration ID:	<u>1226</u>
Method Blank ID:	MB-R13249	Initial Calibration ID:	<u>1226</u>

Analyte	Calibration Blank	Method Blank	RL	l o
Chloride	0.082	0.099	1.0	
Nitrate (as N)	0.015	0.015	0.10	
Sulfate (as SO4)	0.20	0.20	1.0	

Comments:

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AFCEE FORM W-5

AFCEE WET CHEM ANALYSES DATA SHEET 5 BLANKS

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R13249</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	s (mg/L or mg/kg): <u>mg/L</u>		
Calibraton Blank ID	: <u>CCB1</u>	Initial Calibration ID:	<u>1226</u>
Method Blank ID:	<u>MB-R13249</u>	Initial Calibration ID:	<u>1226</u>

Analyte	Calibration Blank	Method Blank	RL	Q
Chloride	0.077	0.099	1.0	
Nitrate (as N)	0.015	0.015	0.10	
Sulfate (as SO4)	0.20	0.20	1.0	

Comments:

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AFCEE FORM W-5

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AFCEE WET CHEM ANALYSES DATA SHEET 5 BLANKS

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R13249</u>	
Lab Name:	Life Science Laboratories, Inc.	Contract Number:		
Concentration Units	s (mg/L or mg/kg): mg/L			
Calibraton Blank ID	: <u>CCB2</u>	Initial Calibration ID:	<u>122</u>	6
Method Blank ID:	<u>MB-R13249</u>	Initial Calibration ID:	<u>122</u>	6

Arrahyte	Calibration Blank	Method Blank	L RL	- o
Chloride	0.083	0.099	1.0	
Nitrate (as N)	0.015	0.015	0.10	
Sulfate (as SO4)	0.20	0.20	1.0	

Comments:

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AFCEE FORM W-5

AFCEE WET CHEM ANALYSES DATA SHEET 6 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R13249</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCS-R13249	Initial Calibration ID:	<u>1226</u>
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Concentration Units (mg/L or mg/kg): mg/L

Analyte	Expected	Found	%R	Control Limits 0
Chloride	5	4.96	99	85 - 115
Nitrate (as N)	0.5	0.505	101	85 - 115
Sulfate (as SO4)	5	4.85	97	85 - 115

Comments:

AFCEE FORM W-6

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AFCEE WET CHEM ANALYSES DATA SHEET 8 HOLDING TIMES

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R13249</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	

Collected Date Date Date Date Holding Held O 101M0216WA 0804057.001B 08.4cc.08 00.4cc.08 00.4cc.08 <t< th=""><th></th><th></th><th>1.4 _ 1756</th><th></th><th>a water</th><th>Max</th><th>Time</th><th></th></t<>			1.4 _ 1756		a water	Max	Time	
		Lange Carl	Collected	Received	Date Analyzed	Holding Time	Heid (days) –	0
	101M0216WA	0804057-001B	08-Apr-08	317 90 09-Apr-08	09-Apr-08	(days)		

Comments:

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AFCEE FORM W-8

AFCEE WET CHEM ANALYSES DATA SHEET 9 INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: SW9056

<u>IC</u>

Lab Name: Life Science Laboratories, Inc. Contract #:

Instrument ID #:

Field Sample ID/Std ID/ Blank ID/OC Sample ID	Lab Sample ID	Date Analyses Started	Time Analyses Started	Date Analyses	Time Analyses Completed
ICAL 0	ICAL 0	08-Apr-08	15:10	Harming Solution	
JCAL 7	ICAL 7	08-Apr-08	15:34	08-Apr-08	15:34
ICAL 6	ICAL 6	08-Apr-08	15:54	08-Apr-08	15:54
ICAL 5	ICAL 5	08-Apr-08		08-Apr-08	16:15
ICAL 4	ICAL 4		16:15	08-Apr-08	16:35
ICAL 3	ICAL 3	08-Apr-08	16:35	08-Apr-08	16:55
ICAL 2	ICAL 2	08-Apr-08	16:55	08-Apr-08	17:16
ICAL 1		08-Apr-08	17:16	08-Apr-08	17:36
	ICAL 1	08-Apr-08	17:36	08-Apr-08	17:36
2S CV		09-Apr-08	8:34	09-Apr-08	8:55
	2S CV	09-Apr-08	8:55	09-Apr-08	9:15
CB	ICB	09-Apr-08	9:15	09-Apr-08	9:36
MB-R13249	MB-R13249	09-Apr-08	9:36	09-Apr-08	9:56
_CS-R13249	LCS-R13249	09-Apr-08	9:56	09-Apr-08	11:21
CCV1	CCV1	09-Apr-08	13:03	09-Apr-08	13:24
CCB1	CCB1	09-Apr-08	13:24	09-Apr-08	
01M0216WA	0804057-001B	09-Apr-08	14:45	09-Apr-08	14:45
CCV2	CCV2	09-Apr-08	15:47		15:47
CCB2	CCB2	09-Apr-08		09-Apr-08	16:07
CCV3	CCV3		16:07	09-Apr-08	18:09
CB3	ССВЗ	09-Apr-08	18:09	09-Apr-08	18:30
CCV4	CCV4	09-Apr-08	18:30	09-Apr-08	19:51
CCB4		09-Apr-08	22:14	09-Apr-08	22:35
	CCB4	09-Apr-08	22:35	09-Apr-08	22:35

Comments:

Total Organic Carbon Data

AFCEE	WET CHEM ANALYSES DATA SHEET 3-10	INITIAL MULTIPOINT CALIBRATION
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Analytical Method:	0906MS	AAB#:	R13328A
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
Instrument ID:	TOC-5000A	Date of Initial Calibration:	<u>16-Apr-08</u>
Initial Calibration ID:	<u>1249</u>	Concentration Units (mg/L or mg/kg):	<u>mg/L</u>

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10.10	0	
8		
STD 6	0	
STD 8 STD		
870	0	
7		
STD	0	
9 6		
ыs	0	
9 Q	~	
ts		
70	20	
6		
10.3	10	
50		
TD 2	-	
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STD 1	0	
alyte	Б	
Ana	Carb	
	rganic	
	otal O	
	F	

r = correlation coefficient

Comments:

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AFCEE	WET CHEM ANALYSES DATA SHEET 3-10	INITIAL MULTIPOINT CALIBRATION
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Analytical Method:	SW9060	AAB #:	<u>R13348</u>
Lab Name:	<u>Life Science Laboratories. Inc.</u>	Contract #:	
Instrument ID:	TOC-5000A	Date of Initial Calibration:	<u>17-Apr-08</u>
Initial Calibration ID:	<u>1250</u>	Concentration Units (mg/L or mg/kg):	<u>mg/L</u>

r Q	0.99999	
STD 10	0	
STD 9	0	
STD 8	0	
sto 7	0	
s m s	0	
STD 5	0	
STD 4	50	
STD 3	10	
STD 2	-	
STD	0	
Analyte	Total Organic Carbon	

r = correlation coefficient

Comments:

Analytical Method:	<u>SW9060</u>			AAB #:	<u>R13328</u>	
Lab Name:	Life Science Laboratories,	inc.		Contract #:		
Instrument ID:	<u>TOC-5000A</u>		ł	Initial Calibration ID:		<u>1249</u>
2nd Source ID: IC	<u>v</u>	CCV #1 ID:	<u>CCV1</u>	CCV #2 ID:	<u>CCV2</u>	

Analyte	2nd Sou Ve Expected	rce Calibrat rification Found	ion — %D Ex	Co Co pected	ontinuing C	alibration %D	Found 2	G %D
Total Organic Carbon	10.0	10.3	2.6	10.0	10.0	0.4	10.2	1.8

Comments:

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Analytical Method:	<u>SW9060</u>		A	\B #:	<u>R13328</u>	
Lab Name:	Life Science Laboratories, I	nc.	Co	ontract #:		
Instrument ID:	TOC-5000A		Ini	itial Calibration ID:		<u>1249</u>
2nd Source ID: IC	∑	CCV #1 ID:	<u>CCV3</u>	CCV #2 ID:	CCV4	

Analyte	2nd Sc	urce Calib /erification	ration		Continuing	Calibration	Verification	Q
	Expected	Found	%D	Expected	Found 1	%D	Found 2	*D
Total Organic Carbon	10.0	10.3	2.6	10.0	10.1	0.6	10.0	0.1

Comments:

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AFCEE FORM W-4

Analytical Method:	<u>SW9060</u>		AAB #:	<u>R13328</u>	
Lab Name:	Life Science Laboratories,	Inc.	Contract #:		
Instrument ID:	TOC-5000A		Initial Calibration	ID:	<u>1249</u>
2nd Source ID: <u>IC</u>	<u>V</u>	CCV #1 ID: <u>C</u>	<u>CV5</u>	CCV #2 ID:	

Analyte	2nd Sc A Expected	aurce Calibra /enfication Found	ntion %D Ex	Ct pected	Found 1	alibration V %D	erification Q Found 2 — %D
Total Organic Carbon	10.0	10.3	2.6	10.0	10.4	3.5	

Comments:

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AFCEE WET CHEMISTRY ANALYSES DATA SHEET 4 CALIBRATION VERIFICATION

Analytical Method:	<u>SW9060</u>		AAB #:		<u>R13348</u>	
Lab Name:	Life Science Laboratories.	Inc.	Contra	ct #:		
Instrument ID:	<u>TOC-5000A</u>		Initial	Calibration ID:		<u>1250</u>
2nd Source ID: IC	<u>×</u>	CCV #1 ID:	CCV1	CCV #2 ID:		

Analyle	2nd Sour Ven Expected F	ce Calibration fication	on %D Ex	Co pected / f	ontinuing C Found 1	alibration W	erification Q Q Folund:2 %D
Total Organic Carbon	10.0	10.3	3.2	10.0	10.2	2.1	

Comments:

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AFCEE FORM W-4

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Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13328A</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Unit	s (mg/L or mg/kg): mg/L		
Calibraton Blank ID	: <u>ICB</u>	Initial Calibration ID:	<u>1249</u>
Method Blank ID:	MB-R13328A	Initial Calibration ID:	<u>1249</u>

	Blank 0.094	Method Blank	RL Q	
Total Organic Carbon	0.094	0.40	1.0	

Comments:

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AFCEE FORM W-5

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Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13328A</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	s (mg/L or mg/kg): <u>mg/L</u>		
Calibraton Blank ID	: <u>CCB1</u>	Initial Calibration ID:	<u>1249</u>
Method Blank ID:	<u>MB-R13328A</u>	Initial Calibration ID:	<u>1249</u>

Analyte	Calibration Blank	Method Blank	RL Q
Total Organic Carbon	0.049	0.40	1.0

Comments:

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AFCEE FORM W-5

Analytical Method:	<u>SW9060</u>	AAB #:	R13328A
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	s (mg/L or mg/kg): <u>mg/L</u>		
Calibraton Blank ID	: <u>CCB2</u>	Initial Calibration ID:	<u>1249</u>
Method Blank ID:	<u>MB-R13328A</u>	Initial Calibration ID:	<u>1249</u>

Analyte	Calibration Blank			Q
Total Organic Carbon	-0.011	0.40	1.0	

Comments:

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AFCEE FORM W-5

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Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13328A</u>
Lab Name:	Life Science Laboratories, In	c. Contract Number:	
Concentration Units	(mg/L or mg/kg): m	g/L	
Calibraton Blank ID:	CCB3	Initial Calibration ID:	<u>1249</u>
Method Blank ID:	MB-R13328A	Initial Calibration ID:	<u>1249</u>

Analyte	Calibration Blank	Method Blank	RL Q
Total Organic Carbon	-0.039	0.40	1.0

Comments:

QAPP 4.0

AFCEE FORM W-5

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Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13328A</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	; (mg/L or mg/kg): <u>ma/L</u>		
Calibraton Blank ID:	CCB4	Initial Calibration ID:	<u>1249</u>
Method Blank ID:	MB-R13328A	Initial Calibration ID:	<u>1249</u>

Analyte	Calibration Blank Meth	od Blank	RL	2.44
Total Organic Carbon	-0.0085	0.40	1.0	

Comments:

AFCEE FORM W-5

______, _____, _____, _____,

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13328A</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	s (mg/L or mg/kg): <u>mg/L</u>		
Calibraton Blank ID	: <u>CCB5</u>	Initial Calibration ID:	<u>1249</u>
Method Blank ID:	MB-R13328A	Initial Calibration ID:	<u>1249</u>

Analyte	Calibration Blank	Methori Blank	RL	a	
Total Organic Carbon	0.088	0.40	1.0		

Comments:

QAPP 4.0

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AFCEE FORM W-5

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Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13348</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units (mg/L or mg/kg): mg/L			
Calibraton Blank ID	: <u>ICB</u>	Initial Calibration ID:	<u>1250</u>
Method Blank ID:	<u>MB-R13348</u>	Initial Calibration ID:	<u>1250</u>

Analyte	Calibration	Method Blank	RL	a –
Total Organic Carbon	0.17	0.40	1.0	

Comments:

QAPP 4.0

AFCEE FORM W-5

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13348</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	s (mg/L or mg/kg): <u>mg/L</u>		
Calibraton Blank ID	: <u>CCB1</u>	Initial Calibration ID:	<u>1250</u>
Method Blank ID:	MB-R13348	Initial Calibration ID:	<u>1250</u>

Analyte	Calibration Blank Methy	vi Blank	RL Q
Total Organic Carbon	0.19	0.40	1.0

Comments:

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QAPP 4.0

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AFCEE FORM W-5

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AFCEE WET CHEM ANALYSES DATA SHEET 6 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW9060</u>	AAB #:	R13328A
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCS-R13328A	Initial Calibration ID:	<u>1249</u>
Concentration Units (mg/L or mg/kg): mg/L			

Analyte "Could age	Expected	Found	%R	Control Limits	a
Total Organic Carbon	10	10.3	103	90 - 110	

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Comments:

QAPP 4.0

AFCEE FORM W-6

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AFCEE WET CHEM ANALYSES DATA SHEET 6 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13348</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCS-R13348	Initial Calibration ID:	<u>1250</u>
Concentration Units ((mg/L or mg/kg): <u>mg/L</u>		

Analyte	Expected	Found 1	%R	Control Limits	<u>o</u>
Total Organic Carbon	10	10.3	103	90 - 110	

Comments:

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QAPP 4.0

AFCEE FORM W-6

AFCEE WET CHEM ANALYSES DATA SHEET 8 HOLDING TIMES

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13328A</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	

Field Sample ID	Leb Sample ID	Date Collected	Date Received	Date Analyzed	Max Holding Time (days)	Time Held (days)	
101M0216WA	0804057-001C	08-Apr-08	09-Apr-08	16-Apr-08	28	8.4	

Comments:

QAPP 4.0

AFCEE FORM W-8

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AFCEE WET CHEM ANALYSES DATA SHEET 8 HOLDING TIMES

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R13348</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	

Field Sample ID	Lab Sample ID	Date Date Date Date	Date Analyzed	Max. Holding Time (days)	Time Held (days)	Q
101M0216WA DL	0804057-001CDL	08-Apr-08 09-Apr-08	17-Apr-08	28	9.0	

Comments:

QAPP 4.0

AFCEE FORM W-8

AFCEE WET CHEM ANALYSES DATA SHEET 9 INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method:	<u>SW9060</u>
Lab Name:	Life Science Laboratories, Inc.

Contract #:

Instrument ID #: TOC-5000A

Field Sample ID/Std II Blank ID/QC Sample I		Date Analyses Started	Time Analyses Started	Date Analyses	Time Analyses
S0		and the second second		Completed	
	S0	16-Apr-08	10:02	16-Apr-08	10:13
S1	S1	16-Apr-08	10:13	16-Apr-08	10:26
S10	S10	16-Apr-08	10:26	16-Apr-08	10:40
S20	S20	16-Apr-08	10:40	16-Apr-08	11:22
		16-Apr-08	11:22	16-Apr-08	11:32
ICB	ICB	16-Apr-08	11:32	16-Apr-08	11:42
CCV1	CCV1	16-Apr-08	14:12	16-Apr-08	14:22
CCB1	CCB1	16-Apr-08	14:22	16-Apr-08	16:12
CCV2	CCV2	16-Apr-08	16:12	16-Apr-08	16:22
CCB2	CCB2	16-Apr-08	16:22	16-Арг-08	16:31
MB-R13328A	MB-R13328A	16-Apr-08	16:31	16-Apr-08	16:45
LCS-R13328A	LCS-R13328A	16-Apr-08	16:45	16-Apr-08	18:46
CCV3	CCV3	16-Apr-08	18:46	16-Apr-08	18:56
CCB3	CCB3	16-Apr-08	18:56	16-Apr-08	19:46
CCV4	CCV4	16-Apr-08	21:06	16-Apr-08	21:16
CCB4	CCB4	16-Apr-08	21:16	16-Apr-08	21:53
101M0216WA	0804057-001C	16-Apr-08	21:53	16-Apr-08	22:06
CCV5	CCV5	16-Apr-08	22:06	16-Apr-08	22:16
CCB5	CCB5	16-Apr-08	22:16	16-Apr-08	22:16
SO	SO	17-Apr-08	9:25	17-Apr-08	9:36
S1	S1	17-Apr-08	9:36	17-Apr-08	9:49
S10	S10	17-Apr-08	9:49	17-Apr-08	10:03
S20	\$20	17-Apr-08	10:03	17-Apr-08	10:23
ICV	ICV	17-Apr-08	10:23	17-Apr-08	10:34
ICB	ICB	17-Apr-08	10:34	17-Apr-08	10:44
MB-R13348	MB-R13348	17-Apr-08	10:44	17-Apr-08	10:57
LCS-R13348	LCS-R13348	17-Apr-08	10:57	17-Apr-08	11:38
101M0216WA DL	0804057-001CDL	17-Apr-08	11:38	17-Apr-08	13:13
CCV1	CCV1	17-Apr-08	13:13	17-Apr-08	13:23
CCB1	CCB1	17-Apr-08	13:23	17-Apr-08	13:23

Comments:

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Total Alkalinity Data

Analytical Method:	<u>E310.1</u>	AAB #:	<u>R13324</u>	
Lab Name:	Life Science Laboratories, Inc.	Contract Number:		
Concentration Units	(mg/L or mg/kg): mg/L			
Calibraton Blank ID:		Initial Calibration ID:	<u>0</u>	
Method Blank ID:	MB-R13324	Initial Calibration ID:	<u>0</u>	

Analyte #	Calibration Blank	Method Blank	RL	0
Alkalinity, as CaCO3		10	10	

Comments:

QAPP 4.0

AFCEE FORM W-5

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AFCEE WET CHEM ANALYSES DATA SHEET 6 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>E310.1</u>	AAB #:	<u>R13324</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCS-R13324	Initial Calibration ID:	<u>0</u>
Concentration Units	(mg/L or mg/kg): <u>mg/L</u>		

Analyte 1	Expected	Found	%R	Control Limits	Q
Alkalinity, as CaCO3	50	52	104	90 - 110	

Comments:

QAPP 4.0

AFCEE FORM W-6

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AFCEE WET CHEM ANALYSES DATA SHEET 8 HOLDING TIMES

Analytical Method:	<u>E310.1</u>	AAB #:	<u>R13324</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	

01M0216WA	0804057-001D 0804057-001DDUP	08-Apr-08 08-Apr-08	09-Apr-08 09-Apr-08	16-Apr-08 16-Apr-08	14	7.5	
01M0216WA	0904057 0010	00 0 00	00 4 00		4.4	7 6	
		all all and a	in the second second	C. Statutore and	(days)		
		Collected	to the strength of the strength of the	Analyzed	Time	(days)	124
Field Sample ID	Lab Sample ID	Date	Date	Date	Holding	Held	-0
					Max	Time	

Comments:

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AFCEE FORM W-8

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AFCEE WET CHEM ANALYSES DATA SHEET 9 INSTRUMENT ANALYSIS SEQUENCE LOG

 Analytical Method:
 E310,1

 Lab Name:
 Life Science Laboratories, Inc.
 Cont

Contract #:

Instrument ID #: Buret Type A

Field Sample 10/St Blank 10/QC Samp	d ID/ Lab le ID Sample ID			Date Analyses Completed	
101M0216WA	0804057-001DDUP	16-Apr-08	0:00	16-Apr-08	0:00
101M0216WA	0804057-001D	16-Apr-08	0:00	16-Apr-08	0:00
_CS-R13324	LCS-R13324	16-Apr-08	0:00	16-Apr-08	0:00
MB-R13324	MB-R13324	16-Apr-08	0:00	16-Apr-08	0:00

Comments:

QAPP 4.0

AFCEE FORM W-9

sstCode: ALK310.1 Units: mg/L Prep I ethod: EPA 310.1 Units: mg/L Prep I Analys Parent Sample PQL SPK Added Result %REC Low	e: ALK310.1 Units: mg/L Prep [EPA 310.1 Parent Parent SPK Added Result %REC Low	ANALYTICAL QC SUMMARY REPORT	Method: EPA 310.1 Work Order: 0804057	ect: Griffiss AFB - Building 101	RunNo: 13324 tte: 4/16/2008 SeqNo: 353183	LowLimit HighLimit RPD Ref Val %RPD RPDLimit	294 4.7 10
ethod: ALK310.1 ethod: EPA 310.1 PQL SPK Added 10) 437-0200 Pe: DUP TestCode: ALK310.1 Pe: DUP TestCode: ALK310.1 C R13324 Method: EPA 310.1 D: D: C Sample PQL SPK Added Result PQL SPK Added 308 10		Meth Work	Project:		%REC	
	Suite 200 (315) 437-0200 SampType: DUP Batch 1D: R13324 ColumnID: ColumnID: 308 308				i i i i i i i i i i i i i i i i i i i	SPK Added	10

Analyte detected in the associated Method Blank Not Detected at the Practical Quantitation Limit (PQL) Not Detected at the MDC or RL 22-Apr-08 a Q ⊃ Qualifiers:

Value exceeds the instrument calibration range RPD exceeds accepted precision limit ш Ж

Spike Recovery outside accepted recovery limits Analyte detected below the PQL - s

Page 2 of 2

Date:



Friday, October 10, 2008

Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441

TEL:

Project: GRIFFISS AFB - BUILDING 101

RE: Analytical Results

Order No.: 0809134

Dear Niels van Hoesel:

Life Science Laboratories, Inc. received 1 sample(s) on 9/19/2008 for the analyses presented in the following report.

Very truly yours, Life Science Laboratories, Inc.

Monika Sentucci

Monika Santucci Project Manager

Laboratory Report

Project Management Case Narrative

INTRODUCTION/ANALYTICAL RESULTS

This report summarizes the laboratory results for samples from FPM, for the Griffiss AFB-Building 101-Rome, NY project.

CONDITION UPON RECEIPT/CHAIN OF CUSTODY

The cooler(s) were received intact. When the cooler(s) were received by the laboratory, the sample custodian(s) opened and inspected the shipment(s) for damage and custody inconsistencies. Chains of custody documenting receipt are presented in the chain of custody section. Each sample was assigned a unique laboratory number and a custody file created. The samples were placed in a secured walk-in cooler and signed in and out by the chemists performing the tests. The sign out record, or lab chronicle, is presented in the chain of custody section.

Discrepancies noted upon receipt were recorded on the sample receipt checklist in the chain of custody section of the report .The temperature of the cooler was -1.2°C.

METHODOLOGY

The following methods were used to perform the analyses:

PARAMETER	METHOD	REFERENCE
Volatile Organics	SW8260B	1
Anions – Ion Chromatography	SW9056	1
TOC	SW9060	1
Total Alkalinity	SM2320B	2

- 1) <u>Test Methods for Evaluating Solid Wastes</u>, SW-846 Third Edition, Final Update III, December 1996 (including the QC requirements specified in AFCEE 4.0 + variances).
- 2) <u>Standard Methods for the Examination of Water and Wastewater</u>, 18th Edition, 1992

QUALITY CONTROL

QA/QC results are summarized in the Laboratory Report.

RAW DATA

The raw data is not requested for this report. Life Science Laboratories, Inc. will keep the raw data on file.

Total # of pages in this report: _____

GC/MS Volatile Organics Case Narrative

Client: Project/Order: Work Order #: Methodology: FPM Griffiss AFB: Building 101 0809134 8260B

Analyzed/Reviewed by (Initials/Date): Supervisor/Reviewed by (Initials/Date):

QA/QC Review (Initials/Date):

2017 10/1/08 2013 por mix 10/1/08

File Name:

G:\Narratives\MSVoa\0809134vnar.doc

GC/MS Volatile Organics

The GC/MS Volatile instruments are equipped with a Restek Rtx-VMS, 40 m x 0.18 mm ID capillary column (MS01 & MS03), Restek Rtx-502.2, 105 m x 0.53 mm ID capillary column (MS02), and Restek Rtx-VMS, 60 m x 0.25mm ID capillary column (MS04), and a Vocarb 3000 adsorbent trap.

Holding Times and Sample Preservation

All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements. Samples had a pH of <2.

Laboratory Control Sample

All spike recoveries met method and/or project specific QC criteria.

Surrogate Standards

The following sample(s) did not meet surrogate recovery criteria:

	Sample #	Surrogate	Corrective Action
Method Blank	MB-14876	4-Bromofluorobenzene	1

1 The recovery marginally exceeded the upper control limit indicating a high bias. All associated samples met surrogate recovery criteria. No corrective action was taken.

Internal Standards

All internal standard areas met method and/or project specific QC criteria.

Calibrations

All initial calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks

All preparation blanks met method and/or project specific QC criteria.

Wet Chemistry Case Narrative

Client ID: Project/Order: Work Order #: Methodology:

FPM Griffiss AFB - Building 101 0809134 Anions - Ion Chromatography - SW9056 Total Organic Carbon – SW9060 Alkalinity, as CaCO3 - SM 2320 B

Analyzed/Reviewed by (Date/Initials): 10-8-08 MT Supervisor/Reviewed by (Date/Initials): 10-8-08 MT

10/9/08 th

QA/QC Review (Date/Initials):

Wet Chemistry

Holding Times

All samples were prepared and analyzed within the method and/or QAPP specified holding times.

Laboratory Control Sample

All spike recoveries met method and/or project specified QC criteria.

Calibrations

All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks

All preparation blanks met method and/or project specific QC criteria.

Miscellaneous

Lower RL was used for nitrate due to the increased sensitivity of the instrument.

Life Science Laboratories, Inc.

0809134-001D 101M0217XA

CLIENT: Project: Lab Order:	FPM Group Griffiss AFB - Building 101 0809134		Work Order Sa	mple Summary
Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
- 0809134-001A	101M0217XA	WL-101MW-2	9/18/2008	9/19/2008
0809134-001B	101M0217XA	WL-101MW-2	9/18/2008	9/19/2008
0809134-001C	101M0217XA	WL-101MW-2	9/18/2008	9/19/2008

WL-101MW-2

Date: 06-Oct-08

9/18/2008

9/19/2008

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Life Science Laboratories, Inc.

Lab Order:

Client:

10-0ct-08

PORT		e Analysis Date	0000 L 000
DATES REPORT		TCLP Date Prep Date	
Q		Matrix Test Name TCLP	
		Matrix	-
	Griffiss AFB - Building 101	Collection Date	
0809134 FPM Group	Griffiss AFB	Client Sample ID	

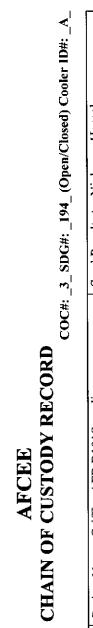
Project:	Griffiss AFB - Building 101	ling 101				
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date Prep Date	Analysis Date
0809134-001A	101M0217XA	9/18/2008 2:00:00 PM	Groundwater	Alkalinity, as CaCO3		9/27/2008
0809134-001B				Inorganic anions by IC		9/19/2008
0809134-001C				Volatile Organic Compounds by GC/MS		9/24/2008
0809134-001D				Total Organic Carbon		10/8/2008
		-		Total Organic Carbon		10/8/2008

Page 1 of 1

Chain of Custody

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External Chain of Custody



Shin to: Monika Santucci	cci				P	oiect N	Project Name: Griffiss AFB B101 Sampling	iriffis	ÅFB	B101	Sampi	ling			Send 1	Result	Send Results to: Niels van Hoesel	iels va	n Hoe	sel	
Life Science L	Life Science Laboratories, Inc.				S	mpler	Sampler Name: Niels van Hoesel	Niels	van F	Ioesel	1						Ē	FPM Group Ltd.	oup L	td.	
5000 Brittonfield Pkwy, S East Svracuse NY 13057	suite 20)0 Tel: (315\437-0200	5\437-0	0000		4			~		7	*					51 R	153 Brooks Road Rome, NY 13441	oks R VY 13	oad 441	
Carrier: LSL courier.					Sa	mpler	Sampler Signature	li e									đ	Phone: (315)	315):	336-7721 Ext. 205	. 205
							>		ł					octod							
				F	-	┝		╞	-		₹∣	1alyse	Allalyses requested								
Field Sample ID	LocID	Date 2008	Time	ХІЯТАМ	ZWCODE	ZVCODE	ZBD/ZED	VOC ₅ notel # of Containers	(IOH) slaiv Jm04	Metals, Hardness ^{note 2} 250 mL poly (HVO ₃)	Metals note 3) 250 mL poly (HNO3)	ΓΓ smper bCB ^s nore s	Phenols ^{note5} 8 oz amber (H ₂ SO4)	^{8 aton} ,snoinA 250 mL poly	125 mL poly (H ₂ SO ₄) NH3, COD, TKN ^{note7}	40 mL vials (HCL)	Cyanide ^{Vote 9} HOnNy (HOaN)	ן ך אסן <i>א</i> BOD [,] מסוק _{דע}	Alkalinity vinileally	8 oz glass (zero headspace)	suts
101M0217XA	WL-101MW-2	9/18	1400	ВМ	m	z	0/0	00	ę	† ,		'		-	,	6	, ,	1	1	-	
					1		ų				Ģ										
Sample Condition Upon Receipt at Laboratory:	on Receipt at Labor	ratory:	0000	k)	1500	12 at)cul	141	HCA		ð				ŭ	oler te	Cooler temperature:	iture:	1	d d	
Special Instructions/Comments: Parameter List: (According to AFCEE QAPP 4.0) Note 1: VOCs: 8260B AFCEE QAPP 4.0 List. Note 2: Metals: SW6010 AFCEE QAPP 4.0 List (Total), Hardness: 130.2.	AFCEE QAPP 4.0	ter List: st.	(Acco tal), Har	rding rdncss:	to AF ¹ 130.2.	ČEE Q	APP 4.	; (i)		5										131 1 6	
Note 3: Metals: 5 would Note 4: PCBs: SW8082.	U APUEE VAFF 4.0	ו דיוצו (הז:	Solved	_																	
Note 5: Phenols: SW9065. Note 6: Anians: SW9056 CHI ORIDE SIII FATE AND NITRATE ONI	65. A CHLORIDE SUI	LEATE A		TRAT	F. ON	N.															
Note 7: NH3: 350.1, COD: 410.4, TKN: 351.2	D: 410.4, TKN: 351	2			5																
Note 8: TOC: SW9060.	c																				
Note 9: Cyanide: SW9012.	7																				
Note 10: BOD: 405.1, Note 11: Alkalinity: 310.1	1																		4		
								~										11			
#1 Released by: (Sig)		Date:		;#	? Relea	#2 Released by: (Sig)	(Sig)	N		\bigwedge	Date:	: 9/19/08	80/0	#3 Rei	#3 Released by: (Sig)	: (Sig)	Z	7 4	7	Date: 9/	10%
Company Name:		Time:		C	Company	v Name	Name: FPM	guore	1 pd.	1	7 Time:	e: / 2	35	Comp	Company Name:	::	Ž	7	4	Time: 9 S	
#1 Received by: (Sig) Niels van Hoesel	iels van Hoesel	Date: 9/12/08	12/08	#	? Recei	#2 Received by: (Sig)	(Sig) -	び	144	X	Date:	2: <i>91</i> /	268	#3 Re	#3 Received by: (Sig)	/ (Sig)	Ø	2 M	J.	Date: 7/15	SC-
Company Name: FPM Group Ltd.	iroup Ltd.	Time: 1000	1000		Company	y Name:		0			Timc:	ار ن	r	Comp	Company Name:	ر د	SL		2	Time: 64	0500
				$\frac{1}{2}$			Ø					þ									

<u>MATIRIX</u> WG = Ground water WQ = Water Quality Control Matrix SO = Soil

SMCODE B = Bailer G = Grab (only for EB). NA = Not Applicable (only for AB/TB) PP = Peristaltic Pump BP = Bladder Pump SP = Submersible Pump SS = Split Spoon

SACODE N = Normal Sample AB = Ambient Blank TB = Trip Blank EB = Equipment Blank FD = Field Duplicate MS = Matrix Spike SD = Matrix Spike

Monika Santucci

From: van Hoesel, Niels [n.vanhoesel@fpm-group.com]

Sent: Friday, September 19, 2008 1:06 PM

To: Monika Santucci

Subject: RE: Bldg 101

Short list is fine.

Niels D.L. van Hoesel Field Operations Manager

FPM group

153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 ext. 205 Fax: (315) 336-7722

From: Monika Santucci [mailto:santuccim@lsl-inc.com] Sent: Friday, September 19, 2008 12:57 PM To: van Hoesel, Niels Subject: Bldg 101

Niels,

My project setup for Bldg 101 has 8260 analysis as a "short list" but your COC states to use the AFCEE list. Is this correct and if so will it be the AFCEE list from now on?

Thanks

Monika Santucci Project Manager Life Science Laboratories, Inc. Brittonfield Lab 5000 Brittonfield Parkway Suite 200 East Syracuse, NY 13057 315.437.0200 X 2481 voice 315.437.0377 fax santuccim@lsl-inc.com

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: FPM			Date and T	me Received:	9/19/2008 9:50:00 AM
Work Order Number 0809134			Received by	y: ads	
Checklist completed by:	Date	7/19/08	_ Reviewed	by: <u>MS</u> Initials	9 19 0g
Matrix:	Carrier name:	<u>Courier</u>			
Shipping container/cooler in good condition?		Yes 🔽	No 🗌	Not Present	
Custody seals intact on shipping container/cooler	?	Yes 🔽	No 📋	Not Present	
Custody seals intact on sample bottles?		Yes 🗌	No	Not Present	\checkmark
Chain of custody present?		Yes 🗹	No 🗌		
Chain of custody signed when relinquished and n	eceived?	Yes 🔽	No 🗌		
Chain of custody agrees with sample labels?		Yes	No 🗹		
Samples in proper container/bottle?		Yes 🔽	No 🗌		
Sample containers intact?	•	Yes 🔽	No 🗌		
Sufficient sample volume for indicated test?		Yes 🔽	No 🗌		
All samples received within holding time?		Yes 🗸	No 🛄		
Container/Temp Blank temperature in compliance	e?	Yes 🔽	No 🔤		
Water - VOA vials have zero headspace?		Yes 🔽	No 🗌	No VOA vials sub	mitted
Water - pH acceptable upon receipt?		Yes 🔽	No 🗌	Not Applicable	

рH	Preservative	pH Acceptable	Sample ID
>12	NaOH	Yes 🗌 N 🗍 NA 🔽	
<2	HNO3	Yes 🗌 N 🗌 NA 🗹	
<2	HSO4	Yes 🗌 N 🗌 NA 🔽	
<2	1:1 HCL	Yes 🗹 N 🗔 NA 🗌	тос
5- 9	Pest/PCBs (608/8081)	Yes 🗋 N 🗌 NA 🗹	

Volume of Preservative added in Lab.

Comments:

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COC shows 3 TOCs sent. Received one.

Corrective Action::

Logged in one TOC vial.

		Sar	nple Co	Sample Control Record		
Sample ID	Frac	Client Samp	D Removed By	Date and Time Removed	Analysis	Date and Time Returned
100104100	¢,		K	9/19/08 10:00	9056	9/19/05 15:52
100-100	<u>)</u> .cc		8	9/27/C8 14:00	SQ1-	9-22-52 1920
0809134-001	U			9-24-08 0845	8260	MR
0 00 1 1			HIC.	me yor her	7127	0501 30-CE-B
	<u>_</u>					
				-		
	, 					
	-					
			-			

FPM 0809134

Client/Project

G.\QAQC\forms\GeneralLaboratory\Sign out.xls

Analytical Results

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AFCEE ORGANIC ANALYSES DATA PACKAGE

Analytical Method:	<u>SW8260B</u>	AAB #:	<u>R14876</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

	ID Lab Sample ID
101M0217XA	0809134-001C

Comments:

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

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Signature:	Monika Landue	L Name:	Monika Santucci	
Date:	0 3/08	Title:	Project Manager	
.0	• 1	AFCEE FORM 0-1	Page 1 of 1	

QAPP 4.0

AFCEE ORGANIC ANALYSES DATA SHEET 2 RESULTS

Analytical Method: <u>SW8260B</u>	Preparatory Method:	AAB #:	<u>R14876</u>
Lab Name: Life Science Laboratories, Inc.	Contract #:		
Field Sample ID: 101M0217XA	Lab Sample ID: 0809134-001C	Matrix:	Groundwater
% Solids: <u>0</u>	Initial Calibration ID: <u>1351</u>	File ID:	<u>J7191.D</u>
Date Received: <u>19-Sep-08</u>	Date Extracted:	Date Analyzed:	24-Sep-08
Concentration Units (ug/L or mg/Kg dry weight)	: <u>µg/L</u>	Sample Size:	<u>10 mL</u>

Analyte	MDL	RL	Concentration	Dilution	Confirm Qualifier
Chloroform	0.100	0.500	0.100	1	U
cis-1,2-Dichloroethene	0.160	1.00	4.93	1	
Tetrachloroethene	0.100	1.00	0.100	1	U
trans-1,2-Dichloroethene	0.160	1.00	0.160	1	U
Trichloroethene	0.100	1.00	0.100	1	U
Vinyl chloride	0.500	1.00	0.500	1	U

Surrogate	Recovery	Control Limits Qualit	ĩer
1,2-Dichloroethane-d4	113	72 - 119	
4-Bromofluorobenzene	111	76 - 119	
Toluene-d8	97	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	217124	151542 - 606166	
Chlorobenzene-d5	436520	220117 - 880468	
Fluorobenzene	1123195	574706 - 2298826	

Comments:

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Page 1 of 1

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R14837</u>
Lab Name:	Life Science Laboratories. Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

- Field Sample ID	Lab Sample ID
101M0217XA	0809134-001B

Comments:

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

Signature:	Monka Enducei	Name:	Monika Santucci	
Date:	10 9 08	Title:	Project Manager	
QAPP 4.0	AFCEE FOR	M W-1		Page 1 of 1

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9056		AAB #:	R14837	,	
Lab Name:	Life Science Laboratories,	Inc.	Contract #:			
Field Sample ID:	101M0217XA	Lab Sample ID:	0809134	-001B	Matrix:	Groundwater
% Solids:	0	Initial Calibration	ID: 1357			
Date Received:	19-Sep-08	Date Prepared:			Date Analyzed:	19-Sep-08
Concentration Units	(mg/L or mg/kg dry weight)	: mg/L				

Analyte	MDL	RL	Concentration	Diction	Qualifier
Chloride	0.20	2.0	78	2	
Nitrate (as N)	0.030	0.20	0.030	2	U
Sulfate (as SO4)	0.40	2.0	0.40	2	U

Comments:

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SM 2320 B</u>	AAB #:	<u>R14921</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

- Field Sample ID	Lab Sample ID
101M0217XA	0809134-001A

Comments:

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

Signature:	Montes Antuci	Name:	Monika Santucci	
Date:	10/9/08	Title:	Project Manager	

QAPP 4.0

AFCEE FORM W-1

Page 1 of 1

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

	AAB #:	R14921	
Life Science Laboratories, Inc.			
Lab Sample ID:	0809134-0	001A Matrix:	Groundwater
Initial Calibration	ID: 0		
Date Prepared:		Date Analyzed:	27-Sep-08
; dry weight): mg/L			
4	A Lab Sample ID: Initial Calibration Date Prepared:	Laboratories, Inc. Contract #: A Lab Sample ID: 0809134-4 Initial Calibration ID: 0 Date Prepared:	Laboratories, Inc. Contract #: A Lab Sample ID: 0809134-001A Matrix: Initial Calibration ID: 0 Date Prepared: Date Analyzed:

Analyte	MDL	RL	Concentration	Dilution	Qualifier
Alkalinity, as CaCO3	10	10	440	1	

Comments:

QAPP 4.0

AFCEE FORM W-2

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Page 1 of 1

AFCEE WET CHEM ANALYSES DATA PACKAGE

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R15086</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Base/Command:		Prime Contractor:	FPM Group

Field Sample ID	Lab Sample ID
101M0217XA	0809134-001D
101M0217XA DL	0809134-001DDL

Comments:

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

Signature:	Monika tontucci 10/9/08	Name: Title:	Monika Santucci Project Manager	
Date:	10 17 108			

QAPP 4.0

AFCEE FORM W-1

Page 1 of 1

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9060		AAB #:	R15086		
Lab Name:	Life Science Laboratories, Inc.		Contract #:			
Field Sample ID:	101M0217XA	Lab Sample ID:	0809134-0	001D Ma	trix:	Groundwater
% Solids:	0	Initial Calibration I	D: 1376			
Date Received:	19-Sep-08	Date Prepared:		Date A	nalyzed:	08-Oct-08
Concentration Units	(mg/L or mg/kg dry weight): mg/L				

Analyte	MDL	RL.	Concentration	Dilution	Qualifier
Total Organic Carbon	0.40	1.0	50	1	J

Comments:

AFCEE WET CHEM ANALYSES DATA SHEET 2 RESULTS

Analytical Method:	SW9060		AAB #:	R15086	i	
Lab Name:	Life Science Laboratories,	Inc.	Contract #:			
Field Sample ID:	101M0217XA DL	Lab Sample ID:	0809134-	001DDL	Matrix:	Groundwater
% Solids:	0	Initial Calibration	D : 1376			
Date Received:	19-Sep-08	Date Prepared:			Date Analyzed:	08-Oct-08
Concentration Units	(mg/L or mg/kg dry weight)	: mg/L				

Analyte	MDL	RL	Concentration	Dilution	Qualifier
Total Organic Carbon	2.0	5.0	51	5	

Comments:

QAPP 4.0

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Quality Control Results

GC/MS Volatile Organics Data

AFCEE ORGANIC ANALYSES DATA SHEET 3 INITIAL MULTIPOINT CALIBRATION-GC/MS ANALYSIS

Analytical Method: 8260B

AAB #:

Contract #:

Lab Name: Life Science Laboratories, Inc.

Instrument ID: HP5973 GCMS#3

Initial Calibration ID: 1351

.

Date of Initial Calibration: 11-SEP-08

Concentration Units (ug/L or mg/kg): ug/L

SEE ATTACHED

Comments:

AFCEE FORM O-3

		R	esponse	e Facto	or Repo	ort #3	3MS10	ا بر	南门	351
	Titl Last	od : C:\HPCHEM e : VOC's w/Re Update : Fri Sep 12 onse via : Continuing	estek 1 2 08:12	Rtx-VM8 2:55 20	5, 0.18 208	W.M (R. 3 mm x	TE Inte 40 m,	egrato 1.0 di	2) E	
	Cali 0.5 10	bration Files ⇒J7031.D 1.0 ≠J7034.D 20	=J' =J'	7032.D 7035.D		2.0 30	=J7033 =J7036	3.D 5.D		
		Compound			2.0	10	20	30	Avg	*RSD
2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 13) 14) 15) 16) 17)	P CP CPM	Fluorobenzene Dichlorodifluoromet Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluorometh 1,1-Dichloroethene Carbon disulfide 1,1,2-Trichloro-1,2 Methyl iodide Acrolein Methylene chloride Acetone trans-1,2-Dichloroe Methyl acetate Methyl tert-Butyl e	0.365 0.382 0.475 0.419 0.333 0.553 0.240 0.799 0.245 0.245	0.345 0.381 0.458 0.450 0.323 0.550 0.238 0.734 0.260 0.121 0.023 0.325 0.047 0.251 0.207 0.660 0.486	$\begin{array}{c} 0.365\\ 0.390\\ 0.460\\ 0.428\\ 0.329\\ 0.543\\ 0.230\\ 0.760\\ 0.242\\ 0.157\\ 0.028\\ 0.284\\ 0.046\\ 0.246\\ 0.246\\ 0.195\\ 0.660\\ 0.491 \end{array}$	0.391 0.399 0.495 0.364 0.337 0.567 0.235 0.799 0.264 0.256 0.031 0.270 0.246 0.246 0.172 0.677 0.479	0.389 0.405 0.493 0.353 0.334 0.562 0.238 0.263 0.263 0.263 0.263 0.263 0.262 0.262 0.262 0.262 0.262 0.262 0.263 0.248 0.687 0.481	0.392 0.396 0.490 0.361 0.333 0.568 0.239 0.823 0.263 0.290 0.033 0.266 0.058 0.250 0.174 0.693 0.489	0.378 0.394 0.481 0.391 0.332 0.558 0.237 0.795 0.258 0.233 0.030 0.279 0.054 0.248 0.181 0.677 0.489	5.20 2.51 3.49 10.05 1.46 1.78 1.89 4.61 4.21 32.18 13.16 8.41 11.30 1.97 8.96 3.31 2.02
20) 21) 22) 23) 24)	CP M S M CP CPM	Chloroform Carbon tetrachlorid 1,1,1-Trichloroetha 2-Butanone 1,1-Dichloropropene Benzene 1,2-Dichloroethane- 1,2-Dichloroethane Methylcyclohexane Trichloroethene	0.374 0.106 0.438 0.473 0.195 0.351 0.339 1.081 0.270 0.295 0.406 0.253 0.124 0.276 0.260 0.54 0.305 0.652 0.149 0.224	0.361 0.421 0.439 0.218 0.357 0.064 0.327 1.125 0.285 0.320 0.385 0.251 0.257 0.256 0.340 0.554 0.253	0.379 0.110 0.429 0.455 0.225 0.355 0.071 0.346 1.153 0.287 0.331 0.262 0.262 0.272 0.269 0.364 0.672 0.274	0.376 0.115 0.450 0.243 0.243 0.371 0.081 0.364 1.156 0.276 0.330 0.414 0.258 0.263 0.263 0.288 0.61 0.406 0.700 0.173 0.323	0.366 0.114 0.454 0.257 0.257 0.372 0.083 0.365 1.165 0.270 0.328 0.424 0.260 0.138 0.273 0.273 0.296 0.58 0.412 0.704 0.181 0.338	0.373 0.118 0.464 0.438 0.266 0.385 0.084 0.372 1.173 0.276 0.336 0.421 0.267 0.139 0.271 0.306 0.054 0.422 0.718 0.187 0.348	0.372 0.113 0.447 0.446 0.240 0.369 0.078 0.356 1.151 0.277 0.326 0.413 0.260 0.133 0.270 0.285 0.059 0.383 0.689 0.167 0.303	$\begin{array}{c} 9.50\\ 4.17\\ 1.72\\ 4.77\\ 4.33\\ 3.10\\ 12.13\\ 4.22\\ 10.89\\ 5.15\\ 3.41\\ 2.35\\ 4.29\\ 2.652\\ 2.99\\ 9.56\\ 12.51\\ 4.36\\ 13.26\\ 13.26\\ 13.35\\ \end{array}$

(#) = Out of Range ### Number of calibration levels exceeded J911VOCW.M Fri Sep 12 08:13:07 2008

Lormat ### 9-[2-08 Page 1

format

Response Fa	ctor Report	#3MS10
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	Math	od : C:\HPCHEM	\ 1 \ MT2TT			мм (р [.]	rr Trita	arato	r)	
	Titl Last	e : VOC's w/Re Update : Fri Sep 1: onse via : Continuing	estek 1 2 08:11	Rtx-VM: 2:55 2:	5, 0.18 008	8 mm x	40 m,	1.0 d:	Ē	
	-		5 0411		-				:	
	0.5 10	bration Files =J7031.D 1.0 =J7034.D 20	U== [] []	7032.D 7035.D		2.0 30	=J7033 =J7036	3.D 5.D		
		Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD
44)		2-Hexanone	0.066	0.069	0.091	0.113	0.123	0.125	0.103	26.89
45) 46) 47) 48) 50) 51) 52) 53) 54) 55) 56) 57)	I S PM CP P I	Chlorobenzene-d5 Toluene-d8 Tetrachloroethene Dibromochloromethan 1,3-Dichloropropane 1,2-Dibromoethane 1-Chlorohexane Chlorobenzene Ethylbenzene 1,1,1,2-Tetrachloro (m+p)-Xylene o-Xylene Styrene Bromoform 1,4-Dichlorobenzene Isopropylbenzene	2.362 0.575 0.344 0.859 0.466 0.757 1.689 3.111 0.444 1.108 1.081 1.271	2.384 0.623 0.363 0.936 0.412 0.747 1.887 3.041 0.437 1.118 1.060 1.399 0.138	2.405 0.593 0.341 0.941 0.461 0.800 1.829 3.232 0.428 1.193 1.162 1.564 0.162	- ISTD- 2.471 0.594 0.432 0.953 0.466 0.881 1.816 3.255 0.482 1.255 1.214 1.740 0.196	2.351 0.576 0.448 0.907 0.455 0.837 1.731 3.177 0.475 1.223 1.178 1.731 0.214	2.427 0.585 0.488 0.932 0.464 0.876 1.770 3.236 0.515 1.255 1.211 1.791 0.233	2.411 0.594 0.418 0.926 0.458 0.830 1.793 3.198 0.473 1.208 1.165 1.621 0.200	2.11 2.99 16.59 3.59 4.84 7.58 3.74 3.02 8.33 6.09 6.02 13.43 22.26
61) 62) 63) 65) 66) 67) 68) 67) 68) 70) 71) 72) 73) 72) 72) 73) 75) 75) 75) 75) 80) 82) 82)	S	Bromofluorobenzene Bromobenzene n-Propylbenzene 1,1,2,2-Tetrachloro 2-Chlorotoluene 1,3,5-Trimethylbenz 1,2,3-Trichloroprop trans-1,4-Dichloro- 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenz	1.367 0.980 4.193 0.826 3.195 2.725 0.849 2.800 2.266 2.573 3.284 2.508 1.865 1.710 2.106 1.620 0.281 0.696 1.107	1.184 1.041 4.451 0.905 3.350 2.756 0.841 0.090 2.854 2.283 2.594 3.342 2.479 1.753 1.700 2.072 1.552 0.077 0.232 0.698 1.238	1.233 0.990 4.650 0.907 3.421 3.009 0.805 0.103 2.935 2.397 2.745 3.354 2.544 1.843 1.695 2.113 1.634 0.091 0.248 0.741 1.371	1.168 0.962 4.867 0.899 3.245 3.171 0.750 0.129 2.902 2.421 2.836 3.537 2.674 1.715 1.613 2.079 1.614 0.233 0.674 1.607	1.175 0.936 5.039 0.882 3.345 3.279 0.768 0.132 2.984 2.571 2.969 3.758 2.216 1.632 2.216 1.646 0.118 0.253 0.724 1.752	1.209 0.950 5.123 0.917 3.396 3.370 0.771 0.152 3.056 2.629 3.063 3.851 2.990 1.746 1.671 2.332 1.673 0.125 0.255 0.754 1.792	1.221 0.975 4.781 0.891 3.338 3.103 0.795 0.127 2.941 2.464 2.841 3.579 2.734 1.674 2.193 1.635 0.108 0.252 0.725 1.532	3.50 7.62

(#) = Out of Range ### Number of calibration levels exceeded format ### J911VOCW.M Fri Sep 12 08:13:09 2008 Page 2

		R	esponse Facto	or Report #3M	1S10		
	Last	od : C:\HPCHEM e : VOC's w/R Update : Fri Sep 1 onse via : Initial C	estek_Rtx-VMS 2 09:32:52 20	3, 0.18 mm x 4	5 Integrator) 40 m, 1.0 df		
	Cali	bration Files					
	40	=J7037.D	=	=			
			=	_	_		
		Compound	40			Avg	%RSD
1)	I	Fluorobenzene		ISTD			-
		Dichlorodifluoromet			:		
3)	Р	Chloromethane	0.404				
4)	CP	Vinyl chloride	0.497				
5)		Bromomethane	0.365				
6)		Chloroethane					
7)		Trichlorofluorometh			•		
8)		1,1-Dichloroethene Carbon disulfide			•		
9) 10)		1,1,2-Trichloro-1,2			:		
10) 11)		Methyl iodide	0.271				
12)		Methyl iodide Acrolein	0.034				
13)		Methylene chloride					
14)		Acetone	0.060		•		
15)		trans-1,2-Dichloroe					
16)		Methyl acetate					
17)		Methyl tert-Butyl e					
		1,1-Dichloroethane			7		
19)		Acrylonitrile					
		Vinyl acetate	0.291		<u>-</u>		
21)		cis-1,2-Dichloroeth	0.289				
22)		2,2-Dichloropropane			· ·		
23)		Bromochloromethane	0.119				
24)		Cyclohexane	0.476				
25)	CP	Chloroform	0.447				
26)		Carbon tetrachlorid			· · ·		
27)		1,1,1-Trichloroetha					
28)		2-Butanone	0.085				
29)		1,1-Dichloropropene					
30)	M	Benzene	1.206 0.279				
31)	S	1,2-Dichloroethane- 1,2-Dichloroethane	0.340				
32) 33)		Methylcyclohexane	0.439				
34)	M	Trichloroethene	0.271				
35)	1.1	Dibromomethane	0.142				
36)	CP	1,2-Dichloropropane					
37)	~-	Bromodichloromethan					
38)		2-Chloroethylvinyl	0.054		. · · ·		
39)		cis-1,3-Dichloropro					
40)	CPM	Toluene	0.726				
41)		4-Methyl-2-pentanon					
42)		trans-1,3-Dichlorop	0.363				
43)		1,1,2-Trichloroetha	0.177				
				tion levels e	wanded form	; 1at: ###	

(#) = Out of Range ### Number of calibration levels exceeded format ### J911VOCW.M Fri Sep 12 09:33:00 2008 Page

Page 1

		Re	esponse Fac	tor Report	#3MS10		
	Title Last	od : C:\HPCHEM\ e : VOC's w/Re Update : Fri Sep 12 onse via : Initial Ca	estek Rtx-N 2 09:32:52	MS, 0.18 mm	(RTE Integrator) i x 40 m, 1.0 df	f	
	Calik 40	pration Files =J7037.D ≒	=		= =	:	
		Compound	40			Avg	%RSD
44)		2-Hexanone	0.134				
45) 46) 47) 48) 50) 51) 52) 53) 55) 55) 55) 55) 57) 58)	S PM CP P	Ethylbenzene 1,1,1,2-Tetrachloro (m+p)-Xylene o-Xylene Styrene Bromoform	2.480 0.610 0.510 0.953 0.483 0.907 1.824 3.331 0.530 1.305 1.246 1.853 0.257	IST			
60)	S	1,4-Dichlorobenzene Isopropylbenzene Bromofluorobenzene n-Propylbenzene 1,1,2,2-Tetrachloro 2-Chlorotoluene 1,3,5-Trimethylbenz 1,2,3-Trichloroprop trans-1,4-Dichloro- 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenz sec-Butylbenzene p-Isopropyltoluene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dibromo-3-chlor Hexachlorobutadiene 1,2,3-Trichlorobenz Naphthalene 1,2,3-Trichlorobenz	4.180 1.211 0.963 5.147 0.902 3.416 3.410 0.778 0.156 3.057 2.680 3.111 3.927 3.052 1.775 1.699 2.435 1.706 0.132 0.262 0.790 1.862	IS	[D		

(#) = Out of Range ### Number of calibration levels exceeded format J911VOCW.M Fri Sep 12 09:33:01 2008

Page 2

AFCEE ORGANIC ANALYSES DATA SHEET 4 SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	SW8260B	AAB #:	<u>R14785</u>
Lab Name:	Life Science Laboratories, In	Contract Number:	
Instrument ID:	<u>MS03_10</u>	Initial Calibration ID:	<u>1351</u>
Second Source ID:	2SRC-14785	Concentration Units (mg/L or mg/kg):	µg/L

Analyte	Expected	Found	%D Q
1,2-Dichloroethane-d4	10	10.5	4.7
4-Bromofluorobenzene	10	9.78	-2.2
Chloroform	10	9.77	-2.3
cis-1,2-Dichloroethene	10	9.71	-2.9
Tetrachloroethene	10	10	0.4
Toluene-d8	10	10.4	4.2
trans-1,2-Dichloroethene	10	10.1	1.1
Trichloroethene	10	9.86	-1.4
Vinyl chloride	10	10.8	8.2

Comments:

QAPP 4.0

AFCEE FORM O-4

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Page 1 of 1

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AFCEE ORGANIC ANALYSES DATA SHEET 5A CALIBRATION VERIFICATION - GC/MS ANALYSIS

Analytical Method:	SW8260B	AAB #:	MS03 10 080924
Lab Name:	Life Science Laboratories, In	Contract Number:	
Instrument ID:	<u>MS03_10</u>	Initial Calibration ID:	<u>1351</u>
ICV ID:	CCV #1 ID: CC	<u>V-14876</u>	CCV #2 ID:

Analyte	ICV	CCV	#1	CCV #2	Landon Maria
Analyte	RE	%D	%D	RF	%D Q
Chloroform #			6.0		
Vinyl chloride #			19.3		
1,2-Dichloroethane-d4			9.9		
4-Bromofluorobenzene			6.5		
cis-1,2-Dichloroethene			4.7		
Tetrachloroethene			-16.3		
Toluene-d8			-3.8		
trans-1,2-Dichloroethene			5.4		
Trichloroethene			-5.1		

* SPCCs # CCCS

Comments:

QAPP 4.0

AFCEE FORM O-5A

Page 1 of 1

AFCEE ORGANIC ANALYSES DATA SHEET 7 BLANKS

Analytical Method:	SW8260B	AAB #:	<u>R14876</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Units:	<u>µg/L</u>	Method Blank ID:	<u>MB-14876</u>
Initial Calibration ID:	<u>1351</u>	File ID:	<u>J7178.D</u>

Analyte	Method Blank		l Q
Chloroform	0.100	0.500	U
cis-1,2-Dichloroethene	0.160	1.00	U ·
Tetrachloroethene	0.100	1.00	U
trans-1,2-Dichloroethene	0.160	1.00	U
Trichloroethene	0.100	1.00	U
Vinyl chloride	0.500	1.00	U

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	114	72 - 119	
4-Bromofluorobenzene	120	76 - 119	*
Toluene-d8	96	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	212288	151542 - 606166	
Chlorobenzene-d5	469071	220117 - 880468	
Fluorobenzene	1162943	574706 - 2298826	

Comments:

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AFCEE FORM 0-7

AFCEE ORGANIC ANALYSES DATA SHEET 8 LABORATORY CONTROL SAMPLE

Analytical Method:	SW8260B		AAB	;#:		<u>R148</u>	<u>376</u>	
Lab Name:	Life Science Labora	itories, Inc.	Con	tract #:				
LCS ID:	LCS-14876		Initia	al Calibra	ation ID:	<u>1351</u>		
Concentration Units	(mg/L or mg/kg):	µg/L	File	ID:		<u>J717</u>	<u>4.D</u>	
	Analyte		Expected F	ound	%R	Contro	l Limits	Q
Chloroform			10	9.99	100	69 -	128	
cis-1,2-Dich	loroethene		10	9.61	96	72 -	126	
Tetrachloroe	ethene	±. ===	10	7.59	76	66 -	128	
trans-1,2-Di	chloroethene		10	9.75	98	63 -	137	
Trichloroeth	ene		10	8.99	90	70 -	127	
Vinyl chlorid	e	·	10	11.0	110	50 -	134	
	Surrogate		Recovery	C	ontrol Li	nits	Quali	fier
1,2-Dic	hloroethane-d4		110		72 - 119	9		
4-Brom	ofluorobenzene		103		76 - 119)		
Toluend	e-d8		94	l	81 - 120)		
	Internal Std	Area	Counts	Area (Count Lir	nits	Q	Jalifier
1,4-Dic	hlorobenzene-d4		305946	1515	42 - 6061	66		
Chlorot	enzene-d5		540377	2201	17 - 8804	68		
Fluorob	enzene		1262223	5747(06 - 2298	826		

Comments:

AFCEE ORGANIC ANALYSES DATA SHEET 8 LABORATORY CONTROL SAMPLE

Analytical Me	thod:	SW8260B		1	AAB #	# :		<u>R148</u>	76	
Lab Name:		Life Science Labora	atories, Inc.	c	Contr	act #:				
LCS ID:		LCSD-14876		I	nitial	Calibra	ation ID:	<u>1351</u>		
Concentratio	n Units (mg/L or mg/kg):	<u>µg/L</u>	F	File 10) :		<u>J717</u>	5.D	
		Analyte		Expected	Fq	und	%R (Control	Limits	Q
Chlo	oroform			1	0	10.3	103	69 -	128	
cis-	1,2-Dichle	proethene		1	۵	9.70	97	72 -	126	
Tetr	achloroe	thene		1	0	7.63	76	66 -	128	
tran	s-1,2-Dic	hloroethene		1	٥	9.95	100	63 -	137	
Tric	hloroethe	ine		1	0	9.17	92	70 -	127	
Viny	l chloride)		1	0	11.3	113	50 -	134	
		Surrogate		Recove) Y	C	ontrol Lim	its	Quali	ifier"
	1,2-Dich	loroethane-d4		108			72 - 119			
	4-Bromo	ofluorobenzene		101			76 - 119			
_	Toluene	-d8		95			81 - 120			
35		Internal Std	Area	Counts		Area (Count Lim	its	Q	ualifier
	1,4-Dich	lorobenzene-d4	- Andrew Contractor (1997)	308365		1515	42 - 60616	6		
•	Chlorob	enzene-d5		527569		2201	17 - 88046	8		

1256963

574706 - 2298826

Comments:

Fluorobenzene

QAPP 4.0

Page 2 of 2

AFCEE ORGANIC ANALYSES DATA SHEET 9 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLE RECOVERY

Analytical Method:	SW8260B		AAB #:	<u>R14876</u>
Lab Name:	Life Science La	boratories, Inc.	Contract #:	
Concentration Units (mg/L	. or mg/kg):	µg/L	% Solids:	<u>0</u>
Parent Field Sample ID:	LCSD-14876	MS	ID; <u>LCS-14876</u>	MSD ID: LCSD-14876

Calibration ID: 1351

Paren Analyte Samp Resu	le Spike It Added	Spiked Sample Result	%R	Duplicate Spiked Sample Result	%R	%RPD	Control Limits %R	Control Limits %RPD	Q
Chloroform	10.0	9.99	100	10.3	103	3	69 - 128	20	
cis-1,2-Dichloroethene	10.0	9.61	96	9.70	97	1	72 - 126	20	
Tetrachloroethene	10.0	7.59	76	7.63	76	1	66 - 128	20	
trans-1,2-Dichloroethene	10.0	9.75	98	9.95	100	2	63 - 137	20	
Trichloroethene	10.0	8.99	90	9.17	92	2	70 - 127	20	
Vinyl chloride	10.0	11.0	110	11.3	113	3	50 - 134	20	

Comments:

QAPP 4.0

AFCEE FORM 0-9

Page 1 of 1

AFCEE ORGANIC ANALYSES DATA SHEET 10 HOLDING TIMES

Analytical Method	: <u>SW8260B</u>			AAB #:	<u>R148</u>	<u>76</u>			
Lab Name:	Life Science Lab	oratories, Inc.		Contract #	ŧ:				
Field Sample ID	Lab Sample ID			Ma Date Hold Extracted Tim	ling Held	Date	Holding	1 - 21 - 20 - 20 - 20 - 20 - 20 - 20 - 2	
101M0217XA (0809134-001C	18-Sep-08	19-Sep-08	24-Sep-08		24-Sep-08	14	6.1	

Comments:

QAPP 4.0

AFCEE FORM O-10

Page 1 of 1

AFCEE ORGANIC ANALYSES DATA SHEET 11 INSTRUMENT ANALYSIS SEQUENCE LOG

AAB#:

Contract #:

Calibration ID: 1351

Analytical Method:	<u>SW8260B</u>
Lab Name:	Life Science Laboratories, Inc.
Instrument ID #:	<u>MS03_10</u>

Field Sample ID/Std ID/ Blank ID/QC Sample ID	Lab Sample ID	Date Analysis Started	Time Analysis Started	Date Analysis Completed	Time Analysis Completed
TB091108A3	TB091108A3	11-Sep-08	15:05	11-Sep-08	15:39
ICAL 0.5 PPB	ICAL 0.5 PPB	11-Sep-08	15:39	11-Sep-08	16:13
ICAL 1.0 PPB	ICAL 1.0 PPB	11-Sep-08	16:13	11-Sep-08	16:47
ICAL 2.0 PPB	ICAL 2.0 PPB	11-Sep-08	16:47	11-Sep-08	17:20
ICAL 10 PPB	ICAL 10 PPB	11-Sep-08	17:20	11-Sep-08	17:54
ICAL 20 PPB	ICAL 20 PPB	11-Sep-08	17:54	11-Sep-08	18:28
ICAL 30 PPB	ICAL 30 PPB	11-Sep-08	18:28	11-Sep-08	19:02
ICAL 40 PPB	ICAL 40 PPB	11-Sep-08	19:02	11-Sep-08	20:09
2SRC-14785	2SRC-14785	11-Sep-08	20:09	11-Sep-08	20:09
TB092408A3	TB092408A3	24-Sep-08	7:23	24-Sep-08	7:56
LCS-14876	LCS-14876	24-Sep-08	7:23	24-Sep-08	7:56
LCSD-14876	LCSD-14876	24-Sep-08	7:56	24-Sep-08	8:30
CCV-14876	CCV-14876	24-Sep-08	8:30	24-Sep-08	9:37
MB-14876	MB-14876	24-Sep-08	9:37	24-Sep-08	10:11
101M0217XA	0809134-001C	24-Sep-08	16:56	24-Sep-08	16:56

Comments:

QAPP 4.0

AFCEE FORM O-11

Page 1 of 1

AFCEE ORGANIC ANALYSES DATA SHEET 12 INSTRUMENT PERFORMANCE CHECK (BFB or DFTPP)

Analytical Method:	<u>SW8260B</u>	AAB #:	MS03 10 080911A
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
instrument ID:	<u>MS03_10</u>	Injection Date/Time:	9/11/2008 3:05:00 PM
Initial Calibration ID:	<u>1351</u>	File ID:	C:\HPCHEM\1\DATA\J7030.D
Compound:	<u>SW8260B</u>	Sample ID:	TB091108A3

		concourded and a second second second
50	15 - 40% of m/z 95	21.5
75	30 - 60% of m/z 95	56.2
95	Base peak, 100% relative abundance	100
96	5 - 9% of m/z 95	6.2
173	Less than 2% of m/z 174	1.2
174	Greater than 50% of m/z 95	68.8
175	5 - 9% of m/z 174	6.5
176	Greater than 95% but less than 101% of m/z 174	96.3
177	5 - 9% of m/z 176	7.2

AFCEE ORGANIC ANALYSES DATA SHEET 12 INSTRUMENT PERFORMANCE CHECK (BFB or DFTPP)

<u>B</u> AAB #	<u>MS03_10_080924A</u>
nce Laboratories, Inc. Contra	act #:
0 Injection Date	e/Time: <u>9/24/2008 7:23:00 AM</u>
File ID	C:\HPCHEM\1\DATA\J7174.D
<u>B</u> Sampl	le ID: <u>TB092408A3</u>
	nce Laboratories, Inc. Contra D Injection Date File ID

Mass	Ion Abundance Criteria	% Relative Abundance	Q
50	15 - 40% of m/z 95	24.4	111199X (ED)
75	30 - 60% of m/z 95	55.2	
95	Base peak, 100% relative abundance	100	
96	5 - 9% of m/z 95	7.2	
173	Less than 2% of m/z 174	1.8	
174	Greater than 50% of m/z 95	58.3	
175	5 - 9% of m/z 174	8.0	
176	Greater than 95% but less than 101% of m/z 174	96.3	
177	5 - 9% of m/z 176	7.4	

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Page 2 of 2

Wet Chemistry Data

	AAB #:	Contract #:	Date of Initial Calibration:	Concentration Units (mg/L or mg/kg): <u>mg/L</u>			0 0.99997	0 0.99999	r = correlation coefficient
AFCEE WET CHEM ANALYSES DATA SHEET 3-10 INITIAL MULTIPOINT CALIBRATION							2 0	40	
AFCEE YSES DATA POINT CALI					题	2010	2	20	
AI EM ANALY L MULTIPI						2 C 0	2 -	10	
WET CHE INITIA							0.5	5	
						4 015	0.1	-	
						510 3 05	0.05	0.5	
		<u>ories, Inc.</u>				5102	0.02	0.2	
		<u>Life Science Laboratories, Inc.</u>				- - - - - -	0	0	
	SW9056	Life Scier	<u>ସ</u>	1357		Server Aller			
	Analytical Method:	Lab Name:	Instrument ID:	Initial Calibration ID:		Chlorida	Nitrate (as N)	Sulfate (as SO4)	

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Comments:

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AFCEE WET CHEMISTRY ANALYSES DATA SHEET 4 CALIBRATION VERIFICATION

Analytical Method:	<u>SW9056</u>			AAB #:		<u>R14837</u>
Lab Name:	Life Science Laboratories, I	nc.		Contract #:		
Instrument ID:	<u>IC</u>			Initial Calibration	D:	<u>1357</u>
2nd Source ID:	<u>2S CV</u>	CCV #1 ID: IC	<u>cv</u>		CCV #2 ID:	<u>CCV1</u>

Analyle	2nd So V	urce Calibr ertfication	ation		Continuing	alibration	Verification	Q
	Expected	Found	%D	Expected	Found 1	=%D	Found 2	%D
Chloride	5.00	5.07	1.3	10.0	10.0	0.3	10.0	0.4
Nitrate (as N)	0.500	0.504	0.8	1.00	1.01	1.5	1.01	0.5
Sulfate (as SO4)	5.00	4.94	-1.3	10.0	10.2	1.7	9.92	-0.8

Comments:

QAPP 4.0

AFCEE FORM W-4

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AFCEE WET CHEMISTRY ANALYSES DATA SHEET 4 CALIBRATION VERIFICATION

Analytical Method:	<u>SW9056</u>			AAB #:		<u>R14837</u>
Lab Name:	Life Science Laboratories, Inc.		Contract #:			
Instrument ID:	<u>IC</u>			Initial Calibration	ID:	<u>1357</u>
2nd Source ID:	<u>28 CV</u>	CCV #1 ID:	<u>ccv</u> z	2	CCV #2 ID:	CCV3

Analyte		irce Calibration	ation	C C C C C C C C C C C C C C C C C C C	ontinuing Cal	ibration Ve	rification	Q
Chloride	Expected 5.00	Found 5.07	%D 1.3	Expected 10.0	Found 1.	%D F 0.5	ound 2	26 D
Nitrate (as N)	0.500	0.504	0.8	1.00	1.01	0.6	1.01	0.9
Sulfate (as SO4)	5.00	4.94	-1.3	10.0	9.94	-0.6	9.93	-0.7

Comments:

QAPP 4.0

AFCEE FORM W-4

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R14837</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	s (mg/L or mg/kg): <u>mg/L</u>		
Calibraton Blank ID	: <u>ICB</u>	Initial Calibration ID:	<u>1357</u>
Method Blank ID:	<u>MB-R14837</u>	Initial Calibration ID:	<u>1357</u>

	Calibration			
Chloride	Blank M	ethod Blank	RL 1.0	Q
Nitrate (as N)	0.025	0.035	0.10	
Sulfate (as SO4)	0.20	0.20	1.0	

Comments:

QAPP 4.0

AFCEE FORM W-5

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R14837</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	(mg/L or mg/kg): <u>ma/L</u>		
Calibraton Blank ID:	CCB1	Initial Calibration ID:	<u>1357</u>
Method Blank ID:	<u>MB-R14837</u>	Initial Calibration ID:	<u>1357</u>

Analyte	Calibration	"Method Blank	RL	Q
Chloride	0.031	0.099	1.0	
Nitrate (as N)	0.015	0.015	0.10	
Sulfate (as SO4)	0.20	0.20	1.0	

Comments:

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AFCEE FORM W-5

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Analytical Method:	<u>SW9056</u>	AAB #:	<u>R14837</u>
Lab Name:	Life Science Laboratories, Inc	. Contract Number:	
Concentration Units	s (mg/L or mg/kg): mg	/∟	
Calibraton Blank ID	: <u>CCB2</u>	Initial Calibration ID:	<u>1357</u>
Method Blank ID:	MB-R14837	Initial Calibration ID:	<u>1357</u>

Analyte	Blank Met	hod Blank	RL Q
Chloride	0.040	0.099	1.0
Nitrate (as N)	0.015	0.015	0.10
Sulfate (as SO4)	0.20	0.20	1.0

Comments:

_____ AFCEE FORM W-5

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R14837</u>	
Lab Name:	Life Science Laboratories, Inc.	Contract Number:		
Concentration Units	s (mg/L or mg/kg); <u>mg/L</u>			
Calibraton Blank ID	: <u>CCB3</u>	Initial Calibration ID:		<u>1357</u>
Method Blank ID:	MB-R14837	Initial Calibration ID:		<u>1357</u>

Analyte	Callbration Blank	Method Blank	RL	0
Chloride	0.028	0.099		
Nitrate (as N)	0.015	0.015	0.10	
Sulfate (as SO4)	0.20	0.20	1.0	

Comments:

QAPP 4.0

AFCEE FORM W-5

AFCEE WET CHEM ANALYSES DATA SHEET 6 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R14837</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCS-R14837	Initial Calibration ID:	<u>1357</u>
Concentration Units	(mg/L or mg/kg): <u>mg/L</u>		

Analyte	Expected	Found	%R	Control Limits
Chloride	5	5.06	101	85 - 115
Nitrate (as N)	0.5	0.505	101	85 - 115
Sulfate (as SO4)	5	4.91	98	85 - 115

Comments:

QAPP 4.0

AFCEE FORM W-6

AFCEE WET CHEM ANALYSES DATA SHEET 6 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R14837</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCSD-R14837	Initial Calibration ID:	<u>1357</u>
Concentration Units	(mg/L or mg/kg): <u>mg/L</u>		

Analyte	Expected	Found	%R	Control Limits	Q
Chloride	5	5.08	102	85 - 115	
Nitrate (as N)	0.5	0.507	101	85 - 115	
Sulfate (as SO4)	5	4.95	99	85 - 115	

Comments:

QAPP 4.0

AFCEE FORM W-6

AFCEE WET CHEM ANALYSES DATA SHEET 8 HOLDING TIMES

Analytical Method:	<u>SW9056</u>	AAB #:	<u>R14837</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	

Field Sample ID	Lab Sample (D	Date Collected	Date Received	Date Analyzed	Max Floiding Time (days)	Time Held (days)	0
101M0217XA	0809134-001B	18-Sep-08	19-Sep-08	19-Sep-08	2	1.1	

Comments:

QAPP 4.0

AFCEE FORM W-8

AFCEE WET CHEM ANALYSES DATA SHEET 9 INSTRUMENT ANALYSIS SEQUENCE LOG

Contract #:

Analytical Method:	<u>SW9056</u>
Lab Name:	Life Science Laboratories, Inc.
Instrument ID #:	<u>IC</u>

Field Sample ID/Std ID/	Lab	Date Analyses	Time Analyses	Date Analyses	Time Analyses
Blank ID/OC Sample ID	Sample 10	Started	Started	Completed	Completed
ICAL 0	ICAL 0	17-Sep-08	10:48	17-Sep-08	11:08
ICAL 7	ICAL 7	17-Sep-08	11:08	17-Sep-08	11:28
ICAL 6	ICAL 6	17-Sep-08	11:28	17-Sep-08	11:49
ICAL 5	ICAL 5	17-Sep-08	11:49	17-Sep-08	12:09
CAL 4	ICAL 4	17-Sep-08	12:09	17-Sep-08	12:30
CAL 3	ICAL 3	17-Sep-08	12:30	17-Sep-08	12:50
CAL 2	ICAL 2	17-Sep-08	12:50	17-Sep-08	13:10
CAL 1	ICAL 1	17-Sep-08	13:10	17-Sep-08	13:10
CV	ICV	19-Sep-08	7:55	19-Sep-08	8:16
2S CV	2S CV	19-Sep-08	8:16	19-Sep-08	8:36
СВ	ICB	19-Sep-08	8:36	19-Sep-08	8:56
MB-R14837	MB-R14837	19-Sep-08	8:56	19-Sep-08	9:17
_CS-R14837	LCS-R14837	19-Sep-08	9:17	19-Sep-08	11:00
CSD-R14837	LCSD-R14837	19-Sep-08	11:00	19-Sep-08	13:43
CCV1	CCV1	19-Sep-08	13:43	19-Sep-08	14:03
CCB1	CCB1	19-Sep-08	14:03	19-Sep-08	16:06
01M0217XA	0809134-001B	19-Sep-08	16:06	19-Sep-08	17:28
CCV2	CCV2	19-Sep-08	17:28	19-Sep-08	17:48
CCB2	ССВ2	19-Sep-08	17:48	19-Sep-08	19:50
CCV3	CCV3	19-Sep-08	19:50	19-Sep-08	20:11
CCB3	CCB3	19-Sep-08	20:11	19-Sep-08	20:11

Comments:

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Analytical Method:	<u>SM 2320 B</u>		AAB #:	<u>R14921</u>	
Lab Name:	Life Science Laboratories.	Inc.	Contract Number:		
Concentration Units	(mg/L or mg/kg):	<u>mg/L</u>			
Calibraton Blank ID:			Initial Calibration ID:		<u>0</u>
Method Blank ID:	<u>MB-R14921</u>		Initial Calibration ID:		<u>0</u>

Analyto	Calibration Blank — Method Blank	RL
Alkalinity, as CaCO3	10	10

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Comments:

QAPP 4.0

AFCEE WET CHEM ANALYSES DATA SHEET 6 LABORATORY CONTROL SAMPLE

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Analytical Method:	<u>SM 2320 B</u>	AAB #:	<u>R14921</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCS-R14921	Initial Calibration ID:	Q
Concentration Units	(mg/L or mg/kg): <u>mg/L</u>		

Analyte	Expected	Found	%R	Control Limits	2
Alkalinity, as CaCO3	50	52	104	90 - 110	

Comments:

QAPP 4.0

AFCEE WET CHEM ANALYSES DATA SHEET 8 HOLDING TIMES

Analytical Method:	<u>SM 2320 B</u>	AAB #:	<u>R14921</u>
Lab Name:	Life Science Laboratories. Inc.	Contract #:	

Field Sample ID	Lab Sample ID	Date Collected	Date Recoved	Date Analyzed	Max. Holding Time (days)	Latte Heid (days)	Q.
101M0217XA	0809134-001A	18-Sep-08	19-Sep-08	27-Sep-08	14	8.4	

Comments:

QAPP 4.0

AFCEE WET CHEM ANALYSES DATA SHEET 9 INSTRUMENT ANALYSIS SEQUENCE LOG

Ana	lytical	Method:	<u>SN</u>	<u>/I 2320 B</u>	

 Lab Name:
 Life Science Laboratories, Inc.
 Contract #:

Instrument ID #: pH meter

 Field Sample ID/St Blank ID/QC Samp 	d'1D/ Lab le 1D Sample 1D	Date Analyses Started	Time Analyses Started	Cate Analyses Completed	Time Analyses Completed
LCS-R14921	LCS-R14921	27-Sep-08	0:00	27-Sep-08	0:00
MB-R14921	MB-R14921	27-Sep-08	0:00	27-Sep-08	0:00
101M0217XA	0809134-001A	27-Sep-08	0:00	27-Sep-08	0:00

Comments:

AFCEE	WET CHEM ANALYSES DATA SHEET 3-10	INITIAL MULTIPOINT CALIBRATION
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Analytical Method:	<u>090600</u>	AAB #:	<u>R15086</u>
Lab Name:	Life Science Laboratories. Inc.	Contract #:	
Instrument ID:	TOC-5000A	Date of Initial Calibration:	<u>08-Oct-08</u>
Initial Calibration ID:	<u>1376</u>	Concentration Units (mg/L or mg/kg):	<u>mg/L</u>

a a	171	
1	0.9995	į
stro 10	•	
STD 9	0	
STD 8	0	
STD/7	0	
STD 6	0	
STD 5	0	
STDA	20	
STD 3.	6	
STD 2		
STD 1	0	
0		
Man	ic Carbon	
	ital Organi	
	۲]

r = correlation coefficient

Comments:

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AFCEE WET CHEMISTRY ANALYSES DATA SHEET 4 CALIBRATION VERIFICATION

Analytical Method:	<u>SW9060</u>			AAB #:		<u>R15086</u>
Lab Name:	Life Science Laboratories,	Inc.		Contract #:		
Instrument ID:	<u>TOC-5000A</u>			Initial Calibration	ID:	<u>1376</u>
2nd Source ID:	ICV	CCV #1 ID:	<u>CCV1</u>	L	CCV #2 ID:	<u>CCV2</u>

Analyte	2nd S Expected	ource Calib Verification Found	ration %D	Co Expected	ontinuing Ca Found 1	Nibration Ve %D	rification ound 2	Q %B
Total Organic Carbon	10.0	9.93	-0.7	10.0	10.1	0.9	9.89	-1.1

Comments:

QAPP 4.0

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R15086</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	s (mg/L or mg/kg): <u>mg/L</u>		
Calibraton Blank ID:	: <u>ICB</u>	Initial Calibration ID:	<u>1376</u>
Method Blank ID:	MB-R15086	Initial Calibration ID:	<u>1376</u>

Total Organic Carbon	0.23	0.40	1.0	
Analyte	Calibration	Method Blank	81 - 0	

Comments:

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R15086</u>
Lab Name:	Life Science Laboratories, Inc.	Contract Number:	
Concentration Units	(mg/L or mg/kg): mg/L		
Calibraton Blank ID:	CCB1	Initial Calibration ID:	<u>1376</u>
Method Blank ID:	MB-R15086	Initial Calibration ID:	<u>1376</u>

Total Organic Carbon	0.21	0.40	1.0
Analyte	Calibration 2 Blank	Method Blank	Q .

Comments:

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R15086</u>	
Lab Name:	Life Science Laboratories, Inc.	Contract Number:		
Concentration Units (mg/L or mg/kg): <u>mg/L</u>				
Calibraton Blank ID	: <u>CCB2</u>	Initial Calibration ID:	<u>1376</u>	
Method Blank ID:	MB-R15086	Initial Calibration ID:	<u>1376</u>	

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Total Organic Carbon	0.23	0.40	1.0	

Comments:

QAPP 4.0

AFCEE WET CHEM ANALYSES DATA SHEET 6 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R15086</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCS-R15086	Initial Calibration ID:	<u>1376</u>
Concentration Units	(mg/Lormg/kg): <u>ma/L</u>		

Analyte	Expected	Found	%R	Control Limits Q
Total Organic Carbon	10	9.99	100	90 - 110

Comments:

QAPP 4.0

AFCEE WET CHEM ANALYSES DATA SHEET 6 LABORATORY CONTROL SAMPLE

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R15086</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	
LCS ID:	LCSD-R15086	Initial Calibration ID:	<u>1376</u>
Concentration Units			

Analyte	Expected	Found	%R	Control Limits Q
Total Organic Carbon	10	9.91	99	90 - 110

Comments:

AFCEE WET CHEM ANALYSES DATA SHEET 8 HOLDING TIMES

Analytical Method:	<u>SW9060</u>	AAB #:	<u>R15086</u>
Lab Name:	Life Science Laboratories, Inc.	Contract #:	

Field Sample ID	Lab Sample 1D	Date Collected	Date Received	Date Analyzed	Mex Holding Time (days)	Tine Held (days)	Q
101M0217XA	0809134-001D	18-Sep-08	19-Sep-08	08-Oct-08	28	19.8	
101M0217XA DL	0809134-001DDL	18-Sep-08	19-Sep-08	08-Oct-08	28	20.0	-

Comments:

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QAPP 4.0

AFCEE WET CHEM ANALYSES DATA SHEET 9 INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method:	<u>SW9060</u>	
Lab Name:	Life Science Laboratories, Inc.	Contract #:
Instrument ID #:	TOC-5000A	

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Field Sample ID/Std ID/ Blank ID/QC Sample ID	Lab Sample ID	Date Analyses Started	Time Analyses Started	Date Analyses	Time Analyses Completed
50	S0	08-Oct-08	7:29	08-Oct-08	7:45
S1	S1	08-Oct-08	7:45	08-Oct-08	8:01
S10	S10	08-Oct-08	8:01	08-Oct-08	8:17
S20	S20	08-Oct-08	8:17	08-Oct-08	8:37
ICV	ICV	08-Oct-08	8:37	08-Oct-08	8:52
ICB	ICB	08-Oct-08	8:52	08-Oct-08	9:05
MB-R15086	MB-R15086	08-Oct-08	9:05	08-Oct-08	9:21
LCS-R15086	LCS-R15086	08-Oct-08	9:21	08-Oct-08	9:40
LCSD-R15086	LCSD-R15086	08-Oct-08	9:40	08-Oct-08	9:57
101M0217XA	0809134-001D	08-Oct-08	9:57	08-Oct-08	11:59
CCV1	CCV1	08-Oct-08	11:59	08-Oct-08	12:12
CCB1	CCB1	08-Oct-08	12:12	08-Oct-08	14:06
101M0217XA DL	0809134-001DDL	08-Oct-08	14:06	08-Oct-08	14:23
CCV2	CCV2	08-Oct-08	14:23	08-Oct-08	14:35
CCB2	CCB2	08-Oct-08	14:35	08-Oct-08	14:35

Comments: