

**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**

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MEMORANDUM

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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
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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

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**2008
ANNUAL
MONITORING
REPORT**

Prepared for:

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

through

**The Air Force Center for Engineering and the Environment
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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	OHM Remediation Services Corporation
ORP	oxidation reduction potential

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

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 semi-annual 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.

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).

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 concrete pit floor and underlying soils. Following the removal and endpoint sampling, 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 [$\mu\text{g}/\text{kg}$]), toluene (3 $\mu\text{g}/\text{kg}$), 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 ($\mu\text{g}/\text{kg}$) (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 $\mu\text{g}/\text{kg}$ (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 $\mu\text{g}/\text{kg}$) and is below the laboratory reporting limit (330 $\mu\text{g}/\text{kg}$) (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 ($\mu\text{g}/\text{L}$), 270 $\mu\text{g}/\text{L}$, 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 $\mu\text{g}/\text{kg}$) contamination. The results of the RI (from samples collected in June 1994) reported the PCE concentration in monitoring well 101MW-1 at 7.7 $\mu\text{g}/\text{L}$, a marked decline from 290 $\mu\text{g}/\text{L}$ (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 µg/L of chlorinated solvents, comprised mostly of cis-1,2- dichloroethylene (DCE) (120 µg/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 µg/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 µg/L and 1 µg/L, respectively. The PCE results were lower than the 7.7 µg/L detected in well 101MW-1 during the RI (LAW, December 1996). cis-1,2-DCE was reported at 0.2 F µg/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 µg/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 µg/L reported during the SI to 4.72 µg/L and 6.33 µg/L, respectively. Subsequent sampling for chloroform showed an increase in concentration to 11.4 µg/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 µg/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 µg/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 µg/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 µg/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 µg/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 µg/L). The highest total PCB concentration (210 µg/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 µg/L, and vinyl chloride at 1 µg/L. Results indicated that previous waste storage activities had potentially impacted the local groundwater conditions, but were inconclusive because the Geoprobe[®] samples collected were

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 µg/L). Concentrations were reported up to 6 µg/L and 42 µg/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 µg/L [2 µg/L for arochlor-1221 only] for May 1998 and 0.06 µg/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).

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 µg/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 µg/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).
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- FPM Group Ltd., Field Sampling Plan, Long-Term Monitoring Program, Revision 3.0, March 2005 (G-435).
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- 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

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Figures

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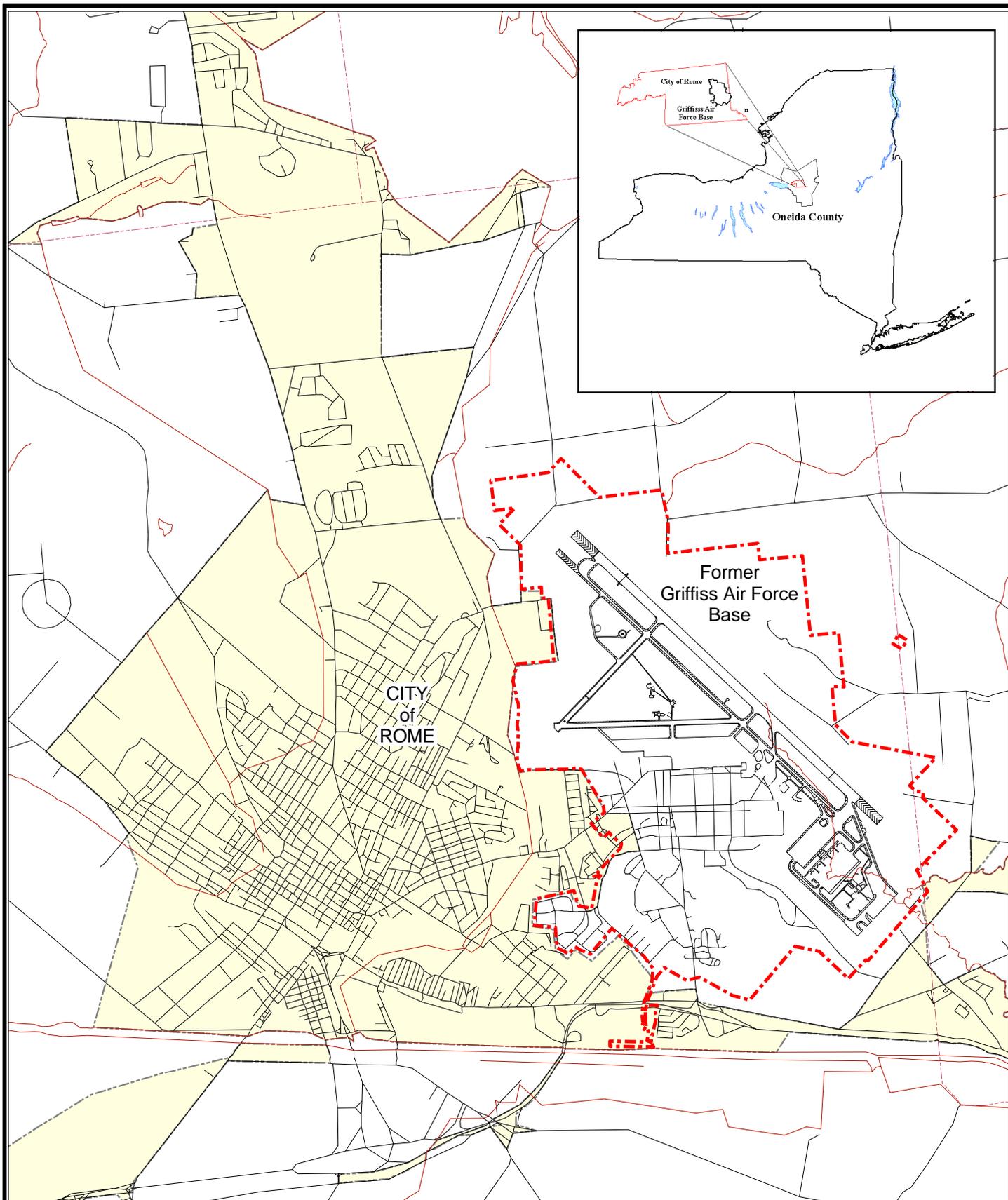
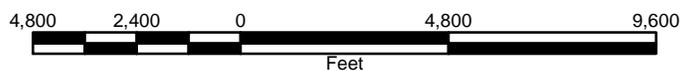
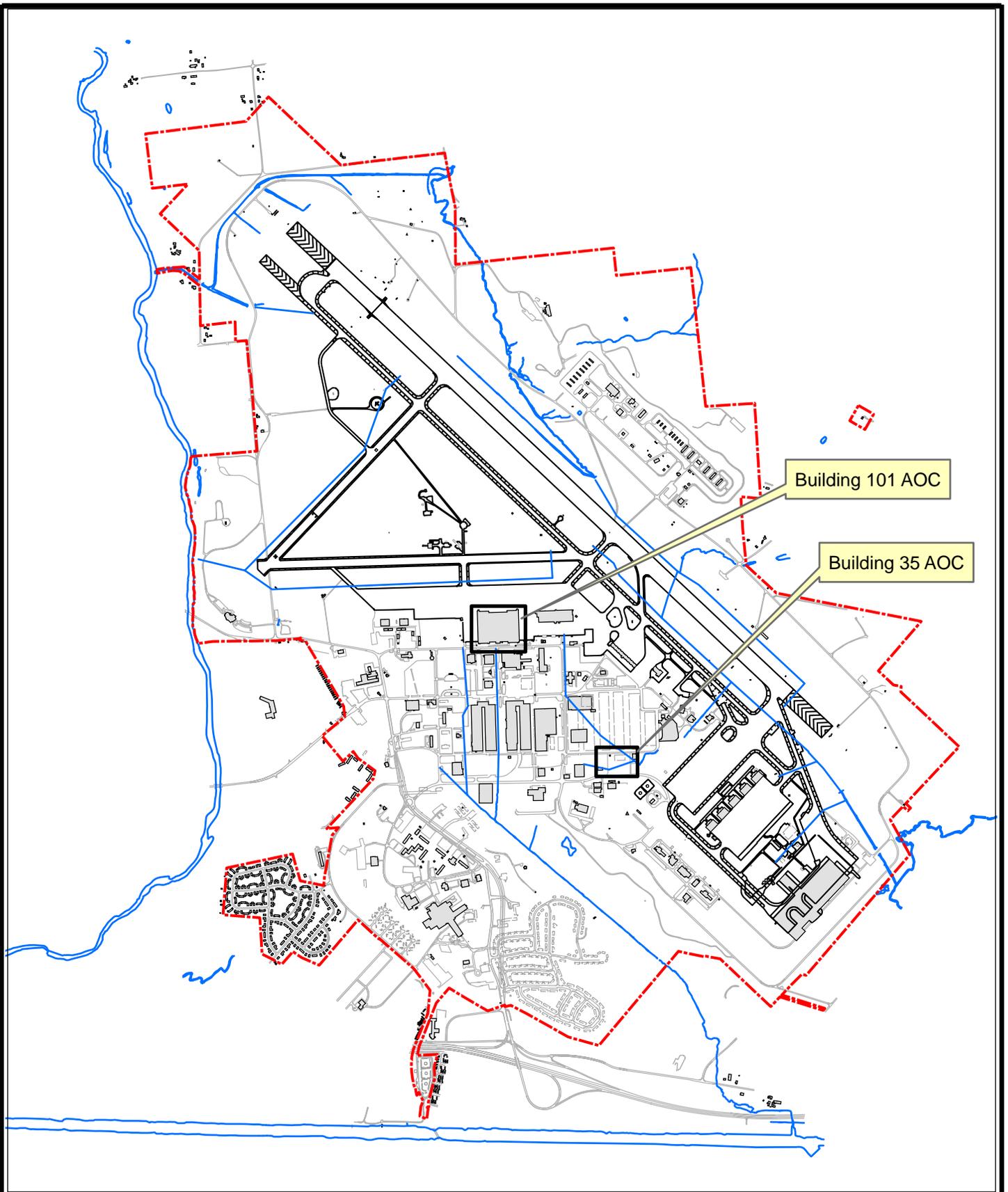


FIGURE 1-1
Base Location Map



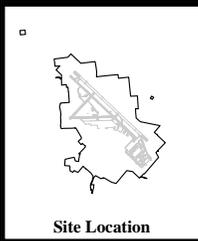
UNITED STATES AIR FORCE
GRIFFISS AIR FORCE BASE
ROME, NEW YORK





Building 101 AOC

Building 35 AOC



Legend

- - - Boundary
- Hydro
- Airfield
- Road
- Existing
- Demolished

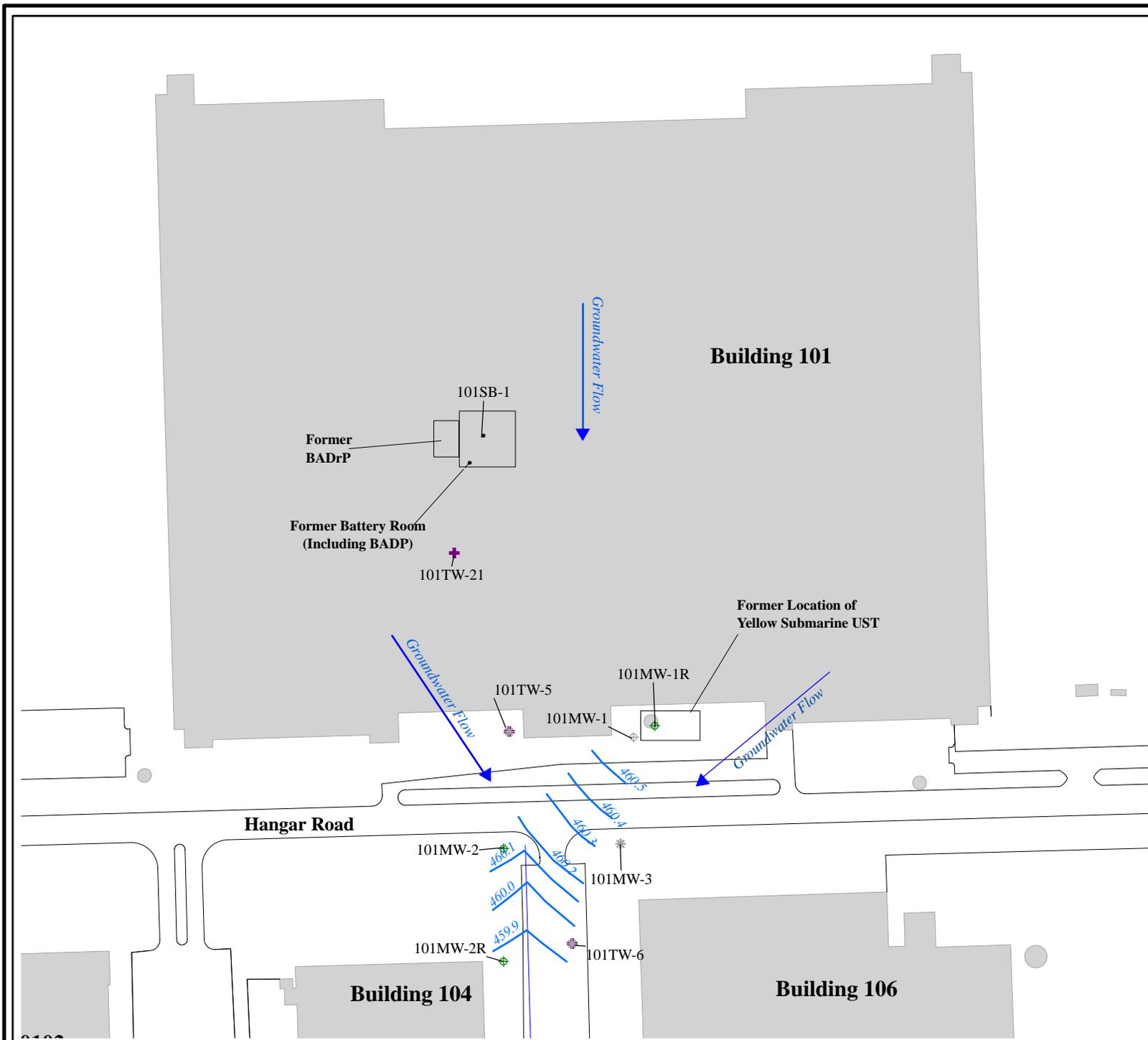
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750 375 0 750 1,500 Feet

United States Air Force
Former Griffiss Air Force Base
Rome, New York

Figure 1-2
On-Base Groundwater AOC
Location Map

FPM group



N

Well Inventory

- ⊕ Decommissioned
- * Destroyed
- ⊕ Monitoring Well
- ⊕ Temporary Well (2002)
- GW Contour March 2004
- Road
- Storm Drain
- Facilities
- Yellow Submarine UST

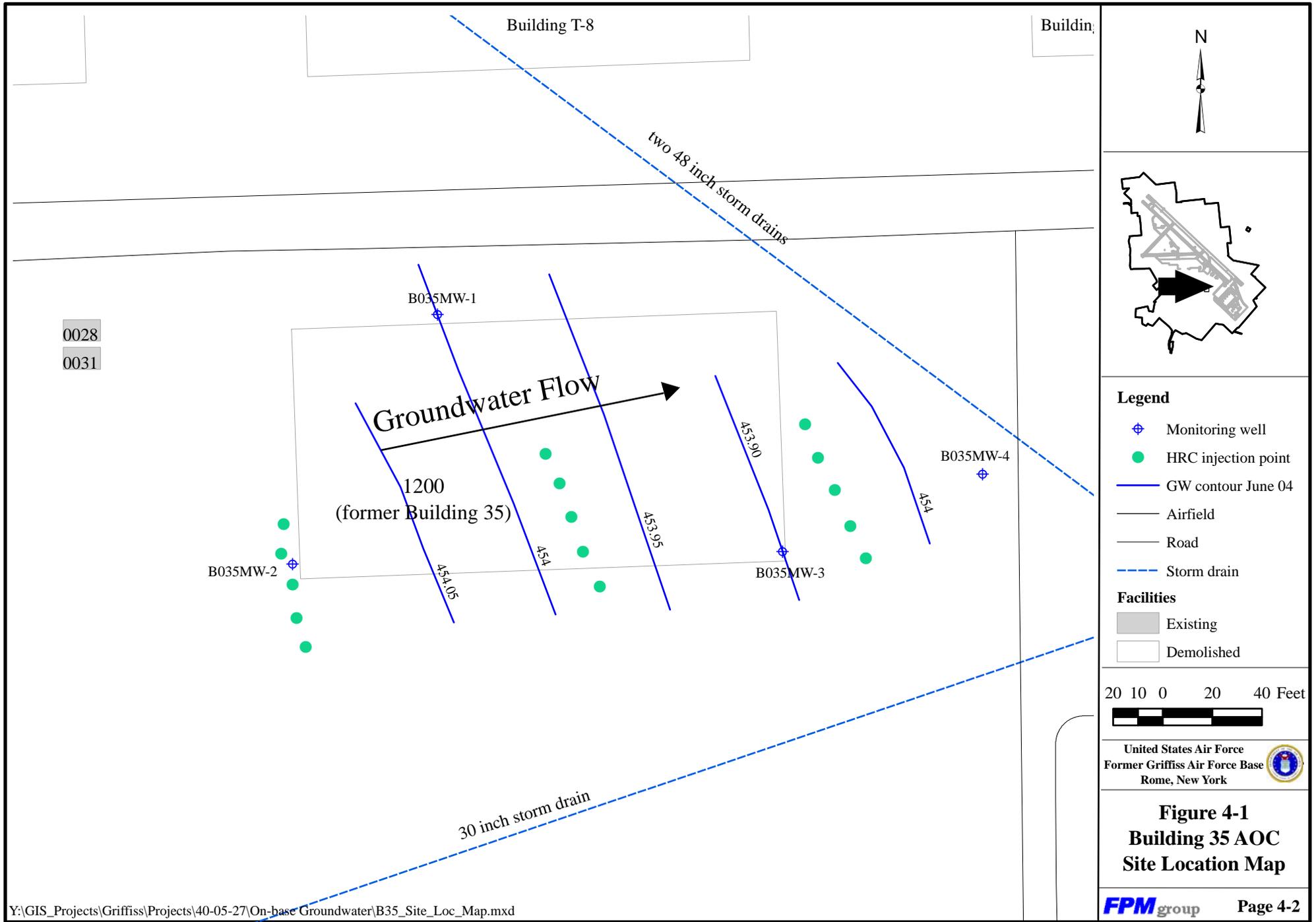
50 25 0 50 100 Feet

United States Air Force
 former Griffiss Air Force Base
 Rome, New York

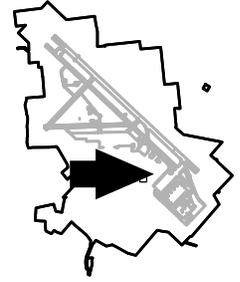
Figure 3-1
Building 101 AOC
Site Location Map

FPM group

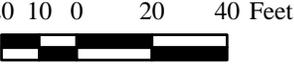
Page 3-2



0028
0031



- Legend**
- Monitoring well
 - HRC injection point
 - GW contour June 04
 - Airfield
 - Road
 - Storm drain
- Facilities**
- Existing
 - Demolished



United States Air Force
Former Griffiss Air Force Base
Rome, New York

Figure 4-1
Building 35 AOC
Site Location Map

Tables

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**Table 3-1
Building 101 AOC Groundwater Monitoring Sample Analysis Summary**

Sampling Locations	Screen Interval Depth (ft MSL)	Sampling Rationale	Target Analytes/ EPA Method Numbers	# of Samples¹	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.

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).

**Table 3-2
Building 101 AOC Field Activity Summary**

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 3-3
Building 101 AOC Detected Groundwater Results**

Sample Location	NYSDEC GW Standards (µg/L)	Results Baseline Study (FPM, 2000)	101MW-1R										
Sample ID			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			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)			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

Sampling was discontinued after April 2004 due to lack of exceedances of the
NYSDEC Groundwater Standards.

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.

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

Sample Location	NYSDEC GW Standards (µg/L)	Results Baseline Study (FPM, 2000)	101MW-2																	
Sample ID			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			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)			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														

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.

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	NYSDEC GW Standards (µg/L)	Results Baseline Study (FPM, 2000)	101MW-2											
			101M0 216PA	101M0 216RA	101M02 16SA	101M0 216TA	101M02 17UA	101M021 6UB	101M02 15VA	101M0 215VB	101M02 16VG	101M021 6WA	101M021 7XA	
Sample ID			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	
Date of Collection			16.22	16.22	15.77	15.52	17.13	16.19	15.91	15.29	15.56	15.82	16.55	
Water Depth (ft BTOIC)														
Chlorinated VOCs (µg/L)														
TCE	5*	0.38F-0.43F	1.7	0.73	0.9 F	0.39 F	0.210 F	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	U	2.61	3.55	5.48	3.72	4.93	
VC	2	U	U	0.33	0.21 F	U	0.110 F	U	U	U	0.160 F	0.500	U	
chloroform	7	0.24F - 11.4	0.58	U	2	U	U	40.8	0.640	0.210 F	0.280 F	0.470 F	U	
Inorganics (mg/L)														
TOC			-	-	-	-	64	5200	-	160	160	89	51	
Chloride			-	-	-	-	-	6.1 F	-	66	70	200	78	
Sulfate			-	-	-	-	3.2	20 F	-	0.26	U	2.5 F	U	
Nitrate			-	-	-	-	0.083 F	U	-	U	U	0.16 F	U	
Alkalinity			-	-	-	-	410	260	-	370	360	290	440	
Field Measurements														
pH (-)	-	-	6.03	6.23	6.36	6.58	8.06	5.93	6.87	6.72	6.67	6.60	5.90	
Conductivity (mS/cm)	-	-	91	15.1	55.1	95.1	120	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	

Newman Zone injection on 19 November 2007.

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.

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	NYSDEC GW Standards (µg/L)	Results Baseline Study (FPM, 2000)	101MW-2R										
			101M2R1 7EA	101M02R 16BA	101M02R2 2CA	101M02R 16DA	101M02R 17EA	101M02R1 6DA	101M02R 16EA	101M02R 16FA	101M02R1 7GA	101M02R1 6HA	101M02R 16IA
Sample ID	NYSDEC GW Standards (µg/L)	Results Baseline 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
Date of Collection			16.87	16.34	16.25	16.23	17.10	16.17	16.34	16.22	16.56	16.05	15.81
Water Depth													
Chlorinated VOCs (µg/L)													
PCE	5	0.21F-0.54F	0.33 F	U	U	U	U	U	U	U	U	U	U
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
chloroform	7	0.24 F-11.4	1.3	U	U	U	U	U	U	U	U	U	U
toluene	5	--	N/A	N/A	0.89	N/A	N/A	U	U	U	U	U	U
SVOCs (µg/L)													
All SVOCs			N/A	N/A	U	N/A							
Metals (µg/L)													
aluminum	--	N/A	N/A	N/A	1010	N/A							
barium	1,000	N/A	N/A	N/A	26.2	N/A							
cadmium	5	N/A	N/A	N/A	0.80 F	N/A							
calcium	--	N/A	N/A	N/A	65,700 M	N/A							
iron	300	N/A	N/A	N/A	1,320 M	N/A							
magnesium	35,000	N/A	N/A	N/A	8,220	N/A							
manganese	300	N/A	N/A	N/A	68.1	N/A							
molybdenum	--	N/A	N/A	N/A	3.6 F	N/A							
nickel	100	N/A	N/A	N/A	5.1 F	N/A							
potassium	--	N/A	N/A	N/A	1,840	N/A							
sodium	20,000	N/A	N/A	N/A	14,600	N/A							
vanadium	--	N/A	N/A	N/A	2.0 F	N/A							
zinc	2,000	N/A	N/A	N/A	8.2 F	N/A							

Sampling was discontinued after April 2004 due to lack of exceedances of the NYSDEC Groundwater Standards.

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.

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

Sample Location	NYSDEC GW Standards (µg/L)	Results Baseline Study (FPM, 2000)	101MW-3				
			101M0313 EA	101M0312 BA	101M0317 CA	101M0312 DA	101MW03 13EA
Sample ID			9/27/01	12/21/01	03/13/02	06/14/02	9/10/02
Date of Collection			12.90	12.76	12.52	12.12	13.12
Water Depth (ft BTOIC)							
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

Sampling was discontinued because the well was decommissioned in November 2002.

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.

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

Sampling Locations	Sampling Rationale	Target Analytes / Method Numbers	Sampling Frequency	Evaluation Criteria / Modification Justification
No further monitoring at the Building 101 Site with LUCs and groundwater restrictions.				
Recommended LTM Network 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.	None	LTM sampling activities will be suspended and the site will have LUCs and groundwater restrictions.

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

Historical LTM Network Changes				
May 2006				
Analysis/ Frequency changes				
101MW-2	Downgradient from plume	VOCs – (Specified COC Short List) / SW8260 COCs - 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.
November 2004				
Removed Sampling Locations				
101MW-1R 101MW-2R	Downgradient from source Downgradient from plume	Same as above.	Discontinued from quarterly basis.	Discontinued sampling after April 2004 based on no reported exceedances.
101MW-3	Downgradient from plume	Same as above.		Decommissioned and removed from groundwater monitoring network in November 2002 due to construction work at the site.

**Table 4-1
Building 35 Groundwater Monitoring Sample Analysis Summary**

Sampling Locations	Screen Interval Depth (ft MSL)	Sampling Rationale	Target Analytes/EPA Method Numbers	# of Samples¹	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.	4	Annually	If downgradient wells do not exhibit exceedances of NYS Groundwater Standards for two successive monitoring events, evaluate monitoring frequency and number of wells.

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

**Table 4-2
Building 35 Site Field Activity Summary**

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 4-3
Building 35 Groundwater Sampling Results
March 2002 through June 2004 Sampling Rounds**

Sample Location	NYSDEC GW Standards (µg/L)	B035MW-1					
		B035M0115AA		B035M0115BA		B035M0115CA	
Sample ID		3/12/02		3/11/03		6/9/04	
Date of Collection		15		15		15	
Sample Depth (ft BTOIC)							
VOCs (µg/L)							
acetone	5	U		U		U	
trichloroethylene (TCE)	5	0.48 F		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

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.

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

Sample Location	NYSDEC GW	B035MW-2					
		B035M0215AA		B035M0215BA		B035M0215CA	
Sample ID	Standards	3/12/02	3/11/03	3/11/03	3/11/03	6/9/04	6/9/04
Date of Collection	(µg/L)	15	15	15	15	15	15
Sample Depth (ft BTOIC)							
VOCs (µg/L)							
acetone	5	U	U	U	U	1.4 F	
trichloroethylene (TCE)	5	0.48 F	0.33 F	0.33 F	0.33 F	U	
cis-1,2-dichloroethylene	5	0.58	0.73	0.73	0.73	1.2	
vinyl chloride	2	U	U	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

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.

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

Sample Location	NYSDEC GW	B035MW-3					
		B035M0315AA	B035M0315BA	B035M0315CA			
Sample ID	Standards (µg/L)	3/12/02	3/11/03	6/9/04			
Date of Collection		15	15	15			
Sample Depth (ft BTOIC)							
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	0.54 ♦	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

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 µg/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 GW Standards (µg/L)	B035MW-4							
		B035M0415AA	B03M0415BA	B035M0415CA	B035M0415DA	B035M0415EA	B035M0416FA	B035M0416GA	
Sample ID									
Date of Collection		3/12/02	3/11/03	6/9/04	3/29/05	3/24/06	4/18/07	4/8/08	
Sample Depth (ft BTOIC)		15	15	15	15	15	16	16	
VOC (µg/L)									
acetone	5	U	U	1.8 F	N/A	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	0.37 F♦	0.22 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
arsenic	25	U	6.9 F♦	U	U	U	N/S	N/S	N/S
barium	1,000	211	174	96.0	92.6	394	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
chromium	50	U	U	U	U	U	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
iron**	300	187	U	242	U	80.0 F	N/S	N/S	N/S
magnesium	--	9,250	9,000	7,540	7,840 B	12,100	N/S	N/S	N/S
manganese**	300	625	U	364 B	11.9	1,170	N/S	N/S	N/S
molybdenum	--	U	U	U	U	U	N/S	N/S	N/S
nickel	100	U	U	U	U	U	N/S	N/S	N/S
potassium	--	1,130	1,110	1,280	1200 B	1,380	N/S	N/S	N/S
selenium	10	U	25.4 ♦	U	U	U	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
vanadium	--	U	U	U	U	U	N/S	N/S	N/S
zinc	--	U	U	4.5 F	U	U	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 µg/L applies to the sum of iron and manganese.

■ - Indicates an exceedance of the NYS Groundwater Standard.

**Table 4-4
Building 35 Proposed Groundwater Sampling and Analysis Plan**

Sampling Locations	Sampling Rationale	Target Analytes / Method Numbers	Sampling Frequency	Evaluation Criteria / Modification Justification
B035MW-4	Downgradient of potential source	<p><u>VOCs</u> – (Specified COC Short List) / SW8260</p> <p><u>COCs</u> - PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and VC.</p>	Annual	<p>Sampling frequency was temporarily increased to monitor the effectiveness of the Newman Zone injection. Additional natural attenuation parameters were also collected.</p> <p>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.</p>
Recommended LTM Network Changes				
None				

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

Historical LTM Network Changes				
July 2004				
Analysis / Frequency Changes				
B035MW-4	Downgradient of potential source	<p>VOCs – (Specified COC Short List) / SW8260</p> <p>COCs - PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and VC.</p>	Annual	<p>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.</p> <p>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.</p>
Removed Sampling Location				
B035MW-1	Upgradient		Discontinued from annual basis.	Discontinue sampling based on no reported exceedances.
B035MW-2	Crossgradient			
B035MW-3	Potential Source Area			

Appendix B
Daily Chemical Quality Control Reports

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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

CQCC Signature: Concordia van Hoesel Date: 1/27/08

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
<input checked="" type="checkbox"/>	✓ Field sampling forms
<input checked="" type="checkbox"/>	✓ Equipment Calibration Log
<input checked="" type="checkbox"/>	✓ Copies of COCs
<input checked="" type="checkbox"/>	✓ SDG Table (See accompanying COCs)
<input checked="" type="checkbox"/>	✓ Daily Health and Safety Meeting Form

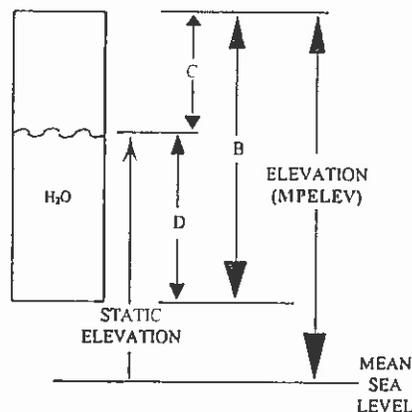
WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: JP/CSLocation and Site Code (SITEID): B101Well No. (LOCID): WL-101MW-2 Well Diameter (SDIAM): 2"Date (LOGDATE): 1-23-08 Weather: 25°/windy/p.sunny

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	
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) 24.13 ft.Measured Water Level Depth (C) (STATDEP) 15.27 ft.Length of Static Water Column (D) = $\frac{24.13}{(B)} - \frac{15.27}{(C)} = \frac{8.84}{(D)}$ ft.Casing Water Volume (E) = $\frac{5.16}{(A)} \times \frac{8.84}{(D)} = \frac{1.42}{(D)}$ galTotal Purge Volume = 4.26 gal (min. of 3 well volumes)Purge Date and Method: BAILEYPhysical Appearance/Comments: grey/brown silty

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

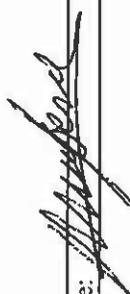
Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1323	1	6.29	0.113	14.58	636	0.09	12
1324	2	6.41	94.3	15.04	676	0.00	-5
1326	3	6.45	99.2	15.75	808	0.00	-17
1328	4	6.54	88.1	15.29	493	0.00	-35
1330	5	6.63	84.8	15.13	457	3.00	-45
1331	6	6.70	84.0	15.13	510	0.00	-50
1333	7	6.72	82.9	15.12	539	3.00	-52

Sample Time: 1345 Sample ID: B101M0215VB

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.

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 Tel: (315)437-0200 Carrier: LSL courier.	Project Name: Griffiss AFB Site Building 101 sampling Sampler Name: Niels van Hoesel Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext 205
Sampler Signature: 	

Analyses Requested												
Field Sample ID	Location ID (LOCID)	Date	Time	MATRIX	SBCODE	SBD/SED	SACODE	Preservative	Fit./Unfil.	No. of Containers	VOCs Note 1 40 mL vial (HCl)	Comments
101M0215VB	101MW-2	1/23	1345	WG	B	0/0	N	HCl	Unf.	3	3	

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.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date:	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 13:55	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 1/5/08	#2 Received by: (Sig) Paul Pank	Date: 1/24/08	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 10200	Company Name: LSL	Time: 11:00	Company Name:	Time:

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

SMCODE
 B = Bailor
 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: 12/23/08 Time: 13:00

Location: FPM office (garage)

Weather Conditions: 20 S Snow 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, frost 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):

—

Report made by (Name): Nels van Noessel

SSHHP 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: Yes No LSL Courier.

DCQCR Prepared by: Niels van Hoesel, FOM

Date: 21 December 2007

CQCC Signature: Concordia van Hoesel Date: 12/27/07

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
<input checked="" type="checkbox"/>	✓ Field sampling forms
<input checked="" type="checkbox"/>	✓ Equipment Calibration Log
<input checked="" type="checkbox"/>	✓ Copies of COCs
<input checked="" type="checkbox"/>	✓ SDG Table (See accompanying COCs)
<input checked="" type="checkbox"/>	✓ Daily Health and Safety Meeting Form

WELL PURGING & SAMPLING FORM

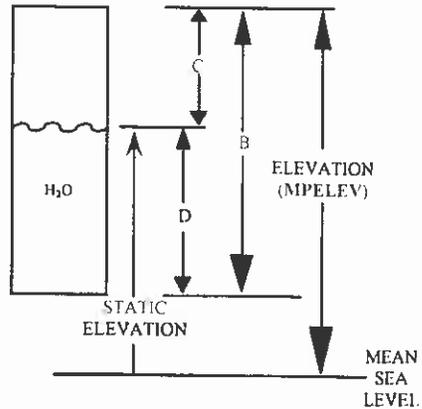
Project: 40-05-22 Sampled by: NM JW
 Location and Site Code (SITEID): B 281
 Well No. (LOCID): 281mw-4 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/07 Weather: 30s cloudy

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	<u>2.0</u>	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	<u>0.16</u>	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 67.38 ft.
 Measured Water Level Depth (C) (STATDEP) 58.13 - 0.80 ft.
 Length of Static Water Column (D) = $\frac{67.38 - 58.13}{1} = 10.03$ ft.



Casing Water Volume (E) = $\frac{0.16}{1} \times 1005 = 1.6$ gal

Minimum Purge Volume = 4.82 gal (3 well volumes)

Purge Date and Method: 12/20/07 check valve
 Physical Appearance/Comments: clear → silty odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
15:38	1	7.85	75.4	4.80	385	4.72	-68
15:41	2	7.85	74.5	6.53	7999	1.44	-75
15:45	3	7.90	76.3	8.18	7999	2.48	-80
15:49	4	7.90	74.9	8.61	7999	1.60	-80
15:53	5	7.90	75.7	9.15	7999	2.23	-90
<i>slow loading poor recharge</i>							

Sample Time: 1:00 Sample ID: 281m0457WA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

Project: 40-05-22 Sampled by: NVA JW
 Location and Site Code (SITEID): B 781
 Well No. (LOCID): 781M-5 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/07 Weather: 30s cloudy

CASING VOLUME INFORMATION:

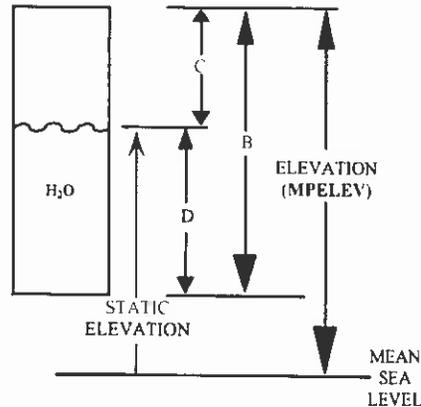
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 68.62 ft
 Measured Water Level Depth (C) (STATDEP) 60.43 - 0.74 ft
 Length of Static Water Column (D) = $\frac{68.62}{(B)} - \frac{59.68}{(C)} = \frac{8.93}{(D)}$ ft

Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{8.93}{(D)} = 1.43$ gal

Minimum Purge Volume = 4.29 gal (3 well volumes)



Purge Date and Method: 12/20/07 check valve

Physical Appearance/Comments: silty/petn odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (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	7.39	.299	9.38	131.0	0.51	-111
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

Sample Time: 1530 Sample ID: 781M0559WA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

6

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: MW JW
 Location and Site Code (SITEID): B 7 81
 Well No. (LOCID): 281mw-6 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/07 Weather: 30S cloudy

CASING VOLUME INFORMATION:

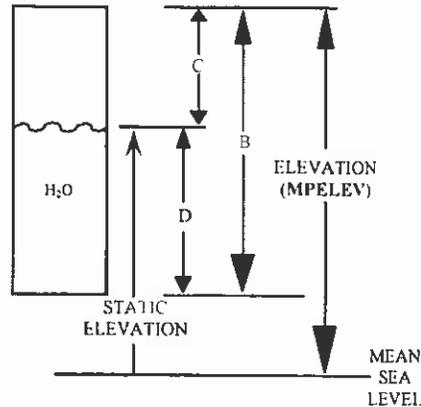
Casing ID (inch)	1.0	1.5	<u>2.0</u>	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	<u>0.16</u>	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 66.59 ft
 Measured Water Level Depth (C) (STATDEP) 61.96 - 0.25 ft.
 Length of Static Water Column (D) = $\frac{66.59}{(B)} - \frac{61.21}{(C)} = \frac{5.38}{(D)}$ ft.

Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{5.38}{(D)} = \frac{0.86}{(E)}$ gal

Minimum Purge Volume = 258 gal (3 well volumes)



Purge Date and Method: 12/20/07 check valve
 Physical Appearance/Comments: the silty petro odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ±1°C

Time	Volume Removed (gal)	pH	EC (µS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
14:32	0.75	7.01	0.322	9.14	211	7.37	-33
14:33	1.5	7.14	0.282	9.98	300	1.73	-72
14:34	2.25	7.22	0.272	9.90	290	0.02	-87
14:35	3	7.30	0.248	10.26	285	0.03	-100
14:36	3.75	7.29	0.237	10.35	284	0.00	-106
14:37	4.5	7.46	0.220	9.00	210	6.41	-100
14:38	5.25	7.44	0.226	10.42	189	0.41	-107
14:39	6	7.45	0.225	10.61	143	0.00	-112

Sample Time: 14:40 Sample ID: 281m0661WA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

Project: 40-05-22 Sampled by: NW JW
 Location and Site Code (SITEID): B781
 Well No. (LOCID): 781mw-8 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/07 Weather: 30s cloudy

CASING VOLUME INFORMATION:

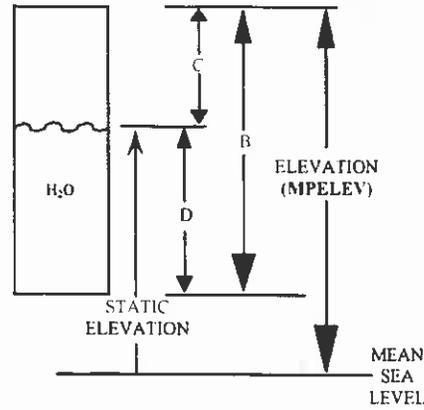
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 65.52 ft
 Measured Water Level Depth (C) (STATDEP) 55.96 ft
 Length of Static Water Column (D) = $\frac{65.52}{(B)} - \frac{55.96}{(C)} = \frac{9.56}{(D)}$ ft

Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{9.56}{(D)} = 1.53$ gal

Minimum Purge Volume = 4.59 gal (3 well volumes)



Purge Date and Method: 12/20/07 boiler
 Physical Appearance/Comments: Shen, potat odor, clear

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1044	1.0	6.66	.214	12.55	58.0	4.20	-91
1045	2.0	6.98	.223	12.48	69.0	3.22	-104
1048	3.0	7.14	.226	12.53	59.8	3.11	-108
1049	4.0	7.20	.225	12.64	181.0	4.92	-107
1052	5.0	7.28	.224	12.66	404.0	3.95	-104
1056	6.0	7.33	.224	12.18	223.0	1.78	-106
1058	7.0	7.38	.222	12.22	325.0	5.35	-106

Sample Time: 1106 Sample ID: 781M0856WA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: NM JW
 Location and Site Code (SITEID): B781
 Well No. (LOCID): 781 MW-13 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/21/07 Weather: 30S cloudy

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	
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

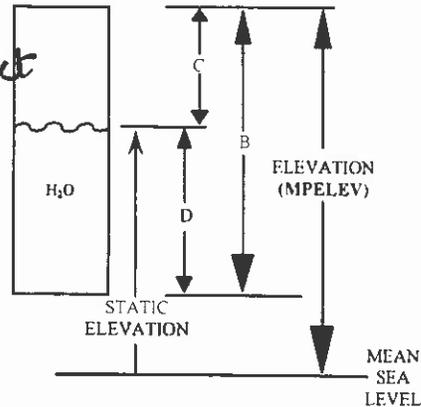
PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 56.99 *free product*
 Measured Water Level Depth (C) (STATDEP) 56.55 *water*

Length of Static Water Column (D) = $\frac{(B)}{(A)} - \frac{(C)}{(A)} = \frac{(D)}{(A)}$ ft

Casing Water Volume (E) = $\frac{(A)}{(D)} \times (D) =$ gal

Minimum Purge Volume = _____ gal (3 well volumes)



Purge Date and Method: _____

Physical Appearance/Comments: No sample collected.

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)

0.44 ft of free product

Sample Time: _____ Sample ID: _____

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: NVA JW
 Location and Site Code (SITEID): B 781
 Well No. (LOCID): 781mw-16 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/07 Weather: 305 cloudy

CASING VOLUME INFORMATION:

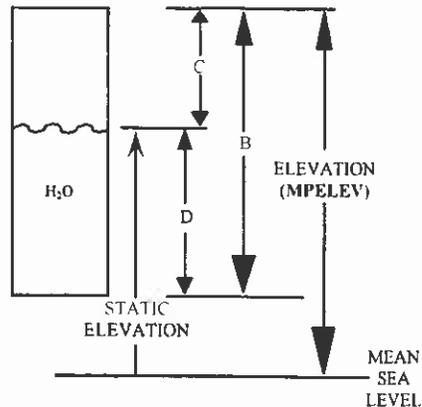
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 58.72 ft.
 Measured Water Level Depth (C) (STATDEP) 51.75 ft.
 Length of Static Water Column (D) = $\frac{58.72}{(B)} - \frac{51.75}{(C)} = \frac{6.97}{(D)}$ ft.

Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{6.97}{(D)} = \frac{1.05}{(E)}$ gal

Minimum Purge Volume = 3.15 gal (3 well volumes)



Purge Date and Method: 12/20/07 check valve
 Physical Appearance/Comments: den. slight odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
14:06	0.75	7.01	25.9	7.75	34.5	10.00	193
14:08	1.5	6.95	27.1	7.94	69.5	7.90	193
14:10	2.25	7.15	26.5	8.23	78.0	7.77	190
14:14	3	7.24	26.9	8.33	92.1	7.24	187
14:16	3.75	7.20	25.8	8.50	223	6.52	191

Sample Time: 14:20 Sample ID: 781m16S2WA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: NH JW
 Location and Site Code (SITEID): B 781
 Well No. (LOCID): 781mw-17 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/07 Weather: 30 s cloudy

CASING VOLUME INFORMATION:

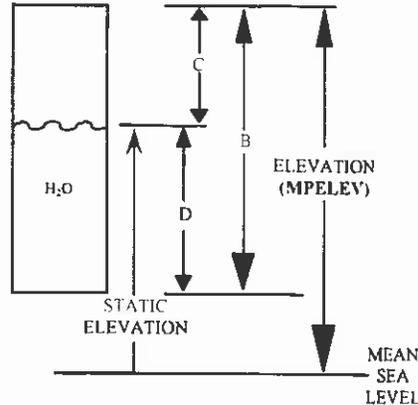
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 68.43 ft.
 Measured Water Level Depth (C) (STATDEP) 59.53 - 1.04 ft.
 Length of Static Water Column (D) = $\frac{68.43}{(B)} - \frac{59.53}{(C)} = \frac{9.90}{(D)}$ ft.

Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{9.90}{(D)} = 1.58$ gal

Minimum Purge Volume = 4.75 gal (3 well volumes)



Purge Date and Method: 12/20/07 check valve
 Physical Appearance/Comments: Clear / H₂S odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ±1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
11:22	1	7.60	26.0	9.38	45.6	10.91	76
11:24	2	7.57	25.0	9.52	26.8	9.70	77
11:26	3	7.74	24.8	8.69	22.7	10.12	78
11:28	4	7.73	24.5	9.24	17.4	9.96	81
11:31	5	7.75	24.6	9.89	18.0	9.94	88

Sample Time: 1134 Sample ID: 781 M17 G0 WA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: NVH JW
 Location and Site Code (SITEID): B 781
 Well No. (LOCID): 781mw-1B Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/07 Weather: 30S cloudy

CASING VOLUME INFORMATION:

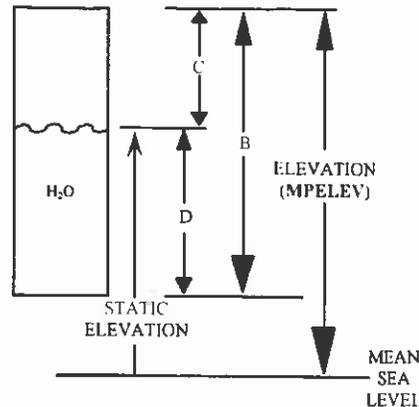
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 58.22 ft
 Measured Water Level Depth (C) (STATDEP) 53.71 - 1.08 ft.
 Length of Static Water Column (D) = $\frac{58.22}{(B)} - \frac{53.71}{(C)} = \frac{5.59}{(D)}$ ft.

Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{5.59}{(D)} = \frac{0.89}{(E)}$ gal

Minimum Purge Volume = 2.68 gal (3 well volumes)



Purge Date and Method: check volume 12/20/07
 Physical Appearance/Comments: clean silty slight potto smell

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
11:45	0.75	7.36	13.1	8.59	551	10.74	128
11:47	1.5	7.46	12.9	9.39	7999	9.11	121
11:49	2.25	7.34	13.0	9.47	7999	10.36	120
11:50	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	7999	10.53	123
+ 0.50 gallons purged.							

Sample Time: 11:55 Sample ID: 781m1d53VA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: NVH JW
 Location and Site Code (SITEID): B 781
 Well No. (LOCID): 781mw-19 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/09 Weather: 30S cloudy

CASING VOLUME INFORMATION:

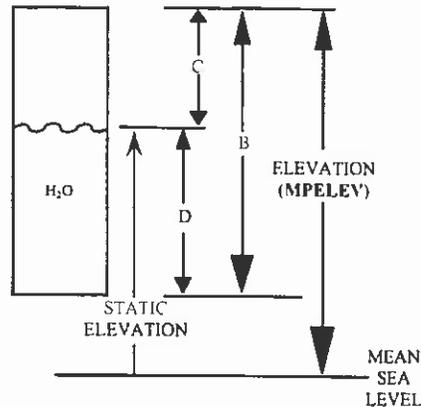
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 51.47 ft.
 Measured Water Level Depth (C) (STATDEP) 42.82 - 0.45 ft.
 Length of Static Water Column (D) = $\frac{51.47}{(B)} - \frac{42.82}{(C)} = \frac{8.65}{(D)}$ ft.

Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{8.65}{(D)} = 1.38$ gal

Minimum Purge Volume = 4.15 gal (3 well volumes)



Purge Date and Method: check volume 12/20/09
 Physical Appearance/Comments: clean

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
13:40	1	7.24	27.2	8.23	27.7	6.51	182
13:42	2	7.27	30.3	8.58	24.5	5.07	180
13:44	3	7.24	31.1	8.76	39.0	5.36	180
13:46	4	7.30	30.9	8.70	48.2	5.52	179
	+ 0.25 gal boiled.						

Sample Time: 13:48 Sample ID: 781mw1943WA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

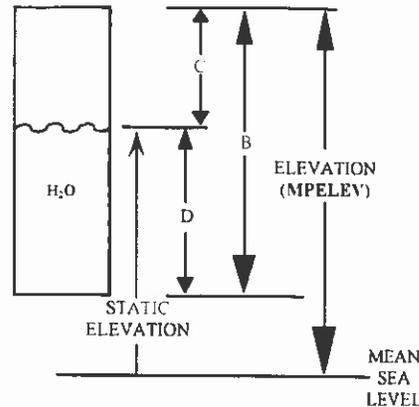
Project: 40-05-27 Sampled by: NVH JW
 Location and Site Code (SITEID): B 381
 Well No. (LOCID): 781mw-20 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/07 Weather: 30 s cloudy

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	
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) 95.62 ft
 Measured Water Level Depth (C) (STATDEP) 39.04 ft.
 Length of Static Water Column (D) = $\frac{45.62}{(B)} - \frac{39.04}{(C)} = \frac{6.58}{(D)}$ ft.
 Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{6.58}{(D)} = \frac{1.05}{(D)}$ gal
 Minimum Purge Volume = 3.16 gal (3 well volumes)



Purge Date and Method: 12/20/07 baile
 Physical Appearance/Comments: light brown no odor/sheen

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
9:37	0.75	5.88	30.5	11.4	512	12.01	236
9:39	1.5	5.96	35.7	11.2	437	12.01	281
9:40	2.25	5.85	30.0	11.1	558	9.81	298
9:42	3	5.72	29.9	11.1	710	9.54	309
9:43	3.75	5.77	28.5	10.9	714	9.89	314
9:45	4.5	5.76	31.0	10.9	535	9.47	318
9:47	5.25	5.85	30.3	10.8	535	10.18	317
9:49	6	5.89	31.6	10.9	471	9.67	319

Sample Time: 9:50 Sample ID: 781M2039WA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

Project: 40-05-23 Sampled by: NVH JW
 Location and Site Code (SITEID): B381
 Well No. (LOCID): 781M21 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/07 Weather: 30s cloudy

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	
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:

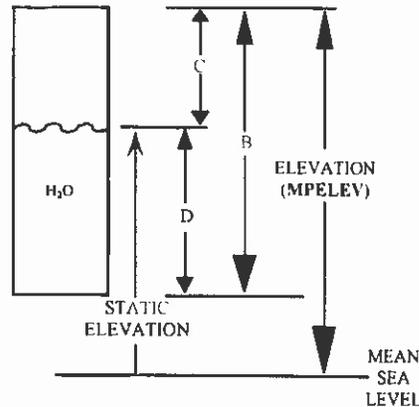
Measured Well Depth (B) (TOTDEPTH) 37.45 ft.

Measured Water Level Depth (C) (STATDEP) 28.16 ft.

Length of Static Water Column (D) = $\frac{37.45}{(B)} - \frac{28.16}{(C)} = \frac{9.29}{(D)}$ ft.

Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{9.29}{(D)} = 1.49$ gal

Minimum Purge Volume = 4.46 gal (3 well volumes)



Purge Date and Method: 12/20/07 bailer

Physical Appearance/Comments: light brown/silty no odor/sheen

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
10:07	1	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	6.11	14.0	10.81	568	10.03	328
10:16	4	6.27	15.2	10.82	620	10.08	332
10:19	5	6.32	13.5	10.77	717	9.81	333
10:21	6	6.27	14.4	10.83	469	10.05	333
10:24	7	6.30	16.1	10.80	484	9.94	332
10:26	8	6.35	15.0	10.73	503	10.08	232
10:28	9	6.37	14.8	10.55	532	10.60	330

Sample Time: 10:30 Sample ID: 781M2128WA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: MMH JW
 Location and Site Code (SITEID): B 101
 Well No. (LOCID): 101mw-2 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 12/20/07 Weather: 30s cloudy

CASING VOLUME INFORMATION:

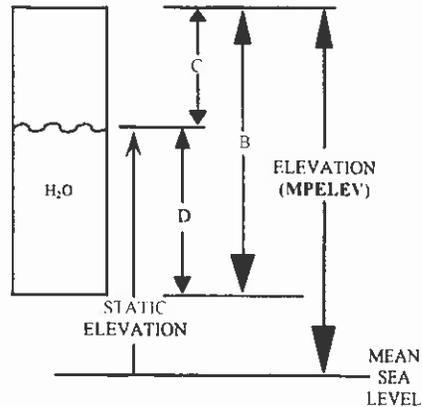
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 24.36 ft
 Measured Water Level Depth (C) (STATDEP) 15.91 ft.
 Length of Static Water Column (D) = $\frac{24.36}{(B)} - \frac{15.91}{(C)} = \frac{8.45}{(D)}$ ft.

Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{8.45}{(D)} = \frac{1.35}{(E)}$ gal

Minimum Purge Volume = 4.06 gal (3 well volumes)



Purge Date and Method: 12/20/07 boiler
 Physical Appearance/Comments: _____

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ±1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
16:23	1	6.97	88.8	15.58	924	1.21	-27
16:25	2.75	6.98	91.4	16.36	792	0.00	-42
16:27	2.5	6.93	95.0	16.35	744	0.00	-48
16:29	3.25	6.90	97.8	16.52	769	0.00	-53
16:30	4	6.87	99.4	16.44	759	0.00	-56

Sample Time: 16:35 Sample ID: 101mw216VA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

AFCÉE 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 Tel: (315)437-0200 Carrier: LSL courier.	Project Name: Griffiss AFB Building 781 sampling Sampler Name: Niels van Hoesel Sampler Signature:
Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 ext 205	

Field Sample ID	Location ID (LOCID)	Date 2007	Time	MATRIX	SMCODE	SBD/SED	SACODE	Preservative	Filt./Unfilt.	No. of Containers	VOCs Note 1 40 mL vial (HCl)	SVOCs Note 2 1 L amber	Comments	Analyses Requested	
781M0457WA	WL-781MW4	12/20	1600	WG	B	0/0	N	HCl	Unf.	3	3	-			
781M0559WA	WL-781MW5	12/20	1530	WG	B	0/0	N	HCl	Unf.	3	3	-			
781M0661WA	WL-781MW6	12/20	1440	WG	B	0/0	N	HCl	Unf.	3	3	-			
781M0856WA	WL-781MW8	12/20	1100	WG	B	0/0	N	HCl	Unf.	3	3	-			
781M1652WA	WL-781MW16	12/20	1420	WG	B	0/0	N	HCl	Unf.	3	3	-			
781M1760WA	WL-781MW17	12/20	1134	WG	B	0/0	N	HCl	Unf.	3	3	-			
781M1853WA	WL-781MW18	12/20	1155	WG	B	0/0	N	HCl	Unf.	3	3	-			
781M1943WA	WL-781MW19	12/20	1348	WG	B	0/0	N	HCl	Unf.	3	3	-			
781M2039WA	WL-781MW-20	12/20	950	WG	B	0/0	N	HCl	Unf.	3	3	-			
781M2128WA	WL-781MW-21	12/20	1030	WG	B	0/0	N	HCl	Unf.	3	3	-			
122007WE	FIELDQC	12/20	1630	WQ	B	0/0	EB	HCL	Unf	3	3	-			
122007WF	FIELDQC	12/20	955	WQ	NA	0/0	AB	HCL	Unf	3	3	-			
122007WR	FIELDQC	12/20	855	WQ	NA	0/0	TB	HCL	Unf	3	3	-			

Sample Condition Upon Receipt at Laboratory: Cooler temperature: _____

Special Instructions/Comments: Analyses to be conducted in compliance with AFCÉE QAPP 4.0
 Note 1: VOCs: method SW 8260 (AFCÉE QAPP 4.0 List).
 Note 2: SVOCs: method SW 8270 (AFCÉE QAPP 4.0 List).

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 12/20/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 1710	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 12/5/07	#2 Received by: (Sig) <i>Ben Davidson</i>	Date: 12-20-07	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 1000	Company Name: <i>Life Science Labs</i>	Time: 9:45	Company Name:	Time:

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 Duplicate

AFCEE CHAIN OF CUSTODY RECORD

COC#: 4_SDG#: 174_Cooler ID: A_

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

Field Sample ID	Location ID (LOCID)	Date	Time	MATRIX	SMCODE	SBD/SED	SACODE	Preservative	Filter/Unfilt	No. of Containers	VOCs Note 1 40 mL vial (HCl)	Analyses Requested		Comments
101M0216VA	101MW-2	12/20	1635	WG	B	0/0	N	HCl	Unf.	3	3			

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.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 12/20/07
Company Name:	Time:	Company Name: <i>Life Science Labs</i>	Time: 1710
#1 Received by: (Sig) <i>Niels van Hoesel</i>	Date: 12/5/07	#2 Received by: (Sig) <i>Bea Davidson</i>	Date: 12-20-07
Company Name: FPM Group Ltd	Time: 10200	Company Name: <i>Life Science Labs</i>	Time: 9:45
#3 Released by: (Sig)	Date:	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name:	Time:

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

SMCODE
 B = Bailor
 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: 12/20/07 Time: 8:30

Location: FPM office (garage)

Weather Conditions: 30s cloudy

Meeting Type: Daily Health and Safety

Personnel Present:

Caleb Smith Josh Wenzel Niels van Hoesel

Visitors Present: —

Visitor Training: —

PPE Required: Modified D

Possible risks, injuries, concerns:

slip trip fall, Frost bite, lost items in snow.

Anticipated Releases to Environment (if so, describe and detail response action/control measures implemented):

none

Property Damage:

none

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): 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: 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

CQCC Signature: Concordia van Hoesel Date: 02/07/08

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
<input checked="" type="checkbox"/>	✓ Field sampling forms
<input checked="" type="checkbox"/>	✓ Equipment Calibration Log
<input checked="" type="checkbox"/>	✓ Copies of COCs
<input checked="" type="checkbox"/>	✓ SDG Table (See accompanying COCs)
<input checked="" type="checkbox"/>	✓ Daily Health and Safety Meeting Form

WELL PURGING & SAMPLING FORM

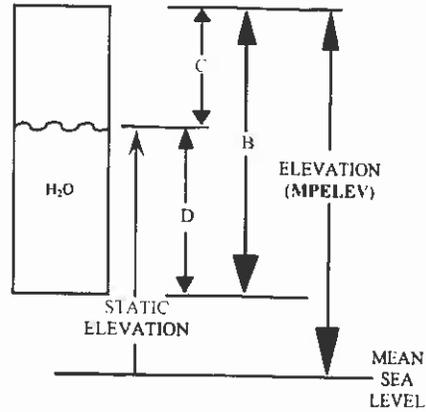
Project: 40-05-25 Sampled by: DP/CS
 Location and Site Code (SITEID): B101
 Well No. (LOCID): WL-101MW-2 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 2-4-08 Weather: 25-30° / light snow

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	
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) 24.13 ft
 Measured Water Level Depth (C) (STATDEP) 15.51 ft
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(B)}{(D)} = \frac{9.62}{(D)}$ ft
 Casing Water Volume (E) = $\frac{(A)}{(D)} \times (D) = 1.38$ gal
 Minimum Purge Volume = 4.14 gal (3 well volumes)



Purge Date and Method: 3A lea
 Physical Appearance/Comments: silty grey

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1113	1	5.93	102	14.81	365	.10	22
1114	2	6.16	89.9	14.97	412	0.00	-12
1116	3	6.38	86.5	15.11	473	0.00	-36
1117	4	6.49	86.1	15.11	406	0.53	-47
1119	5	6.58	84.9	14.94	376	0.63	-54
1122	6	6.62	83.9	14.85	345	0.82	-57
1124	7	6.66	83.3	14.95	416	0.25	-60

Sample Time: 1130 Sample ID: 101M0215UR

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

AFCEE CHAIN OF CUSTODY RECORD

COC#: 1_SDG#: 174_ (Open/Closed) Cooler ID#: A

Ship to: Monika Santucci Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Tel: (315)437-0200 Carrier: LSL courier.	Project Name: Griffiss AFB B101 Sampling Sampler Name: Niels van Hoessel Send Results to: Niels van Hoessel FPM Group Ltd. 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext. 205
Sampler Signature:	

Field Sample ID	LocID	Date	Time	MATRIX	SACODE	SBD/SED	# of Containers	VOCs <small>note 1</small>	40mL vials (HCl)	Metals, Hardness <small>note 2</small>	250 mL poly (HNO ₃)	Metals <small>note 3</small>	250 mL poly (HNO ₃)	PCBs <small>note 4</small>	1 L amber	Phenols <small>note 5</small>	8 oz amber (H ₂ SO ₄)	Anions, <small>note 6</small>	250 mL poly	NH ₃ , COD, TKN <small>note 7</small>	125 mL poly (H ₂ SO ₄)	TOC <small>note 8</small>	40 mL vials (HCL)	Cyanide <small>Note 9</small>	8 oz poly (NaOH)	BOD, <small>note 10</small>	1 L poly	Alkalinity <small>note 11</small>	8 oz glass (zero headspace)	Comments	
101M0215VB	WL-101MW-2	2/4	1130	WG	B	N	0/0	4	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	1	

Analyses requested

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.	
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 6: Anions: SW9056 CHLORIDE, SULFATE AND NITRATE ONLY	
Note 7: NH ₃ : 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.	
Cooler temperature:	

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 2/4/08
Company Name:	Time:	Company Name: FPM Group Ltd.	Time: 11:45
#1 Received by: (Sig) Niels van Hoessel	Date: 9/03/07	#2 Received by: (Sig) <i>See Donohue</i>	Date: 2-4-08
Company Name: FPM Group Ltd.	Time: 1000	Company Name: Life Science Labs	Time: 1312
#3 Released by: (Sig)	Date:	#3 Received by: (Sig)	Date:
Company Name:	Time:	Company Name:	Time:

MATRIX

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

SMCODE

B = Bailor
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: 2/4/08 Time: 11:00

Location: FPM office (garage)

Weather Conditions: 30° cloudy

Meeting Type: Daily Health and Safety

Personnel Present:

John Pratt Celeb Smith

Visitors Present: —

Visitor Training: —

PPE Required: Modified D

Possible risks, injuries, concerns:

slip trip fall. frost 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):

—

Report made by (Name): Niels von Haxel

SSHOP Organization Title: Site Safety and Health Officer

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

CQCC Signature: Concordia van Hoesel Date: 03/07/08

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
<input checked="" type="checkbox"/>	✓ Field sampling forms
<input checked="" type="checkbox"/>	✓ Equipment Calibration Log
<input checked="" type="checkbox"/>	✓ Copies of COCs
<input checked="" type="checkbox"/>	✓ SDG Table (See accompanying COCs)
<input checked="" type="checkbox"/>	✓ Daily Health and Safety Meeting Form

WELL PURGING & SAMPLING FORM

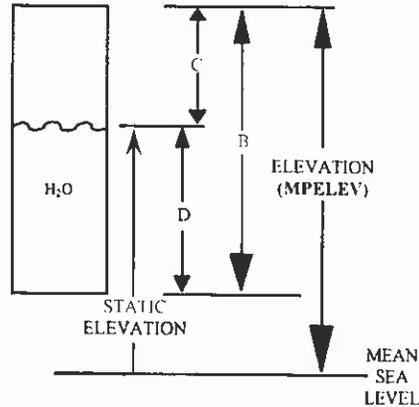
Project: 40-05-27 Sampled by: JP/CS
 Location and Site Code (SITEID): B101
 Well No. (LOCID): 101NW-2 Well Diameter (SDIAM): 2'
 Date (LOGDATE): 3-3-08 Weather: overcast / 35-40°

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	
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) 23.91 ft.
 Measured Water Level Depth (C) (STATDEP) 15.56 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(C)}{(D)} = \frac{8.35}{(D)}$ ft.
 Casing Water Volume (E) = $\frac{(A)}{(D)} \times (D) = 1.346$ gal



Minimum Purge Volume = 4.038 gal (3 well volumes)

Purge Date and Method: Br/Gr
 Physical Appearance/Comments: water is cloudy / no odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1145	1	6.31	109	14.2	564	6.32	-7
1146	2	6.40	52.3	14.19	645	5.91	-30
1147	3	6.49	90.5	14.17	718	8.78	-41
1149	4	6.55	87.8	14.09	523	7.38	-45
1150	5	6.59	87.9	14.06	461	5.27	-45
1150 ¹⁰	5	6.60	85.6	14.01	472	7.44	-47
1152	6	6.61	88.0	14.35	468	10.27	-48
1153	7	6.64	84.6	14.02	748	3.20	-51
1155	8	6.67	84.7	14.07	492	1.15	-51

Sample Time: 1200 Sample ID: 101M0216VG

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

AFCEE CHAIN OF CUSTODY RECORD

COC#: 1_SDG#: 176_Cooler ID: A

Ship to: Monika Santucci Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Tel: (315)437-0200	Project Name: Griffiss AFB Site Building 101 sampling Sampler Name: Niels van Hoesel Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext 205
Carrier: LSL courier. <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> </div>	

Field Sample ID	Location ID (LOCID)	Date	Time	MATRIX	SMCODE	SBD/SED	SACODE	Preservative	Filt./Unfilt.	No. of Containers	VOCs Note 1 40 mL vial (HCl)	Anions, note 2 250 mL poly	TOC note 3 40 mL vials (HCL)	Alkalinity note 4 8 oz glass (zero headspace)	Analyses Requested		Comments
101M0216VG	101MW-2	3/3	1200	WG	B	0/0	N	HCl	Unf.	7	3	1	2	1			

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.

Note 2: Anions: SW9056 CHLORIDE, SULFATE AND NITRATE ONLY

Note 3: TOC: SW9060.

Note 4: Alkalinity: 310.1.

Cooler Temperature: _____

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 3/3/08	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 12:50	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/22/08	#2 Received by: (Sig) Bob Donnellan	Date: 3-3-08	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 10200	Company Name: Life Science Labs	Time: 1515	Company Name:	Time:

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

SMCODE
 B = Bailor
 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° Sunny

Meeting Type: Daily Health and Safety

Personnel Present:

John Pratt Caleb Smith

Visitors Present: —

Visitor Training: —

PPE Required: Modified D

Possible risks, injuries, concerns:

slip trip fall

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):

—

Report made by (Name): Nels van Nozel

SSHOP 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: Yes No LSL Courier.

DCQCR Prepared by: Niels van Hoesel, FOM

Date: 15 April 2008

CQCC Signature: Concordia van Hoesel Date: 4/17/08

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Field sampling forms
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Equipment Calibration Log
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Copies of COCs
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> SDG Table (See accompanying COCs)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Daily Health and Safety Meeting Form

WELL PURGING & SAMPLING FORM (LOW FLOW)

Project: 40-06-27 Sampled by: JPLocation and Site Code (SITEID): LE6Well No. (LOCID): 775mW-20R Well Diameter (SDIAM): 2"Date (LOGDATE): 4-8-08 Weather: sunny / 55°CASING VOLUME INFORMATION:

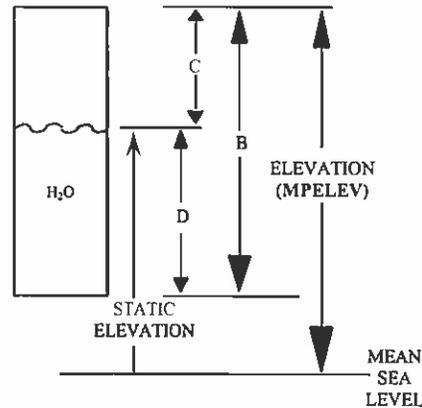
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) _____ ft. (optional)

Measured Water Level Depth (C) (STATDEP) 63.34 ft.Length of Static Water Column (D) = _____ - _____ - _____ ft. (optional)
(B) (C) (D)Pump Intake Depth (ft): 110Depth during Purging/Sampling: _____ ft.
(provide range)

Comments (re: Depth during purging/sampling): _____

Purge Date and Method: BLADDER PUMPPhysical Appearance/Comments: clear / no odor

Dissolved Ferrous Iron (mg/L): _____

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 3% ± 10% ± 10% ± 10mV

Time	Depth to Water (ft BTOC)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
1524	63.34	6.92	59.6	12.53	155	10.18	283	100
1528		6.53	64.2	12.31	160	3.54	285	100
1530	↓	6.56	64.7	12.27	158	0.92	268	150
1532		6.65	66.3	12.19	156	0.21	248	150
1538		6.79	67.9	12.34	159	0.00	223	150
1541		6.84	67.3	12.43	156	0.00	195	150
1545		6.94	67.6	12.36	145	6.00	173	150
1548		7.01	68.3	12.28	155	0.00	141	150
1551		7.06	68.6	12.35	150	0.00	120	150
1554		7.09	68.3	12.37	150	0.00	103	150
1557		7.12	67.9	12.42	150	0.00	85	150

Sample Time: 1630 Sample ID: 775mW-22R110 HA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM (LOW FLOW)

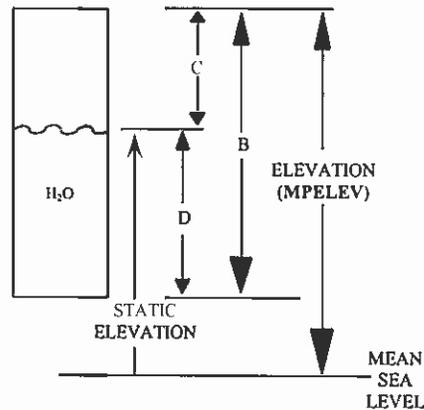
Project: 40-05-27 Sampled by: OO
 Location and Site Code (SITEID): LPG
 Well No. (LOCID): 775VMW-20R Well Diameter (SDIAM): 2"
 Date (LOGDATE): 4-8-08 Weather: Sunny / 65°

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. (optional)
 Measured Water Level Depth (C) (STATDEP) _____ ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(C)}{(D)} = \frac{(D)}{(D)}$ ft. (optional)
 Pump Intake Depth (ft): _____
 Depth during Purging/Sampling: _____ ft.
 (provide range)
 Comments (re: Depth during purging/sampling): _____



Purge Date and Method: BLADDER PUMP
 Physical Appearance/Comments: clear / no odor
 Dissolved Ferrous Iron (mg/L): _____

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 3% ± 10% ± 10% ± 10mV

Time	Depth to Water (ft BTOC)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
1601	63.34	7.20	67.7	12.52	150	0.00	63	150
1604	↓	7.24	67.7	12.54	150	0.00	50	↓
1607		7.27	67.9	12.59	152	0.00	38	
1610		7.29	67.8	12.44	144	0.00	33	
1613		7.31	67.8	12.51	149	0.00	29	

Sample Time: 1630 Sample ID: 775VMW20R110HA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM (LOW FLOW)

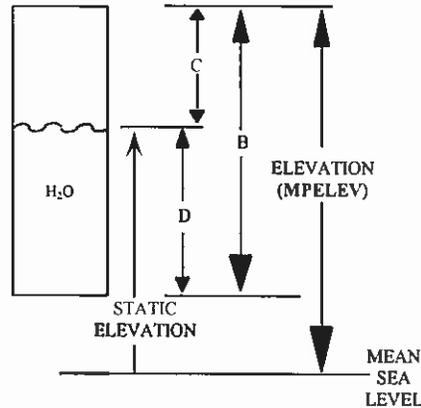
Project: 40-05-27 Sampled by: JM
 Location and Site Code (SITEID): LFG
 Well No. (LOCID): WL-LFGVMW-22 Well Diameter (SDIAM): 22
 Date (LOGDATE): 4-8-08 Weather: Sunny / 50°

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. (optional)
 Measured Water Level Depth (C) (STATDEP) 12.84 ft.
 Length of Static Water Column (D) = _____ - _____ = _____ ft. (optional)
(B) (C) (D)
 Pump Intake Depth (ft): 35
 Depth during Purging/Sampling: _____ ft.
(provide range)
 Comments (re: Depth during purging/sampling): _____



Purge Date and Method: BLADDER PUMP
 Physical Appearance/Comments: _____
 Dissolved Ferrous Iron (mg/L): _____

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 3% ± 10% ± 10% ± 10mV

Time	Depth to Water (ft BTOC)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
1203	12.84	6.97	48.3	9.14	10.7	7.68	331	200
1205		7.09	76.3	9.01	23.6	6.23	330	
1207	↓	7.15	25.6	9.27	13.2	5.53	333	↓
1209		7.12	25.8	9.30	6.2	5.05	334	
1211		7.05	26.4	9.26	3.5	4.83	335	
1213		7.06	27.6	9.29	2.2	4.53	335	
1215		7.08	29.4	9.25	0.4	4.48	334	
1217		7.06	29.0	9.30	0.6	4.36	333	
1219		7.06	29.4	9.26	0.0	4.30	333	
1221		7.06	30.29	9.23	0.0	4.27	332	

Sample Time: 1270 Sample ID: LFGVM2235HA/c

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM (LOW FLOW)

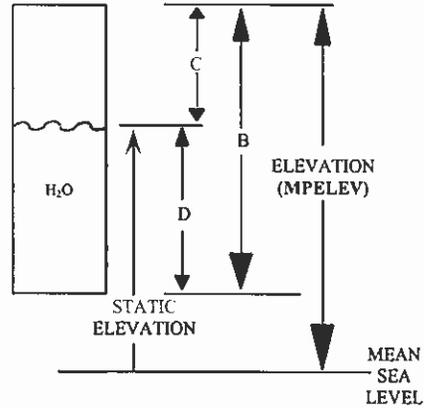
Project: 40.05.27 Sampled by: SP
 Location and Site Code (SITEID): _____
 Well No. (LOCID): TMC-2565-2 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 4.8.08 Weather: sunny / 45°

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) _____ ft. (optional)
 Measured Water Level Depth (C) (STATDEP) 3.20 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(D)}{(D)}$ _____ ft. (optional)
 Pump Intake Depth (ft): 27
 Depth during Purging/Sampling: _____ ft.
 (provide range)
 Comments (re: Depth during purging/sampling): _____



Purge Date and Method: BLADDER PUMP
 Physical Appearance/Comments: cloudy/poor recharge/no data
 Dissolved Ferrous Iron (mg/L): _____

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 3% ± 10% ± 10% ± 10mV

Time	Depth to Water (ft BTOC)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
1006	<u>-.08/purge</u>	5.67	43.7	6.09	533	2.09	360	100
1010		5.23	42.6	7.55	372	0.00	357	↓
1014		5.46	42.0	7.23	298	0.00	351	
1018		5.58	41.8	7.11	242	0.00	346	
1022		5.78	41.6	7.19	199	0.00	379	
1026		5.96	42.5	7.26	192	0.00	333	
1030		6.16	41.2	7.28	198	0.00	326	
1034		6.27	41.3	7.34	198	0.00	321	
1038		6.37	41.2	7.44	208	0.00	315	
1042		6.46	41.1	7.48	220	0.00	309	
1046		6.52	43.0	7.59	206	0.00	304	

Sample Time: _____ Sample ID: TMC-2565-2-27HA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM (LOW FLOW)

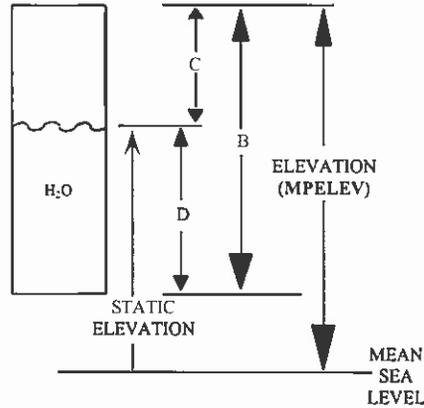
Project: 40-05-27 Sampled by: JP
 Location and Site Code (SITEID): LFC
 Well No. (LOCID): TMC-4565-2 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 4-8-08 Weather: sunny / 45°

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) _____ ft. (optional)
 Measured Water Level Depth (C) (STATDEP) _____ ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(D)}{(D)}$ = _____ ft. (optional)
See previous
 Pump Intake Depth (ft): _____
 Depth during Purging/Sampling: _____ ft
 (provide range)
 Comments (re: Depth during purging/sampling): _____



Purge Date and Method: BLADDER PUMP
 Physical Appearance/Comments: see previous
 Dissolved Ferrous Iron (mg/L): _____

FIELD MEASUREMENTS:

Time	Depth to Water (ft BTOC)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
<u>1050</u>	<u>7.02/purge</u>	<u>6.55</u>	<u>41.0</u>	<u>7.65</u>	<u>210</u>	<u>0.00</u>	<u>259</u>	<u>100</u>
								↓

Sample Time: 1100 Sample ID: TMCUM0227HA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM (LOW FLOW)

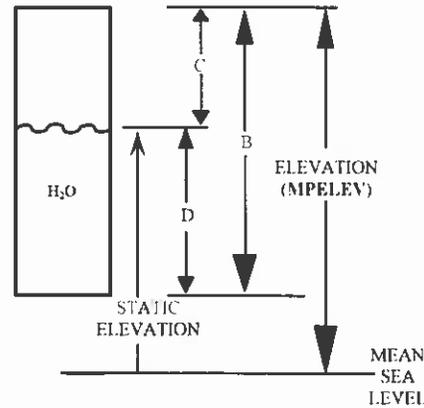
Project: 40-05-27 Sampled by: JMCS
 Location and Site Code (SITEID): LF6
 Well No. (LOCID): 2V-LF6LH-1 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 4-8-08 Weather: sun/45°

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) _____ ft (optional)
 Measured Water Level Depth (C) (STATDEP) _____ ft
 Length of Static Water Column (D) = $\frac{(B)}{(C)} = \frac{(D)}{(D)}$ ft (optional)
 Pump Intake Depth (ft) _____
 Depth during Purging/Sampling _____ ft
 (provide range)
 Comments (re Depth during purging/sampling): _____



Purge Date and Method: BLADDER PUMP Grab
 Physical Appearance/Comments: clear/no odor/sheen
 Dissolved Ferrous Iron (mg/L): _____

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 3% ± 10% ± 10% ± 10mV

Time	Depth to Water (ft BTOC)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
0957	—	7.22	36	8.4	39.8	9.72	222	—
0957	—	7.22	36	8.4	39.8	9.72	222	—

Sample Time: 0957 Sample ID: LF6LH0101HA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

Project: 46-05-27 Sampled by: JWCS
 Location and Site Code (SITEID): TF3 Tank Farms 133
 Well No. (LOCID): 46-TF3 MW-119R Well Diameter (SDIAM): 2"
 Date (LOGDATE): 4-8-08 Weather: sun/50°

CASING VOLUME INFORMATION:

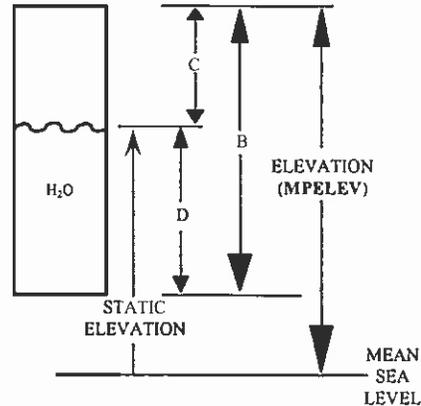
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 18.20 ft.
 Measured Water Level Depth (C) (STATDEP) 11.40 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(C)}{(D)} = \frac{6.8}{(D)}$ ft.

Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{6.8}{(D)} = \frac{1.088}{(D)}$ gal

Minimum Purge Volume = 3.26 gal (3 well volumes)



Purge Date and Method: Boiler
 Physical Appearance/Comments: cloudy / petro odor / Fe²⁺ = 2.5

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1312	0.75	6.90	0.16	12.0	245	3.91	187
1313	1.50	6.90	0.15	10.8	341	3.12	159
1314	2.25	7.05	0.15	10.6	389	3.20	128
1315	3.00	7.09	0.15	10.6	261	3.78	98
1316	3.75	7.11	0.15	10.5	282	4.26	73

Sample Time: 1317 Sample ID: TF3M119R11SA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

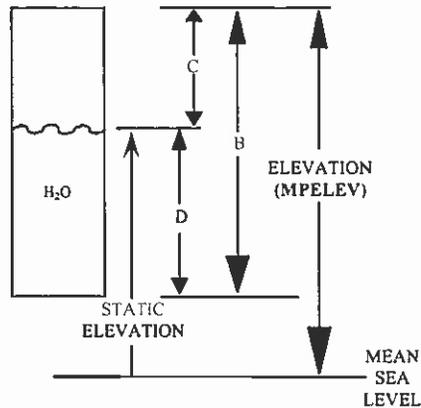
Project: 40-05-27 Sampled by: JW/CS
 Location and Site Code (SITEID): Tank Farms 103
 Well No. (LOCID): 6L-TF3MW-121R Well Diameter (SDIAM): 2"
 Date (LOGDATE): 4-8-08 Weather: Sun/50°

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	
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) 17.00 ft.
 Measured Water Level Depth (C) (STATDEP) 11.04 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(D)}{(D)} = \frac{17.00}{11.04} - 1 = 0.54$ ft.
 Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{6.04}{(D)} = \frac{0.16}{0.16} \times 6.04 = 0.966$ gal



Minimum Purge Volume = 2.99 gal (3 well volumes)

Purge Date and Method: Bailer
 Physical Appearance/Comments: Silty brown / no odor / Fe²⁺ = 0.4

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1336	0.50	7.26	0.13	13.7	655	4.30	201
1337	1.0	7.09	0.12	13.6	856	3.36	210
1338	1.5	7.05	0.12	13.5	975	4.02	215
1339	2.0	7.06	0.12	13.6	571	4.03	215
1340	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

Sample Time: 1343 Sample ID: TF3M121R11SA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

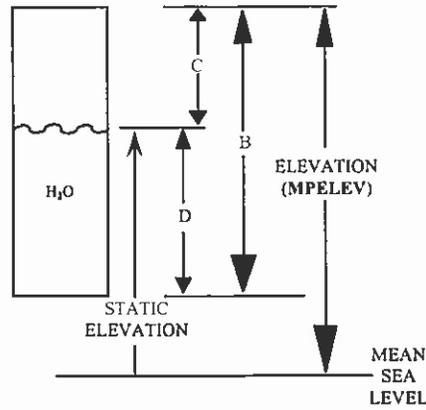
Project: 40-05-27 Sampled by: CS/JW
 Location and Site Code (SITEID): B101
 Well No. (LOCID): 101 MW-2 Well Diameter (SDIAM): 2 in
 Date (LOGDATE): 4-8-08 Weather: Sunny, 40's

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	
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) 24.36 ft.
 Measured Water Level Depth (C) (STATDEP) 15.82 ft.
 Length of Static Water Column (D) = $\frac{24.36}{(B)} - \frac{15.82}{(C)} = \frac{8.54}{(D)}$ ft.
 Casing Water Volume (E) = $\frac{0.16}{(A)} \times \frac{8.54}{(D)} = 1.3664$ gal



Minimum Purge Volume = 4.09 gal (3 well volumes)

Purge Date and Method: Boiler
 Physical Appearance/Comments: cloudy / bio-degradation odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1124	1	6.42	0.12	12.7	168.0	1.57	12
1126	2	6.46	0.12	12.8	260.0	4.20	0
1128	3	6.54	0.13	12.3	188.0	5.88	-13
1130	4	6.53	0.13	12.6	143.0	1.32	-22
1132	5	6.60	0.13	12.2	136.0	4.07	-27

Sample Time: 1133 Sample ID: 101M0216WA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

AFCEE CHAIN OF CUSTODY RECORD

COC#: 1_SDG#: 183_ (Open/Closed) Cooler ID#: A_

Ship to: Monika Santucci Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Carrier: LSL courier.	Project Name: Griffiss AFB LF6 LTM Sampler Name: Justin Damann Send Results to: Niels van Hoesel FPM Group Ltd. 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext. 205
Date 2008	Time 1630
Matrix WG	SBD/SED 0/0
# of Containers 12	VOCs note 1 40mL vials (HCl)
Metals, Hardness note 2 250 mL poly (HNO ₃)	Metals note 10 250 mL poly (HNO ₃)
Phenols note 3 1 L amber (H ₂ SO ₄)	Anions, TDS, color note 4 500 mL poly
NH ₃ , COD, TKN note 5 125 mL poly (H ₂ SO ₄)	TOC note 6 40 mL vial (HCL)
BOD note 7 1 L Poly	Alkalinity Note 8 8 oz glass (no headspace)
Cyanide note 9 8 oz poly (NaOH)	Comments

Analyses requested

Field Sample ID	LocID	Date	Time	MATRIX	SMCODE	SACODE	SBD/SED	# of Containers	VOCs note 1 40mL vials (HCl)	Metals, Hardness note 2 250 mL poly (HNO ₃)	Metals note 10 250 mL poly (HNO ₃)	Phenols note 3 1 L amber (H ₂ SO ₄)	Anions, TDS, color note 4 500 mL poly	NH ₃ , COD, TKN note 5 125 mL poly (H ₂ SO ₄)	TOC note 6 40 mL vial (HCL)	BOD note 7 1 L Poly	Alkalinity Note 8 8 oz glass (no headspace)	Cyanide note 9 8 oz poly (NaOH)	Comments	
775VM20R110HA	775VMW-20R	4/8	1630	WG	BP	N	0/0	12	3	1	1	1	1	1	1	1	1	1	1	
LF6VM2235HA	WL-LF6VMW-22	4/8	1230	WG	BP	N	0/0	12	3	1	1	1	1	1	1	1	1	1	1	
LF6VM2235HC	WL-LF6VMW-22	4/8	1230	WG	BP	FD	0/0	12	3	1	1	1	1	1	1	1	1	1	1	
TMCUM0227HA	TMC-USGS-2	4/8	1100	WG	BP	N	0/0	12	3	1	1	1	1	1	1	1	1	1	1	
LF6WT0101HA	WT-LF6WT-1	4/8	0935	WG	G	N	0/0	12	3	1	1	1	1	1	1	1	1	1	1	
LF6LH0101HA	RV-LF6LH-1	4/8	0959	WG	G	N	0/0	12	3	1	1	1	1	1	1	1	1	1	1	
LF6LH0201HA	RV-LF6LH-2	4/8	1017	WG	G	N	0/0	12	3	1	1	1	1	1	1	1	1	1	1	
040808HE	FIELDQC	4/8	1700	WQ	BP	EB	0/0	11	3	1	-	1	1	1	1	1	1	1	1	
040808HF	FIELDQC	4/8	1457	WQ	NA	AB	0/0	3	3	-	-	-	-	-	-	-	-	-	-	
040808HR	FIELDQC	4/8	0900	WQ	NA	TB	0/0	3	3	-	-	-	-	-	-	-	-	-	-	

Sample Condition Upon Receipt at Laboratory: Cooler temperature:

Special Instructions/Comments: Parameter List: (According to AFCEE QAPP 4.0 and NYSDEC Landfill Part 360 Baseline Parameters)

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: SW9065.

Note 4: Anions: SW9056, TDS: 160.1.

Note 5: NH₃: 350.2, COD: 410.4, TKN: 351.2.

Note 6: TOC: SW9060.

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 (Dissolved).

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 4/8/08	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 1790	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig)	Date: 4/8/08	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 1000	Company Name: LS	Time: 1700	Company Name:	Time:

MATRIX

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

SMCODE

B = Bailor
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 Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Tel: (315)437-0200 Carrier: LSL courier.	Project Name: Griffiss AFB TF 1 and 3 Sampling Sampler Name: David Forse Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext. 205
Sampler Signature: <i>Paul P. Forse</i>	

Field Sample ID	Location ID (LOCTD)	Date	Time	MATRIX	SMCODE	SBD/SED	SACODE	Preservative	Filt./Unfilt.	No. of Containers	VOC <small>note 1</small>	40 mL vials (HCl)	SVOCs <small>note 2</small>	1 L amber	Total Alkalinity <small>note 3</small>	(zero headspace)	Nitrogen (Nitrate) <small>note 4</small>	16 oz poly	Total Sulfide <small>note 5</small>	16 oz poly (ZnAc and NaOH)	Comments
TF3M119R11SA	WL-TF3MW-119R	4/8	1317	WG	B	0/0	N	HCl	Unf.	3	3	-	-	-	-	-	-	-	-	-	-
TF3M121R11SA	WL-TF3MW-121R	4/8	1343	WG	B	0/0	N	HCl	Unf.	3	3	-	-	-	-	-	-	-	-	-	-

Analyses Requested

Sample Condition Upon Receipt at Laboratory:
 Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0
 Note 1: VOCs: SW8260, AFCEE QAPP 4.0 List.
 Note 2: SVOCs: SW8270, AFCEE QAPP 4.0 List.
 Note 3: Total Alkalinity, 310.2.
 Note 4: Nitrogen: 353.2, Nitrate: Automated.
 Note 5: Total Sulfide: 376.2.

Cooler Temperature: _____

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 4/8/08	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 1310	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig) <i>Paul P. Forse</i>	Date: 4/28/08	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 1000	Company Name:	Time: 1200	Company Name:	Time:

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

SMCODE
 B = Bailor
 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

AFCEE CHAIN OF CUSTODY RECORD

COC#: 1_SDG#: 183_Cooler ID: A

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

Field Sample ID		Location ID (LOCID)	Date	Time	MATRIX	SMCODE	SBD/SED	SACODE	Preservative	Fil./Unfil.	No. of Containers	VOCs Note 1 40 mL vial (HCl)	Anions, note 2 500 mL poly	TOC note 3 40 mL vials (HCL)	Alkalinity note 4 8 oz glass (zero headspace)	Analyses Requested		Comments
101M0216WA	101MW-2		4/8	1133	WG	B	0/0	N	HCl	Unf.	6	3	1	1	1	1		

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 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 4/8/08	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 17:00	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/28/08	#2 Received by: (Sig)	Date: 4/8/08	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 10200	Company Name:	Time: 17:00	Company Name:	Time:

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

SMCODE
 B = Bailor
 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 Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Tel: (315)437-0200	Project Name: Griffiss AFB Site Building 35 sampling Sampler Name: Niels van Hoesel Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext 205
Carrier: LSL courier.	Sampler Signature:

Analyses Requested										Comments		
Field Sample ID	Location ID (LOCID)	Date	Time	MATRIX	SMCODE	SBD/SED	SACODE	Preservative	Fit./Unfil.		No. of Containers	VOCs Note 1 40 mL vial (HCl)
B035M0416GA	B035MW04	4/8	1451	WG	BP	0/0	N	HCl	Unf.	3	3	

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 SW8260: Target COCs: PCE, TCE, cis- and trans 1,2-DCE, and VC.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 4/8/08	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 17:00	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/28/08	#2 Received by: (Sig)	Date: 4/8/08	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 1000	Company Name:	Time: 17:00	Company Name:	Time:

MATRIX

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 WQ = Water Quality Control Matrix
 SO = Soil

SMCODE

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 G = Grab (only for EB).
 NA = Not Applicable (only for AB/TB)
 PP = Peristaltic Pump
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 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: 4.8.08 Time: 0900

Location: FPM office (garage)

Weather Conditions: Sunny / 45° - 60°

Meeting Type: Daily Health and Safety

Personnel Present:

John Pratt, Niels Van Hoeseel, Joel Wenzel
Caleb Smith

Visitors Present: —

Visitor Training: —

PPE Required: Modified D

Possible risks, injuries, concerns:

Driving hazards, parking lots etc. - mud - insects
sunburn

Anticipated Releases to Environment (if so, describe and detail response action/control measures implemented):

—

Property Damage:

—

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

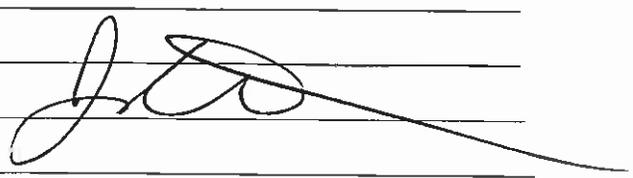
—

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): John J. Pratt

SSHP Organization Title: Site Safety and Health Officer



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: *Niels van Hoesel* Date: 9/21/08

ATTACHMENTS:

Checklist	Daily Chemical Quality Control Report Attachments
<input checked="" type="checkbox"/>	✓ Field sampling forms
<input checked="" type="checkbox"/>	✓ Equipment Calibration Log
<input checked="" type="checkbox"/>	✓ Copies of COCs
<input checked="" type="checkbox"/>	✓ SDG Table (See accompanying COCs)
<input checked="" type="checkbox"/>	✓ Daily Health and Safety Meeting Form

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: CS/DF
 Location and Site Code (SITEID): LF 2/3
 Well No. (LOCID): LF2MW-100 Well Diameter (SDIAM): 2 in
 Date (LOGDATE): 9/17/08 Weather: 87° Sunny

CASING VOLUME INFORMATION:

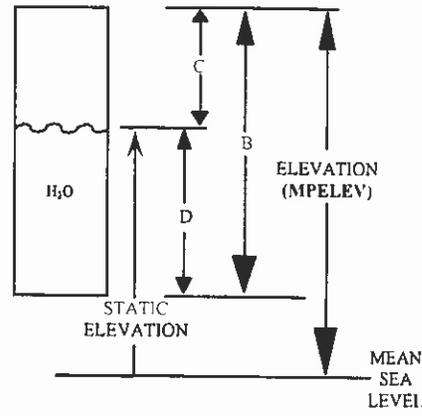
Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 66.92 ft.
 Measured Water Level Depth (C) (STATDEP) 11.45 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} = \frac{66.92}{11.45} = 5.847$ ft.

Casing Water Volume (E) = $\frac{(A)}{(D)} \times (D) = 9.8752$ gal

Minimum Purge Volume = 26.6256 gal (3 well volumes)



Purge Date and Method: Bailer
 Physical Appearance/Comments: milky, no odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1330	4	7.87	7.93	11.93	30.5	14.88	103
1340	8	7.75	7.75	10.95	23.7	8.59	86
1352	12	7.61	9.7	12.26	869	3.16	86
1407	14	7.20	10.2	10.7	576	8.28	-111
<u>Bailed dry at 14 gallons.</u>							

Sample Time: 1010 Sample ID: LF2M100110A

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM (LOW FLOW)

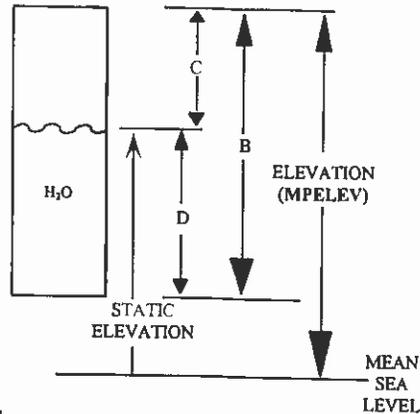
Project: 40-05-27 Sampled by: CS/JW
 Location and Site Code (SITEID): LFJ
 Well No. (LOCID): LF1MW-5 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 9-18-08 Weather: Sun/65°

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. (optional)
 Measured Water Level Depth (C) (STATDEP) 3.94 ft.
 Length of Static Water Column (D) = _____ - _____ = _____ ft. (optional)
(B) (C) (D)
 Pump Intake Depth (ft): 26
 Depth during Purging/Sampling: 4.02-4.03 ft
(provide range)
 Comments (re: Depth during purging/sampling): _____



Purge Date and Method: BLADDER PUMP 9-18-08
 Physical Appearance/Comments: clear/no odor
 Dissolved Ferrous Iron (mg/L): _____

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 3% ± 10% ± 10% ± 10mV

Time	Depth to Water (ft BTOC)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
1145	4.03	6.78	.576	12.66	8.3	8.76	-82	250 mL/min ↓ ✓
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	
1151	4.03	6.73	.574	12.75	7.3	5.86	-85	
1153	4.02	6.71	.574	12.79	7.2	5.04	-87	
1155	4.12	6.70	.573	13.04	6.0	4.77	-88	
1157	4.02	6.70	.574	13.12	6.2	4.65	-89	
1159	4.03	6.70	.574	13.23	5.2	4.58	-90	
1201	4.03	6.70	.575	13.35	7.0	4.53	-91	

Sample Time: 1205 Sample ID: LF1M0526QA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM (LOW FLOW)

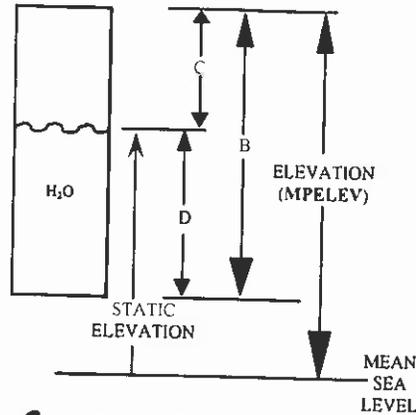
Project: 40-05-27 Sampled by: DB / JC
 Location and Site Code (SITEID): Landfill 1
 Well No. (LOCID): WL-LF1M06-6 Well Diameter (SDIAM): 2"
 Date (LOGDATE): Sun / DB Weather: sun / 60
9-18-08

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 (optional)
 Measured Water Level Depth (C) (STATDEP) 2.91 ft
 Length of Static Water Column (D) = _____ - _____ = _____ ft (optional)
(B) (C) (D)
 Pump Intake Depth (ft): 20
 Depth during Purging/Sampling _____ ft
(provide range)
 Comments (re Depth during purging/sampling): _____



Purge Date and Method: BLADDER PUMP 9-18-08
 Physical Appearance/Comments: clear / no odor
 Dissolved Ferrous Iron (mg/L): X

FIELD MEASUREMENTS:

Time	Depth to Water (ft BTOC)	Allowable Range:		Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
		± 0.1	± 3%					
<u>0914</u>	<u>3.12</u>			<u>14.66</u>	<u>70.1</u>	<u>6.65</u>	<u>229</u>	<u>150</u>
<u>0916</u>	↓			<u>13.96</u>	<u>62.6</u>	<u>4.60</u>	<u>136</u>	
<u>0919</u>	↓			<u>13.16</u>	<u>34.7</u>	<u>2.24</u>	<u>-7</u>	↓
<u>0922</u>	↓			<u>13.10</u>	<u>30.3</u>	<u>2.10</u>	<u>-18</u>	
<u>0925</u>	↓			<u>13.03</u>	<u>25.2</u>	<u>1.95</u>	<u>-29</u>	
<u>0928</u>	↓			<u>13.01</u>	<u>22.0</u>	<u>1.88</u>	<u>-36</u>	↓
<u>0931</u>	↓			<u>12.95</u>	<u>17.7</u>	<u>1.79</u>	<u>-44</u>	
<u>0934</u>	↓			<u>12.95</u>	<u>15.8</u>	<u>1.70</u>	<u>-50</u>	
<u>0937</u>	↓			<u>12.95</u>	<u>14.6</u>	<u>1.66</u>	<u>-54</u>	

Sample Time: 0940 Sample ID: LF1M0620R4

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

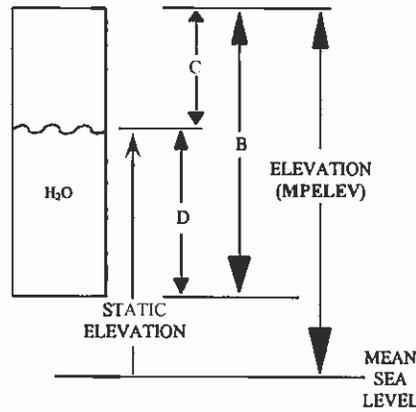
Project: 40-05-27 Sampled by: DB / PC
 Location and Site Code (SITEID): Landfill 1
 Well No. (LOCID): WL-LFIMW-14 Well Diameter (SDIAM): 2
 Date (LOGDATE): 9-18-08 Weather: sun / 60

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	
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) 15.60 ft.
 Measured Water Level Depth (C) (STATDEP) 11.90 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(D)}{(D)} = \frac{3.7}{(D)}$ ft.
 Casing Water Volume (E) = $\frac{(A)}{(D)} \times (D) = 0.592$ gal
 Minimum Purge Volume = 1.8 gal (3 well volumes)



Purge Date and Method: bauler / 9-18-08
 Physical Appearance/Comments: clear / no odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
<u>1356</u>	<u>0.5</u>	<u>6.65</u>	<u>18.8</u>	<u>13.67</u>	<u>189.0</u>	<u>9.97</u>	<u>187</u>
<u>1358</u>	<u>1.0</u>	<u>6.35</u>	<u>17.9</u>	<u>12.90</u>	<u>164.0</u>	<u>7.78</u>	<u>193</u>
<u>1300</u>	<u>1.5</u>	<u>6.26</u>	<u>17.5</u>	<u>12.89</u>	<u>500.0</u>	<u>7.66</u>	<u>198</u>
<u>1302</u>	<u>2.0</u>	<u>6.27</u>	<u>17.0</u>	<u>12.83</u>	<u>516.0</u>	<u>6.83</u>	<u>204</u>

Sample Time: 1304 Sample ID: LFIM1412QA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

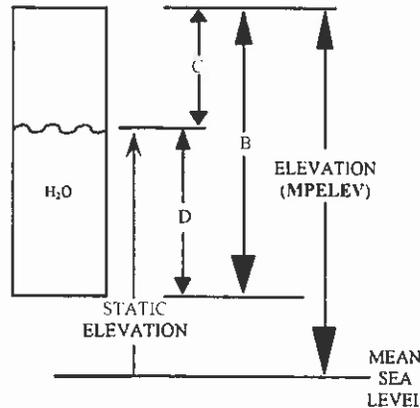
Project: 40-05-27 Sampled by: CS/JW
 Location and Site Code (SITEID): LF 1
 Well No. (LOCID): WL-LF1MW-103 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 9-18-08 Weather: Sun/60°

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	
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) 35.23 ft.
 Measured Water Level Depth (C) (STATDEP) 17.51 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(D)}{(D)} = \frac{17.72}{(D)}$ ft.



Casing Water Volume (E) = $\frac{.16}{(A)} \times \frac{17.72}{(D)} = \frac{2.83}{(D)}$ gal

Minimum Purge Volume = 8.5 gal (3 well volumes)

Purge Date and Method: Bailer/ 9-18-08
 Physical Appearance/Comments: clear/ no odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
0934	2	11.92	1.23	11.60	86.4	13.12	75
0937	4	11.71	0.99	9.85	187.0	11.64	63
<u>Bailed Dry at 4.75 gal</u>							

Sample Time: 1715 Sample ID: LF1M10333QA - 2 VOA's - Total Metals
 - 8oz Boston (4 containers) total

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM (LOW FLOW)

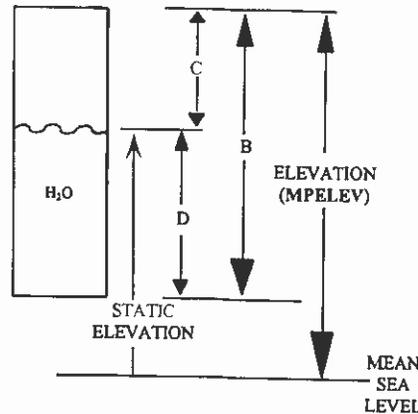
Project: 40-05-27 Sampled by: CS/JW
 Location and Site Code (SITEID): LF1
 Well No. (LOCID): LFIP-2 Well Diameter (SDIAM): _____
 Date (LOGDATE): 9-18-08 Weather: sun/60°

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/R)	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. (optional)
 Measured Water Level Depth (C) (STATDEP) 6.05 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(C)}{(D)}$ = _____ ft. (optional)
 Pump Intake Depth (ft): 13
 Depth during Purging/Sampling: 6.40-6.43 ft.
 (provide range)
 Comments (re: Depth during purging/sampling): _____



Purge Date and Method: BLADDER PUMP 9-18-08
 Physical Appearance/Comments: clear/no odor
 Dissolved Ferrous Iron (mg/L): _____

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 3% ± 10% ± 10% ± 10mV

Time	Depth to Water (ft BTOC)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
1003	6.43	7.04	.703	13.62	2.5	6.28	-106	100ml/min ↓
1007	6.40	6.92	.707	13.65	2.9	5.88	-106	
1011	6.40	6.87	.710	13.69	3.2	5.51	-107	
1015	6.43	6.84	.711	13.70	1.9	5.19	-107	
1019	6.43	6.82	.712	13.67	1.6	5.02	-108	
1023	6.43	6.81	.712	13.66	1.6	4.82	-107	

Sample Time: 1027 Sample ID: LFIP0213QA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM (LOW FLOW)

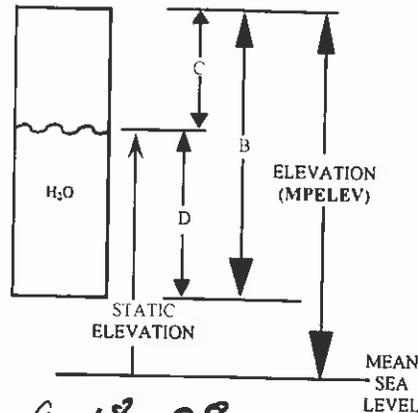
Project: 40-05-27 Sampled by: DB/PC
 Location and Site Code (SITEID): BB Landfill 1
 Well No. (LOCID): WL-LFIP-3 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 9-18-08 Weather: sun / 60

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. (optional)
 Measured Water Level Depth (C) (STATDEP) 4.67 ft.
 Length of Static Water Column (D) = _____ ft. (optional)
(B) - (C) = (D)
 Pump Intake Depth (ft): 17
 Depth during Purging/Sampling: 4.67 - 4.79 ft.
(provide range)
 Comments (re. Depth during purging/sampling): _____



Purge Date and Method: BLADDER PUMP 9-18-08
 Physical Appearance/Comments: clear No Odor
 Dissolved Ferrous Iron (mg/L): X

FIELD MEASUREMENTS:

Time	Depth to Water (ft BTOC)	Allowable Range:		Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
		± 0.1	± 3%					
1057	4.77	5.85	67.1	12.53	53.9	4.21	130	300
1059	↓	5.77	67.3	12.15	50.6	3.10	102	↓
1101		5.73	67.5	11.94	46.9	2.83	78	
1103		5.70	67.5	11.82	42.1	2.38	59	
1105		5.70	67.5	11.75	38.2	2.07	43	
1107		5.70	67.5	11.73	33.3	1.80	36	
1109		5.71	67.5	11.73	31.5	1.79	30	
1111		5.71	67.6	11.70	30.4	1.71	28	

Sample Time: 1116 Sample ID: LF110317 QA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM (LOW FLOW)

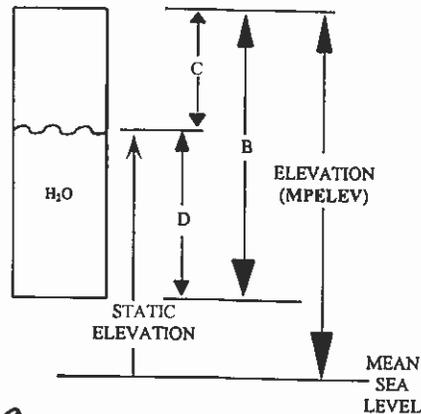
Project: 40-05-27 Sampled by: CS/JW
 Location and Site Code (SITEID): LF1
 Well No. (LOCID): LFIP-5 Well Diameter (SDIAM): 4"
 Date (LOGDATE): 9-18-08 Weather: Sun/70°

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. (optional)
 Measured Water Level Depth (C) (STATDEP) 6.17 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(D)}{(D)}$ = _____ ft. (optional)
 Pump Intake Depth (R): 25
 Depth during Purging/Sampling: 25 6.23-6.25 ft.
 (provide range)



Comments (re: Depth during purging/sampling): _____

Purge Date and Method: BLADDER PUMP 9-18-08
 Physical Appearance/Comments: clear/no odor
 Dissolved Ferrous Iron (mg/L): _____

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 3% ± 10% ± 10% ± 10mV

Time	Depth to Water (ft BTOC)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)	Flow Rate (mL/min)
1445	6.23	7.26	.593	12.01	4.9	8.41	-135	250 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	
1451	6.23	7.21	.606	12.13	3.9	6.35	-139	
1453	6.23	7.19	.610	12.17	3.8	6.23	-139	
1455	6.23	7.19	.615	12.09	3.3	6.23	-139	
1457	6.23	7.19	.614	11.88	3.4	6.12	-139	

Sample Time: 1459 Sample ID: LFIP0525QA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

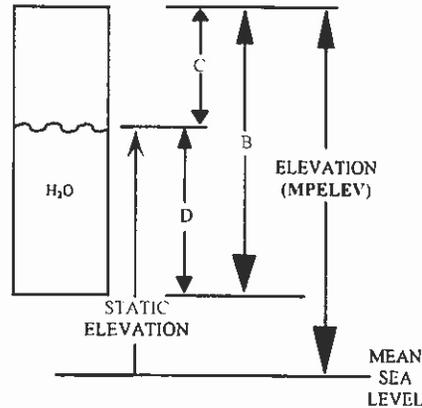
Project: 40-09-27 Sampled by: CS/DF
 Location and Site Code (SITEID): LFI
 Well No. (LOCID): MWSAR-03 Well Diameter (SDIAM): 2 in
 Date (LOGDATE): 9/17/08 Weather: SUNNY, 79°

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	<u>2.0</u>	2.2	3.0	4.0	4.3	5.0	6.0	7.0	
Unit Casing Volume (A) (gal/ft)	0.04	0.09	<u>0.16</u>	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION:

Measured Well Depth (B) (TOTDEPTH) 24.6 ft
 Measured Water Level Depth (C) (STATDEP) 21 ft
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(C)}{(D)} = 3.6$ ft



Casing Water Volume (E) = $\frac{(A)}{(D)} \times (D) = 0.58$ gal

Minimum Purge Volume = 1.74 gal (3 well volumes)

Purge Date and Method: Bailer / 9-18-08
 Physical Appearance/Comments: silty orange / no odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1523	0.5	7.59	0.376	14.58	465	11.10	-161
1525	1	7.10	0.343	12.74	562	10.67	-134
1527	1.5	6.93	0.325	12.09	455	10.29	-116
1528	2	6.78	0.313	11.81	199	9.80	-101
1530	2.5	6.66	0.309	11.64	2999	10.26	-89
<u>Bailed dry at 2.75 gal.</u>							

Sample Time: 1030 Sample ID: MWSAR0324 QA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

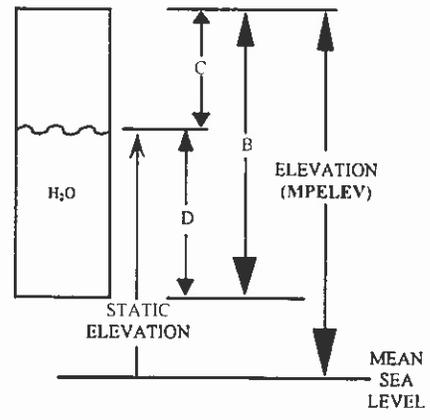
Project: 40-05-27 Sampled by: CS/JW
 Location and Site Code (SITEID): LF1
 Well No. (LOCID): SL-LF154-2 Well Diameter (SDIAM): _____
 Date (LOGDATE): 9-18-08 Weather: Sun/60°

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	
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) (NOTDEPTH) _____ ft.
 Measured Water Level Depth (C) (STATDEP) _____ ft.
 Length of Static Water Column (D) = _____ - _____ = _____ ft.
 (B) (C) (D)
 Casing Water Volume (E) = _____ x _____ = _____ gal
 (A) (D)



Minimum Purge Volume = _____ gal (3 well volumes)

Purge Date and Method: Grab
 Physical Appearance/Comments: no odor / Iron flak on water

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1031		7.06	705	13.28	33.4	9.17	-103

Sample Time: 1031 Sample ID: LF1SW02SMCO1QA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

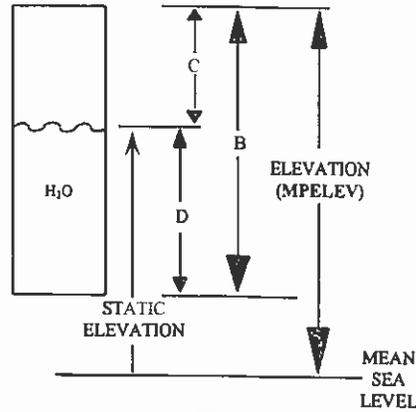
Project: 40-05-27 Sampled by: DB / PC
 Location and Site Code (SITEID): Landfill 1
 Well No. (LOCID): SL-LFISW-3 Well Diameter (SDIAM): 4
 Date (LOGDATE): 9-18-08 Weather: sun 160

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	
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.
 Measured Water Level Depth (C) (STATDEP) _____ ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(C)}{(D)} =$ _____ ft.
 Casing Water Volume (E) = _____ x _____ = _____ gal
 Minimum Purge Volume = _____ gal (3 well volumes)



Purge Date and Method: Grab 9-18-08
 Physical Appearance/Comments: clear / no odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ±1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
	0.25	5.84	48.7	15.98	35.2	7.6	180

Sample Time: 1420 Sample ID: LFISW0301QA
1320

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

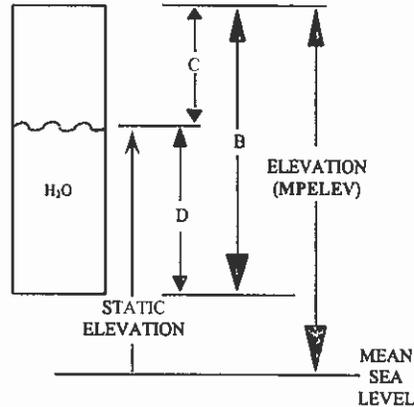
Project: 40-05-27 Sampled by: DB / PC
 Location and Site Code (SITEID): B 15
 Well No. (LOCID): WL- B15MW-12 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 9-18-08 Weather: sun / 60

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	
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) 15.41 ft.
 Measured Water Level Depth (C) (STATDEP) 8.07 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(B)}{(D)} = \frac{7.34}{(D)}$ ft.
 Casing Water Volume (E) = $\frac{(A)}{(D)} \times (D) = 1.1$ gal
 Minimum Purge Volume = 3.5 gal (3 well volumes)



Purge Date and Method: bailey / 9-18-08
 Physical Appearance/Comments: silly grey / sheen / petro odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 $\pm 5\%$ $\pm 1^\circ\text{C}$

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1429	0.75	5.95	0.153	17.89	382.0	5.80	-97
1430	1.5	5.94	0.157	17.28	390.0	4.54	-112
1431	2.25	5.95	0.154	17.10	503.0	5.61	-111
1432	3.0	5.96	0.151	16.94	460.0	5.13	-114
1434	3.75	5.97	0.149	16.93	477.0	4.86	-113
		5.97					

Sample Time: 1440 Sample ID: B15M1208TA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

WELL PURGING & SAMPLING FORM

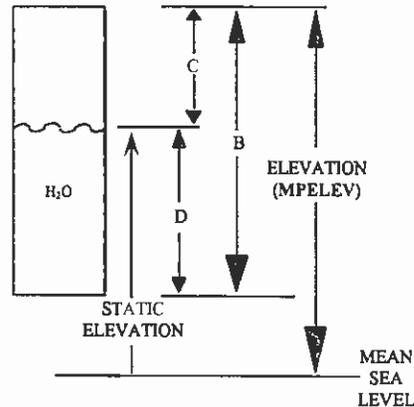
Project: 40-05-27 Sampled by: DB / PC
 Location and Site Code (SITEID): B 101
 Well No. (LOCID): WL-101AW-2 Well Diameter (SDIAM): 2"
 Date (LOGDATE): 9-18-08 Weather: sun / 60

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	
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) 24.34 ft.
 Measured Water Level Depth (C) (STATDEP) 16.55 ft.
 Length of Static Water Column (D) = $\frac{(B)}{(C)} - \frac{(B)}{(D)} = 7.79$ ft.



Casing Water Volume (E) = $\frac{(A)}{(D)} \times (D) = 1.25$ gal

Minimum Purge Volume = 4 gal (3 well volumes)

Purge Date and Method: Boiler / 9-18-08
 Physical Appearance/Comments: clear / organic odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ± 1°C

Time	Volume Removed (gal)	pH	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1355	1	6.13	0.119	19.46	171.0	5.35	-105
1357	2	5.97	0.124	19.49	234.0	5.32	-102
1359	3	5.93	0.125	19.44	249.0	4.59	-104
1400	4	5.90	0.125	19.49	193.0	4.72	-105

Sample Time: 1400 Sample ID: 101M02 17 XA

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, Fe²⁺, CH₄, H₂S) parameters should be sampled first.

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

Sample Condition Upon Receipt at Laboratory:

Cooler temperature:

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.
- 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 6: Anions: SW9056, TDS: 160.1.
- 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.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 9/18/08	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd.	Time: 1727	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 9/15/08	#2 Received by: (Sig)	Date: 9/19/08	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd.	Time: 1000	Company Name:	Time: 829	Company Name:	Time:

MATRIX

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

SMCODE

- B = Bailor
- 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 (WO)

COC#: 4_SDG#: 194_Cooler ID: A_

Ship to: Monika Santucci Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Tel: (315)437-0200	Project Name: Griffiss AFB Building 15 Sampling Sampler Name: Niels van Hoesel Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 ext. 205
Carrier: LSL courier.	Sampler Signature:

Field Sample ID	Location ID (LOCID)	Date	Time	Analyses Requested							Comments		
				MATRIX	SMCODE	SBD/SED	SACODE	Preservative	Fit./Unfit.	No. of Containers		VOCs Note 1 40 mL Vials (HCl)	SVOC Note 2 1 L Ambers
B15M1208TA	WL-B15MW-12	9/18	1440	WG	B	0/0	N	HCl	Unf.	3	3	-	

Sample Condition Upon Receipt at Laboratory:
 Cooler temperature: _____

Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 3.1
 Note 1: VOCs: SW 8260 analysis for STARS List including MTBE.
 Note 2: SVOCs: SW 8270 analysis for STARS List.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 9/19/08	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 1330	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 9/10/08	#2 Received by: (Sig)	Date: 9/19/08	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 1000	Company Name:	Time: 8:22	Company Name:	Time:

- | | | |
|--|--|---|
| MATRIX
WG = Ground water
WQ = Water Quality Control Matrix
SO = Soil
WS = Surface water | SMCODE
B = Bailor
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#: 3_SDG#: 194_ (Open/Closed) Cooler ID#: A

Ship to: Monika Santucci Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Tel: (315)437-0200 Carrier: LSL courier.	Project Name: Griffiss AFB B101 Sampling Sampler Name: Niels van Hoesel Sampler Signature: 
Send Results to: Niels van Hoesel FPM Group Ltd. 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext. 205	

Field Sample ID	LocID	Date	Time	MATRIX	SMCODE	SACODE	SBD/SED	# of Containers	VOCs <small>note 1</small>	Metals, Hardness <small>note 2</small>	Metals <small>note 3</small>	250 mL poly (HNO ₃)	PCBs <small>note 4</small>	1 L amber	Phenols <small>note 5</small>	8 oz amber (H ₂ SO ₄)	Anions, <small>note 6</small>	250 mL poly	NH ₃ , COD, TKN <small>note 7</small>	125 mL poly (H ₂ SO ₄)	TOC <small>note 8</small>	40 mL vials (HCL)	Cyanide <small>Note 9</small>	8 oz poly (NaOH)	BOD, <small>note 10</small>	1 L poly	Alkalinity <small>note 11</small>	8 oz glass (zero headspace)	Comments
101M0217XA	WL-101MW-2	9/18	1400	WG	B	N	0/0	8	3	-	-	-	-	-	-	-	-	1	-	-	3	-	-	-	-	-	-	1	

Analyses requested

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.
 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 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.
 Note 11: Alkalinity: 310.1.

Cooler temperature: _____

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 9/19/08
Company Name:	Time:	Company Name: FPM Group Ltd.	Time: 1235
#1 Received by: (Sig) Niels van Hoesel	Date: 9/12/08	#2 Received by: (Sig)	Date: 9/19/08
Company Name: FPM Group Ltd.	Time: 1000	Company Name:	Time: 835
#3 Released by: (Sig)	Date:	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name:	Time:

MATRIX

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

SMCODE

B = Bailor
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: 9/18/08 Time: 8:15

Location: FPM office (garage)

Weather Conditions: 60 sunny

Meeting Type: Daily Health and Safety

Personnel Present:

Caleb Smith Josh Wemel David Ballyga Peter Coniglione III

Visitors Present: —

Visitor Training: —

PPE Required: Modified D

Possible risks, injuries, concerns:

slip trip fall sun burn

Anticipated Releases to Environment (if so, describe and detail response action/control measures implemented):

none

Property Damage:

none

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): Nick van Hoveel

SSHP Organization Title: Site Safety and Health Officer

Appendix C
Validated Data

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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:

<i>Sample ID</i>	<i>Date</i>	<i>QC Samples</i>	<i>Date</i>
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 with exceptions discussed in the text below. 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 Hoessel

Date: 2/18/08

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

**AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS**

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

Analyte	MDL	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	

*ent
7/18/08*

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:

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 with exceptions discussed in the text below. 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 SHEET 2
RESULTS**

Analytical Method: SW8260B Preparatory Method: AAB #: R13266
 Lab Name: Life Science Laboratories, Inc. Contract #: _____
 Field Sample ID: 101M0216WA Lab Sample ID: 0804057-001A Matrix: Groundwater
 % Solids: 0 Initial Calibration ID: 1221 File ID: M4887.D
 Date Received: 09-Apr-08 Date Extracted: _____ Date Analyzed: 10-Apr-08
 Concentration Units (ug/L or mg/Kg dry weight): ug/L Sample Size: 25 mL

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	

*WA
5/21/08*

Comments:

**AFCEE
WET CHEM ANALYSES DATA PACKAGE**

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

Field Sample ID	Lab
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: Monika Santucci Name: Monika Santucci
Date: 4/28/08 Title: Project Manager

**AFCEE
WET CHEM ANALYSES DATA SHEET 2
RESULTS**

Analytical Method: SW9056 **AAB #:** R13249
Lab Name: Life Science Laboratories, Inc. **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

			Concentration	Dilution	Qualification
Chloride	0.99	10	200	10	
Nitrate (as N)	0.15	1.0	0.16	10	F
Sulfate (as SO4)	2.0	10	2.5	10	F

*cut
5/21/08*

Comments:

**AFCEE
WET CHEM ANALYSES DATA PACKAGE**

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

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

AFCEE
WET CHEM ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW9060 **AAB #:** R13348
Lab Name: Life Science Laboratories, Inc. **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

Parameter	MDL	PL	Concentration	Dilution	Quality
Total Organic Carbon	4.0	10	89	10	

**use this result*

**Result transferred ~~from~~ ^{to} original sample 101M0216WA (1:1)*

*EWK
5/21/08*

Comments:

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 with exceptions discussed in the text below. 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”) and non-detect results are considered estimated (flagged “UJ”). 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).

Corrective Action: 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 SHEET 2
RESULTS

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

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	Qualifier
1,2-Dichloroethane-d4	113	72 - 119	
4-Bromofluorobenzene	111	76 - 119	
Toluene-d8	97	81 - 120	

WJK
10/14/08

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:

**AFCEE
WET CHEM ANALYSES DATA PACKAGE**

Analytical Method: SW9056 AAB #: R14837
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: Monika Santucci Name: Monika Santucci
Date: 10/9/08 Title: Project Manager

**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

	MDL	RL	Concentration	Dilution	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

*cut
10/14/08*

Comments:

**AFCEE
WET CHEM ANALYSES DATA PACKAGE**

Analytical Method: SM 2320 B AAB #: R14921
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: Monika Santucci Name: Monika Santucci
Date: 10/9/00 Title: Project Manager

Quality Control Results

Appendix D
Raw Lab Data

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Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

Tuesday, January 22, 2008

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

TEL:

Project: GRIFFISS AFB - BUILDING 101

RE: 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.

A handwritten signature in black ink that reads 'Monika Santucci'.

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) Test Methods for Evaluating Solid Wastes, 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: FPM
Project/Order: Griffiss AFB – Building 101
Work Order #: 0712141
Methodology: 8260B

Analyzed/Reviewed by (Initials/Date): JK 1/16/08

Supervisor/Reviewed by (Initials/Date): MT 1/13/08

QA/QC Review (Initials/Date): [Signature] 1/21/08

File Name: G:\Narratives\MSVoa\0712141msvnr.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 Vocab 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.

CLIENT: FPM Group
Project: Griffiss AFB - Building 101
Lab Order: 0712141

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0712141-001A	101M0216VA	101MW-2	12/20/2007	12/21/2007

Lab Order: 0712141
Client: FPM Group
Project: Griffiss AFB - Building 101

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0712141-001A	101M0216VA	12/20/2007 4:35:00 PM	Groundwater	Volatile Organic Compounds by GC/MS			12/30/2007

Chain of Custody

External Chain of Custody

AFCÉE CHAIN OF CUSTODY RECORD

COC#: 4 SDG#: 174 Cooler ID: A

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

Analyses Requested

Field Sample ID	Location ID (LOCID)	Date	Time	MATRIX	SMCODE	SBD/SED	SACODE	Preservative	Fit/UnFit	No. of Containers	VOCs Note 1	Comments
101M0216VA	101MW-2	12/20	1635	WG	B	0/0	N	HCl	Unf.	3	3	

Sample Condition Upon Receipt at Laboratory: Good Custody Seal INTACT Cooler Temperature: 4.4°C EN 100
 Special Instructions/Comments: Analyses to be conducted in compliance with AFCÉE QAPP 4.0
 Note 1: VOC: method SW 8260; Target COCs: PCE, TCE, DCE, Vinyl Chloride and Chloroform.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date:	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 12/5/07	#2 Received by: (Sig) <u>Bill Donnellan</u>	Date: 12/20/07	#3 Received by: (Sig) <u>Bill Donnellan</u>	Date: 12/21/07
Company Name: FPM Group Ltd	Time: 10200	Company Name: <u>Life Science Labs</u>	Time: 9:45	Company Name: <u>LSC</u>	Time: 1445

MATRIX

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

SMCODE

B = Bailor
 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

Analytical Results

**AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS**

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

Analyte	MDL	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:

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.

Contract #:

Instrument ID: HP5970 GCMS#2

Date of Initial Calibration: 28DEC07

Initial Calibration ID: 1155

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

SEE ATTACHED

Comments:

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\MD28VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Sun Dec 30 14:09:18 2007
 Response via : Initial Calibration

ICAL # 1155

Calibration Files

0.5 =M4111.D 1.0 =M4112.D 2.0 =M4113.D
 10 =M4114.D 20 =M4115.D 30 =M4116.D

Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD
-----ISTD-----								
1) I Fluorobenzene								
2) Dichlorodifluoromet	0.603	0.576	0.644	0.768	0.794	0.781	0.707	13.41
3) P Chloromethane	0.201	0.187	0.195	0.239	0.252	0.270	0.231	15.56
4) CP Vinyl chloride	0.142	0.178	0.220	0.265	0.246	0.270	0.229	22.85
5) Bromomethane	0.156	0.190	0.198	0.251	0.260	0.267	0.220	20.53
6) Chloroethane	0.107	0.122	0.124	0.152	0.159	0.157	0.140	15.71
7) Trichlorofluorometh	0.626	0.550	0.629	0.758	0.766	0.736	0.686	12.18
8) Acetone	0.021	0.024	0.021	0.024	0.023	0.022	0.023#	5.78
9) Acrolein	0.010	0.013	0.014	0.015	0.015	0.015	0.014#	14.17
10) CPM 1,1-Dichloroethene	0.226	0.208	0.246	0.281	0.283	0.276	0.258	12.04
11) Methyl iodide	0.349	0.306	0.355	0.442	0.523	0.586	0.451	26.48
12) 1,1,2-Trichloro-1,2	0.622	0.581	0.652	0.754	0.744	0.712	0.683	9.58
13) Methyl acetate	0.085	0.096	0.095	0.107	0.106	0.103	0.100	8.01
14) Acrylonitrile	0.016	0.019	0.021	0.025	0.025	0.025	0.022#	17.09
15) Methylene chloride	0.287	0.274	0.293	0.315	0.311	0.300	0.298	4.83
16) Carbon disulfide	0.515	0.462	0.559	0.769	0.810	0.809	0.679	23.51
17) trans-1,2-Dichloroe	0.263	0.268	0.292	0.344	0.347	0.338	0.314	12.09
18) Methyl tert-Butyl e	0.345	0.375	0.370	0.407	0.413	0.406	0.390	6.74
19) P 1,1-Dichloroethane	0.549	0.518	0.575	0.663	0.673	0.651	0.608	10.02
20) Vinyl acetate	0.198	0.201	0.221	0.273	0.295	0.291	0.255	18.33
21) 2-Butanone	0.047	0.037	0.039	0.048	0.052	0.050	0.046#	12.24
22) cis-1,2-Dichloroeth	0.316	0.309	0.338	0.379	0.374	0.367	0.348	8.08
23) Bromochloromethane	0.171	0.162	0.183	0.205	0.207	0.198	0.189	9.20
24) CP Chloroform	0.715	0.650	0.709	0.777	0.782	0.760	0.733	6.32
25) 2,2-Dichloropropane	0.357	0.356	0.391	0.486	0.501	0.490	0.437	15.08
26) Cyclohexane	0.327	0.316	0.356	0.417	0.418	0.404	0.375	11.34
27) S Dibromofluoromethan	0.639	0.610	0.646	0.717	0.721	0.699	0.673	6.33
28) S 1,2-Dichloroethane-	0.229	0.221	0.244	0.264	0.260	0.248	0.243	6.39
29) 1,2-Dichloroethane	0.262	0.250	0.275	0.303	0.304	0.298	0.283	7.56
30) 1,1,1-Trichloroetha	0.460	0.447	0.513	0.613	0.633	0.622	0.557	14.55
31) 1,1-Dichloropropene	0.385	0.376	0.416	0.488	0.493	0.481	0.445	11.44
32) Carbon tetrachlorid	0.419	0.425	0.484	0.618	0.635	0.626	0.545	18.07
33) M Benzene	0.803	0.729	0.807	0.894	0.893	0.874	0.836	7.17
34) M Trichloroethene	0.364	0.353	0.403	0.466	0.466	0.453	0.419	11.24
35) Dibromomethane	0.271	0.268	0.292	0.327	0.324	0.319	0.302	8.25
36) Methylcyclohexane	0.295	0.280	0.323	0.399	0.407	0.398	0.356	15.36
37) CP 1,2-Dichloropropane	0.305	0.287	0.325	0.360	0.356	0.356	0.333	8.50
38) Bromodichloromethan	0.529	0.545	0.642	0.806	0.828	0.819	0.709	18.83
39) 2-Chloroethylvinyl	0.068	0.064	0.075	0.088	0.089	0.086	0.077	13.46
40) 4-Methyl-2-pentanon	0.144	0.130	0.149	0.178	0.178	0.176	0.161	12.18
41) cis-1,3-Dichloropro	0.277	0.293	0.351	0.464	0.487	0.490	0.406	23.58
42) S Toluene-d8	0.702	0.686	0.757	0.870	0.861	0.840	0.790	9.56
43) CPM Toluene	0.452	0.449	0.510	0.573	0.568	0.564	0.524	10.36

J. H. 1/2/08

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\MD28VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Sun Dec 30 14:09:18 2007
 Response via : Initial Calibration

Calibration Files

0.5 =M4111.D 1.0 =M4112.D 2.0 =M4113.D
 10 =M4114.D 20 =M4115.D 30 =M4116.D

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	0.220	0.243	0.242	0.237	0.222	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	0.617	0.606	0.653	0.761	0.736	0.708	0.695	10.03
49)	1,3-Dichloropropane	0.611	0.630	0.667	0.725	0.703	0.678	0.679	6.96
50)	Dibromochloromethan	0.718	0.730	0.890	1.121	1.117	1.103	0.985	20.65
51)	Tetrachloroethene	0.961	0.899	0.982	1.098	1.045	1.001	1.010	6.94
52)	1-Chlorohexane	0.567	0.533	0.604	0.725	0.709	0.688	0.655	13.25
53)	1,1,1,2-Tetrachloro	0.645	0.644	0.707	0.801	0.776	0.750	0.734	9.57
54) PM	Chlorobenzene	1.292	1.221	1.326	1.399	1.323	1.254	1.306	4.43
55) CP	Ethylbenzene	1.878	1.723	1.947	1.995	1.854	1.772	1.861	5.04
56)	(m+p)-Xylene	0.672	0.634	0.707	0.762	0.724	0.703	0.711	6.76
57)	o-Xylene	0.651	0.645	0.716	0.805	0.782	0.736	0.733	9.10
58)	Styrene	0.967	0.920	1.033	1.178	1.161	1.109	1.082	10.19
59) P	Bromoform	0.328	0.374	0.481	0.643	0.660	0.649	0.553	28.59
60) S	Bromofluorobenzene	1.249	1.089	1.169	1.224	1.157	1.110	1.173	5.06
61) I	1,4-Dichlorobenzene-d	-----ISTD-----							
62)	trans-1,4-Dichloro-	0.025	0.038	0.076	0.038	0.048	0.052	0.047#	34.44
63) P	1,1,2,2-Tetrachloro	0.734	0.756	0.833	0.926	0.904	0.874	0.842	8.63
64)	Isopropylbenzene	2.041	1.946	2.238	2.567	2.539	2.431	2.300	10.39
65)	1,2,3-Trichloroprop	0.373	0.301	0.396	0.406	0.446	0.432	0.395	12.12
66)	Bromobenzene	0.871	0.833	0.913	0.974	0.969	0.938	0.915	5.59
67)	n-Propylbenzene	2.678	2.564	2.883	3.295	3.253	3.121	2.971	9.39
68)	2-Chlorotoluene	1.992	1.754	2.083	2.302	2.317	2.261	2.085	10.51
69)	4-Chlorotoluene	1.906	2.338	2.414	2.302	2.386	2.238	2.288	7.93
70)	1,3,5-Trimethylbenz	1.661	1.504	1.737	1.958	1.954	1.908	1.797	9.48
71)	tert-Butylbenzene	1.748	1.637	1.861	2.119	2.121	2.057	1.933	9.79
72)	1,2,4-Trimethylbenz	1.558	1.442	1.652	1.882	1.869	1.818	1.713	9.79
73)	sec-Butylbenzene	2.484	2.353	2.708	3.082	3.163	2.966	2.796	10.80
74)	1,3-Dichlorobenzene	1.521	1.452	1.554	1.713	1.711	1.643	1.595	6.15
75)	p-Isopropyltoluene	1.735	1.629	1.851	2.221	2.239	2.190	2.000	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	1.507	1.466	1.632	2.010	2.045	1.993	1.815	14.71
78)	1,2-Dichlorobenzene	1.274	1.197	1.331	1.479	1.458	1.411	1.364	7.48
79)	1,2-Dibromo-3-chlor	0.065	0.067	0.083	0.123	0.132	0.131	0.104	30.02
80)	1,2,4-Trichlorobenz	0.721	0.691	0.758	0.904	0.914	0.880	0.817	11.26
81)	Hexachlorobutadiene	0.667	0.635	0.741	0.856	0.838	0.803	0.762	11.12
82)	Naphthalene	0.472	0.467	0.521	0.571	0.585	0.578	0.538	9.53
83)	1,2,3-Trichlorobenz	0.474	0.436	0.499	0.597	0.603	0.594	0.540	12.80

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\MD28VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Wed Jan 02 11:51:27 2008
 Response via : Initial Calibration

Calibration Files

40 =M4119.D = =
 = = = =

Compound	40	Avg	%RSD
-----ISTD-----			
1) I Fluorobenzene			
2) Dichlorodifluoromet	0.780		
3) P Chloromethane	0.272		
4) CP Vinyl chloride	0.282		
5) Bromomethane			
6) Chloroethane	0.161		
7) Trichlorofluorometh	0.735		
8) Acetone	0.023		
9) Acrolein	0.015		
10) CPM 1,1-Dichloroethene	0.283		
11) Methyl iodide	0.598		
12) 1,1,2-Trichloro-1,2	0.713		
13) Methyl acetate	0.105		
14) Acrylonitrile	0.026		
15) Methylene chloride	0.302		
16) Carbon disulfide	0.829		
17) trans-1,2-Dichloroe	0.343		
18) Methyl tert-Butyl e	0.411		
19) P 1,1-Dichloroethane	0.628		
20) Vinyl acetate	0.305		
21) 2-Butanone	0.049		
22) cis-1,2-Dichloroeth	0.355		
23) Bromochloromethane	0.195		
24) CP Chloroform	0.735		
25) 2,2-Dichloropropane	0.476		
26) Cyclohexane	0.391		
27) S Dibromofluoromethan	0.680		
28) S 1,2-Dichloroethane-	0.238		
29) 1,2-Dichloroethane	0.291		
30) 1,1,1-Trichloroetha	0.609		
31) 1,1-Dichloropropene	0.474		
32) Carbon tetrachlorid	0.612		
33) M Benzene	0.851		
34) M Trichloroethene	0.430		
35) Dibromomethane	0.309		
36) Methylcyclohexane	0.391		
37) CP 1,2-Dichloropropane	0.339		
38) Bromodichloromethan	0.795		
39) 2-Chloroethylvinyl	0.069		
40) 4-Methyl-2-pentanon	0.169		
41) cis-1,3-Dichloropro	0.483		
42) S Toluene-d8	0.814		
43) CPM Toluene	0.553		

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\MD28VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Wed Jan 02 11:51:27 2008
 Response via : Initial Calibration

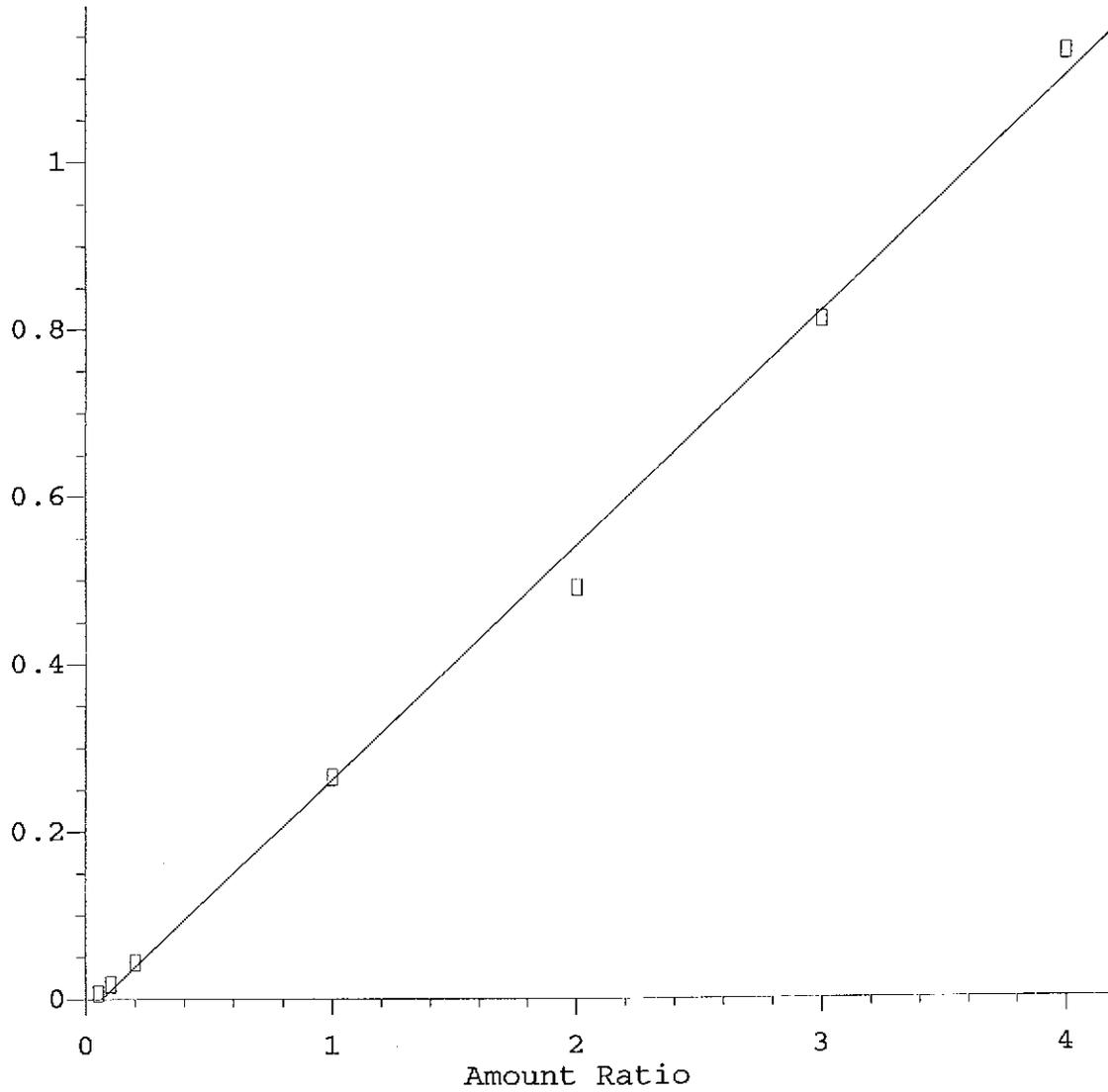
Calibration Files

40 =M4119.D = =
 = = = =

	Compound	40	Avg	%RSD
44)	trans-1,3-Dichlorop	0.345		
45)	1,1,2-Trichloroetha	0.229		
46)	2-Hexanone	0.099		
-----ISTD-----				
47) I	Chlorobenzene-d5			
48)	1,2-Dibromoethane	0.780		
49)	1,3-Dichloropropane	0.739		
50)	Dibromochloromethan	1.214		
51)	Tetrachloroethene	1.081		
52)	1-Chlorohexane	0.760		
53)	1,1,1,2-Tetrachloro	0.814		
54) PM	Chlorobenzene	1.330		
55) CP	Ethylbenzene	1.862		
56)	(m+p)-Xylene	0.771		
57)	o-Xylene	0.799		
58)	Styrene	1.204		
59) P	Bromoform	0.736		
60) S	Bromofluorobenzene	1.212		
-----ISTD-----				
61) I	1,4-Dichlorobenzene-d			
62)	trans-1,4-Dichloro-	0.054		
63) P	1,1,2,2-Tetrachloro	0.865		
64)	Isopropylbenzene	2.337		
65)	1,2,3-Trichloroprop	0.414		
66)	Bromobenzene	0.907		
67)	n-Propylbenzene	3.007		
68)	2-Chlorotoluene	1.889		
69)	4-Chlorotoluene	2.433		
70)	1,3,5-Trimethylbenz	1.856		
71)	tert-Butylbenzene	1.986		
72)	1,2,4-Trimethylbenz	1.772		
73)	sec-Butylbenzene	2.813		
74)	1,3-Dichlorobenzene	1.573		
75)	p-Isopropyltoluene	2.137		
76)	1,4-Dichlorobenzene	1.483		
77)	n-Butylbenzene	2.050		
78)	1,2-Dichlorobenzene	1.396		
79)	1,2-Dibromo-3-chlor	0.130		
80)	1,2,4-Trichlorobenz	0.854		
81)	Hexachlorobutadiene	0.796		
82)	Naphthalene	0.570		
83)	1,2,3-Trichlorobenz	0.580		

Vinyl chloride

Response Ratio



Resp Ratio = 2.79e-001 * Amt - 1.80e-002
Coef of Det (r²) = 0.997 Curve Fit: Linear

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

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:

AFCEE
ORGANIC ANALYSES DATA SHEET 4
SECOND SOURCE CALIBRATION VERIFICATION

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

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:

AFCEE
 ORGANIC ANALYSES DATA SHEET 4
 SECOND SOURCE CALIBRATION VERIFICATION

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

Analyte	Expected	Found	%D	Q
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:

AFCEE
ORGANIC ANALYSES DATA SHEET 5
CALIBRATION VERIFICATION

Analytical Method: 8260B

AAB #:

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID: HP5970 GCMS#2

Initial Calibration -ID: 1155

ICV ID: ICV-12455

CCV #1 ID: CCV-12463

SEE ATTACHED

Comments:

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\M4135.D
 Acq On : 30 Dec 2007 13:26
 Sample : CCV-12463
 Misc : CCV , 8260WAF 40CAL,
 MS Integration Params: RTEINT.P

Vial: 2
 Operator: GS
 Inst : #2MS12
 Multiplr: 1.00

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. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Fluorobenzene	1.000	1.000	0.0	96	0.00
2 CP	Vinyl chloride	0.229	0.250	-9.2	90	0.00
3	trans-1,2-Dichloroethene	0.314	0.337	-7.3	93	0.00
4	cis-1,2-Dichloroethene	0.348	0.357	-2.6	90	0.00
5 CP	Chloroform	0.733	0.729	0.5	90	0.00
6 S	Dibromofluoromethane	0.673	0.693	-3.0	92	0.00
7 S	1,2-Dichloroethane-d4	0.243	0.245	-0.8	89	0.00
8 M	Trichloroethene	0.419	0.449	-7.2	92	0.00
9 S	Toluene-d8	0.790	0.839	-6.2	92	0.00
10 I	Chlorobenzene-d5	1.000	1.000	0.0	95	0.00
11	Tetrachloroethene	1.010	1.120	-10.9	96	0.00
12 S	Bromofluorobenzene	1.173	1.224	-4.3	94	0.00
I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	96	0.00

[Handwritten signature]
 1/3/08

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\M4135.D
 Acq On : 30 Dec 2007 13:26
 Sample : CCV-12463
 Misc : CCV ,8260WAF_40CAL,
 MS Integration Params: RTEINT.P

Vial: 2
 Operator: GS
 Inst : #2MS12
 Multiplr: 1.00

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. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	Fluorobenzene	10.000	10.000	0.0	96	0.00
2 CP	Vinyl chloride	10.000	9.583	4.2	90	0.00
3	trans-1,2-Dichloroethene	10.000	10.747	-7.5	93	0.00
4	cis-1,2-Dichloroethene	10.000	10.256	-2.6	90	0.00
5 CP	Chloroform	10.000	9.958	0.4	90	0.00
6 S	Dibromofluoromethane	10.000	10.294	-2.9	92	0.00
7 S	1,2-Dichloroethane-d4	10.000	10.071	-0.7	89	0.00
8 M	Trichloroethene	10.000	10.704	-7.0	92	0.00
9 S	Toluene-d8	10.000	10.622	-6.2	92	0.00
10 I	Chlorobenzene-d5	10.000	10.000	0.0	95	0.00
11	Tetrachloroethene	10.000	11.088	-10.9	96	0.00
12 S	Bromofluorobenzene	10.000	10.432	-4.3	94	0.00
I	1,4-Dichlorobenzene-d4	10.000	10.000	0.0	96	0.00

AFCEE
ORGANIC ANALYSES DATA SHEET 10
HOLDING TIMES

Analytical Method: SW8260B

AAB #: R12463

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Max. Holding Time E	Time Held Ext.	Date Analyzed	Max. Holding Time A	Time Held Anal.	Q
101M0216VA	0712141-001A	20-Dec-07	21-Dec-07	30-Dec-07			30-Dec-07	14	10.2	

Comments:

AFCEE
 ORGANIC ANALYSES DATA SHEET 11
 INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: SW8260B

AAB#:

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID #: MS02_12

Calibration ID: 1155

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
TB123007A2	TB123007A2	30-Dec-07	12:50	30-Dec-07	13:26
CCV-12463	CCV-12463	30-Dec-07	13:26	30-Dec-07	14:05
LCS-12463	LCS-12463	30-Dec-07	14:05	30-Dec-07	14:41
LCSD-12463	LCSD-12463	30-Dec-07	14:41	30-Dec-07	15:56
MB-12463	MB-12463	30-Dec-07	15:56	30-Dec-07	20:13
101M0216VA	0712141-001A	30-Dec-07	20:13	30-Dec-07	20:13

Comments:



Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

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.

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: FPM
Project/Order: Griffiss AFB – Building 101
Work Order #: 0801104
Methodology: 8260B

Analyzed/Reviewed by (Initials/Date): LD 1/29/08

Supervisor/Reviewed by (Initials/Date): MT 1-31-08

QA/QC Review (Initials/Date): AS 1/31/08

File Name: G:\Narratives\MSVoa\0801104msvnr.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 Vocab 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.

CLIENT: FPM Group
Project: Griffiss AFB - Building 101
Lab Order: 0801104

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0801104-001A	101M0215VB	101MW-2	1/23/2008	1/24/2008

Lab Order: 0801104
Client: FPM Group
Project: Griffiss AFB - Building 101

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0801104-001A	101M0215VB	1/23/2008 1:45:00 PM	Groundwater	Volatile Organic Compounds by GC/MS			1/25/2008

Chain of Custody

External Chain of Custody

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 Tel: (315)437-0200 Carrier: LSL courier.	Project Name: Griffiss AFB Site Building 101 sampling Sampler Name: Niels van Hoesel Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext 205
Sampler Signature:	

Analyses Requested												
Field Sample ID	Location ID (LOCID)	Date	Time	MATRIX	SMCODE	SBD/SED	SACODE	Preservative	File/Unfil.	No. of Containers	VOCs Note 1 40 mL vial (HCl)	Comments
101M0215VB	101MW-2	1/23	1345	WG	B	0/0	N	HCl	Unf.	3	3	

Sample Condition Upon Receipt at Laboratory: Cooler Temperature: 1.2 °C

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.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date:	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 13:55	Company Name: Paul Forth	Time: 1313
#1 Received by: (Sig) Niels van Hoesel	Date: 1/5/08	#2 Received by: (Sig) Paul Forth	Date: 1/29/08	#3 Received by: (Sig) Cable	Date: 1-29-08
Company Name: FPM Group Ltd	Time: 10200	Company Name: LSC	Time: 11:00	Company Name: LSL-BL	Time: 1313

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

SMCODE
 B = Bailor
 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

Chain of custody seal present

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: FPM

Date and Time Received:

1/24/2008 1:13:00 PM

Work Order Number 0801104

Received by: AC

Checklist completed by:

Initials

Date

1/24/08

Reviewed by:

Initials

MS

Date

1/25/08

Matrix:

Carrier name: Courier

- | | | | |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input checked="" type="checkbox"/> |

Comments:

Corrective Action::

Analytical Results

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

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

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
Chloroform	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:

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.

Contract #:

Instrument ID: HP5970 GCMS#2

Date of Initial Calibration: 28-DEC-07

Initial Calibration ID: 1155

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

SEE ATTACHED

Comments:

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\MD28VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Sun Dec 30 14:09:18 2007
 Response via : Initial Calibration

ICAL # 1155

Calibration Files

0.5 =M4111.D 1.0 =M4112.D 2.0 =M4113.D
 10 =M4114.D 20 =M4115.D 30 =M4116.D

Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD
1) I Fluorobenzene	-----ISTD-----							
2) Dichlorodifluoromet	0.603	0.576	0.644	0.768	0.794	0.781	0.707	13.41
3) P Chloromethane	0.201	0.187	0.195	0.239	0.252	0.270	0.231	15.56
4) CP Vinyl chloride	0.142	0.178	0.220	0.265	0.246	0.270	0.229	22.85
5) Bromomethane	0.156	0.190	0.198	0.251	0.260	0.267	0.220	20.53
6) Chloroethane	0.107	0.122	0.124	0.152	0.159	0.157	0.140	15.71
7) Trichlorofluorometh	0.626	0.550	0.629	0.758	0.766	0.736	0.686	12.18
8) Acetone	0.021	0.024	0.021	0.024	0.023	0.022	0.023#	5.78
9) Acrolein	0.010	0.013	0.014	0.015	0.015	0.015	0.014#	14.17
10) CPM 1,1-Dichloroethene	0.226	0.208	0.246	0.281	0.283	0.276	0.258	12.04
11) Methyl iodide	0.349	0.306	0.355	0.442	0.523	0.586	0.451	26.48
12) 1,1,2-Trichloro-1,2	0.622	0.581	0.652	0.754	0.744	0.712	0.683	9.58
13) Methyl acetate	0.085	0.096	0.095	0.107	0.106	0.103	0.100	8.01
14) Acrylonitrile	0.016	0.019	0.021	0.025	0.025	0.025	0.022#	17.09
15) Methylene chloride	0.287	0.274	0.293	0.315	0.311	0.300	0.298	4.83
16) Carbon disulfide	0.515	0.462	0.559	0.769	0.810	0.809	0.679	23.51
17) trans-1,2-Dichloroe	0.263	0.268	0.292	0.344	0.347	0.338	0.314	12.09
18) Methyl tert-Butyl e	0.345	0.375	0.370	0.407	0.413	0.406	0.390	6.74
19) P 1,1-Dichloroethane	0.549	0.518	0.575	0.663	0.673	0.651	0.608	10.02
20) Vinyl acetate	0.198	0.201	0.221	0.273	0.295	0.291	0.255	18.33
21) 2-Butanone	0.047	0.037	0.039	0.048	0.052	0.050	0.046#	12.24
22) cis-1,2-Dichloroeth	0.316	0.309	0.338	0.379	0.374	0.367	0.348	8.08
23) Bromochloromethane	0.171	0.162	0.183	0.205	0.207	0.198	0.189	9.20
24) CP Chloroform	0.715	0.650	0.709	0.777	0.782	0.760	0.733	6.32
25) 2,2-Dichloropropane	0.357	0.356	0.391	0.486	0.501	0.490	0.437	15.08
26) Cyclohexane	0.327	0.316	0.356	0.417	0.418	0.404	0.375	11.34
27) S Dibromofluoromethan	0.639	0.610	0.646	0.717	0.721	0.699	0.673	6.33
28) S 1,2-Dichloroethane-	0.229	0.221	0.244	0.264	0.260	0.248	0.243	6.39
29) 1,2-Dichloroethane	0.262	0.250	0.275	0.303	0.304	0.298	0.283	7.56
30) 1,1,1-Trichloroetha	0.460	0.447	0.513	0.613	0.633	0.622	0.557	14.55
31) 1,1-Dichloropropene	0.385	0.376	0.416	0.488	0.493	0.481	0.445	11.44
32) Carbon tetrachlorid	0.419	0.425	0.484	0.618	0.635	0.626	0.545	18.07
33) M Benzene	0.803	0.729	0.807	0.894	0.893	0.874	0.836	7.17
34) M Trichloroethene	0.364	0.353	0.403	0.466	0.466	0.453	0.419	11.24
35) Dibromomethane	0.271	0.268	0.292	0.327	0.324	0.319	0.302	8.25
36) Methylcyclohexane	0.295	0.280	0.323	0.399	0.407	0.398	0.356	15.36
37) CP 1,2-Dichloropropane	0.305	0.287	0.325	0.360	0.356	0.356	0.333	8.50
38) Bromodichloromethan	0.529	0.545	0.642	0.806	0.828	0.819	0.709	18.83
39) 2-Chloroethylvinyl	0.068	0.064	0.075	0.088	0.089	0.086	0.077	13.46
40) 4-Methyl-2-pentanon	0.144	0.130	0.149	0.178	0.178	0.176	0.161	12.18
41) cis-1,3-Dichloropro	0.277	0.293	0.351	0.464	0.487	0.490	0.406	23.58
42) S Toluene-d8	0.702	0.686	0.757	0.870	0.861	0.840	0.790	9.56
43) CPM Toluene	0.452	0.449	0.510	0.573	0.568	0.564	0.524	10.36

Jan 1/2/08

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\MD28VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Sun Dec 30 14:09:18 2007
 Response via : Initial Calibration

Calibration Files

0.5 =M4111.D 1.0 =M4112.D 2.0 =M4113.D
 10 =M4114.D 20 =M4115.D 30 =M4116.D

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	0.220	0.243	0.242	0.237	0.222	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	0.617	0.606	0.653	0.761	0.736	0.708	0.695	10.03
49) 1,3-Dichloropropane	0.611	0.630	0.667	0.725	0.703	0.678	0.679	6.96
50) Dibromochloromethan	0.718	0.730	0.890	1.121	1.117	1.103	0.985	20.65
51) Tetrachloroethene	0.961	0.899	0.982	1.098	1.045	1.001	1.010	6.94
52) 1-Chlorohexane	0.567	0.533	0.604	0.725	0.709	0.688	0.655	13.25
53) 1,1,1,2-Tetrachloro	0.645	0.644	0.707	0.801	0.776	0.750	0.734	9.57
54) PM Chlorobenzene	1.292	1.221	1.326	1.399	1.323	1.254	1.306	4.43
55) CP Ethylbenzene	1.878	1.723	1.947	1.995	1.854	1.772	1.861	5.04
56) (m+p)-Xylene	0.672	0.634	0.707	0.762	0.724	0.703	0.711	6.76
57) o-Xylene	0.651	0.645	0.716	0.805	0.782	0.736	0.733	9.10
58) Styrene	0.967	0.920	1.033	1.178	1.161	1.109	1.082	10.19
59) P Bromoform	0.328	0.374	0.481	0.643	0.660	0.649	0.553	28.59
60) S Bromofluorobenzene	1.249	1.089	1.169	1.224	1.157	1.110	1.173	5.06
61) I 1,4-Dichlorobenzene-d	-----ISTD-----							
62) trans-1,4-Dichloro-	0.025	0.038	0.076	0.038	0.048	0.052	0.047#	34.44
63) P 1,1,2,2-Tetrachloro	0.734	0.756	0.833	0.926	0.904	0.874	0.842	8.63
64) Isopropylbenzene	2.041	1.946	2.238	2.567	2.539	2.431	2.300	10.39
65) 1,2,3-Trichloroprop	0.373	0.301	0.396	0.406	0.446	0.432	0.395	12.12
66) Bromobenzene	0.871	0.833	0.913	0.974	0.969	0.938	0.915	5.59
67) n-Propylbenzene	2.678	2.564	2.883	3.295	3.253	3.121	2.971	9.39
68) 2-Chlorotoluene	1.992	1.754	2.083	2.302	2.317	2.261	2.085	10.51
69) 4-Chlorotoluene	1.906	2.338	2.414	2.302	2.386	2.238	2.288	7.93
70) 1,3,5-Trimethylbenz	1.661	1.504	1.737	1.958	1.954	1.908	1.797	9.48
71) tert-Butylbenzene	1.748	1.637	1.861	2.119	2.121	2.057	1.933	9.79
72) 1,2,4-Trimethylbenz	1.558	1.442	1.652	1.882	1.869	1.818	1.713	9.79
73) sec-Butylbenzene	2.484	2.353	2.708	3.082	3.163	2.966	2.796	10.80
74) 1,3-Dichlorobenzene	1.521	1.452	1.554	1.713	1.711	1.643	1.595	6.15
75) p-Isopropyltoluene	1.735	1.629	1.851	2.221	2.239	2.190	2.000	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	1.507	1.466	1.632	2.010	2.045	1.993	1.815	14.71
78) 1,2-Dichlorobenzene	1.274	1.197	1.331	1.479	1.458	1.411	1.364	7.48
79) 1,2-Dibromo-3-chlor	0.065	0.067	0.083	0.123	0.132	0.131	0.104	30.02
80) 1,2,4-Trichlorobenz	0.721	0.691	0.758	0.904	0.914	0.880	0.817	11.26
81) Hexachlorobutadiene	0.667	0.635	0.741	0.856	0.838	0.803	0.762	11.12
82) Naphthalene	0.472	0.467	0.521	0.571	0.585	0.578	0.538	9.53
83) 1,2,3-Trichlorobenz	0.474	0.436	0.499	0.597	0.603	0.594	0.540	12.80

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\MD28VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Wed Jan 02 11:51:27 2008
 Response via : Initial Calibration

Calibration Files

40 =M4119.D = =
 = = =

Compound	40	Avg	%RSD
-----ISTD-----			
1) I Fluorobenzene			
2) Dichlorodifluoromet	0.780		
3) P Chloromethane	0.272		
4) CP Vinyl chloride	0.282		
5) Bromomethane			
6) Chloroethane	0.161		
7) Trichlorofluorometh	0.735		
8) Acetone	0.023		
9) Acrolein	0.015		
10) CPM 1,1-Dichloroethene	0.283		
11) Methyl iodide	0.598		
12) 1,1,2-Trichloro-1,2	0.713		
13) Methyl acetate	0.105		
14) Acrylonitrile	0.026		
15) Methylene chloride	0.302		
16) Carbon disulfide	0.829		
17) trans-1,2-Dichloroe	0.343		
18) Methyl tert-Butyl e	0.411		
19) P 1,1-Dichloroethane	0.628		
20) Vinyl acetate	0.305		
21) 2-Butanone	0.049		
22) cis-1,2-Dichloroeth	0.355		
23) Bromochloromethane	0.195		
24) CP Chloroform	0.735		
25) 2,2-Dichloropropane	0.476		
26) Cyclohexane	0.391		
27) S Dibromofluoromethan	0.680		
28) S 1,2-Dichloroethane-	0.238		
29) 1,2-Dichloroethane	0.291		
30) 1,1,1-Trichloroetha	0.609		
31) 1,1-Dichloropropene	0.474		
32) Carbon tetrachlorid	0.612		
33) M Benzene	0.851		
34) M Trichloroethene	0.430		
35) Dibromomethane	0.309		
36) Methylcyclohexane	0.391		
37) CP 1,2-Dichloropropane	0.339		
38) Bromodichloromethan	0.795		
39) 2-Chloroethylvinyl	0.069		
40) 4-Methyl-2-pentanon	0.169		
41) cis-1,3-Dichloropro	0.483		
42) S Toluene-d8	0.814		
43) CPM Toluene	0.553		

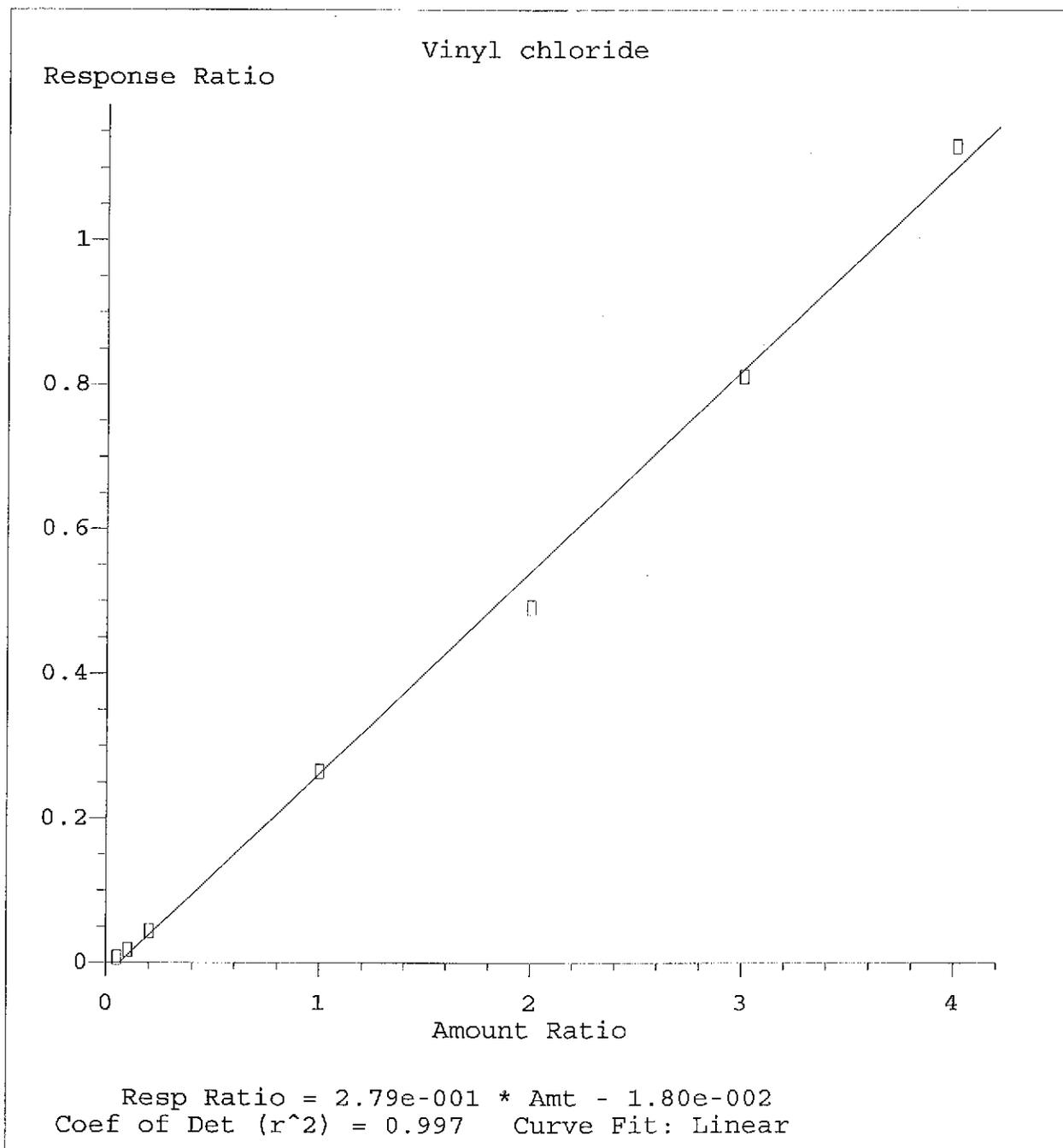
Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\MD28VOCW.M (RTE Integrator)
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 Last Update : Wed Jan 02 11:51:27 2008
 Response via : Initial Calibration

Calibration Files

40 =M4119.D = =
 = = = =

	Compound	40	Avg	%RSD
44)	trans-1,3-Dichlorop	0.345		
45)	1,1,2-Trichloroetha	0.229		
46)	2-Hexanone	0.099		
47) I	Chlorobenzene-d5			-----ISTD-----
48)	1,2-Dibromoethane	0.780		
49)	1,3-Dichloropropane	0.739		
50)	Dibromochloromethan	1.214		
51)	Tetrachloroethene	1.081		
52)	1-Chlorohexane	0.760		
53)	1,1,1,2-Tetrachloro	0.814		
54) PM	Chlorobenzene	1.330		
55) CP	Ethylbenzene	1.862		
56)	(m+p)-Xylene	0.771		
57)	o-Xylene	0.799		
58)	Styrene	1.204		
59) P	Bromoform	0.736		
60) S	Bromofluorobenzene	1.212		
61) I	1,4-Dichlorobenzene-d			-----ISTD-----
62)	trans-1,4-Dichloro-	0.054		
63) P	1,1,2,2-Tetrachloro	0.865		
64)	Isopropylbenzene	2.337		
65)	1,2,3-Trichloroprop	0.414		
66)	Bromobenzene	0.907		
67)	n-Propylbenzene	3.007		
68)	2-Chlorotoluene	1.889		
69)	4-Chlorotoluene	2.433		
70)	1,3,5-Trimethylbenz	1.856		
71)	tert-Butylbenzene	1.986		
72)	1,2,4-Trimethylbenz	1.772		
73)	sec-Butylbenzene	2.813		
74)	1,3-Dichlorobenzene	1.573		
75)	p-Isopropyltoluene	2.137		
76)	1,4-Dichlorobenzene	1.483		
77)	n-Butylbenzene	2.050		
78)	1,2-Dichlorobenzene	1.396		
79)	1,2-Dibromo-3-chlor	0.130		
80)	1,2,4-Trichlorobenz	0.854		
81)	Hexachlorobutadiene	0.796		
82)	Naphthalene	0.570		
83)	1,2,3-Trichlorobenz	0.580		



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

AFCEE
ORGANIC ANALYSES DATA SHEET 5
CALIBRATION VERIFICATION

Analytical Method: 8260B

AAB #:

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID: HP5970 GCMS#2

Initial Calibration -ID: 1155

ICV ID: ICV-12455

CCV #1 ID: CCV-12648

SEE ATTACHED

Comments:

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\M4432.D
 Acq On : 25 Jan 2008 7:59
 Sample : CCV-12648
 Misc : CCV ,8260WAF_40CAL,
 MS Integration Params: RTEINT.P

Vial: 2
 Operator: DMB
 Inst : #2MS12
 Multiplr: 1.00

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. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev (min)
1 I	Fluorobenzene	1.000	1.000	0.0	73	-0.05
2 CP	Vinyl chloride	0.229	0.270	-17.9	75	-0.08
3	trans-1,2-Dichloroethene	0.314	0.350	-11.5	74	-0.05
4	cis-1,2-Dichloroethene	0.348	0.367	-5.5	71	-0.05
5 CP	Chloroform	0.733	0.746	-1.8	70	-0.05
6 S	Dibromofluoromethane	0.673	0.000#	100.0#	0#	-13.01#
7 S	1,2-Dichloroethane-d4	0.243	0.262	-7.8	73	-0.05
8 M	Trichloroethene	0.419	0.468	-11.7	73	-0.05
9 S	Toluene-d8	0.790	0.858	-8.6	72	-0.05
10 I	Chlorobenzene-d5	1.000	1.000	0.0	70	-0.05
11	Tetrachloroethene	1.010	1.182	-17.0	76	0.00
12 S	Bromofluorobenzene	1.173	1.316	-12.2	76	-0.08
I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	72	-0.08

Handwritten signature
 1/28/08

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\M4432.D
 Acq On : 25 Jan 2008 7:59
 Sample : CCV-12648
 Misc : CCV ,8260WAF_40CAL,
 MS Integration Params: RTEINT.P

Vial: 2
 Operator: DMB
 Inst : #2MS12
 Multiplr: 1.00

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. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	Fluorobenzene	10.000	10.000	0.0	73	-0.05
2 CP	Vinyl chloride	10.000	10.313	-3.1	75	-0.08
3	trans-1,2-Dichloroethene	10.000	11.157	-11.6	74	-0.05
4	cis-1,2-Dichloroethene	10.000	10.531	-5.3	71	-0.05
5 CP	Chloroform	10.000	10.183	-1.8	70	-0.05
6 S	Dibromofluoromethane	10.000	0.000	100.0#	0	-13.01#
7 S	1,2-Dichloroethane-d4	10.000	10.779	-7.8	73	-0.05
8 M	Trichloroethene	10.000	11.152	-11.5	73	-0.05
9 S	Toluene-d8	10.000	10.869	-8.7	72	-0.05
10 I	Chlorobenzene-d5	10.000	10.000	0.0	70	-0.05
11	Tetrachloroethene	10.000	11.702	-17.0	76	0.00
12 S	Bromofluorobenzene	10.000	11.216	-12.2	76	-0.08
I	1,4-Dichlorobenzene-d4	10.000	10.000	0.0	72	-0.08

AFCEE
ORGANIC ANALYSES DATA SHEET 10
HOLDING TIMES

Analytical Method: SW8260B

AAB #: R12648

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Max. Holding Time E	Time Held Ext.	Date Analyzed	Max. Holding Time A	Time Held Anal.	Q
101M0215VB	0801104-001A	23-Jan-08	24-Jan-08	25-Jan-08			25-Jan-08	14	2.1	

Comments:

AFCEE
 ORGANIC ANALYSES DATA SHEET 11
 INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: SW8260B

AAB#:

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID #: MS02 12

Calibration ID: 1155

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:



Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

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.

Monika Santucci
Project Manager



Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

Analytical Results

StateCertNo: 10155

CLIENT: FPM Group	Lab ID: 0802004-001A
Project: Griffiss AFB - Bldg 101	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: IC	Sample Size: NA
ColumnID:	%Moisture:
Revision: 02/06/08 13:08	TestCode: 9056WAF
Col Type:	PrepDate:
	BatchNo: R12727
	FileID: 1-SAMP-

Analyte	Result	Qual	PQL	MDL	Units	DF	Date Analyzed
INORGANIC ANIONS BY IC				SW9056			
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

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

Print Date: 02/12/08 12:58

339258

Project Supervisor: Monika Santucci



Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

Analytical Results

StateCertNo: 10155

CLIENT: FPM Group	Lab ID: 0802004-001ADL
Project: Griffiss AFB - Bldg 101	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: IC	Sample Size: NA
ColumnID:	%Moisture:
Revision: 02/06/08 13:08	TestCode: 9056WAF
Col Type:	PrepDate:
	BatchNo: R12727
	FileID: 1-DL-

Analyte	Result	Qual	PQL	MDL	Units	DF	Date Analyzed
INORGANIC ANIONS BY IC					SW9056		
Chloride	66		2.0	0.20	mg/L	2	02/05/08 9:55

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

Print Date: 02/12/08 12:58

339257

Project Supervisor: Monika Santucci



Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

Analytical Results

StateCertNo: 10155

CLIENT: FPM Group	Lab ID: 0802004-001B
Project: Griffiss AFB - Bldg 101	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: TOC-5000A	Sample Size: NA
ColumnID:	%Moisture:
Revision: 02/11/08 14:21	TestCode: TOC9060
Col Type:	PrepDate:
	BatchNo: R12762
	FileID: 1-SAMP-

Analyte	Result	Qual	PQL	MDL	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON					SW9060		
Total Organic Carbon	160		10	4.0	mg/L	10	02/11/08 12:57

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



Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

Analytical Results

StateCertNo: 10155

CLIENT: FPM Group	Lab ID: 0802004-001C
Project: Griffiss AFB - Bldg 101	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: Buret Type A	Sample Size: NA
ColumnID:	%Moisture:
Revision: 02/11/08 9:53	TestCode: ALK310.1
Col Type:	PrepDate:
	BatchNo: R12758
	FileID: 1-SAMP-

Analyte	Result	Qual	PQL	MDL	Units	DF	Date Analyzed
ALKALINITY, AS CaCO3					EPA 310.1		
Alkalinity, as CaCO3	370	10		10	mg/L	1	02/11/08

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

Print Date: 02/12/08 12:58

340077

Project Supervisor: Monika Santucci

AFCEE CHAIN OF CUSTODY RECORD

COC#: 1_SDG#: 174 (Open/Closed) Cooler ID#: A_

Ship to: Monika Santucci Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Tel: (315)437-0200	Project Name: Griffiss AFB B101 Sampling Sampler Name: Niels van Hoesel Send Results to: Niels van Hoesel FPM Group Ltd. 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext. 205
Carrier: LSL courier.	Sampler Signature:

Field Sample ID	LocID	Date	Time	MATRIX	SMCODE	SACODE	SBD/SED	# of Containers	VOCs <small>note 1</small>	40mL vials (HCl)	Metals, Hardness <small>note 2</small>	250 mL poly (HNO ₃)	Metals <small>note 3</small>	250 mL poly (HNO ₃)	PCBs <small>note 4</small>	1 L amber	Phenols <small>note 5</small>	8 oz amber (H ₂ SO ₄)	Anions, <small>note 6</small>	250 mL poly	NH ₃ , COD, TKN <small>note 7</small>	125 mL poly (H ₂ SO ₄)	TOC <small>note 8</small>	40 mL vials (HCL)	Cyanide <small>Note 9</small>	8 oz poly (NaOH)	BOD, <small>note 10</small>	1 L poly	Alkalinity <small>note 11</small>	8 oz glass (zero headspace)	Comments				
101M0215VB	WL-101MW-2	2/4	1130	WG	B	N	0/0	4												1		2													

Analyses requested

Sample Condition Upon Receipt at Laboratory: Good, Custody Seal Intact	Cooler temperature: 3.6 °C
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. 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 ONLY Note 7: NH ₃ : 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.	

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 2/4/08
Company Name:	Time: 11:45	Company Name: FPM Group Ltd.	Time: 1312
#1 Received by: (Sig) Niels van Hoesel	Date: 9/03/07	#2 Received by: (Sig) Bull-Domaling	Date: 2-4-08
Company Name: FPM Group Ltd.	Time: 1000	Company Name: Life Science Labs	Time: 1455
		#3 Received by: (Sig)	Date: 2/4/08
		Company Name:	Time: 1455

MATRIX

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

SMCODE

B = Bailor
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

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: FPM

Date and Time Received:

2/4/2008 2:55:00 PM

Work Order Number 0802004

Received by: ads

Checklist completed by:

2/4/08

Reviewed by:

MS

2/4/08

Initials

Date

Initials

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
- 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 No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No Not Applicable

pH	Preservative	pH Acceptable			Sample ID	Volume of Preservative added in Lab.
>12	NaOH	Yes <input type="checkbox"/>	N <input type="checkbox"/>	NA <input checked="" type="checkbox"/>		
<2	HNO3	Yes <input type="checkbox"/>	N <input type="checkbox"/>	NA <input checked="" type="checkbox"/>		
<2	H2SO4	Yes <input type="checkbox"/>	N <input type="checkbox"/>	NA <input checked="" type="checkbox"/>		
<2	1:1 HCL	Yes <input checked="" type="checkbox"/>	N <input type="checkbox"/>	NA <input type="checkbox"/>	TOC	
5-9	Pest/PCBs (608/8081)	Yes <input type="checkbox"/>	N <input type="checkbox"/>	NA <input checked="" type="checkbox"/>		

Comments:

Corrective Action::

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

Today's 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 today's 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



Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

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.

A handwritten signature in black ink that reads 'Monika Santucci'.

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) Test Methods for Evaluating Solid Wastes, 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: _____

GC/MS Volatile Organics Case Narrative

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

Analyzed/Reviewed by (Initials/Date): JK 4/18/08

Supervisor/Reviewed by (Initials/Date): AS 4/21/08

QA/QC Review (Initials/Date): JK 4/24/08

File Name: G:\Narratives\MSVoa\0804057msvnr.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 Vocab 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): 4-22-08 mg

Supervisor/Reviewed by (Date/Initials): 4-22-08 mg

QA/QC Review (Date/Initials): 4/24/08 [Signature]

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.

CLIENT: FPM Group
Project: Griffiss AFB - Building 101
Lab Order: 0804057

Work Order Sample 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

Lab Order: 0804057
 Client: FPM Group
 Project: Griffiss AFB - Building 101

DATES REPORT

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

Chain of Custody

External Chain of Custody

AFCEE CHAIN OF CUSTODY RECORD

COC#: 1 SDG#: 183 Cooler ID: A

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

Field Sample ID	Location ID (LOCID)	Date	Time	MATRIX	SMCODE	SBD/SED	SACODE	Preservative	Fit/Unfit	No. of Containers	VOCs Note 1 40 mL vial (HCl)	Anions, note 2 500 mL poly	TOC notes	40 mL vials (HCl)	Alkalinity note 4 8 oz glass (zero headspace)	Analyses Requested		Comments	
101M0216WA	101MW-2	4/8	1133	WG	B	0/0	N	HCl	Unf.	6	3	1	1	1	1	1			

Sample Condition Upon Receipt at Laboratory: Cooler Temperature: -1.8, 2.4, -1.4, -1.4

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 Released by: (Sig)	Date: 4/8/08	#2 Released by: (Sig)	Date: 4/8/08	#3 Released by: (Sig)	Date: 4/10/08
Company Name: FPM Group Ltd	Time: 17:00	Company Name: FPM Group Ltd	Time: 17:00	Company Name: FPM Group Ltd	Time: 17:00
#1 Received by: (Sig) Niels van Hoesel	Date: 2/28/08	#2 Received by: (Sig)	Date: 4/8/08	#3 Received by: (Sig)	Date: 4/9/08
Company Name: FPM Group Ltd	Time: 10200	Company Name: LSL	Time: 17:00	Company Name: LSL	Time: 0730

- MATRIX**
 WG = Ground water
 WQ = Water Quality Control Matrix
 SO = Soil
- SMCODE**
 B = Bailor
 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

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:

Initials

[Signature]

Date

4/9/08

Reviewed by:

Initials

MS

Date

4/9/08

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
- 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 No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No Not Applicable

pH	Preservative	pH Acceptable	Sample ID	Volume of Preservative added in Lab.
>12	NaOH	Yes <input type="checkbox"/> N <input type="checkbox"/> NA <input checked="" type="checkbox"/>		
<2	HNO3	Yes <input type="checkbox"/> N <input type="checkbox"/> NA <input checked="" type="checkbox"/>		
<2	HSO4	Yes <input type="checkbox"/> N <input type="checkbox"/> NA <input checked="" type="checkbox"/>		
<2	1:1 HCL	Yes <input checked="" type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/>	TOC	
5-9	Pest/PCBs (608/8081)	Yes <input type="checkbox"/> N <input type="checkbox"/> NA <input checked="" type="checkbox"/>		

Comments:

Corrective Action::

Analytical Results

**AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS**

Analytical Method: SW8260B **Preparatory Method:** **AAB #:** R13266
Lab Name: Life Science Laboratories, Inc. **Contract #:**
Field Sample ID: 101M0216WA **Lab Sample ID:** 0804057-001A **Matrix:** Groundwater
% Solids: 0 **Initial Calibration ID:** 1221 **File ID:** M4887.D
Date Received: 09-Apr-08 **Date Extracted:** **Date Analyzed:** 10-Apr-08
Concentration Units (ug/L or mg/Kg dry weight): ug/L **Sample Size:** 25 mL

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:

**AFCEE
WET CHEM ANALYSES DATA PACKAGE**

Analytical Method: SW9056 **AAB #:** R13249
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: Monika Santucci **Name:** Monika Santucci
Date: 4/28/09 **Title:** Project Manager

**AFCEE
WET CHEM ANALYSES DATA SHEET 2
RESULTS**

Analytical Method: SW9056 **AAB #:** R13249
Lab Name: Life Science Laboratories, Inc. **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	MDL	RL	Concentration	Dilution	Qualifier
Chloride	0.99	10	200	10	
Nitrate (as N)	0.15	1.0	0.16	10	F
Sulfate (as SO4)	2.0	10	2.5	10	F

Comments:

**AFCEE
WET CHEM ANALYSES DATA PACKAGE**

Analytical Method: SW9060 **AAB #:** R13328A
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: Monika Santucci **Name:** Monika Santucci
Date: 4/28/08 **Title:** Project Manager

**AFCEE
WET CHEM ANALYSES DATA SHEET 2
RESULTS**

Analytical Method: SW9060 **AAB #:** R13328A
Lab Name: Life Science Laboratories, Inc. **Contract #:**
Field Sample ID: 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 weight): mg/L

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

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 2
RESULTS**

Analytical Method: SW9060 **AAB #:** R13348
Lab Name: Life Science Laboratories, Inc. **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

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

Comments:

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.

Contract #:

Instrument ID: HP5970 GCMS#2

Date of Initial Calibration: 07APR08

Initial Calibration ID: 1221

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

SEE ATTACHED

Comments:

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\M407VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Tue Apr 08 10:25:42 2008
 Response via : Initial Calibration

Calibration Files

0.5 =M4820.D 1.0 =M4824.D 2.0 =M4825.D
 10 =M4823.D 20 =M4826.D 30 =M4827.D

Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD
1) I Fluorobenzene	-----ISTD-----							
2) Dichlorodifluoromet	0.716	0.754	0.656	0.880	0.921	0.923	0.818	13.18
3) P Chloromethane	0.277	0.336	0.284	0.316	0.332	0.326	0.313	7.51
4) CP Vinyl chloride	0.266	0.280	0.250	0.303	0.334	0.335	0.299	11.42
5) Bromomethane		0.189	0.117	0.150	0.208	0.228	0.187	24.23
6) Chloroethane	0.120	0.145	0.141	0.186	0.181	0.170	0.161	15.79
7) Trichlorofluorometh	0.603	0.662	0.569	0.783	0.798	0.795	0.712	13.79
8) Acrolein		0.003	0.004	0.005	0.005	0.005	0.004#	20.58
9) 1,1,2-Trichloro-1,2	0.488	0.565	0.486	0.642	0.633	0.640	0.579	11.81
10) Acetone		0.032	0.021	0.026	0.025	0.024	0.025#	14.76
11) CPM 1,1-Dichloroethene	0.157	0.181	0.161	0.203	0.206	0.222	0.192	13.13
12) Methyl 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
14) Methylene chloride	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-Butyl	0.342	0.388	0.362	0.382	0.402	0.398	0.382	5.85
3) trans-1,2-Dichloroe	0.230	0.259	0.231	0.272	0.292	0.291	0.266	10.16
19) Vinyl acetate		0.222	0.211	0.257	0.265	0.241	0.239	8.53
20) P 1,1-Dichloroethane	0.498	0.548	0.472	0.584	0.606	0.614	0.559	9.89
21) 2-Butanone		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
24) CP Chloroform	0.693	0.712	0.629	0.737	0.771	0.749	0.716	6.40
25) Bromochloromethane	0.163	0.167	0.157	0.191	0.188	0.188	0.177	8.09
26) 1,1,1-Trichloroetha	0.403	0.469	0.420	0.566	0.589	0.594	0.517	16.23
27) Cyclohexane	0.213	0.277	0.259	0.345	0.347	0.350	0.304	17.90
28) 1,1-Dichloropropene	0.333	0.370	0.333	0.448	0.455	0.463	0.407	14.55
29) S 1,2-Dichloroethane-	0.221	0.265	0.239	0.272	0.249	0.236	0.245	7.55
30) Carbon tetrachlorid	0.415	0.485	0.423	0.573	0.592	0.595	0.522	15.24
31) 1,2-Dichloroethane	0.245	0.281	0.264	0.330	0.303	0.296	0.288	9.53
32) M Benzene	0.718	0.768	0.710	0.871	0.879	0.878	0.812	9.51
33) M Trichloroethene	0.338	0.388	0.350	0.439	0.456	0.460	0.411	12.51
34) Methylcyclohexane	0.223	0.257	0.241	0.358	0.353	0.363	0.307	20.58
35) CP 1,2-Dichloropropane	0.305	0.330	0.294	0.343	0.350	0.348	0.331	6.93
36) Bromodichloromethan	0.619	0.676	0.637	0.788	0.808	0.801	0.732	11.47
37) Dibromomethane	0.246	0.272	0.260	0.308	0.312	0.304	0.286	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		0.145	0.155	0.137	0.124	0.137	0.138	7.92
40) cis-1,3-Dichloropro	0.306	0.371	0.359	0.460	0.482	0.484	0.421	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

Yusella
Stallone
 Page 1
 4/8/08

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\M407VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Tue Apr 08 10:25:42 2008
 Response via : Initial Calibration

Calibration Files

0.5 =M4820.D 1.0 =M4824.D 2.0 =M4825.D
 10 =M4823.D 20 =M4826.D 30 =M4827.D

Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD
44) 1,1,2-Trichloroetha	0.186	0.209	0.202	0.237	0.237	0.233	0.220	9.32
45) I Chlorobenzene-d5	-----ISTD-----							
46) S Toluene-d8	1.309	1.432	1.304	1.501	1.615	1.646	1.490	9.81
47) 1,3-Dichloropropane	0.559	0.622	0.582	0.671	0.702	0.708	0.652	9.92
48) Tetrachloroethene	0.735	0.814	0.728	0.881	0.931	0.948	0.853	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) PM Chlorobenzene	1.297	1.334	1.224	1.424	1.382	1.376	1.341	4.89
53) 1,1,1,2-Tetrachloro	0.603	0.696	0.616	0.762	0.762	0.764	0.710	10.33
54) CP Ethylbenzene	1.744	1.888	1.645	2.077	1.908	1.915	1.865	7.36
55) (m+p)-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) P Bromoform	0.393	0.416	0.447	0.584	0.608	0.616	0.529	20.03
59) I 1,4-Dichlorobenzene-d	-----ISTD-----							
60) Isopropylbenzene	2.143	2.443	2.293	2.788	2.896	2.855	2.597	11.55
61) P 1,1,2,2-Tetrachloro	0.824	0.940	0.891	1.047	1.003	0.952	0.944	7.65
62) S Bromofluorobenzene	1.615	1.884	1.653	1.778	1.741	1.687	1.714	5.53
63) 1,2,3-Trichloroprop	0.529	0.479	0.425	0.482	0.508	0.459	0.477	7.23
64) trans-1,4-Dichloro-		0.021	0.034	0.065	0.065	0.069	0.055	39.76
65) n-Propylbenzene	2.404	2.742	2.605	3.367	3.452	3.412	3.043	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	1.484	1.512	1.554	1.995	2.075	2.060	1.815	15.47
68) 2-Chlorotoluene	2.327	2.441	2.366	2.695	2.775	2.564	2.526	6.56
69) 4-Chlorotoluene	2.032	2.359	2.227	2.542	2.467	2.526	2.375	7.86
70) tert-Butylbenzene	1.488	1.670	1.606	2.069	2.149	2.165	1.894	15.44
71) 1,2,4-Trimethylbenz	1.195	1.317	1.319	1.771	1.871	1.872	1.601	19.23
72) sec-Butylbenzene	1.939	2.293	2.185	2.900	3.032	3.037	2.620	17.74
73) p-Isopropyltoluene	1.399	1.484	1.459	1.997	2.132	2.205	1.833	20.02
74) 1,3-Dichlorobenzene	1.349	1.532	1.437	1.690	1.683	1.681	1.570	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	1.206	1.305	1.243	1.470	1.477	1.459	1.369	8.40
78) 1,2-Dibromo-3-chlor	0.113	0.147	0.143	0.161	0.165	0.164	0.151	12.76
79) 1,2,4-Trichlorobenz	0.410	0.504	0.525	0.684	0.729	0.757	0.624	22.68
80) Hexachlorobutadiene	0.499	0.576	0.537	0.670	0.694	0.697	0.621	13.12
81) Naphthalene		0.293	0.333	0.451	0.510	0.528	0.448	25.02
82) 1,2,3-Trichlorobenz	0.286	0.393	0.427	0.532	0.579	0.596	0.489	25.20

Gisella Stallock

4/8/08

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\M407VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Tue Apr 08 10:35:07 2008
 Response via : Initial Calibration

Calibration Files

40 =M4828.D = =
 = = = =

Compound 40

		ISTD
1) I	Fluorobenzene	
2)	Dichlorodifluoromet	0.879
3) P	Chloromethane	0.323
4) CP	Vinyl chloride	0.323
5)	Bromomethane	0.231
6)	Chloroethane	0.181
7)	Trichlorofluorometh	0.774
8)	Acrolein	0.005
9)	1,1,2-Trichloro-1,2	0.598
10)	Acetone	0.024
11) CPM	1,1-Dichloroethene	0.210
12)	Methyl acetate	0.082
13)	Methyl iodide	0.623
14)	Methylene chloride	0.294
15)	Acrylonitrile	0.024
16)	Carbon disulfide	1.001
17)	Methyl tert-Butyl e	0.397
18)	trans-1,2-Dichloroe	0.286
19)	Vinyl acetate	0.238
20) P	1,1-Dichloroethane	0.591
21)	2-Butanone	0.046
22)	2,2-Dichloropropane	0.437
23)	cis-1,2-Dichloroeth	0.320
24) CP	Chloroform	0.718
25)	Bromochloromethane	0.188
26)	1,1,1-Trichloroetha	0.581
27)	Cyclohexane	0.339
28)	1,1-Dichloropropene	0.448
29) S	1,2-Dichloroethane-	0.232
30)	Carbon tetrachlorid	0.574
31)	1,2-Dichloroethane	0.294
32) M	Benzene	0.860
33) M	Trichloroethene	0.445
34)	Methylcyclohexane	0.354
35) CP	1,2-Dichloropropane	0.348
36)	Bromodichloromethan	0.794
37)	Dibromomethane	0.303
38)	2-Chloroethylvinyl	0.094
39)	4-Methyl-2-pentanon	0.131
40)	cis-1,3-Dichloropro	0.487
41) CPM	Toluene	0.582
42)	trans-1,3-Dichlorop	0.335
)	2-Hexanone	0.097

Guella Hall
 4/8/08

Response Factor Report #2MS12

Method : C:\HPCHEM\1\METHODS\M407VOCW.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Tue Apr 08 10:35:07 2008
 Response via : Initial Calibration

Calibration Files

40 =M4828.D = =
 = = = =

Compound	40
44) 1,1,2-Trichloroetha	0.233
45) I Chlorobenzene-d5	-----ISTD-----
46) S Toluene-d8	1.620
47) 1,3-Dichloropropane	0.721
48) Tetrachloroethene	0.936
49) Dibromochloromethan	1.114
50) 1,2-Dibromoethane	0.723
51) 1-Chlorohexane	0.705
52) PM Chlorobenzene	1.353
53) 1,1,1,2-Tetrachloro	0.768
54) CP Ethylbenzene	1.877
55) (m+p)-Xylene	0.722
56) o-Xylene	0.754
57) Styrene	1.254
58) P Bromoform	0.643
59) I 1,4-Dichlorobenzene-d	-----ISTD-----
60) J Isopropylbenzene	2.758
61) P 1,1,2,2-Tetrachloro	0.947
62) S Bromofluorobenzene	1.636
63) 1,2,3-Trichloroprop	0.457
64) trans-1,4-Dichloro-	0.075
65) n-Propylbenzene	3.321
66) Bromobenzene	1.001
67) 1,3,5-Trimethylbenz	2.024
68) 2-Chlorotoluene	2.514
69) 4-Chlorotoluene	2.476
70) tert-Butylbenzene	2.109
71) 1,2,4-Trimethylbenz	1.863
72) sec-Butylbenzene	2.957
73) p-Isopropyltoluene	2.155
74) 1,3-Dichlorobenzene	1.621
75) 1,4-Dichlorobenzene	1.507
76) n-Butylbenzene	1.915
77) 1,2-Dichlorobenzene	1.423
78) 1,2-Dibromo-3-chlor	0.167
79) 1,2,4-Trichlorobenz	0.756
80) Hexachlorobutadiene	0.670
81) Naphthalene	0.571
82) 1,2,3-Trichlorobenz	0.614

AFCEE
 ORGANIC ANALYSES DATA SHEET 4
 SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method: SW8260B AAB #: R13190
 Lab Name: Life Science Laboratories, In Contract Number:
 Instrument ID: MS02_12 Initial Calibration ID: 1221
 Second Source ID: 2SRC-13190 Concentration Units (mg/L or mg/kg): µg/L

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:

AFCEE
ORGANIC ANALYSES DATA SHEET 5
CALIBRATION VERIFICATION

Analytical Method: 8260B

AAB #:

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID: HP5970 GCMS#2

Initial Calibration -ID: 1221

ICV ID: ICV-13190

CCV #1 ID: CCV-13266

SEE ATTACHED

Comments:

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\M4878.D
 Acq On : 10 Apr 2008 13:05
 Sample : CCV-13266
 Misc : CCV ,8260WAF 40CAL,
 MS Integration Params: RTEINT.P

Vial: 2
 Operator: GS
 Inst : #2MS12
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\M407P360.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Fri Apr 11 14:15:41 2008
 Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Fluorobenzene	1.000	1.000	0.0	106	0.00
2	Dichlorodifluoromethane	0.818	0.815	0.4	98	0.00
3 P	Chloromethane	0.313	0.271	13.4	91	0.00
4 CP	Vinyl chloride	0.299	0.283	5.4	99	0.00
5	Bromomethane	0.187	0.166	11.2	117	0.00
6	Chloroethane	0.161	0.156	3.1	89	0.00
7	Trichlorofluoromethane	0.712	0.702	1.4	95	0.00
8	Acetone	0.025	0.024#	4.0	96	0.00
9 CPM	1,1-Dichloroethene	0.192	0.176	8.3	92	0.00
10	Methyl iodide	0.477	0.349	26.8#	62	0.00
11	Methylene chloride	0.346	0.255	26.3#	91	0.00
12	Acrylonitrile	0.022	0.020#	9.1	96	0.00
13	Carbon disulfide	0.914	0.830	9.2	92	0.00
14	Methyl tert-Butyl ether	0.382	0.359	6.0	100	0.00
	trans-1,2-Dichloroethene	0.266	0.244	8.3	95	0.00
16	Vinyl acetate	0.239	0.238	0.4	98	0.00
17 P	1,1-Dichloroethane	0.559	0.509	8.9	92	0.00
18	2-Butanone	0.042	0.037#	11.9	97	0.00
19	2,2-Dichloropropane	0.403	0.386	4.2	92	0.00
20	cis-1,2-Dichloroethene	0.309	0.280	9.4	91	0.00
21 CP	Chloroform	0.716	0.626	12.6	90	0.00
22	Bromochloromethane	0.177	0.159	10.2	88	0.00
23	1,1,1-Trichloroethane	0.517	0.479	7.4	90	0.00
24	1,1-Dichloropropene	0.407	0.367	9.8	87	0.00
25 S	1,2-Dichloroethane-d4	0.245	0.218	11.0	85	0.00
26	Carbon tetrachloride	0.522	0.487	6.7	90	0.00
27	1,2-Dichloroethane	0.288	0.257	10.8	83	0.00
28 M	Benzene	0.812	0.714	12.1	87	0.00
29 M	Trichloroethene	0.411	0.367	10.7	89	0.00
30 CP	1,2-Dichloropropane	0.331	0.285	13.9	88	0.00
31	Bromodichloromethane	0.732	0.663	9.4	89	0.00
32	Dibromomethane	0.286	0.256	10.5	88	0.00
33	4-Methyl-2-pentanone	0.138	0.114	17.4	89	0.00
34	cis-1,3-Dichloropropene	0.421	0.380	9.7	88	0.00
35 CPM	Toluene	0.533	0.476	10.7	89	0.00
36	trans-1,3-Dichloropropene	0.276	0.253	8.3	87	0.00
37	2-Hexanone	0.085	0.075	11.8	85	0.00
38	1,1,2-Trichloroethane	0.220	0.197	10.5	88	0.00
39 I	Chlorobenzene-d5	1.000	1.000	0.0	99	0.00
S	Toluene-d8	1.490	1.354	9.1	89	0.00

(#) = Out of Range

M4878.D M407P360.M Fri Apr 11 14:19:12 2008

Stella
Stella
 4/11/08

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\M4878.D
 Acq On : 10 Apr 2008 13:05
 Sample : CCV-13266
 Misc : CCV ,8260WAF_40CAL,
 MS Integration Params: RTEINT.P

Vial: 2
 Operator: GS
 Inst : #2MS12
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\M407P360.M (RTE Integrator)
 Title : VOC's w/Restek RTX-502.2, 0.53mm x 105m, 3.0 df
 Last Update : Fri Apr 11 14:15:41 2008
 Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
41	1,3-Dichloropropane	0.652	0.609	6.6	90	0.00
42	Tetrachloroethene	0.853	0.792	7.2	89	0.00
43	Dibromochloromethane	0.976	0.934	4.3	90	0.00
44	1,2-Dibromoethane	0.644	0.601	6.7	88	0.00
45	1-Chlorohexane	0.601	0.577	4.0	90	0.00
46 PM	Chlorobenzene	1.341	1.231	8.2	85	0.00
47	1,1,1,2-Tetrachloroethane	0.710	0.676	4.8	88	0.00
48 CP	Ethylbenzene	1.865	1.738	6.8	83	0.00
49	(m+p)-Xylene	0.662	0.626	5.4	83	0.00
50	o-Xylene	0.667	0.638	4.3	92	0.00
51	Styrene	1.098	1.060	3.5	90	0.00
52 P	Bromoform	0.529	0.537	-1.5	91	0.00
53 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	101	0.00
	Isopropylbenzene	2.597	2.500	3.7	91	0.00
55 P	1,1,2,2-Tetrachloroethane	0.944	0.938	0.6	91	0.00
56 S	Bromofluorobenzene	1.714	1.604	6.4	91	0.00
57	1,2,3-Trichloropropane	0.477	0.440	7.8	93	0.00
58	trans-1,4-Dichloro-2-butene	0.055	0.056	-1.8	88	0.00
59	n-Propylbenzene	3.043	2.923	3.9	88	0.00
60	Bromobenzene	0.983	0.935	4.9	90	0.00
61	1,3,5-Trimethylbenzene	1.815	1.719	5.3	87	0.00
62	2-Chlorotoluene	2.526	2.403	4.9	90	0.00
63	4-Chlorotoluene	2.375	2.272	4.3	91	0.00
64	tert-Butylbenzene	1.894	1.843	2.7	90	0.00
65	1,2,4-Trimethylbenzene	1.601	1.564	2.3	89	0.00
66	sec-Butylbenzene	2.620	2.575	1.7	90	0.00
67	p-Isopropyltoluene	1.833	1.766	3.7	90	0.00
68	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	1.582	1.550	2.0	90	0.00
71	1,2-Dichlorobenzene	1.369	1.350	1.4	93	0.00
72	1,2-Dibromo-3-chloropropane	0.151	0.158	-4.6	99	0.00
73	1,2,4-Trichlorobenzene	0.624	0.634	-1.6	94	0.00
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

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

Analytical Method: SW8260B AAB #: R13266

Lab Name: Life Science Laboratories, Inc. Contract #:

Concentration Units (mg/L or mg/kg): µg/L % Solids: 0

Parent Field Sample ID: LCSD-13266 MS ID: LCS-13266 MSD ID: LCSD-13266

Calibration ID: 1221

Analyte	Parent Sample Result	Spike Added	Spiked Sample Result	%R	Duplicate Spiked Sample Result	%R	%RPD	Control Limits %R	Control Limits %RPD	Q
Chloroform		10.0	9.48	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:

AFCEE
ORGANIC ANALYSES DATA SHEET 10
HOLDING TIMES

Analytical Method: SW8260B

AAB #: R13266

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Max. Holding Time E	Time Held Ext.	Date Analyzed	Max. Holding Time A	Time Held Anal.	Q
101M0216WA	0804057-001A	08-Apr-08	09-Apr-08	10-Apr-08			10-Apr-08	14	2.3	

Comments:

**AFCEE
ORGANIC ANALYSES DATA SHEET 11
INSTRUMENT ANALYSIS SEQUENCE LOG**

Analytical Method: SW8260B

AAB#:

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID #: MS02 12

Calibration ID: 1221

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
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
101M0216VA	0804057-001A	10-Apr-08	19:53	10-Apr-08	19:53

Comments:

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

Analytical Method: SW8260B AAB #: MS02_12_080407A
Lab Name: Life Science Laboratories, Inc. Contract #:
Instrument ID: MS02_12 Injection Date/Time: 4/7/2008 11:43:00 AM
Initial Calibration ID: 1221 File ID: C:\HPCHEM\1\DATA\M4818.D
Compound: SW8260B 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	

Wet Chemistry Data

AFCEE
WET CHEM ANALYSES DATA SHEET 3-10
INITIAL MULTIPOINT CALIBRATION

Analytical Method: SW9056 AAB #: R13249
 Lab Name: Life Science Laboratories, Inc. Contract #: _____
 Instrument ID: IC Date of Initial Calibration: 08-Apr-08
 Initial Calibration ID: 1226 Concentration Units (mg/L or mg/kg): mg/L

Analyte	STD 1	STD 2	STD 3	STD 4	STD 5	STD 6	STD 7	STD 8	STD 9	STD 10	r	Q
Chloride	0	0.2	0.5	1	5	10	20	40	0	0	0.99999	
Nitrate (as N)	0	0.02	0.05	0.1	0.5	1	2	0	0	0	0.99987	
Sulfate (as SO4)	0	0.2	0.5	1	5	10	20	40	0	0	0.99999	

r = correlation coefficient

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS**

Analytical Method: SW9056 AAB #: R13249
Lab Name: Life Science Laboratories, Inc. Contract Number:
Concentration Units (mg/L or mg/kg): mg/L
Calibration Blank ID: ICB Initial Calibration ID: 1226
Method Blank ID: MB-R13249 Initial Calibration ID: 1226

Analyte	Calibration Blank	Method Blank	RL	Q
Chloride	0.082	0.099	1.0	
Nitrate (as N)	0.015	0.015	0.10	
Sulfate (as SO ₄)	0.20	0.20	1.0	

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS**

Analytical Method: SW9056 AAB #: R13249

Lab Name: Life Science Laboratories, Inc. Contract Number:

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

Calibration Blank ID: CCB1 Initial Calibration ID: 1226

Method Blank ID: MB-R13249 Initial Calibration ID: 1226

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 SO ₄)	0.20	0.20	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9056 AAB #: R13249
 Lab Name: Life Science Laboratories, Inc. Contract Number:
 Concentration Units (mg/L or mg/kg): mg/L
 Calibration Blank ID: CCB2 Initial Calibration ID: 1226
 Method Blank ID: MB-R13249 Initial Calibration ID: 1226

Analyte	Calibration Blank	Method Blank	RL	Q
Chloride	0.083	0.099	1.0	
Nitrate (as N)	0.015	0.015	0.10	
Sulfate (as SO ₄)	0.20	0.20	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 8
HOLDING TIMES

Analytical Method: SW9056

AAB #: R13249

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Analyzed	Max Holding Time (days)	Time Held (days)	Q
101M0216WA	0804057-001B	08-Apr-08	09-Apr-08	09-Apr-08	2	1.1	

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 9
INSTRUMENT ANALYSIS SEQUENCE LOG**

Analytical Method: SW9056

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID #: IC

Field Sample ID/Std ID/ Blank ID/QC Sample ID	Lab Sample ID	Date Analyses Started	Time Analyses Started	Date Analyses Completed	Time Analyses Completed
ICAL 0	ICAL 0	08-Apr-08	15:10	08-Apr-08	15:34
ICAL 7	ICAL 7	08-Apr-08	15:34	08-Apr-08	15:54
ICAL 6	ICAL 6	08-Apr-08	15:54	08-Apr-08	16:15
ICAL 5	ICAL 5	08-Apr-08	16:15	08-Apr-08	16:35
ICAL 4	ICAL 4	08-Apr-08	16:35	08-Apr-08	16:55
ICAL 3	ICAL 3	08-Apr-08	16:55	08-Apr-08	17:16
ICAL 2	ICAL 2	08-Apr-08	17:16	08-Apr-08	17:36
ICAL 1	ICAL 1	08-Apr-08	17:36	08-Apr-08	17:36
ICV	ICV	09-Apr-08	8:34	09-Apr-08	8:55
2S CV	2S CV	09-Apr-08	8:55	09-Apr-08	9:15
ICB	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
LCS-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	14:45
101M0216WA	0804057-001B	09-Apr-08	14:45	09-Apr-08	15:47
CCV2	CCV2	09-Apr-08	15:47	09-Apr-08	16:07
CCB2	CCB2	09-Apr-08	16:07	09-Apr-08	18:09
CCV3	CCV3	09-Apr-08	18:09	09-Apr-08	18:30
CCB3	CCB3	09-Apr-08	18:30	09-Apr-08	19:51
CCV4	CCV4	09-Apr-08	22:14	09-Apr-08	22:35
CCB4	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

Analytical Method: SW9060 **AAB #:** R1332BA
Lab Name: Life Science Laboratories, Inc. **Contract #:**
Instrument ID: IOC-5000A **Date of Initial Calibration:** 16-Apr-08
Initial Calibration ID: 1249 **Concentration Units (mg/L or mg/kg):** mg/L

Analyte	STD 1	STD 2	STD 3	STD 4	STD 5	STD 6	STD 7	STD 8	STD 9	STD 10	r	Q
Total Organic Carbon	0	1	10	20	0	0	0	0	0	0	0.999997	

r = correlation coefficient

Comments:

AFCEE
 WET CHEM ANALYSES DATA SHEET 3-10
 INITIAL MULTIPOINT CALIBRATION

Analytical Method: SW9060 AAB #: R13348
 Lab Name: Life Science Laboratories, Inc. Contract #: _____
 Instrument ID: TOC-5000A Date of Initial Calibration: 17-Apr-08
 Initial Calibration ID: 1250 Concentration Units (mg/L or mg/kg): mg/L

Analyte	STD 1	STD 2	STD 3	STD 4	STD 5	STD 6	STD 7	STD 8	STD 9	STD 10	r	Q
Total Organic Carbon	0	1	10	20	0	0	0	0	0	0	0.99999	0

r = correlation coefficient

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9060 AAB #: R13328A

Lab Name: Life Science Laboratories, Inc. Contract Number:

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

Calibration Blank ID: ICB Initial Calibration ID: 1249

Method Blank ID: MB-R13328A Initial Calibration ID: 1249

Analyte	Calibration Blank	Method Blank	RL	Q
Total Organic Carbon	0.094	0.40	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9060 AAB #: R13328A

Lab Name: Life Science Laboratories, Inc. Contract Number:

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

Calibration Blank ID: CCB1 Initial Calibration ID: 1249

Method Blank ID: MB-R13328A Initial Calibration ID: 1249

Analyte	Calibration Blank	Method Blank	RL	Q
Total Organic Carbon	0.049	0.40	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9060 AAB #: R13328A

Lab Name: Life Science Laboratories, Inc. Contract Number:

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

Calibration Blank ID: CCB2 Initial Calibration ID: 1249

Method Blank ID: MB-R13328A Initial Calibration ID: 1249

Analyte	Calibration Blank	Method Blank	RL	Q
Total Organic Carbon	-0.011	0.40	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9060 AAB #: R13328A

Lab Name: Life Science Laboratories, Inc. Contract Number:

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

Calibration Blank ID: CCB3 Initial Calibration ID: 1249

Method Blank ID: MB-R13328A Initial Calibration ID: 1249

Analyte	Calibration Blank	Method Blank	RL	Q
Total Organic Carbon	-0.039	0.40	1.0	

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS**

Analytical Method: SW9060 **AAB #:** R13328A

Lab Name: Life Science Laboratories, Inc. **Contract Number:**

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

Calibration Blank ID: CCB4 **Initial Calibration ID:** 1249

Method Blank ID: MB-R13328A **Initial Calibration ID:** 1249

Analyte	Calibration Blank	Method Blank	RL	Q
Total Organic Carbon	-0.0085	0.40	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9060 AAB #: R13328A

Lab Name: Life Science Laboratories, Inc. Contract Number:

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

Calibration Blank ID: CCB5 Initial Calibration ID: 1249

Method Blank ID: MB-R13328A Initial Calibration ID: 1249

Analyte	Calibration Blank	Method Blank	RL	Q
Total Organic Carbon	0.088	0.40	1.0	

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS**

Analytical Method: SW9060 **AAB #:** R13348
Lab Name: Life Science Laboratories, Inc. **Contract Number:**
Concentration Units (mg/L or mg/kg): mg/L
Calibrator Blank ID: ICB **Initial Calibration ID:** 1250
Method Blank ID: MB-R13348 **Initial Calibration ID:** 1250

Analyte	Calibration Blank	Method Blank	RL	Q
Total Organic Carbon	0.17	0.40	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9060 AAB #: R13348

Lab Name: Life Science Laboratories, Inc. Contract Number:

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

Calibration Blank ID: CCB1 Initial Calibration ID: 1250

Method Blank ID: MB-R13348 Initial Calibration ID: 1250

Analyte	Calibration Blank	Method Blank	RL	Q
Total Organic Carbon	0.19	0.40	1.0	

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 8
HOLDING TIMES**

Analytical Method: SW9060

AAB #: R13328A

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Analyzed	Max. Holding Time (days)	Time Held (days)	G
101M0216WA	0804057-001C	08-Apr-08	09-Apr-08	16-Apr-08	28	8.4	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 8
HOLDING TIMES

Analytical Method: SW9060

AAB #: R13348

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Analyzed	Max Holding Time (days)	Time Held (days)	C
101M0216WA DL	0804057-001CDL	08-Apr-08	09-Apr-08	17-Apr-08	28	9.0	

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 9
INSTRUMENT ANALYSIS SEQUENCE LOG**

Analytical Method: SW9060

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID #: TOC-5000A

Field Sample ID/Std ID/ Blank ID/QC Sample ID	Lab Sample ID	Date Analyses Started	Time Analyses Started	Date Analyses Completed	Time Analyses Completed
S0	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
ICV	ICV	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-Apr-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
S0	S0	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	S20	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:

Total Alkalinity Data

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: E310.1 AAB #: R13324
 Lab Name: Life Science Laboratories, Inc. Contract Number:
 Concentration Units (mg/L or mg/kg): mg/L
 Calibrator Blank ID: Initial Calibration ID: 0
 Method Blank ID: MB-R13324 Initial Calibration ID: 0

Analyte	Calibration Blank	Method Blank	RL	LO
Alkalinity, as CaCO ₃		10	10	

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 8
HOLDING TIMES**

Analytical Method: E310.1

AAB #: R13324

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Analyzed	Max Holding Time (days)	Time Held (days)	Q
101M0216WA	0804057-001D	08-Apr-08	09-Apr-08	16-Apr-08	14	7.5	
101M0216WA	0804057-001DDUP	08-Apr-08	09-Apr-08	16-Apr-08	14	7.5	

Comments:

AFCEE
 WET CHEM ANALYSES DATA SHEET 9
 INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: E310.1

Lab Name: Life Science Laboratories, Inc. Contract #:

Instrument ID #: Buret Type A

Field Sample ID/Std ID/ Blank ID/QC Sample ID	Lab Sample ID	Date Analyses Started	Time Analyses Started	Date Analyses Completed	Time 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
LCS-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:

Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

ANALYTICAL QC SUMMARY REPORT

Method: EPA 310.1

Work Order: 0804057

Project: Griffiss AFB - Building 101

CLIENT: FPM Group

Sample ID: 0804057-001DDUP	Sample Type: DUP	TestCode: ALK310.1	Units: mg/L	Prep Date:	RunNo: 13324
Client ID: 101M0216WA	Batch ID: R13324	Method: EPA 310.1		Analysis Date: 4/16/2008	SeqNo: 353183
Instrument:	ColumnID:				
Analyte	QC Sample Result	PQL	SPK Added	Parent Sample Result	
Alkalinity, as CaCO3	308	10			
		%REC	LowLimit	HighLimit	RPD Ref Val
					294
				%RPD	4.7
				RPDLimit	10
				Qual	

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value exceeds the instrument calibration range	J	Analyte detected below the PQL
	ND	Not Detected at the Practical Quantitation Limit (PQL)	R	RPD exceeds accepted precision limit	S	Spike Recovery outside accepted recovery limits
	U	Not Detected at the MDC or RL				
Date:		22-Apr-08				



Life Science Laboratories, Inc.

5000 Brittonfield Parkway, Suite 200

East Syracuse, NY 13057

(315) 437-0200

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.

A handwritten signature in black ink that reads "Monika Santucci". The signature is written in a cursive, flowing style.

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) Test Methods for Evaluating Solid Wastes, SW-846 Third Edition, Final Update III, December 1996 (including the QC requirements specified in AFCEE 4.0 + variances).
- 2) Standard Methods for the Examination of Water and Wastewater, 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: FPM
Project/Order: Griffiss AFB: Building 101
Work Order #: 0809134
Methodology: 8260B

Analyzed/Reviewed by (Initials/Date): JSR 10/1/08

Supervisor/Reviewed by (Initials/Date): JSR for mv 10/1/08

QA/QC Review (Initials/Date): MT 10/3/08

File Name: G:\Narratives\MSVoa\0809134vnr.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 Vocab 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 Description	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: FPM
Project/Order: Griffiss AFB – Building 101
Work Order #: 0809134
Methodology: 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

QA/QC Review (Date/Initials): 10/9/08 Sh

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.

CLIENT: FPM Group
Project: Griffiss AFB - Building 101
Lab Order: 0809134

Work Order Sample 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
0809134-001D	101M0217XA	WL-101MW-2	9/18/2008	9/19/2008

Lab Order: 0809134
 Client: FPM Group
 Project: Griffiss AFB - Building 101

DATES REPORT

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

Chain of Custody

External Chain of Custody

AFCEE CHAIN OF CUSTODY RECORD

COC#: 3_SDG#: 194_(Open/Closed) Cooler ID#: A

Ship to: Monika Santucci Life Science Laboratories, Inc. 5000 Brittonfield Pkwy, Suite 200 East Syracuse, NY 13057 Tel: (315)437-0200 Carrier: LSL courier.	Project Name: Griffiss AFB B10 Sampling Sampler Name: Niels van Hoesel Send Results to: Niels van Hoesel FPM Group Ltd. 153 Brooks Road Rome, NY 13441 Phone: (315) 336-7721 Ext. 205
Sampler Signature:	

Field Sample ID	LocID	Date	Time	MATRIX	SMCODE	SACODE	SBD/SED	# of Containers	VOCs note 1	40mL vials (HCl)	Metals, Hardness note 2	250 mL poly (HNO ₃) note 3	250 mL poly (HNO ₃) note 4	PCBs note 4	1 L amber	Phenols note 5	8 oz amber (H ₂ SO ₄) note 6	Anions, note 6	250 mL poly	NH ₃ , COD, TKN note 7	125 mL poly (H ₂ SO ₄) note 8	TOC note 8	40 mL vials (HCL) note 9	Cyanide Note 9	8 oz poly (NaOH) note 10	BOD, note 10	1 L poly note 11	Alkalinity note 11	8 oz glass (zero headspace)	Comments		
101M0217XA	WL-101MW-2	9/18	1400	WG	B	N	0/0	8	3										1			3										

Analyses requested

Sample Condition Upon Receipt at Laboratory: *Good, Custody Seal Intact*

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.
 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 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.
 Note 11: Alkalinity: 310.1.

Cooler temperature: -1.2 °C
DW ICE

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date:	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd.	Time: 1235	Company Name:	Time: 9:50
#1 Received by: (Sig) Niels van Hoesel	Date: 9/12/08	#2 Received by: (Sig)	Date: 9/19/08	#3 Received by: (Sig)	Date: 9/19/08
Company Name: FPM Group Ltd.	Time: 1000	Company Name:	Time: 8:30	Company Name: LSL	Time: 0950

MATRIX

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

SMCODE

B = Bailor
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

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 Time Received: **9/19/2008 9:50:00 AM**

Work Order Number **0809134**

Received by: **ads**

Checklist completed by: 
Initials

9/19/08
Date

Reviewed by: MS
Initials

9/19/08
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
- 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 No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No Not Applicable

pH	Preservative	pH Acceptable			Sample ID	Volume of Preservative added in Lab.
>12	NaOH	Yes <input type="checkbox"/>	N <input type="checkbox"/>	NA <input checked="" type="checkbox"/>		
<2	HNO3	Yes <input type="checkbox"/>	N <input type="checkbox"/>	NA <input checked="" type="checkbox"/>		
<2	HSO4	Yes <input type="checkbox"/>	N <input type="checkbox"/>	NA <input checked="" type="checkbox"/>		
<2	1:1 HCL	Yes <input checked="" type="checkbox"/>	N <input type="checkbox"/>	NA <input type="checkbox"/>	TOC	
5-9	Pest/PCBs (608/8081)	Yes <input type="checkbox"/>	N <input type="checkbox"/>	NA <input checked="" type="checkbox"/>		

Comments:
COC shows 3 TOCs sent. Received one.

Corrective Action:
Logged in one TOC vial.

Analytical Results

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

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

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	Qualifier
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:

**AFCEE
WET CHEM ANALYSES DATA PACKAGE**

Analytical Method: SW9056 **AAB #:** R14837
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: Monika Santucci **Name:** Monika Santucci
Date: 10/9/08 **Title:** Project Manager

**AFCEE
WET CHEM ANALYSES DATA PACKAGE**

Analytical Method: SM 2320 B AAB #: R14921
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: Monika Santucci Name: Monika Santucci
Date: 10/9/00 Title: Project Manager

**AFCEE
WET CHEM ANALYSES DATA SHEET 2
RESULTS**

Analytical Method: SW9060 **AAB #:** R15086
Lab Name: Life Science Laboratories, Inc. **Contract #:**
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): mg/L

Analyte	MDL	RI	Concentration	Dilution	Qualifier
Total Organic Carbon	2.0	5.0	51	5	

Comments:

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.

Contract #:

Instrument ID: HP5973 GCMS#3

Date of Initial Calibration: 11-SEP-08

Initial Calibration ID: 1351

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

SEE ATTACHED

Comments:

#1351

Method : C:\HPCHEM\1\METHODS\J911VOCW.M (RTE Integrator)
 Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
 Last Update : Fri Sep 12 08:12:55 2008
 Response via : Continuing Calibration

Calibration Files

0.5 =J7031.D 1.0 =J7032.D 2.0 =J7033.D
 10 =J7034.D 20 =J7035.D 30 =J7036.D

Compound	0.5	1.0	2.0	10	20	30	Avg	%RSD	
1) I Fluorobenzene	-----ISTD-----								
2) Dichlorodifluoromet	0.365	0.345	0.365	0.391	0.389	0.392	0.378	5.20	
3) P Chloromethane	0.382	0.381	0.390	0.399	0.405	0.396	0.394	2.51	
4) CP Vinyl chloride	0.475	0.458	0.460	0.495	0.493	0.490	0.481	3.49	
5) Bromomethane	0.419	0.450	0.428	0.364	0.353	0.361	0.391	10.05	
6) Chloroethane	0.333	0.323	0.329	0.337	0.334	0.333	0.332	1.46	
7) Trichlorofluorometh	0.553	0.550	0.543	0.567	0.562	0.568	0.558	1.78	
8) CPM 1,1-Dichloroethene	0.240	0.238	0.230	0.235	0.238	0.239	0.237	1.89	
9) Carbon disulfide	0.799	0.734	0.760	0.799	0.808	0.823	0.795	4.61	
10) 1,1,2-Trichloro-1,2	0.245	0.260	0.242	0.264	0.263	0.263	0.258	4.21	
11) Methyl iodide		0.121	0.157	0.256	0.275	0.290	0.233	32.18	
12) Acrolein		0.023	0.028	0.031	0.032	0.033	0.030	13.16	
13) Methylene chloride		0.325	0.284	0.270	0.262	0.266	0.279	8.41	
14) Acetone		0.047	0.046	0.054	0.056	0.058	0.054	11.30	
15) trans-1,2-Dichloroe	0.238	0.251	0.246	0.246	0.248	0.250	0.248	1.97	
16) Methyl acetate		0.207	0.195	0.172	0.164	0.174	0.181	8.96	
17) Methyl tert-Butyl e	0.649	0.660	0.660	0.677	0.687	0.693	0.677	3.31	
18) P 1,1-Dichloroethane	0.509	0.486	0.491	0.479	0.481	0.489	0.489	2.02	
19) Acrylonitrile		0.054	0.063	0.063	0.067	0.069	0.064	8.94	
20) Vinyl acetate	0.257	0.232	0.236	0.272	0.285	0.292	0.266	9.50	
21) cis-1,2-Dichloroeth	0.256	0.264	0.283	0.279	0.280	0.280	0.276	4.17	
22) 2,2-Dichloropropane	0.374	0.361	0.379	0.376	0.366	0.373	0.372	1.72	
23) Bromochloromethane	0.106	0.107	0.110	0.115	0.114	0.118	0.113	4.77	
24) Cyclohexane	0.438	0.421	0.429	0.450	0.454	0.464	0.447	4.33	
25) CP Chloroform	0.473	0.439	0.455	0.435	0.437	0.438	0.446	3.10	
26) Carbon tetrachlorid	0.195	0.218	0.225	0.243	0.257	0.266	0.240	12.13	
27) 1,1,1-Trichloroetha	0.351	0.357	0.355	0.371	0.372	0.385	0.369	4.22	
28) 2-Butanone		0.064	0.071	0.081	0.083	0.084	0.078	10.89	
29) 1,1-Dichloropropene	0.339	0.327	0.346	0.364	0.365	0.372	0.356	5.15	
30) M Benzene	1.081	1.125	1.153	1.156	1.165	1.173	1.151	3.41	
31) S 1,2-Dichloroethane-	0.270	0.285	0.287	0.276	0.270	0.276	0.277	2.35	
32) 1,2-Dichloroethane	0.295	0.320	0.331	0.330	0.328	0.336	0.326	4.53	
33) Methylcyclohexane	0.406	0.385	0.401	0.414	0.424	0.421	0.413	4.29	
34) M Trichloroethene	0.253	0.251	0.262	0.258	0.260	0.267	0.260	2.66	
35) Dibromomethane	0.124	0.129	0.125	0.136	0.138	0.139	0.133	5.52	
36) CP 1,2-Dichloropropane	0.276	0.257	0.272	0.263	0.273	0.271	0.270	2.92	
37) Bromodichloromethan	0.260	0.256	0.269	0.288	0.296	0.306	0.285	8.39	
38) 2-Chloroethylvinyl	0.054	0.061	0.069	0.061	0.058	0.054	0.059	9.56	
39) cis-1,3-Dichloropro	0.305	0.340	0.364	0.406	0.412	0.422	0.383	12.51	
40) CPM Toluene	0.652	0.654	0.672	0.700	0.704	0.718	0.689	4.36	
41) 4-Methyl-2-pentanon	0.149	0.135	0.150	0.173	0.181	0.187	0.167	13.26	
42) trans-1,3-Dichlorop	0.224	0.253	0.274	0.323	0.338	0.348	0.303	17.48	
43) 1,1,2-Trichloroetha	0.179	0.161	0.172	0.174	0.171	0.173	0.172	3.35	

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Response Factor Report #3MS10

Method : C:\HPCHEM\1\METHODS\J911VOCW.M (RTE Integrator)
 Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
 Last Update : Fri Sep 12 08:12:55 2008
 Response via : Continuing Calibration

Calibration Files

0.5 =J7031.D 1.0 =J7032.D 2.0 =J7033.D
 10 =J7034.D 20 =J7035.D 30 =J7036.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) I Chlorobenzene-d5	-----ISTD-----							
46) S Toluene-d8	2.362	2.384	2.405	2.471	2.351	2.427	2.411	2.11
47) Tetrachloroethene	0.575	0.623	0.593	0.594	0.576	0.585	0.594	2.99
48) Dibromochloromethan	0.344	0.363	0.341	0.432	0.448	0.488	0.418	16.59
49) 1,3-Dichloropropane	0.859	0.936	0.941	0.953	0.907	0.932	0.926	3.59
50) 1,2-Dibromoethane	0.466	0.412	0.461	0.466	0.455	0.464	0.458	4.84
51) 1-Chlorohexane	0.757	0.747	0.800	0.881	0.837	0.876	0.830	7.58
52) PM Chlorobenzene	1.689	1.887	1.829	1.816	1.731	1.770	1.793	3.74
53) CP Ethylbenzene	3.111	3.041	3.232	3.255	3.177	3.236	3.198	3.02
54) 1,1,1,2-Tetrachloro	0.444	0.437	0.428	0.482	0.475	0.515	0.473	8.33
55) (m+p)-Xylene	1.108	1.118	1.193	1.255	1.223	1.255	1.208	6.09
56) o-Xylene	1.081	1.060	1.162	1.214	1.178	1.211	1.165	6.02
57) Styrene	1.271	1.399	1.564	1.740	1.731	1.791	1.621	13.43
58) P Bromoform		0.138	0.162	0.196	0.214	0.233	0.200	22.26
59) I 1,4-Dichlorobenzene-d	-----ISTD-----							
60) Isopropylbenzene	3.907	3.838	4.015	4.019	4.107	4.189	4.036	3.29
61) S Bromofluorobenzene	1.367	1.184	1.233	1.168	1.175	1.209	1.221	5.59
62) Bromobenzene	0.980	1.041	0.990	0.962	0.936	0.950	0.975	3.50
63) n-Propylbenzene	4.193	4.451	4.650	4.867	5.039	5.123	4.781	7.62
64) P 1,1,2,2-Tetrachloro	0.826	0.905	0.907	0.899	0.882	0.917	0.891	3.44
65) 2-Chlorotoluene	3.195	3.350	3.421	3.245	3.345	3.396	3.338	2.61
66) 1,3,5-Trimethylbenz	2.725	2.756	3.009	3.171	3.279	3.370	3.103	9.05
67) 1,2,3-Trichloroprop	0.849	0.841	0.805	0.750	0.768	0.771	0.795	4.80
68) trans-1,4-Dichloro-		0.090	0.103	0.129	0.132	0.152	0.127	20.64
69) 4-Chlorotoluene	2.800	2.854	2.935	2.902	2.984	3.056	2.941	3.33
70) tert-Butylbenzene	2.266	2.283	2.397	2.421	2.571	2.629	2.464	6.70
71) 1,2,4-Trimethylbenz	2.573	2.594	2.745	2.836	2.969	3.063	2.841	7.61
72) sec-Butylbenzene	3.284	3.342	3.354	3.537	3.758	3.851	3.579	7.42
73) p-Isopropyltoluene	2.508	2.479	2.544	2.674	2.892	2.990	2.734	8.81
74) 1,3-Dichlorobenzene	1.865	1.753	1.843	1.715	1.725	1.746	1.774	3.26
75) 1,4-Dichlorobenzene	1.710	1.700	1.695	1.613	1.632	1.671	1.674	2.24
76) n-Butylbenzene	2.106	2.072	2.113	2.079	2.216	2.332	2.193	6.44
77) 1,2-Dichlorobenzene	1.620	1.552	1.634	1.614	1.646	1.673	1.635	2.97
78) 1,2-Dibromo-3-chlor		0.077	0.091	0.106	0.118	0.125	0.108	19.39
79) Hexachlorobutadiene	0.281	0.232	0.248	0.233	0.253	0.255	0.252	6.70
80) 1,2,4-Trichlorobenz	0.696	0.698	0.741	0.674	0.724	0.754	0.725	5.50
81) Naphthalene	1.107	1.238	1.371	1.607	1.752	1.792	1.532	19.28
82) 1,2,3-Trichlorobenz	0.483	0.534	0.593	0.569	0.618	0.645	0.588	11.20

Method : C:\HPCHEM\1\METHODS\J911VOCW.M (RTE Integrator)
 Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
 Last Update : Fri Sep 12 09:32:52 2008
 Response via : Initial Calibration

Calibration Files

40 =J7037.D = =
 = = = =

Compound	40	Avg	%RSD
-----ISTD-----			
1) I Fluorobenzene			
2) Dichlorodifluoromet	0.399		
3) P Chloromethane	0.404		
4) CP Vinyl chloride	0.497		
5) Bromomethane	0.365		
6) Chloroethane	0.337		
7) Trichlorofluorometh	0.566		
8) CPM 1,1-Dichloroethene	0.244		
9) Carbon disulfide	0.841		
10) 1,1,2-Trichloro-1,2	0.271		
11) Methyl iodide	0.297		
12) Acrolein	0.034		
13) Methylene chloride	0.268		
14) Acetone	0.060		
15) trans-1,2-Dichloroe	0.253		
16) Methyl acetate	0.176		
17) Methyl tert-Butyl e	0.713		
18) P 1,1-Dichloroethane	0.491		
19) Acrylonitrile	0.070		
20) Vinyl acetate	0.291		
21) cis-1,2-Dichloroeth	0.289		
22) 2,2-Dichloropropane	0.376		
23) Bromochloromethane	0.119		
24) Cyclohexane	0.476		
25) CP Chloroform	0.447		
26) Carbon tetrachlorid	0.277		
27) 1,1,1-Trichloroetha	0.391		
28) 2-Butanone	0.085		
29) 1,1-Dichloropropene	0.376		
30) M Benzene	1.206		
31) S 1,2-Dichloroethane-	0.279		
32) 1,2-Dichloroethane	0.340		
33) Methylcyclohexane	0.439		
34) M Trichloroethene	0.271		
35) Dibromomethane	0.142		
36) CP 1,2-Dichloropropane	0.281		
37) Bromodichloromethan	0.319		
38) 2-Chloroethylvinyl	0.054		
39) cis-1,3-Dichloropro	0.434		
40) CPM Toluene	0.726		
41) 4-Methyl-2-pentanon	0.194		
42) trans-1,3-Dichlorop	0.363		
43) 1,1,2-Trichloroetha	0.177		

Method : C:\HPCHEM\1\METHODS\J911VOCW.M (RTE Integrator)
 Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
 Last Update : Fri Sep 12 09:32:52 2008
 Response via : Initial Calibration

Calibration Files

40 =J7037.D = =
 = = = =

	Compound	40	Avg	%RSD
44)	2-Hexanone	0.134		
45) I	Chlorobenzene-d5			-----ISTD-----
46) S	Toluene-d8	2.480		
47)	Tetrachloroethene	0.610		
48)	Dibromochloromethan	0.510		
49)	1,3-Dichloropropane	0.953		
50)	1,2-Dibromoethane	0.483		
51)	1-Chlorohexane	0.907		
52) PM	Chlorobenzene	1.824		
53) CP	Ethylbenzene	3.331		
54)	1,1,1,2-Tetrachloro	0.530		
55)	(m+p)-Xylene	1.305		
56)	o-Xylene	1.246		
57)	Styrene	1.853		
58) P	Bromoform	0.257		
59) I	1,4-Dichlorobenzene-d			-----ISTD-----
60)	Isopropylbenzene	4.180		
61) S	Bromofluorobenzene	1.211		
62)	Bromobenzene	0.963		
63)	n-Propylbenzene	5.147		
64) P	1,1,2,2-Tetrachloro	0.902		
65)	2-Chlorotoluene	3.416		
66)	1,3,5-Trimethylbenz	3.410		
67)	1,2,3-Trichloroprop	0.778		
68)	trans-1,4-Dichloro-	0.156		
69)	4-Chlorotoluene	3.057		
70)	tert-Butylbenzene	2.680		
71)	1,2,4-Trimethylbenz	3.111		
72)	sec-Butylbenzene	3.927		
73)	p-Isopropyltoluene	3.052		
74)	1,3-Dichlorobenzene	1.775		
75)	1,4-Dichlorobenzene	1.699		
76)	n-Butylbenzene	2.435		
77)	1,2-Dichlorobenzene	1.706		
78)	1,2-Dibromo-3-chlor	0.132		
79)	Hexachlorobutadiene	0.262		
80)	1,2,4-Trichlorobenz	0.790		
81)	Naphthalene	1.862		
82)	1,2,3-Trichlorobenz	0.674		

AFCEE
ORGANIC ANALYSES DATA SHEET 4
SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method: SW8260B AAB #: R14785
Lab Name: Life Science Laboratories, In Contract Number:
Instrument ID: MS03_10 Initial Calibration ID: 1351
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:

AFCEE
ORGANIC ANALYSES DATA SHEET 10
HOLDING TIMES

Analytical Method: SW8260B

AAB #: R14876

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Max. Holding Time E	Time Held Ext.	Date Analyzed	Max. Holding Time A	Time Held Anal.	Q
101M0217XA	0809134-001C	18-Sep-08	19-Sep-08	24-Sep-08			24-Sep-08	14	6.1	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 11
INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: SW8260B

AAB#:

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID #: MS03_10

Calibration ID: 1351

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:

Wet Chemistry Data

AFCEE
WET CHEM ANALYSES DATA SHEET 3-10
INITIAL MULTIPOINT CALIBRATION

Analytical Method: SW9056 AAB #: R14837
 Lab Name: Life Science Laboratories, Inc. Contract #: _____
 Instrument ID: IC Date of Initial Calibration: 17-Sep-08
 Initial Calibration ID: 135Z Concentration Units (mg/L or mg/kg): mg/L

Analyte	STD 1	STD 2	STD 3	STD 4	STD 5	STD 6	STD 7	STD 8	STD 9	STD 10	r	Q
Chloride	0	0.2	0.5	1	5	10	20	40	0	0	1	
Nitrate (as N)	0	0.02	0.05	0.1	0.5	1	2	0	0	0	0.99997	
Sulfate (as SO4)	0	0.2	0.5	1	5	10	20	40	0	0	0.99999	

r = correlation coefficient

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9056 AAB #: R14837
Lab Name: Life Science Laboratories, Inc. Contract Number:
Concentration Units (mg/L or mg/kg): mg/L
Calibrator Blank ID: ICB Initial Calibration ID: 1357
Method Blank ID: MB-R14837 Initial Calibration ID: 1357

Analyte	Calibration Blank	Method Blank	RL	Q
Chloride	0.028	0.099	1.0	
Nitrate (as N)	0.015	0.015	0.10	
Sulfate (as SO ₄)	0.20	0.20	1.0	

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS**

Analytical Method: SW9056 **AAB #:** R14837
Lab Name: Life Science Laboratories, Inc. **Contract Number:**
Concentration Units (mg/L or mg/kg): mg/L
Calibration Blank ID: CCB1 **Initial Calibration ID:** 1357
Method Blank ID: MB-R14837 **Initial Calibration ID:** 1357

Analyte	Calibration Blank	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:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9056 AAB #: R14837
 Lab Name: Life Science Laboratories, Inc. Contract Number:
 Concentration Units (mg/L or mg/kg): mg/L
 Calibrator Blank ID: CCB2 Initial Calibration ID: 1357
 Method Blank ID: MB-R14837 Initial Calibration ID: 1357

Analyte	Calibration Blank	Method 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
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9056 AAB #: R14837
Lab Name: Life Science Laboratories, Inc. Contract Number:
Concentration Units (mg/L or mg/kg): mg/L
Calibrator Blank ID: CCB3 Initial Calibration ID: 1357
Method Blank ID: MB-R14837 Initial Calibration ID: 1357

Analyte	Calibration Blank	Method Blank	RL	Q
Chloride	0.028	0.099	1.0	
Nitrate (as N)	0.015	0.015	0.10	
Sulfate (as SO4)	0.20	0.20	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 8
HOLDING TIMES

Analytical Method: SW9056

AAB #: R14837

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Analyzed	Max Holding Time (days)	Time Held (days)	Q
101M0217XA	0809134-001B	18-Sep-08	19-Sep-08	19-Sep-08	2	1.1	

Comments:

**AFCEE
WET CHEM ANALYSES DATA SHEET 9
INSTRUMENT ANALYSIS SEQUENCE LOG**

Analytical Method: SW9056

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID #: IC

Field Sample ID/Std ID/ Blank ID/QC Sample ID	Lab Sample ID	Date Analyses Started	Time Analyses Started	Date Analyses Completed	Time Analyses 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
ICAL 4	ICAL 4	17-Sep-08	12:09	17-Sep-08	12:30
ICAL 3	ICAL 3	17-Sep-08	12:30	17-Sep-08	12:50
ICAL 2	ICAL 2	17-Sep-08	12:50	17-Sep-08	13:10
ICAL 1	ICAL 1	17-Sep-08	13:10	17-Sep-08	13:10
ICV	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
ICB	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
LCS-R14837	LCS-R14837	19-Sep-08	9:17	19-Sep-08	11:00
LCSD-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
101M0217XA	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	CCB2	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:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SM 2320 B AAB #: R14921

Lab Name: Life Science Laboratories, Inc. Contract Number:

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

Calibration Blank ID: Initial Calibration ID: 0

Method Blank ID: MB-R14921 Initial Calibration ID: 0

Analyte	Calibration Blank	Method Blank	RL	Q
Alkalinity, as CaCO ₃		10	10	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 8
HOLDING TIMES

Analytical Method: SM 2320 B

AAB #: R14921

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Analyzed	Max Holding Time (days)	Time Held (days)	Q
101M0217XA	0809134-001A	18-Sep-08	19-Sep-08	27-Sep-08	14	8.4	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 9
INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: SM 2320 B

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID #: pH meter

Field Sample ID/Std ID/ Blank ID/GC Sample ID	Lab Sample ID	Date Analyses Started	Time Analyses Started	Date 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

Analytical Method: SW9060 AAB #: R15086
 Lab Name: Life Science Laboratories, Inc. Contract #: _____
 Instrument ID: TOC-5000A Date of Initial Calibration: 08-Oct-08
 Initial Calibration ID: 1376 Concentration Units (mg/L or mg/kg): mg/L

Analyte	STD 1	STD 2	STD 3	STD 4	STD 5	STD 6	STD 7	STD 8	STD 9	STD 10	r	Q
Total Organic Carbon	0	1	10	20	0	0	0	0	0	0	0.999571	

r = correlation coefficient

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9060 AAB #: R15086

Lab Name: Life Science Laboratories, Inc. Contract Number:

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

Calibration Blank ID: ICB Initial Calibration ID: 1376

Method Blank ID: MB-R15086 Initial Calibration ID: 1376

Analyte	Calibration Blank	Method Blank	RL	D
Total Organic Carbon	0.23	0.40	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9060 AAB #: R15086
Lab Name: Life Science Laboratories, Inc. Contract Number:
Concentration Units (mg/L or mg/kg): mg/L
Calibration Blank ID: CCB1 Initial Calibration ID: 1376
Method Blank ID: MB-R15086 Initial Calibration ID: 1376

Analyte	Calibration Blank	Method Blank	RL	Q
Total Organic Carbon	0.21	0.40	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 5
BLANKS

Analytical Method: SW9060 AAB #: R15086
 Lab Name: Life Science Laboratories, Inc. Contract Number:
 Concentration Units (mg/L or mg/kg): mg/L
 Calibrator Blank ID: CCB2 Initial Calibration ID: 1376
 Method Blank ID: MB-R15086 Initial Calibration ID: 1376

Analyte	Calibration Blank	Method Blank	RL	Q
Total Organic Carbon	0.23	0.40	1.0	

Comments:

AFCEE
WET CHEM ANALYSES DATA SHEET 8
HOLDING TIMES

Analytical Method: SW9060

AAB #: R15086

Lab Name: Life Science Laboratories, Inc.

Contract #:

Field Sample ID	Lab Sample ID	Date Collected	Date Received	Date Analyzed	Max Holding Time (days)	Time 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:

**AFCEE
WET CHEM ANALYSES DATA SHEET 9
INSTRUMENT ANALYSIS SEQUENCE LOG**

Analytical Method: SW9060

Lab Name: Life Science Laboratories, Inc.

Contract #:

Instrument ID #: TOC-5000A

Field Sample ID/Std ID/ Blank ID/QC Sample ID	Lab Sample ID	Date Analyses Started	Time Analyses Started	Date Analyses Completed	Time Analyses Completed
S0	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:
