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

MONITORING REPORT (Spring 2007)

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

Revision 0.0
August 2007

FPM group

MONITORING REPORT (Spring 2007)

Prepared for:

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

through

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LIST OF ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFCEE	Air Force Center for Engineering and the Environmental
AFRPA	Air Force Real Property Agency
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
CSM	Conceptual site model
DCE	dichloroethylene/dichloroethene
DO	Delivery Order
E&E	Ecology and Environment, Inc.
EPA	Environmental Protection Agency
FPM	FPM Group, Ltd.
FPTA	Fire Protection Training Area
FSP	Field Sampling Plan
ft	feet
HRC®	Hydrogen Release Compound
LAW	LAW engineering and environmental services, Inc.
LTM	long term monitoring
MSL	mean sea level
NFS	No Further Sampling
NYSBC	New York State Barge Canal
NYSDEC	New York State Department of Environmental Conservation
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene/perchloroethylene/tetrachloroethene/perchloroethene
POC	Point of compliance

LIST OF ACRONYMS AND ABBREVIATIONS (cont'd.)

QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
SI	Supplemental Investigation
SVOC	semi-volatile organic compound
TCE	trichloroethylene/trichloroethene
TOC	total organic carbon
UST	Underground Storage Tank
VOC	volatile organic compound
µg/L	micrograms per liter

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). 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 (quarterly) 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 semi-annual groundwater monitoring report includes collection, analysis, and reporting of COCs for the following On-Base Groundwater Areas of Concern:

- FT-30: Fire Protection Training Area (FPTA)
- ST-06: Building 101
- SS-60: Building 35

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 (NFS) was proposed or sampling was suspended until the feasibility study is approved.

- SD-52: Nosedocks / Apron 2 Chlorinated Plume
- SS-23: Building 20
- DP-12: Building 301
- SS-17: Lot 69

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

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).

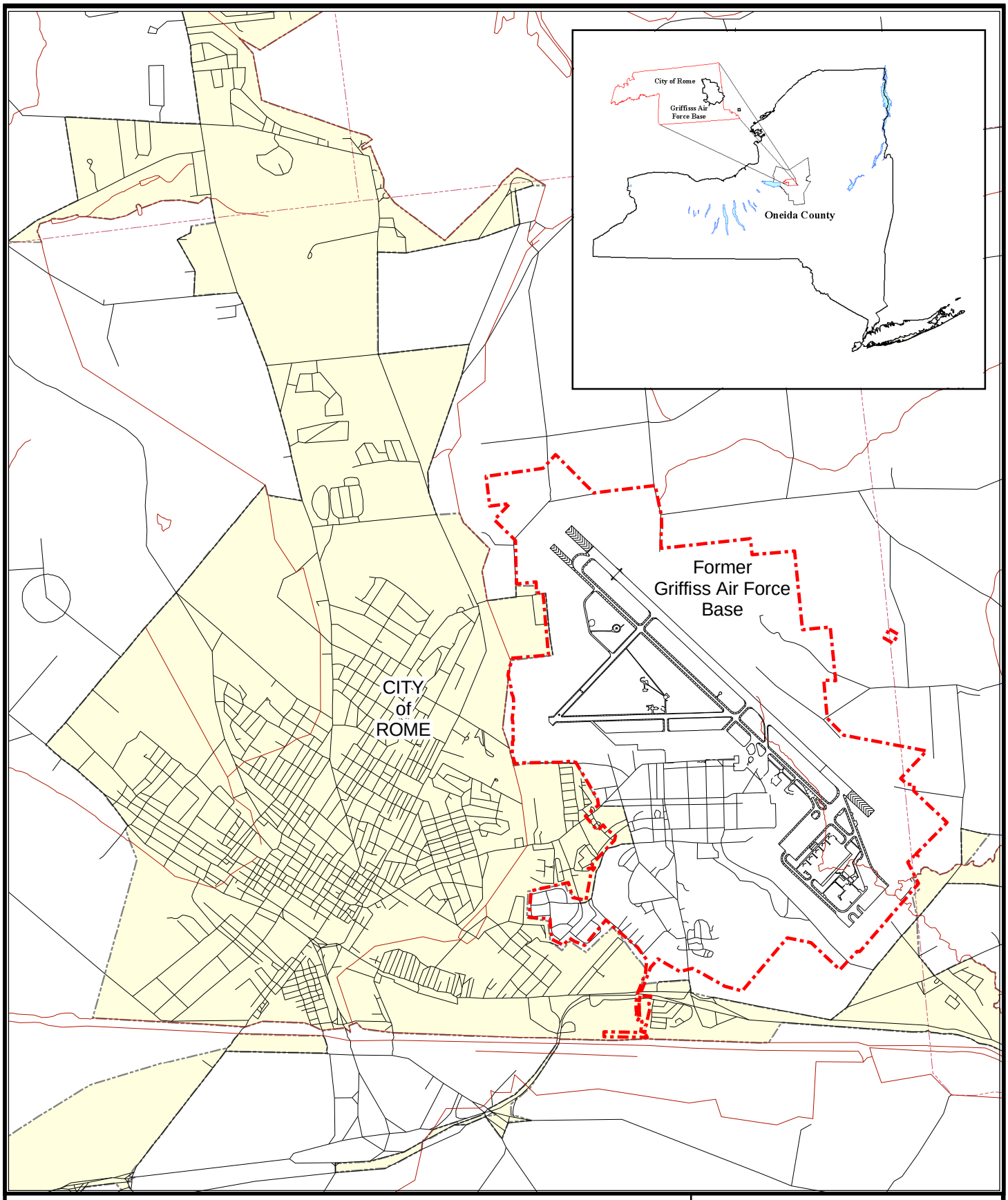

FIGURE 1-1
Base Location Map

N

4,800 2,400 0 4,800 9,600

Feet

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

FPM group

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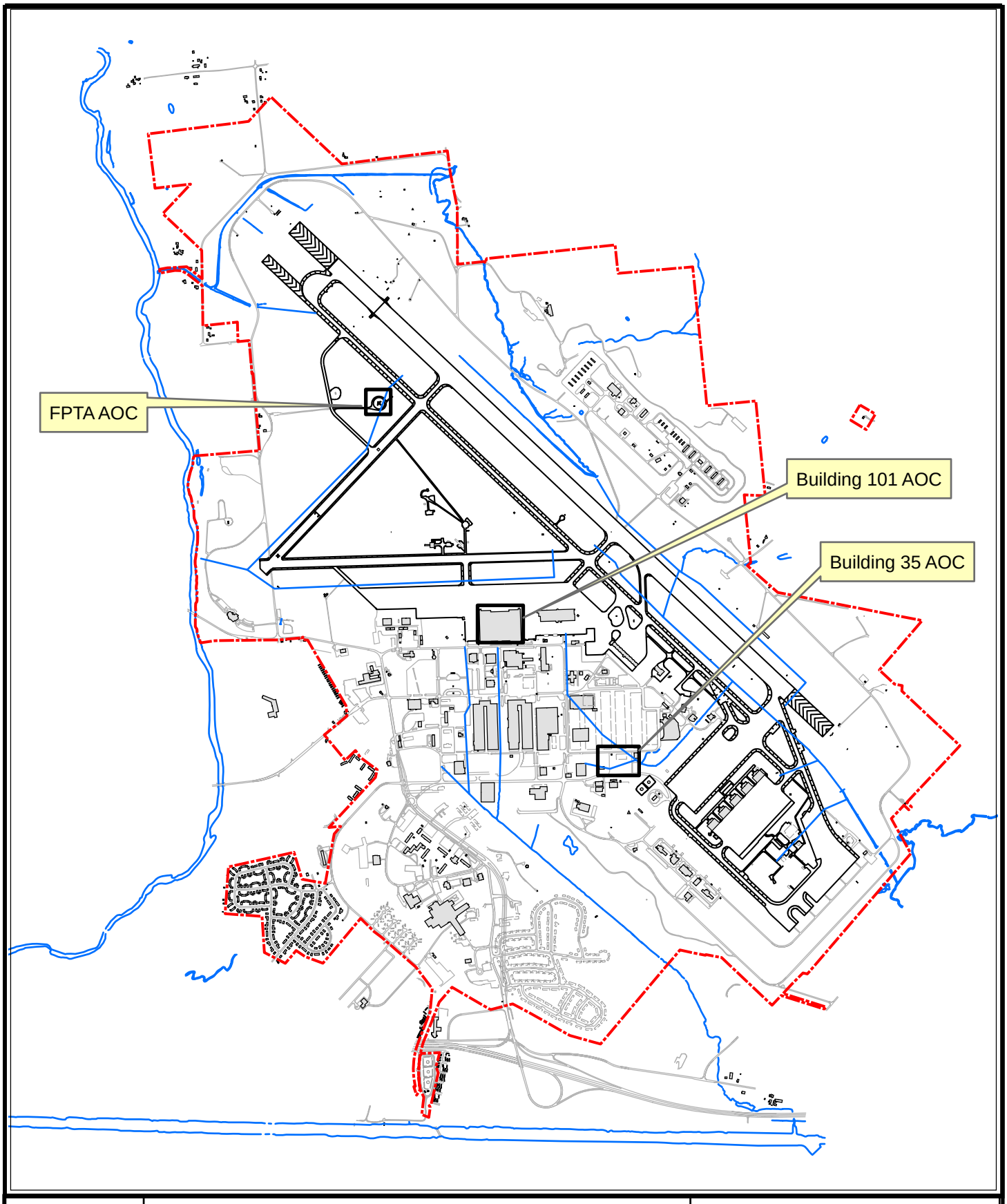

Site Location

Legend

Boundary
Hydro
Airfield
Road

Facilities

Existing
Demolished

N

750 375 0 750 1,500 Feet

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

Figure 1-21
On-Base Groundwater AOC
Location Map

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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 or later, with project-specific variances. The QAPP, together with the FSP, form the Sampling and Analysis Plan (SAP).

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 (CSM) 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 sufficiently 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). 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 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 feet above MSL. The topography across the former Base is relatively flat with elevations ranging from 435 feet above MSL in the southwest portion to 595 feet 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 feet in the northeast portion to more than 130 feet in the southern portion of the former Base. The average thickness of the unconsolidated sediments is 25 to 50 feet in the central portion and 100 to 130 feet 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 to 59 feet below ground surface (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 New York State Barge Canal to the south. Several creeks, drainage culverts, and sewers (mostly acting as drains for shallow groundwater), intercept surface water runoff. Please refer to the On-Base Groundwater AOCs Monitoring Report (FPM, November 2004) for the groundwater elevation contour map of the former Griffiss Air Force Base along with monitoring well identifications and respective groundwater elevations.

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), and in the Remedial Investigation (RI) (LAW, December 1996), and in the Supplemental Investigation (SI) prepared by Ecology and Environment, Inc. (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 45.6 inches, which includes the mean annual snowfall of 107 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 1992 at the three closest stations ranged from 4.25 to 4.28. Fluctuations in pH have an inverse correlation to precipitation, such that lower pH levels correlate with higher amounts of precipitation (LAW, December 1996).

3 FIRE PROTECTION TRAINING AREA (FT-30)

3.1 SITE LOCATION AND HISTORY

The Fire Protection Training Area, Area of Concern (FPTA AOC FT-30) was previously the fire-training activities area. The training fires at the area used petroleum fuels and, before 1985, the training occurred on bare soil. The FPTA was constructed in 1985 in two separate areas; one for structural fire simulations and one for aircraft fire simulations. The aircraft fire simulation area consisted of an airplane mockup and a concrete basin. After training, the petroleum waste was discharged through a network of pipes from the concrete basin into a 4,000-gallon OWS (OWS 6365-1). The OWS discharged the aqueous waste to a 10,000-gallon UST (UST 6365-1). The aqueous waste was transferred through an ultra-filtration unit in Building 6365, then to UST 6365-3. The petroleum phase liquid from OWS 6365-1 discharged to a separate UST (UST 6365-2). Records indicate that OWS 6365-1 overflowed once in its operating history. OWS 6365-1, UST 6365-1, and UST 6365-3 were removed in 1993 and replaced by a 10,000-gallon OWS (OWS 6365-2). The new OWS transferred aqueous waste to a sanitary sewer lift station and petroleum waste to UST 6365-2. In 1996, AST 6365-C was installed to replace UST 6365-2. Table 3-1 summarizes the FPTA AOC former site features in chronological order and Figure 3-1 identifies the FPTA former site features.

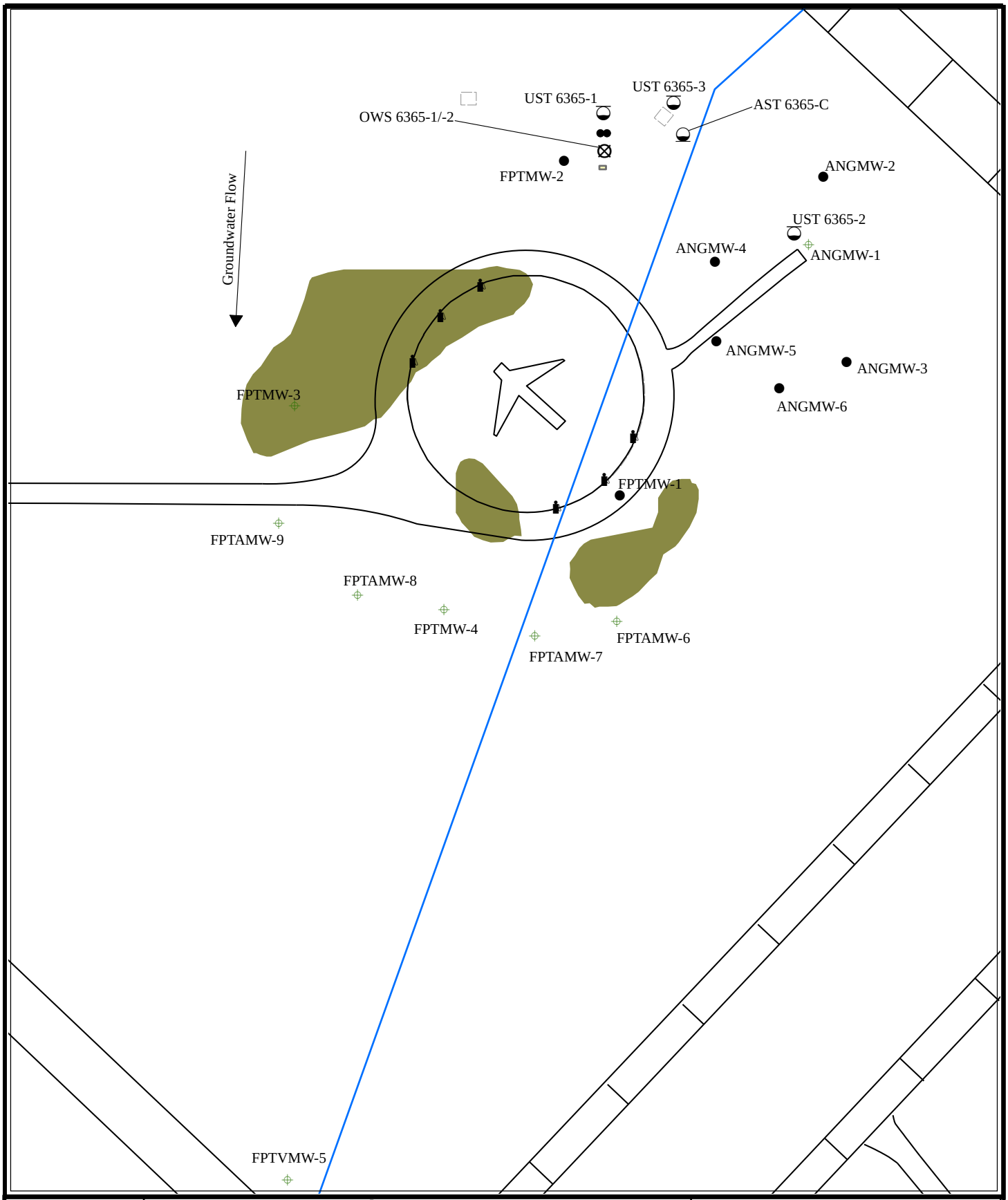
In 1995, NYSDEC assigned Spill #9510187 to the FPTA AOC after an overfilling event of OWS 6365-2, caused UST 6365-2 to release 3,000 gallons of jet fuel to the ground surface. Site closure has been approved and the spill number remains open pending the bioremediation of the contaminated soils excavated from the OWS site. Another NYSDEC Spill #9510184 was assigned to the FPTA AOC in 1995. NYSDEC Spill #9510184 was assigned due to multiple spills at the area throughout its history.

The following summarizes the information given in Table 3-1:

- Seven years after their installation at the FPTA OWS 6365-1, UST 6365-1 and the ultra filtration unit (UST 6365-3) were removed in 1993.
- UST-6365-2, associated with NYSDEC Spill #9510187, was removed in 1996.
- Closure of the FPTA occurred in 1998, when the concrete basin, covering gravel, and surrounding asphalt were removed. A total of 2,378 tons of debris and gravel and 7,164 cubic yards of asphaltic millings were removed from the site.
- In July 1999, remedial actions included the removals of AST 6365-C, OWS 6365-2, the demolition of Building 6365 and remediation of superficial contaminated soils identified during the remediation (FPM / PEER, July 2003).

Table 3-1
Site Features for the Fire Protection Training Area

Pre-1986 Fire Protection Training Area				
Years of Existence	**Description**	**Purpose**	**Environmental Program**	**Known Past Releases**
1960-1986	Original FPTA	Simulate aircraft fires on bare soils.	AOC/Petroleum Spill Site	Excavation of 497 cubic yards of contaminated soils (1985).
Post-1986 Fire Protection Training Area				
1986-1998	FPTA	Simulate aircraft fires, with concrete basin.	AOC/Petroleum Spill Site	Multiple petroleum spills from USTs and OWS (NYSDEC Spill # 9510184).
1986-1993	OWS 6365-1	Separated petroleum and aqueous waste after training, distributed petroleum waste to UST 6365-2 and aqueous waste to UST 6365-1.	AOC/Petroleum Spill Site	Overfilled on at least one occasion, part of NYSEC Spill # 9510184. (November 1995)
1986-1993	UST 6365-1	Stored aqueous wastes from OWS 6365-1. The waste was transported to the ultra-filtration unit at Building 6365.	AOC/Petroleum Spill Site	
1986-1993	Building 6365	Ultra-filtration unit which filtered aqueous waste from UST 6365-1, transferred waste to UST 6365-3.	AOC/Petroleum Spill Site	
1986-1996	UST 6365-2	Stored petroleum waste from OWS 6365-1 and OWS 6365-2 to be reused for training.	AOC/Petroleum Spill Site	Overfilled, releasing 3,000 gallons of petroleum product resulting in NYSDEC Spill #9510187.
1986-1993	UST 6365-3	Received aqueous waste for storage from the ultra-filtration unit at Building 6365.	AOC/Petroleum Spill Site	
1993-1999	OWS 6365-2	Replaced OWS 6365-1, the ultra-filtration unit, UST 6365-1, and UST 6365-3. Aqueous waste from OWS 6365-2 discharged to the sanitary sewer via a lift station and the petroleum waste discharged to UST 6365-2.	AOC/Petroleum Spill Site	
1996-1999	AST 6365-C	Replaced UST 6365-2	AOC/Petroleum Spill Site	



Legend

- Former Soil Contamination (1998)
- Demolished Building
- Storm Drain
- Airfield/Road
- Lift Station
- Flume
- Monitoring Well
- Monitoring Well (LTM)
- Monitoring Well (Decommissioned)
- AST
- UST
- OWS
- Fuel Nozzle

N

40 20 0 40 80 Feet

Site Location

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

Figure 3-1
FPTA former Site Features and Sampling Locations

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3.2 TOPOGRAPHY, GEOLOGY, AND SOILS

Surrounded by taxiways, reforested land, and a golf course, the FPTA is located in the north-central portion of the base in an area with less than 1 foot of relief. The FPTA is not located near natural surface-water drainage features. Run-off from the site is channeled into the base storm drain system which discharges to the Mohawk River (approximately 3,900 feet west of the site) (Law, December 1996). Groundwater at the FPTA exists under unconfined conditions within the unconsolidated aquifer. The saturated zone encountered at the site ranges in depth from 10 to 13 ft bgs. The site-specific groundwater flow is to the southwest towards the Mohawk River. Soils encountered at the FPTA were generally characterized by brown, fine to coarse sand with variable quantities of silt and gravel (Law, December 1996).

3.3 SUMMARY OF PREVIOUS INVESTIGATIONS

The following summarizes previous investigations and remediation activities:

- In 1994, LAW performed an RI consisting of soil gas analysis and groundwater headspace sampling. Results indicated no detections for various volatiles in the soil gas and groundwater headspace sampling. LAW installed 13 soil borings down to saturated soil. Three samples were collected from each soil boring and analyzed for VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs), dioxins, TAL metals, and TRPH. Results indicated six VOC detections, 18 SVOC detections, 13 pesticides, PCBs, dioxins and TPH detections. There were no PCBs or pesticides exceeding their applicable Guidance Values. Three monitoring wells (FPTMW-1, -2, and -3, shown on Figure 3-2) were installed and sampled in 1994.

  Ten VOCs were detected at concentrations exceeding NYS Groundwater Standards in FPTMW-1 (LAW, December 1996). In 1996, 2,000 cubic yards of soil were excavated during the removal of UST 6365-2. This excavation was in response to the overfilling of UST 6365-2 (NYSDEC Spill #9510187).

- In 1997, E&E performed a supplemental investigation at this site (E&E, November 1997). Two additional monitoring wells were installed (FPTMW-4 and FPTVMW-5, Figure 3-1) and two storm drains were sampled. The results indicated minor VOC detections in FPTMW-1. It was concluded that the stormwater drain, which traverses the site, acts as a groundwater drain and captures the plume. In July 1997, five new monitoring wells (ANGMW-1, -2, -3, -4, and -5, shown on Figure 3-1) were installed at the site. Groundwater testing reported VOC exceedances in ANGMW-1 and -5. In 1998, to get a better sampling point downgradient of UST 6365-2, ANGMW-6 was installed to replace ANGMW-3. The three rounds of July and October 1998 and January 1999 reported no VOC detections above NYS Groundwater Standards. Spill #9510187 associated with the UST 6365-2 area (ANG site) was requested for closure in July 1998,

closure is pending the completion of soil remediation in the landfarm. In 1999, site closure was recommended and ANGMW-2, -3, -4, -5, and -6 were decommissioned.

- PEER conducted a site investigation at the FPTA AOC in May 1998. Surface soil sampling was performed using a PID. Twelve samples were collected on May 4 and 5, 1998 and analyzed for VOCs and SVOCs. Results reported that sample location FPTASS-9 contained the only VOC exceedances at the site and also indicated an elevated PID level. SVOCs were detected in exceedance of STARS Guidance Values at three sample locations (FPTASS-7, -9, and -11). On May 11 and 12, 1998, subsurface soil sampling was conducted and 41 soil borings were installed. Four locations showed VOC detections and three locations showed SVOC detections exceeding STARS Guidance Values.

  On August 12 and 13, 1998, PEER installed 6 soil borings in the vicinity of OWS 6365-2 (two borings each were placed to the north and south and one boring was placed to the east and west of the OWS). Results from the soil sampling of these borings indicated four VOC exceedances in the borings to the south of the OWS.

  On October 12, 13, and 19, 1998, soil samples were collected from 22 additional borings installed through the concrete basin at the FPTA. No SVOC exceedances were reported; however, four locations showed VOC concentrations exceeding STARS Guidance Values. Based on the investigation performed at the FPTA AOC, areas on the Southeast and Northwest sides of the site were associated with soil contamination. For a complete description of the sampling locations and results, please refer to the Final Interim Remedial Action Report for the Fire Protection Training Area (FPM/PEER, 2003).

- PEER removed the FPTA concrete basin from September 1998 through June 1999. A total of 751.83 tons of gravel were removed from the site. Fuel lines, airplane mock-up, a diverter valve manhole, and asphaltic millings were removed and the areas around them were excavated. Evidence of soil contamination was observed under the diverter valve manhole and the soil was excavated and placed in Cell T of the Apron 1 Landfarm. During the removal of the asphaltic millings, two electrical manholes were discovered containing water and what appeared to be petroleum product. 4,731 gallons of petroleum-contaminated liquid were removed from the manholes and the manholes were left in place for future use. The concrete basin was removed on April 13, 1999. 1,627 tons of concrete rubble was removed from the site. Contaminated soils were excavated to 4 ft bgs on May 17, 18, and 25, 1999 and the soil was transported to the Apron 1 Landfarm. On June 8, 1999, Building 6365 was demolished. No contamination was observed during the removal of the building (FPM/PEER, July 2003).

- After the removal of the concrete basin, asphaltic millings and the excavation of the contaminated surface soil, 22 soil samples were collected from the excavation pit. No VOCs or SVOCs were reported exceeding STARS Guidance Values.

- OWS 6365-2 was removed in June 1999. Associated pipelines were cleaned and removed and 4,695 gallons of petroleum-contaminated liquid were removed and disposed of off-site. The removal of the OWS resulted in a pit 60 feet long x 26 feet wide x 13 feet deep. Eighteen soil samples were collected from the excavation pit and results indicated no VOC or SVOC detections above STARS Guidance Values.

- The concrete electric and communications vaults, discovered during the removal of the asphaltic millings, were removed in July 2001. Confirmation soil samples were collected from the excavation and analyzed for VOCs and SVOCs. The results for two locations indicated SVOC exceedances and the area was overexcavated. Additional sampling was performed and no VOCs or SVOCs were detected above STARS Guidance Values. The excavation was backfilled on July 24, 2001 using clean fill from the Apron 1 Landfarm.

- 3,300 cubic yards of contaminated soils in the landfarm associated with NYSDEC Spill #9510184 underwent bioremediation at the Griffiss AFB Apron 1 landfarm. After confirmatory soil sampling showed that soils were remediated, NYSDEC approved the closure of approximately 1,880 cubic yards of the formerly contaminated soil on July 5th, 2001.

- Due to existing contamination of subsurface soils at depths of 8 to 14 ft bgs, under NYSDEC Spill #9510184, FPM installed four monitoring wells FPTAMW-6, -7, -8, and -9 in November 2003 (see Figure 3-1). These locations were used to confirm the presence/absence of groundwater contamination caused by the residual subsurface soil contamination. During installation, there were no visible signs of contamination and PID readings remained at background concentrations.

- The remainder of the contaminated soils under NYSDEC Spill #9510184 (approximately 1,420 cubic yards), were considered remediated after NYSDEC approved closure on July 19th, 2005.

3.4 FPTA GROUNDWATER SAMPLING PLAN

Residual soil contamination is located at or near the groundwater table and appears to have resulted from the spread of VOC contamination within the groundwater at the FPTA AOC. Quarterly monitoring of groundwater was conducted at the site to assess petroleum contamination at the AOC. The groundwater monitoring sampling network consisted of eight monitoring wells (FPTMW-3, -4, FPTAMW -6, -7, -8, -9, FPTVMW-5, and ANGMW-1, shown on Figure 3-1). Each monitoring well location was sampled and tested for the target VOCs (STARS VOCs). The original sample analysis summary, which has since been updated/modified, is provided in Table 3-2. A summary of the field activities are provided in Table 3-3. Details regarding the sampling analysis and field activity procedures can be found in the FSP.

Table 3-2
FPTA Groundwater Monitoring Sample Analysis Summary

Sampling Locations	Screen Interval Depth (ft MSL)	Sampling Rationale	Target Analytes / Method Numbers	# of Samples[2]	Sampling Frequency	Evaluation Criteria
Groundwater		----------	**Groundwater**	11	Quarterly	If wells do not exhibit exceedances of NYS Groundwater Standards or Base background levels for four successive monitoring events, evaluate monitoring frequency and number of wells.
FPTMW-3	477.42 – 467.42	Downgradient of FPTA	VOCs – (8260 STARS List) / SW8260			
FPTMW-4	477.29 – 467.29	Downgradient of FPTA				
FPTVMW-5	472.31 – 462.31	Downgradient of FPTA				
FPTAMW-6	479.51 – 469.51	Adjacent to FPTA				
FPTAMW-7	479.20 – 469.20	Downgradient of FPTA	**Manhole**			
FPTAMW-8	477.99 – 469.99	Downgradient of FPTA	VOCs – (8260 STARS List) / SW8260			
FPTAMW-9	479.99 – 469.99	Downgradient of FPTA				
ANGMW-1	478.47 – 468.47[1]	Upgradient of FPTA				
FPTA Manhole		----------				
FPTMH-1W		Upgradient of FPTA				
FPTMH-2W		Crossgradient of FPTA				
FPTMH-3W		Downgradient of FPTA				

Notes:
[1] Screen interval estimated based on piezometer location.
[2] 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 3-3
FPTA AOC Site Field Activity Summary

Activity	Rationale	Analytical Parameters
Sample existing monitoring wells ANGMW-1, FPTMW-3, -4 and FPTVMW-5 and new monitoring wells FPTAMW-6, -7, -8, and -9 installed by FPM in November 2003.	Sampling of four new and four existing monitoring wells to accurately delineate and assess groundwater contamination at the FPTA AOC.	VOCs – (STARS List/ SW8260)
Sample the water in the storm sewer upstream, adjacent, and downstream of the site.	Sampling the storm sewer at the upstream, downstream and adjacent locations of FPTA AOC to assess if the petroleum contamination is entering the water system.	VOCs – (STARS List/ SW8260)
Perform ORC® treatment at site in lieu of groundwater sampling in the Fall 2005 sampling round. Install ORC® socks at ANGMW-1 in August 2005. The ORC® socks were removed in February 2006.	ORC® socks were installed at this well to remediate contaminated groundwater in the vicinity of the former UST 6365-2.	--
Additional ORC® treatment was performed in Fall 2006 and Winter 2007 at ANGMW-1.		

The determination of residual groundwater contamination and requirements for continued monitoring are based on comparisons of the sample analytical data to the applicable regulatory guidelines. The criteria and guidelines applicable to the FPTA include the following: (1) NYSDEC STARS Memo #1, August 1992; and (2) NYSDEC Ambient Water Quality Standards and Guidance Values, June 1998.

3.5 GROUNDWATER SAMPLING RESULTS 2003 THROUGH 2007

Monitoring wells ANGMW-1, FPTMW-3, -4, -6, -7, -8, -9, and FPTVMW-5 were sampled in November 2003, April 2004, June 2004, and September 2004. No samples were collected from any of the manholes during the November 2003 and April 2004 sampling rounds due to insufficient water volume. Manholes FPTMH-1 and -2 were sampled in June 2004 and September 2004 only. No sample could be collected from manhole FPTMH-3 in these two sampling rounds, due to the small quantity of water present. During the 2003-2004 sampling rounds, no VOC detections were reported in any of the FPTA monitoring wells except for ANGMW-1. The detected results for ANGMW-1 only, are shown in Table 3-4.

Table 3-4
FPTA Detected Groundwater Results

Monitoring Well ID	NYS Groundwater Standards (µg/L)	ANGMW-1						
Sample ID		ANGM0111AA	ANGM0111BA	ANGM0112CA	ANGM0111DA	ANGM0111EA	ANGM0111FA	ANGM0111GA
Date of Collection		Nov-03	Apr-04	Jun-04	Sep-04	Mar-05	Mar-06	Apr-07
Sample Depth (ft)		11	11	12	11	11	11	11
VOCs (µg/L)								
1,3,5-trimethylbenzene	5	4.5	2.6	U	3.1	1.7	U	U
1,2,4-trimethylbenzene	5	20	15	6.7	16	7.8	U	U
ethylbenzene	5	3.0	2.2	1.1	2.4	1.5	U	0.43 F
isopropylbenzene	5	1.1	1.2	0.64	1.1	0.84	U	0.32 F
m,p-xylene	5	2.5	1.65	1.4	1.8	0.84	U	U
naphthalene	10	20	10	4.9	11	5.9	U	3.13
n-propylbenzene	5	1.6	1.7	0.84	1.6	1.1	U	0.41 F
o-xylene	5	0.84	0.51	U	0.52	U	U	U
p-isopropyltoluene	5	1.4	0.25 F	U	0.47 F	4.1	U	1.96
sec-butylbenzene	5	1.4	1.4	0.68	1.4	1.3	U	0.61 F
t-butylbenzene	5	0.76	0.41	0.38 F	0.78	0.71	U	0.36 F

Notes:
- Exceedance of NYS Groundwater Standards.
F - The analyte was detected above the MDL, but below the RL.
U - The analyte was not detected above the MDL.

Beginning in March 2005, only monitoring well ANGMW-1 was sampled at this site. ANGMW-1 was sampled annually during the March 2006 and April 2007 sampling rounds (Table 3-4). The daily chemical quality control reports (CQCRs) are included in Appendix A, validated lab data are given in Appendix B, and the raw lab data are included in Appendix C.

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

April 2007

- Groundwater sampling results from the Spring 2007 sampling round, showed seven VOC detections. None of the VOC concentrations exceeded NYS Groundwater Standards.

In summary, LTM sampling indicates that residual petroleum-related contamination has attenuated at the site.

3.6 CONCLUSIONS AND MONITORING RECOMMENDATIONS

Sampling of the FPTA monitoring wells confirmed that VOC contamination is absent downgradient of the former concrete pad. Following the September 2004 sampling round, VOC contamination was limited to monitoring well ANGMW-1, located in the vicinity of the former UST 6365-2. ORC® socks were utilized in monitoring well ANGMW-1 during Summer 2005 and Fall 2006. The absence of VOC exceedances in the well during the Spring 2006 and Spring 2007 sampling rounds suggests that the ORC® socks have had a beneficial effect.

The FPTA site and its associated NYSDEC Spill #9510184 are recommended for closure. No VOC exceedances have been reported in the last two annual sampling rounds and the contaminated soils associated with NYSDEC Spill #9510184 have been remediated. The history of the FPTA sampling network is provided in Table 3-5.

Table 3-5
FPTA Groundwater Sampling and Analysis Plan

Sampling Locations	Sampling Rationale	Target Analytes / Method Numbers	Sampling Frequency	Evaluation Criteria / Modification Justification
ANGMW-1	Upgradient of FPTA – located in the vicinity of UST 6365-2	**Groundwater** VOCs – (8260 STARS List) / SW8260	Semi-annually (Spring and fall)	Continue in groundwater monitoring network semi-annually. Re-evaluation will take place following ORC treatment and once Spring 2007 groundwater results are assessed.
Historical LTM Network Changes				
August 2006				
Analysis/Frequency Changes				
ANGMW-1	Upgradient of FPTA – located in the vicinity of UST 6365-2	**Groundwater** VOCs – (8260 STARS List) / SW8260	Semi-annually (spring and fall)	Change sampling frequency from annual to semi-annual to confirm absence of residual petroleum contamination.
August 2005				
Analysis/ Frequency Changes				
ANGMW-1	Upgradient of FPTA – located in the vicinity of UST 6365-2	**Groundwater** VOCs – (8260 STARS List) / SW8260	Annually	Install ORC® socks at ANGMW-1 in lieu of groundwater sampling in the Fall 2005 sampling round, sampling will take place in Spring 2006. Re-evaluation will take place once Spring 2006 groundwater results are assessed.

Table 3-5 (cont'd.)
FPTA Proposed Groundwater Sampling and Analysis Plan

January 2005				
Analysis/ Frequency Changes				
ANGMW-1	Upgradient of FPTA	**Groundwater** VOCs – (8260 STARS List) / SW8260	Semi-Annually	Continue in groundwater monitoring network semi-annually, with semi-annual evaluations.
Removed Sampling Locations				
FPTMW-3	Downgradient of FPTA	Same as above	Discontinued from quarterly basis.	No VOC detections were reported for four consecutive sampling rounds.
FPTMW-4	Downgradient of FPTA			
FPTVMW-5	Downgradient of FPTA			
FPTMW-6	Adjacent to FPTA			
FPTMW-7	Downgradient of FPTA			
FPTMW-8	Downgradient of FPTA			
FPTMW-9	Downgradient of FPTA			
FPTA Manhole	----------			Sampling results from June and September 2004 sampling rounds confirmed that VOC contamination from the site is not seeping into the storm drain.
FPTMH-1W	Upgradient of FPTA			
FPTMH-2W	Crossgradient of FPTA			
FPTMH-3W	Downgradient of FPTA			

4 BUILDING 101 (ST-06)

4.1 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 4-1 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, July 1998).

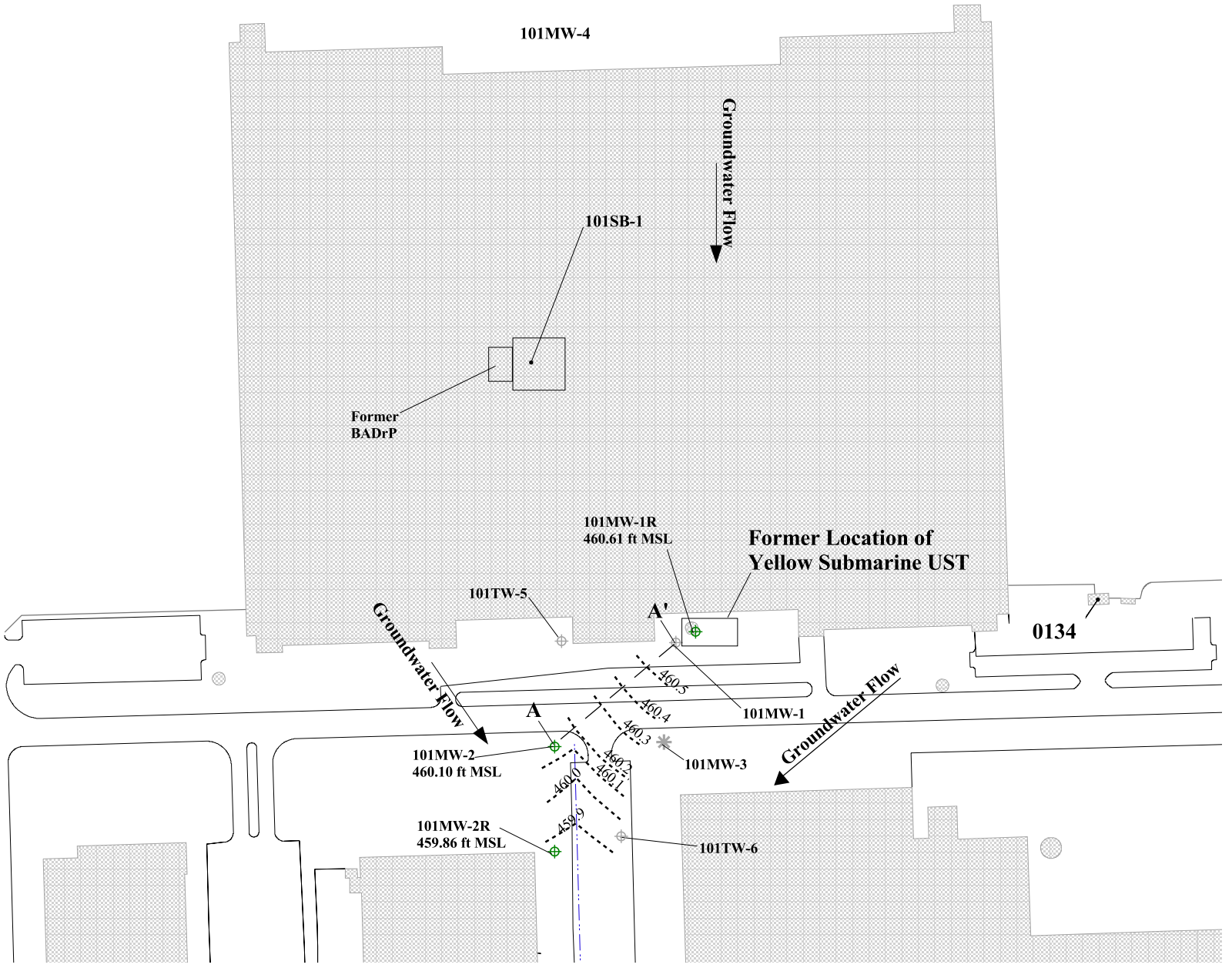
The Yellow Submarine UST, which was located 15 feet from the south edge of Building 101, was used as a holding and dilution tank for plating wastes from a metal plating shop housed in Building 101, until June 1993 when it was excavated (LAW, December 1996).

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.

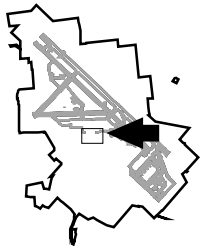
4.2 HYDROGEOLOGICAL SETTING

Building 101, approximately 1,440,000 square feet (ft^2) in area, has a topographic relief of less than 1 foot across the site. The soils below 0.5 feet 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 4-2 illustrates the geological cross section A-A' (LAW, December 1996).

APRON 3



N



Legend

- GW contour March 2004
- Well inventory
  - Existing
  - Decommissioned
  - Destroyed
- Stormdrain
- Road/Airfield
- Building

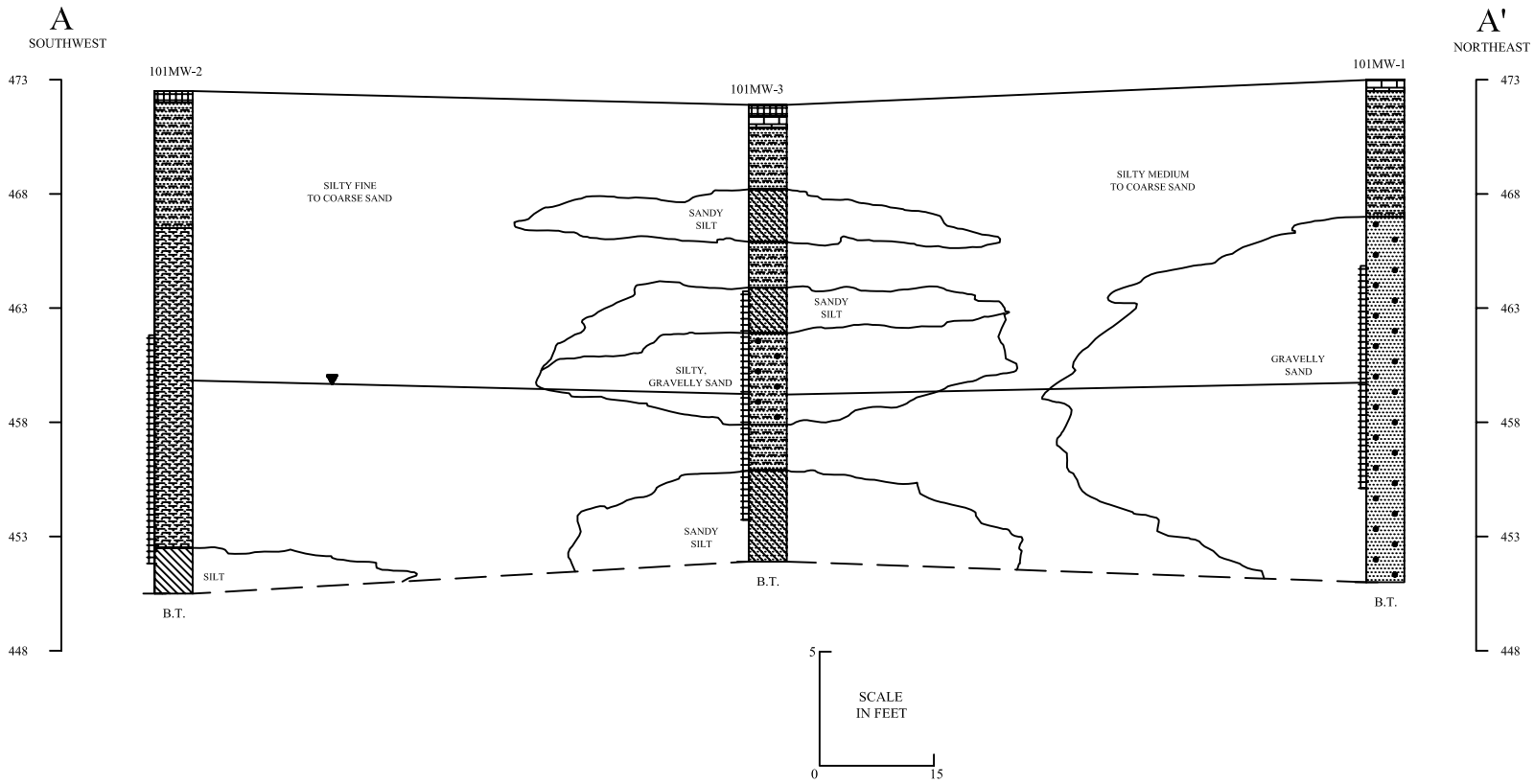
50 0 50 100 Feet

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

Figure 4-1
Building 101
Site Location Map

FPM group

Y:\GIS_Projects\Griffiss\Projects\40-05-27\On-base Groundwater\Buidling 101 Site Location Map.apr



LEGEND:

WATER TABLE

MONITORING WELL SCREEN INTERVAL

NOTES:

1. THE CORRELATIONS SHOWN ARE INTERPRETED FROM FIELD DESCRIPTIONS OF STRATA ENCOUNTERED IN THE DEPICTED BORINGS. IN SOME CASES, CORRELATIONS EXTEND BETWEEN STRATA WHICH WERE NOT FULLY PENETRATED, FOR WHICH SAMPLE RECOVERIES WERE INSUFFICIENT FOR SOIL DESCRIPTION OR FOR WHICH SAMPLES WERE NOT COLLECTED. THE DEPTHS TO STATIC GROUNDWATER ARE SHOWN FOR EACH WELL. THE WATER TABLE IS INTERPRETED BETWEEN THESE POINTS.

2. TAKEN FROM RI REPORT
(LAW ENVIRONMENTAL, INC., 1996)

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

FIGURE 4-2

GEOLOGIC CROSS-SECTION A-A'

BUILDING 101, BADP AND YELLOW SUBMARINE UST

Building 101 is located approximately 3,200 feet 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 4-1) 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 Building 101 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). A groundwater gradient indicates that the groundwater flow in the general Building 101 area is southwesterly. Water level measurements collected during the March 2005 sampling round indicate the same flow direction (see Figure 4-1).

The reported average site-specific hydraulic conductivity (K) for the Building 101 area 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).

4.3 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 mg/kg), lead (83,000 mg/kg), copper (784 mg/kg), and zinc (262 mg/kg) (101SB-1) (Figure 4-1). 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 µg/kg), toluene (3 µg/kg), and polynuclear aromatic hydrocarbon (PAH) compounds; of these, benzo(a)pyrene, phenol, and six metals (including antimony, arsenic, lead, and mercury) exceeded soil to-be-considereds (TBCs) (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 further soil removal, 1,4-dichlorobenzene was also reported below its respective TAGM level of 8.5 mg/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 4-1). 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, reported at 310 F micrograms per kilogram (µg/kg) (F indicating the detection was below 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 within one order of magnitude of the RSCO (30 µg/kg) and is below the laboratory reporting limit (330 µg/kg) (FPM, August 2002).

Three metals were reported at levels exceeding RSCO and/or Background Soil Screening Levels (from the RI, LAW, December 1996) at two sampling locations: 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 RSCO's, 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 well (located approximately 100' south of the BADP - not shown on map). 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.

<u>Yellow Submarine UST</u>

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 (µg/L), 270 µg/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 µg/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 µg/L, a marked decline from 290 µg/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, although 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 January 1999 during the Baseline Study, 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.

4.4 BUILDING 101 GROUNDWATER SAMPLING PLAN

The purpose of the sampling at the Building 101 Site is to monitor the presence and movement of chlorinated hydrocarbon COCs. Sampling is performed quarterly, and one monitoring well (101MW-2) is currently sampled on the site. The sample is analyzed for VOCs (EPA Method SW8260) for the specified short list (see Table 4-1). The original sample analysis summary, which has since been updated / modified, is provided in Table 4-1.

Table 4-1
Building 101 Groundwater Monitoring Sample Analysis Summary

Sampling Locations	Screen Interval Depth (ft MSL)	Sampling Rationale	Target Analytes/ EPA Method Numbers	# of Samples[1]	Sampling Frequency	Evaluation Criteria
101MW-1R[2] 101MW-2 101MW-2R[2] 101MW-3[3]	463.14' – 453.14' 464.75' – 454.75' 461.87' – 451.87' 463.20' – 453.20'	Downgradient from source Downgradient from plume Downgradient from plume Downgradient from plume	VOCs – (Specified COC Short List)[4] / SW8260 COCs - 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).

4.5 GROUNDWATER SAMPLING RESULTS 2001 THROUGH 2007

FPM performed quarterly groundwater sampling from September 2001 through April 2007 (in total, 22 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, December 2006, and April 2007. Well 101MW-3 was sampled only during the first five sampling rounds (September 2001 through September 2002). This monitoring well 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 4-2. The analytical results are given in Table 4-3. The daily Chemical Quality Control Reports (CQCRs) are attached in Appendix A. The validated lab data are attached in Appendix B and the raw lab data are attached in Appendix C.

Table 4-2
Building 101 Site Field Activity Summary

Activity	Rationale	Analytical Parameters
Confirmation of groundwater flow direction.	The groundwater flow direction and elevation was confirmed using existing monitoring wells.	VOCs – (Specified COC Short List) / SW8260 COCs - PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, VC, and chloroform.
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.	
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 (see Figure 4-3). HRC® was injected from 20 to 10 ft bgs at a rate of 8 pounds of product per foot.	
2nd 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 (see Figure 4-3). HRC® was injected from 20 to 10 ft bgs at a rate of 8 pounds of product per foot.	

Table 4-3
Building 101 Detected Groundwater Results

Sample Location	**NYSDEC GW Standards (µg/L)**	**Results Baseline Study (FPM, 2000)**	**101MW-1R**											
Sample ID			**101M1R14EA**	**101M113BA**	**101M01R18CA**	**101M01R12DA**	**101M01R14EA**	**101M0112DA**	**101M01R13EA**	**101M0113FA**	**101M0113GA**	**101M01R12HA**	**101M01R12IA**	
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	Sampling was discontinued after April 2004 due to lack of exceedances of the NYSDEC Groundwater Standards.
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	

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.

Table 4-3 (continued)
Building 101 Detected Groundwater Results

Sample Location	NYSDEC GW Standards (µg/L)	Results Baseline Study (FPM, 2000)	101MW-2																				
Sample ID			**101M0217EA**	**101M0216BA**	**101M0222CA**	**101M0216DA**	**101M0217EA**	**101M0215DA**	**101M0216EA**	**101M0216FA**	**101M0216GA**	**101M0216HA**	**101M0215IA**	**101M0215JA**	**101M0215KA**	**101M0215LA**	**101M0216MA**	**101M0216NA**	**101M0217OA**	**101M0216PA**	**101M0216PA**	**101M0216RA**	**101M0216SA**	**101M0216TA**
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**	**5/23/06**	**9/21/06**	**12/20/06**	**3/27/07**
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**	**16.22**	**16.22**	**15.77**	**15.52**
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	1.7	0.73	0.9 F	0.39 F
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	11	15.5	14.1	9.53
VC	2	U	U	0.11M	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.33	0.21 F	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	0.58	U	2	U
1,2-DCB	3	--	N/A	N/A	0.28 F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
toluene	5*	--	N/A	N/A	0.59	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Metals (µg/L)																								
aluminum	--	**	N/A	N/A	556	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
barium	1,000	**	N/A	N/A	119	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
calcium	--	**	N/A	N/A	72,900	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
iron	300	**	N/A	N/A	932	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
magnesium	35,000	**	N/A	N/A	13,900	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
manganese	300	**	N/A	N/A	523	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
potassium	--	**	N/A	N/A	1,330	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
sodium	20,000	**	N/A	N/A	58,500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
vanadium	--	**	N/A	N/A	1.8 F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
zinc	2,000	**	N/A	N/A	5.7 F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	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.

Table 4-3 (continued)
Building 101 Detected Groundwater Results

Sample Location			**101MW-2R**											
Sample ID	**NYSDEC GW Standards (µg/L)**	**Results Baseline Study (FPM, 2000)**	**101M2R17 EA**	**101M02R16 BA**	**101M02R22 CA**	**101M02R16 DA**	**101M02R17 EA**	**101M02R16 DA**	**101M02R16 EA**	**101M02R16 FA**	**101M02R17 GA**	**101M02R16 HA**	**101M02R16 IA**	Sampling was discontinued after April 2004 due to lack of exceedances of the NYSDEC Groundwater Standards.
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)			**16.87**	**16.34**	**16.25**	**16.23**	**17.10**	**16.17**	**16.34**	**16.22**	**16.56**	**16.05**	**15.81**	
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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Metals (µg/L)														
aluminum	--	**	N/A	N/A	1010	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	
cadmium	5	**	N/A	N/A	0.80 F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
calcium	--	**	N/A	N/A	65,700 M	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
iron	300	**	N/A	N/A	1,320 M	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
magnesium	35,000	**	N/A	N/A	8,220	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
manganese	300	**	N/A	N/A	68.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
molybdenum	--	**	N/A	N/A	3.6 F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
nickel	100	**	N/A	N/A	5.1 F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
potassium	--	**	N/A	N/A	1,840	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
sodium	20,000	**	N/A	N/A	14,600	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
vanadium	--	**	N/A	N/A	2.0 F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
zinc	2,000	**	N/A	N/A	8.2 F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

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.
* - 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.

Table 4-3 (Continued)
Building 101 Detected Groundwater Results

Sample Location	NYSDEC GW Standards (µg/L)	Results Baseline Study (FPM, 2000)	101MW-3					
Sample ID			**101M0313EA**	**101M0312BA**	**101M0317CA**	**101M0312DA**	**101MW0313EA**	Sampling was discontinued because the well was decommissioned in November 2002.
Date of Collection			**9/27/01**	**12/21/01**	**03/13/02**	**06/14/02**	**9/10/02**	
Water Depth (ft BTOIC)			**12.90**	**12.76**	**12.52**	**12.12**	**13.12**	
Chlorinated VOCs (µg/L)								
TCE	5*	0.38 F-0.92 F	0.68	0.70	0.59	0.45 F	0.68	
chloroform	7	0.24 F-11.4	3.4 B	4.3 B	3.4	2.2	3.2	
toluene	5*	--	N/A	N/A	0.31 F	N/A	N/A	
bromodichloromethane	50	--	N/A	N/A	0.21 F	N/A	N/A	
SVOCs (µg/L)								
All SVOCs			N/A	N/A	U	N/A	N/A	
Metals (µg/L)								
aluminum	--	**	N/A	N/A	634	N/A	N/A	
barium	1,000	**	N/A	N/A	14.8	N/A	N/A	
cadmium	5	**	N/A	N/A	0.70 F	N/A	N/A	
calcium	--	**	N/A	N/A	48,800	N/A	N/A	
chromium	50	**	N/A	N/A	1.9 F	N/A	N/A	
iron	300	**	N/A	N/A	921	N/A	N/A	
magnesium	35,000	**	N/A	N/A	6,260	N/A	N/A	
manganese	300	**	N/A	N/A	131	N/A	N/A	
potassium	--	**	N/A	N/A	1,190	N/A	N/A	
sodium	20,000	**	N/A	N/A	14,400	N/A	N/A	

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.
* - 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.

In order to increase the readability of the report, all discussion of past sampling rounds has been eliminated. Only the sampling rounds relevant to this report (December 2006 and March 2007) are discussed in detail. Detailed descriptions of past sampling rounds can be found in the last issued report (FPM, July 2007). The discussion on site activities has been preserved to inform the reader of pertinent information.

As recommended in the August 2005 monitoring report (FPM, August 2005), Hydrogen Release Compound (HRC) Advanced™ was injected at Site Building 101 in December 2005. HRC Advanced™ is "a product designed specifically for the in-situ treatment of chlorinated solvent based contamination or any anaerobically degradable substance in the groundwater environment. HRC is a viscous liquid that is pressure injected directly into the subsurface. Upon contact with water, HRC Advanced™ slowly hydrolizes and is broken down by microbial action. During this process, lactic acid is released and utilized by microbes to produce hydrogen. The resulting hydrogen is then used in a microbially mediated process known as reductive dechlorination. This step-by-step biodegradation process (reductive dechlorination) reduces harmful contaminants into harmless end products." (Regenesis website, 9 January 2006). Five injection points were planned in a 50-ft wide injection wall. True locations were spaced differently due to utility interference, as can be seen in Figure 4-3. HRC Advanced™ was injected from 20 to 10 ft bgs with an application rate of 8 pounds of product per ft of depth.

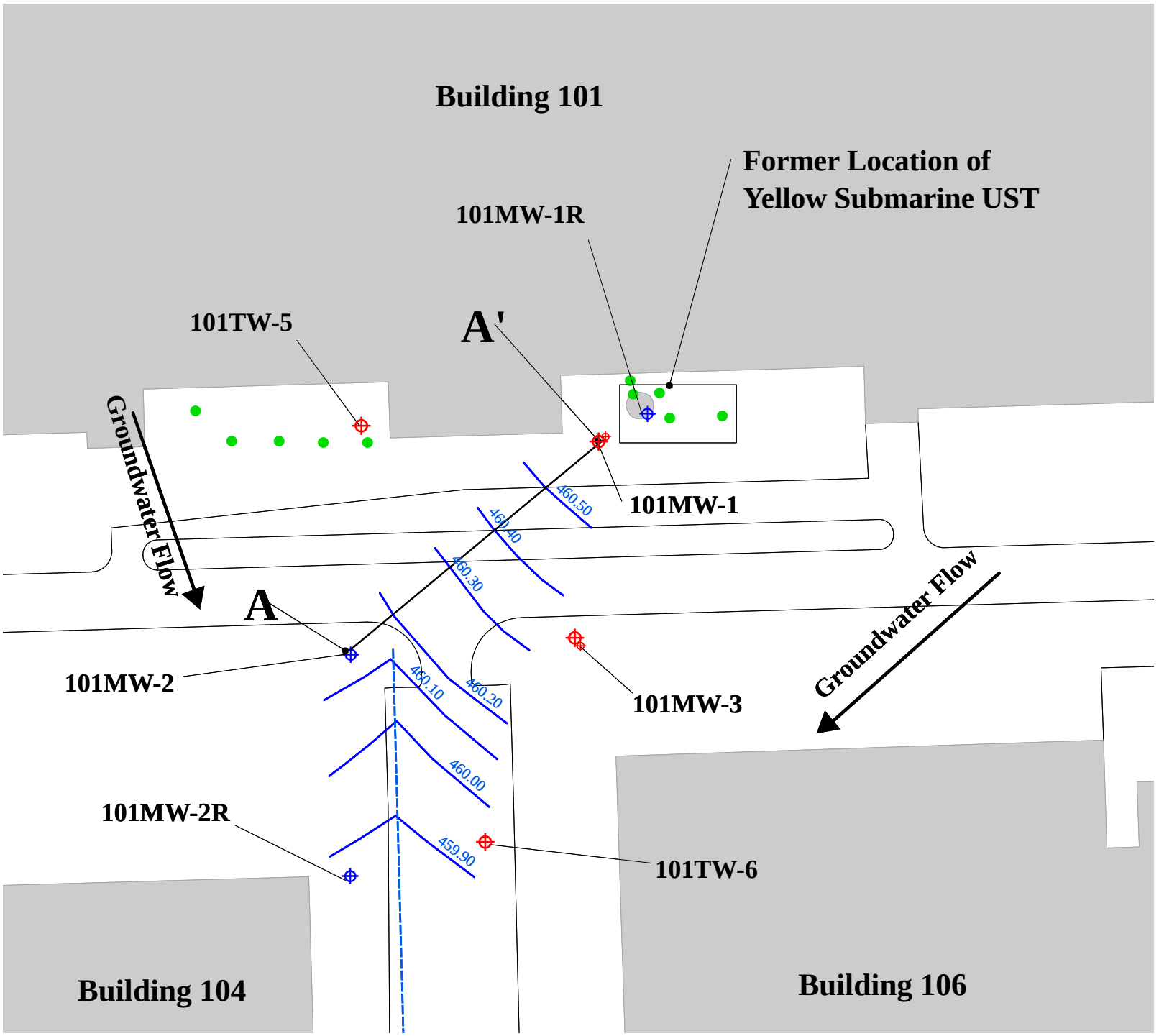
HRC Advanced™ was also applied in monitoring well 101MW-2 in February 2006. The light-brown syrupy HRC Advanced™ turned solid and opaque after contact with the groundwater and fouled up the monitoring well screen. Monitoring well maintenance activities performed in March and April 2006 included adding hot water to solubilize the HRC Advanced™ and surging the water column to mobilize the solidified HRC Advanced™. Additional well development was conducted in May 2006. A total of 170 gallons of water containing HRC Advanced™ was removed from the well during redevelopment. The well was left to stabilize and was sampled a week after redevelopment.

<u>December 2006:</u>
Only monitoring well 101MW-2 was sampled during this sampling round. One VOC exceedance was reported for cis-1,2-DCE, and three additional detections were reported for TCE, chloroform, and vinyl chloride.

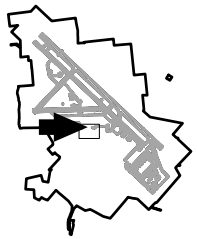
- VOC exceedance concentration: cis-1,2-DCE at 14.1 µg/L at monitoring well 101MW-2.

<u>March 2007:</u>
Only monitoring well 101MW-2 was sampled during this sampling round. One VOC exceedance was reported for cis-1,2-DCE, and one additional detection was reported for TCE.

- VOC exceedance concentration: cis-1,2-DCE at 9.53 µg/L at monitoring well 101MW-2.



N



Legend

- HRC injection point
- Monitoring Well
- Decommissioned Well
- Destroyed Well
- GW contour March 2004
- Culvert

Facilities

- Existing

Road

- Existing

25 12.5 0 25 50 Feet

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

Figure 4-3
Building 101
HRC Injection Points

Y:\GIS_Projects\Griffiss\Projects\40-05-27\On-base Groundwater\ Building 101 HRC.mxd

The groundwater contours for the March 2004 sampling round are depicted in Figure 4-1. 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).

4.5.1 2001 - 2007 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.

The number of exceedances reported at the Building 101 AOC has changed little in the 22 sampling rounds. 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 groundwater standards.

4.6 CONCLUSIONS AND MONITORING RECOMMENDATIONS

The results of the December 2006 and March 2007 sampling rounds are similar to those reported in past sampling rounds (FPM, July 2007). cis-1,2-DCE remains at concentrations which slightly exceed the NYS Groundwater Standard of 5 µg/L. Several other COCs have consistently been detected at concentrations below their corresponding NYS Groundwater Standards. However, the constituents have changed. Changes in the last two sampling rounds include chloroform which changed to intermittent detections and vinyl chloride which returned to non detect.

The HRC Advanced™ applications performed in December 2005 and August 2006, do not appear to have had the anticipated effect. This can be attributed to the distance between injection points and sample location. Groundwater velocity at the site suggests that HRC Advanced™ is expected to take several years to travel that distance. Vinyl chloride detections suggest that enhanced reductive dechlorination is occurring at the site.

Additional enhanced in-situ bioremediation techniques and/or in-situ chemical oxidation techniques will be evaluated. Currently, an injection emulsified vegetable oil and/or zero-valent iron is considered. Due to the complex utilities at the site, injection into monitoring well 101MW-2 appears the only viable option.

Annual sampling will be performed in the Spring 2008 sampling round. Table 4-4 shows the historical and proposed groundwater sampling and analysis plan.

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

Sampling Locations	Sampling Rationale	Target Analytes / Method Numbers	Sampling Frequency	Evaluation Criteria / Modification Justification
101MW-2	Downgradient from plume	VOCs – (Specified COC Short List) / SW8260 COCs - PCE, TCE, cis-1,2-DCE, vinyl chloride, and chloroform.	Annually	Slight exceedance for cis-1,2-DCE at this sampling location.
Recommended LTM Network Changes				
None				

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.

5 BUILDING 35 (SS-60)

5.1 SITE LOCATION AND HISTORY

Building 35 was located in the southeast-central section of the base (Figure 1-2), 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 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.

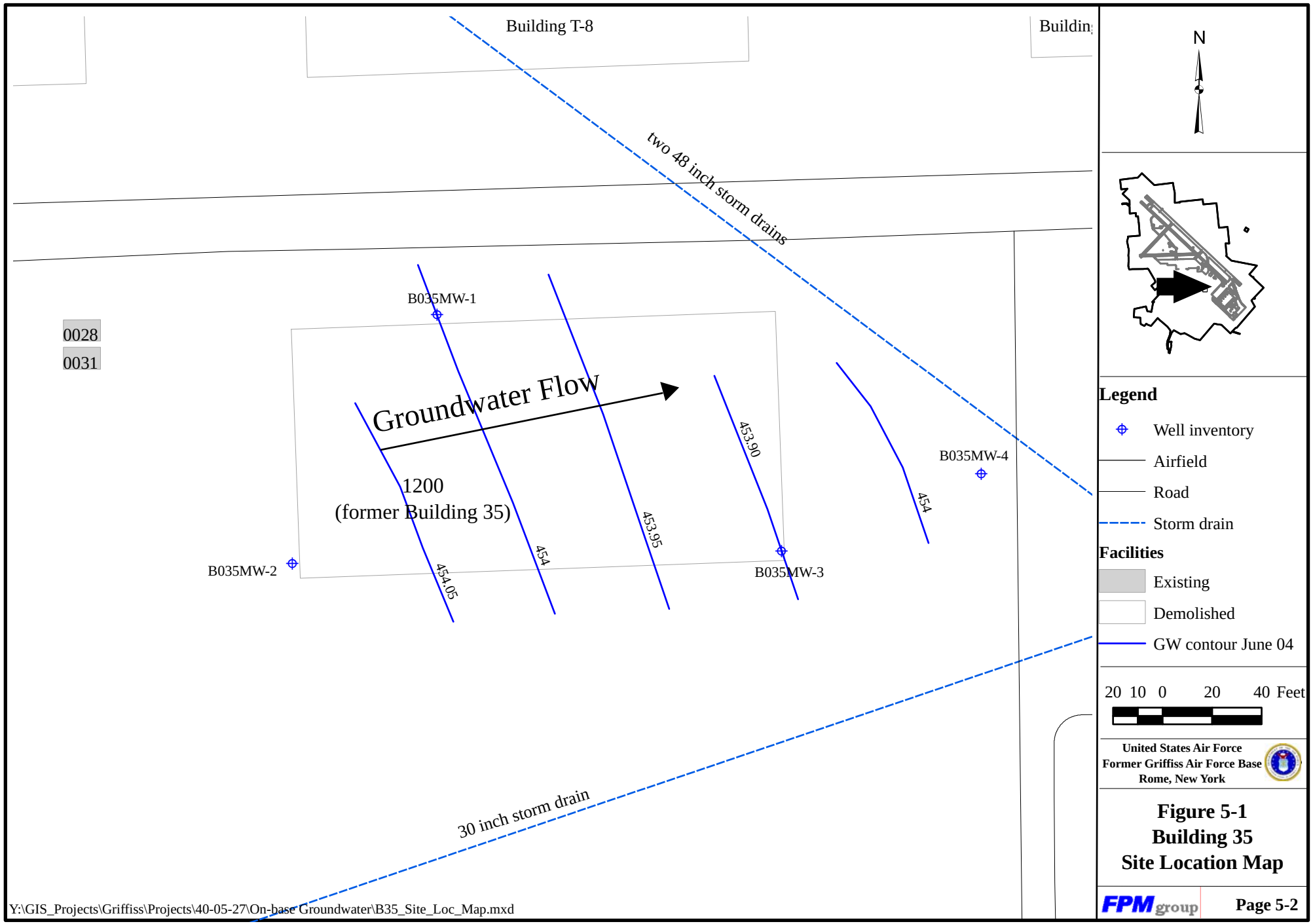
The former PCB storage area was located in the northwest corner of Building 35 and occupied an approximate area of 37 by 46 feet. Inspection reports indicate that PCB items were stored in the area since at least 1985. Also, a spill in the PCB area was recorded on October 25, 1991, when approximately 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.

5.2 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 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 bgs). 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 5-1.


Building T-8
Buildin
two 48 inch storm drains
B035MW-1
0028
0031
Groundwater Flow
1200
(former Building 35)
B035MW-2
B035MW-3
B035MW-4
454.05
454
453.95
453.90
454
30 inch storm drain
Y:\GIS_Projects\Griffiss\Projects\40-05-27\On-base Groundwater\B35_Site_Loc_Map.mxd
N
Legend
Well inventory
Airfield
Road
Storm drain
Facilities
Existing
Demolished
GW contour June 04
20 10 0 20 40 Feet
United States Air Force
Former Griffiss Air Force Base
Rome, New York
Figure 5-1
Building 35
Site Location Map
FPM group
Page 5-2

5.3 SUMMARY OF PREVIOUS INVESTIGATIONS

Closure activities for the HWSA and PCB areas in association with Resource Conservation and Recovery Act of 1976 (RCRA) DEC 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. Soils 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 micrograms per liter [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 (RA) 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).

5.4 BUILDING 35 GROUNDWATER SAMPLING PLAN

The original sample analysis summary, which has since been updated / modified, is provided in Table 5-1. The site features and existing monitoring wells are illustrated in Figure 5-1.

Table 5-1
Building 35 Groundwater Monitoring Sample Analysis Summary

Sampling Locations	Screen Interval Depth (ft MSL)	Sampling Rationale	Target Analytes/EPA Method Numbers	# of Samples[1]	Sampling Frequency	Evaluation Criteria
B035MW-1 B035MW-2 B035MW-3 B035MW-4	449.2 – 459.2' 449.2 – 459.2' 449.0 – 459.0' 449.3 – 459.3'	Upgradient Crossgradient Potential Source Area Downgradient of potential source	VOCs – (AFCEE QAPP 3.1 List) / SW8260. SVOCs – (AFCEE QAPP 3.1 List) / SW8270. Total and Dissolved Metals – (AFCEE QAPP 3.1 List) / SW6010.	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

5.5 GROUNDWATER SAMPLING RESULTS 2002 THROUGH 2007

FPM performed annual groundwater sampling in March 2002, March 2003, June 2004, March 2005, March 2006, and April 2007. 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 (B03MW-04) which was sampled for a short list of VOCs only.

The field activities summary table is provided in Table 5-2. The daily CQCRs are attached in Appendix A. 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 at the Building 35 GW OU are shown in Table 5-3. Please note that no SVOCs were reported above the detection limits.

Table 5-2
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.	VOCs – (Specified COC Short List) / SW8260 COCs - PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and VC.
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.	
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 (see Figure 5-1). HRC® was injected from 20 to 10 ft bgs at a rate of 8 pounds of product per foot.	
2nd 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 (see Figure 5-2). HRC® was injected from 20 to 10 ft bgs at a rate of 8 pounds of product per foot.	

Table 5-3
Building 35 Groundwater Sampling Results
March 2002 through June 2004 Sampling Rounds

Sample Location	NYSDEC GW Standards (µg/L)	B035MW-1					
Sample ID		B035M0115AA		B035M0115BA		B035M0115CA	
Date of Collection		3/12/02		3/11/03		6/9/04	
Sample Depth (ft BTOIC)		15		15		15	
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 5-3 (Continued)
Building 35 Groundwater Sampling Results
March 2002 through June 2004 Sampling Rounds

Sample Location	**NYSDEC GW Standards (µg/L)**	**B035MW-2**					
Sample ID		**B035M0215AA**		**B035M0215BA**		**B035M0215CA**	
Date of Collection		**3/12/02**		**3/11/03**		**6/9/04**	
Sample Depth (ft BTOIC)		**15**		**15**		**15**	
VOCs (µg/L)							
Acetone	5	U		U		1.4 F	
trichloroethylene (TCE)	5	0.48 F		0.33 F		U	
cis-1,2-dichloroethylene	5	0.58		0.73		1.2	
vinyl chloride	2	U		U		U	
SVOCs (µg/L)							
No SVOCs were detected.							
Metals (µg/L)		**Total**	**Dissolved**	**Total**	**Dissolved**	**Total**	**Dissolved**
Aluminum	--	238	U	58.5 F	U	57.4 F	U
Arsenic	25	U	4.9 F	U	U	U	U
Barium	1,000	38.1	21.5	27.1 F	20.0 F	26.2 F	19.5 F
Calcium	--	83,200	68,300	80,400	83,000 B	75,400	69,600
Chromium	50	U	U	U	1.0 F	U	U
Copper	200	U	2.8 F	1.9 F	4.2 F	4.2 F	2.8 F
iron**	300	515	U	168 F	U	U	U
Magnesium	--	6,790	6,640	6,790	7,250 B	7,920	7,660
manganese**	300	3,530	615	2,990 B	1,510	2,340	423
Nickel	100	U	1.9 F	U	U	1.8 F	U
Potassium	--	1,660	1,570	1,490	1,540 B	1,440	1,290
Selenium	10	U	25.4	U	U	U	U
Sodium	20,000	89,100	86,800	65,700	71,200	47,200	36,600
Zinc	--	U	U	U	3.1 F	U	U

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 5-3 (Continued)
Building 35 Groundwater Sampling Results
March 2002 through June 2004 Sampling Rounds

Sample Location	**NYSDEC GW Standards (µg/L)**	**B035MW-3**					
Sample ID		**B035M0315AA**		**B035M0315BA**		**B035M0315CA**	
Date of Collection		**3/12/02**		**3/11/03**		**6/9/04**	
Sample Depth (ft BTOIC)		**15**		**15**		**15**	
VOC (µg/L)							
Acetone	5	U		U		U	
tetrachloroethylene (PCE)	5	U		U		U	
trichloroethylene (TCE)	5	U		U		U	
cis-1,2-dichloroethylene	5	0.23 F		0.54 ♦		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.

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Table 5-3 (Continued)
Building 35 Groundwater Sampling Results
March 2002 through April 2007 Sampling Rounds

Sample Location	**NYSDEC GW Standards (µg/L)**	**B035MW-4**									
Sample ID		**B035M0415AA**		**B03M0415BA**		**B035M0415CA**		**B035M0415DA**	**B035M0415EA**	**B035M0416FA**	
Date of Collection		**3/12/02**		**3/11/03**		**6/9/04**		**3/29/05**	**3/24/06**	**4/18/07**	
Sample Depth (ft BTOIC)		**15**		**15**		**15**		**15**	**15**	**16**	
VOC (µg/L)											
acetone	5	U		U		1.8 F		N/A	N/A	N/A	
tetrachloroethylene (PCE)	5	0.84		0.82		0.81 F		0.63	0.66	0.42 F	
trichloroethylene (TCE)	5	0.75 ♦		0.55		0.97 F		0.28 F	0.35 F	0.35 F	
cis-1,2-dichloroethylene	5	21		18		32		7.8	9.3	13.9	
trans-1,2-dichloroethylene	5	0.37 F♦		0.22 F		0.69 F		U	U	0.39 F	
vinyl chloride	2	0.75		0.54		1.1		0.45 F	0.55	0.88 F	
SVOCs (µg/L)											
No SVOCs were detected.							N/S	N/S	N/S	N/S	
Metals (µg/L)		**Total**	**Dissolved**	**Total**	**Dissolved**	**Total**	**Dissolved**				
aluminum	--	143 F	U	215	U	U	N/S	N/S	N/S	N/S	
arsenic	25	U	6.9 F♦	U	U	U	N/S	N/S	N/S	N/S	
barium	1,000	211	174	96.0	92.6	394	N/S	N/S	N/S	N/S	
calcium	--	93,100♦	60,600 M	90,900	91,200 B	81,000	N/S	N/S	N/S	N/S	
chromium	50	U	U	U	U	U	N/S	N/S	N/S	N/S	
copper	200	U	2.3 F	U	1.6 F	5.7 F	N/S	N/S	N/S	N/S	
iron**	300	187	U	242	U	80.0 F	N/S	N/S	N/S	N/S	
magnesium	--	9,250	9,000	7,540	7,840 B	12,100	N/S	N/S	N/S	N/S	
manganese**	300	625	U	364 B	11.9	1,170	N/S	N/S	N/S	N/S	
molybdenum	--	U	U	U	U	U	N/S	N/S	N/S	N/S	
nickel	100	U	U	U	U	U	N/S	N/S	N/S	N/S	
potassium	--	1,130	1,110	1,280	1200 B	1,380	N/S	N/S	N/S	N/S	
selenium	10	U	25.4 ♦	U	U	U	N/S	N/S	N/S	N/S	
sodium	20,000	42,000	40,600	25,000	25,700	22,000	N/S	N/S	N/S	N/S	
vanadium	--	U	U	U	U	U	N/S	N/S	N/S	N/S	
zinc	--	U	U	4.5 F	U	U	N/S	N/S	N/S	N/S	

Notes:
BTOIC - below top of inner casing.
B - The analyte was also reported in a blank associated with this sample.
F - Analyte was positively identified but the associated numerical value is below the RL.
M - Matrix effect was present.
N/A - Not analyzed.
N/S - Not sampled.
U - Analyte analyzed for, but not detected. The associated numerical value is at or below the method detection limit.
-- Indicates no NYS GA Groundwater Standard.
♦ - Concentrations are from duplicate sample, which was greater than the original sample.
** - The NYS Groundwater Standard of 500 µg/L applies to the sum of iron and manganese.
▭ - Indicates an exceedance of the NYS Groundwater Standard.

March 2002:
In the March 2002 sampling round, the groundwater analytical results for VOCs indicated no exceedances of the NYS Groundwater Standards at sampling locations B035MW-1, -2, and -3. One exceedance was reported for sampling location B035MW-4 for cis-1,2-DCE at a concentration of 21 µg/L. Four additional VOCs – tetrachloroethene (PCE), TCE, trans-1,2-DCE and vinyl chloride - were reported at sampling location B035MW-4, but the concentrations were below their respective groundwater standards or guidance values.

TCE and cis-1,2-DCE were detected in sampling location B035MW-1 and -2 but at levels below their respective NYS Groundwater Standards (5 µg/L). cis-1,2-DCE was also reported at B035MW-3 below the NYS Groundwater Standard.

- VOC exceedance: 21 µg/L for cis-1,2-DCE in monitoring well B035MW-4.

The analytical results for total and dissolved metals analysis indicated the following: iron and manganese were detected at concentrations that exceeded the combined NYS Groundwater Standard of 500 µg/L for total analysis at all sampling locations. Only in the dissolved sample collected at sampling location B035MW-2 was manganese reported at a concentration exceeding the individual NYS Groundwater Standard of 300 µg/L.

- Minimum metals exceedance: 451 µg/L for iron in the total metals sample from monitoring well B035MW-1 (NYS Groundwater Standard is 300 µg/L).
- Maximum metals exceedance: 89,100 µg/L for sodium in the total metals sample from monitoring well B035MW-2.

Selenium was detected in the filtered samples from locations B035MW-1 (29.4 µg/L), B035MW-2 (25.4 µg/L), and B035MW-4 (25.4 µg/L) at concentrations that exceeded the NYS Groundwater Standard of 10 µg/L. No selenium detections were reported in the unfiltered samples. The presence of selenium in the dissolved samples is most likely an artifact of the filtering process or the sample handling in the laboratory. This is further supported by the fact that *all* of the samples collected in this sampling round were handled in one analytical batch.

The previous two groundwater sampling rounds for total metals (May and July 1998 [not shown]) showed several metals at levels above NYS Groundwater Standards, including iron, manganese, sodium, lead, antimony, copper, zinc, chromium, arsenic, and thallium.

March 2003:
The VOC results of the March 2003 sampling round confirmed the results reported for the March 2002 sampling round: no exceedances of the NYS Groundwater Standards were reported for sampling locations B035MW-1, -2, and -3, and only one exceedance was reported for sampling location B035MW-4, for cis-1,2-DCE at 18 µg/L. Again, four additional VOCs were reported at

this sampling location and all concentrations were below their respective groundwater standards or guidance values.

- VOC exceedance: 18 µg/L for cis-1,2-DCE in monitoring well B035MW-4.

The metals results in the March 2003 sampling round are similar to the results of the March 2002 sampling round, with the exception that no selenium exceedances were reported. Manganese results exceeded the NYS Groundwater Standard of 300 µg/L for total analysis at all sampling locations. After filtration, the samples from sampling location B035MW-1 and -2 contained manganese concentrations exceeding the individual NYS Groundwater Standard of 300 µg/L. Sodium was detected in both filtered and unfiltered samples at locations B035MW-1, -2, and -4 at concentrations that exceeded the NYS Groundwater Standard of 20,000 µg/L. No sodium exceedances were reported in sampling location B035MW-3.

- Minimum metals exceedance: 339 B µg/L for manganese in the total metals sample from monitoring well B035MW-3.
- Maximum metals exceedance: 71,200 µg/L for sodium in the dissolved metals sample from monitoring well B035MW-2.

<u>June 2004:</u>
The VOC results of the June 2004 sampling round confirmed the results reported for the previous sampling rounds: no exceedances of the NYS Groundwater Standards were reported for sampling locations B035MW-1, -2, and -3 and only one exceedance was reported for sampling location B035MW-4, for cis-1,2-DCE at 32 µg/L. Five additional VOCs were reported at this sampling location, but the concentrations were below their respective groundwater standards or guidance values (Table 5-3).

- VOC exceedance: 32 µg/L for cis-1,2-DCE in the sample from monitoring well B035MW-4.

The metals results in the June 2004 sampling round are similar to the results of the previous sampling rounds: exceedances were reported for iron, manganese and sodium, both in total and dissolved samples. Sodium and manganese results for sampling locations B035MW-1, -2, and -4 exceeded their respective Groundwater Standards of 20,000 µg/L and 300 µg/L, respectively. Only one exceedance was reported for sampling location B035MW-3; iron exceeded the NYS Groundwater Standard of 300 µg/L only in the total sample.

- Minimum metals exceedance: 324 µg/L for iron in the total metals sample from monitoring well B035MW-3.
- Maximum metals exceedance: 112,000 µg/L for sodium in the total metals sample from monitoring well B035MW-1.

March 2005:
In the March 2005 sampling round, only one monitoring well (B035MW-4) was sampled, and for a short list of VOCs only (chlorinated ethenes). The results confirmed the exceedances reported in the past three sampling rounds: that is, one exceedance for cis-1,2-DCE at 7.8 µg/L in monitoring well B035MW-04. Four additional VOC detections were reported at this well, but none exceeded their respective groundwater standard (Table 5-3).

- VOC exceedance: 7.8 µg/L for cis-1,2-DCE in monitoring well B035MW-4.

As recommended in the August 2005 monitoring report (FPM, August 2005), Hydrogen Release Compound (HRC) Advanced™ was injected at Site Building 101 in December 2005. Five injection points were planned in a 50-ft wide injection wall (Figure 5-2). HRC Advanced™ was injected from 20 to 10 ft bgs with an application rate of 8 pounds of product per ft of depth.

March 2006:
In the March 2006 sampling round, only one monitoring well (B035MW-4) was sampled and analyzed for a short list of VOCs only (chlorinated ethenes). The results were similar to those reported in the past four sampling rounds: one exceedance for cis-1,2-DCE at 9.3 µg/L and detections of PCE, TCE, and VC which were all below their respective NYS Groundwater Standard (Table 5-3).

- VOC exceedance: 9.3 µg/L for cis-1,2-DCE in monitoring well B035MW-4.

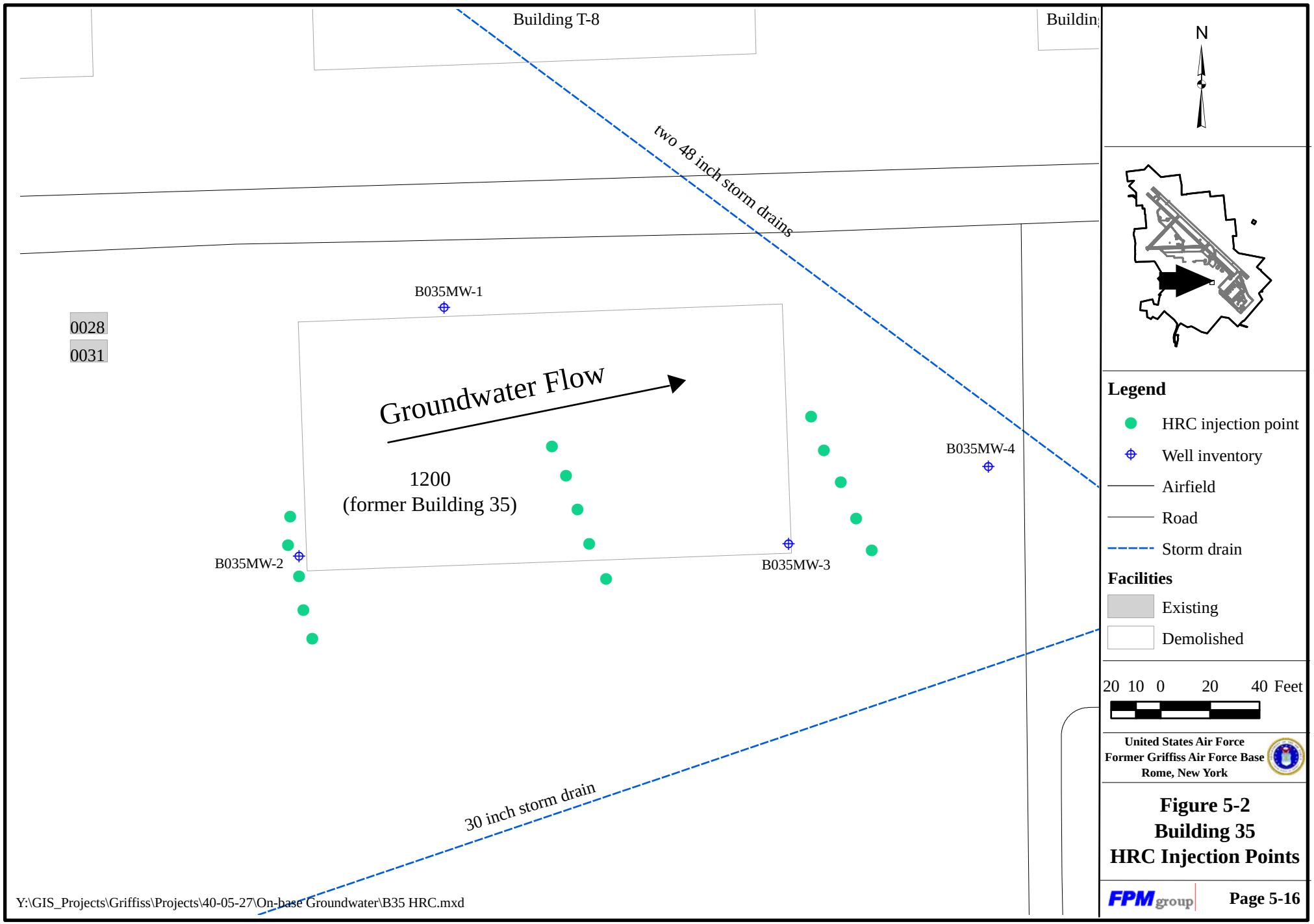
As proposed in the August 2006 On-Base Groundwater AOC Monitoring Report (FPM, August 2006), additional HRC Advanced™ injections were performed at Site Building 35. This time, two injection rows were installed at identical depth and volume as the December 2005 injections. The injection points are shown on Figure 5-2.

April 2007:
Monitoring well B035MW-4 was the only well sampled in the April 2007 sampling round. It was analyzed for chlorinated ethenes only. The results were similar to those reported in previous sampling rounds: one exceedance for cis-1,2-DCE at 13.9 µg/L and detections of PCE, TCE, trans-1,2-DCE, and VC which were all below their respective NYS Groundwater Standard (Table 5-3).

- VOC exceedance: 13.9 µg/L for cis-1,2-DCE in monitoring well B035MW-4.

5.6 CONCLUSIONS AND MONITORING RECOMMENDATIONS

The March 2007 sampling round at the Building 35 AOC confirms the results of past sampling rounds: cis-1,2-DCE levels continue to exceed the NYS Groundwater Standard at downgradient sampling location B035MW-4. FPM recommends continued annual groundwater monitoring for


Building T-8
Buildin
two 48 inch storm drains
B035MW-1
0028
0031
Groundwater Flow
1200
(former Building 35)
B035MW-2
B035MW-3
B035MW-4
30 inch storm drain
N
Legend
HRC injection point
Well inventory
Airfield
Road
Storm drain
Facilities
Existing
Demolished
20 10 0 20 40 Feet
United States Air Force
Former Griffiss Air Force Base
Rome, New York
Figure 5-2
Building 35
HRC Injection Points
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chlorinated ethenes the Building 35 AOC. The continued sampling will monitor the groundwater and identify any beneficial effect of the HRC® injection performed in December 2005 and August 2006. Based on the groundwater flow of the site, estimated at 71 ft/year (Law, December 1996, Volume 20), the HRC® from the December 2005 injection, is expected to reach monitoring well B035MW-4 in approximately two years. It is expected that the HRC® from the August 2006 injection will reach monitoring well B035MW-4 prior to the HRC® from the December 2005 injection. The August 2006 injection was location closer to B035MW-4, as illustrated in Figure 5-2. Table 5-4 shows the historical and proposed groundwater sampling and analysis plan.

Table 5-4
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	VOCs – (Specified COC Short List) / SW8260 COCs - PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and VC.	Annual	Continue in the monitoring network to verify the cis-1,2-DCE attenuation. Analysis for VOCs (chlorinated ethenes short list only) will occur annually, after which the results will be evaluated to assess future monitoring frequency.
Recommended LTM Network Changes				
None				

Table 5-4 (continued)
Building 35 Proposed Groundwater Sampling and Analysis Plan

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

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6 REFERENCES

Air Force Center for Environmental Excellence, Quality Assurance Project Plan, Version 3.1, August 2001.

Ecology and Environment, Inc., Final Report for Supplemental Investigation of Areas of Concern, Former Griffiss Air Force Base, July 1998 (G-103A).

FPM Group Ltd., Draft Confirmation Sampling Report, Building 101 Battery Acid Drainage Pit Area of Concern, former Griffiss Air Force Base, Rome, New York, Revision 0.0, August 2002 (G-267).

FPM Group Ltd., Draft Monitoring Report, On-Base Groundwater AOCs, Revision 1.0, November 2004 (G-353).

FPM Group, Ltd., Draft Report, AOC Long-Term Monitoring Baseline Study, Griffiss Air Force Base, Revision 1.0, July 2000 (G-208).

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

FPM Group, Ltd., Monitoring Report, On-Base Groundwater AOCs Monitoring Program, Former Griffiss Air Force Base, Rome, New York, Revision 0.0, August 2005 (G-446).

FPM Group, Ltd., Monitoring Report, On-Base Groundwater AOCs Monitoring Program, Former Griffiss Air Force Base, Rome, New York, Revision 0.0, August 2006.

LAW Engineering and Environmental Services, Inc., Draft Final Primary Report, Remedial Investigation at Griffiss Air Force Base, December 1996 (G-018).

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
Daily Chemical Quality Control Reports

Daily Chemical Quality Control Report

Project/Delivery Order Number: F41624-03-D-8601-0027 Date: 3/26-27/07

Project Name/Site Number: Griffiss Petroleum Spill Sites, Source Areas of Concern, and Landfills LTM sampling (Tank Farms 1 and 3, Apron 2, Building 15, 101, and Landfill 5).

Weather conditions: Temperature: 48 Barometric reading: 30.1
Wind direction and speed: 3 mph.
Significant wind changes: southwest on 26, northwest on 27.

General description of tasks completed: Bailer sampling at Site Tank Farms 1 and 3 (TF3MW-119R, and -121R), Site Apron 2 (AP2MW-B1N, -B4S, -B4N, -14, 782MW-87, and -91), Building 15 (B15MW-5, -6, -10, -11, and -12), Building 101 (101MW-2), and Site Landfill 5 (LF5MW-1A). Bladder pump sampling at Site Landfill 5 (LF5MW-5).

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: 13 April 2007

CQCC Signature: Concordia van Hoesel Date: 4/15/07

ATTACHMENTS:

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

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: JD DF

Location and Site Code (**SITEID**): TF 163

Well No. (**LOCID**): WL-TF3/MW-119R Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3/27/07 Weather: Overcast, 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:

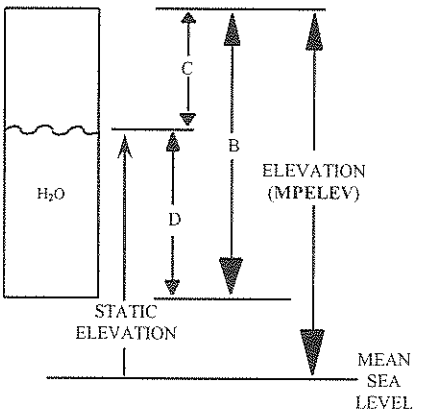
Measured Well Depth (B) (**TOTDEPTH**) 18.40 ft.

Measured Water Level Depth (C) (**STATDEP**) 11.20 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 7.20 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 1.15 gal

Minimum Purge Volume = 3.45 gal (3 well volumes)



Purge Date and Method: Bailer, Retrofit w/ adapter well under couple inches of H_2O

Physical Appearance/Comments: No odor, Cloudy-clear

Fe^{2+}: 1.0 mg/L

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)
1015	0.75	7.61	3.99	8.1	460	7.30	-4
1017	1.5	7.22	84.1	9.3	299	1.61	-11
1018	2.25	7.16	.129	10.4	204	0?	-41
1021	3	7.22	.139	10.8	161	7.54	-66
1024	3.75	7.26	0.139	11.0	152	[illegible]	-75
1025	4.50	7.27	0.139	10.9	266	1.67	-73

Sample Time: 1027 Sample ID: TF3M119R R11RA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: JD DF

Location and Site Code (**SITEID**): TF 18-3

Well No. (**LOCID**): GL-TF3MW-121R Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3/27/07 Weather: Overcast, 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:

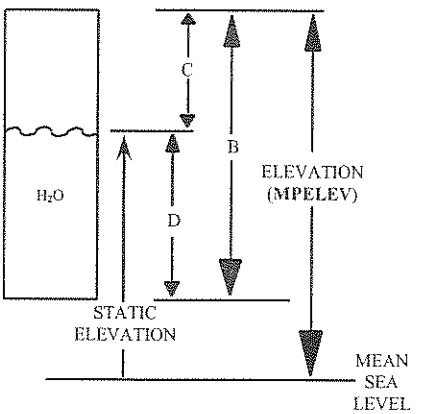
Measured Well Depth (B) (**TOTDEPTH**) 17.20 ft.

Measured Water Level Depth (C) (**STATDEP**) 10.70 ft.

Length of Static Water Column (D) = (B) 17.20 - (C) 10.70 = (D) 6.50 ft.

Casing Water Volume (E) = (A) _____ x (D) 6.50 = 1.04 gal

Minimum Purge Volume = 3.12 gal (3 well volumes)



Purge Date and Method: Bailer w/ Retrofit Adapter Well under Couple inches of Water

Physical Appearance/Comments: Silty Brown, No odor

Fe^{2+}: 0.1 mg/L

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)
1048	0.75	7.48	87.4	10.0	>999	8.46	57
1049	1.50	7.31	99.4	10.7	>999	8.35	66
1051	2.25	7.19	0.125	11.4	>999	4.93	67
1053	3.00	7.16	0.131	11.7	>999	2.55	71
1054	3.75	7.15	0.133	12.1	>999	7.98	70
1055	4.50	7.14	0.134	12.1	>999	9.44	71

Sample Time: 1057 Sample ID: TF3M121R11RA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB IPC

Location and Site Code (**SITEID**): Aprm 2

Well No. (**LOCID**): WL-AP2MW-BIN Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3-27-07 Weather: fog / 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

1140

PURGING INFORMATION:

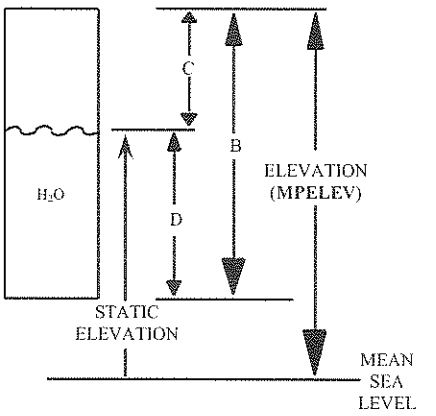
Measured Well Depth (B) (**TOTDEPTH**) 22.13 ft.

Measured Water Level Depth (C) (**STATDEP**) 15.86 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 6.27 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 1.00 gal

Minimum Purge Volume = 3.00 gal (3 well volumes)



Purge Date and Method: Bailer / 3-27-07

Physical Appearance/Comments: silty orange / no odor
slight sheen

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)
1143	0.75	6.72	0.802	9.61		6.14	-46.3
1144	1.5	6.67	0.807	9.59		4.97	-56.6
1146	2.25	6.66	0.801	9.62		4.98	-61.7
1148	3.0	6.67	0.807	9.82		2.63	-60.8

Sample Time: 1150 1149 DB Sample ID: AP2MBIN16TH

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB / PC

Location and Site Code (**SITEID**): Area 2

Well No. (**LOCID**): WL-AP2MW-B4S Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3-27-07 Weather: fog / 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

1420

PURGING INFORMATION:

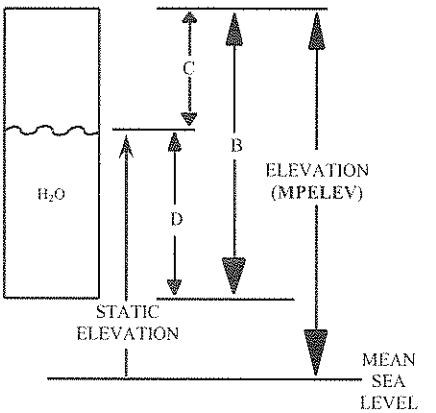
Measured Well Depth (B) (**TOTDEPTH**) 23.51 ft.

Measured Water Level Depth (C) (**STATDEP**) 16.25 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 7.26 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 1.16 gal

Minimum Purge Volume = 3.5 gal (3 well volumes)



Purge Date and Method: Bailer / 3-27-07

Physical Appearance/Comments: silty orange / 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)
1422	1	6.58	0.941	11.13		9.66	-23.6
1424	2 6.58	~~6.032~~	1.032	11.15		4.42	-59.6
1426	3	6.58	1.038	11.37		3.68	-74.6
1428	4	6.64	1.039	11.53		3.51	-71.8

Sample Time: 1430 Sample ID: AP2MB4S16TA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB / BC

Location and Site Code (**SITEID**): Apron 2

Well No. (**LOCID**): WL-AP2MW-B4N Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3-27-07 Weather: fog / 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

1400

PURGING INFORMATION:

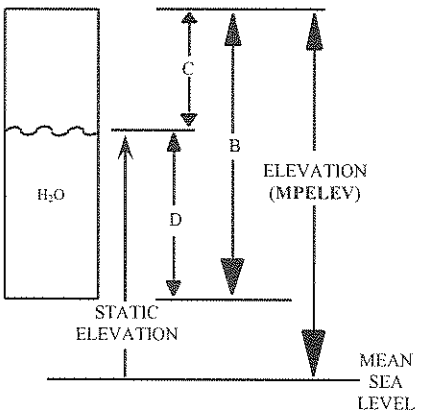
Measured Well Depth (B) (**TOTDEPTH**) 23.74 ft.

Measured Water Level Depth (C) (**STATDEP**) 21.24 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 2.5 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 0.4 gal

Minimum Purge Volume = 1.2 gal (3 well volumes)



Purge Date and Method: Bailer / 3-27-07

Physical Appearance/Comments: silty grey to green / 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)
1408	0.5	7.75	0.016	6.76		12.48	-73.7
1410	1.0	7.55	0.013	6.96		10.49	-29.7
1412	1.5	7.50	0.013	7.24		9.69	-6.5
1414	2.0	7.48	0.013	7.18		8.76	26.5

Sample Time: 1414 Sample ID: AP2MB4N21TA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB / PC

Location and Site Code (**SITEID**): Approx 2

Well No. (**LOCID**): WL-AP2MW-14 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3-27-07 Weather: fog / 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

1330

PURGING INFORMATION:

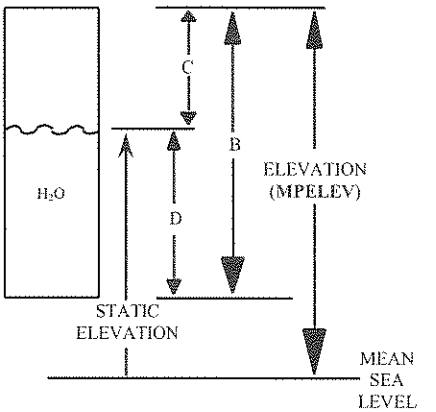
Measured Well Depth (B) (**TOTDEPTH**) 25.55 ft.

Measured Water Level Depth (C) (**STATDEP**) 10.38 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 15.17 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 2.42 gal

Minimum Purge Volume = 7.3 gal (3 well volumes)



Purge Date and Method: Bailer / 3-27-07

Physical Appearance/Comments: clear / petro
turns grey silty

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)
1332	~~1332~~ 2	6.84	0.587	9.84		3.73	-65.9
1334	4	6.77	0.588	9.90		6.43	-63.9
1336	6	6.77	0.589	9.87		6.55	-64.7
1338	8	6.80	0.588	9.75		6.23	-62.0

Sample Time: 1340 Sample ID: AP2M1410TA/TC

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB / BC

Location and Site Code (**SITEID**): AP2

Well No. (**LOCID**): WL-782MW-87 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3-27-07 Weather: fog / 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

1115

PURGING INFORMATION:

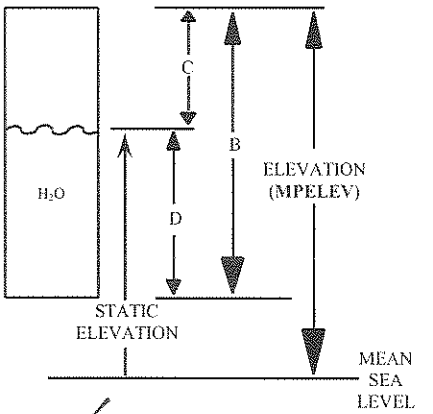
Measured Well Depth (B) (**TOTDEPTH**) 39.74 ft.

Measured Water Level Depth (C) (**STATDEP**) 21.95 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 17.79 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 2.7 gal

Minimum Purge Volume = 8.1 gal (3 well volumes)



Purge Date and Method: Bailer / 3-27-07

Physical Appearance/Comments: clear / no odor

FIELD MEASUREMENTS:

Allowable Range: ± 0.1 ± 5% ±1°C

Time	Volume Removed (gal)	pH 7.02	EC (mS/cm)	Temp. (F or C)	Turbidity (NTU)	D.O. (mg/L)	ORP (mV)
1124	1 2	[illegible]	0.589	11.14	X	5.76	-16.7
1126	2 3	6.78	0.628	11.54		2.74	-57.4
1127	3 4	6.76	0.637	11.57		2.28	-63.8
1128	4 5	6.76	0.641	11.66		4.78	-68.5
1130	5 6	6.75	0.641	11.66		5.20	-67.4
1132	6 7	6.76	0.642	11.66		3.63	-68.4
~~1134~~ 1136	7 8	6.77	0.641	11.63		4.65	-67.4
	8						

Sample Time: 1136 Sample ID: 782MW722TA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB / PC

Location and Site Code (**SITEID**): Apron 2

Well No. (**LOCID**): WL-782MW-91 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3-27-07 Weather: Fog 140

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

1350

PURGING INFORMATION:

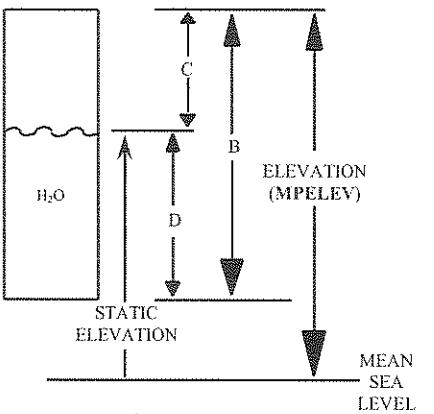
Measured Well Depth (B) (**TOTDEPTH**) 30.00 ft.

Measured Water Level Depth (C) (**STATDEP**) 18.15 ft.

Length of Static Water Column (D) = (B) 30.00 - (C) 18.15 = (D) 11.85 ft.

Casing Water Volume (E) = (A) ____ x (D) 11.85 = 1.89 gal

Minimum Purge Volume = 5.6 gal (3 well volumes)



Purge Date and Method: bailer / 3-27-07

Physical Appearance/Comments: clear to slight silty petro / petro 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)
1352	1	6.73	0.894	10.73		9.16	-60.5
1354	2	6.70	1.030	11.79		5.32	-81.1
1356	3	6.70	1.074	11.37		5.93	-78.5
1358	4	6.67	1.087	11.45		3.91	-84.0
1400	5	6.65	1.080	11.37		3.26	-77.0
1402	6	6.71	1.083	11.30		3.49	-80.1

Sample Time: 1406 Sample ID: 782MW9118TA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: SM DF

Location and Site Code (**SITEID**): Bldg. 15

Well No. (**LOCID**): UL-B15MW-5 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3/27/07 Weather: Overcast, fog, 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:

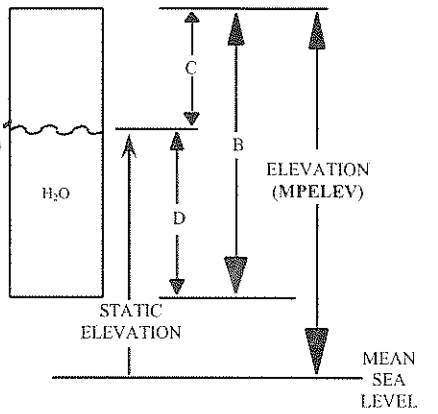
Measured Well Depth (B) (**TOTDEPTH**) 14.70 ft.

Measured Water Level Depth (C) (**STATDEP**) 6.45 ft. (8.35)

Length of Static Water Column (D) = (B) 14.70 - (C) 6.45 = 1.34 (D) ft.

Casing Water Volume (E) = (A) ___ x (D) 1.34 = 4.02 gal

Minimum Purge Volume = ___ gal (3 well volumes)



Purge Date and Method: Bailer

Physical Appearance/Comments: Silty, Sulfur odor, Slow Recharge

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)
0817	1.0	6.11	0.325	7.9	7999	7.71	-2
0820	2.0	6.16	0.398	8.6	497	6.47	-37
0822	3.0	6.29	0.414	8.9	688	6.76	-49
0831	4.0	6.57	0.512	9.1	7999	9.54	-67
	Bailed dry after approx. 4 bailers ~0.25 gal removed						

Sample Time: 0857 Sample ID: B15M0506NA

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.

WELL PURGING & SAMPLING FORM

Project: 4-05-07 Sampled by: JD DF

Location and Site Code (**SITEID**): Bldg. 15

Well No. (**LOCID**): WL-B15MW-6 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3/27/07 Weather: Drizzle, 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:

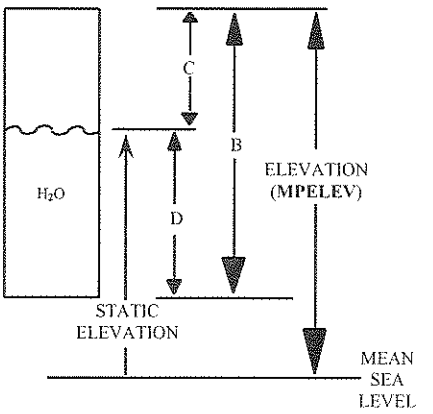
Measured Well Depth (B) (**TOTDEPTH**) 13.40 ft.

Measured Water Level Depth (C) (**STATDEP**) 6.55 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 6.85 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 1.10 gal

Minimum Purge Volume = 2.30 gal (3 well volumes)



Purge Date and Method: Bailer

Physical Appearance/Comments: Silty, 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)
0912	0.75	7.44	0.155	6.7	>999	9.48	139
0913	1.50	7.30	0.152	6.8	>999	7.01	143
0914	2.25	7.17	0.155	6.8	>999	6.85	142
0916	3.00	7.06	0.156	6.9	>999	8.56	149
0918	3.75	6.99	0.158	6.9	>999	7.58	150
0919	4.50	6.95	0.156	6.9	>999	4.69	151
0921	5.25	6.92	0.153	7.0	>999	6.74	151

Sample Time: 0923 Sample ID: B15M0607NA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: JM DF

Location and Site Code (**SITEID**): Bldg. 15

Well No. (**LOCID**): 40-B15MW-10 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3/27/07 Weather: foggy, 30'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:

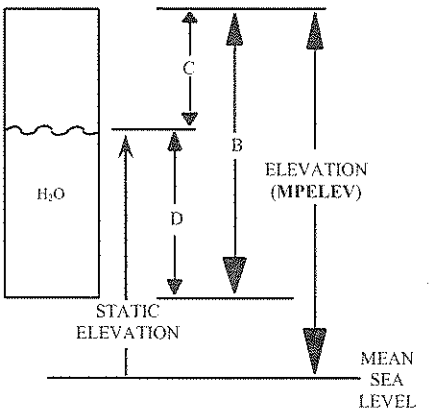
Measured Well Depth (B) (**TOTDEPTH**) 16.55 ft.

Measured Water Level Depth (C) (**STATDEP**) 7.01 ft.

Length of Static Water Column (D) = (B) 16.55 - (C) 7.01 = (D) 9.54 ft.

Casing Water Volume (E) = (A) 0.16 x (D) 9.54 = 1.53 gal

Minimum Purge Volume = 4.59 gal (3 well volumes)



Purge Date and Method: Bailer

Physical Appearance/Comments: Silty, No odor, iron floc, water clear

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)
0756	1.85	5.83	0.137	13.2	961	7.47	160
0757	2.00	5.94	0.130	12.7	>999	4.16	65
0758	3.0	5.85	0.130	13.2	596	2.72	36
0759	4.0	5.86	0.128	13.1	>999	7.81	21
0801	5.0	5.87	0.129	13.1	>999	4.62	19

Sample Time: 0803 Sample ID: B15M1007NA

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.

0.128
0.0129
0.064

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: JD DF

Location and Site Code (**SITEID**): Bldg. 15

Well No. (**LOCID**): WL-B15MW-11 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3/26/08 Weather: Rain 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:

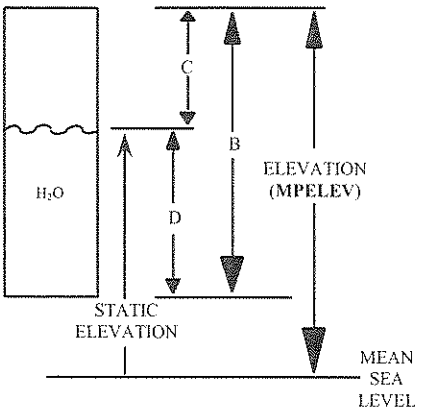
Measured Well Depth (B) (**TOTDEPTH**) 15.90 ft.

Measured Water Level Depth (C) (**STATDEP**) 7.42 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 8.48 (D) ft.

Casing Water Volume (E) = 0.16 (A) x 8.48 (D) = 1.36 gal

Minimum Purge Volume = 4.08 gal (3 well volumes)



Purge Date and Method: Bailer

Physical Appearance/Comments: No odor, Clear to Silty

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)
0925	1.0	5.75	0.216	8.5	>999	11.45	199
0926	2.0	5.85	0.232	8.3	>999	9.80	199
0927	3.0	5.93	0.223	8.4	>999	10.28	202
0929	4.0	6.02	0.205	8.4	>999	7.86	204
0930	5.0	6.08	0.197	8.5	>999	6.96	204
0931	6.0	6.15	0.203	8.5	>999	9.56	203
0933	7.0	6.25	0.203	8.5	>999	7.80	202
0935	8.0	6.34	0.197	8.4	>999	10.66	202
extra 0.25g. removed for 6 well volumes							

Sample Time: 0937 Sample ID: B15M1107NA/NC

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: JO DF

Location and Site Code (**SITEID**): Bldg. 15

Well No. (**LOCID**): WL-B15MW-12 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3/27/07 Weather: Drizzle, 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:

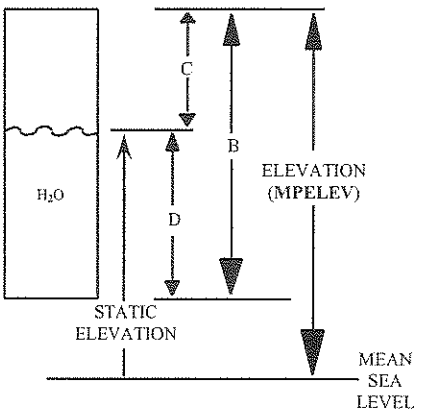
Measured Well Depth (B) (**TOTDEPTH**) 15.50 ft.

Measured Water Level Depth (C) (**STATDEP**) 6.45 ft.

Length of Static Water Column (D) = (B) 15.50 - (C) 6.45 = (D) 9.05 ft.

Casing Water Volume (E) = (A) ___ x (D) 9.05 = 1.45 gal

Minimum Purge Volume = 4.35 gal (3 well volumes)



Purge Date and Method: Bailer

Physical Appearance/Comments: Silty Grey Sheen, Petroleodor

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)
0936	1.0	7.08	0.136	9.6	246	5.02	-74
0937	2.0	7.00	0.132	10.0	339	6.22	-82
0939	3.0	7.01	0.125	10.7	262	9.25	-88
0941	4.0	7.00	0.128	10.3	328	3.83	-90
0942	5.0	7.00	0.124	10.5	401	8.50	-90

Sample Time: 0943 Sample ID: B15M1206NA

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.

WELL PURGING & SAMPLING FORM

Project: 4-05-27 Sampled by: JD DF

Location and Site Code (**SITEID**): Bldg. 609

Well No. (**LOCID**): 101MW-2 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3/27/07 Weather: Overcast 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:

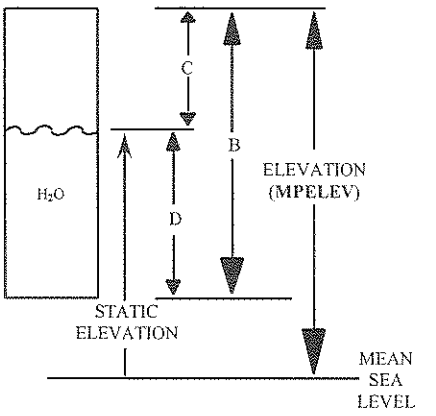
Measured Well Depth (B) (**TOTDEPTH**) 23.91 ft.

Measured Water Level Depth (C) (**STATDEP**) 15.52 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 8.41 (D) ft.

Casing Water Volume (E) = ____ (A) x 8.41 (D) = 1.35 gal

Minimum Purge Volume = 4.05 gal (3 well volumes)



Purge Date and Method: Bailer

Physical Appearance/Comments: Clear, Decaying 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	1.0	7.06	0.105	13.0	279	4.22	-84
1126	2.0	6.66	0.103	13.3	192	7.14	-82
1128	3.0	6.58	95.1	13.7	247	4.18	-80
1130	Bailed dry after approximately 2 0.25g. min removed						

Sample Time: 1151 Sample ID: 101MW2160TA

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.

WELL PURGING & SAMPLING FORM

Project: 40.05-27 Sampled by: D. Forse, J. Pamann

Location and Site Code (**SITEID**): LFS

Well No. (**LOCID**): WL-LFSMW-1A Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3/27/07 Weather: 45° 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:

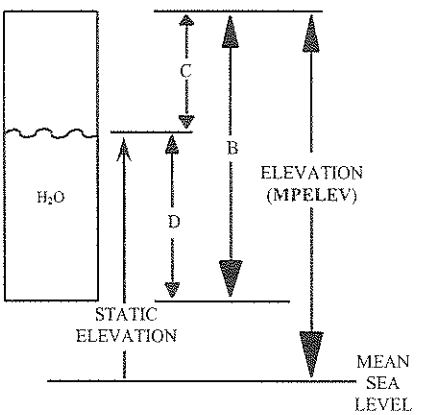
Measured Well Depth (B) (**TOTDEPTH**) 26.10 ft.

Measured Water Level Depth (C) (**STATDEP**) 20.52 ft.

Length of Static Water Column (D) = (B) 26.10 - (C) 20.52 = (D) 5.58 ft.

Casing Water Volume (E) = (A) ___ x (D) ___ = ~~0.89~~ 0.9 gal DF

Minimum Purge Volume = 3 gal (3 well volumes)



Purge Date and Method: Bailer

Physical Appearance/Comments: No odor, Iron floc, Silty

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)
1426	0.75	5.82	94	10.8	370	8.5	283
1427	1.50	6.00	91	10.8	550	9.0	277
1428	2.25	6.16	90	10.8	600	6.2	290
1430	3.00	6.23	87	10.7	690	4.8	304
1432	3.75	6.32	88	10.7	530	5.9	317
1434	4.50	6.36	87	10.7	650	6.0	314
1436	5.25	6.40	84	10.7	690	6.8	283

Sample Time: 1439 Sample ID: LFSM1A210A/OC/OD/OS

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.

WELL PURGING & SAMPLING FORM
(LOW FLOW)

Project: 40-05-27 Sampled by: JD DF

Location and Site Code (**SITEID**): LFS

Well No. (**LOCID**): 40-LFSMW-5 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 3/27/2007 Weather: Overcast, 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	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)

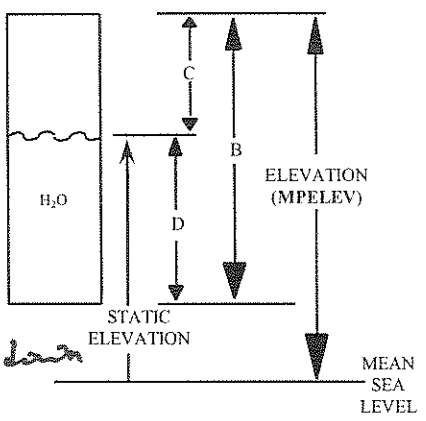
Measured Water Level Depth (C) (**STATDEP**) 3.45 ft.

Length of Static Water Column (D) = _____ (B) - _____ (C) = _____ (D) ft. (optional)

Pump Intake Depth (ft): 12'

Depth during Purging/Sampling: 3.45 - 4.06 ft (provide range)

Comments (re: Depth during purging/sampling): Poor Recharge - need drawdown



Purge Date and Method: BLADDER PUMP

Physical Appearance/Comments: Clear, No odor, Poor Recharge, Sacrifice drawdown

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)
1505	4.03	7.19	27	5.4	8	4.0	311	140
1509	4.04	6.68	23	5.3	37	0.6	307	100
1513	4.05	6.25	22	5.3	26	0.4	299	100
1517	4.06	6.04	21	5.0	28	0.4	296	100
1521	4.06	5.94	19	5.0	20	0.3	290	100
1525	4.06	5.89	19	4.9	21	0.2	287	100
1529	4.06	5.86	18	4.9	17	0.1	279	100
1533	4.06	5.84	18	4.9	18	0.0	270	100
1537	4.06	5.82	18	4.9	22	0.0	263	100
1541	4.06	5.82	17	5.0	19	0.0	260	100

Sample Time: 1543 Sample ID: LFSM05120A

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

Equipment Calibration Log

Instrument Name: Horiba U-22

Model Number: FPM #1

Date	First Standard Concentration	First Standard Reading	Second Standard Concentration	Second Standard Reading	Comments
3-22	4	3.6 No Good	4	3.99	Ok 2nd Time
3/23	4.00	3.98	4.00		
3/26	4.00	4.00			
3/27	4.00	3.99			
3/28	4.00	4.00			
4/2	4.00	3.98	4.00	3.99	
4/4	4.00	3.97	4.01	3.98	
4/11	4.00	3.99			
4/12	4.00	3.98	4.00	4.00	

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _1_ SDG#: _152_ 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 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
Carrier: LSL courier.	Sampler Signature: David P Forse	

Analyses Requested

Field Sample ID	Location ID (LOCID)	Date 2007	Time	MATRIX	SMCODE	SBD/SED	SACODE	Preservative	Filt./UnFilt.	No. of Containers	VOC note 1 40 mL vials (HCl)	SVOCs note 2 1 L amber	Total Alkalinity note 3 (zero headspace)	Metals note4 250 mL poly (HNO_3)	Metals note5 250 mL poly (HNO_3)	Comments
TF3M119R11RA	WL-TF3MW-119R	3/27	1027	WG	B	0/0	N	HCl	Unf.	4	3	-	1	-	-	
TF3M121R11RA	WL-TF3MW-121R	3/27	1057	WG	B	0/0	N	HCl	Unf.	4	3	-	1	-	-	
032607RE	FIELDQC	3/26	0755	WQ	B	0/0	EB	HCl	Unf.	6	3	-	1	1	1	
032707RF	FIELDQC	3/27	0951	WQ	NA	0/0	AB	HCl	Unf.	3	3	-	-	-	-	
032607RR	FIELDQC	3/26	0745	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 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: Metals: SW6010 AFCEE QAPP 4.0 List (Total).

Note 5: Metals: SW6010 AFCEE QAPP 4.0 List (Dissolved).

#1 Released by: (Sig)	Date:	#2 Released by: (Sig) David P Forse	Date: 3/28/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 0900	Company Name:	Time
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig)	Date 3·28·07	#3 Received by: (Sig)	Date
Company Name: FPM Group Ltd	Time: 1000	Company Name: LSL	Time: 1220	Company Name:	Time:

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

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

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

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _2_ SDG#: _150/152_ 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 Apron 2 Sampling Sampler Name: Daniel Baldyga	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

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	Comments
AP2MB1N16TA	WL-AP2MW-B1N	3/27	1150	WG	B	0/0	N	HCl	Unf.	3	3	
AP2MB4S16TA	WL-AP2MW-B4S	3/27	1430	WG	B	0/0	N	HCl	Unf.	3	3	
AP2MB4N21TA	WL-AP2MW-B4N	3/27	1414	WG	B	0/0	N	HCl	Unf.	3	3	
AP2M1410TA	WL-AP2MW-14	3/27	1340	WG	B	0/0	N	HCl	Unf.	3	3	
AP2M1410TC	WL-AP2MW-14	3/27	1340	WG	B	0/0	FD	HCl	Unf.	3	3	
782M8722TA	WL-782VMW-87	3/27	1136	WG	B	0/0	N	HCl	Unf.	3	3	
782M9118TA	WL-782VMW-91	3/27	1404	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: VOCs: method SW 8260 (STARS List).
Note 2: SVOCs: method SW 8270 (STARS List).

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 3/28/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd.	Time: 0900	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig)	Date: 3·28·07	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd.	Time: 1000	Company Name: LSL	Time: 1220	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

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#: _3_ SDG#: _152_ 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: David Forse	Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441
Carrier: LSL courier.	Sampler Signature: David P Forse	Phone: (315) 336-7721 ext. 205

Analyses Requested

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 Vials (HCl)	SVOC Note 2 1 L Ambers	Comments
B15M0506NA	WL-B15MW-5	3/27	0857	WG	B	0/0	N	HCl	Unf.	3	3	-	
B15M0607NA	WL-B15MW-6	3/27	0923	WG	B	0/0	N	HCl	Unf.	3	3	-	
B15M1007NA	WL-B15MW-10	3/27	0803	WG	B	0/0	N	HCl	Unf.	3	3	-	
B15M1107NA	WL-B15MW-11	3/26	0937	WG	B	0/0	N	HCl	Unf.	3	3	-	
B15M1107NC	WL-B15MW-11	3/26	0937	WG	B	0/0	FD	HCl	Unf.	3	3	-	
B15M1206NA	WL-B15MW-12	3/27	0943	WG	B	0/0	N	HCl	Unf.	3	3	-	Noticeable sheen on sample

Sample Condition Upon Receipt at Laboratory: Cooler temperature:

Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0
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) David Forse	Date: 3/28/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 0900	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig)	Date: 3-28-07	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 1000	Company Name: LSL	Time: 1220	Company Name:	Time:

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

SMCODE
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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#: _152_ 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: Justin Damann	Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441
Carrier: LSL courier.	Sampler Signature:	Phone: (315) 336-7721 Ext 205

Analyses Requested

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)		Comments
101M0216TA	101MW-2	3/27	1151	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: 3/28/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 0900	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig)	Date: 3-28-07	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 10200	Company Name: LSL	Time: 1220	Company Name:	Time:

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

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

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

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _5_ SDG#: _152_ (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 LF5 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
Carrier: LSL courier.	Sampler Signature:	

Analyses requested

Field Sample ID	LocID	Date 2007	Time	MATRIX	SMCODE	SACODE	SBD/SED	# of Containers	VOCs note 1 40 mL vials (HCl)	Metals note2 250 mL poly (HNO_3)	PCBs note3 1 L amber	Metals note4 250 mL poly (HNO_3)	Anions, TDS, color note 5 250 mL poly	NH3, COD, TKN note 6 125 mL poly (H_2SO_4)	TOC note 7 40 mL vial (HCL)	Alkalinity note 8 8 oz glass (no headspace)	BOD note 9 1 L poly	Cyanide note 10 8 oz poly (NaOH)	Comments
LF5M1A21OA	WL-LF5MW-1A	3/27	1439	WG	B	N	0/0	2	-	1	-	1	-	-	-	-	-	-	
LF5M1A21OC	WL-LF5MW-1A	3/27	1439	WG	B	FD	0/0	2	-	1	-	1	-	-	-	-	-	-	
LF5M1A21OS	WL-LF5MW-1A	3/27	1439	WG	B	MS	0/0	2	-	1	-	1	-	-	-	-	-	-	
LF5M1A21OD	WL-LF5MW-1A	3/27	1439	WG	B	SD	0/0	2	-	1	-	1	-	-	-	-	-	-	
LF5M0512OA	WL-LF5MW-5	3/27	1543	WG	BP	N	0/0	2	-	1	-	1	-	-	-	-	-	-	

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: SW8260B AFCEE QAPP 4.0 List + NYS Part 360 Baseline Parameters.
Note 2: Metals: SW6010 AFCEE QAPP 4.0 List (Total).
Note 3: PCBs: SW 8082 AFCEE QAPP 4.0 List.
Note 4: Metals: SW6010 AFCEE QAPP 4.0 List (Dissolved).
Note 5: Anions: SW9056, TDS: 160.1, color 110.1.
Note 6: NH3: 350.1, COD: 410.4, TKN: 351.1.
Note 7: TOC: SW9060.
Note 8: Alkalinity: 310.1.
Note 9: BOD: 405.1.
Note 10: Cyanide: SW9012

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 3/28/07	#3 Released by: (Sig)	Date:
Company Name:	Time	Company Name: FPM Group Ltd.	Time 0900	Company Name:	Time
#1 Received by: (Sig) Niels van Hoesel	Date 2/20/07	#2 Received by: (Sig)	Date 3/28/07	#3 Received by: (Sig)	Date
Company Name: FPM Group Ltd.	Time: 10:00	Company Name: ESL	Time: 1220	Company Name:	Time:

MATRIX
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SMCODE
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G = Grab (only for EB).
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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: 3/26/07 *Time :* 0815

Location: FPM office (garage)

Weather Conditions: Overcast, 40's

Meeting Type: Daily Health and Safety

Personnel Present:
Justin Damann, Dave Forse

Visitors Present: —

Visitor Training: —

PPE Required: Modified D

Possible risks, injuries, concerns:
Slip/Trip/Fall, Automobiles, Cold Exposure

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): Justin Damann

SSHP Organization Title: Site Safety and Health Officer

Daily Health and Safety Meeting Form

Date: 3/27/07 *Time :* 0720

Location: FPM office (garage)

Weather Conditions: Hazy, 40°

Meeting Type: Daily Health and Safety

Personnel Present:

Justin Damman, Dave Forse, Dan Baldyga

Pete Corigliano.

Visitors Present: —

Visitor Training: —

PPE Required: Modified D

Possible risks, injuries, concerns:

Slip/Trip/Fall, Automobiles

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): Justin Damman

SSHP Organization Title: Site Safety and Health Officer

Daily Chemical Quality Control Report

Project/Delivery Order Number: F41624-03-D-8601-0027 Date: 4/10/07

Project Name/Site Number: Griffiss Petroleum Spills Sites LTM sampling (Apron 1, 2, Building 789, and Fire Protection Training Area [=FPTA]).

Weather conditions: Temperature: 40 Barometric reading: 30.0
Wind direction and speed: north-northwest 4 mph.
Significant wind changes: none.

General description of tasks completed: Bailer sampling at Site Apron 2 (AP2MW-3, 782VMW-102), Site Apron 1 (AP1PIW-12, 782MW-9, HE8MW-2, and -3), Site Building 789 (789MW-101 and -102), and Site FPTA (ANGMW-1). Surface water sampling at Site Apron 2 (782SW-118, -119, and -120).

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: 13 April 2007

CQCC Signature: Cornelia van Hoesel Date: 4/15/07

ATTACHMENTS:

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

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: AG

Location and Site Code (**SITEID**): Apron 2

Well No. (**LOCID**): WL-AP2MW-3 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-10-07 Weather: cloudy / 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:

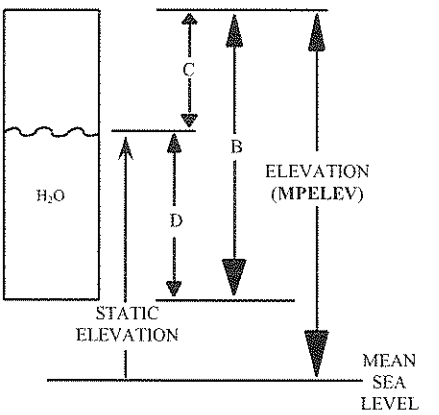
Measured Well Depth (B) (**TOTDEPTH**) 33.69 ft.

Measured Water Level Depth (C) (**STATDEP**) 20.10 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 13.59 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 2.17 gal

Minimum Purge Volume = 6.5 gal (3 well volumes)



Purge Date and Method: bailer 4/10/07

Physical Appearance/Comments: silty orange / petro 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)
1057	2	7.06	0.553	10.15		8.28	-2.5
1100	4	6.73	0.601	10.75		5.47	-37.0
1103	6	6.82	0.609	11.24		3.10	-49.7
1105	7	7.01	0.612	11.26		6.91	-59.1
1107	8	6.96	0.619	11.30		5.14	-62.3
1109	9	6.98	0.615	11.19		4.98	-61.5

Sample Time: 1110 Sample ID: AP2M032007A

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB

Location and Site Code (**SITEID**): Apron 2

Well No. (**LOCID**): WL-782VMW-102 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-10-07 Weather: snow / 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:

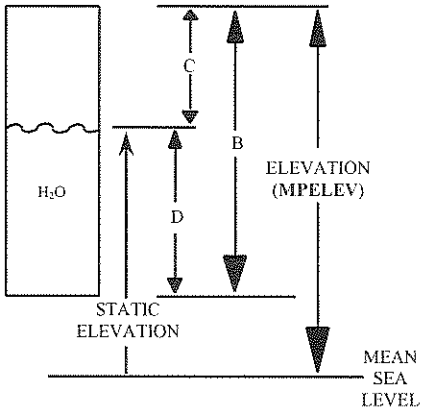
Measured Well Depth (B) (**TOTDEPTH**) 24.57 ft.

Measured Water Level Depth (C) (**STATDEP**) 8.63 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 15.94 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 2.55 gal

Minimum Purge Volume = 7.65 gal (3 well volumes)



Purge Date and Method: bailer / 4-10-07

Physical Appearance/Comments: cloudy / solvent 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)
~~1115~~	2	7.35	0.560	7.45		5.27	-66.8
1117	4	7.11	0.575	8.03		3.81	-74.1
1120	6	7.09	0.581	8.19		3.53	-79.5
1123	8	7.06	0.600	8.41		3.19	-80.1

Sample Time: 1125 Sample ID: 782M102097A / TC / TD / TS

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB / PC

Location and Site Code (**SITEID**): 4p 2

Well No. (**LOCID**): 7825W-118 Well Diameter (**SDIAM**): 4

Date (**LOGDATE**): 4-10-07 Weather: cloudy / 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:

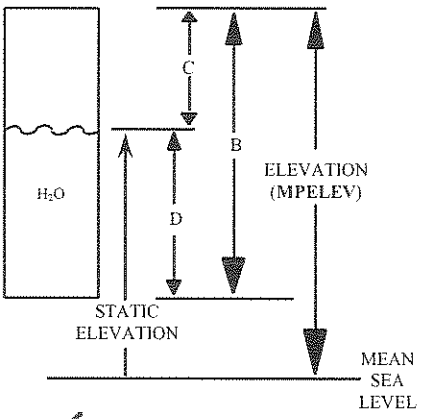
Measured Well Depth (B) (**TOTDEPTH**) _____ ft.

Measured Water Level Depth (C) (**STATDEP**) _____ ft.

Length of Static Water Column (D) = _____ (B) - _____ (C) = _____ (D) ft.

Casing Water Volume (E) = _____ (A) x _____ (D) = _____ gal

Minimum Purge Volume = _____ gal (3 well volumes)



Purge Date and Method: 6mb 14-10-07

Physical Appearance/Comments: clear / solvent 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)
1134	0.25	7.69	0.206	4.84		12.23	-52.2
					X		

Sample Time: 1135 Sample ID: 7825W118O1TA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB / PC

Location and Site Code (**SITEID**): Ap 2

Well No. (**LOCID**): 7825W-119 Well Diameter (**SDIAM**): x

Date (**LOGDATE**): 4-10-07 Weather: cloudy / 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:

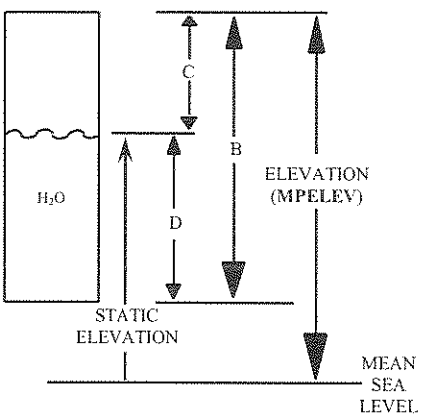
Measured Well Depth (B) (**TOTDEPTH**) _____ ft.

Measured Water Level Depth (C) (**STATDEP**) _____ ft.

Length of Static Water Column (D) = _____ (B) - _____ (C) = _____ (D) ft.

Casing Water Volume (E) = _____ (A) x _____ (D) = _____ gal

Minimum Purge Volume = _____ gal (3 well volumes)



Purge Date and Method: Grab - 4-10-07

Physical Appearance/Comments: clear / sweet 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)
1139	0.25	7.57	0.197	4.43		13.31	-32.3

Sample Time: 1140 Sample ID: 7825W119017A

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.

WELL PURGING & SAMPLING FORM

Project: 10-05-27 Sampled by: DB / PC

Location and Site Code (**SITEID**): Apron 2

Well No. (**LOCID**): 782SW-120 Well Diameter (**SDIAM**): 4

Date (**LOGDATE**): 4-10-07 Weather: cloudy / 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:

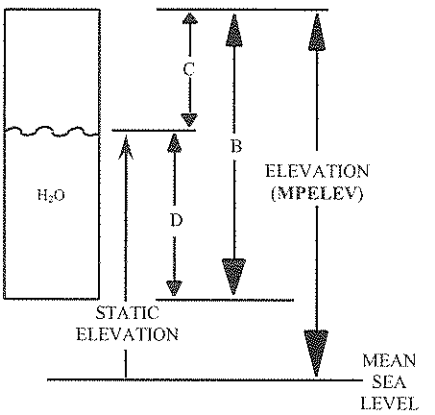
Measured Well Depth (B) (**TOTDEPTH**) _____ ft.

Measured Water Level Depth (C) (**STATDEP**) _____ ft.

Length of Static Water Column (D) = _____ (B) - _____ (C) = _____ (D) ft.

Casing Water Volume (E) = _____ (A) x _____ (D) = _____ gal

Minimum Purge Volume = _____ gal (3 well volumes)



Purge Date and Method: 6in6 / 4-10-07

Physical Appearance/Comments: clear / solvent 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)
1159	0.25	7.32	0.213	4.78		12.89	-56.8

Sample Time: 1200 Sample ID: 782SW120017A

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB IPC

Location and Site Code (**SITEID**): Apron 1

Well No. (**LOCID**): WL-782MW-9 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-10-07 Weather: Sun 140

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:

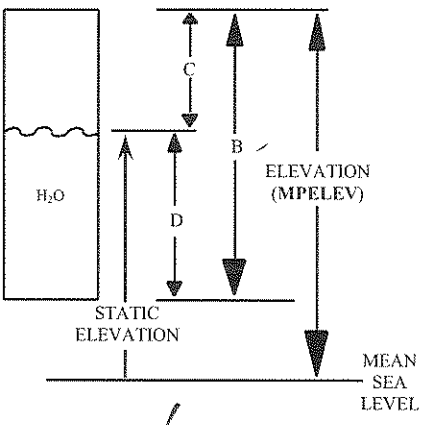
Measured Well Depth (B) (**TOTDEPTH**) 28.95 ft.

Measured Water Level Depth (C) (**STATDEP**) 23.50 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 5.45 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = ≈ 872 gal

Minimum Purge Volume = 2.6 gal (3 well volumes)



Purge Date and Method: Bailer / 4-10-07

Physical Appearance/Comments: 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)
1555	0.75	7.62	0.253	7.36		12.08	-101.9
1557	1.5	7.55	0.245	7.42		11.05	-38.9
1559	2.25	7.46	0.245	7.32		10.37	-8.3
1602	3.0	7.43	0.244	7.32		10.80	10.2

Sample Time: 1605 Sample ID: 782MW0905A

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB JPC

Location and Site Code (**SITEID**): Apron 1

Well No. (**LOCID**): APIPIW-12 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-10-07 Weather: 40 sun

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:

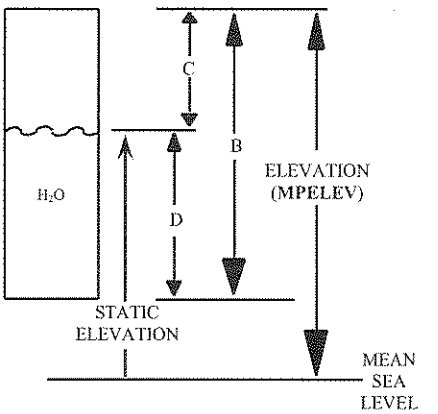
Measured Well Depth (B) (**TOTDEPTH**) 23.34 ft.

Measured Water Level Depth (C) (**STATDEP**) 19.41 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 3.93 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = ≈6.28 gal

Minimum Purge Volume = 1.88 gal (3 well volumes)



Purge Date and Method: Bailer 14-10-07

Physical Appearance/Comments: silty brown / 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)
1345	0.5	7.67	0.152	8.22		13.37	100.6
1346	1.0	7.61	0.155	8.25		11.22	98.2
1348	1.5	7.63	0.156	8.26		11.04	97.0
	2.0						
		Dry after 1.5 gallons					

Sample Time: 1530 Sample ID: APIPIW12195A

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: PC / DB

Location and Site Code (**SITEID**): Apron 1

Well No. (**LOCID**): WL-HE8MW-2 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-10-07 Weather: 40 / sun

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:

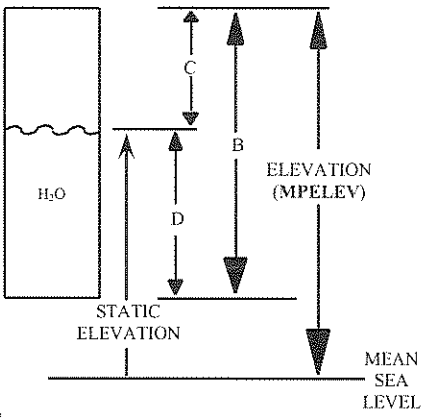
Measured Well Depth (B) (**TOTDEPTH**) 27.95 ft.

Measured Water Level Depth (C) (**STATDEP**) 15.97 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 11.98 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 1.9 gal

Minimum Purge Volume = 5.7 gal (3 well volumes)



Purge Date and Method: Bailer 4-10-07

Physical Appearance/Comments: silty grey / 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)
1536	1	7.01	0.817	9.96		6.39	-58.9
1537	2	6.78	0.837	10.63		2.47	-91.4
1539	3	6.80	0.847	11.15		3.18	-94.8
1541	4	6.86	0.847	11.38		4.18	-85.2
1543	5	6.85	0.845	11.34		4.65	-93.4
1545	6	6.83	0.841	11.44		3.99	-94.5

Sample Time: 1545 Sample ID: HE8M0216SA / SC

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB / PC

Location and Site Code (**SITEID**): Apron 1

Well No. (**LOCID**): WL-HE8MW-3 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-10-07 Weather: Sun / 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:

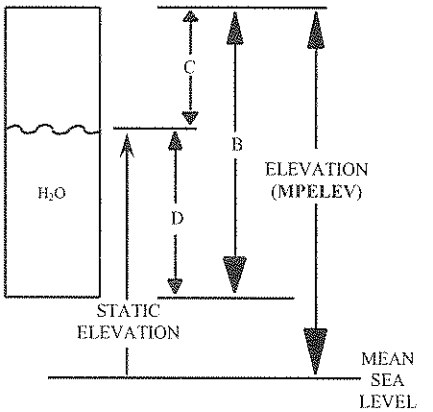
Measured Well Depth (B) (**TOTDEPTH**) 27.33 ft.

Measured Water Level Depth (C) (**STATDEP**) 15.21 ft.

Length of Static Water Column (D) = _____ (B) - _____ (C) = _____ (D) ft.

Casing Water Volume (E) = _____ (A) x _____ (D) = 1.9 gal

Minimum Purge Volume = 6 gal (3 well volumes)



Purge Date and Method: Bailer 4-10-07

Physical Appearance/Comments: silty brown / petro 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)
1510	1	8.31	0.128	5.64		11.95	165.5
1512	2	8.06	0.133	6.38		10.39	157.9
1514	3	7.86	0.148	7.38		9.30	138.0
1516	4	7.61	0.178	8.33		7.84	42.6
1518	5	7.29	0.216	9.03		7.38	-16.2
1520	6	7.16	0.228	9.37		7.32	-23.0
1522	7	7.13	0.230	9.28		9.68	-21.2
1524	8	7.10	0.240	9.04		7.98	-23.4

Sample Time: 1525 Sample ID: HE8M0315SA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: ~~DS~~ JPC

Location and Site Code (**SITEID**): B 789

Well No. (**LOCID**): WL-789MW-101 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-10-07 Weather: 40 / 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:

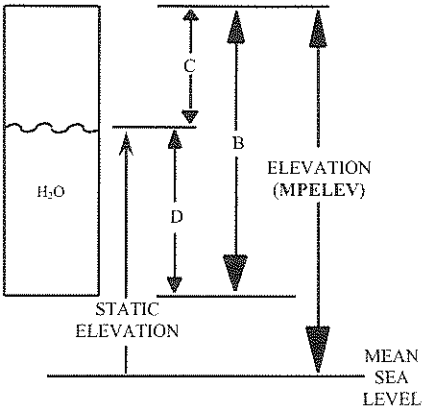
Measured Well Depth (B) (**TOTDEPTH**) 15.45 ft.

Measured Water Level Depth (C) (**STATDEP**) 8.24 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 7.21 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 1.15 gal

Minimum Purge Volume = 3.46 gal (3 well volumes)



Purge Date and Method: Bailer 4-10-07

Physical Appearance/Comments: silty orange / 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	7.10	0.814	6.31		4.63	-77.6
1147	2	7.07	0.808	6.48		4.67	-79.0
1149	3	7.06	0.798	6.50		3.77	-83.0
1151	4	7.06	0.801	6.50		3.98	-82.4

Sample Time: 1155 Sample ID: 789MW0108TA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: BB / PC

Location and Site Code (**SITEID**): B 789

Well No. (**LOCID**): WL-789MW-102 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-10-07 Weather: 40 / 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:

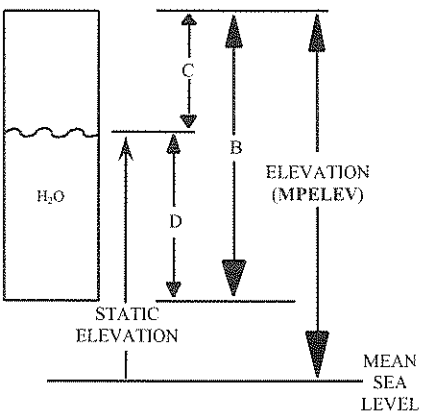
Measured Well Depth (B) (**TOTDEPTH**) 17.82 ft.

Measured Water Level Depth (C) (**STATDEP**) 9.86 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 7.96 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 1.27 gal

Minimum Purge Volume = 3.8 gal (3 well volumes)



Purge Date and Method: bailer / 4-10-07

Physical Appearance/Comments: silty brown / 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)
1205	1	7.20	0.110	6.00		12.24	-15.5
1208	2	6.65	0.108	5.98		4.91	19.8
1210	3	6.53	0.098	5.89		4.94	30.8
1212	4	6.48	0.095	5.83		4.98	40.1
1214	5	6.43	0.094	5.81		5.39	44.1

Sample Time: 1215 Sample ID: 789M102107A

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: DB/PC

Location and Site Code (**SITEID**): & FDTH

Well No. (**LOCID**): WL-4N6MW-1 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-10-07 Weather: cloudy / 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:

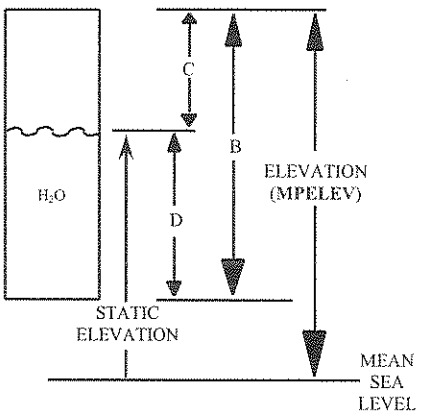
Measured Well Depth (B) (**TOTDEPTH**) 17.46 ft.

Measured Water Level Depth (C) (**STATDEP**) 10.96 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 6.50 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = .9 gal

Minimum Purge Volume = 3 gal (3 well volumes)



Purge Date and Method: Bailer / 4-10-07

Physical Appearance/Comments: silty orange / petro 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)
0950	0.75	6.92	0.520	7.14		6.72	-17.0
0952	1.5	6.54	0.512	7.32		5.78	-38.6
0954	2.25	6.57	0.508	7.21		6.11	-43.0
0956	3.0	6.53	0.511	7.20		7.01	-34.6

Sample Time: 1000 Sample ID: 4N6M01116A

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

EQUIPMENT CALIBRATION LOG

Instrument Name: Horiba U-22

Model No.: FPM #02

2004

Date and Time	First Standard Concentration	First Standard Reading	Second Standard Concentration	Second Standard Reading	Comments
4/29	4.00	3.97			
4-30	4.00	4.00			
6.9	4.00	4.01	4.00	4.01	
6-12	4.0	4.00			
4/9/07	4.00	4.00			
4/10/07	4.	3.97	4	3.96	✓
4-13-07	4	3.97	4	3.98	✓

FPM

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _3_ SDG#: _155/156_ 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 Apron 2 Sampling Sampler Name: Daniel Baldyga	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

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	Comments
AP2M0320TA	AP2MW-3	4/10	1110	WG	B	0/0	N	HCl	Unf.	3	3	
782M10209TA	WL-782VMW-102	4/10	1125	WG	B	0/0	N	HCl	Unf.	3	3	
782M10209TC	WL-782VMW-102	4/10	1125	WG	B	0/0	FD	HCl	Unf.	3	3	
782M10209TS	WL-782VMW-102	4/10	1125	WG	B	0/0	MS	HCl	Unf.	3	3	
782M10209TD	WL-782VMW-102	4/10	1125	WG	B	0/0	SD	HCl	Unf.	3	3	
AP2SW11801TA	782SW-118	4/10	1135	WG	G	0/0	N	HCl	Unf.	3	3	
AP2SW11901TA	782SW-119	4/10	1140	WG	G	0/0	N	HCl	Unf.	3	3	
AP2SW12001TA	782SW-120	4/10	1200	WG	G	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: VOCs: method SW 8260 (STARS List).
Note 2: SVOCs: method SW 8270 (STARS List).

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 4/10/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd.	Time: 1700	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig) Bill Donaldson	Date: 4/11/07	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd.	Time: 1000	Company Name: Life Science Labs	Time: 10:35	Company Name:	Time:

MATRIX
WG = Ground water
WQ = Water Quality Control Matrix

SMCODE
B = Bailer
G = Grab (only for EB).

SACODE
N = Normal Sample
AB = Ambient Blank

SO = Soil
WS - Surface water

NA = Not Applicable (only for AB/TB)
PP = Peristaltic Pump
BP = Bladder Pump
SP = Submersible Pump
SS = Split Spoon

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

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _4_ SDG#: _155_ 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 Apron 1 Sampling Sampler Name: Daniel Baldyga	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: D Baldyga	

Analyses Requested

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 vials (HCl)	Comments
782M0924SA	WL-782MW-9	4/10	1605	WG	B	0/0	N	HCl	Unf.	3	3	
AP1PIW1219SA	AV-PIW-12	4/10	1530	WG	B	0/0	N	HCl	Unf.	3	3	
HE8M0216SA	WL-HE8MW-2	4/10	1545	WG	B	0/0	N	HCl	Unf.	3	3	
HE8M0216SC	WL-HE8MW-2	4/10	1545	WG	B	0/0	FD	HCl	Unf.	3	3	
HE8M0315SA	WL-HE8MW-3	4/10	1525	WG	B	0/0	N	HCl	Unf.	3	3	
041007SE	FIELDQC	4/10	0840	WQ	B	0/0	EB	HCl	Unf.	3	3	
041007SF	FIELDQC	4/10	1220	WQ	NA	0/0	AB	HCl	Unf.	3	3	
041007SR	FIELDQC	4/10	0810	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 AFCEE QAPP 4.0
Note 1: VOCs: Method SW 8260 for AFCEE QAPP 4.0 List.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 4/10/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd.	Time: 1702	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig) Bill Donaldson	Date: 4-11-07	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd.	Time: 1000	Company Name: Life Science Labs	Time: 1035	Company Name:	Time:

MATRIX
WG = Ground water
WQ = Water Quality Control Matrix
SO = Soil
SW = 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#: _2_ SDG#: _155_ Cooler ID: _A_

Ship to: Mark Nemec Severn Trent Laboratories 10 Hazelwood Drive, Suite 106 Amherst, NY 14228-2298 Tel: (716)691-2600	Project Name: Griffiss AFB Building 789 Sampling Sampler Name: Daniel Baldyga	Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441
Carrier: STL courier.	Sampler Signature:	Phone: (315) 336-7721 ext. 205

Analyses Requested

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 via: (HCl)	Comments
789M10108TA	WL-789MW-101	4/10	1155	WG	B	0/0	N	HCl	Unf.	3	3	
789M10210TA	WL-789MW-102	4/10	1215	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: VOCs: SW 8260 STARS List.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 4/10/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd.	Time: 1702	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig) Bill Donaldson	Date: 4-11-07	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd.	Time: 1000	Company Name: Life Science Labs	Time: 10:35	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#: _1_ SDG#: _155_ 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 FPTA Sampling Sampler Name: Daniel Baldyga	Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441
Carrier: LSL courier.	Sampler Signature:	Phone: (315) 336-7721 ext. 205

Analyses Requested

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 Vials (HCl)	Comments
ANGM0111GA	ANGMW-1	4/10	1000	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: VOCs: SW 8260 analysis for STARS List including MTBE.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 4/10/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 1700	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig) Bill Donaldson	Date: 4/11/07	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 1000	Company Name: STL	Time: 1035	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

Daily Health and Safety Meeting Form

Date: 4/10/07 *Time :* 8:00

Location: FPM office (garage)

Weather Conditions: 35° cloudy

Meeting Type: Daily Health and Safety

Personnel Present:

Peter Corigliano III, Daniel Ballerga

Visitors Present: —

Visitor Training: —

PPE Required: Modified D

Possible risks, injuries, concerns:

slip trip fall, cold, wind

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):

None

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: 4/18/07

Project Name/Site Number: Griffiss Landfills and SRA LTM sampling (Landfill 6 and Building 35).

Weather conditions: Temperature: 56 Barometric reading: 29.8
Wind direction and speed: north-northwest 1 mph.
Significant wind changes: none.

General description of tasks completed: Bladder pump sampling at Site Landfill 6 (TMC-USGS-2). Surface water and leachate sampling at Site Landfill 6 (LF6SW-3, LF6LH-1 and -2). Bladder pump sampling at Site Building 35 (B35MW-4).

Explain any departures from the SAP or deviations from approved procedures during the day's field activities: Monitoring well LF6MW-17S was resampled for TOC because the vials was mistakenly not sent to the lab and was not stored under the right conditions.

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 April 2007

CQCC Signature: Cornelis van Hoesel Date: 4/21/07

ATTACHMENTS:

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

WELL PURGING & SAMPLING FORM
(LOW FLOW)

Project: 40-05-27 Sampled by: JD DF

Location and Site Code (**SITEID**): LF6

Well No. (**LOCID**): WL-LF6VMW-17S Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4/18/07 Weather: Overcast, 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	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)

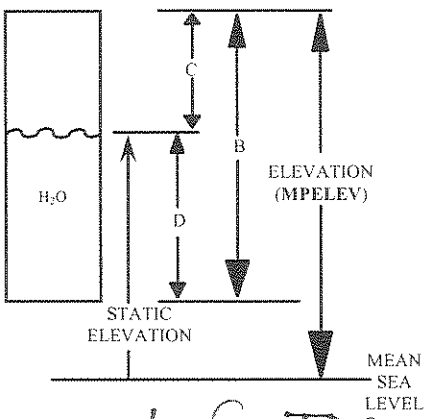
Measured Water Level Depth (C) (**STATDEP**) 7.30 ft.

Length of Static Water Column (D) = _____ (B) - _____ (C) = _____ (D) ft. (optional)

Pump Intake Depth (ft): 15'

Depth during Purging/Sampling: 7.40 – 7.45 ft (provide range)

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



Purge Date and Method: BLADDER PUMP – Resample for TOC

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)
1033	7.40	5.86	10.5	3.3	79.2	9.00	322	300
1035	7.40	4.85	10.0	3.3	89.4	3.90	333	400
1036	7.40	4.72	9.8	3.2	87.8	3.18	338	400
1037	7.40	4.64	9.8	3.2	87.0	3.06	340	400
1038	7.40	4.49	9.7	3.2	86.8	2.80	345	400
1039	7.40	4.35	9.7	3.2	79.3	2.56	349	400
1040	7.40	4.31	9.7	3.3	76.5	2.30	353	400
1041	7.40	4.23	9.7	3.3	71.3	2.02	355	400
1042	7.40	4.20	9.7	3.2	69.5	1.80	357	400
1043	7.40	4.16	9.7	3.3	65.6	1.69	358	400
1044	7.40	4.14	9.7	3.3	63.7	1.61	359	400
1045	7.40	4.13	9.7	3.3	61.8	1.55	359	400

Sample Time: 1047 Sample ID: LF6VM17S15DA

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

WELL PURGING & SAMPLING FORM
(LOW FLOW)

Project: 40-05-27 Sampled by: DF / JD

Location and Site Code (**SITEID**): Cantil 6 , CFG

Well No. (**LOCID**): TMC-USGS-2 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-18-07 Weather: 45° 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	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)

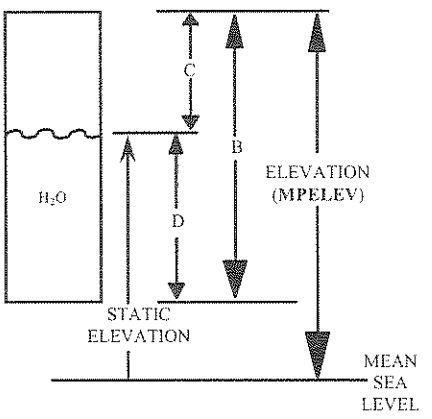
Measured Water Level Depth (C) (**STATDEP**) 2.66 ft.

Length of Static Water Column (D) = _____ (B) - _____ (C) = _____ (D) ft. (optional)

Pump Intake Depth (ft): 27'

Depth during Purging/Sampling: 2.66 - 8.77 ft (provide range)

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



Purge Date and Method: BLADDER PUMP _____

Physical Appearance/Comments: Cloudy / Grey - 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)
0909	3.70	6.02	44	6.8	>999	2.10	126	100
0913	4.45	6.25	44	7.1	>999	1.11	114	100
9:17	5.01	6.36	43	7.2	>999	1.01	110	100
9:21	5.56	6.56	43	7.3	>999	.76	101	100
9:25	5.94	6.65	43	7.3	>999	.62	95	100
9:29	6.45	6.76	43	7.3	>999	.56	80	100
9:33	6.80	6.89	43	7.3	>999	.41	71	↓
9:37	7.05	6.95	43	7.3	>999	.38	59	↓
9:41	7.45	7.04	43	7.3	>999	.29	45	100
9:44	7.76	7.11	43	7.3	>999	.29	37	↓
9:48	7.81	7.17	43	7.3	>999	.21	28	↓

Sample Time: 1011 Sample ID: TMC4M0227DA

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

WELL PURGING & SAMPLING FORM
(LOW FLOW)

Project: 40-05-27 Sampled by: DF

Location and Site Code (**SITEID**): L56

Well No. (**LOCID**): TMC-USGS-2" Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4-18-07 Weather: 45° 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	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**) 2.66 ft.

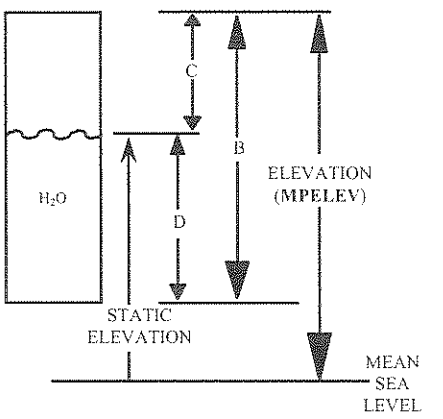
Length of Static Water Column (D) = _____ (B) - _____ (C) = _____ (D) ft. (optional)

Pump Intake Depth (ft): 27'

Depth during Purging/Sampling: 2.66 - 8.77 ft (provide range)

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

PAGE #2



Purge Date and Method: BLADDER PUMP

Physical Appearance/Comments: Cloudy/Grey - 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)
09:52	1.98	7.29	43	7.4	7999	0.13	18	100
09:56	8.20	7.29	43	7.4	>999	0.10	10	↓
10:00	8.41	7.39	43	7.5	>999	0.02	3	↓
10:04	8.65	7.43	43	7.5	>999	0.0	-4	↓
10:07	8.77	7.47	43	7.6	7999	0.0	-7	↓
10:11	SAMPLE							

Page #2

Sample Time: 10:11 Sample ID: TMC U-M0227DA

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

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: JO DF

Location and Site Code (**SITEID**): LF6

Well No. (**LOCID**): RV-LF6 SW-#3 Well Diameter (**SDIAM**): —

Date (**LOGDATE**): 4/18/07 Weather: Overcast, 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:

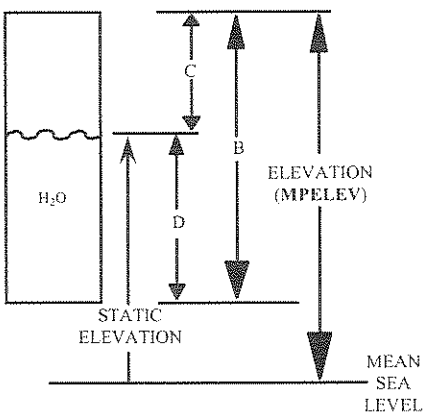
Measured Well Depth (B) (**TOTDEPTH**) — ft.

Measured Water Level Depth (C) (**STATDEP**) — ft.

Length of Static Water Column (D) = — (B) - — (C) = — (D) ft.

Casing Water Volume (E) = — (A) x — (D) = — gal

Minimum Purge Volume = — gal (3 well volumes)



Purge Date and Method: Surface Water Grab

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)
0941	—	6.08	93.3	18.3	41.9	11.28	244

Sample Time: 0939 Sample ID: LF6SW0301DA

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.

WELL PURGING & SAMPLING FORM

Project: 10-05-27 Sampled by: JD DF

Location and Site Code (**SITEID**): LFC

Well No. (**LOCID**): RW-LF6LH-1 Well Diameter (**SDIAM**): —

Date (**LOGDATE**): 4/18/07 Weather: Overcast, 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:

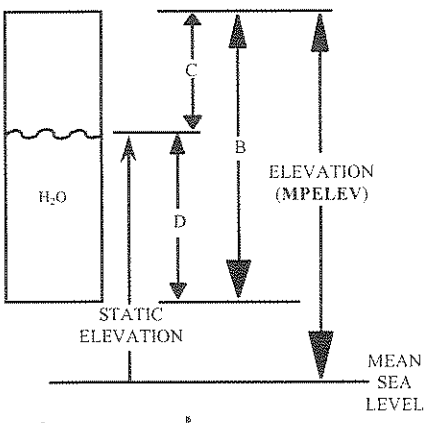
Measured Well Depth (B) (**TOTDEPTH**) — ft.

Measured Water Level Depth (C) (**STATDEP**) — ft.

Length of Static Water Column (D) = — (B) - — (C) = — (D) ft.

Casing Water Volume (E) = — (A) x — (D) = — gal

Minimum Purge Volume = — gal (3 well volumes)



Purge Date and Method: Landfill Leachate grab

Physical Appearance/Comments: Silty-Cloudy, N. 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)
1132	—	6.22	29.4	8.6	348	5.32	207

Sample Time: 1129 Sample ID: LF6LH0101DA

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.

WELL PURGING & SAMPLING FORM

Project: 40-05-27 Sampled by: JD DF

Location and Site Code (**SITEID**): LF6

Well No. (**LOCID**): MW-LF6LH-2 Well Diameter (**SDIAM**): —

Date (**LOGDATE**): 4/18/07 Weather: Overcast, 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:

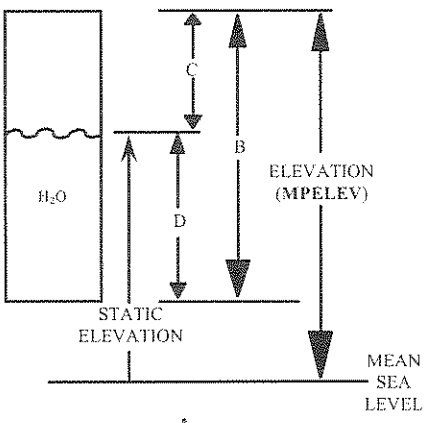
Measured Well Depth (B) (**TOTDEPTH**) — ft.

Measured Water Level Depth (C) (**STATDEP**) — ft.

Length of Static Water Column (D) = — (B) - — (C) = — (D) ft.

Casing Water Volume (E) = — (A) x — (D) = — gal

Minimum Purge Volume = — gal (3 well volumes)



Purge Date and Method: Landfill Leachate grab

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)
1002	—	6.66	68.0	9.4	52.0	6.48	166

Sample Time: 0959 Sample ID: LF6LH0201DA

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.

WELL PURGING & SAMPLING FORM
(LOW FLOW)

Project: 10-05-27 Sampled by: JD DF

Location and Site Code (**SITEID**): Bldg. 35

Well No. (**LOCID**): B035MW-4 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4/18/07 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	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)

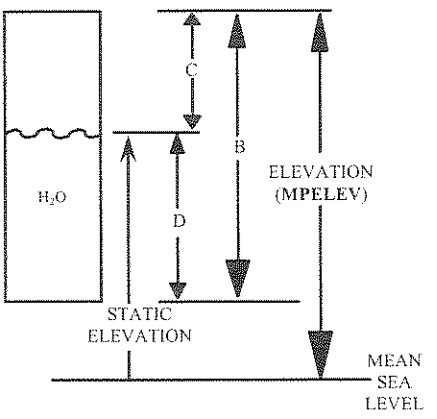
Measured Water Level Depth (C) (**STATDEP**) 8.33 ft.

Length of Static Water Column (D) = _____ (B) - _____ (C) = _____ (D) ft. (optional)

Pump Intake Depth (ft): 16

Depth during Purging/Sampling: 8.33 - 8.35 ft (provide range)

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



Purge Date and Method: BLADDER PUMP _____

Physical Appearance/Comments: Cloudy, 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)
1341	8.33	7.25	0.19	7.1	450	0.21	206	400
1343	8.33	7.22	0.19	7.2	390	0.06	194	300
1345	8.33	7.18	0.19	7.2	380	0.00	180	300
1347	8.33	7.16	0.18	7.2	280	0.00	164	300
1349	8.33	7.15	0.18	7.3	220	0.00	150	300
1351	8.33	7.14	0.18	7.3	200	0.00	138	300
1353	8.33	7.13	0.18	7.4	150	0.00	124	300
1355	8.33	7.12	0.17	7.4	130	0.00	111	300
1357	8.33	7.12	0.17	7.4	120	0.00	102	300
1359	8.33	7.12	0.17	7.4	110	0.00	92	300
1401	8.33	7.12	0.17	7.5	99	0.60	83	300

Sample Time: 1419 Sample ID: B035M0416FA

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

WELL PURGING & SAMPLING FORM
(LOW FLOW)

Project: JO DF Sampled by: 10-05-27

Location and Site Code (**SITEID**): Bldg. 35

Well No. (**LOCID**): B035mw-4 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 4/18/07 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	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)

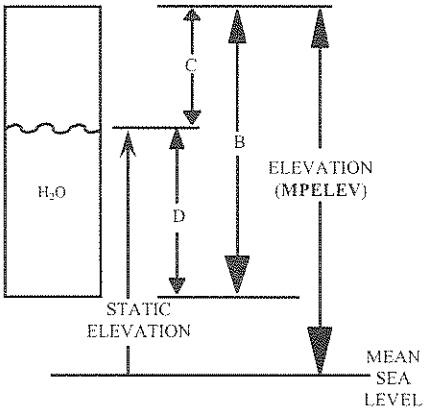
Measured Water Level Depth (C) (**STATDEP**) _____ ft.

Length of Static Water Column (D) = _____ (B) - _____ (C) = _____ (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: Cloudy, 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)
1403	8.33	7.11	0.17	7.5	96	0.00	75	300
1405	8.33	7.12	0.16	7.5	91	0.00	66	300
1407	8.33	7.11	0.16	7.4	85	0.00	60	300
1409	8.33	7.11	0.16	7.4	76	0.00	53	300
1411	8.33	7.11	0.16	7.5	77	0.00	47	300
1413	8.33	7.11	0.16	7.5	67	0.00	42	300
1415	8.33	7.11	0.16	7.4	64	0.00	38	300
1417	8.33	7.11	0.16	7.4	60	0.00	33	300

Sample Time: 1419 Sample ID: B035M16FA04

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

Equipment Calibration Log

Instrument Name: Horiba U-22

Model Number: FPM #1

Date	First Standard Concentration	First Standard Reading	Second Standard Concentration	Second Standard Reading	Comments
3-22	4	3.6 No Good	4	3.99	Ok 2nd Time
3/23	4.00	3.98	4.00		
3/26	4.00	4.00			
3/27	4.00	3.99			
3/28	4.00	4.00			
4/2	4.00	3.98	4.00	3.99	
4/4	4.00	3.97	4.01	3.98	
4/11	4.00	3.99			
4/12	4.00	3.98	4.00	4.00	
4-18-07	4	4.01	4	4.00	

EQUIPMENT CALIBRATION LOG

Instrument Name: Horiba U-22

Model No.: FPM #02

2004

Date and Time	First Standard Concentration	First Standard Reading	Second Standard Concentration	Second Standard Reading	Comments
4/29	4.00	3.97			
4-30	4.00	4.00			
6-9	4.00	4.01	4.00	4.01	
6-12	4.0	4.00			
4/9/07	4.00	4.00			
4/10/07	4	3.97	4	3.96	✓
4-13-07	4	3.97	4	3.98	✓
4-17-07	4	3.98	4	3.98	✓
4-18-07	4	3.99	4	3.98	✓

FPM

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _1_ SDG#: _158_ (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 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
Carrier: LSL courier.	Sampler Signature:	

Analyses requested

Field Sample ID	LocID	Date 2007	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_2SO_4)	Anions, TDS note 4 250 mL poly	NH3, COD, TKN note 5 125 mL poly (H_2SO_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
LF6VM17S15DA	WL-LF6VMW-17S	4/18	1047	WG	BP	N	0/0	1	-	-	-	-	-	-	1	-	-	-	
TMCUM0227DA	TMC-USGS-2	4/18	1011	WG	BP	N	0/0	11	3	1	1	1	1	1	1	1	1	-	
LF6SW0301DA	RV-LF6SW-3	4/18	0939	WS	G	N	0/0	11	3	1	1	1	1	1	1	1	1	-	
LF6LH0101DA	RV-LF6LH-1	4/18	1129	WG	G	N	0/0	11	3	1	1	1	1	1	1	1	1	-	
LF6LH0201DA	RV-LF6LH-2	4/18	0959	WG	G	N	0/0	11	3	1	1	1	1	1	1	1	1	-	
041807DE	FIELDQC	4/18	1455	WQ	BP	EB	0/0	11	3	1	1	1	1	1	1	1	1	-	
041807DF	FIELDQC	4/18	1145	WQ	NA	AB	0/0	3	3	-	-	-	-	-	-	-	-	-	
041807DR	FIELDQC	4/18	0745	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 (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 (Dissolved).

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 4/19/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 10:20	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: : 2/20/07	#2 Received by: (Sig)	Date: 4.19.07	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 1000	Company Name: LSL	Time: 1020	Company Name:	Time:

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

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

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

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _2_ SDG#: _158_ 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: Justin Damann	Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441
Carrier: LSL courier.	Sampler Signature:	Phone: (315) 336-7721 Ext 205

Analyses Requested

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)		Comments
B035M0416FA	B035MW04	4/18	1419	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: 4/19/07	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 10:20	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig)	Date: 4.19.07	#3 Received by: (Sig)	Date:
Company Name: FPM Group Ltd	Time: 1000	Company Name: LSL	Time: 1020	Company Name:	Time:

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

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

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

Daily Health and Safety Meeting Form

Date: 4/18/07 *Time :* 0830

Location: FPM office (garage)

Weather Conditions: Overcast, 40°

Meeting Type: Daily Health and Safety

Personnel Present:
Justin Duncan, Duke Forse

Visitors Present:

Visitor Training:

PPE Required: Modified D

Possible risks, injuries, concerns:
Slip/Trip/fall, Vehicles, Biological

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): Justin Duncan

SSHP Organization Title: Site Safety and Health Officer

Appendix B
Validated Laboratory Data

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 # 0703161

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:	March 27, 2007

LIST OF DATA VERIFICATION SAMPLES

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

Sample ID	*Date*	*QC Samples*	*Date*
101M0216TA	3/27/07		

Notes:

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

TA – Primary environmental samples

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 methods employed included SW-846: Volatile Organic Compounds (VOC) 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 # 0703161 are valid and usable with qualifications as noted in the data review.

Signed: Concordia van Hoesel Date: 4/24/07

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 PACKAGE

Analytical Method:	SW8260B	**AAB #:**	R9124
Lab Name:	Life Science Laboratories, Inc.	**Contract Number:**	
Base/Command:		**Prime Contractor:**	FPM Group

Field Sample ID	Lab Sample ID
101M0216TA	0703161-001A

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: 4/16/07 Title: Project Manager

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method:	SW8260B	**Preparatory Method:**		**AAB #:**	R9124
Lab Name:	Life Science Laboratories, Inc.	**Contract #:**			
Field Sample ID:	101M0216TA	**Lab Sample ID:**	0703161-001A	**Matrix:**	Groundwater
% Solids:	0	**Initial Calibration ID:**	901	**File ID:**	T7985.D
Date Received:	28-Mar-07	**Date Extracted:**		**Date Analyzed:**	06-Apr-07
Concentration Units (ug/L or mg/Kg dry weight):	ug/L			**Sample Size:**	10 mL

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
Chloroform	0.0290	0.500	0.0290	1		U
cis-1,2-Dichloroethene	0.0320	1.00	9.53	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	0.390	1		F
Vinyl chloride	0.0380	1.00	0.0380	1		U

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	97	72 - 119	
4-Bromofluorobenzene	107	76 - 119	
Dibromofluoromethane	96	85 - 115	
Toluene-d8	100	81 - 120	

ERK 4/24/07

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	388858	213391 - 853564	
Chlorobenzene-d5	529218	262028 - 1048114	
Fluorobenzene	1199473	541449 - 2165796	

Comments:

GRIFFISS ENVIRONMENTAL SAMPLES - PETROLEUM SITES
CHEMICAL DATA QUALITY CONTROL SUMMARY MEMORANDUM: RESULTS FOR ORGANICS

Laboratory:	LSL, Inc.	FPM Contract#: 40-05-27		Method:	8260
Job Number:	0704056	LSL Project: FPTA		Reviewer:	Connie van Hoesel
Sample Date:	4/10/07			Review Date:	6/1/07

Review Questions	Yes	No	N/A	Compounds/Samples Affected and/or Comments	Flag
1a. Were sample preservation requirements met?	X				
1b. Were sample storage requirements met?	X				
2. Were QAPP-specified RLs achieved?	X			As per approved variance.	None
3. Were measurement results for all QAPP-specified target analytes reported?	X				
4. Were all results reported between the MDL and the RL flagged F?	X				
5a. Were surrogate spikes added to every sample, control, standard, and method blank?	X				
5b. Was the %R for each surrogate spike within QAPP specifications?	X				
6. If dilutions were performed, which results should be reported?			X		
7. Were target analytes in the field blank analyses (trip, field or equipment) reported below the RL?			X	The blank samples were collected in association with another analytical batch.	
8a. Was a method blank analyzed with each batch?	X				
8b. Were target analytes in the method blank reported below the RL?	X				
9a. Were the mass spectral ion intensities using BFB checked? (I-tune)	X				

Signed: Concordia van Hoesel Dated: 5/31/07

GRIFFISS ENVIRONMENTAL SAMPLES - PETROLEUM SITES
CHEMICAL DATA QUALITY CONTROL SUMMARY MEMORANDUM: RESULTS FOR ORGANICS

Laboratory:	LSL, Inc.	FPM Contract#: 40-05-27		Method:	8260
Job Number:	0704056	LSL Project: FPTA		Reviewer:	Connie van Hoesel
Sample Date:	4/10/07			Review Date:	6/1/07

Review Questions	Yes	No	N/A	Compounds/Samples Affected and/or Comments	Flag
9b. Did the mass spectral ion intensities meet QAPP specifications?	X				
10a. Was at least a five-point initial calibration for all analytes performed?	X				
10b. Did the initial calibration meet QAPP specifications?	X				
11a. Was continuing calibration verification performed?	X				
11b. Were continuing calibration verifications within QAPP specifications?	X				
12a. Were internal standards (Iss) run?	X				
12b. Were the QAPP-specified criteria met?	X				
13a. Were retention time windows calculated for each analyte?	X				
13b. Were the QAPP-specified criteria met?	X				
14a. Was an LCS analyzed with each batch?	X				
14b. Were LCS recoveries within QAPP specifications?	X				
15a. Was a second source calibration verification performed?	X				
15b. Did the second source calibration verification meet QAPP specifications?	X				
16a. Was an MS/MSD pair analyzed every 20 AFCEE	X			The MS/MSD samples were collected in association with	

Signed: Concordia van Hoesel Dated: 5/31/07

GRIFFISS ENVIRONMENTAL SAMPLES - PETROLEUM SITES
CHEMICAL DATA QUALITY CONTROL SUMMARY MEMORANDUM: RESULTS FOR ORGANICS

Laboratory:	LSL, Inc.	FPM Contract#: 40-05-27		Method:	8260
Job Number:	0704056	LSL Project: FPTA		Reviewer:	Connie van Hoesel
Sample Date:	4/10/07			Review Date:	6/1/07

Review Questions	Yes	No	N/A	Compounds/Samples Affected and/or Comments	Flag
samples?				another analytical batch.	
16b. Is the MS/MSD sample a parent sample?			X		
16c. Were RPDs for MS/MSD samples within QAPP specifications?			X		
17. Were holding times met?	X				
18a. Was a field duplicate sample analyzed every 10 AFCEE samples?	X			The field duplicate sample was collected in association with another analytical batch.	
18. Were RPDs for field duplicate samples within QAPP specifications?			X		
Comments: 1 normal sample, 0 duplicates, 0 blanks, 0 MS/MSD					

Table A, Surrogate Exceedances
None.

Table B, Blank Exceedances
None.

Table C, Calibration Exceedances
None.

Table D, LCS Exceedances
None.

Signed: Concordia van Hoesel Dated: 5/31/07

GRIFFISS ENVIRONMENTAL SAMPLES - PETROLEUM SITES
CHEMICAL DATA QUALITY CONTROL SUMMARY MEMORANDUM: RESULTS FOR ORGANICS

Laboratory:	LSL, Inc.	FPM Contract#: 40-05-27	Method:	8260
Job Number:	0704056	LSL Project: FPTA	Reviewer:	Connie van Hoesel
Sample Date:	4/10/07		Review Date:	6/1/07

Table E, MS/MSD Exceedances
None.

Table F, Field Duplicate Exceedances
None.

Signed: Concordia van Hoesel Dated: 5/31/07

Analytical Results

AFCEE
ORGANIC ANALYSES DATA PACKAGE

Analytical Method:	SW8260B	**AAB #:**	R9225
Lab Name:	Life Science Laboratories, Inc.	**Contract Number:**	
Base/Command:		**Prime Contractor:**	FPM Group

Field Sample ID	Lab Sample ID
ANGM0111GA	0704056-001A

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: 4/26/07 Title: Project Manager

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8260B
Preparatory Method:
AAB #: R9225

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

Field Sample ID: ANGM0111GA
Lab Sample ID: 0704056-001A
Matrix: Groundwater

% Solids: 0
Initial Calibration ID: 901
File ID: T8107.D

Date Received: 11-Apr-07
Date Extracted:
Date Analyzed: 13-Apr-07

Concentration Units (ug/L or mg/Kg dry weight): ug/L
Sample Size: 10 mL

Analyte	MDL	RL	Concentration	Dilution	Q	Qualifier
(m+p)-Xylene	0.0280	2.00	0.0280	1		U
1,2,4-Trimethylbenzene	0.0120	1.00	0.0120	1		U
1,3,5-Trimethylbenzene	0.0130	1.00	0.0130	1		U
Benzene	0.0100	0.500	0.0100	1		U
Ethylbenzene	0.0240	1.00	0.430	1		F
Isopropylbenzene	0.0210	1.00	0.320	1		F
Methyl tert-butyl ether	0.0250	5.00	0.0250	1		U
n-Butylbenzene	0.0130	1.00	0.0130	1		U
n-Propylbenzene	0.00900	1.00	0.410	1		F
Naphthalene	0.0240	1.00	3.13	1		
o-Xylene	0.0140	1.00	0.0140	1		U
p-Isopropyltoluene	0.0140	1.00	1.96	1		
sec-Butylbenzene	0.0170	1.00	0.610	1		F
tert-Butylbenzene	0.0160	1.00	0.360	1		F
Toluene	0.0180	1.00	0.0180	1		U
Xylenes (total)	0.0420	2.00	0.0420	1		U

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	95	72 - 119	
4-Bromofluorobenzene	103	76 - 119	
Dibromofluoromethane	97	85 - 115	
Toluene-d8	103	81 - 120	

cwk 5/3/07

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	501984	213391 - 853564	
Chlorobenzene-d5	622950	262028 - 1048114	
Fluorobenzene	1358614	541449 - 2165796	

Comments:

FPM-GROUP
Data Verification and Usability Report
GRIFFISS AIR FORCE BASE
Site Griffiss AFB Building 35
Water Sampling
Contract No. F41624-03-D-8601

FPM Project No. 40-05-27

LSL Job # 0704120

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 18, 2007

LIST OF DATA VERIFICATION SAMPLES

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

Sample ID	*Date*	*QC Samples*	*Date*
B035M0416FA	4/18/07		

Notes:

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

FA – Primary environmental samples

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 methods employed included SW-846: Volatile Organic Compounds (VOC) 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 # 0704120 are valid and usable with qualifications as noted in the data review.

Signed: Concordia van Hoesel Date: 5/31/07

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 PACKAGE

Analytical Method:	SW8260B	**AAB #:**	R9334
Lab Name:	Life Science Laboratories, Inc.	**Contract Number:**	
Base/Command:		**Prime Contractor:**	FPM Group

Field Sample ID	Lab Sample ID
B035M0416FA	0704120-001A

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: 5/9/07 Title: Project Manager

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method:	SW8260B	Preparatory Method:		AAB #:	R9334
Lab Name:	Life Science Laboratories, Inc.	Contract #:			
Field Sample ID:	B035M0416FA	Lab Sample ID:	0704120-001A	Matrix:	Groundwater
% Solids:	0	Initial Calibration ID:	901	File ID:	T8309.D
Date Received:	19-Apr-07	Date Extracted:		Date Analyzed:	23-Apr-07
Concentration Units (ug/L or mg/Kg dry weight):	ug/L			Sample Size:	10 mL

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
cis-1,2-Dichloroethene	0.0320	1.00	13.9	1		
Tetrachloroethene	0.0300	1.00	0.420	1		F
trans-1,2-Dichloroethene	0.0270	1.00	0.390	1		F
Trichloroethene	0.0270	1.00	0.350	1		F
Vinyl chloride	0.0380	1.00	0.880	1		F

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	117	72 - 119	
4-Bromofluorobenzene	92	76 - 119	
Dibromofluoromethane	106	85 - 115	
Toluene-d8	102	81 - 120	

cwt 5/31/07

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	309274	213391 - 853564	
Chlorobenzene-d5	523662	262028 - 1048114	
Fluorobenzene	1153248	541449 - 2165796	

Comments:

Appendix C
Raw Laboratory Data

Life Science Laboratories, Inc.
5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

Monday, April 16, 2007

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

TEL: 315-336-7721

Project: GRIFFISS AFB - BUILDING 101
RE: Analytical Results Order No.: 0703161

Dear Niels van Hoesel:

Life Science Laboratories, Inc. received 1 sample(s) on 3/28/2007 for the analyses presented in the following report.

Very truly yours,
Life Science Laboratories, Inc.

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 -1°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 #:	0703161
Methodology:	8260B

Analyzed/Reviewed by (Initials/Date): Angela Z 4/12/07

Supervisor/Reviewed by (Initials/Date): [illegible] 4-13-07

QA/QC Review (Initials/Date): [illegible] 4/13/07

File Name: G:\Narratives\MSVoa\0103161msvnar.doc

GC/MS Volatile Organics
The GC/MS Volatile instruments used a Restek Rtx-VMS, 40 m x 0.18 mm ID capillary column and a Vocarb 3000 trap.

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

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

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

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

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

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

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

Life Science Laboratories, Inc.

Date: *16-Apr-07*

CLIENT: FPM Group
Project: Griffiss AFB - Building 101
Lab Order: 0703161

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0703161-001A	101M0216TA	101MW-2	3/27/2007 11:51:00 AM	3/28/2007

Life Science Laboratories, Inc.

Lab Order: 0703161
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
0703161-001A	101M0216TA	3/27/2007 11:51:00 AM	Groundwater	Volatile Organic Compounds by GC/MS			4/6/2007

Chain of Custody

External Chain of Custody

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _4_ SDG#: _152_ 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: Justin Damann	Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441
Carrier: LSL courier.	Sampler Signature:	Phone: (315) 336-7721 Ext 205

Analyses Requested

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)		Comments
101M0216TA	101MW-2	3/27	1151	WG	B	0/0	N	HCl	Unf.	3	3		

Sample Condition Upon Receipt at Laboratory:	Cooler Temperature: -1°C
Special Instructions/Comments: Analyses to be conducted in compliance with AFCEE QAPP 4.0	Custody Seal Intact
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: 3/28/07	#3 Released by: (Sig)	Date: 3/28/07
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 0900	Company Name:	Time:
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig)	Date: 3-28-07	#3 Received by: (Sig)	Date: 3/28/07
Company Name: FPM Group Ltd	Time: 10200	Company Name: LSL	Time: 1220	Company Name: LSL	Time: 1415

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

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

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

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: **FPM** Date and Time Received: **3/28/2007 2:15:00 PM**

Work Order Number **0703161** Received by: ads

Checklist completed by: _____ Initials 3/28/07 Date Reviewed by: MS Initials 3/28/07 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 ☑

Comments:

Corrective Action::

Client/Project FPM . 0703161

Sample Control Record

Sample ID	Frac	Client Sample ID	Removed By	Date and Time Removed	Analysis	Date and Time Returned
0703161-001	A		JK	4/6/07 13:00	8260	NL

Analytical Results

AFCEE
ORGANIC ANALYSES DATA PACKAGE

Analytical Method:	SW8260B	**AAB #:**	R9124
Lab Name:	Life Science Laboratories, Inc.	**Contract Number:**	
Base/Command:		**Prime Contractor:**	FPM Group

Field Sample ID	Lab Sample ID
101M0216TA	0703161-001A

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: 4/16/07 Title: Project Manager

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method:	SW8260B	**Preparatory Method:**		**AAB #:**	R9124
Lab Name:	Life Science Laboratories, Inc.	**Contract #:**			
Field Sample ID:	101M0216TA	**Lab Sample ID:**	0703161-001A	**Matrix:**	Groundwater
% Solids:	0	**Initial Calibration ID:**	901	**File ID:**	T7985.D
Date Received:	28-Mar-07	**Date Extracted:**		**Date Analyzed:**	06-Apr-07
Concentration Units (ug/L or mg/Kg dry weight):	ug/L			**Sample Size:**	10 mL

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
Chloroform	0.0290	0.500	0.0290	1		U
cis-1,2-Dichloroethene	0.0320	1.00	9.53	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	0.390	1		F
Vinyl chloride	0.0380	1.00	0.0380	1		U

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	97	72 - 119	
4-Bromofluorobenzene	107	76 - 119	
Dibromofluoromethane	96	85 - 115	
Toluene-d8	100	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	388858	213391 - 853564	
Chlorobenzene-d5	529218	262028 - 1048114	
Fluorobenzene	1199473	541449 - 2165796	

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#1

Date of Initial Calibration: 06APR07

Initial Calibration ID: 901

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

SEE ATTACHED

Comments:

AFCEE FORM O-3

Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 13:59:15 2007
Response via : Continuing Calibration

ICAL #901

Calibration Files
0.3 =T7968.D 0.5 =T7969.D 2.0 =T7970.D
10 =T7971.D 20 =T7972.D 30 =T7973.D

		Compound	0.3	0.5	2.0	10	20	30	Avg	%RSD
1)	I	Fluorobenzene	ISTD							
2)		Dichlorodifluoromet	0.263	0.308	0.300	0.335	0.322	0.318	0.309	7.54
3)	P	Chloromethane	0.475	0.463	0.439	0.456	0.443	0.436	0.450	3.36
4)	CP	Vinyl chloride	0.293	0.340	0.338	0.377	0.370	0.372	0.352	8.71
5)		Bromomethane	0.091	0.112	0.110	0.123	0.135	0.154	0.126	18.97
6)		Chloroethane	0.236	0.279	0.249	0.251	0.242	0.242	0.249	5.62
7)		Trichlorofluorometh	0.462	0.434	0.431	0.503	0.479	0.474	0.466	5.56
8)		Acetone			0.051	0.048	0.046	0.046	0.048	4.08
9)		Acrolein 4pts for curve DMS 4/6/07				0.002	0.002	0.002	0.002	7.00
10)	CPM	1,1-Dichloroethene	0.173	0.157	0.197	0.210	0.215	0.220	0.200	12.76
11)		Methyl iodide	0.093	0.128	0.166	0.225	0.258	0.288	0.209	39.19
12)		1,1,2-Trichloro-1,2	0.242	0.222	0.236	0.270	0.265	0.265	0.253	7.69
13)		Methyl acetate	0.189	0.187	0.178	0.156	0.171	0.173	0.177	6.46
14)		Acrylonitrile	0.057	0.055	0.059	0.063	0.063	0.063	0.061	6.83
15)		Methylene chloride		0.369	0.371	0.298	0.292	0.285	0.318	12.70
16)		Carbon disulfide	0.838	0.850	0.818	0.950	0.906	0.897	0.881	5.32
17)		trans-1,2-Dichloroe	0.269	0.222	0.248	0.255	0.263	0.269	0.257	7.05
18)		Methyl tert-Butyl e	0.530	0.532	0.584	0.663	0.641	0.662	0.614	10.60
19)	P	1,1-Dichloroethane	0.486	0.496	0.505	0.522	0.516	0.519	0.510	2.92
20)		Vinyl acetate	0.238	0.231	0.269	0.320	0.337	0.353	0.302	18.60
21)		2-Butanone	0.062	0.062	0.065	0.084	0.075	0.077	0.073	13.93
22)		cis-1,2-Dichloroeth	0.275	0.246	0.265	0.287	0.291	0.297	0.281	7.15
23)		Bromochloromethane	0.121	0.123	0.127	0.129	0.133	0.136	0.130	5.10
24)	CP	Chloroform	0.551	0.521	1.022	0.530	0.526	0.532	0.603	30.63#
25)		2,2-Dichloropropane	0.350	0.361	0.374	0.448	0.450	0.463	0.417	12.62
26)		Cyclohexane	0.353	0.373	0.400	0.532	0.549	0.566	0.478	20.32
27)	S	Dibromofluoromethan	0.232	0.226	0.222	0.237	0.243	0.246	0.237	4.70
28)	S	1,2-Dichloroethane-	0.319	0.297	0.302	0.305	0.306	0.307	0.307	2.16
29)		1,2-Dichloroethane	0.367	0.359	0.369	0.361	0.362	0.364	0.365	1.28
30)		1,1,1-Trichloroetha	0.386	0.364	0.416	0.462	0.463	0.473	0.435	10.70
31)		1,1-Dichloropropene		0.288	0.320	0.369	0.391	0.408	0.365	14.00
32)		Carbon tetrachlorid	0.293	0.297	0.327	0.372	0.377	0.392	0.352	13.02
33)	M	Benzene	1.085	1.046	1.154	1.214	1.229	1.257	1.175	6.99
34)	M	Trichloroethene	0.275	0.267	0.267	0.297	0.303	0.311	0.290	6.91
35)		Dibromomethane	0.148	0.127	0.144	0.149	0.146	0.148	0.145	5.87
36)		Methylcyclohexane	0.373	0.358	0.400	0.498	0.519	0.530	0.461	17.44
37)	CP	1,2-Dichloropropane	0.279	0.256	0.275	0.289	0.295	0.305	0.288	6.71
38)		Bromodichloromethan	0.305	0.292	0.378	0.351	0.359	0.367	0.347	10.08
39)		2-Chloroethylvinyl		0.004	0.010	0.015	0.016	0.018	0.014	42.49
40)		4-Methyl-2-pentanon	0.123	0.126	0.147	0.178	0.188	0.194	0.167	21.24
41)		cis-1,3-Dichloropro	0.280	0.328	0.351	0.419	0.436	0.459	0.392	18.52
42)	S	Toluene-d8	0.779	0.803	0.898	1.066	1.074	1.102	0.976	14.88
43)	CPM	Toluene		0.634	0.743	0.845	0.846	0.868	0.802	11.93

(#) = Out of Range ### Number of calibration levels exceeded format ###

ok DS 4-11-07

DMS 4/9/07

Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 13:59:15 2007
Response via : Continuing Calibration

Calibration Files
0.3 =T7968.D 0.5 =T7969.D 2.0 =T7970.D
10 =T7971.D 20 =T7972.D 30 =T7973.D

		Compound	0.3	0.5	2.0	10	20	30	Avg	%RSD
44)		trans-1,3-Dichlorop	0.236	0.240	0.293	0.386	0.381	0.405	0.337	23.26
45)		1,1,2-Trichloroetha	0.171	0.153	0.178	0.188	0.180	0.186	0.178	7.13
46)		2-Hexanone	0.067	0.066	0.093	0.117	0.136	0.135	0.110	31.81
47)		1,2-Dibromoethane	0.164	0.157	0.178	0.202	0.195	0.205	0.188	11.65
48)	I	Chlorobenzene-d5	----------	----------	ISTD	----------	----------	----------		
49)		1,3-Dichloropropane	0.766	0.752	0.771	0.855	0.810	0.862	0.814	6.54
50)		Dibromochloromethan	0.384	0.377	0.424	0.484	0.489	0.538	0.465	15.57
51)		Tetrachloroethene	0.577	0.622	0.649	0.702	0.697	0.730	0.676	9.35
52)		1-Chlorohexane	0.635	0.625	0.671	0.890	0.930	0.962	0.817	20.34
53)		1,1,1,2-Tetrachloro	0.453	0.490	0.497	0.578	0.575	0.591	0.543	11.49
54)	PM	Chlorobenzene	1.877	1.789	1.827	1.881	1.868	1.901	1.867	2.47
55)	CP	Ethylbenzene	2.838	2.817	3.119	3.505	3.464	3.480	3.239	9.59
56)		(m+p)-Xylene	0.975	0.982	1.104	1.286	1.297	1.310	1.184	13.52
57)		o-Xylene	0.809	0.849	0.971	1.219	1.253	1.287	1.104	20.06
58)		Styrene	0.994	1.071	1.389	1.904	2.043	2.073	1.661	29.94
59)	P	Bromoform	0.204	0.201	0.231	0.290	0.298	0.326	0.272	22.45
60)	S	Bromofluorobenzene	0.719	0.646	0.717	0.833	0.862	0.900	0.801	13.40
61)	I	1,4-Dichlorobenzene-d	----------	----------	ISTD	----------	----------	----------		
62)		trans-1,4-Dichloro-	0.037	0.070	0.074	0.093	0.096	0.111	0.086	32.71
63)	P	1,1,2,2-Tetrachloro	0.648	0.722	0.687	0.693	0.634	0.667	0.677	4.38
64)		Isopropylbenzene	2.738	2.872	3.410	4.019	3.850	3.934	3.515	14.88
65)		1,2,3-Trichloroprop	0.606	0.623	0.606	0.606	0.567	0.604	0.606	3.26
66)		Bromobenzene	0.943	0.884	0.976	1.005	0.954	1.001	0.965	4.45
67)		n-Propylbenzene		3.163	3.890	4.612	4.441	4.460	4.137	13.00
68)		2-Chlorotoluene	2.316	2.367	2.814	3.130	3.034	3.144	2.843	12.67
69)		4-Chlorotoluene	1.860	1.951	2.408	2.661	2.599	2.710	2.410	14.92
70)		1,3,5-Trimethylbenz	1.628	1.772	2.307	2.789	2.805	2.886	2.437	22.24
71)		tert-Butylbenzene		1.857	2.264	2.674	2.650	2.739	2.480	14.13
72)		1,2,4-Trimethylbenz	1.382	1.398	1.928	2.393	2.448	2.532	2.091	24.99
73)		sec-Butylbenzene		2.619	3.383	3.920	3.862	3.888	3.565	14.14
74)		1,3-Dichlorobenzene	1.537	1.509	1.690	1.789	1.727	1.811	1.693	7.31
75)		p-Isopropyltoluene	1.457	1.609	2.236	2.882	2.915	3.005	2.440	27.62
76)		1,4-Dichlorobenzene	1.593	1.575	1.648	1.707	1.665	1.723	1.663	3.74
77)		n-Butylbenzene	1.156	1.136	1.572	2.204	2.307	2.397	1.882	30.69
78)		1,2-Dichlorobenzene	1.384	1.434	1.552	1.644	1.604	1.680	1.564	7.33
79)		1,2-Dibromo-3-chlor		0.082	0.082	0.086	0.091	0.101	0.091	11.42
80)		1,2,4-Trichlorobenz	0.222	0.241	0.395	0.625	0.692	0.755	0.533	45.64
81)		Hexachlorobutadiene		0.477	0.500	0.606	0.588	0.622	0.569	11.25
82)		Naphthalene	0.123	0.154	0.420	0.775	0.944	1.020	0.653	64.13
83)		1,2,3-Trichlorobenz	0.146	0.199	0.393	0.603	0.662	0.688	0.491	49.85

(#) = Out of Range ### Number of calibration levels exceeded format ##

Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 14:48:17 2007
Response via : Initial Calibration

Calibration Files
40 =T7974.D = =
= = =

		Compound	40	Avg	%RSD
1)	I	Fluorobenzene	ISTD		
2)		Dichlorodifluoromet	0.320		
3)	P	Chloromethane	0.437		
4)	CP	Vinyl chloride	0.373		
5)		Bromomethane	0.155		
6)		Chloroethane	0.244		
7)		Trichlorofluorometh	0.481		
8)		Acetone	0.049		
9)		Acrolein	0.002		
10)	CPM	1,1-Dichloroethene	0.225		
11)		Methyl iodide	0.308		
12)		1,1,2-Trichloro-1,2	0.271		
13)		Methyl acetate	0.182		
14)		Acrylonitrile	0.067		
15)		Methylene chloride	0.293		
16)		Carbon disulfide	0.909		
17)		trans-1,2-Dichloroe	0.274		
18)		Methyl tert-Butyl e	0.687		
19)	P	1,1-Dichloroethane	0.527		
20)		Vinyl acetate	0.369		
21)		2-Butanone	0.086		
22)		cis-1,2-Dichloroeth	0.304		
23)		Bromochloromethane	0.139		
24)	CP	Chloroform	0.541		
25)		2,2-Dichloropropane	0.471		
26)		Cyclohexane	0.569		
27)	S	Dibromofluoromethan	0.253		
28)	S	1,2-Dichloroethane-	0.309		
29)		1,2-Dichloroethane	0.372		
30)		1,1,1-Trichloroetha	0.482		
31)		1,1-Dichloropropene	0.416		
32)		Carbon tetrachlorid	0.405		
33)	M	Benzene	1.239		
34)	M	Trichloroethene	0.312		
35)		Dibromomethane	0.153		
36)		Methylcyclohexane	0.546		
37)	CP	1,2-Dichloropropane	0.313		
38)		Bromodichloromethan	0.379		
39)		2-Chloroethylvinyl	0.020		
40)		4-Methyl-2-pentanon	0.214		
41)		cis-1,3-Dichloropro	0.470		
42)	S	Toluene-d8	1.109		
43)	CPM	Toluene	0.879		

(#) = Out of Range ### Number of calibration levels exceeded format ##"

4/9/07

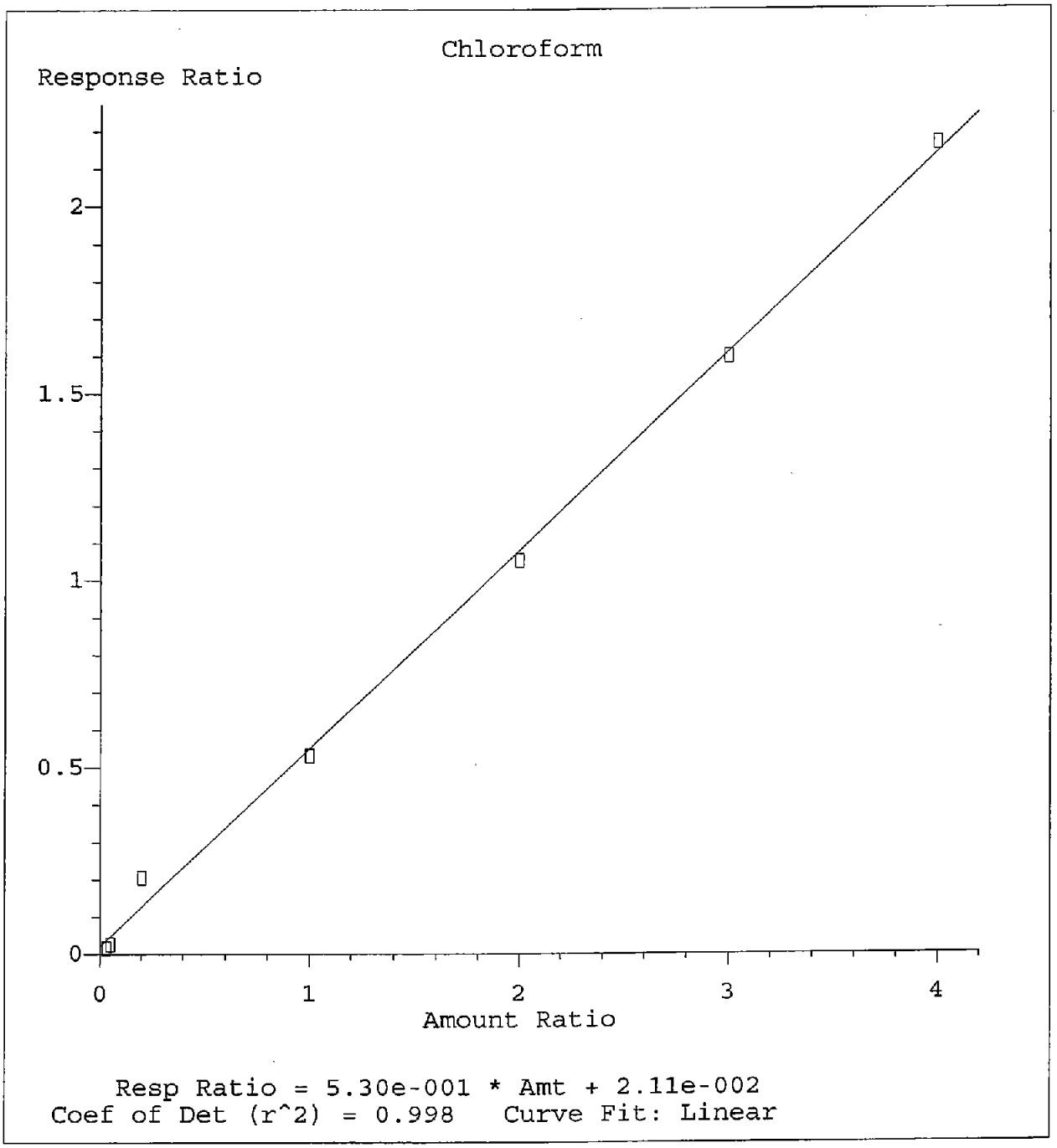
Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 14:48:17 2007
Response via : Initial Calibration

Calibration Files
40 =T7974.D = =
= = =

		Compound	40	Avg	%RSD
44)		trans-1,3-Dichlorop	0.417		
45)		1,1,2-Trichloroetha	0.190		
46)		2-Hexanone	0.153		
47)		1,2-Dibromoethane	0.214		
48)	I	Chlorobenzene-d5	----------ISTD----------		
49)		1,3-Dichloropropane	0.885		
50)		Dibromochloromethan	0.561		
51)		Tetrachloroethene	0.757		
52)		1-Chlorohexane	1.005		
53)		1,1,1,2-Tetrachloro	0.619		
54)	PM	Chlorobenzene	1.926		
55)	CP	Ethylbenzene	3.453		
56)		(m+p)-Xylene	1.337		
57)		o-Xylene	1.341		
58)		Styrene	2.153		
59)	P	Bromoform	0.356		
60)	S	Bromofluorobenzene	0.930		
61)	I	1,4-Dichlorobenzene-d	----------ISTD----------		
62)		trans-1,4-Dichloro-	0.120		
63)	P	1,1,2,2-Tetrachloro	0.686		
64)		Isopropylbenzene	3.784		
65)		1,2,3-Trichloroprop	0.629		
66)		Bromobenzene	0.993		
67)		n-Propylbenzene	4.259		
68)		2-Chlorotoluene	3.097		
69)		4-Chlorotoluene	2.682		
70)		1,3,5-Trimethylbenz	2.871		
71)		tert-Butylbenzene	2.694		
72)		1,2,4-Trimethylbenz	2.556		
73)		sec-Butylbenzene	3.721		
74)		1,3-Dichlorobenzene	1.789		
75)		p-Isopropyltoluene	2.977		
76)		1,4-Dichlorobenzene	1.731		
77)		n-Butylbenzene	2.404		
78)		1,2-Dichlorobenzene	1.651		
79)		1,2-Dibromo-3-chlor	0.107		
80)		1,2,4-Trichlorobenz	0.799		
81)		Hexachlorobutadiene	0.622		
82)		Naphthalene	1.136		
83)		1,2,3-Trichlorobenz	0.747		

(#) = Out of Range ### Number of calibration levels exceeded format ###



Method Name: C:\HPCHEM\1\METHODS\T406VOCW.M
Calibration Table Last Updated: Fri Apr 06 13:22:47 2007

AFCEE
ORGANIC ANALYSES DATA SHEET 4
SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	SW8260B	**AAB #:**	R9117
Lab Name:	Life Science Laboratories, In	**Contract Number:**	
Instrument ID:	MS01_11	**Initial Calibration ID:**	901
Second Source ID:	ICV-9117	**Concentration Units (mg/L or mg/kg):**	µg/L

Analyte	Expected	Found	%D	Q
(m+p)-Xylene	20	20.8	4.1	
1,1,1,2-Tetrachloroethane	10	9.64	-3.6	
1,1,1-Trichloroethane	10	9.71	-2.9	
1,1,2,2-Tetrachloroethane	10	9.5	-5.0	
1,1,2-Trichloro-1,2,2-trifluoroethane	10	9.79	-2.1	
1,1,2-Trichloroethane	10	9.3	-7.0	
1,1-Dichloroethane	10	9.41	-5.9	
1,1-Dichloroethene	10	9.73	-2.7	
1,1-Dichloropropene	10	9.92	-0.8	
1,2,3-Trichlorobenzene	10	9.37	-6.3	
1,2,3-Trichloropropane	10	9.3	-7.0	
1,2,4-Trichlorobenzene	10	9.27	-7.3	
1,2,4-Trimethylbenzene	10	9.55	-4.5	
1,2-Dibromoethane	10	9.54	-4.6	
1,2-Dichlorobenzene	10	10.3	2.8	
1,2-Dichloroethane	10	9.12	-8.8	
1,2-Dichloroethane-d4	10	9.07	-9.3	
1,2-Dichloropropane	10	9.41	-5.9	
1,3,5-Trimethylbenzene	10	9.67	-3.3	
1,3-Dichlorobenzene	10	10.2	2.1	
1,3-Dichloropropane	10	9.74	-2.6	
1,4-Dichlorobenzene	10	9.87	-1.3	
1-Chlorohexane	10	9.43	-5.7	
2,2-Dichloropropane	10	9.89	-1.1	
2-Butanone	20	21.1	5.6	
2-Chloroethylvinyl ether	10	57.4	474	*
2-Chlorotoluene	10	10.7	7.2	
2-Hexanone	20	17.6	-11.8	
4-Bromofluorobenzene	10	10.2	2.0	
4-Chlorotoluene	10	10.6	6.2	
4-Methyl-2-pentanone	20	17.4	-13.3	
Acetone	20	22.6	12.9	
Acrolein	50	43.4	-13.1	
Acrylonitrile	50	49.2	-1.5	
Benzene	10	9.6	-4.0	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 4
SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	SW8260B	**AAB #:**	R9117
Lab Name:	Life Science Laboratories, In	**Contract Number:**	
Instrument ID:	MS01_11	**Initial Calibration ID:**	901
Second Source ID:	ICV-9117	**Concentration Units (mg/L or mg/kg):**	µg/L

Analyte	Expected	Found	%D	Q
Bromobenzene	10	10	0.2	
Bromochloromethane	10	9.45	-5.5	
Bromodichloromethane	10	9.3	-7.0	
Bromoform	10	8.7	-13.0	
Bromomethane	10	9.53	-4.7	
Carbon disulfide	10	9.24	-7.6	
Carbon tetrachloride	10	9.85	-1.5	
Chlorobenzene	10	9.58	-4.2	
Chloroethane	10	9.3	-7.0	
Chloroform	10	8.76	-12.4	
Chloromethane	10	9.71	-2.9	
cis-1,2-Dichloroethene	10	9.59	-4.1	
cis-1,3-Dichloropropene	10	9.12	-8.8	
Cyclohexane	10	9.57	-4.3	
Dibromochloromethane	10	8.99	-10.1	
Dibromofluoromethane	10	9.29	-7.1	
Dibromomethane	10	9.25	-7.5	
Dichlorodifluoromethane	10	10.8	8.3	
Ethylbenzene	10	10.3	3.2	
Hexachlorobutadiene	10	10.5	5.2	
Isopropylbenzene	10	11.2	12.5	
Methyl acetate	10	9.17	-8.3	
Methyl iodide	10	10.2	2.0	
Methyl tert-butyl ether	10	9.69	-3.1	
Methylcyclohexane	10	9.26	-7.4	
Methylene chloride	10	8.48	-15.2	
n-Butylbenzene	10	9.52	-4.8	
n-Propylbenzene	10	10.8	8.1	
Naphthalene	10	9.03	-9.7	
o-Xylene	10	9.46	-5.4	
p-Isopropyltoluene	10	9.83	-1.7	
sec-Butylbenzene	10	10.7	7.4	
Styrene	10	9.01	-9.9	
tert-Butylbenzene	10	10.7	6.7	
Tetrachloroethene	10	10.1	0.8	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 4
SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	SW8260B	**AAB #:**	R9117
Lab Name:	Life Science Laboratories, In	**Contract Number:**	
Instrument ID:	MS01_11	**Initial Calibration ID:**	901
Second Source ID:	ICV-9117	**Concentration Units (mg/L or mg/kg):**	µg/L

Analyte	Expected	Found	%D	Q
Toluene	10	9.72	-2.8	
Toluene-d8	10	10.2	2.1	
trans-1,2-Dichloroethene	10	9.68	-3.2	
trans-1,3-Dichloropropene	10	8.84	-11.6	
trans-1,4-Dichloro-2-butene	10	8.7	-13.0	
Trichloroethene	10	9.62	-3.8	
Trichlorofluoromethane	10	9.8	-2.0	
Vinyl acetate	10	8.99	-10.1	
Vinyl chloride	10	10.2	2.4	
Xylenes (total)	30	30.3	0.9	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 5
CALIBRATION VERIFICATION

Analytical Method: 8260 AAB #:

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

Instrument ID: HP5973 GCMS#1 Initial Calibration -ID: 901

ICV ID: ICV-9117 CCV #1 ID: CCV-9124 CCV #2 ID:

SEE ATTACHED

Comments:

AFCEE FORM O-5

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\T7977.D
Acq On : 6 Apr 2007 15:51
Sample : CCV-9124
Misc : CCV ,8260WAF_40CAL,
MS Integration Params: RTEINT.P

Vial: 16
Operator: DMB
Inst : #1MS11
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\T406SHOR.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Mon Apr 09 12:42:03 2007
Response via : Multiple Level Calibration

Min. RRF : 0.000 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	124	0.00
2	CP	Vinyl chloride	0.352	0.379	-7.7	124	0.00
3		trans-1,2-Dichloroethene	0.257	0.254	1.2	123	0.00
4		cis-1,2-Dichloroethene	0.281	0.285	-1.4	122	0.00
5	CP	Chloroform	0.603	0.503	16.6	117	0.00
6	S	Dibromofluoromethane	0.237	0.229	3.4	119	0.00
7	S	1,2-Dichloroethane-d4	0.307	0.287	6.5	116	0.00
8	M	Trichloroethene	0.290	0.282	2.8	117	0.00
9	S	Toluene-d8	0.976	1.007	-3.2	117	0.00
10	I	Chlorobenzene-d5	1.000	1.000	0.0	117	0.00
11		Tetrachloroethene	0.676	0.684	-1.2	114	0.00
12	S	Bromofluorobenzene	0.801	0.834	-4.1	117	0.00
	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

4/11/07

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\T7977.D
Acq On : 6 Apr 2007 15:51
Sample : CCV-9124
Misc : CCV ,8260WAF_40CAL,
MS Integration Params: RTEINT.P

Vial: 16
Operator: DMB
Inst : #1MS11
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\T406SHOR.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Mon Apr 09 12:42:03 2007
Response via : Multiple Level Calibration

Min. RRF : 0.000 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	124	0.00
2	CP	Vinyl chloride	10.000	10.763	-7.6	124	0.00
3		trans-1,2-Dichloroethene	10.000	9.877	1.2	123	0.00
4		cis-1,2-Dichloroethene	10.000	10.131	-1.3	122	0.00
5	CP	Chloroform	10.000	9.097	9.0	117	0.00
6	S	Dibromofluoromethane	10.000	9.642	3.6	119	0.00
7	S	1,2-Dichloroethane-d4	10.000	9.357	6.4	116	0.00
8	M	Trichloroethene	10.000	9.731	2.7	117	0.00
9	S	Toluene-d8	10.000	10.321	-3.2	117	0.00
10	I	Chlorobenzene-d5	10.000	10.000	0.0	117	0.00
11		Tetrachloroethene	10.000	10.111	-1.1	114	0.00
12	S	Bromofluorobenzene	10.000	10.408	-4.1	117	0.00
	I	1,4-Dichlorobenzene-d4	10.000	10.000	0.0	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

4/11/07

AFCEE
ORGANIC ANALYSES DATA SHEET 7
BLANKS

Analytical Method:	SW8260B	**AAB #:**	R9124
Lab Name:	Life Science Laboratories, In	**Contract Number:**	
Units:	µg/L	**Method Blank ID:**	MB-9124
Initial Calibration ID:	901	**File ID:**	T7981.D

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

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	95	72 - 119	
4-Bromofluorobenzene	98	76 - 119	
Dibromofluoromethane	94	85 - 115	
Toluene-d8	97	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	404643	213391 - 853564	
Chlorobenzene-d5	585627	262028 - 1048114	
Fluorobenzene	1344753	541449 - 2165796	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 8
LABORATORY CONTROL SAMPLE

Analytical Method: SW8260B **AAB #:** R9124

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

LCS ID: LCS-9124 **Initial Calibration ID:** 901

Concentration Units (mg/L or mg/kg): µg/L **File ID:** T7978.D

Analyte	Expected	Found	%R	Control Limits	Q
Chloroform	10	8.23	82	69 - 128	
cis-1,2-Dichloroethene	10	9.12	91	72 - 126	
Tetrachloroethene	10	9.68	97	66 - 128	
trans-1,2-Dichloroethene	10	8.92	89	63 - 137	
Trichloroethene	10	9.00	90	70 - 127	
Vinyl chloride	10	9.86	99	50 - 134	

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	90	72 - 119	
4-Bromofluorobenzene	104	76 - 119	
Dibromofluoromethane	94	85 - 115	
Toluene-d8	102	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	529132	213391 - 853564	
Chlorobenzene-d5	660229	262028 - 1048114	
Fluorobenzene	1465140	541449 - 2165796	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 8
LABORATORY CONTROL SAMPLE

Analytical Method: SW8260B **AAB #:** R9124

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

LCS ID: LCSD-9124 **Initial Calibration ID:** 901

Concentration Units (mg/L or mg/kg): µg/L **File ID:** T7979.D

Analyte	Expected	Found	%R	Control Limits	Q
Chloroform	10	8.51	85	69 - 128	
cis-1,2-Dichloroethene	10	9.57	96	72 - 126	
Tetrachloroethene	10	9.97	100	66 - 128	
trans-1,2-Dichloroethene	10	9.35	94	63 - 137	
Trichloroethene	10	9.27	93	70 - 127	
Vinyl chloride	10	10.1	101	50 - 134	

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	92	72 - 119	
4-Bromofluorobenzene	102	76 - 119	
Dibromofluoromethane	95	85 - 115	
Toluene-d8	102	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	528890	213391 - 853564	
Chlorobenzene-d5	661216	262028 - 1048114	
Fluorobenzene	1458691	541449 - 2165796	

Comments:

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

Analytical Method: SW8260B **AAB #:** R9124

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

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

Parent Field Sample ID: LCSD-9124 **MS ID:** LCS-9124 **MSD ID:** LCSD-9124

Calibration ID: 901

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	8.23	82	8.51	85	3	69 - 128	20	
cis-1,2-Dichloroethene		10.0	9.12	91	9.57	96	5	72 - 126	20	
Tetrachloroethene		10.0	9.68	97	9.97	100	3	66 - 128	20	
trans-1,2-Dichloroethene		10.0	8.92	89	9.35	94	5	63 - 137	20	
Trichloroethene		10.0	9.00	90	9.27	93	3	70 - 127	20	
Vinyl chloride		10.0	9.86	99	10.1	101	2	50 - 134	20	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 10
HOLDING TIMES

Analytical Method: SW8260B **AAB #:** R9124

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
101M0216TA	0703161-001A	27-Mar-07	28-Mar-07	06-Apr-07			06-Apr-07	14	10.3	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 11
INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: SW8260B **AAB#:**

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

Instrument ID #: MS01_11

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
TB020907A1	TB020907A1	06-Apr-07	9:11	06-Apr-07	9:40
ICAL 0.3 PPB	ICAL 0.3 PPB	06-Apr-07	9:40	06-Apr-07	10:13
ICAL 0.5 PPB	ICAL 0.5 PPB	06-Apr-07	10:13	06-Apr-07	10:46
ICAL 2.0 PPB	ICAL 2.0 PPB	06-Apr-07	10:46	06-Apr-07	11:19
ICAL 10 PPB	ICAL 10 PPB	06-Apr-07	11:19	06-Apr-07	11:52
ICAL 20 PPB	ICAL 20 PPB	06-Apr-07	11:52	06-Apr-07	12:24
ICAL 30 PPB	ICAL 30 PPB	06-Apr-07	12:24	06-Apr-07	12:57
ICAL 40 PPB	ICAL 40 PPB	06-Apr-07	12:57	06-Apr-07	14:03
ICV-9117	ICV-9117	06-Apr-07	14:03	06-Apr-07	14:03
TB040607A1	TB040607A1	06-Apr-07	15:21	06-Apr-07	15:51
CCV-9124	CCV-9124	06-Apr-07	15:51	06-Apr-07	16:24
LCS-9124	LCS-9124	06-Apr-07	16:24	06-Apr-07	16:57
LCSD-9124	LCSD-9124	06-Apr-07	16:57	06-Apr-07	18:02
MB-9124	MB-9124	06-Apr-07	18:02	06-Apr-07	20:15
101M0216TA	0703161-001A	06-Apr-07	20:15	06-Apr-07	20:15

Comments:

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

Analytical Method:	SW8260B	**AAB #:**	MS01_11_070406A
Lab Name:	Life Science Laboratories, Inc.	**Contract #:**	
Instrument ID:	MS01_11	**Injection Date/Time:**	4/6/2007 9:11:00 AM
Initial Calibration ID:	901	**File ID:**	C:\HPCHEM\1\DATA\T7967.D
Compound:	SW8260B	**Sample ID:**	TB020907A1

Mass	Ion Abundance Criteria	% Relative Abundance	Q
50	15 - 40% of m/z 95	22.6	
75	30 - 60% of m/z 95	55.9	
95	Base peak, 100% relative abundance	100	
96	5 - 9% of m/z 95	6.6	
173	Less than 2% of m/z 174	0.6	
174	Greater than 50% of m/z 95	83.1	
175	5 - 9% of m/z 174	7.2	
176	Greater than 95% but less than 101% of m/z 174	99.4	
177	5 - 9% of m/z 176	6.4	

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

Analytical Method:	SW8260B	**AAB #:**	MS01_11_070406C
Lab Name:	Life Science Laboratories, Inc.	**Contract #:**	
Instrument ID:	MS01_11	**Injection Date/Time:**	4/6/2007 3:21:00 PM
Initial Calibration ID:	901	**File ID:**	C:\HPCHEM\1\DATA\T7976.D
Compound:	SW8260B	**Sample ID:**	TB040607A1

Mass	Ion Abundance Criteria	% Relative Abundance	Q
50	15 - 40% of m/z 95	22.3	
75	30 - 60% of m/z 95	53.5	
95	Base peak, 100% relative abundance	100	
96	5 - 9% of m/z 95	6.7	
173	Less than 2% of m/z 174	0	
174	Greater than 50% of m/z 95	76.8	
175	5 - 9% of m/z 174	7.1	
176	Greater than 95% but less than 101% of m/z 174	97.5	
177	5 - 9% of m/z 176	6.2	

Life Science Laboratories, Inc.
5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 **(315) 437-0200**

Thursday, April 26, 2007

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

TEL:

Project: GRIFFISS AFB - FPTA
RE: Analytical Result Order No.: 0704056

Dear Niels van Hoesel:

Life Science Laboratories, Inc. received 1 sample(s) on 4/11/2007 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- FPTA- 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.

No discrepancies were noted upon receipt. The temperature of the cooler was 3°C.

METHODOLOGY

The following methods were used to perform the analyses:

PARAMETER	METHOD	REFERENCE
Volatile Organics	8260B	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 - FPTA
Work Order #:	0704056
Methodology:	8260B

Analyzed/Reviewed by (Initials/Date): Angela Z 4/17/07

Supervisor/Reviewed by (Initials/Date): Monika Sanders 4/26/07

QA/QC Review (Initials/Date): QK 4/26/07

File Name: G:\Narratives\MSVoa\0704056msvnar.doc

GC/MS Volatile Organics
The GC/MS Volatile instruments used a Restek Rtx-VMS, 40 m x 0.18 mm ID capillary column and a Vocarb 3000 trap.

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

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

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

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

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

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

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

Life Science Laboratories, Inc. Date: *26-Apr-07*

CLIENT: FPM Group
Project: Griffiss AFB - FPTA
Lab Order: 0704056

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0704056-001A	ANGM0111GA	ANGMW-1	4/10/2007 10:00:00 AM	4/11/2007

Lab Order: 0704056
Client: FPM Group
Project: Griffiss AFB - FPTA

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0704056-001A	ANGM0111GA	4/10/2007 10:00:00 AM	Groundwater	Volatile Organic Compounds by GC/MS			4/13/2007

Chain of Custody

External Chain of Custody

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _1_ SDG#: _155_ 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 FPTA Sampling Sampler Name: Daniel Baldyga	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: DBaldyga	

Analyses Requested

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 Vials (HCl)	Comments
ANGM0111GA	ANGMW-1	4/10	1000	WG	B	0/0	N	HCl	Unf.	3	3	

Sample Condition Upon Receipt at Laboratory: Good, Custody Seal INTACT Cooler temperature: 3 °C

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

Note 1: VOCs: SW 8260 analysis for STARS List including MTBE.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 4/10/07	#3 Released by: (Sig) Bill Donaldson	Date: 4/10/07
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 1700	Company Name: Life Science Labs	Time: 1700
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig) Bill Donaldson	Date: 4/11/07	#3 Received by: (Sig)	Date: 4-11-07
Company Name: FPM Group Ltd	Time: 1000	Company Name: STL	Time: 1035	Company Name: LSL	Time: 1200

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

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: **FPM**

Date and Time Received: **4/11/2007 12:00:00 PM**

Work Order Number **0704056**

Received by: ads

Checklist completed by: _____ Initials 4/11/07 Date

Reviewed by: MS Initials 4/11/07 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 ☑

Comments:

Corrective Action::

Client/Project FPM 0704056

Sample Control Record

Sample ID	Frac	Client Sample ID	Removed By	Date and Time Removed	Analysis	Date and Time Returned
001	A		DMB	4/12/07 14:35	8260	NA

Analytical Results

AFCEE
ORGANIC ANALYSES DATA PACKAGE

Analytical Method:	SW8260B	**AAB #:**	R9225
Lab Name:	Life Science Laboratories, Inc.	**Contract Number:**	
Base/Command:		**Prime Contractor:**	FPM Group

Field Sample ID	Lab Sample ID
ANGM0111GA	0704056-001A

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: 4/26/07 Title: Project Manager

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SW8260B
Lab Name: Life Science Laboratories, Inc.
Field Sample ID: ANGM0111GA
% Solids: 0
Date Received: 11-Apr-07
Concentration Units (ug/L or mg/Kg dry weight): ug/L

Preparatory Method:
Contract #:
Lab Sample ID: 0704056-001A
Initial Calibration ID: 901
Date Extracted:

AAB #: R9225
Matrix: Groundwater
File ID: T8107.D
Date Analyzed: 13-Apr-07
Sample Size: 10 mL

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
(m+p)-Xylene	0.0280	2.00	0.0280	1		U
1,2,4-Trimethylbenzene	0.0120	1.00	0.0120	1		U
1,3,5-Trimethylbenzene	0.0130	1.00	0.0130	1		U
Benzene	0.0100	0.500	0.0100	1		U
Ethylbenzene	0.0240	1.00	0.430	1		F
Isopropylbenzene	0.0210	1.00	0.320	1		F
Methyl tert-butyl ether	0.0250	5.00	0.0250	1		U
n-Butylbenzene	0.0130	1.00	0.0130	1		U
n-Propylbenzene	0.00900	1.00	0.410	1		F
Naphthalene	0.0240	1.00	3.13	1		
o-Xylene	0.0140	1.00	0.0140	1		U
p-Isopropyltoluene	0.0140	1.00	1.96	1		
sec-Butylbenzene	0.0170	1.00	0.610	1		F
tert-Butylbenzene	0.0160	1.00	0.360	1		F
Toluene	0.0180	1.00	0.0180	1		U
Xylenes (total)	0.0420	2.00	0.0420	1		U

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	95	72 - 119	
4-Bromofluorobenzene	103	76 - 119	
Dibromofluoromethane	97	85 - 115	
Toluene-d8	103	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	501984	213391 - 853564	
Chlorobenzene-d5	622950	262028 - 1048114	
Fluorobenzene	1358614	541449 - 2165796	

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#1

Date of Initial Calibration: 06APR07

Initial Calibration ID: 901

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

SEE ATTACHED

Comments:

AFCEE FORM O-3

Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 13:59:15 2007
Response via : Continuing Calibration

ICAL #901

Calibration Files

0.3	=T7968.D	0.5	=T7969.D	2.0	=T7970.D
10	=T7971.D	20	=T7972.D	30	=T7973.D

#		Compound	0.3	0.5	2.0	10	20	30	Avg	%RSD
1)	I	Fluorobenzene	----------------			ISTD			----------------	
2)		Dichlorodifluoromet	0.263	0.308	0.300	0.335	0.322	0.318	0.309	7.54
3)	P	Chloromethane	0.475	0.463	0.439	0.456	0.443	0.436	0.450	3.36
4)	CP	Vinyl chloride	0.293	0.340	0.338	0.377	0.370	0.372	0.352	8.71
5)		Bromomethane	0.091	0.112	0.110	0.123	0.135	0.154	0.126	18.97
6)		Chloroethane	0.236	0.279	0.249	0.251	0.242	0.242	0.249	5.62
7)		Trichlorofluorometh	0.462	0.434	0.431	0.503	0.479	0.474	0.466	5.56
8)		Acetone			0.051	0.048	0.046	0.046	0.048	4.08
9)		Acrolein *4pts for curve DWB 4/6/07*				0.002	0.002	0.002	0.002	7.00
10)	CPM	1,1-Dichloroethene	0.173	0.157	0.197	0.210	0.215	0.220	0.200	12.76
11)		Methyl iodide	0.093	0.128	0.166	0.225	0.258	0.288	0.209	39.19
12)		1,1,2-Trichloro-1,2	0.242	0.222	0.236	0.270	0.265	0.265	0.253	7.69
13)		Methyl acetate	0.189	0.187	0.178	0.156	0.171	0.173	0.177	6.46
14)		Acrylonitrile	0.057	0.055	0.059	0.063	0.063	0.063	0.061	6.83
15)		Methylene chloride		0.369	0.371	0.298	0.292	0.285	0.318	12.70
16)		Carbon disulfide	0.838	0.850	0.818	0.950	0.906	0.897	0.881	5.32
17)		trans-1,2-Dichloroe	0.269	0.222	0.248	0.255	0.263	0.269	0.257	7.05
18)		Methyl tert-Butyl e	0.530	0.532	0.584	0.663	0.641	0.662	0.614	10.60
19)	P	1,1-Dichloroethane	0.486	0.496	0.505	0.522	0.516	0.519	0.510	2.92
20)		Vinyl acetate	0.238	0.231	0.269	0.320	0.337	0.353	0.302	18.60
21)		2-Butanone	0.062	0.062	0.065	0.084	0.075	0.077	0.073	13.93
22)		cis-1,2-Dichloroeth	0.275	0.246	0.265	0.287	0.291	0.297	0.281	7.15
23)		Bromochloromethane	0.121	0.123	0.127	0.129	0.133	0.136	0.130	5.10
24)	CP	Chloroform	0.551	0.521	1.022	0.530	0.526	0.532	0.603	30.63#
25)		2,2-Dichloropropane	0.350	0.361	0.374	0.448	0.450	0.463	0.417	12.62
26)		Cyclohexane	0.353	0.373	0.400	0.532	0.549	0.566	0.478	20.32
27)	S	Dibromofluoromethan	0.232	0.226	0.222	0.237	0.243	0.246	0.237	4.70
28)	S	1,2-Dichloroethane-	0.319	0.297	0.302	0.305	0.306	0.307	0.307	2.16
29)		1,2-Dichloroethane	0.367	0.359	0.369	0.361	0.362	0.364	0.365	1.28
30)		1,1,1-Trichloroetha	0.386	0.364	0.416	0.462	0.463	0.473	0.435	10.70
31)		1,1-Dichloropropene		0.288	0.320	0.369	0.391	0.408	0.365	14.00
32)		Carbon tetrachlorid	0.293	0.297	0.327	0.372	0.377	0.392	0.352	13.02
33)	M	Benzene	1.085	1.046	1.154	1.214	1.229	1.257	1.175	6.99
34)	M	Trichloroethene	0.275	0.267	0.267	0.297	0.303	0.311	0.290	6.91
35)		Dibromomethane	0.148	0.127	0.144	0.149	0.146	0.148	0.145	5.87
36)		Methylcyclohexane	0.373	0.358	0.400	0.498	0.519	0.530	0.461	17.44
37)	CP	1,2-Dichloropropane	0.279	0.256	0.275	0.289	0.295	0.305	0.288	6.71
38)		Bromodichloromethan	0.305	0.292	0.378	0.351	0.359	0.367	0.347	10.08
39)		2-Chloroethylvinyl		0.004	0.010	0.015	0.016	0.018	0.014	42.49
40)		4-Methyl-2-pentanon	0.123	0.126	0.147	0.178	0.188	0.194	0.167	21.24
41)		cis-1,3-Dichloropro	0.280	0.328	0.351	0.419	0.436	0.459	0.392	18.52
42)	S	Toluene-d8	0.779	0.803	0.898	1.066	1.074	1.102	0.976	14.88
43)	CPM	Toluene		0.634	0.743	0.845	0.846	0.868	0.802	11.93

(#) = Out of Range ### Number of calibration levels exceeded format ###

DWB 4/9/07

OK (DW) 4-11-07

Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 13:59:15 2007
Response via : Continuing Calibration

Calibration Files
0.3 =T7968.D 0.5 =T7969.D 2.0 =T7970.D
10 =T7971.D 20 =T7972.D 30 =T7973.D

		Compound	0.3	0.5	2.0	10	20	30	Avg	%RSD
44)		trans-1,3-Dichlorop	0.236	0.240	0.293	0.386	0.381	0.405	0.337	23.26
45)		1,1,2-Trichloroetha	0.171	0.153	0.178	0.188	0.180	0.186	0.178	7.13
46)		2-Hexanone	0.067	0.066	0.093	0.117	0.136	0.135	0.110	31.81
47)		1,2-Dibromoethane	0.164	0.157	0.178	0.202	0.195	0.205	0.188	11.65
48)	I	Chlorobenzene-d5	ISTD							
49)		1,3-Dichloropropane	0.766	0.752	0.771	0.855	0.810	0.862	0.814	6.54
50)		Dibromochloromethan	0.384	0.377	0.424	0.484	0.489	0.538	0.465	15.57
51)		Tetrachloroethene	0.577	0.622	0.649	0.702	0.697	0.730	0.676	9.35
52)		1-Chlorohexane	0.635	0.625	0.671	0.890	0.930	0.962	0.817	20.34
53)		1,1,1,2-Tetrachloro	0.453	0.490	0.497	0.578	0.575	0.591	0.543	11.49
54)	PM	Chlorobenzene	1.877	1.789	1.827	1.881	1.868	1.901	1.867	2.47
55)	CP	Ethylbenzene	2.838	2.817	3.119	3.505	3.464	3.480	3.239	9.59
56)		(m+p)-Xylene	0.975	0.982	1.104	1.286	1.297	1.310	1.184	13.52
57)		o-Xylene	0.809	0.849	0.971	1.219	1.253	1.287	1.104	20.06
58)		Styrene	0.994	1.071	1.389	1.904	2.043	2.073	1.661	29.94
59)	P	Bromoform	0.204	0.201	0.231	0.290	0.298	0.326	0.272	22.45
60)	S	Bromofluorobenzene	0.719	0.646	0.717	0.833	0.862	0.900	0.801	13.40
o1)	I	1,4-Dichlorobenzene-d	ISTD							
62)		trans-1,4-Dichloro-	0.037	0.070	0.074	0.093	0.096	0.111	0.086	32.71
63)	P	1,1,2,2-Tetrachloro	0.648	0.722	0.687	0.693	0.634	0.667	0.677	4.38
64)		Isopropylbenzene	2.738	2.872	3.410	4.019	3.850	3.934	3.515	14.88
65)		1,2,3-Trichloroprop	0.606	0.623	0.606	0.606	0.567	0.604	0.606	3.26
66)		Bromobenzene	0.943	0.884	0.976	1.005	0.954	1.001	0.965	4.45
67)		n-Propylbenzene		3.163	3.890	4.612	4.441	4.460	4.137	13.00
68)		2-Chlorotoluene	2.316	2.367	2.814	3.130	3.034	3.144	2.843	12.67
69)		4-Chlorotoluene	1.860	1.951	2.408	2.661	2.599	2.710	2.410	14.92
70)		1,3,5-Trimethylbenz	1.628	1.772	2.307	2.789	2.805	2.886	2.437	22.24
71)		tert-Butylbenzene		1.857	2.264	2.674	2.650	2.739	2.480	14.13
72)		1,2,4-Trimethylbenz	1.382	1.398	1.928	2.393	2.448	2.532	2.091	24.99
73)		sec-Butylbenzene		2.619	3.383	3.920	3.862	3.888	3.565	14.14
74)		1,3-Dichlorobenzene	1.537	1.509	1.690	1.789	1.727	1.811	1.693	7.31
75)		p-Isopropyltoluene	1.457	1.609	2.236	2.882	2.915	3.005	2.440	27.62
76)		1,4-Dichlorobenzene	1.593	1.575	1.648	1.707	1.665	1.723	1.663	3.74
77)		n-Butylbenzene	1.156	1.136	1.572	2.204	2.307	2.397	1.882	30.69
78)		1,2-Dichlorobenzene	1.384	1.434	1.552	1.644	1.604	1.680	1.564	7.33
79)		1,2-Dibromo-3-chlor		0.082	0.082	0.086	0.091	0.101	0.091	11.42
80)		1,2,4-Trichlorobenz	0.222	0.241	0.395	0.625	0.692	0.755	0.533	45.64
81)		Hexachlorobutadiene		0.477	0.500	0.606	0.588	0.622	0.569	11.25
82)		Naphthalene	0.123	0.154	0.420	0.775	0.944	1.020	0.653	64.13
83)		1,2,3-Trichlorobenz	0.146	0.199	0.393	0.603	0.662	0.688	0.491	49.85

(#) = Out of Range ### Number of calibration levels exceeded format ###

Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 14:48:17 2007
Response via : Initial Calibration

Calibration Files
40 =T7974.D = =
= = =

		Compound	40	Avg	%RSD
1)	I	Fluorobenzene	----------ISTD----------		
2)		Dichlorodifluoromet	0.320		
3)	P	Chloromethane	0.437		
4)	CP	Vinyl chloride	0.373		
5)		Bromomethane	0.155		
6)		Chloroethane	0.244		
7)		Trichlorofluorometh	0.481		
8)		Acetone	0.049		
9)		Acrolein	0.002		
10)	CPM	1,1-Dichloroethene	0.225		
11)		Methyl iodide	0.308		
12)		1,1,2-Trichloro-1,2	0.271		
13)		Methyl acetate	0.182		
14)		Acrylonitrile	0.067		
15)		Methylene chloride	0.293		
16)		Carbon disulfide	0.909		
17)		trans-1,2-Dichloroe	0.274		
8)		Methyl tert-Butyl e	0.687		
19)	P	1,1-Dichloroethane	0.527		
20)		Vinyl acetate	0.369		
21)		2-Butanone	0.086		
22)		cis-1,2-Dichloroeth	0.304		
23)		Bromochloromethane	0.139		
24)	CP	Chloroform	0.541		
25)		2,2-Dichloropropane	0.471		
26)		Cyclohexane	0.569		
27)	S	Dibromofluoromethan	0.253		
28)	S	1,2-Dichloroethane-	0.309		
29)		1,2-Dichloroethane	0.372		
30)		1,1,1-Trichloroetha	0.482		
31)		1,1-Dichloropropene	0.416		
32)		Carbon tetrachlorid	0.405		
33)	M	Benzene	1.239		
34)	M	Trichloroethene	0.312		
35)		Dibromomethane	0.153		
36)		Methylcyclohexane	0.546		
37)	CP	1,2-Dichloropropane	0.313		
38)		Bromodichloromethan	0.379		
39)		2-Chloroethylvinyl	0.020		
40)		4-Methyl-2-pentanon	0.214		
41)		cis-1,3-Dichloropro	0.470		
42)	S	Toluene-d8	1.109		
43)	CPM	Toluene	0.879		

(#) = Out of Range ### Number of calibration levels exceeded format ###

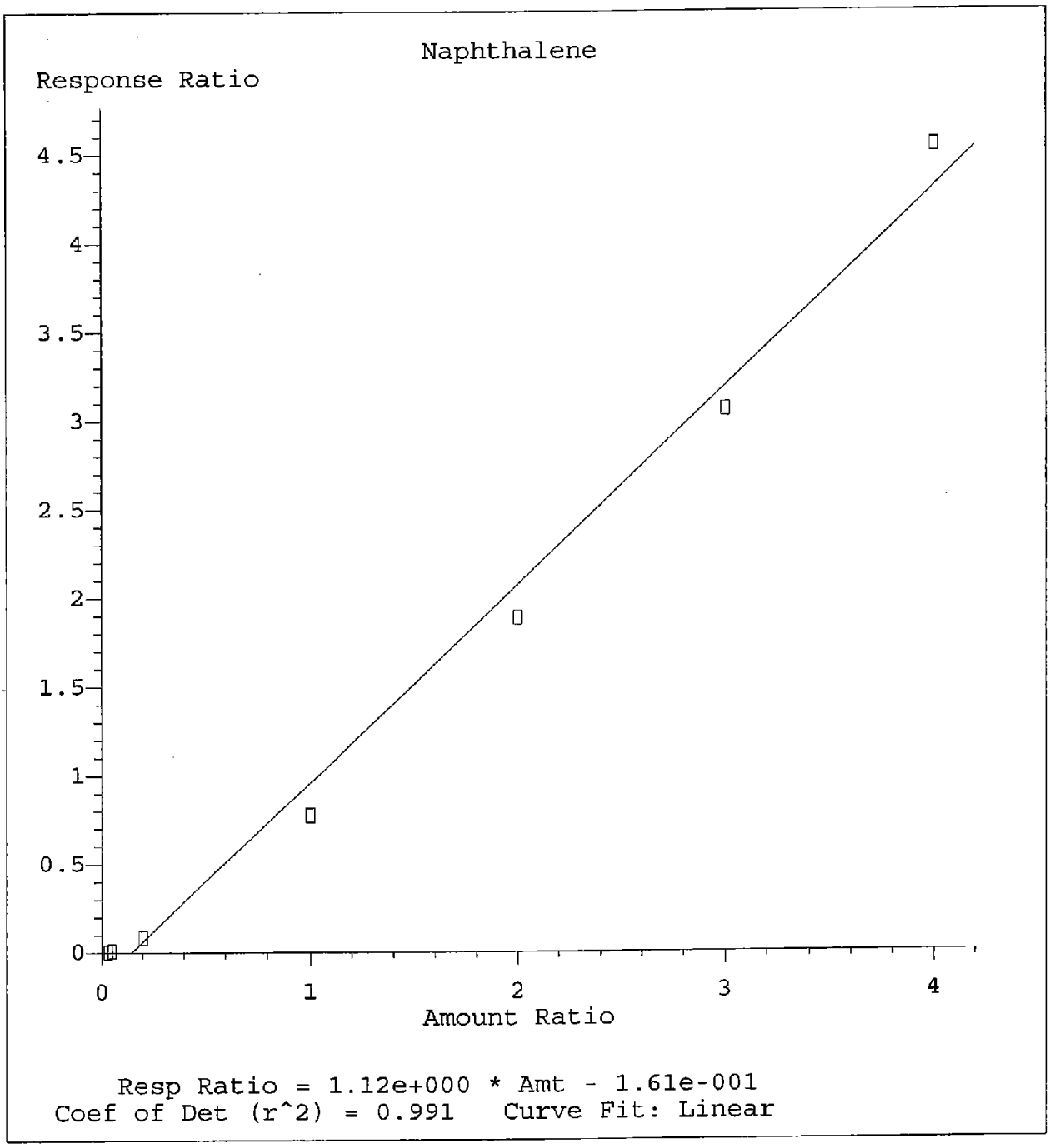
Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 14:48:17 2007
Response via : Initial Calibration

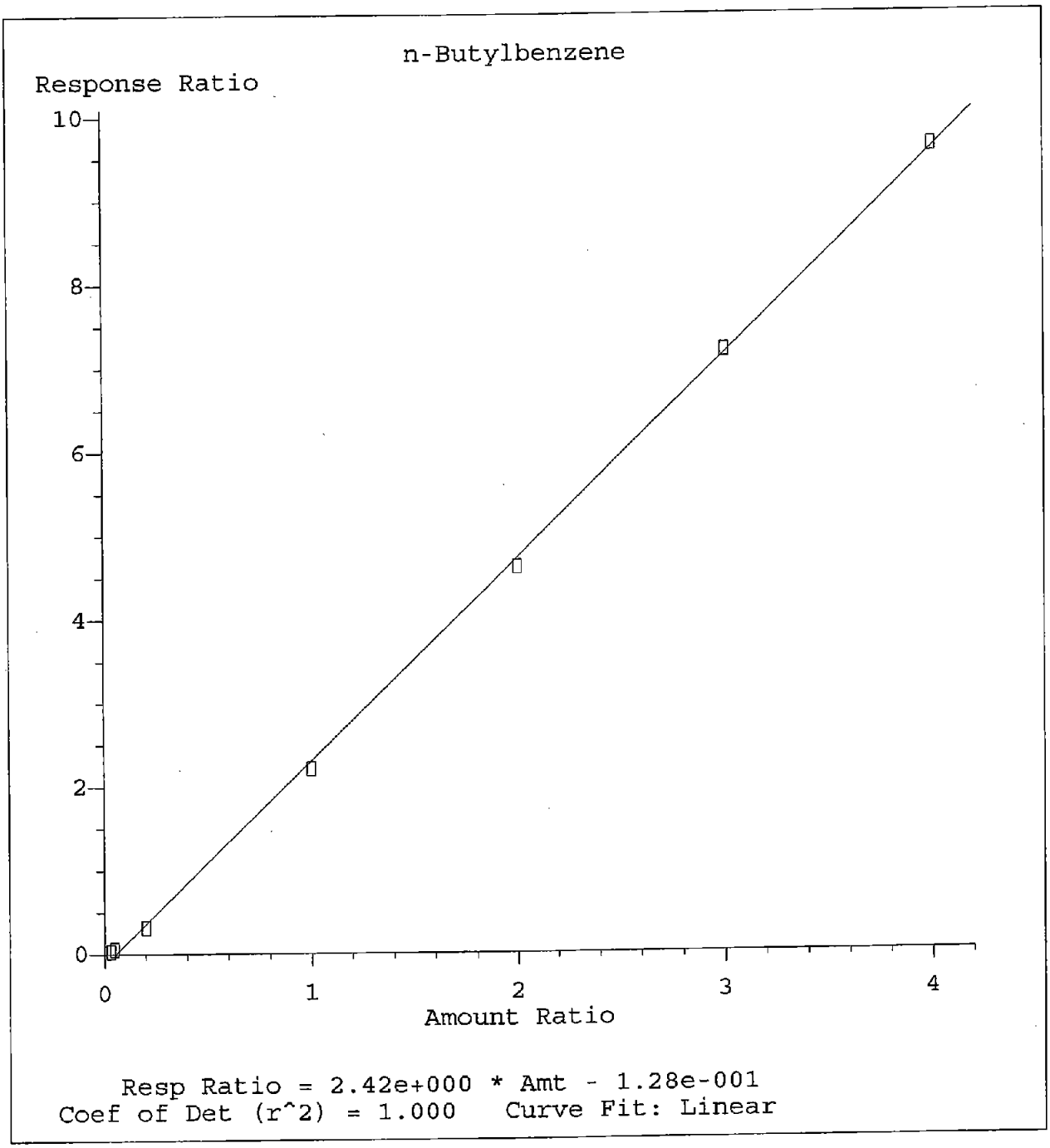
Calibration Files
40 =T7974.D = =
= = =

		Compound	40	Avg	%RSD
44)		trans-1,3-Dichlorop	0.417		
45)		1,1,2-Trichloroetha	0.190		
46)		2-Hexanone	0.153		
47)		1,2-Dibromoethane	0.214		
48)	I	Chlorobenzene-d5	----------ISTD----------		
49)		1,3-Dichloropropane	0.885		
50)		Dibromochloromethan	0.561		
51)		Tetrachloroethene	0.757		
52)		1-Chlorohexane	1.005		
53)		1,1,1,2-Tetrachloro	0.619		
54)	PM	Chlorobenzene	1.926		
55)	CP	Ethylbenzene	3.453		
56)		(m+p)-Xylene	1.337		
57)		o-Xylene	1.341		
58)		Styrene	2.153		
59)	P	Bromoform	0.356		
60)	S	Bromofluorobenzene	0.930		
61)	I	1,4-Dichlorobenzene-d	----------ISTD----------		
62)		trans-1,4-Dichloro-	0.120		
63)	P	1,1,2,2-Tetrachloro	0.686		
64)		Isopropylbenzene	3.784		
65)		1,2,3-Trichloroprop	0.629		
66)		Bromobenzene	0.993		
67)		n-Propylbenzene	4.259		
68)		2-Chlorotoluene	3.097		
69)		4-Chlorotoluene	2.682		
70)		1,3,5-Trimethylbenz	2.871		
71)		tert-Butylbenzene	2.694		
72)		1,2,4-Trimethylbenz	2.556		
73)		sec-Butylbenzene	3.721		
74)		1,3-Dichlorobenzene	1.789		
75)		p-Isopropyltoluene	2.977		
76)		1,4-Dichlorobenzene	1.731		
77)		n-Butylbenzene	2.404		
78)		1,2-Dichlorobenzene	1.651		
79)		1,2-Dibromo-3-chlor	0.107		
80)		1,2,4-Trichlorobenz	0.799		
81)		Hexachlorobutadiene	0.622		
82)		Naphthalene	1.136		
83)		1,2,3-Trichlorobenz	0.747		

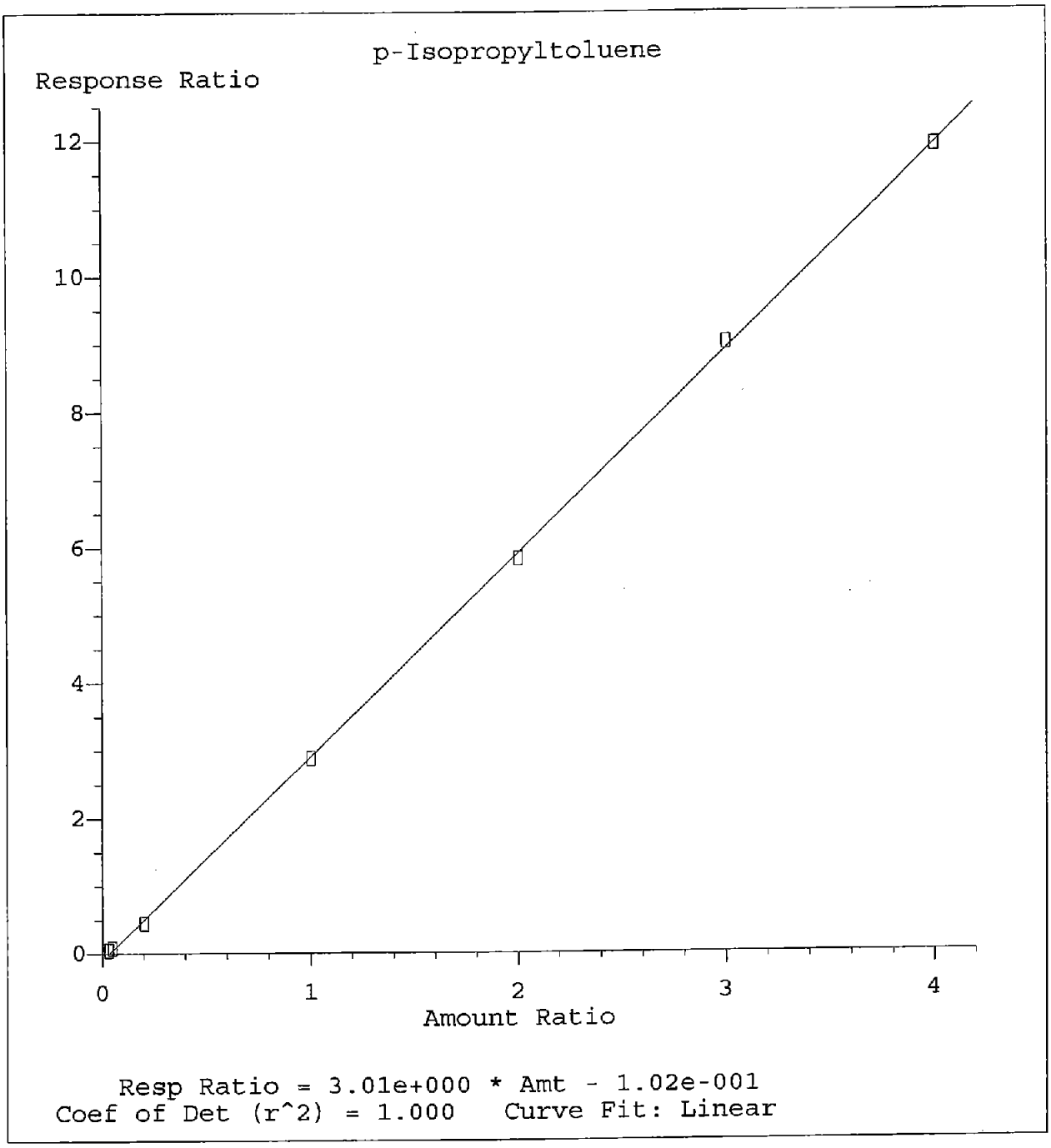
(#) = Out of Range ### Number of calibration levels exceeded format ###



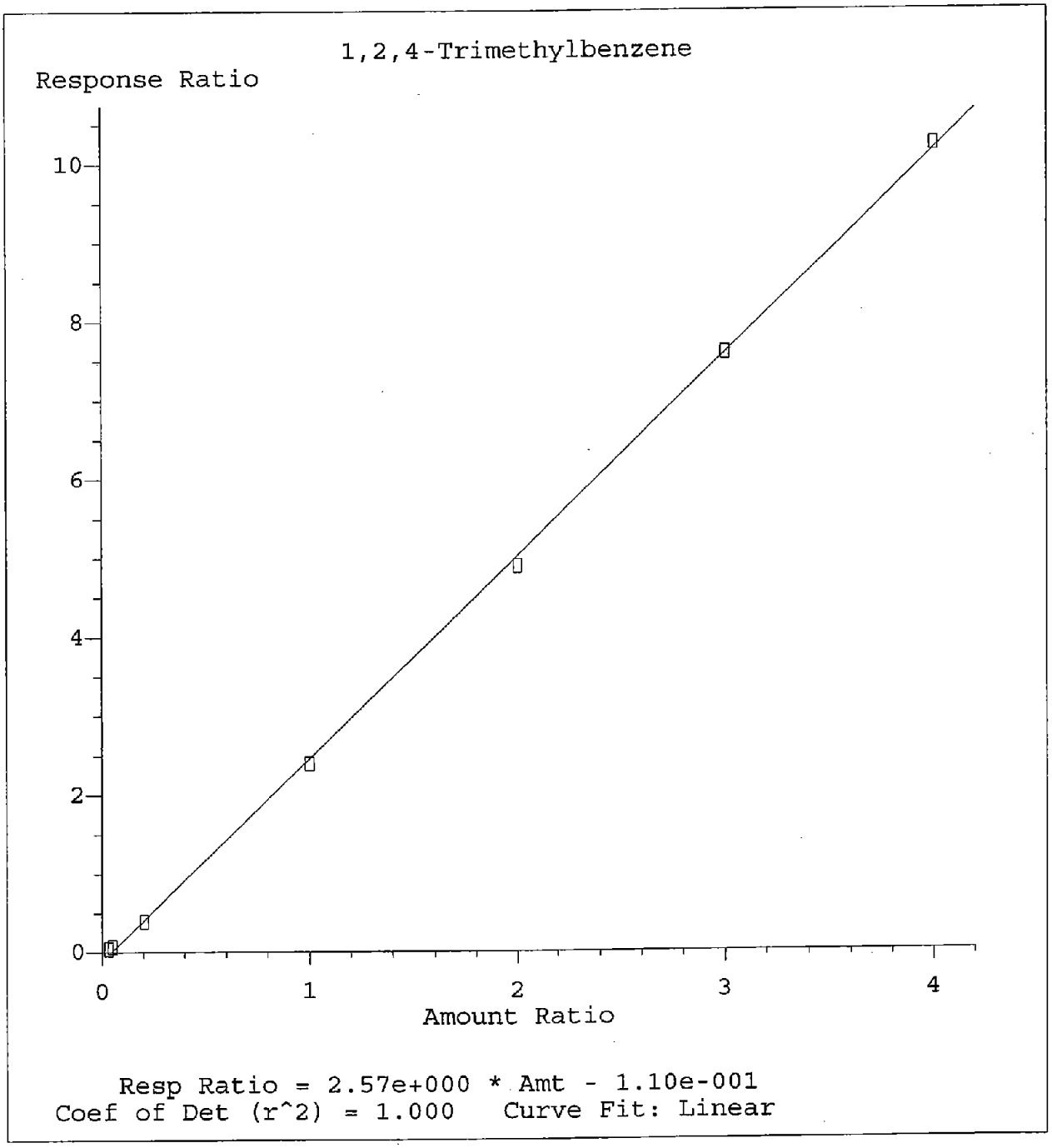
Method Name: C:\HPCHEM\1\METHODS\T406VOCW.M
Calibration Table Last Updated: Fri Apr 06 13:49:24 2007



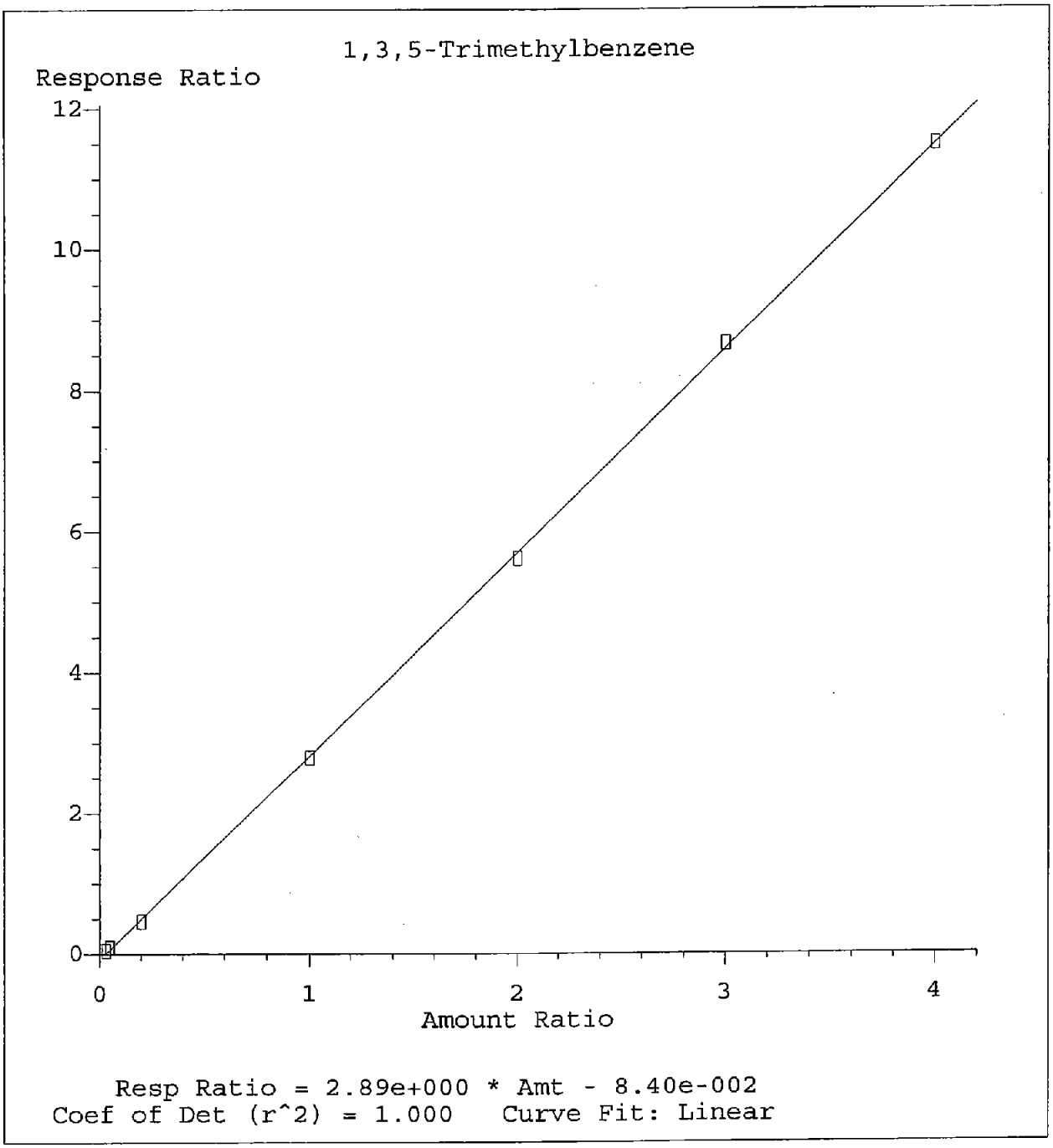
Method Name: C:\HPCHEM\1\METHODS\T406VOCW.M
Calibration Table Last Updated: Fri Apr 06 13:46:59 2007



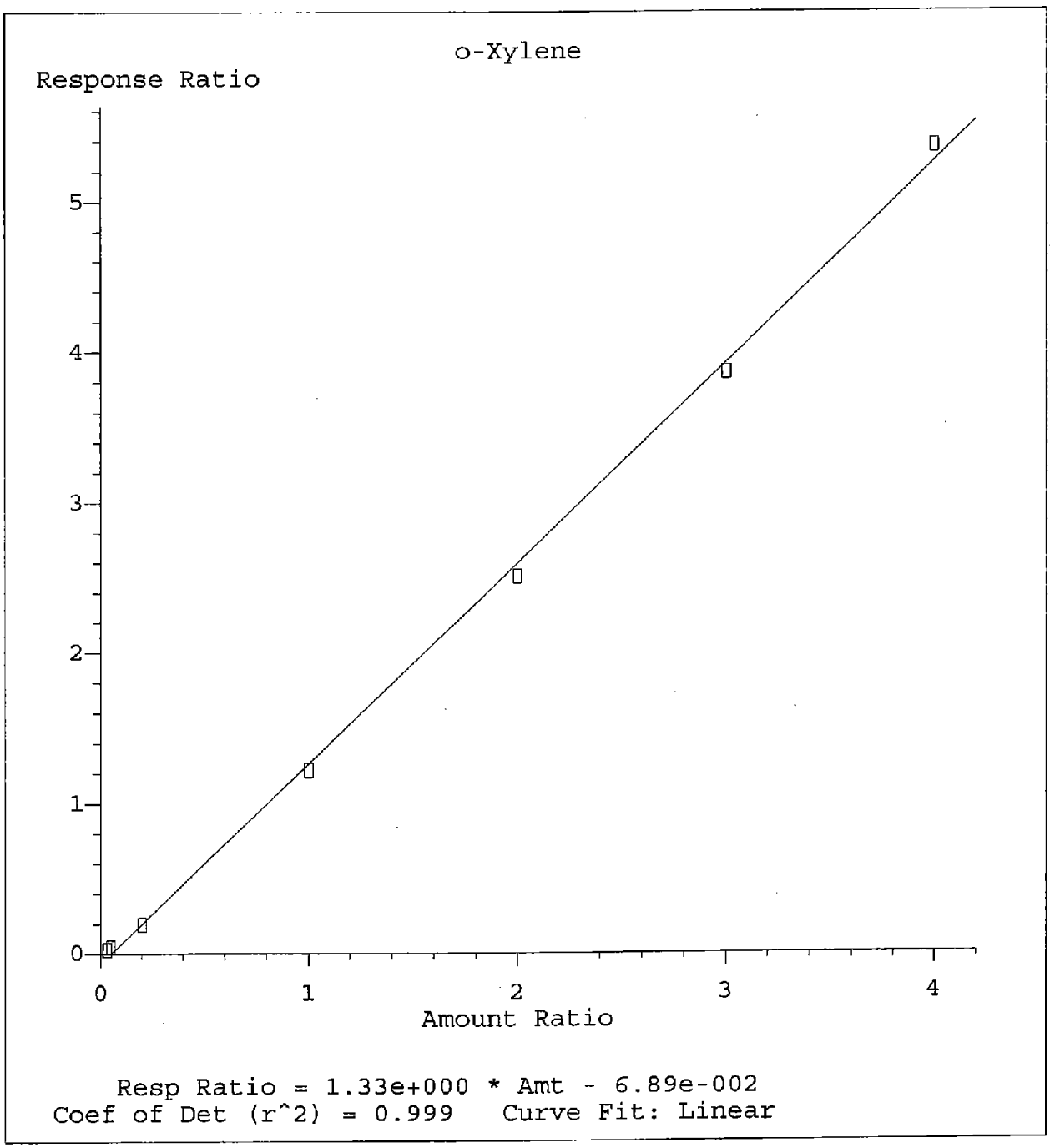
Method Name: C:\HPCHEM\1\METHODS\T406VOCW.M
Calibration Table Last Updated: Fri Apr 06 13:46:18 2007



Method Name: C:\HPCHEM\1\METHODS\T406VOCW.M
Calibration Table Last Updated: Fri Apr 06 13:44:41 2007



Method Name: C:\HPCHEM\1\METHODS\T406VOCW.M
Calibration Table Last Updated: Fri Apr 06 13:43:19 2007



Method Name: C:\HPCHEM\1\METHODS\T406VOCW.M
Calibration Table Last Updated: Fri Apr 06 13:38:28 2007

AFCEE
ORGANIC ANALYSES DATA SHEET 4
SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	SW8260B	**AAB #:**	R9117
Lab Name:	Life Science Laboratories, In	**Contract Number:**	
Instrument ID:	MS01_11	**Initial Calibration ID:**	901
Second Source ID:	ICV-9117	**Concentration Units (mg/L or mg/kg):**	ug/L

Analyte	Expected	Found	%D	Q
(m+p)-Xylene	20	20.8	4.1	
1,2,4-Trimethylbenzene	10	9.55	-4.5	
1,2-Dichloroethane-d4	10	9.07	-9.3	
1,3,5-Trimethylbenzene	10	9.67	-3.3	
4-Bromofluorobenzene	10	10.2	2.0	
Benzene	10	9.6	-4.0	
Dibromofluoromethane	10	9.29	-7.1	
Ethylbenzene	10	10.3	3.2	
Isopropylbenzene	10	11.2	12.5	
Methyl tert-butyl ether	10	9.69	-3.1	
n-Butylbenzene	10	9.52	-4.8	
n-Propylbenzene	10	10.8	8.1	
Naphthalene	10	9.03	-9.7	
o-Xylene	10	9.46	-5.4	
p-Isopropyltoluene	10	9.83	-1.7	
sec-Butylbenzene	10	10.7	7.4	
tert-Butylbenzene	10	10.7	6.7	
Toluene	10	9.72	-2.8	
Toluene-d8	10	10.2	2.1	
Xylenes (total)	30	30.3	0.9	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 5
CALIBRATION VERIFICATION

Analytical Method: 8260 AAB #:

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

Instrument ID: HP5973 GCMS#1 Initial Calibration -ID: 901

ICV ID: ICV-9117 CCV #1 ID: CCV-9225 CCV #2 ID:

SEE ATTACHED

Comments:

AFCEE FORM O-5

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\T8102.D
Acq On : 13 Apr 2007 9:35
Sample : CCV-9225
Misc : CCV ,8260WAF_40CAL,
MS Integration Params: RTEINT.P

Vial: 16
Operator: DMB
Inst : #1MS11
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\T406STAR.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Mon Apr 16 07:54:10 2007
Response via : Multiple Level Calibration

Min. RRF : 0.000 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	117	0.00
2		Methyl tert-Butyl ether	0.614	0.654	-6.5	115	0.00
3	S	Dibromofluoromethane	0.237	0.245	-3.4	120	0.00
4	S	1,2-Dichloroethane-d4	0.307	0.312	-1.6	119	0.00
5	M	Benzene	1.175	1.226	-4.3	118	0.00
6	S	Toluene-d8	0.976	1.084	-11.1	119	0.00
7	CPM	Toluene	0.802	0.853	-6.4	118	0.00
8	I	Chlorobenzene-d5	1.000	1.000	0.0	114	0.00
9	CP	Ethylbenzene	3.239	3.523	-8.8	114	0.00
10		(m+p)-Xylene	1.184	1.294	-9.3	114	0.00
11		o-Xylene	1.104	1.248	-13.0	116	0.00
12	S	Bromofluorobenzene	0.801	0.871	-8.7	119	0.00
	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	115	0.00
14		Isopropylbenzene	3.515	4.117	-17.1	117	0.00
15		n-Propylbenzene	4.137	4.678	-13.1	116	0.00
16		1,3,5-Trimethylbenzene	2.437	2.729	-12.0	112	0.00
17		tert-Butylbenzene	2.480	2.765	-11.5	119	0.00
18		1,2,4-Trimethylbenzene	2.091	2.358	-12.8	113	0.00
19		sec-Butylbenzene	3.565	4.039	-13.3	118	0.00
20		p-Isopropyltoluene	2.440	2.948	-20.8#	117	0.00
21		n-Butylbenzene	1.882	2.200	-16.9	115	0.00
22		Naphthalene	0.653	1.134	-73.7#	168	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

4/17/07

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\T8102.D
Acq On : 13 Apr 2007 9:35
Sample : CCV-9225
Misc : CCV ,8260WAF_40CAL,
MS Integration Params: RTEINT.P

Vial: 16
Operator: DMB
Inst : #1MS11
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\T406STAR.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Mon Apr 16 07:54:10 2007
Response via : Multiple Level Calibration

Min. RRF : 0.000 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	117	0.00
2		Methyl tert-Butyl ether	10.000	10.652	-6.5	115	0.00
3	S	Dibromofluoromethane	10.000	10.317	-3.2	120	0.00
4	S	1,2-Dichloroethane-d4	10.000	10.180	-1.8	119	0.00
5	M	Benzene	10.000	10.436	-4.4	118	0.00
6	S	Toluene-d8	10.000	11.103	-11.0	119	0.00
7	CPM	Toluene	10.000	10.631	-6.3	118	0.00
8	I	Chlorobenzene-d5	10.000	10.000	0.0	114	0.00
9	CP	Ethylbenzene	10.000	10.874	-8.7	114	0.00
10		(m+p)-Xylene	20.000	21.859	-9.3	114	0.00
11		o-Xylene	10.000	9.887	1.1	116	0.00
12	S	Bromofluorobenzene	10.000	10.873	-8.7	119	0.00
	I	1,4-Dichlorobenzene-d4	10.000	10.000	0.0	115	0.00
14		Isopropylbenzene	10.000	11.712	-17.1	117	0.00
15		n-Propylbenzene	10.000	11.308	-13.1	116	0.00
16		1,3,5-Trimethylbenzene	10.000	9.728	2.7	112	0.00
17		tert-Butylbenzene	10.000	11.151	-11.5	119	0.00
18		1,2,4-Trimethylbenzene	10.000	9.620	3.8	113	0.00
19		sec-Butylbenzene	10.000	11.330	-13.3	118	0.00
20		p-Isopropyltoluene	10.000	10.140	-1.4	117	0.00
21		n-Butylbenzene	10.000	9.603	4.0	115	0.00
22		Naphthalene	10.000	11.586	-15.9	168	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

AFCEE
ORGANIC ANALYSES DATA SHEET 7
BLANKS

Analytical Method:	SW8260B	**AAB #:**	R9225
Lab Name:	Life Science Laboratories, In	**Contract Number:**	
Units:	ug/L	**Method Blank ID:**	MB-9225
Initial Calibration ID:	901	**File ID:**	T8106.D

Analyte	Method Blank	RL	Q
(m+p)-Xylene	0.0280	2.00	U
1,2,4-Trimethylbenzene	0.0120	1.00	U
1,3,5-Trimethylbenzene	0.0130	1.00	U
Benzene	0.0100	0.500	U
Ethylbenzene	0.0240	1.00	U
Isopropylbenzene	0.0210	1.00	U
Methyl tert-butyl ether	0.0250	5.00	U
n-Butylbenzene	0.0130	1.00	U
n-Propylbenzene	0.00900	1.00	U
Naphthalene	0.0240	1.00	U
o-Xylene	0.0140	1.00	U
p-Isopropyltoluene	0.0140	1.00	U
sec-Butylbenzene	0.0170	1.00	U
tert-Butylbenzene	0.0160	1.00	U
Toluene	0.0180	1.00	U
Xylenes (total)	0.0420	2.00	U

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	97	72 - 119	
4-Bromofluorobenzene	98	76 - 119	
Dibromofluoromethane	98	85 - 115	
Toluene-d8	102	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	419527	213391 - 853564	
Chlorobenzene-d5	622804	262028 - 1048114	
Fluorobenzene	1407783	541449 - 2165796	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 8
LABORATORY CONTROL SAMPLE

Analytical Method: SW8260B **AAB #:** R9225

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

LCS ID: LCS-9225 **Initial Calibration ID:** 901

Concentration Units (mg/L or mg/kg): µg/L **File ID:** T8103.D

Analyte	Expected	Found	%R	Control Limits	Q
(m+p)-Xylene	20	19.6	98	76 - 128	
1,2,4-Trimethylbenzene	10	8.79	88	74 - 132	
1,3,5-Trimethylbenzene	10	8.93	89	74 - 131	
Benzene	10	9.06	91	81 - 122	
Ethylbenzene	10	9.78	98	73 - 127	
Isopropylbenzene	10	10.7	107	75 - 127	
Methyl tert-butyl ether	10	9.15	92	65 - 123	
n-Butylbenzene	10	8.86	89	69 - 137	
n-Propylbenzene	10	10.2	102	72 - 129	
Naphthalene	10	11.1	111	54 - 138	
o-Xylene	10	8.90	89	80 - 121	
p-Isopropyltoluene	10	9.16	92	73 - 130	
sec-Butylbenzene	10	10.4	104	72 - 127	
tert-Butylbenzene	10	10.2	102	70 - 129	
Toluene	10	9.36	94	77 - 122	
Xylenes (total)	30	28.5	95	80 - 121	

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	96	72 - 119	
4-Bromofluorobenzene	103	76 - 119	
Dibromofluoromethane	96	85 - 115	
Toluene-d8	106	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	544813	213391 - 853564	
Chlorobenzene-d5	670948	262028 - 1048114	
Fluorobenzene	1437900	541449 - 2165796	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 8
LABORATORY CONTROL SAMPLE

Analytical Method: SW8260B **AAB #:** R9225

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

LCS ID: LCSD-9225 **Initial Calibration ID:** 901

Concentration Units (mg/L or mg/kg): µg/L **File ID:** T8104.D

Analyte	Expected	Found	%R	Control Limits	Q
(m+p)-Xylene	20	19.5	98	76 - 128	
1,2,4-Trimethylbenzene	10	8.85	88	74 - 132	
1,3,5-Trimethylbenzene	10	8.89	89	74 - 131	
Benzene	10	8.97	90	81 - 122	
Ethylbenzene	10	9.69	97	73 - 127	
Isopropylbenzene	10	10.6	106	75 - 127	
Methyl tert-butyl ether	10	8.92	89	65 - 123	
n-Butylbenzene	10	8.95	90	69 - 137	
n-Propylbenzene	10	10.1	101	72 - 129	
Naphthalene	10	11.3	113	54 - 138	
o-Xylene	10	8.95	90	80 - 121	
p-Isopropyltoluene	10	9.17	92	73 - 130	
sec-Butylbenzene	10	10.2	102	72 - 127	
tert-Butylbenzene	10	10.1	101	70 - 129	
Toluene	10	9.32	93	77 - 122	
Xylenes (total)	30	28.4	95	80 - 121	

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	94	72 - 119	
4-Bromofluorobenzene	104	76 - 119	
Dibromofluoromethane	97	85 - 115	
Toluene-d8	105	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	546732	213391 - 853564	
Chlorobenzene-d5	675636	262028 - 1048114	
Fluorobenzene	1451530	541449 - 2165796	

Comments:

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

Analytical Method: SW8260B **AAB #:** R9225

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

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

Parent Field Sample ID: LCSD-9225 **MS ID:** LCS-9225 **MSD ID:** LCSD-9225

Calibration ID: 901

Analyte	Parent Sample Result	Spike Added	Spiked Sample Result	%R	Duplicate Spiked Sample Result	%R	%RPD	Control Limits %R	Control Limits %RPD	Q
(m+p)-Xylene		20.0	19.6	98	19.5	98	1	76 - 128	20	
1,2,4-Trimethylbenzene		10.0	8.79	88	8.85	88	1	74 - 132	20	
1,3,5-Trimethylbenzene		10.0	8.93	89	8.89	89	0	74 - 131	20	
Benzene		10.0	9.06	91	8.97	90	1	81 - 122	20	
Ethylbenzene		10.0	9.78	98	9.69	97	1	73 - 127	20	
Isopropylbenzene		10.0	10.7	107	10.6	106	1	75 - 127	20	
Methyl tert-butyl ether		10.0	9.15	92	8.92	89	3	65 - 123	20	
n-Butylbenzene		10.0	8.86	89	8.95	90	1	69 - 137	20	
n-Propylbenzene		10.0	10.2	102	10.1	101	1	72 - 129	20	
Naphthalene		10.0	11.1	111	11.3	113	1	54 - 138	20	
o-Xylene		10.0	8.90	89	8.95	90	1	80 - 121	20	
p-Isopropyltoluene		10.0	9.16	92	9.17	92	0	73 - 130	20	
sec-Butylbenzene		10.0	10.4	104	10.2	102	2	72 - 127	20	
tert-Butylbenzene		10.0	10.2	102	10.1	101	1	70 - 129	20	
Toluene		10.0	9.36	94	9.32	93	0	77 - 122	20	
Xylenes (total)		30.0	28.5	95	28.4	95	0	80 - 121	20	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 10
HOLDING TIMES

Analytical Method: SW8260B **AAB #:** R9225

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
ANGM0111GA	0704056-001A	10-Apr-07	11-Apr-07	13-Apr-07			13-Apr-07	14	3.1	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 11
INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: SW8260B **AAB#:**

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

Instrument ID #: MS01_11

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
TB020907A1	TB020907A1	06-Apr-07	9:11	06-Apr-07	9:40
ICAL 0.3 PPB	ICAL 0.3 PPB	06-Apr-07	9:40	06-Apr-07	10:13
ICAL 0.5 PPB	ICAL 0.5 PPB	06-Apr-07	10:13	06-Apr-07	10:46
ICAL 2.0 PPB	ICAL 2.0 PPB	06-Apr-07	10:46	06-Apr-07	11:19
ICAL 10 PPB	ICAL 10 PPB	06-Apr-07	11:19	06-Apr-07	11:52
ICAL 20 PPB	ICAL 20 PPB	06-Apr-07	11:52	06-Apr-07	12:24
ICAL 30 PPB	ICAL 30 PPB	06-Apr-07	12:24	06-Apr-07	12:57
ICAL 40 PPB	ICAL 40 PPB	06-Apr-07	12:57	06-Apr-07	14:03
ICV-9117	ICV-9117	06-Apr-07	14:03	06-Apr-07	14:03
TB041307A1	TB041307A1	13-Apr-07	9:06	13-Apr-07	9:35
CCV-9225	CCV-9225	13-Apr-07	9:35	13-Apr-07	10:07
LCS-9225	LCS-9225	13-Apr-07	10:07	13-Apr-07	10:40
LCSD-9225	LCSD-9225	13-Apr-07	10:40	13-Apr-07	11:46
MB-9225	MB-9225	13-Apr-07	11:46	13-Apr-07	12:19
ANGM0111GA	0704056-001A	13-Apr-07	12:19	13-Apr-07	12:19

Comments:

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

Analytical Method:	SW8260B	**AAB #:**	MS01_11_070406A
Lab Name:	Life Science Laboratories, Inc.	**Contract #:**	
Instrument ID:	MS01_11	**Injection Date/Time:**	4/6/2007 9:11:00 AM
Initial Calibration ID:	901	**File ID:**	C:\HPCHEM\1\DATA\T7967.D
Compound:	SW8260B	**Sample ID:**	TB020907A1

Mass	Ion Abundance Criteria	% Relative Abundance	Q
50	15 - 40% of m/z 95	22.6	
75	30 - 60% of m/z 95	55.9	
95	Base peak, 100% relative abundance	100	
96	5 - 9% of m/z 95	6.6	
173	Less than 2% of m/z 174	0.6	
174	Greater than 50% of m/z 95	83.1	
175	5 - 9% of m/z 174	7.2	
176	Greater than 95% but less than 101% of m/z 174	99.4	
177	5 - 9% of m/z 176	6.4	

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

Analytical Method:	SW8260B	**AAB #:**	MS01_11_070413A
Lab Name:	Life Science Laboratories, Inc.	**Contract #:**	
Instrument ID:	MS01_11	**Injection Date/Time:**	4/13/2007 9:06:00 AM
Initial Calibration ID:	901	**File ID:**	C:\HPCHEM\1\DATA\T8101.D
Compound:	SW8260B	**Sample ID:**	TB041307A1

Mass	Ion Abundance Criteria	% Relative Abundance	Q
50	15 - 40% of m/z 95	21.1	
75	30 - 60% of m/z 95	53.0	
95	Base peak, 100% relative abundance	100	
96	5 - 9% of m/z 95	7.2	
173	Less than 2% of m/z 174	0.2	
174	Greater than 50% of m/z 95	83.2	
175	5 - 9% of m/z 174	7.6	
176	Greater than 95% but less than 101% of m/z 174	95.8	
177	5 - 9% of m/z 176	6.7	

Life Science Laboratories, Inc.
5000 Brittonfield Parkway, Suite 200
East Syracuse, NY 13057 (315) 437-0200

Wednesday, May 09, 2007

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

TEL:

Project: GRIFFISS AFB - BUILDING 35
RE: Analytical Result Order No.: 0704120

Dear Niels van Hoesel:

Life Science Laboratories, Inc. received 1 sample(s) on 4/19/2007 for the analyses presented in the following report.

Very truly yours,
Life Science Laboratories, Inc.

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 35 - 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 iced coolers were -0.2°C and -1°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 35
Work Order #:	0704120
Methodology:	8260B

Analyzed/Reviewed by (Initials/Date): GS 4/26/07

Supervisor/Reviewed by (Initials/Date): MS 5/9/07

QA/QC Review (Initials/Date): GK 5/8/07

File Name: G:\Narratives\MSVoa\0704120msvnar.doc

GC/MS Volatile Organics
The GC/MS Volatile instruments used a Restek Rtx-VMS, 40 m x 0.18 mm ID capillary column and a Vocarb 3000 trap.

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

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

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

MS/MSD/MSB
All spike recovery and RPD data met method and/or project specific QC criteria.

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

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

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

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

Life Science Laboratories, Inc.

Date: *09-May-07*

CLIENT: FPM Group
Project: Griffiss AFB - Building 35
Lab Order: 0704120

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0704120-001A	B035M0416FA	B035MW04	4/18/2007 2:19:00 PM	4/19/2007

Life Science Laboratories, Inc.

Lab Order: 0704120
Client: FPM Group
Project: Griffiss AFB - Building 35

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0704120-001A	B035M0416FA	4/18/2007 2:19:00 PM	Groundwater	Volatile Organic Compounds by GC/MS			4/23/2007

Chain of Custody

External Chain of Custody

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _2_ SDG#: _158_ 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: Justin Damann	Send Results to: Niels van Hoesel FPM Group 153 Brooks Road Rome, NY 13441
Carrier: LSL courier.	Sampler Signature:	Phone: (315) 336-7721 Ext 205

Analyses Requested

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)		Comments
B035M0416FA	B035MW04	4/18	1419	WG	BP	0/0	N	HCl	Unf.	3	3		

Sample Condition Upon Receipt at Laboratory: Good, custody seals intact — Cooler Temperature: -0.2, -1.0

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

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: 4/19/07	#3 Released by: (Sig)	Date: 4.19.07
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 10:20	Company Name: LSL	Time: 1420
#1 Received by: (Sig) Niels van Hoesel	Date: 2/20/07	#2 Received by: (Sig)	Date: 4.19.07	#3 Received by: (Sig)	Date: 4/19/07
Company Name: FPM Group Ltd	Time: 1000	Company Name: LSL	Time: 1020	Company Name: LSL	Time: 1420

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

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

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

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: **FPM**

Date and Time Received: **4/19/2007 2:20:00 PM**

Work Order Number **0704120**

Received by: ads

Checklist completed by: _____ 4-19-07 (Initials / Date)

Reviewed by: MS 4/19/07 (Initials / Date)

Matrix: Carrier name: Hand Delivered

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 ☑

Comments:

Corrective Action::

Client/Project FPM 070420

Sample Control Record

Sample ID	Frac	Client Sample ID	Removed By	Date and Time Removed	Analysis	Date and Time Returned
0031	A		DMB	4/23/07 13:10	826W	MR

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

Analytical Results

AFCEE
ORGANIC ANALYSES DATA PACKAGE

Analytical Method: SW8260B **AAB #:** R9334

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

Base/Command: **Prime Contractor:** FPM Group

Field Sample ID	Lab Sample ID
B035M0416FA	0704120-001A

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: 5/9/07 Title: Project Manager

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method:	SW8260B	**Preparatory Method:**		**AAB #:**	R9334
Lab Name:	Life Science Laboratories, Inc.	**Contract #:**			
Field Sample ID:	B035M0416FA	**Lab Sample ID:**	0704120-001A	**Matrix:**	Groundwater
% Solids:	0	**Initial Calibration ID:**	901	**File ID:**	T8309.D
Date Received:	19-Apr-07	**Date Extracted:**		**Date Analyzed:**	23-Apr-07
Concentration Units (ug/L or mg/Kg dry weight):	ug/L			**Sample Size:**	10 mL

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
cis-1,2-Dichloroethene	0.0320	1.00	13.9	1		
Tetrachloroethene	0.0300	1.00	0.420	1		F
trans-1,2-Dichloroethene	0.0270	1.00	0.390	1		F
Trichloroethene	0.0270	1.00	0.350	1		F
Vinyl chloride	0.0380	1.00	0.880	1		F

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	117	72 - 119	
4-Bromofluorobenzene	92	76 - 119	
Dibromofluoromethane	106	85 - 115	
Toluene-d8	102	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	309274	213391 - 853564	
Chlorobenzene-d5	523662	262028 - 1048114	
Fluorobenzene	1153248	541449 - 2165796	

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#1

Date of Initial Calibration: 06APR07

Initial Calibration ID: 901

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

SEE ATTACHED

Comments:

AFCEE FORM O-3

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 13:59:15 2007
Response via : Continuing Calibration

ICAL #901

Calibration Files
0.3 =T7968.D 0.5 =T7969.D 2.0 =T7970.D
10 =T7971.D 20 =T7972.D 30 =T7973.D

		Compound	0.3	0.5	2.0	10	20	30	Avg	%RSD
1)	I	Fluorobenzene	----------------	ISTD	----------------					
2)		Dichlorodifluoromet	0.263	0.308	0.300	0.335	0.322	0.318	0.309	7.54
3)	P	Chloromethane	0.475	0.463	0.439	0.456	0.443	0.436	0.450	3.36
4)	CP	Vinyl chloride	0.293	0.340	0.338	0.377	0.370	0.372	0.352	8.71
5)		Bromomethane	0.091	0.112	0.110	0.123	0.135	0.154	0.126	18.97
6)		Chloroethane	0.236	0.279	0.249	0.251	0.242	0.242	0.249	5.62
7)		Trichlorofluorometh	0.462	0.434	0.431	0.503	0.479	0.474	0.466	5.56
8)		Acetone			0.051	0.048	0.046	0.046	0.048	4.08
9)		Acrolein 4pts for curve 4/6/07				0.002	0.002	0.002	0.002	7.00
10)	CPM	1,1-Dichloroethene	0.173	0.157	0.197	0.210	0.215	0.220	0.200	12.76
11)		Methyl iodide	0.093	0.128	0.166	0.225	0.258	0.288	0.209	39.19
12)		1,1,2-Trichloro-1,2	0.242	0.222	0.236	0.270	0.265	0.265	0.253	7.69
13)		Methyl acetate	0.189	0.187	0.178	0.156	0.171	0.173	0.177	6.46
14)		Acrylonitrile	0.057	0.055	0.059	0.063	0.063	0.063	0.061	6.83
15)		Methylene chloride		0.369	0.371	0.298	0.292	0.285	0.318	12.70
16)		Carbon disulfide	0.838	0.850	0.818	0.950	0.906	0.897	0.881	5.32
17)		trans-1,2-Dichloroe	0.269	0.222	0.248	0.255	0.263	0.269	0.257	7.05
18)		Methyl tert-Butyl e	0.530	0.532	0.584	0.663	0.641	0.662	0.614	10.60
19)	P	1,1-Dichloroethane	0.486	0.496	0.505	0.522	0.516	0.519	0.510	2.92
20)		Vinyl acetate	0.238	0.231	0.269	0.320	0.337	0.353	0.302	18.60
21)		2-Butanone	0.062	0.062	0.065	0.084	0.075	0.077	0.073	13.93
22)		cis-1,2-Dichloroeth	0.275	0.246	0.265	0.287	0.291	0.297	0.281	7.15
23)		Bromochloromethane	0.121	0.123	0.127	0.129	0.133	0.136	0.130	5.10
24)	CP	Chloroform	0.551	0.521	1.022	0.530	0.526	0.532	0.603	30.63#
25)		2,2-Dichloropropane	0.350	0.361	0.374	0.448	0.450	0.463	0.417	12.62
26)		Cyclohexane	0.353	0.373	0.400	0.532	0.549	0.566	0.478	20.32
27)	S	Dibromofluoromethan	0.232	0.226	0.222	0.237	0.243	0.246	0.237	4.70
28)	S	1,2-Dichloroethane-	0.319	0.297	0.302	0.305	0.306	0.307	0.307	2.16
29)		1,2-Dichloroethane	0.367	0.359	0.369	0.361	0.362	0.364	0.365	1.28
30)		1,1,1-Trichloroetha	0.386	0.364	0.416	0.462	0.463	0.473	0.435	10.70
31)		1,1-Dichloropropene		0.288	0.320	0.369	0.391	0.408	0.365	14.00
32)		Carbon tetrachlorid	0.293	0.297	0.327	0.372	0.377	0.392	0.352	13.02
33)	M	Benzene	1.085	1.046	1.154	1.214	1.229	1.257	1.175	6.99
34)	M	Trichloroethene	0.275	0.267	0.267	0.297	0.303	0.311	0.290	6.91
35)		Dibromomethane	0.148	0.127	0.144	0.149	0.146	0.148	0.145	5.87
36)		Methylcyclohexane	0.373	0.358	0.400	0.498	0.519	0.530	0.461	17.44
37)	CP	1,2-Dichloropropane	0.279	0.256	0.275	0.289	0.295	0.305	0.288	6.71
38)		Bromodichloromethan	0.305	0.292	0.378	0.351	0.359	0.367	0.347	10.08
39)		2-Chloroethylvinyl		0.004	0.010	0.015	0.016	0.018	0.014	42.49
40)		4-Methyl-2-pentanon	0.123	0.126	0.147	0.178	0.188	0.194	0.167	21.24
41)		cis-1,3-Dichloropro	0.280	0.328	0.351	0.419	0.436	0.459	0.392	18.52
42)	S	Toluene-d8	0.779	0.803	0.898	1.066	1.074	1.102	0.976	14.88
43)	CPM	Toluene		0.634	0.743	0.845	0.846	0.868	0.802	11.93

(#) = Out of Range ### Number of calibration levels exceeded format ###

4/9/07

OK 4-11-07

Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 13:59:15 2007
Response via : Continuing Calibration

Calibration Files
0.3 =T7968.D 0.5 =T7969.D 2.0 =T7970.D
10 =T7971.D 20 =T7972.D 30 =T7973.D

		Compound	0.3	0.5	2.0	10	20	30	Avg	%RSD
44)		trans-1,3-Dichlorop	0.236	0.240	0.293	0.386	0.381	0.405	0.337	23.26
45)		1,1,2-Trichloroetha	0.171	0.153	0.178	0.188	0.180	0.186	0.178	7.13
46)		2-Hexanone	0.067	0.066	0.093	0.117	0.136	0.135	0.110	31.81
47)		1,2-Dibromoethane	0.164	0.157	0.178	0.202	0.195	0.205	0.188	11.65
48)	I	Chlorobenzene-d5	ISTD							
49)		1,3-Dichloropropane	0.766	0.752	0.771	0.855	0.810	0.862	0.814	6.54
50)		Dibromochloromethan	0.384	0.377	0.424	0.484	0.489	0.538	0.465	15.57
51)		Tetrachloroethene	0.577	0.622	0.649	0.702	0.697	0.730	0.676	9.35
52)		1-Chlorohexane	0.635	0.625	0.671	0.890	0.930	0.962	0.817	20.34
53)		1,1,1,2-Tetrachloro	0.453	0.490	0.497	0.578	0.575	0.591	0.543	11.49
54)	PM	Chlorobenzene	1.877	1.789	1.827	1.881	1.868	1.901	1.867	2.47
55)	CP	Ethylbenzene	2.838	2.817	3.119	3.505	3.464	3.480	3.239	9.59
56)		(m+p)-Xylene	0.975	0.982	1.104	1.286	1.297	1.310	1.184	13.52
57)		o-Xylene	0.809	0.849	0.971	1.219	1.253	1.287	1.104	20.06
58)		Styrene	0.994	1.071	1.389	1.904	2.043	2.073	1.661	29.94
59)	P	Bromoform	0.204	0.201	0.231	0.290	0.298	0.326	0.272	22.45
60)	S	Bromofluorobenzene	0.719	0.646	0.717	0.833	0.862	0.900	0.801	13.40
61)	I	1,4-Dichlorobenzene-d	ISTD							
62)		trans-1,4-Dichloro-	0.037	0.070	0.074	0.093	0.096	0.111	0.086	32.71
63)	P	1,1,2,2-Tetrachloro	0.648	0.722	0.687	0.693	0.634	0.667	0.677	4.38
64)		Isopropylbenzene	2.738	2.872	3.410	4.019	3.850	3.934	3.515	14.88
65)		1,2,3-Trichloroprop	0.606	0.623	0.606	0.606	0.567	0.604	0.606	3.26
66)		Bromobenzene	0.943	0.884	0.976	1.005	0.954	1.001	0.965	4.45
67)		n-Propylbenzene		3.163	3.890	4.612	4.441	4.460	4.137	13.00
68)		2-Chlorotoluene	2.316	2.367	2.814	3.130	3.034	3.144	2.843	12.67
69)		4-Chlorotoluene	1.860	1.951	2.408	2.661	2.599	2.710	2.410	14.92
70)		1,3,5-Trimethylbenz	1.628	1.772	2.307	2.789	2.805	2.886	2.437	22.24
71)		tert-Butylbenzene		1.857	2.264	2.674	2.650	2.739	2.480	14.13
72)		1,2,4-Trimethylbenz	1.382	1.398	1.928	2.393	2.448	2.532	2.091	24.99
73)		sec-Butylbenzene		2.619	3.383	3.920	3.862	3.888	3.565	14.14
74)		1,3-Dichlorobenzene	1.537	1.509	1.690	1.789	1.727	1.811	1.693	7.31
75)		p-Isopropyltoluene	1.457	1.609	2.236	2.882	2.915	3.005	2.440	27.62
76)		1,4-Dichlorobenzene	1.593	1.575	1.648	1.707	1.665	1.723	1.663	3.74
77)		n-Butylbenzene	1.156	1.136	1.572	2.204	2.307	2.397	1.882	30.69
78)		1,2-Dichlorobenzene	1.384	1.434	1.552	1.644	1.604	1.680	1.564	7.33
79)		1,2-Dibromo-3-chlor		0.082	0.082	0.086	0.091	0.101	0.091	11.42
80)		1,2,4-Trichlorobenz	0.222	0.241	0.395	0.625	0.692	0.755	0.533	45.64
81)		Hexachlorobutadiene		0.477	0.500	0.606	0.588	0.622	0.569	11.25
82)		Naphthalene	0.123	0.154	0.420	0.775	0.944	1.020	0.653	64.13
83)		1,2,3-Trichlorobenz	0.146	0.199	0.393	0.603	0.662	0.688	0.491	49.85

(#) = Out of Range ### Number of calibration levels exceeded format ###

Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 14:48:17 2007
Response via : Initial Calibration

Calibration Files
40 =T7974.D = =
= = =

		Compound	40	Avg	%RSD
			ISTD		
1)	I	Fluorobenzene			
2)		Dichlorodifluoromet	0.320		
3)	P	Chloromethane	0.437		
4)	CP	Vinyl chloride	0.373		
5)		Bromomethane	0.155		
6)		Chloroethane	0.244		
7)		Trichlorofluorometh	0.481		
8)		Acetone	0.049		
9)		Acrolein	0.002		
10)	CPM	1,1-Dichloroethene	0.225		
11)		Methyl iodide	0.308		
12)		1,1,2-Trichloro-1,2	0.271		
13)		Methyl acetate	0.182		
14)		Acrylonitrile	0.067		
15)		Methylene chloride	0.293		
16)		Carbon disulfide	0.909		
17)		trans-1,2-Dichloroe	0.274		
8)		Methyl tert-Butyl e	0.687		
19)	P	1,1-Dichloroethane	0.527		
20)		Vinyl acetate	0.369		
21)		2-Butanone	0.086		
22)		cis-1,2-Dichloroeth	0.304		
23)		Bromochloromethane	0.139		
24)	CP	Chloroform	0.541		
25)		2,2-Dichloropropane	0.471		
26)		Cyclohexane	0.569		
27)	S	Dibromofluoromethan	0.253		
28)	S	1,2-Dichloroethane-	0.309		
29)		1,2-Dichloroethane	0.372		
30)		1,1,1-Trichloroetha	0.482		
31)		1,1-Dichloropropene	0.416		
32)		Carbon tetrachlorid	0.405		
33)	M	Benzene	1.239		
34)	M	Trichloroethene	0.312		
35)		Dibromomethane	0.153		
36)		Methylcyclohexane	0.546		
37)	CP	1,2-Dichloropropane	0.313		
38)		Bromodichloromethan	0.379		
39)		2-Chloroethylvinyl	0.020		
40)		4-Methyl-2-pentanon	0.214		
41)		cis-1,3-Dichloropro	0.470		
42)	S	Toluene-d8	1.109		
43)	CPM	Toluene	0.879		

(#) = Out of Range ### Number of calibration levels exceeded format ###

4/9/07

Response Factor Report #1MS11

Method : C:\HPCHEM\1\METHODS\T406VOCW.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Fri Apr 06 14:48:17 2007
Response via : Initial Calibration

Calibration Files
40 =T7974.D = =
= = =

		Compound	40	Avg	%RSD
44)		trans-1,3-Dichlorop	0.417		
45)		1,1,2-Trichloroetha	0.190		
46)		2-Hexanone	0.153		
47)		1,2-Dibromoethane	0.214		
48)	I	Chlorobenzene-d5	----------ISTD----------		
49)		1,3-Dichloropropane	0.885		
50)		Dibromochloromethan	0.561		
51)		Tetrachloroethene	0.757		
52)		1-Chlorohexane	1.005		
53)		1,1,1,2-Tetrachloro	0.619		
54)	PM	Chlorobenzene	1.926		
55)	CP	Ethylbenzene	3.453		
56)		(m+p)-Xylene	1.337		
57)		o-Xylene	1.341		
58)		Styrene	2.153		
59)	P	Bromoform	0.356		
60)	S	Bromofluorobenzene	0.930		
61)	I	1,4-Dichlorobenzene-d	----------ISTD----------		
62)		trans-1,4-Dichloro-	0.120		
63)	P	1,1,2,2-Tetrachloro	0.686		
64)		Isopropylbenzene	3.784		
65)		1,2,3-Trichloroprop	0.629		
66)		Bromobenzene	0.993		
67)		n-Propylbenzene	4.259		
68)		2-Chlorotoluene	3.097		
69)		4-Chlorotoluene	2.682		
70)		1,3,5-Trimethylbenz	2.871		
71)		tert-Butylbenzene	2.694		
72)		1,2,4-Trimethylbenz	2.556		
73)		sec-Butylbenzene	3.721		
74)		1,3-Dichlorobenzene	1.789		
75)		p-Isopropyltoluene	2.977		
76)		1,4-Dichlorobenzene	1.731		
77)		n-Butylbenzene	2.404		
78)		1,2-Dichlorobenzene	1.651		
79)		1,2-Dibromo-3-chlor	0.107		
80)		1,2,4-Trichlorobenz	0.799		
81)		Hexachlorobutadiene	0.622		
82)		Naphthalene	1.136		
83)		1,2,3-Trichlorobenz	0.747		

(#) = Out of Range ### Number of calibration levels exceeded format ###

AFCEE
ORGANIC ANALYSES DATA SHEET 4
SECOND SOURCE CALIBRATION VERIFICATION

Analytical Method:	SW8260B	**AAB #:**	R9117
Lab Name:	Life Science Laboratories, In	**Contract Number:**	
Instrument ID:	MS01_11	**Initial Calibration ID:**	901
Second Source ID:	ICV-9117	**Concentration Units (mg/L or mg/kg):**	µg/L

Analyte	Expected	Found	%D	Q
1,2-Dichloroethane-d4	10	9.07	-9.3	
4-Bromofluorobenzene	10	10.2	2.0	
cis-1,2-Dichloroethene	10	9.59	-4.1	
Dibromofluoromethane	10	9.29	-7.1	
Tetrachloroethene	10	10.1	0.8	
Toluene-d8	10	10.2	2.1	
trans-1,2-Dichloroethene	10	9.68	-3.2	
Trichloroethene	10	9.62	-3.8	
Vinyl chloride	10	10.2	2.4	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 5
CALIBRATION VERIFICATION

Analytical Method: 8260 AAB #: R9334

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

Instrument ID: HP5973 GCMS#1 Initial Calibration -ID: 901

ICV ID: ICV-9117 CCV #1 ID: CCV-9334 CCV #2 ID:

SEE ATTACHED

Comments:

AFCEE FORM O-5

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\T8296.D
Acq On : 23 Apr 2007 8:40
Sample : CCV-9334
Misc : CCV ,8260WAF_40CAL,
MS Integration Params: RTEINT.P

Vial: 16
Operator: DMB
Inst : #1MS11
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\T406SHOR.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Wed Apr 11 10:37:46 2007
Response via : Multiple Level Calibration

Min. RRF : 0.000 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	121	0.00
2	CP	Vinyl chloride	0.352	0.367	-4.3	117	0.00
3		trans-1,2-Dichloroethene	0.257	0.256	0.4	121	0.00
4		cis-1,2-Dichloroethene	0.281	0.268	4.6	112	0.00
5	CP	Chloroform	0.603	0.539	10.6	123	0.00
6	S	Dibromofluoromethane	0.237	0.240	-1.3	122	0.00
7	S	1,2-Dichloroethane-d4	0.307	0.327	-6.5	129	0.00
8	M	Trichloroethene	0.290	0.291	-0.3	118	0.00
9	S	Toluene-d8	0.976	0.984	-0.8	111	0.00
10	I	Chlorobenzene-d5	1.000	1.000	0.0	122	0.00
11		Tetrachloroethene	0.676	0.667	1.3	116	0.00
12	S	Bromofluorobenzene	0.801	0.786	1.9	115	0.00
	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

4/24/07

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\T8296.D
Acq On : 23 Apr 2007 8:40
Sample : CCV-9334
Misc : CCV ,8260WAF_40CAL,
MS Integration Params: RTEINT.P

Vial: 16
Operator: DMB
Inst : #1MS11
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\T406SHOR.M (RTE Integrator)
Title : VOC's w/Restek Rtx-VMS, 0.18 mm x 40 m, 1.0 df
Last Update : Wed Apr 11 10:37:46 2007
Response via : Multiple Level Calibration

Min. RRF : 0.000 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	121	0.00
2	CP	Vinyl chloride	10.000	10.415	-4.1	117	0.00
3		trans-1,2-Dichloroethene	10.000	9.959	0.4	121	0.00
4		cis-1,2-Dichloroethene	10.000	9.535	4.6	112	0.00
5	CP	Chloroform	10.000	9.786	2.1	123	0.00
6	S	Dibromofluoromethane	10.000	10.134	-1.3	122	0.00
7	S	1,2-Dichloroethane-d4	10.000	10.660	-6.6	129	0.00
8	M	Trichloroethene	10.000	10.028	-0.3	118	0.00
9	S	Toluene-d8	10.000	10.083	-0.8	111	0.00
10	I	Chlorobenzene-d5	10.000	10.000	0.0	122	0.00
11		Tetrachloroethene	10.000	9.866	1.3	116	0.00
12	S	Bromofluorobenzene	10.000	9.812	1.9	115	0.00
	I	1,4-Dichlorobenzene-d4	10.000	10.000	0.0	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

4/24/07

AFCEE
ORGANIC ANALYSES DATA SHEET 7
BLANKS

Analytical Method:	SW8260B	**AAB #:**	R9334
Lab Name:	Life Science Laboratories, Inc.	**Contract Number:**	
Units:	µg/L	**Method Blank ID:**	MB-9334
Initial Calibration ID:	901	**File ID:**	T8301.D

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

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	116	72 - 119	
4-Bromofluorobenzene	98	76 - 119	
Dibromofluoromethane	105	85 - 115	
Toluene-d8	100	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	381188	213391 - 853564	
Chlorobenzene-d5	576114	262028 - 1048114	
Fluorobenzene	1270140	541449 - 2165796	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 8
LABORATORY CONTROL SAMPLE

Analytical Method: SW8260B **AAB #:** R9334

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

LCS ID: LCS-9334 **Initial Calibration ID:** 901

Concentration Units (mg/L or mg/kg): µg/L **File ID:** T8297.D

Analyte	Expected	Found	%R	Control Limits	Q
cis-1,2-Dichloroethene	10	9.98	100	72 - 126	
Tetrachloroethene	10	10.4	104	66 - 128	
trans-1,2-Dichloroethene	10	10.0	100	63 - 137	
Trichloroethene	10	10.4	104	70 - 127	
Vinyl chloride	10	11.0	110	50 - 134	

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	112	72 - 119	
4-Bromofluorobenzene	102	76 - 119	
Dibromofluoromethane	106	85 - 115	
Toluene-d8	105	81 - 120	

Internal Std	Area Counts	Area Count Limits	Qualifier
1,4-Dichlorobenzene-d4	496572	213391 - 853564	
Chlorobenzene-d5	637678	262028 - 1048114	
Fluorobenzene	1309773	541449 - 2165796	

Comments:

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ORGANIC ANALYSES DATA SHEET 10
HOLDING TIMES

Analytical Method: SW8260B **AAB #:** R9334

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
B035M0416FA	0704120-001A	18-Apr-07	19-Apr-07	23-Apr-07			23-Apr-07	14	5.1	

Comments:

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ORGANIC ANALYSES DATA SHEET 11
INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: SW8260B **AAB#:**

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

Instrument ID #: MS01_11

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
TB040507A1	TB040507A1	06-Apr-07	9:11	06-Apr-07	9:40
ICAL 0.3 PPB	ICAL 0.3 PPB	06-Apr-07	9:40	06-Apr-07	10:13
ICAL 0.5 PPB	ICAL 0.5 PPB	06-Apr-07	10:13	06-Apr-07	10:46
ICAL 2.0 PPB	ICAL 2.0 PPB	06-Apr-07	10:46	06-Apr-07	11:19
ICAL 10 PPB	ICAL 10 PPB	06-Apr-07	11:19	06-Apr-07	11:52
ICAL 20 PPB	ICAL 20 PPB	06-Apr-07	11:52	06-Apr-07	12:24
ICAL 30 PPB	ICAL 30 PPB	06-Apr-07	12:24	06-Apr-07	12:57
ICAL 40 PPB	ICAL 40 PPB	06-Apr-07	12:57	06-Apr-07	14:03
ICV-9117	ICV-9117	06-Apr-07	14:03	06-Apr-07	14:03
TB042307A1	TB042307A1	23-Apr-07	8:11	23-Apr-07	8:40
CCV-9334	CCV-9334	23-Apr-07	8:40	23-Apr-07	9:13
LCS-9334	LCS-9334	23-Apr-07	9:13	23-Apr-07	11:24
MB-9334	MB-9334	23-Apr-07	11:24	23-Apr-07	15:48
B035M0416FA	0704120-001A	23-Apr-07	15:48	23-Apr-07	15:48

Comments:

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

Analytical Method:	SW8260B	**AAB #:**	MS01_11_070406A
Lab Name:	Life Science Laboratories, Inc.	**Contract #:**	
Instrument ID:	MS01_11	**Injection Date/Time:**	4/6/2007 9:11:00 AM
Initial Calibration ID:	901	**File ID:**	C:\HPCHEM\1\DATA\T7967.D
Compound:	SW8260B	**Sample ID:**	TB040507A1

Mass	Ion Abundance Criteria	% Relative Abundance	Q
50	15 - 40% of m/z 95	22.6	
75	30 - 60% of m/z 95	55.9	
95	Base peak, 100% relative abundance	100	
96	5 - 9% of m/z 95	6.6	
173	Less than 2% of m/z 174	0.6	
174	Greater than 50% of m/z 95	83.1	
175	5 - 9% of m/z 174	7.2	
176	Greater than 95% but less than 101% of m/z 174	99.4	
177	5 - 9% of m/z 176	6.4	

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

Analytical Method:	SW8260B	**AAB #:**	MS01_11_070423B
Lab Name:	Life Science Laboratories, Inc.	**Contract #:**	
Instrument ID:	MS01_11	**Injection Date/Time:**	4/23/2007 8:11:00 AM
Initial Calibration ID:	901	**File ID:**	C:\HPCHEM\1\DATA\T8295.D
Compound:	SW8260B	**Sample ID:**	TB042307A1

Mass	Ion Abundance Criteria	% Relative Abundance	Q
50	15 - 40% of m/z 95	22.7	
75	30 - 60% of m/z 95	56.5	
95	Base peak, 100% relative abundance	100	
96	5 - 9% of m/z 95	6.2	
173	Less than 2% of m/z 174	0.6	
174	Greater than 50% of m/z 95	74.1	
175	5 - 9% of m/z 174	8.1	
176	Greater than 95% but less than 101% of m/z 174	100.3	
177	5 - 9% of m/z 176	7.0	