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2011
ANNUAL LONG TERM MONITORING REPORT
SD031 (THREE MILE CREEK) AND SD032 (SIX MILE CREEK)
AREAS OF CONCERN

Prepared for:

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/kg	micrograms per kilogram
µg/L	micrograms per liter
AFB	Air Force Base
AFCEE	Air Force Center for Engineering and the Environment
AFFF	Aqueous film-forming foam
AFRPA	Air Force Real Property Agency
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
CAPE	Cape Environmental Management Inc
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
CQCR	Chemical Quality Control Reports
CSYA	Coal Storage Yard Area
CY	cubic yards
DDD	Dichlorodiphenyldichloroethane
DDE	1,1-dichloro-2,2-bis(chlorophenyl) ethylene
DDT	dichlorodiphenyltrichloroethane
DO	Delivery Order
DRMO	Defense Reutilization and Marketing Office
E&E	Ecology and Environment, Inc.
EPS	Electrical Power Substation
FDA	Food and Drug Administration
FPM	FPM Remediations, Inc.
FS	Feasibility Study
FSP	Field Sampling Plan
ft	feet
HSP	Health and Safety Plan
IRA	Interim Remedial Action
IT	International Technology Corp.
LAW	Law Engineering and Environmental Services, Inc.
LTM	long-term monitoring
MDL	method detection limit
mg/kg	milligram per kilogram
mm	millimeters
MSL	mean sea level
NYCRR	New York Code of Rules and Regulations
NYS	New York State
NYSBC	New York State Barge Canal
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OU	Operable Unit
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PISCES	passive in-situ chemical extraction sample
ppm	parts per million

QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RI	Remedial Investigation
RL	reporting limit
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SCG	Standards, Criteria, and Guidelines
SI	Supplemental Investigation
SMC	Six Mile Creek
SVOC	semivolatile organic compound
TMC	Three Mile Creek
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compound
WP	Work Plan
WSA	Weapon Storage Area

1.0 INTRODUCTION

FPM Remediations Inc. (FPM), in association with Cape Environmental Management Inc (CAPE), has been contracted by the Air Force Center for Engineering and the Environment (AFCEE), to perform Long Term Monitoring (LTM) at Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites at the former Griffiss Air Force Base (AFB), Rome, New York. The work discussed in this Annual Report will be conducted through contract number FA8903-10-D-8595-0014. The following sections provide the LTM data for the former Griffiss AFB Three Mile Creek (TMC) and Six Mile Creek (SMC) Areas of Concern (AOC) for 2011. Sediment sampling was performed at both TMC and SMC in September 2011 under contract number FA8903-10-D-8595-0014. The TMC and SMC AOCs are illustrated in Figure 1-1.

The LTM program is part of the selected remedy as described in the signed Record of Decision (ROD) (Ecology and Environment, Inc. [E&E], December 2003). The LTM program will monitor the presence of contaminants of concern (COCs), assess the potential for migration of COCs and establish an early warning system for assuring compliance with potential COC receptors (human, terrestrial, and aquatic wildlife).

The sampling is being performed in accordance with the following documents: the Final LTM Work Plan (WP) for the TMC and SMC AOCs (FPM, October 2004), Draft Final Optimization Plan for CERCLA AOCs (FPM/CAPE, September 2011), Final Health and Safety Plan (HSP) (CAPE, November 2011), and Final Uniform Federal Policy (UFP) Quality Assurance Project Plan (QAPP) (FPM/CAPE, November 2011). .

2.0 SD031 (THREE MILE CREEK AOC)

2.1 Site Description

The TMC AOC is located in a forested area in the southern part of the former Griffiss AFB. It is bordered by the Electrical Power Substation (EPS) to the northwest, Landfills 4, 5, and 6 to the northeast, and the former Skyline Housing development to the southwest. The TMC AOC is a creek with an approximate length of 10,000 feet, a width of 10 feet and a depth ranging from 2 inches at its origination to 2 feet at the furthest downstream area near the New York State Barge Canal (NYSBC). The creek originates at two storm water culvert outlets located at Ellsworth Road and Wright Drive (near the EPS). Two additional smaller culverts that drain the area surrounding the EPS enter the creek slightly downstream from the two larger culverts. The creek receives both surface water runoff and groundwater from the surrounding watershed. Drainage is received from Landfills 4, 5, and 6, the EPS and the south central part of the base. TMC flows in a southeasterly direction and eventually flows into the NYSBC (about one mile south of the base).

The ROD for the TMC AOC was issued by the Air Force in December 2003 and signed by the United States Environmental Protection Agency (USEPA) in March 2004. In addition, 5-Year Reviews were conducted in 2005 and 2010. Both 5-Year Reviews indicated that the selected remedy is protective of human health and the environment.

2.2 Three Mile Creek AOC Conditions

2.2.1 Previous Investigations

Preliminary studies of TMC were performed in 1981, 1987, and 1988. Soil, sediment, surface water, groundwater, and fish tissue samples were collected. Numerous metals, polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCBs), and pesticides were detected in the streambed sediments and the fish tissue was contaminated with PCBs, some PAHs, and metals. The results of these studies led to the performance of a Remedial Investigation (RI) from 1993-1995.

The RI was performed to characterize the nature and extent of environmental contamination at the TMC AOC to determine whether remedial action was necessary to eliminate potential threats to human health and the environment from exposures that might arise under existing or expected future site conditions. The RI included an aquatic survey, surface water sampling, sediment sampling, and fish tissue sampling. The aquatic survey was used to evaluate creek habitat, water quality, benthic and drift macroinvertebrate communities, and fish populations within four 100-meter segments of the on-base part of the creek (one near the EPS, one near Landfill 5, one near the Thor Street residential area, and one further downstream just inside the base boundary). At approximately the same locations, sediment samples were collected for toxicity testing and fish samples were collected for pesticides, PCBs, and metals analyses. Results from the sediment toxicity tests performed as part of the aquatic survey indicated that chemicals were not present at levels acutely toxic to aquatic life. A slight impairment of benthic macroinvertebrate populations was noted at the locations near Landfill 5 and near the base boundary. The fish population assessment indicated that fish communities were in poor to fair condition which could be due to site contaminants and, in part, to the lack

of quality habitat. The results of the fish tissue analysis indicated the presence of PCBs, pesticides, and mercury at levels exceeding New York Department of Environmental Conservation (NYSDEC) ecological risk guidelines for protection of piscivorous wildlife.

Surface water samples were collected from 12 locations along TMC and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), PCBs, pesticides, metals, glycols, radionuclides and water quality parameters. One VOC, 15 SVOCs, four pesticides, and seven metals were detected at concentrations above the most stringent criteria for surface water. Sediment samples were collected at two depths below the surface water/sediment interface (0.5 feet and 1.0 foot) from 15 locations, including the 12 locations along TMC and three locations along the drainage ditch near Landfill 5. The samples were analyzed for VOCs, SVOCs, pesticides, herbicides, PCBs, dioxins, metals, and radionuclides. Three VOCs, 22 SVOCs, 18 pesticides, one dioxin, and ten metals were detected at concentrations above the most stringent criteria for sediment.

In 1995, NYSDEC performed passive in-situ concentration/extraction sampling (PISCES) at one location in TMC to test for PCBs and other organochlorines. PCBs and 1,1-dichloro-2,2-bis(chlorophenyl)ethylene (DDE) were detected. Naturally occurring conditions such as below average rainfall and low flow in the stream may have affected the ability of PISCES to detect contaminants.

In 1997, for a separate investigation of PCB contamination associated with Landfill 5, sediment samples were collected at two depth intervals (0-0.5 feet and 1-1.5 feet) from seven locations in the Landfill 5 tributary to TMC. PCBs were detected at concentrations above the most stringent criteria.

In June 1997, as part of a base-wide Supplemental Investigation (SI), three PISCES samples and two surface water samples were collected from TMC for pesticide and PCB analysis. Pesticides were detected in two of the PISCES samples. No contaminants were detected in the surface water.

In July 1998, additional SI samples were taken from the off-base portion of TMC to fill data gaps that had been identified in the RI sampling. These included two surface water samples and eight sediment samples. Four metals were detected in surface water samples above the most stringent criteria. Concentrations of 18 SVOCs, one dichlorodiohenyldichloroethane (DDD), one PCB (Aroclor 1260), and five metals detected in sediment were above the most stringent criteria.

A visual inspection of the habitat quality of TMC was conducted in 1999, by the Air Force, United States Army Corps of Engineers (USACE), NYSDEC, USEPA, and US Fish and Wildlife Service (USFWS) to gain a better understanding of creek conditions and the impact of potential remedial actions. In the same year, for the TMC Feasibility Study (FS), sediment samples were collected from six locations in TMC pond (located off-base between NYS Routes 365 and 49) and analyzed for PCBs, cadmium, and lead. In 2001, the same six locations in the pond were vertically profiled to depths of 3.5 feet below creek bottom to determine the vertical extent of sediment contamination and the appropriate depth for sediment remediation. Twelve additional samples were collected, two samples per location. PCBs, cadmium, and lead were all detected at concentrations exceeding the most stringent criteria.

The 2001 FS investigation also included sampling along the on-base portion of the TMC channel and the Landfill 5 tributary in order to define the vertical and lateral extent of contamination to better determine the potential breadth and depth of sediment remediation in those areas. Samples of sediment and native soil (beneath sediment) were collected at selected locations from depth intervals of up to 3.5 feet. Five VOCs, 24 SVOCs, 15 pesticides, two PCBs, dioxins, and 10 metals were detected at concentrations exceeding the most stringent criteria.

2.2.2 Record of Decision

The ROD for the TMC AOC was issued by the Air Force in December 2003 and signed by the USEPA in March 2004. Based on the previous investigations and environmental conditions at the site the selected remedy for the creek is selected excavation of contaminated sediments and LTM. The excavation included the entire length of the on-base portion of the creek, discrete and localized off-base portions of the creek, and the TMC pond. The contamination was identified to be considerably lower in the off-base portion of the creek. Therefore, excavation of the entire off-base portion was not required. For LTM, the ROD states surface water, sediment, and fish tissue samples will be analyzed in accordance with the TMC AOC LTM program following creek bed remediation and restoration.

2.2.3 Three Mile Creek AOC Remedial Action

CAPE performed a Remedial Action (RA) at TMC from summer 2004 to summer 2005. For the remedial action, excavation of contaminated sediments was conducted in the on-base and off-base portions of TMC. The TMC pond along with sixteen soil deposits was excavated to a depth of 3.5 feet below ground surface (bgs) in the off-base portion of TMC. Approximately 5,940 cubic yards (CY) of sediment was excavated from the off-base portion of TMC. The main channel, the north channel, and the Landfill 5 tributary were excavated in the on-base portion of TMC. The design depths for the excavation, as defined in the ROD, ranged from 2.5 feet bgs to 4 feet bgs and approximately 29,427 CY were excavated. FPM collected two soil samples on June 29, 2005, from the TMC pond backfill, which were analyzed for VOCs, SVOCs, PCBs, pesticides, and metals. The results indicated VOCs and metals detections, none of which exceeded the most stringent ecological screening values.

The restoration of the creek consisted of sediment backfill, the construction of several meanders throughout the length of the creek and the distribution of logs across the banks of the main channel to provide wildlife habitat areas, the creation of five vernal pools, and the creation of a mitigation wetland (5 acres) within the TMC floodplain.

2.2.4 Three Mile Creek AOC Long Term Monitoring (2006 through 2010)

LTM at the TMC AOC initially consisted of annual surface water and sediment sampling at sampling locations TMC-1 through -8 and fish tissue sampling and a benthic qualitative assessment performed every three years at sampling locations TMC-1 through -5. The sampling locations are illustrated in Figure 2-1. Fish tissue sampling and benthic qualitative assessment is not performed at TMC-6 through -8 as these sites are upgradient potential source locations. LTM at the AOC was initiated in fall 2006. Surface water sampling, sediment sampling, fish tissue sampling and a benthic qualitative assessment was performed in accordance with the Final LTM work plan requirements (FPM, October

2004). Annual LTM sampling was also performed in fall 2007, fall 2008, fall 2009, and fall 2010. Only surface water and sediment samples were collected in the fall 2007, fall 2008, and fall 2010 sampling rounds. Fish tissue sampling and a benthic qualitative assessment were also performed in fall 2009 in addition to surface water and sediment sampling. Surface water and sediment samples were analyzed for VOCs, SVOCs, metals, pesticides, and PCBs. Fish tissue samples were analyzed for cadmium, mercury, pesticides, and PCBs.

The following summarizes the previous LTM results for TMC. Full descriptions of previous LTM activities and sampling results are provided in the Fall 2006 Annual LTM Report for Three Mile Creek (FPM, October 2007), Fall 2007 Annual LTM Report for Three Mile Creek (FPM, October 2008), Fall 2008 Annual LTM Report for Three Mile Creek (FPM, December 2009), Fall 2009 Annual LTM Report for Three Mile Creek (FPM, March 2010), and Fall 2010 Annual LTM Report for Three Mile Creek (FPM, July 2011).

Surface Water:

VOC detections were reported in surface water samples during the 2006, 2007, 2008, and 2009 sampling events (not analyzed during the 2010 sampling event). None of these detections exceeded NYS Surface Water Standards. SVOC and metals concentrations exceeding NYS Surface Water Standards were reported during all sampling events. During data analysis, the SVOC and metals detections were determined to be indicative of basewide background conditions identified during the RI (reported at several sites throughout the base) or were detected within one order of magnitude of the surface water standard. Only one sampling location showed PCB or pesticide exceedances during the TMC AOC LTM sampling events. Anlytical results for location TMC-7 indicated that one PCB (Aroclor 1260) and one pesticide (dieldrin) were in exceedance of NYS Surface Water Standards during the fall 2007 and fall 2008 sampling events. The exceedances may be attributed to suspended solids in the sample.

All LTM surface water sampling results from the 2006, 2007, 2008, 2009, and 2010 sampling events were compared to the previous LTM surface water results and the 1993/94 RI (if applicable). Surface water results for SVOCs and pesticides are lower in concentration and in number of detected COCs than the four previous LTM rounds. Two SVOCs that were detected above NYSDEC Surface Water Standards are associated with the B data qualifier. This qualifier indicates that the analyst was also detected in the associated blank. TMC-7 which showed the most SVOC exceedances during the fall 2009 sampling round could not be sampled in 2010 due to a lack of water in the creek. TMC-6 showed the highest number of SVOC exceedances during this round which is an increase from the fall 2009 round. This may be attributed to suspended sediment/solids present in the sample. One pesticide, gamma-chlordane, exceedance was also detected in one surface water sampling location (TMC-6) and may be attributed to the sample containing suspended solids. No pesticides have ever been detected at this location. Additionally, it should be noted that pesticides containing these COCs are no longer used at the former Griffiss AFB.

Sediment:

VOCs were not detected in sediments above the most stringent ecological screening value at any location during the fall 2006 through fall 2009 sampling rounds. VOC analysis

was removed from the LTM network following the fall 2009 sampling round. SVOC and metals concentrations were detected above the most stringent ecological screening value. The SVOC and metals exceedances reported in each of the previous LTM sampling rounds are indicative of basewide background conditions (identified during the RI) or were detected within one order of magnitude of the most stringent ecological screening value. Pesticide exceedances were reported at all sampling locations in at least one of the LTM sampling rounds. Total pesticide concentrations show a decreasing trend when the 1994 RI and historical LTM sampling results are compared. PCB (Aroclor 1260) has been detected at concentrations above the most stringent ecological screening value of 5 µg/kg during all sampling rounds. Exceedances show a decreasing trend at applicable sampling locations (TMC-1, -2, -3, -6, -7, and -8) when the 1994 RI sampling round and LTM sampling rounds were compared.

Arochlor 1260 was detected at a maximum concentration of 7,500 µg/kg (TMC-7) in the 1993/94 RI and declined to a maximum concentration of 603 J µg/kg (TMC-5) in the fall 2010 sampling round. The maximum detection was 304 µg/kg (TMC-4) in the fall 2009 sampling round, 433 µg/kg (TMC-4) in the fall 2008 round, 116 µg/kg (TMC-5) in the fall 2007 round, and 570 µg/kg (TMC-4) in the fall 2006 round. The COC variations are likely due to spatial variability. However, the general trend is declining from the 1993/4 RI to the fall 2010 results by an order of magnitude.

Fish Tissue:

Pesticide, PCB, and metals detections were reported in fish tissue samples at all of the sampling locations (TMC-1, -2, -3, -4, and -5) during the fall 2006 and fall 2009 sampling rounds. All locations had at least one fish sample with a PCB or pesticide concentration above the NYSDEC piscivorous wildlife criteria. At sampling locations 1, 4, and 5, PCB concentrations were detected above the New York State Department of Health (NYSDOH) Fish Advisory Guidelines (locations 1, 4, and 5 also showed elevated PCB exceedances in the sediment samples). The TMC AOC 2004/2005 RA was not required along the entire length of the creek. Given that TMC is dammed, fish migration to and from the Barge Canal is not possible. It is feasible that the fish sampled during the 2006 and 2009 sampling rounds lived in the creek prior to and during RA activities, resulting in the continued PCB detections in fish tissue.

In the on-base portion of the creek that required remediation, LTM fish tissue sampling data has shown a decrease in PCB levels compared to the RI results at locations TMC-1, -2, and -3. These three locations are similar to sampling locations sampled during the RI (TMCFS-1, -2, and -3). Detected PCBs concentrations ranged from 0.028-32.5 parts per million (ppm) during the RI. In the 2006 sampling event, total detected PCB concentrations ranged from 0.25-2.89 ppm and from 0.58-4.3 ppm in the 2009 sampling event.

It should also be noted that the number and size of fish collected during the 2006 and 2009 sampling events show an increasing trend compared to the RI results. During the RI, a total of 456 fish were collected from these three locations ranging in length from 33-179 millimeters (mm). In the 2006 sampling event, 319 fish were collected from these locations ranging from 45-225 mm and in the 2009 sampling event, 759 fish were collected at these three locations ranging from 47-251 mm. The small decrease in number of fish collected from the RI to the 2006 sampling event may be a result of the 2004/2005

RA displacing fish in this section of the creek.

Additional fish tissue sampling in 2012 and 2015 will be used to identify any trends.

Benthic Qualitative Assessment:
The results of the benthic qualitative assessments conducted in 2006 and 2009 indicated that the creek was slightly-to-moderately impacted according to the NYSDEC Biomonitoring Unit protocol for slow and sandy streams. Since there is sandy substrate and slow water flow in portions of the creek, TMC is considered a poor habitat for benthic macroinvertebrates. Therefore, the slightly-to-moderately impacted classification may be due to the poor habitat and not chemical conditions in surface water or sediment.

2.3 2011 Field Activities

The TMC LTM is performed to determine the impacts of other sites on TMC as well as the evaluation of the effectiveness of the RA performed in 2004 and 2005. Sediment samples were collected from the designated sampling locations on September 6, 2011 in accordance with the Final LTM WP requirements (FPM, October 2004). Daily Chemical Quality Control Reports (CQCRs) are attached in Appendix A. The sediment sampling results are provided in Table 2-1. The validated lab results are attached in Appendix B and the raw lab data are attached in Appendix C.

Cadmium and mercury were detected in samples collected from TMC-1, -3, -4, -5, and -6. Cadmium was also detected in the sample collected from TMC-2. No concentrations were above the most stringent ecological screening value in the samples collected from TMC-1, -2, and -3. A cadmium exceedance was reported at location TMC-4 at 0.61 J milligram per kilogram (mg/kg) and a cadmium and a mercury exceedance was reported at location TMC-5 at 5.2 J mg/kg and 0.17 J mg/kg, respectively. Mercury was also reported above the most stringent ecological criteria at TMC-6 (0.18 mg/kg). The most stringent ecological screening value for cadmium is 0.6 mg/kg. For mercury, the most stringent ecological screening value is 0.15 mg/kg. The J data qualifier identifies that the analyte was positively identified; the quantitation is an estimate.

SVOCs were detected at all sampling locations. SVOC concentrations above the most stringent ecological screening value were reported at sampling locations TMC-1, -3, -5, and -7. Ten SVOC exceedances were reported at TMC-1. They included acenaphthene, anthracene, benzo(a) anthracene, benzo(a)pyrene, benzo(b)flouranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, phenanthrene, and pyrene. The concentrations ranged from 62 J to 930 J µg/kg. One SVOC exceedance was reported at TMC-3 and -7. Phenol was detected at 36 J µg/kg at both locations. Ten SVOC exceedances were reported at TMC-5. They included acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene. The concentrations ranged from 89 J to 2,200 J µg/kg.

Figure 2-2 shows the total SVOC concentration trends for all of the sampling rounds completed to date at each sampling location. Figure 2-2 demonstrates that total SVOC concentrations are stable or declining at all of the TMC sampling locations except for TMC-5, which is the most downstream location. At sampling location TMC-5, an

increasing trend has been observed since 2008. The SVOC contamination at the creek may be attributed to upstream parking lots and roadway runoff. This is feasible considering that TMC-5 is located at the TMC pond; the flow velocity of water that enters the pond decreases and as it does suspended sediments are deposited.

PCB (Aroclor 1260) exceedances were reported for sampling locations TMC-1 (48 J µg/kg), -4 (12 J µg/kg), and -5 (27 J µg/kg). The most stringent ecological screening value for Aroclor 1260 is 5 µg/kg. The highest PCB (Aroclor 1260) concentration during the fall 2011 sampling round was reported at TMC-1 (48 J µg/kg). Figure 2-3 shows the PCB concentrations detected in all of the sampling rounds completed to date at each sampling location. PCB concentration trend charts are also provided in Figure 2-4 for each sampling location with PCB detections.

PCB (Aroclor 1254) was also detected above the most stringent ecological screening value (11.10 µg/kg) at TMC-6 with a concentration of 21 J µg/kg. This aroclor had never been previously detected at any location at the TMC AOC during any previous LTM sampling events.

Arochlor 1260 was detected at a maximum concentration of 7,500 µg/kg (TMC-7) in the 1993/94 RI and has declined to a maximum concentration of 48 J µg/kg (TMC-1) in the fall 2011 sampling round. TMC-1 is near the EPS. Given the 1 ppm cleanup objectives for the Interim RA conducted at the EPS, the PCB detections at TMC-1 and further downstream may be a result of surface water drainage and surface erosion from the EPS. Prior to the 2011 sampling event, the maximum detection was 604 J µg/kg (TMC-5) in the fall 2010 sampling round, 304 µg/kg (TMC-4) in the fall 2009 sampling round, 433 µg/kg (TMC-4) in the fall 2008 round, 116 µg/kg (TMC-5) in the fall 2007 round, and 570 µg/kg (TMC-4) in the fall 2006 round. Although variations in detected PCB concentrations are evident, the variations are likely due to spatial variability. The general trend is an order of magnitude decline from 1993/94 RI to fall 2011 results. The declining trend is illustrated in Figures 2-3 and 2-4.

A pesticide exceedance was reported for beta BHC, p,p-DDT and dieldrin. p,p-DDT concentrations at TMC-1 (9.1 J µg/kg), and TMC-4 (1.8 J µg/kg) exceeded the most stringent ecological screening value of 1 µg/kg. The beta BHC concentration at TMC-2 (1.9 J µg/kg) exceeded the most stringent ecological screening value of 0.04 µg/kg. Dieldrin concentrations at TMC-2 (0.32 J µg/kg) and TMC-4 (0.49 J µg/kg) exceeded the most stringent ecological screening value of 0.02 µg/kg.

The trends of the RI and LTM data indicate that the RA was effective in removing a majority of the contamination in the TMC sediments, and that sediment quality is improving.

2.4 Conclusions

LTM sampling is performed to determine the impact of the RA and other sites (Figure 2-1) on TMC as well as to determine data trends. As reported in the LTM reports for Landfill 5 and Landfill 6, there is no evidence that sites influence TMC based on the lack of detections in the point of compliance wells. Landfill 5 and 6 figures and the latest results tables are provided in Appendix D.

Given the presence of PCBs in the sediments following the RA, there is a possibility that residual soil contamination at the EPS has some effect on TMC sediments, but the effects are limited in extent and declining over time.

Sediment:
Cadmium and mercury concentrations were above the most stringent ecological screening values at sampling locations TMC-4, -5, and -6. SVOC exceedances were reported at sampling locations TMC-1, -3, -5, and -7. The SVOC exceedances may be contributed to contaminated surface runoff from adjacent roadways and parking lots. Pesticide exceedances were reported at sampling locations TMC-1, -2, and -4. PCB (Aroclor 1260) was reported at three sampling locations (TMC-1, -4, and -5) during the fall 2011 sampling round at concentrations above the most stringent ecological screening value.

The fall 2011 sediment sampling results were compared to the previous LTM sediment results and the 1993/94 RI (if applicable). Exceedances show a decreasing trend compared to the 1994 RI sampling round and to the previous LTM sampling rounds, at applicable sampling locations (TMC-1, -2, -3, -6, and -7).

2.5 LTM Optimization Recommendations

Annual sediment sampling and triennial fish tissue sampling and qualitative benthic community evaluation will continue at the TMC AOC. The LTM sampling network summary for TMC is shown in Table 2-2.

The following recommendations are made for future TMC LTM sampling:

Sediment:
Annual sediment sampling is recommended at locations TMC-1 through -7 to confirm the reduction of sediment contaminant concentrations. The RA has resulted in a significant reduction in COC concentrations of over 2 orders of magnitude and has achieved the RA goal of reducing PCBs concentrations to 1 ppm or less throughout the creek.

Currently, sediment samples are analyzed for PCBs, SVOCs, mercury, cadmium, and pesticides. However, several COCs have not been detected above the most stringent ecological screening values at several locations and it is recommended to remove them as follows:

- Remove mercury and cadmium analysis at TMC-1, -3, and -7
- Remove pesticides analysis at TMC-3, -6, and -7
- Remove SVOC analysis at TMC-2 and -3.

Fish Tissue Sampling and Benthic Qualitative Assessment:
Fish tissue sampling and benthic qualitative assessment are proposed to continue at TMC-1 through -5 on a triennial basis. Fish tissue samples will be analyzed for pesticides, PCBs, cadmium, mercury, and % lipids to confirm the stabilization and decline of COC levels in fish tissue. The next fish tissue sampling and benthic qualitative assessment event will be during the fall 2012 LTM sampling round.

3.0 SD032 (SIX MILE CREEK AOC)

3.1 Site Description

SMC is a natural stream bordered by wetlands and enters the base from the north. The creek is approximately 8 feet wide and 1.5 feet deep prior to entering the base and approximately 20 feet wide and 4 feet deep after leaving the former base. The on-base portion of the creek is approximately 8,400 feet long, split in an upper and lower section, plus an additional 7,200 feet within the runway culvert separating both sections. The creek continues off base for approximately 2 miles, ultimately flowing into the NYSBC.

Surface water runoff from Landfills 1, 2/3, and 7, the Weapon Storage Area (WSA), WSA Landfill, runway, on-base shops, and Rainbow Creek flows into SMC. Portions of the base storm water system discharge to the on-base lower portion of the creek. During Base operation, the base storm water system also received rinse water and washdown, which may have contained oils, solvents, and fuels from various base facilities.

SMC has been classified as a NYSDEC Class C stream. According to the New York Code of Rules and Regulations (NYCRR) 701, the best usage for Class C stream waters is fishing, where waters shall be suitable for fish propagation and survival. Based on an Aquatic Habitat Assessment, at least 12 species of fish are found in SMC.

The ROD for SMC AOC was signed by the USEPA on March 26, 2004 and LTM was initiated in October 2004. In addition, 5-Year Reviews were conducted in 2005 and 2010. Both 5-Year Reviews indicated that the selected remedy is protective of human health and the environment.

3.2 Six Mile Creek AOC Conditions

3.2.1 Previous Investigations

Preliminary studies of SMC were performed in 1981 and 1988. Soil, sediment, and fish tissue samples were collected. Numerous metals and PAHs were detected in the sediments. Several metals and PCBs were detected in the fish tissue samples at levels below the Food and Drug Administration (FDA) action level of 2.0 ppm but above the 0.1 ppm level representing risk to piscivorous wildlife. The results of these studies led to the performance of an RI in 1994 and 1995.

The RI was performed to evaluate the nature and extent of environmental contamination at the site and to determine whether RA was necessary to eliminate potential threats to human health and the environment from exposures that might arise under existing or expected future site conditions. The RI included an aquatic survey that evaluated creek habitat, water quality, benthic and drift macroinvertebrate communities, and fish populations at three stations along the northern section of the creek (SMC-FS1, SMC-FS2, and SMC-FS3, similar in location to location SMC-1 and -2). At approximately the same three locations, sediment samples were collected for toxicity testing and fish samples were collected for pesticides, PCBs, and metals analyses. Results from the sediment toxicity tests performed as part of the aquatic survey indicated that chemicals were not present at levels acutely toxic to aquatic life; however, the benthic macroinvertebrate community at one station was classified as slightly impaired.

During the RI, surface water samples were collected over several rounds of sampling from 21 locations: 14 from SMC, one at the Aqueous Film-Forming Foam (AFFF) lagoon, three in the Mohawk River, and three in the NYSBC. Two VOCs, 14 SVOCs, four pesticides, six metals, cyanide, and sulfide were detected at concentrations above the most stringent criteria for surface water. Sediment samples were collected at two depths below the surface water/sediment interface from the same 21 locations. Three VOCs, 18 SVOCs, 20 pesticides, one PCB and six metals were detected at concentrations above the most stringent criteria for sediment.

In 1995, the NYSDEC conducted a benthic macroinvertebrate community analysis for SMC just downstream of the former AFB's boundary at the Route 365 Bridge. Due to a significantly impacted benthic macroinvertebrate community, the water quality was assessed as being moderately impacted. Fish population data indicated that fish communities were generally in fair condition and whole-body fish tissue concentrations indicated that PCBs, pesticides and mercury were present at levels exceeding NYSDEC ecological risk guidelines. The PCB concentrations in fish tissue also exceeded the previously mentioned FDA action level.

Also in 1995, NYSDEC performed PISCES on the lower portion of SMC to test for PCBs and other organochlorines. No contaminants were detected. However, naturally occurring conditions, such as below average rainfall and low flow in the stream, may have affected the ability of PISCES samplers to detect contaminants.

As part of a basewide SI performed in June 1997, one water sample was collected from a storm sewer manhole located within the SMC culverted section, and two surface water samples were collected from the storm sewer outfalls at the headwaters of Rainbow Creek. No contaminants were detected in these water samples. In addition, ten PISCES samples were collected for pesticides and PCBs analyses from SMC, two from unnamed tributaries to the creek, and one from the Rainbow Creek Tributary. No PCBs were detected. The levels of pesticides found in Rainbow Creek and downstream in SMC were higher than in the upper portion of SMC and the other tributaries. There are no screening criteria for PISCES samples.

In July 1998, additional SI samples were collected, primarily from off-Base locations, to fill data gaps that had been identified in the RI sampling. These included two surface water samples and 12 sediment samples. Three metals were detected above the most stringent criteria for surface water. Ten SVOCs, PCBs, dioxins/furans, and two metals were above the most stringent criteria for sediment.

In July 1999, the habitat quality of the creek was visually inspected by Air Force Real Property Agency (AFRPA), USACE, NYSDEC, USEPA, and USFWS. A brief walkover of the on-Base portion revealed the presence of orange floc (iron oxide) at a few locations above and below the culvert. This was attributed to the presence of leachate seeps with extensive orange floc upstream at Landfill 1. A more extensive walkover of the off-Base portion of the creek revealed an aquatic habitat of relatively high quality. The surrounding habitat is also of high quality for plants and wildlife, including extensive areas of forest, shrub, and emergent wetlands. The presence of cloudiness and some orange floc in the water column was observed. The floc is attributed to leachate seepage from Landfill 1. However, it should be noted that high concentrations of iron were

observed in background soil conditions (E&E, July 2003).

3.2.2 Record of Decision

The ROD for the SMC AOC was issued by the Air Force in December 2003 and signed by the USEPA in March 26, 2004. Based on the previous investigations and environmental conditions at the site, the selected remedy is Source Control at sites potentially discharging to SMC and LTM of the SMC AOC, stated in the ROD.

3.2.3 Six Mile Creek AOC Long Term Monitoring (2004 through 2010)

LTM at the SMC AOC was initiated in October 2004 and consisted of annual surface water and sediment sampling at twelve sampling locations (SMC-1 through -12) and fish tissue sampling and a benthic qualitative assessment is conducted every three years at 5 sampling locations (SMC-1 through -5). Surface water sampling, sediment sampling, fish tissue sampling and a benthic qualitative assessment was performed in fall 2004 and fall 2007. Surface water and sediment sampling was also conducted in fall 2005 and fall 2006. The sampling locations are illustrated on Figure 3-1.

As recommended in the fall 2007 LTM Report, only SMC-1, -2, -4, -5, and -11 were sampled in 2008 and 2009. Seven locations were removed as a result of little to no contamination reported at the sites over four consecutive sampling rounds. During these events, surface water and sediment sampling was conducted.

In fall 2010, surface water samples, sediment samples, fish tissue samples, and benthic qualitative assessments were conducted at sampling locations SMC-1, -4, and -5. A benthic qualitative assessment was also conducted at SMC-2. No sediment samples were collected here due to the absence of contamination and surface water sampling is conducted under the Landfill 1 LTM network. Sampling location SMC-11 was removed from the LTM network following the installation of the Rainbow Creek culvert.

The following summarizes the previous LTM results for SMC. Full descriptions of previous LTM activities and sampling results are provided in the Fall 2004 Annual LTM Report for Six Mile Creek (FPM, July 2005), Fall 2005 Annual LTM Report for Six Mile Creek (FPM, May 2006), Fall 2006 Annual LTM Report for Six Mile Creek (FPM, October 2007), Fall 2007 Annual LTM Report for Six Mile Creek (FPM, October 2008), Fall 2008 Annual LTM Report for Six Mile Creek (FPM, August 2009), Fall 2009 Annual LTM Report for Six Mile Creek (FPM, March 2010), and Fall 2010 Annual LTM Report for Six Mile Creek (FPM, July 2011).

<u>Surface Water:</u>
Results from annual surface water sampling conducted between 2004 and 2010 showed VOC, SVOC, and metals concentrations above NYS Surface Water Standards. One VOC (benzene) exceedance was present at two sampling locations, SMC-4 and -5. However, benzene concentrations have not been detected above the NYS Surface Water Standards at these locations since 2008. The historical exceedances were attributed to the Apron 2 Petroleum Spill Site, which is upgradient of the creek and currently undergoing active remediation through horizontal biosparging. The NYS Surface Water Standard for benzene is 1 µg/L.

Samples from several locations have reported SVOC and metals concentrations above NYS Surface Water Standards. However, concentrations were within one order of magnitude of the NYS Surface Water Standards or attributed to background conditions. There were no PCB or pesticide exceedances reported in any of the sampling events.

Sediment:

Results from annual sediment sampling conducted between 2004 and 2010 showed SVOC, metals, pesticides, and PCBs concentrations above the NYSDEC's most stringent ecological screening values. The following summarizes the latest LTM sampling results (fall 2010).

Up to eight SVOC detections were reported at all three sampling locations, but concentrations did not exceed the most stringent ecological screening values. Additionally, two of the SVOCs detected at each location were also detected in the associated blank. No pesticides were detected in any of the three locations.

One PCB detection was reported: Aroclor 1254 exceeded the most stringent ecological screening value (15.96 µg/kg) at sampling location SMC-5 (50.2 µg/kg). No PCBs detections were reported from sampling locations SMCs -1 and - 4. The most stringent ecological screening value for Aroclor 1248 and 1254 is 15.96 µg/kg. The most stringent ecological screening value for Aroclor is 1260 is 5 µg/kg.

PCB exceedances observed during LTM sampling show a decreasing trend compared to the 1994 RI sampling round, at applicable sampling locations (SMCs -1, -4, and -5). Detected PCB concentrations from the 2004 to 2010 sampling rounds showed no discernible trends.

Fish Tissue:

During the 2004 LTM event, fish tissue sampling was conducted at sampling locations SMC-1, -2, -3, -4, and -5. Results showed PCB detections at all sampling locations, including SMC-1 which is the upgradient location. PCB exceedances of the NYSDEC piscivorous wildlife criteria were reported at sampling locations SMC-4 and -5. However, the concentrations were not above the NYS Department of Health Fish Advisory Guidelines.

Sampling locations SMC-3, -4, and -5 were sampled in 2007. Results showed PCB detections at all sampling locations. PCB exceedances of the NYSDEC piscivorous wildlife criteria were reported at sampling locations SMC-4 and -5. However, the concentrations were not above the NYSDOH Fish Advisory Guidelines.

Fish sampling was again conducted at SMC-1, -4, and -5 in 2010. No fish samples could be collected at SMC-2 due to a beaver pond. The samples from SMC-1, -4 and -5 were analyzed whole for ecological evaluation. No exceedances were reported in fish tissue samples at SMC-1, but one PCB (aroclor 1254) was detected. This location is upstream of all former Griffiss AFB source sites. PCB exceedances of the NYSDEC piscivorous wildlife criteria were reported at sampling locations SMC-4 and -5. However, the concentrations were not above the NYSDOH Fish Advisory Guidelines.

The range of total PCB concentrations from the 2010 sampling round was lower than the total PCB concentration ranges from both the 2004 and 2007 sampling rounds. The sediment sample at SMC-4 did not show any PCB detections during the 2010 sampling round.

Benthic Qualitative Assessment:

Benthic Qualitative Assessments were conducted at locations SMC-1, -2, -3, -4, and -5 in 2004, at SMC-2, -3, -4, and -5 in 2007, and at SMC-1, -2, -4, and -5 in 2010. Results from 2010 showed an improvement in water quality impacts in the creek at sampling locations SMC-1, -4, and -5. The water quality at SMC-1 and -5 was non-impacted in the 2010 sampling round. SMC-1 was slightly impacted in 2004 (not sampled in 2007) and SMC-5 was slightly impacted in 2004 and 2007. Both locations have ideal macro invertebrate habitat including a rocky substrate with faster water flow rates.

The water quality at SMC-4 was slightly impacted during the 2010 sampling round. This location was moderately impacted during the 2004 and 2007. Only 36 specimens could be collected using the kick sampling method at this location. However, the number of specimens collected has increased from the 2007 sampling round when only 26 specimens were collected. Additionally, only 84 specimens were collected at SMC-4 in 2004. Therefore, given the substrate and overall habitat of the sampling location, the low yield is not believed to be attributed to water quality but rather, poor habitat. The water quality at SMC-2 remained similar when compared to previous sampling events (moderate). This location had sandy substrate and is downgradient of Landfill 1. At this location, a beaver dam has been constructed generating slow water flow rates. The sample was collected upstream of the pond in a narrower and shallower portion of the creek. The slow water flow rates can contribute to lower oxygen rates in the water and a less favorable benthic habitat.

3.3 2011 Field Activities

On September 6, 2011, sediments and surface water samples were collected at sampling locations SMC-4 and -5. Sediment samples collected at locations SMC-4 and -5 were analyzed for PCBs. Sediment sampling results are provided in Table 3-1. Daily CQCRs are attached in Appendix A. The validated and raw lab results are attached in Appendix B and Appendix C, respectively. No PCBs detections were reported.

3.4 Conclusions

No PCBs were detected at sampling locations SMC-4 and -5 in the 2011sampling round. PCBs have previously been detected at both locations. When the PCB results from all LTM events prior to 2011 are compared, there is no discernable trend. The total PCB concentration trends in Six Mile Creek sediments are illustrated in Figure 3-2. Rainbow Creek, the suspected source of PCB contamination, was culverted in 2008 and 2009. Therefore, it is anticipated that the PCB detections will continue to decline since the culvert may have eliminated the source of discharge of additional PCBs to SMC by minimizing erosion of residual contaminated soils and sediments.

3.5 LTM Optimization Recommendations

Continued annual sediment sampling is recommended at sampling location SMC-5 to monitor contamination degradation and migration. Two consecutive sampling rounds have shown no PCB detections at SMC-4. Therefore, it is recommended to remove SMC-4 from the LTM Network. The LTM sampling network summary for SMC is shown in Table 3-2.

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TABLES

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-1							
Sample ID		RI Results (TMCSD-2)	TMCSD0101AA	TMCSD0101BB	TMCSD0101CA	TMCSD0101DA	TMCSD0101EA	TMCSD0101FA	
Date of Collection		5/17/1994	10/11/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5							
SVOCs (µg/Kg)									
1,2-dichlorobenzene	7900	U	U	U	30 F	280 F	U	U	
1,2,4-trichlorobenzene	3400	U	U	U	U	U	U	U	
1,3-dichlorobenzene	1600	U	U	U	U	U	U	U	
1,4-dichlorobenzene	8500	U	U	U	U	78 F	U	U	
2-methylnaphthalene	65	5,100 J	25 F	U	U	33 F	30 F	U	
4-chlorophenyl phenyl ether	--	U	U	U	U	U	U	U	
4-nitroaniline	500*	U	U	U	U	U	U	U	
acenaphthene	16	U	33 F	U	U	160 F	220 F	62 J	
acenaphthylene	--	11,000 J	U	U	22 F	U	U	U	
anthracene	85	19,000	75 F	U	58 F	540 F	86 F	170 J	
benzo(a)anthracene	261	51,000	190 F	U	160 F	1,700 J	290 F	460 J	
benzo(a)pyrene	370	35,000	170 F	U	130 F	1,500 M	250 F	370 J	
benzo(b)fluoranthene	--	41,000	250 F	U	190 F	2,300 M	470 F	670 J	
benzo(k)fluoranthene	240	28,000	95 F	U	83 F	970 M	150 F	U	
benzo(g,h,i)perylene	170	19,000	60 F	U	47 F	320 F	88 F	210 J	
benzyl alcohol	--	U	U	U	U	U	U	U	
benzoic acid	--	U	U	U	U	U	U	U	
bis(2-ethylhexyl) phthalate	10453.8	900 J	30 F	29 F	45 F	110 F	120 F	U	
benzyl butyl phthalate	50000	U	U	U	U	47 F	39	U	
chrysene	340	43,000	190 F	U	130 F	1,700 J	310 F	410 J	
di-n-butyl phthalate	--	U	U	U	U	U	U	U	
di-n-octyl phthalate	50000	U	U	U	U	U	U	U	
dibenz(a,h)anthracene	60	8,700 J	22 F	U	U	120 F	U	U	
dibenzofuran	2000	10,000 J	31 F	U	U	U	52 F	U	
diethyl phthalate	7100	U	U	41 F	U	U	U	U	
fluoranthene	600	84,000	370 F	U	320 F	3,200 J	650 F	930 J	
fluorene	35	12,000 J	45 F	U	24 F	210 F	55 F	U	
indeno(1,2,3-c,d)pyrene	200	22,000	50 F	U	34 F	140 F	18 F	190 J	
naphthalene	160	15,000 J	47 F	U	20 F	U	58 F	U	
nitrobenzene	200*	U	U	U	U	U	U	U	
phenol	26.2	U	U	U	U	U	U	U	
phenanthrene	240	91,000	330 F	U	250 F	2,400 J	510 F	700 J	
pyrene	490	89,000	340 F	U	260 F	3,900 J	580 F	740 J	

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-1							
Sample ID		RI Results (TMCSD-2)	TMCSD0101AA	TMCSD0101BB	TMCSD0101CA	TMCSD0101DA	TMCSD0101EA	TMCSD0101FA	
Date of Collection		5/17/1994	10/11/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5							
Metals (mg/Kg)									
aluminum	--	1,930	3,900	4,100	3,600	3,000	2,800 J	NS	
antimony	2	U	U	U	0.23 F	U	U	NS	
arsenic	6	5 J	2.9 F	3.0 F	2 F	1.9 F	3.3 F	NS	
barium	--	23.8	15.0	17.0	14.0	11.0	11.0	NS	
berylium	--	U	0.18 F	0.18 F	0.17 F	0.13 F	0.12 F	NS	
cadmium	0.6	1.7	0.44 F	U	0.44 F	U	U	0.18 J	
calcium	--	20,100	5,600	720	5,600	8,800	6,700	NS	
chromium	26	21.2	5.6	4.9	5.3	3.9	5.9	NS	
cobalt	--	2.7	3.2	3.1	2.7	1.9	2.3	NS	
copper	16	52.5	42	10	10	9.4	8.6	NS	
iron	20,000	11,400	9,600	9,100	8,600	7,200	6,500	NS	
lead	31	94.6 J	7.1	1.9 F	5.7	4.3	12	NS	
magnesium	--	1,970	2,200	1,700	2,100	2,100	1,800	NS	
manganese	460	77.9	170	160	130	100	120	NS	
molybdenum	--	9.1	0.33 F	U	U	U	U	NS	
nickel	16	33.9	7.5	7.1	6.9	5.8	5.5	NS	
potassium	--	233	500	520	58	440	450	NS	
selenium	--	U	U	0.61 F	0.39 F	U	U	NS	
silver	1	U	U	U	U	U	U	NS	
sodium	--	206	67 F	44 F	51 F	74 F	74	NS	
thallium	--	U	U		U	U	U	NS	
vanadium	--	97.0	9.3	6.9	8.1	6.7	5.9	NS	
zinc	120	153 J	23	18	20	23	26	NS	
mercury	0.15	U	0.0249 F	0.006 F	0.056 F	0.015 F	0.0095 F	0.078 J	
PCBs (µg/Kg)									
Aroclor 1248	11.1	U	U	U	U	U	U	U	
Aroclor 1254	11.10 [3]	R	U	U	U	U	U	U	
Aroclor 1260	5	R	66.5	U	51.2	146	144	48 J	
Pesticides (µg/Kg)									
alpha BHC	0.01	R	U	U	U	U	U	U	
beta BHC	0.04	R	U	U	U	U	U	U	
delta BHC	0.04	R	U	U	U	U	U	U	
gamma BHC (Lindane)	0.05	R	U	U	U	U	U	U	
alpha-Chlordane	0.05	R	U	U	U	U	U	U	
gamma-Chlordane	0.05	R	0.66 F	U	U	U	U	U	
p,p'-DDD	2	R	5.8 F	U	U	U	U	U	
p,p'-DDE	2	R	0.53 F	U	U	U	U	U	
p,p'-DDT	1	R	25 F	UM	13 J	U	U	9.1 J	
aldrin	--	R	13 F	U	U	U	U	U	
dieldrin	0.02	R	U	0.56 F	8.6 J	U	U	U	
endosulfan I	--	R	U	U	U	U	U	U	
endosulfan II	--	R	12 F	0.40 F	U	U	U	0.68 J	
endosulfan sulfate	--	R	U	U	U	U	U	U	
endrin	3	R	4 F	U	U	U	U	U	
endrin aldehyde	5*	R	8.8 F	U	U	U	U	U	
heptachlor	0.04	R	U	U	U	U	U	U	
heptachlor epoxide	0.03	R	0.79 J	U	U	U	U	U	
methoxychlor	31.44	R	2.9 F	U	U	U	U	U	

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-2							
Sample ID		RI Results (TMCSD-8)	TMCSD0201AA	TMCSD0201BB	TMCSD0201CA	TMCSD0201DA	TMCSD0201EA	TMCSD0201FA	
Date of Collection		5/16/1994	10/11/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5							
SVOCs (µg/Kg)									
1,2-dichlorobenzene	7900	220 J	U	U	U	140 F	55 F	U	
1,2,4-trichlorobenzene	3400	U	U	U	U	U	U	U	
1,3-dichlorobenzene	1600	U	U	U	U	U	U	U	
1,4-dichlorobenzene	8500	200 J	U	U	U	62 F	29 F	U	
2-methylnaphthalene	65	360 J	U	U	U	24 F	U	U	
4-chlorophenyl phenyl ether	--	U	U	U	U	U	U	U	
4-nitroaniline	500*	U	U	U	U	U	U	U	
acenaphthene	16	810 J	U	U	U	27 F	U	U	
acenaphthylene	--	230 J	U	U	U	30 F	U	U	
anthracene	85	1,600	30 F	U	U	68 F	25 F	U	
benzo(a)anthracene	261	6,300	84 F	U	20 F	340 F	130 F	45 J	
benzo(a)pyrene	370	4,600	75 F	U	U	370 F	140 F	43 J	
benzo(b)fluoranthene	--	5,400	100 F	U	19 F	790 F	240 F	86 J	
benzo(k)fluoranthene	240	4,700	37 F	U	U	210 F	80 F	U	
benzo(g,h,i)perylene	170	1,700	24 F	U	U	110 F	59 F	31 J	
benzyl alcohol	--	U	U	U	U	U	U	U	
benzoic acid	--	U	U	U	U	U	U	U	
bis(2-ethylhexyl) phthalate	10453.8	1000 J	26 F	47 F	30 F	49 F	63 F	130 J	
benzyl butyl phthalate	50000	U	U	U	U	U	U	U	
chrysene	340	5,300	81 F	U	U	430 F	150 F	58 J	
di-n-butyl phthalate	--	U	U	U	U	U	U	U	
di-n-octyl phthalate	50000	U	U	U	U	U	50 F	U	
dibenz(a,h)anthracene	60	970 J	U	U	U	UM	U	U	
dibenzofuran	2000	660 J	U	U	U	U	U	U	
diethyl phthalate	7100	U	U	40 F	U	U	U	U	
fluoranthene	600	11,000	150 F	U	32 F	690 F	260 F	91 J	
fluorene	35	1,000 J	U	U	U	36 F	U	U	
indeno(1,2,3-c,d)pyrene	200	2,300	U	U	U	U	U	28 J	
naphthalene	160	860 J	U	U	U	28 F	U	U	
nitrobenzene	200*	U	U	U	U	U	U	U	
phenol	26.2	U	U	U	U	U	U	23 J	
phenanthrene	240	8,500	110 F	U	18 F	380 F	140 F	48 J	
pyrene	490	10,000	130 F	U	26 F	800 F	260 F	23 J	

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-2							
Sample ID		RI Results (TMCSD-8)	TMCSD0201AA	TMCSD0201BB	TMCSD0201CA	TMCSD0201DA	TMCSD0201EA	TMCSD0201FA	
Date of Collection		5/16/1994	10/11/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5							
Metals (mg/Kg)									
aluminum	--	54,330	2,700	2,900	3,100	3,600	1,900	NS	
antimony	2			U	U	U	0.38 F	NS	
arsenic	6	26.7	1.7 F	1.1 F	1.5 F	3.8 F	6.7	NS	
barium	--	95.7	11	14	9.5	17.0	21.0	NS	
berylium	--	U	0.12 F	0.12 F	0.14 F	0.20 F	0.28 F	NS	
cadmium	0.6	7.7	0.22 F	U	0.19 F	1.3	2.0	0.22 J	
calcium	--	14,600	2,700	4,000	860	2,200	2,900	NS	
chromium	26	65.8	4	4.0	4.0	5.2	6.6	NS	
cobalt	--	6.8	2.4	2.2	2.4	2.3	0.9	NS	
copper	16	67.6	6.8	7.3	7.1	11	15	NS	
iron	20,000	19,100	6,700	7,400	7,200	8,800	5,100	NS	
lead	31	206	2.5 F	1.9 F	1.8 F	12	28	NS	
magnesium	--	1,870	1,300	1,500	1,400	1,200	430	NS	
manganese	460	119	180	110	180	160	89	NS	
molybdenum	--	U	U	U	U	U	0.59 F	NS	
nickel	16	22.9	5.2	5.4	5.6	7.3	3.9	NS	
potassium	--	519	380	420	490	480	270	NS	
selenium	--	U	U	0.41 F	U	U	0.65 F	NS	
silver	1	6.8	U	U	U	U	0.26 F	NS	
sodium	--	448	41 F	31 F	16 F	30 F	50 F	NS	
thallium	--	U	U	U	0.77 F	U	U	NS	
vanadium	--	77.3	6.4	6.4	5.9	9.1	8.3	NS	
zinc	120	184	20	22	15	33	26	NS	
mercury	0.15	0.4	0.00613 F	U	0.0069 F	0.050 F	0.081	U	
PCBs (µg/Kg)									
Aroclor 1248	11.1	U	U	U	U	U	U	U	
Aroclor 1254	11.10 [3]	U	U	U	U	U	U	U	
Aroclor 1260	5	6,600	28.5 F	16.7	13.2 F	84.0	71.7	U	
Pesticides (µg/Kg)									
alpha BHC	0.01	U	U	U	U	U	U	U	
beta BHC	0.04	U	U	U	U	U	U	1.9 J	
delta BHC	0.04	U	U	U	U	U	U	U	
gamma BHC (Lindane)	0.05	U	U	U	U	U	U	U	
alpha-Chlordane	0.05	U	0.41 F	U	U	U	U	U	
gamma-Chlordane	0.05	U	0.41 F	U	U	U	U	U	
p,p'-DDD	2	U	2.8 F	2.9 F	U	U	U	U	
p,p'-DDE	2	U	U	U	U	U	U	U	
p,p'-DDT	1	U	2.6 F	UM	U	U	U	U	
aldrin	--	U	2.8 F	U	U	U	U	U	
dieldrin	0.02	U	U	2.5 F	1.4 F	U	U	0.32 J	
endosulfan I	--	U	U	U	U	U	U	U	
endosulfan II	--	U	2.2 F	U	U	U	U	U	
endosulfan sulfate	--	U	U	U	U	U	U	U	
endrin	3	U	U	1.1 F	U	U	U	U	
endrin aldehyde	5*	U	1.7 F	U	U	U	U	U	
heptachlor	0.04	U	U	U	U	U	U	U	
heptachlor epoxide	0.03	U	0.63 F	U	U	U	U	U	
methoxychlor	31.44	U	UJ	U	U	67 F	U	U	

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-3							
Sample ID		RI Results (TMCSD-10)	TMCSD0301AA	TMCSD0301BB	TMCSD0301CA	TMCSD0301DA	TMCSD0301EA	TMCSD0301FA	
Date of Collection		5/15/1994	10/11/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5							
SVOCs (µg/Kg)									
1,2-dichlorobenzene	7900	97 J	U	U	U	U	U	U	
1,2,4-trichlorobenzene	3400	U	U	U	U	U	U	U	
1,3-dichlorobenzene	1600	U	U	U	U	U	U	U	
1,4-dichlorobenzene	8500	U	U	U	U	U	U	U	
2-methylnaphthalene	65	U	U	U	U	U	24 F	U	
4-chlorophenyl phenyl ether	--	U	U	U	U	U	U	U	
4-nitroaniline	500*	U	U	U	U	U	U	U	
acenaphthene	16	120 J	U	U	U	U	U	U	
acenaphthylene	--	82 J	U	U	U	U	U	U	
anthracene	85	340 J	U	U	U	38 F	33 F	U	
benzo(a)anthracene	261	1,700	U	51 F	U	120 F	160 F	36 J	
benzo(a)pyrene	370	1,200	U	53 F	U	100 F	160 FM	38 J	
benzo(b)fluoranthene	--	1,700	U	79 F	U	230 F	300 FM	76 J	
benzo(k)fluoranthene	240	920	U	31 F	U	75 F	93 FM	U	
benzo(g,h,i)perylene	170	370 J	U	23 F	U	UM	UM	31 J	
benzyl alcohol	--	U	U	U	U	U	U	14 J	
benzoic acid	--	U	U	U	U	U	U	U	
bis(2-ethylhexyl) phthalate	10453.8	U	U	77 F	100 F	70 F	260 F	U	
benzyl butyl phthalate	50000	U	U	U	U	U	51 F	U	
chrysene	340	1,500	U	60 F	U	110 F	170 F	45 J	
di-n-butyl phthalate	--	U	U	U	U	U	U	U	
di-n-octyl phthalate	50000	U	U	U	U	U	62 F	U	
dibenz(a,h)anthracene	60	U	U	U	U	UM	UM	U	
dibenzofuran	2000	U	U	U	U	U	U	U	
diethyl phthalate	7100	U	U	47 F	U	U	U	U	
fluoranthene	600	2,800	U	110 F	U	220 F	300 F	68 J	
fluorene	35	200 J	U	U	U	U	U	U	
indeno(1,2,3-c,d)pyrene	200	440 J	U	U	U	U	U	U	
naphthalene	160	87 J	U	U	U	U	U	U	
nitrobenzene	200*	U	U	U	U	U	U	U	
phenol	26.2	U	U	U	U	U	U	36 J	
phenanthrene	240	1,700	U	59 F	U	150 F	170 F	35 J	
pyrene	490	2,400	U	99 F	U	230 F	270 F	60 J	

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-3							
Sample ID		RI Results (TMCSD-10)	TMCSD0301AA	TMCSD0301BB	TMCSD0301CA	TMCSD0301DA	TMCSD0301EA	TMCSD0301FA	
Date of Collection		5/15/1994	10/11/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5							
Metals (mg/Kg)									
aluminum	--	3,030	2,100	3,600	3,000	3,500	3,800	NS	
antimony	2	U	U	U	U	U	U	NS	
arsenic	6	6.20	1.4 F	2.0 F	1.4 F	2.4 F	3.50	NS	
barium	--	48.2	9.4	16	22	37	52	NS	
berylium	--	0.54	0.16 F	0.17 F	0.13 F	0.15 F	0.22 F	NS	
cadmium	0.6	1.6	0.23 F	0.30 F	0.15 F	0.21 F	0.57	0.10 J	
calcium	--	19400	2,200	4,400	900	5,300	9,200	NS	
chromium	26	25.2	3.7	5.3	3.7	4.5	6.6	NS	
cobalt	--	3.9	2.2	3.1	2.5	2.5	2.6	NS	
copper	16	11	3.8	10	7.1	10	17	NS	
iron	20,000	9,330	8,300	7,900	7,100	7,600	9,000	NS	
lead	31	36.5	1.8 F	5.5	1.6 F	5.4	12	NS	
magnesium	--	2,390	1,100	1,900	1,400	1,700	1,800	NS	
manganese	460	135	64	210	210	140	470	NS	
molybdenum	--	U	0.48 F	0.46 F	U	U	U	NS	
nickel	16	8.6	4.1	7.5	5.4	6.7	7.4	NS	
potassium	--	408	300	480	470	470	580	NS	
selenium	--	U	U	0.40 F	U	U	.50 F	NS	
silver	1	1.8	U	U	U	U	U	NS	
sodium	--	260	24 F	42 F	18 F	34 F	66 F	NS	
thallium	--	U	U	U	U	U	U	NS	
vanadium	--	14.3	9.1	9.2	5.4	7.6	12	NS	
zinc	120	63.6	12	30	15	28	63	NS	
mercury	0.15	U	0.00677 F	0.012 F	0.0044 F	0.014 F	0.034 F	0.013 J	
PCBs (µg/Kg)									
Aroclor 1248	11.1	U	U	U	U	U	U	U	
Aroclor 1254	11.10 [3]	U	U	U	U	U	U	U	
Aroclor 1260	5	3400	U	38.1	3.76 F	47.5	234	U	
Pesticides (µg/Kg)									
alpha BHC	0.01	U	U	U	U	U	U	U	
beta BHC	0.04	U	U	U	U	U	U	U	
delta BHC	0.04	U	U	U	U	U	U	U	
gamma BHC (Lindane)	0.05	U	U	U	U	U	U	U	
alpha-Chlordane	0.05	U	U	U	U	U	U	U	
gamma-Chlordane	0.05	U	U	U	U	U	U	U	
p,p'-DDD	2	U	0.28 F	2.8 F	U	3.1 F	U	U	
p,p'-DDE	2	U	0.42 F	3.7 F	U	U	U	U	
p,p'-DDT	1	U	0.68 F	U	U	U	U	U	
aldrin	--	U	U	1.0 F	U	U	U	U	
dieldrin	0.02	U	0.51 F	6.5 F	U	5.4 F	U	U	
endosulfan I	--	U	U	U	U	U	U	U	
endosulfan II	--	U	0.2 F	U	U	U	U	U	
endosulfan sulfate	--	U	U	U	U	U	U	U	
endrin	3	U	U	U	U	U	U	U	
endrin aldehyde	5*	U	U	U	U	U	U	U	
heptachlor	0.04	U	U	U	U	U	U	U	
heptachlor epoxide	0.03	U	U	0.48 F	U	U	U	U	
methoxychlor	31.44	U	UJ	U	U	U	U	U	

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-4							
Sample ID		TMCSD0401AA	TMCSD0401BB	TMCSD0401CA	TMCSD0401DA	TMCSD0401EA	TMCSD0401FA		
Date of Collection		10/9/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011		
Sample Depth (ft TOIC)		0-0.5							
SVOCs (µg/Kg)									
1,2-dichlorobenzene	7900	400 F	U	U	220 F	U	U		
1,2,4-trichlorobenzene	3400	U	U	U	U	U	U		
1,3-dichlorobenzene	1600	77 F	U	U	U	56 F	U		
1,4-dichlorobenzene	8500	1200 F	U	U	430 F	43 F	U		
2-methylnaphthalene	65	190 F	U	U	59 F	95 F	U		
4-chlorophenyl phenyl ether	--	150 F	U	U	U	U	U		
4-nitroaniline	500*	U	U	U	U	U	U		
acenaphthene	16	U	U	U	74 F	U	U		
acenaphthylene	--	220 F	U	U	49 F	62 F	U		
anthracene	85	130 F	U	U	110 F	100 F	U		
benzo(a)anthracene	261	380 F	27 F	350 F	360 F	330 F	59 J		
benzo(a)pyrene	370	460 F	27 F	240 F	390 F	230 FM	61 J		
benzo(b)fluoranthene	--	940 F	39 F	370 F	790 F	430 F	110 J		
benzo(k)fluoranthene	240	320 F	U	U	300 F	340 F	U		
benzo(g,h,i)perylene	170	210 F	U	U	UM	90 FM	43 J		
benzyl alcohol	--	U	U	U	U	U	13 J		
benzoic acid	--	U	U	U	U	U	U		
bis(2-ethylhexyl) phthalate	10453.8	U	60 F	U	150 F	120 F	88 J		
benzyl butyl phthalate	50000	U	U	U	U	U	U		
chrysene	340	620 F	32 F	270 F	420 F	240 F	77 J		
di-n-butyl phthalate	--	U	U	U	U	U	U		
di-n-octyl phthalate	50000	U	U	U	U	86 F	U		
dibenz(a,h)anthracene	60	80 F	U	U	UM	UM	U		
dibenzofuran	2000	U	U	U	57 F	60 F	U		
diethyl phthalate	7100	U	44 F	U	U	U	U		
fluoranthene	600	870 F	58 F	670 F	680 F	540 F	120 J		
fluorene	35	120 F	U	U	80 F	77 F	U		
indeno(1,2,3-c,d)pyrene	200	110 F	U	U	U	U	64 J		
naphthalene	160	140 F	U	U	49 F	140 F	U		
nitrobenzene	200*	U	U	U	U	U	U		
phenol	26.2	U	U	U	U	U	U		
phenanthrene	240	440 F	35 F	500 F	490 F	500 F	64 J		
pyrene	490	1,400 J	52 F	510 F	1,200 F	480 F	110 J		

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-4							
Sample ID		TMCSD0401AA	TMCSD0401BB	TMCSD0401CA	TMCSD0401DA	TMCSD0401EA	TMCSD0401FA		
Date of Collection		10/9/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011		
Sample Depth (ft TOIC)		0-0.5							
Metals (mg/Kg)									
aluminum	--	4,800	2,500	3,600	5,100	4,000	NS		
antimony	2	U	U	U	U	U	NS		
arsenic	6	9	2.1 F	2.2 F	12	4	NS		
barium	--	43	24	34	58	36	NS		
berylium	--	0.35 F	0.11 F	0.22 F	0.48 F	0.25 F	NS		
cadmium	0.6	6.5	0.44 F	1.4	20	1.9	0.61 J		
calcium	--	4,900	2,700	3,600	3,800	3,800	NS		
chromium	26	32	4.8	9.7	44	11	NS		
cobalt	--	5.1	2.4	3	5.9	2.9	NS		
copper	16	26	5.4	15	38	13	NS		
iron	20,000	9,700	6,400	7,500	9,800	7,400	NS		
lead	31	55	8	21	68	25	NS		
magnesium	--	2,600	1,600	1,900	1,900	2,000	NS		
manganese	460	160	260	130	160	130	NS		
molybdenum	--	0.86 F	U	U	U	U	NS		
nickel	16	15	5.5	8.7	19	13	NS		
potassium	--	490	320	370	410	380	NS		
selenium	--	0.61 F	0.45 F	0.46 F	U	0.42 F	NS		
silver	1	0.81 F	U	0.21 F	1.0 F	0.22 F	NS		
sodium	--	48 F	27 F	31 F	51 F	84	NS		
thallium	--	U	U	0.83 F	U	U	NS		
vanadium	--	16	5.7	12	21	17	NS		
zinc	120	100	34	69	130	65	NS		
mercury	0.15	0.0747 F	0.010 F	0.040 F	0.17 F	0.040 F	0.025 J		
PCBs (µg/Kg)									
Aroclor 1248	11.1	U	U	U	U	U	U		
Aroclor 1254	11.10 [3]	U	U	U	U	U	U		
Aroclor 1260	5	570	67.1	433	304	339	12 J		
Pesticides (µg/Kg)									
alpha BHC	0.01	U	U	U	U	U	U		
beta BHC	0.04	2.7 F	U	U	U	U	U		
delta BHC	0.04	16 F	U	U	U	U	U		
gamma BHC (Lindane)	0.05	2 F	U	U	U	U	U		
alpha-Chlordane	0.05	35 F	U	U	U	U	U		
gamma-Chlordane	0.05	22 F	U	17 J	U	U	U		
p,p'-DDD	2	59	4.5 J	11	60 F	U	U		
p,p'-DDE	2	15	U	U	U	U	U		
p,p'-DDT	1	81 J	UM	U	U	46 F	1.8 J		
aldrin	--	U	U	U	U	U	U		
dieldrin	0.02	56 J	6.8 J	28 J	45 F	U	0.49 J		
endosulfan I	--	U	U	U	U	U	U		
endosulfan II	--	57 F	3.9 F	18 J	U	U	U		
endosulfan sulfate	--	U	U	U	U	U	U		
endrin	3	7 F	U	U	U	U	U		
endrin aldehyde	5*	39 J	U	U	U	U	U		
heptachlor	0.04	2 F	U	U	U	U	U		
heptachlor epoxide	0.03	110 J	0.75 F	U	U	U	U		
methoxychlor	31.44	14 F	U	U	U	U	U		

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-5							
Sample ID		TMCSD0501AA	TMCSD0501BB	TMCSD0501CA	TMCSD0501DA	TMCSD0501EA	TMCSD0501FA		
Date of Collection		10/9/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011		
Sample Depth (ft TOIC)		0-0.5							
SVOCs (µg/Kg)									
1,2-dichlorobenzene	7900	63 F	U	U	19 F	28 F	U		
1,2,4-trichlorobenzene	3400	U	U	U	U	U	U		
1,3-dichlorobenzene	1600	U	U	U	U	U	U		
1,4-dichlorobenzene	8500	33 F	U	U	U	22 F	U		
2-methylnaphthalene	65	44 F	U	U	U	26 F	U		
4-chlorophenyl phenyl ether	--	U	U	U	U	U	U		
4-nitroaniline	500*	U	U	U	U	U	U		
acenaphthene	16	23 F	U	U	U	U	89 J		
acenaphthylene	--	110 F	U	U	U	U	U		
anthracene	85	79 F	30 F	U	35 F	54 F	300 J		
benzo(a)anthracene	261	320 F	120 F	190 F	160 F	350 F	1,100 J		
benzo(a)pyrene	370	380 F	120 F	U	150 F	260 F	1,000 J		
benzo(b)fluoranthene	--	550 F	190 F	U	310 F	480 FM	1,900 J		
benzo(k)fluoranthene	240	180 F	82 F	U	98 F	94 FM	U		
benzo(g,h,i)perylene	170	170 F	44 F	U	U	180 FM	600 J		
benzyl alcohol	--	U	U	U	U	U	U		
benzoic acid	--	U	U	U	U	U	U		
bis(2-ethylhexyl) phthalate	10453.8	U	63 F	U	56 F	180 F	U		
benzyl butyl phthalate	50000	U	U	U	U	U	U		
chrysene	340	430 F	140 F	U	170 F	260 F	1,200 J		
di-n-butyl phthalate	--	U	U	U	U	63 F	U		
di-n-octyl phthalate	50000	U	U	U	U	U	U		
dibenz(a,h)anthracene	60	52 F	U	U	U	UM	U		
dibenzofuran	2000	41 F	U	U	U	U	U		
diethyl phthalate	7100	41 F	50 F	U	U	U	U		
fluoranthene	600	770 F	240 F	230 F	280 F	540 F	2,200 J		
fluorene	35	68 F	U	U	U	25 F	U		
indeno(1,2,3-c,d)pyrene	200	140 F	25 F	U	U	U	550 J		
naphthalene	160	55 F	U	U	U	24 F	U		
nitrobenzene	200*	U	U	U	U	U	U		
phenol	26.2	U	U	U	U	U	U		
phenanthrene	240	570 F	140 F	U	170 F	270 F	1,200 J		
pyrene	490	750 F	240 F	200 F	330 F	460 F	1,900 J		

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-5							
Sample ID		TMCSD0501AA	TMCSD0501BB	TMCSD0501CA	TMCSD0501DA	TMCSD0501EA	TMCSD0501FA		
Date of Collection		10/9/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011		
Sample Depth (ft TOIC)		0-0.5							
Metals (mg/Kg)									
aluminum	--	11,000	3,600	3,500	4,600	3,600	NS		
antimony	2	U	U	U	U	U	NS		
arsenic	6	13	2.1 F	1.5 F	3.1 F	2.7 F	NS		
barium	--	66	34	27	31	52	NS		
berylium	--	0.55 F	0.18 F	0.16 F	0.24 F	0.22 F	NS		
cadmium	0.6	6.6	0.53 F	0.62 F	1.0	0.91	5.2		
calcium	--	2,200	3,700	2,000	3,700	9,900	NS		
chromium	26	21	6	5.2	7.6	7.2	NS		
cobalt	--	7.1	2.8	2.7	3.2	2.6	NS		
copper	16	30	13	9.9	16	16	NS		
iron	20,000	18,000	8,300	7,800	9,300	7,900	NS		
lead	31	44	9.0	6	16	16	NS		
magnesium	--	2,100	1,600	1,500	1,800	1,500	NS		
manganese	460	390	180	120	310	230	NS		
molybdenum	--	0.55 F	U	U	U	U	NS		
nickel	16	14	7.1	6.3	9.2	7.9	NS		
potassium	--	580	460	490	520	510	NS		
selenium	--	1.1 F	0.54 F	0.33 F	U	U	NS		
silver	1	0.57 F	U	U	U	0.20 F	NS		
sodium	--	60 F	56 F	32 F	61 F	100	NS		
thallium	--	U	U	U	U	U	NS		
vanadium	--	22	8.6	7.4	14	11	NS		
zinc	120	84	33	25	49	52	NS		
mercury	0.15	0.116 F	0.024 F	0.012 F	0.054 F	0.044 F	0.17		
PCBs (µg/Kg)									
Aroclor 1248	11.1	U	U	U	U	U	U		
Aroclor 1254	11.10 [3]	U	U	U	U	U	U		
Aroclor 1260	5	111	116	74.6	211	604 J	27 J		
Pesticides (µg/Kg)									
alpha BHC	0.01	0.22 F	U	U	U	U	U		
beta BHC	0.04	U	U	U	U	U	U		
delta BHC	0.04	0.97 F	U	U	U	U	U		
gamma BHC (Lindane)	0.05	U	U	U	U	U	U		
alpha-Chlordane	0.05	8.3 J	U	U	U	U	U		
gamma-Chlordane	0.05	41 J	U	U	U	U	U		
p,p'-DDD	2	10	5.5 J	U	U	U	U		
p,p'-DDE	2	2 J	1.8 F	U	U	U	U		
p,p'-DDT	1	19 J	UM	14 J	U	U	U		
aldrin	--	U	U	U	U	U	U		
dieldrin	0.02	12 J	13 J	9.3 J	24 F	U	U		
endosulfan I	--	U	U	U	U	U	U		
endosulfan II	--	11 J	U	U	U	U	U		
endosulfan sulfate	--	U	U	U	U	U	U		
endrin	3	4.2 J	U	U	U	U	U		
endrin aldehyde	5*	0.92 J	U	U	U	U	U		
heptachlor	0.04	U	U	U	U	U	U		
heptachlor epoxide	0.03	2 F	2.4 J	U	U	U	U		
methoxychlor	31.44	2.6 F	U	U	U	U	U		

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-6							
Sample ID		RI Results (TMCSD-4)	TMCSD0601AA	TMCSD0601BB	TMCSD0601CA	TMCSD0601DA	TMCSD0601EA	TMCSD0601FA	
Date of Collection		5/15/1994	10/9/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5							
SVOCs (µg/Kg)									
1,2-dichlorobenzene	7900	U	U	U	U	U	U	U	
1,2,4-trichlorobenzene	3400	U	U	U	U	U	U	U	
1,3-dichlorobenzene	1600	U	U	U	U	U	U	U	
1,4-dichlorobenzene	8500	U	U	U	U	U	U	U	
2-methylnaphthalene	65	U	U	U	U	92 F	U	U	
4-chlorophenyl phenyl ether	--	U	U	U	U	U	U	U	
4-nitroaniline	500*	U	U	U	U	U	U	U	
acenaphthene	16	15 J	U	U	U	200 F	21 F	U	
acenaphthylene	--	9 J	U	U	U	U	39 F	U	
anthracene	85	60 J	41 F	U	U	980 F	80 F	U	
benzo(a)anthracene	261	U	99 F	47 F	19 F	U	370 F	U	
benzo(a)pyrene	370	160 J	91 F	60 F	19 F	2,400 F	220 F	U	
benzo(b)fluoranthene	--	190 J	140 F	100 F	U	4,800 J	510 FM	U	
benzo(k)fluoranthene	240	99 J	47 F	51 F	U	1,500 F	130 FM	U	
benzo(g,h,i)perylene	170	140 J	43 F	32 F	U	550 F	110 FM	U	
benzyl alcohol	--	U	U	U	U	U	U	U	
benzoic acid	--	5 J	U	U	U	U	U	U	
bis(2-ethylhexyl) phthalate	10453.8	540 J	190 F	390 F	U	430 F	350 F	U	
benzyl butyl phthalate	50000	540 J	U	U	U	U	28 F	U	
chrysene	340	180 J	110 F	79 F	U	3,500 J	280 F	U	
di-n-butyl phthalate	--	U	U	U	U	U	U	U	
di-n-octyl phthalate	50000	U	U	30 F	U	U	U	U	
dibenz(a,h)anthracene	60	U	U	U	U	UM	UM	U	
dibenzofuran	2000	U	U	U	U	130 F	28 F	U	
diethyl phthalate	7100	U	33 F	47 F	U	U	U	U	
fluoranthene	600	350 J	200 F	110 F	29 F	5,600 J	730 F	U	
fluorene	35	U	U	U	U	360 F	47 F	U	
indeno(1,2,3-c,d)pyrene	200	U	37 F	U	U	U	U	U	
naphthalene	160	U	23 F	U	U	U	U	U	
nitrobenzene	200*	U	U	U	U	U	U	U	
phenol	26.2	U	U	U	U	U	U	U	
phenanthrene	240	260 J	160 F	50 F	18 F	5,000 J	530 F	U	
pyrene	490	430 J	180 F	140 F	25 F	9,300 J	560 F	150 J	

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-6							
Sample ID		RI Results (TMCSD-4)	TMCSD0601AA	TMCSD0601BB	TMCSD0601CA	TMCSD0601DA	TMCSD0601EA	TMCSD0601FA	
Date of Collection		5/15/1994	10/9/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5							
Metals (mg/Kg)									
aluminum	--	1960 J	3,300	2,700	3,200 M	2,900	3,100	NS	
antimony	2	U	U	U	UM	U	U	NS	
arsenic	6	1 J	1.9 F	1.0 F	1.3 F	2.5 F	1.2 F	NS	
barium	--	61.8	12	15	11	U	19.0	NS	
berylium	--	U	0.17 F	0.10 F	0.14 F	0.13 F	0.14 F	NS	
cadmium	0.6	U	0.24 F	0.044 F	0.17 F	U	U	0.23 J	
calcium	--	27400 J	3,400	5,800	2,200	37,000	13,000	NS	
chromium	26	9.0	5.3	5.0	4.1	5.4	9.0	NS	
cobalt	--	2.3	3.1	1.9	2.4	1.8	1.7	NS	
copper	16	11.7 J	9.3	8.8	7.4	12	21	NS	
iron	20,000	7,720	7,600	6,200	7,500 M	11,000	7,100	NS	
lead	31	59.8 J	3.5 F	4.1	1.8 F	10	12	NS	
magnesium	--	1,720	1,800	1,700	1,700	2,300	2,100	NS	
manganese	460	118	250	59	140	200	90	NS	
molybdenum	--	U	U	U	U	U	U	NS	
nickel	16	4.8 J	6.4	5.3	5.6	7.7	5.9	NS	
potassium	--	265 J	470	420	490	390	620	NS	
selenium	--	U	U	0.28 F	0.3 F	U	U	NS	
silver	1	U	U	U	U	U	U	NS	
sodium	--	209	50 F	34 F	35 F	55 F	75	NS	
thallium	--	U	U	U	U	U	U	NS	
vanadium	--	6.1 J	6.9	6.0	6.1	7.5	10.0	NS	
zinc	120	82.9	20	32	15	60	41	NS	
mercury	0.15	U	0.0149 F	0.0048 F	0.0050 F	U	0.011 F	0.18	
PCBs (µg/Kg)									
Aroclor 1248	11.1	U	U	16.7 F	U	U	U	U	
Aroclor 1254	11.10 [3]	U	U	U	U	U	U	21 J	
Aroclor 1260	5	U	8.75 F	U	U	U	U	U	
Pesticides (µg/Kg)									
alpha BHC	0.01	U	U	U	U	U	U	U	
beta BHC	0.04	U	U	U	U	U	U	U	
delta BHC	0.04	U	U	U	U	U	U	U	
gamma BHC (Lindane)	0.05	U	U	U	U	U	U	U	
alpha-Chlordane	0.05	U	3.5 J	U	U	U	U	U	
gamma-Chlordane	0.05	U	2.5 J	U	1.7 F	U	U	U	
p,p'-DDD	2	U	0.78 F	2.1 F	U	U	U	U	
p,p'-DDE	2	U	0.22 F	U	U	U	U	U	
p,p'-DDT	1	U	1.8 F	UM	2.2 F	1.4 F	U	U	
aldrin	--	U	U	U	U	U	U	U	
dieldrin	0.02	U	1.6 F	3.3 F	U	U	U	U	
endosulfan I	--	U	U	U	U	U	U	U	
endosulfan II	--	U	1.1 F	U	U	U	U	U	
endosulfan sulfate	--	U	U	U	U	U	U	U	
endrin	3	U	0.83 F	U	U	U	U	U	
endrin aldehyde	5*	U	U	U	U	U	U	U	
heptachlor	0.04	U	U	U	U	U	U	U	
heptachlor epoxide	0.03	U	0.83 F	U	U	U	U	U	
methoxychlor	31.44	U	UJ	U	U	U	U	U	

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-7							
Sample ID		RI Results (LF5SD-3)	TMCSD0701AA	TMCSD0701BB	TMCSD0701CA	TMCSD0701DA	TMCSD0701EA	TMCSD0701FA	
Date of Collection		5/15/1994	10/9/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5							
SVOCs (µg/Kg)									
1,2-dichlorobenzene	7900	U	190 F	2100 F	U	28 F	U	U	
1,2,4-trichlorobenzene	3400	U	U	48 F	U	U	U	U	
1,3-dichlorobenzene	1600	U	U	34 F	U	U	U	U	
1,4-dichlorobenzene	8500	U	260 F	270 F	U	37 F	19 F	U	
2-methylnaphthalene	65	U	61 F	89 F	U	U	U	U	
4-chlorophenyl phenyl ether	--	U	U	U	U	U	U	U	
4-nitroaniline	500*	U	U	U	U	U	U	U	
acenaphthene	16	U	U	U	U	U	U	U	
acenaphthylene	--	U	U	U	U	U	U	U	
anthracene	85	U	35 F	37 F	U	U	U	U	
benzo(a)anthracene	261	U	110 F	480 F	U	47 F	22 F	U	
benzo(a)pyrene	370	U	110 F	510 F	U	44 F	U	U	
benzo(b)fluoranthene	--	140 J	160 F	770 F	U	120 F	U	U	
benzo(k)fluoranthene	240	72 J	75 F	370 F	U	22 F	U	U	
benzo(g,h,i)perylene	170	U	44 F	210 F	U	U	U	U	
benzyl alcohol	--	180 J	U	U	U	U	U	U	
benzoic acid	--	4,200	U	U	U	U	U	U	
bis(2-ethylhexyl) phthalate	10453.8	1,300	52 F	260 F	30 F	41 F	76 F	U	
benzyl butyl phthalate	50000	U	U	U	U	U	U	U	
chrysene	340	220 J	13 F	450 F	U	46 F	U	U	
di-n-butyl phthalate	--	U	U	U	U	U	U	U	
di-n-octyl phthalate	50000	U	U	U	U	U	35 F	U	
dibenz(a,h)anthracene	60	U	U	71 F	U	U	U	U	
dibenzofuran	2000	U	U	U	U	U	U	U	
diethyl phthalate	7100	U	29 F	53 F	U	U	U	U	
fluoranthene	600	150 J	230 F	460 F	U	75 F	32 F	U	
fluorene	35	U	U	U	U	U	U	U	
indeno(1,2,3-c,d)pyrene	200	U	33 F	U	U	U	U	U	
naphthalene	160	U	43 F	41 F	U	U	U	U	
nitrobenzene	200*	U	U	U	U	U	U	U	
phenol	26.2	U	U	U	U	U	U	36 J	
phenanthrene	240	100 J	150 F	120 F	U	43 F	27 F	U	
pyrene	490	270 J	230 F	610 F	U	76 F	26 F	U	

Table 2-1
Three Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value	TMC-7							
Sample ID		RI Results (LF5SD-3)	TMCSD0701AA	TMCSD0701BB	TMCSD0701CA	TMCSD0701DA	TMCSD0701EA	TMCSD0701FA	
Date of Collection		5/15/1994	10/9/2006	10/18/2007	10/27/2008	10/1/2009	10/29/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5							
Metals (mg/Kg)									
aluminum	--	3,420	3,200	6,500	3,000	3,800	2,800	NS	
antimony	2	U	U	U	U	U	0.32 F	NS	
arsenic	6	U	2.3 F	5.7 F	1.3 F	2.4 F	2.0 F	NS	
barium	--	5.9	18	42	15	20	18	NS	
berylium	--	29	0.18 F	0.34 F	0.13 F	0.19 F	0.13 F	NS	
cadmium	0.6	U	0.44 F	0.23 F	0.18 F	0.32 F	U	U	
calcium	--	9,850	1,100	62,000	2,500	3,400	2,700	NS	
chromium	26	6.7	4.8	12	4	4.7	3.2	NS	
cobalt	--	3.2	3.1	4.0	2.3	2.9	2	NS	
copper	16	10.6	7.5	9.8	7.1	9.8	5.6	NS	
iron	20,000	10,200	6,900	9,800	7,100	8,500	6,500	NS	
lead	31	39.6	4.4	7.6	1.9 F	4.8	2.3	NS	
magnesium	--	2,890	1,700	2,700	1,500	1,800	1,400	NS	
manganese	460	476	190	230	280	610	180	NS	
molybdenum	--	U	0.34 F	1.3 F	U	U	U	NS	
nickel	16	8.2	11	19	6.2	9.4	6	NS	
potassium	--	514	450	450	450	540	470	NS	
selenium	--	U	U	0.57 F	0.27 F	U	U	NS	
silver	1	U	U	U	U	U	U	NS	
sodium	--	357	44 F	71 F	48 F	64 F	24 F	NS	
thallium	--	U	U	U	U	U	U	NS	
vanadium	--	13.2	20	67	7.1	13	7.8	NS	
zinc	120	51.6	63	120	21	44	21	NS	
mercury	0.15	0.29	0.0180 F	0.035 F	0.0091 F	0.019 F	0.010 F	U	
PCBs (µg/Kg)									
Aroclor 1248	11.1	U	U	U	U	U	U	U	
Aroclor 1254	11.10 [3]	U	U	U	U	U	U	U	
Aroclor 1260	5	7,500 J	115	101	7.97 F	54.7	28.3	U	
Pesticides (µg/Kg)									
alpha BHC	0.01	U	UJ	U	U	U	U	U	
beta BHC	0.04	U	UJ	U	U	U	U	U	
delta BHC	0.04	U	UJ	U	U	U	U	U	
gamma BHC (Lindane)	0.05	U	UJ	U	U	U	U	U	
alpha-Chlordane	0.05	24 J	0.99 F	0.93 F	U	U	U	U	
gamma-Chlordane	0.05	U	0.68 F	U	U	U	U	U	
p,p'-DDD	2	U	3.9 F	3.8 F	0.87 F	1.8 F	U	U	
p,p'-DDE	2	U	0.28 F	U	U	U	U	U	
p,p'-DDT	1	U	5.2 J	UM	2.3 F	U	U	U	
aldrin	--	U	UJ	U	U	U	U	U	
dieldrin	0.02	U	4.8 J	6.5	1.5 F	2.9 F	U	U	
endosulfan I	--	U	0.229 F	U	U	U	U	U	
endosulfan II	--	U	4.3 F	6.4 J	1.4 F	U	U	U	
endosulfan sulfate	--	U	UJ	U	U	U	U	U	
endrin	3	U	1.7 F	U	U	U	U	U	
endrin aldehyde	5*	U	3 F	U	1.1 F	U	U	U	
heptachlor	0.04	U	UJ	U	U	U	U	U	
heptachlor epoxide	0.03	U	0.68 F	1.3 F	U	U	U	U	
methoxychlor	31.44	U	1.0 F	U	1.2 F	U	U	U	

Table 2-2
Three Mile Creek LTM Network Summary

Sampling Locations	Sampling Rationale	Sample Medium/ Target Analytes/ Method Numbers	Sampling Frequency	Evaluation Criteria/ Modification Justification
Future LTM Sampling Network – Including All Recommended Changes				
TMC-1	Upstream, northern fork	**Sediment:** SVOCs/SW8270, Pesticides/SW8081, PCBs/SW8082	Annually for sediment	Sediment is sampled annually to track COC concentrations. Fish are sampled every three years to track COC changes in fish tissues and benthic macroinvertebrates.
TMC-2	Downstream of Landfill 5 tributary	**Sediment:** Pesticides/SW8081, PCBs/SW8082, Mercury/SW7471 Cadmium/SW6010		
TMC-3	Crossgradient of Landfill 6 (downstream of Landfill 5)	**Sediment:** PCBs/SW8082,		
TMC-4	Downstream of Base Boundary In TMC Pond	**Sediment:** SVOCs/SW8270, Pesticides/SW8081, PCBs/SW8082, Mercury/SW7471 Cadmium/SW6010		
TMC-5	Downstream of Base Boundary In TMC Pond	**Sediment:** SVOCs/SW8270, PCBs/SW8082, Mercury/SW7471 Cadmium/SW6010		

Table 2-2 (Continued)
Three Mile Creek LTM Network Summary

Sampling Locations	Sampling Rationale	Sample Medium/ Target Analytes/ Method Numbers	Sampling Frequency	Evaluation Criteria/ Modification Justification
TMC-1 TMC-2 TMC-3 TMC-4 TMC-5	Upstream, northern fork Downstream of Landfill 5 tributary Crossgradient of Landfill 6 Downstream of Base Boundary In TMC Pond	**Fish:** Cadmium/SW6010, Mercury/SW7471, Pesticides/SW8081, PCBs/SW8082, % lipid.	Every three years for fish tissue sampling and qualitative benthic community evaluation	Sediment is sampled annually to track COC concentrations. Fish are sampled every three years to track COC changes in fish tissues and benthic macroinvertebrates.
TMC-6 TMC-7	Upstream, southern fork Landfill 5 tributary	**Sediment:** SVOCs/SW8270, PCBs/SW8082, Mercury/SW7471 Cadmium/SW6010	Annually for sediment.	Sediment is sampled annually to track COC concentrations.
Currently Recommended LTM Sampling Network Changes				
Removed Sampling Analysis				
TMC-1 TMC-3 TMC-7	Upstream, northern fork Crossgradient of Landfill 6 Landfill 5 tributary	**Sediment:** Mercury/SW7471 Cadmium/SW6010	Annually for sediment.	Remove mercury and cadmium analysis. Analytes not detected above criteria for two consecutive annual rounds.
TMC-3 TMC-5 TMC-6 TMC-7	Crossgradient of Landfill 6 In TMC Pond Upstream, southern fork Landfill 5 tributary	**Sediment:** Pesticides/SW8081		Remove Pesticides analysis. Analytes not detected above criteria for two consecutive annual rounds.
TMC-2 TMC-3	Downstream of Landfill 5 tributary Crossgradient of Landfill 6	**Sediment:** SVOCs/SW8270		Remove SVOCs analysis. Analytes not detected above criteria for two consecutive annual rounds.

Table 2-2 (Continued)
Three Mile Creek LTM Network Summary

Sampling Locations	Sampling Rationale	Sample Medium/ Target Analytes/ Method Numbers	Sampling Frequency	Evaluation Criteria/ Modification Justification
Historical LTM Sampling Network Changes				
July 2011				
Removed Sampling Analysis				
TMC-1 TMC-2 TMC-3 TMC-4 TMC-5	Upstream, northern fork Downstream of Landfill 5 tributary Downstream of Landfill 5, cross gradient of Landfill 6 Downstream of Base Boundary In TMC Pond	**Sediment:** SVOCs/SW8270, Pesticides/SW8081, PCBs/SW8082, Mercury/SW7471 Cadmium/SW6010	Annually for sediment.	Remove surface water sampling as COCs at the site are associated with creek sediments. Surface water at TMC will be further evaluated under the Landfill 5 and 6 LTM networks.
		Fish: Cadmium/SW6010, Mercury/SW7471, Pesticides/SW8081, PCBs/SW8082, % lipid.	Every three years for fish tissue sampling and qualitative benthic community evaluation	
TMC-6 TMC-7	Upstream, southern fork Landfill 5 tributary	**Sediment:** SVOCs/SW8270, Pesticides/SW8081, PCBs/SW8082, Mercury/SW7471 Cadmium/SW6010	Annually for sediment.	

Table 2-2 (Continued)
Three Mile Creek LTM Network Summary

Sampling Locations	Sampling Rationale	Sample Medium/ Target Analytes/ Method Numbers	Sampling Frequency	Evaluation Criteria/ Modification Justification
Historical LTM Sampling Network Changes				
March 2010				
Analysis / Frequency Change				
TMC-1 TMC-2 TMC-3 TMC-4 TMC-5	Upstream, northern fork Downstream of Landfill 5 tributary Downstream of Landfill 5, cross gradient of Landfill 6 Downstream of Base Boundary In TMC Pond	**Surface Water and Sediment:** SVOCs/SW8270, Pesticides/SW8081, PCBs/SW8082, **Sediment (only):** Mercury/SW7471 Cadmium/SW6010	Annually for sediment and surface water.	Remove VOC/SW8260 analysis from the surface water and sediment sampling. No VOC exceedances were detected in any sample during the four consecutive sampling rounds. Remove Metals/SW6010 analysis from the surface water and sediment sampling. All metals detections and exceedances are attributed to background conditions (Volume 1 of Remedial Investigation/Background Information – December, 1996). Keep mercury/ SW7471 and cadmium/ SW6010 analysis for sediment sampling due to fish tissue detections.
		Fish: Cadmium/SW6010, Mercury/SW7471, Pesticides/SW8081, PCBs/SW8082, % lipid.	Every three years for fish tissue sampling and qualitative benthic community evaluation	
TMC-6 TMC-7	Upstream, southern fork Landfill 5 tributary	**Surface Water and Sediment:** SVOCs/SW8270, Pesticides/SW8081, PCBs/SW8082 Mercury/SW7471	Annually for sediment and surface water.	

Table 2-2 (Continued)
Three Mile Creek LTM Network Summary

Sampling Locations	Sampling Rationale	Sample Medium/ Target Analytes/ Method Numbers	Sampling Frequency	Evaluation Criteria/ Modification Justification
Historical LTM Sampling Network Changes				
March 2010				
Removed Sampling Location				
TMC-8	Wetland adjacent to TMC and south of Landfill 5	**Surface Water and Sediment:** SVOCs/SW8270, Metals/SW6010, Pesticides/SW8081, PCBs/SW8082		Little or no exceedances have been reported for these sampling locations and all are attributable to lab contaminants, background conditions or are minor exceedances related to localized conditions not influencing the creek.

Table 3-1
Six Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value (µg/Kg) [1]	SMC-4									
Sample ID		RI Results (SMCSD-13)	SMCSD0401AA	SMCSD0401BB	SMCSD0401CA	SMCSD0401DA	SMCSD0401EA	SMCSD0401FA	SMCSD0401GA	SMCSD0401HA	
Date of Collection		5/14/1994	10/20/2004	11/30/2005	10/17/2006	10/17/2007	11/24/2008	10/1/2009	10/27/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	
PCBs (µg/Kg)											
Aroclor 1248	15.96 [3]	-	54	9.9 F	U	U	U	U	U	U	
Aroclor 1254	15.96 [3]	U	61	52	67.1	120 J♦	14.5 F ♦	72.7	U	U	
Aroclor 1260	5	-	U	19 F	U	U	U	U	U	U	

For Notes, refer to the end of Table 4-2.

Table 3-1
Six Mile Creek Sediment Sampling Results

Sample Location	Most Stringent Ecological Screening Value (µg/Kg) [1]	SMC-5									
Sample ID		RI Results (SMCSD-14)	SMCSD0501AA	SMCSD0501BB	SMCSD0501CA	SMCSD0501DA	SMCSD0501EA	SMCSD0501FA	SMCSD0501GA	SMCSD0501HA	
Date of Collection		5/14/1994	10/20/2004	11/30/2005	10/17/2006	10/17/2007	11/24/2008	10/1/2009	10/27/2010	9/6/2011	
Sample Depth (ft TOIC)		0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	
PCBs (µg/Kg)											
Aroclor 1248	15.96 [3]	-	U	U	U	U	U	U	U	UJ	
Aroclor 1254	15.96 [3]	84 J	24 F	U	U	92.6	U	U	50.2	UJ	
Aroclor 1260	5	-	U	U	19.4 F	U	U	U	U	UJ	

For Notes, refer to the end of Table 4-2.

Table 3-2
Six Mile Creek LTM Network Summary

Sampling Locations	Sampling Rationale	Sample Medium/ Target Analytes/ Method Numbers	Sampling Frequency	Evaluation Criteria/ Modification Justification
Future LTM Sampling Network – Including All Recommended Changes				
SMC-5	Downgradient, FSS Location	**Sediments:** PCBs/SW8082	Annually for sediment.	Sediment samples at SMC-5 will be sampled for the identical analyses as SMC-11 to monitor potential downgradient contamination migration.
Currently Recommended LTM Sampling Network Changes				
Removed LTM Sampling Locations				
SMC-4	Downgradient, FSS Location	**Sediments:** PCBs/SW8082		Remove SMC-4 as no Contaminants of Concern have been detected for two consecutive annual sampling events.

Table 3-2 (Continued)
Six Mile Creek LTM Network Summary

Sampling Locations	Sampling Rationale	Sample Medium/ Target Analytes/ Method Numbers	Sampling Frequency	Evaluation Criteria/ Modification Justification
Historical LTM Sampling Network Changes				
July 2011				
Removed LTM Sampling Locations				
SMC-1 SMC-2	Upgradient, FSS Location Downgradient, FSS Location	**Surface Water:** VOCs/SW8260 **Sediments:** SVOCs/SW8270, Pesticides/SW8081, PCBs/SW8082 **Fish:** PCBs/SW8082, % lipid.		Remove SMC-1 as no upgradient sources have been identified in several rounds. Remove SMC-2 as surface water is sampled under the LF001 LTM network and no contamination has been identified in sediment or fish tissue samples in several rounds.
Removed Analysis				
SMC-4 SMC-5	Downgradient, FSS Location Downgradient, FSS Location	**Fish:** PCBs/SW8082, % lipid.		Discontinue fish tissue sampling. PCB detections have never been above NYSDOH Fish Advisory Guidelines. Fish tissue sampling is also recommended to stop to promote trout propagation in the creek. The Benthic community will also be assessed in 2012 and 2014 and will provide a water quality assessment.

Table 3-2 (Continued)
Six Mile Creek LTM Network Summary

Sampling Locations	Sampling Rationale	Sample Medium/ Target Analytes/ Method Numbers	Sampling Frequency	Evaluation Criteria/ Modification Justification
Historical LTM Sampling Network Changes				
July 2011				
Removed Analysis				
SMC-4 SMC-5	Downgradient, FSS Location Downgradient, FSS Location	**Sediments:** SVOCs/SW8270, Pesticides/SW8081		SVOCs were detected under NYS criterion for two consecutive sampling rounds at SMC-5. SVOCs were detected under NYS criterion for one sampling round at SMC-4. It is believed at the spike in 2009 is a result of an influx of runoff from adjacent sites including a large distribution warehouse. Therefore, it is recommended to remove SVOC analysis. Pesticides were detected under NYS criterion for two consecutive sampling rounds at SMC-4 and -5.
March 2010				
Removed Sampling Location				
SMC-11	Crossgradient, SS Location	**Surface Water:** VOCs/SW8260 **Sediments:** SVOCs/SW8270, Pesticides/SW8081, PCBs/SW8082		The sampling location has been eliminated as a result of the culverting of Rainbow Creek.

Table 3-2 (Continued)
Six Mile Creek LTM Network Summary

Sampling Locations	Sampling Rationale	Sample Medium/ Target Analytes/ Method Numbers	Sampling Frequency	Evaluation Criteria/ Modification Justification
Historical LTM Sampling Network Changes				
October 2008				
Analysis/Frequency Changes				
SMC-1R	Upgradient, FSS Location	**Surface Water:** VOCs/SW8260 **Sediments:** SVOCs/SW8270, Pesticides/SW8081, PCBs/SW8082	Annually for sediment and surface water.	The list of analytes is identical to locations SMC-4 and SMC-5 to allow results comparisons.
		Fish: PCBs/SW8082, % lipid.	Every three years for fish and benthic macroinvertebrates.	
SMC-2	Crossgradient, FSS Location	**Fish:** PCBs/SW8082, % lipid.	Every three years for fish and benthic macroinvertebrates.	Little or no exceedances have been reported for these sampling locations and all are attributable to lab contaminants, background conditions or are minor exceedances related to localized conditions not influencing the creek. Fish sampling results did not show any exceedances, but need to be confirmed with one additional sampling round.

Table 3-2 (Continued)
Six Mile Creek LTM Network Summary

Sampling Locations	Sampling Rationale	Sample Medium/ Target Analytes/ Method Numbers	Sampling Frequency	Evaluation Criteria/ Modification Justification
Historical LTM Sampling Network Changes				
October 2008				
Analysis/Frequency Changes				
SMC-4 SMC-5	Downgradient, FSS Location Downgradient, FSS Location	**Surface Water:** VOCs/SW8260 **Sediments:** SVOCs/SW8270, Pesticides/SW8081, PCBs/SW8082	Annually for sediment and surface water.	Surface water VOC exceedances were reported in SMC-4 and 5. Sediment samples at SMC-4 and -5 will be sampled for the identical analyses as SMC-11 to monitor potential downgradient contamination migration.
		Fish: PCBs/SW8082, % lipid.	Every three years for fish and benthic macroinvertebrates.	PCB exceedances were reported in all fish samples at both sampling locations.
Removed Sampling Locations				
SMC-3	Crossgradient, FSS Location	**Surface Water and Sediment:** VOCs/SW8260, SVOCs/SW8270, Metals/SW6010, Pesticides/SW8081, PCBs/SW8082	Annually for sediment and surface water.	Little or no exceedances have been reported for these sampling locations and all are attributable to lab contaminants, background conditions or are minor exceedances related to localized conditions not influencing the creek.
		Fish: Cadmium/SW6010, Mercury/SW7471, Pesticides/SW8081, PCBs/SW8082,% lipid.	Every three years for fish and benthic macroinvertebrates.	Fish sampling results did not show any exceedances.

DATA QUALIFIERS

Sediment:

B – Result is a positive value; however, the analyte was detected in an associated blank above the RL.

F – The analyte was positively identified above the MDL, however, the concentration is below the RL.

FM – The analyte was positively identified above the MDL, however, the concentration is below the RL and a matrix effect was present.

J – The analyte was positively identified, but the quantitation is an estimation.

M – A matrix effect was present.

NA – not analyzed

R – The data was rejected because QA/QC criteria were not met during the analysis.

U – The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

UJ – The analyte was analyzed for, but not detected. The quantitation is an approximation.

UM – The analyte was analyzed for, but not detected. A matrix effect was present.

BHC –hexachlorocyclohexane

1 – This value is the most stringent criterion for ecological endpoints derived from Table 2-3a in the Final Three Mile Creek Feasibility Study Addendum (E&E, July 2002).

2 – The most stringent criterion for metals have been derived from Table 2 in Technical Guidance for Screening Contaminated Sediments (NYSDEC, January 1999).

- – This analyte was not sampled for in the 1993/4 RI.

-- – No most stringent ecological screening value is known for this compound.

– Indicates an exceedance of the Most Stringent Ecological Screening Value.

Fish Tissue:

F – The analyte was positively identified above the MDL, however, the concentration is below the RL.

J – The analyte was positively identified, but the quantitation is an estimation.

U – The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

UJ – The analyte was analyzed for, but not detected. The quantitation is an approximation.

UM – The analyte was analyzed for, but not detected. A matrix effect was present.

1 – The PCB piscivorous wildlife criterion of 110 ppb applies to the sum of all PCB congeners.

2 – The PCB fish advisory guideline of 2,000 ppb applies to the sum of all PCB congeners.

3 – The chlordane fish advisory guideline of 300 ppb applies to the sum of all chlordane compounds.

4 – The DDT fish advisory guideline of 5,000 ppb applies to the sum of all DDT, DDE, and DDD compounds.

5 – The aldrin fish advisory guideline of 300 ppb applies to the sum of all aldrin/dieldrin compounds.

6 – The endrin fish advisory guideline of 300 ppb applies to the sum of all endrin/ endrin aldehyde compounds.

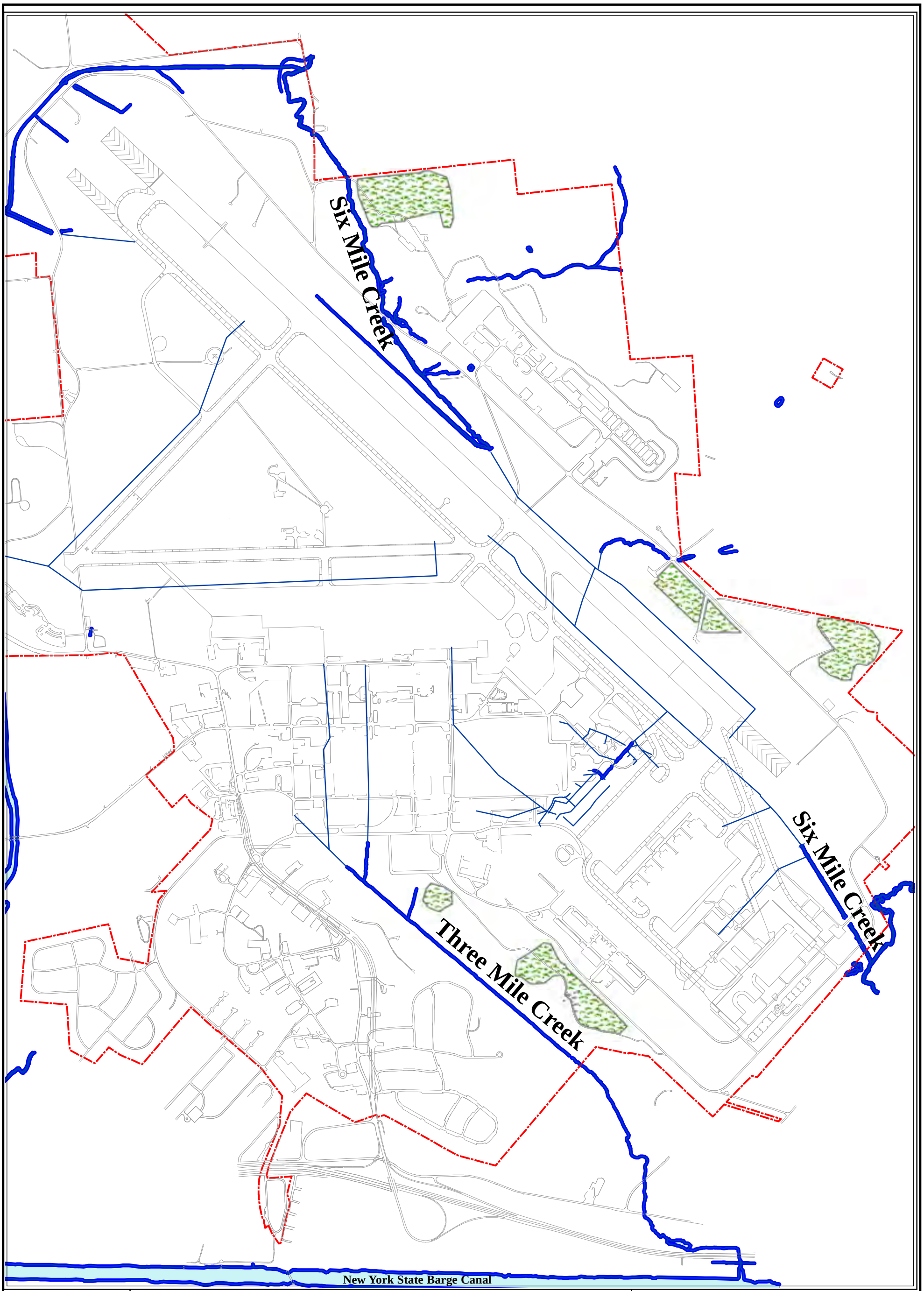
7 – The heptachlor fish advisory guideline of 300 ppb applies to the sum of all heptachlor/ heptachlor epoxide compounds.

- – No piscivorous wildlife criterion or fish advisory guideline is available.

* – OF is offal sample, WF is whole fish, HG is offal-and-head, CC is creek chub, and WS is white sucker.

 – Indicates an exceedance of the NYSDOH Fish Advisory Guidelines and/or the NYSDEC Pisc. Wildlife Criteria.

FIGURES



Site Location

Legend

- Pond/Canal
- Landfill
- Creek/Culvert
- Airfield/Road
- Air Force Boundary

N

600 300 0 600 1,200
Feet

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ROME,NEW YORK

Figure 1-1
Three Mile Creek and
Six Mile Creek Locations

FPM CAPE

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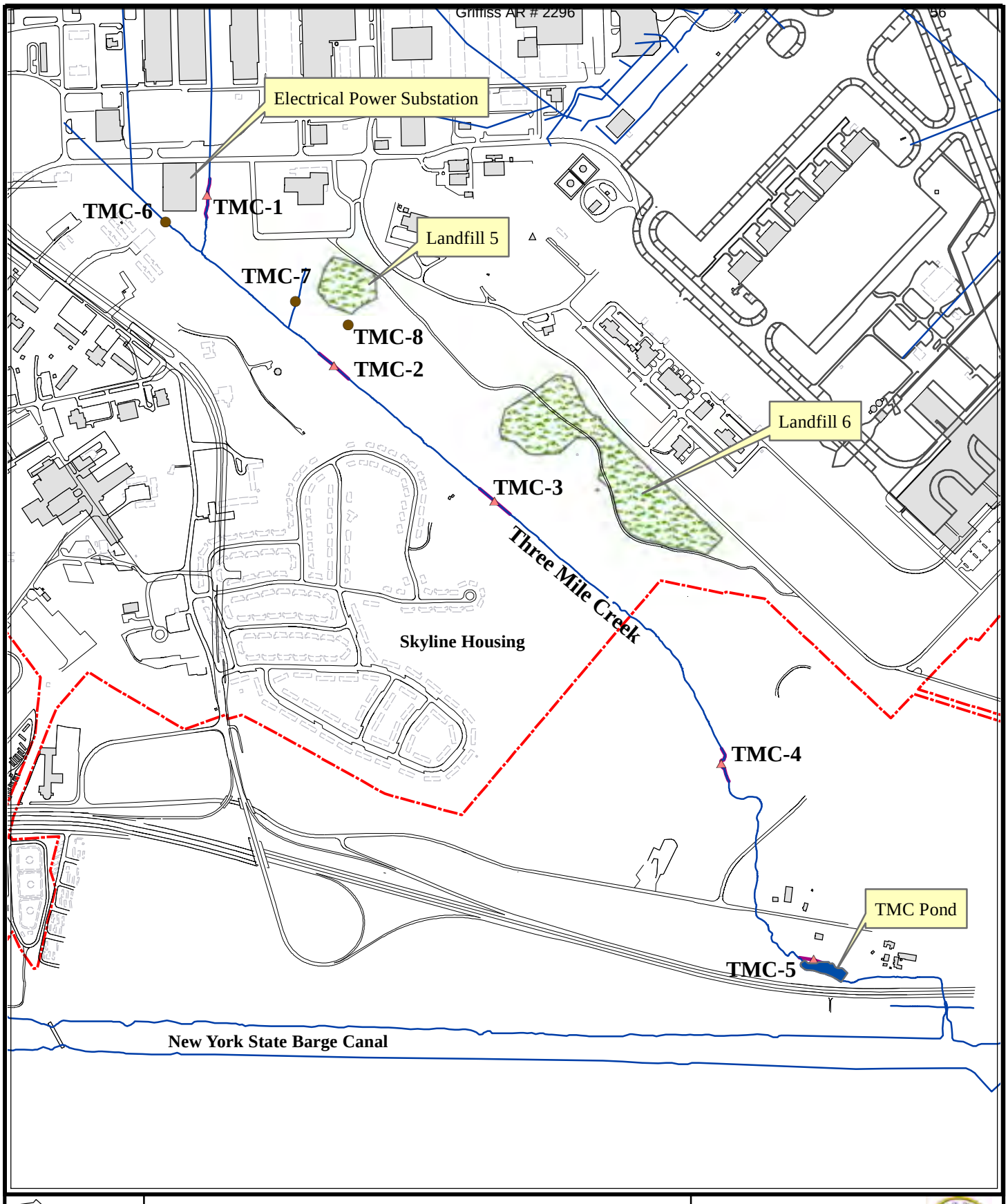

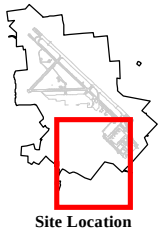

Legend

- Demolished Building
- Existing Building
- Landfill
- Suface Water/Sediment Sample Location
- Suface Water/Sediment/Fish/Benthic Sample Location
- Surface Water
- Airfield/Road
- Air Force Boundary
- Fish Sampling Stretch

N

300 150 0 300 600
Feet

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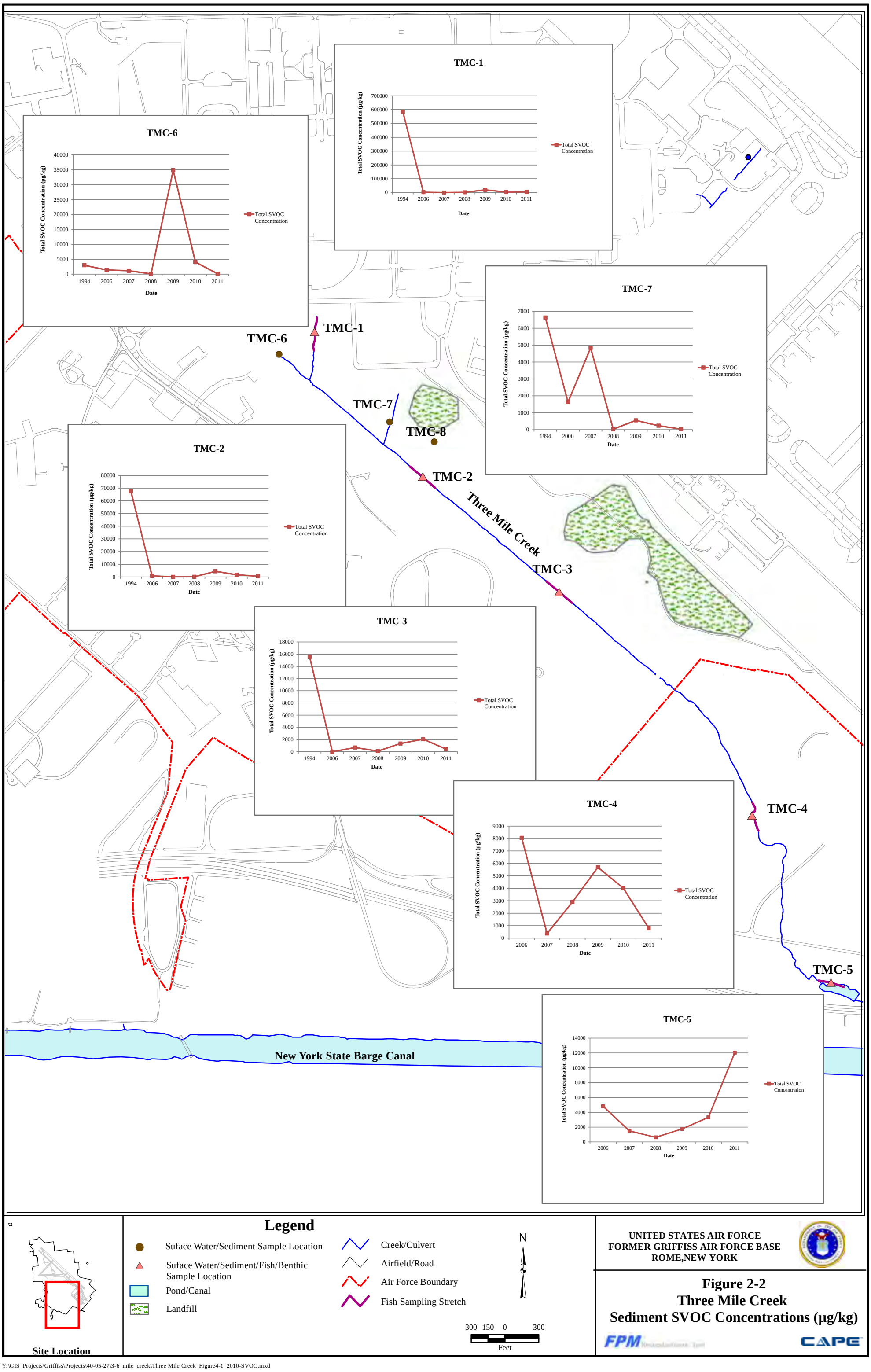
Figure 2-1
Three Mile Creek
Sampling Locations

FPM CAPE

Y:\GIS_Projects\Griffiss\Projects\40-05-27\3-6_mile_creek\Three Mile Creek_Figure3-1.mxd



Site Location

Legend

- Suface Water/Sediment Sample Location
- Suface Water/Sediment/Fish/Benthic Sample Location
- Pond/Canal
- Landfill
- Creek/Culvert
- Airfield/Road
- Air Force Boundary
- Fish Sampling Stretch

N

300 150 0 300
Feet

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Figure 2-2
Three Mile Creek
Sediment SVOC Concentrations (µg/kg)

FPM CAPE

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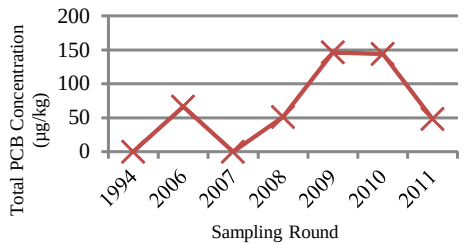
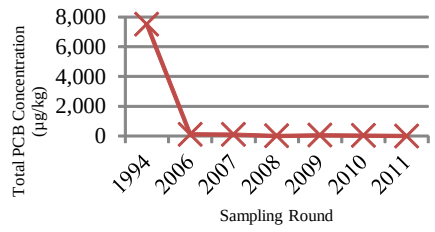
TMC-1	
1994 RI	ND
Fall 2006	66.5
Fall 2007	ND
Fall 2008	51.2
Fall 2009	146
Fall 2010	144
Fall 2011	48 J



TMC-6	
1994 RI	ND
Fall 2006	8.75 F
Fall 2007	ND
Fall 2008	ND
Fall 2009	ND
Fall 2010	ND
Fall 2011	21 J

TMC-7	
1994 RI	7,500 J
Fall 2006	115
Fall 2007	101
Fall 2008	7.97 F
Fall 2009	54.7
Fall 2010	28.3
Fall 2011	ND



TMC-6

TMC-1

TMC-7

TMC-8

TMC-2

Three Mile Creek

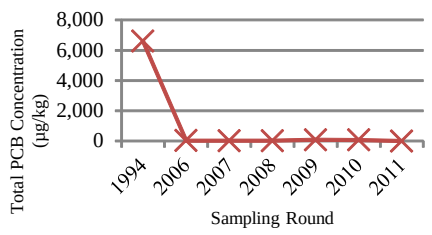
TMC-3

TMC-4

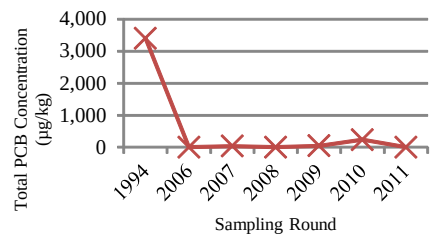
TMC-5

New York State Barge Canal

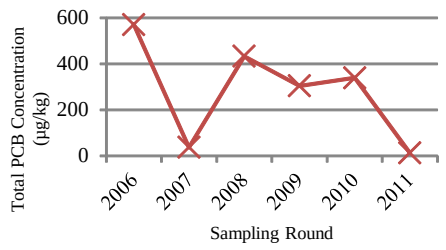
TMC-2	
1994 RI	6,600
Fall 2006	28.5 F
Fall 2007	16.7
Fall 2008	13.2 F
Fall 2009	84
Fall 2010	71.7
Fall 2011	ND



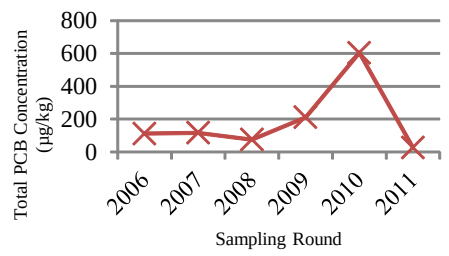
TMC-3	
1994 RI	3,400
Fall 2006	ND
Fall 2007	38.1
Fall 2008	3.76 F
Fall 2009	47.5
Fall 2010	234
Fall 2011	ND

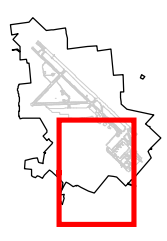


TMC-4	
1994 RI	NS
Fall 2006	570
Fall 2007	37.1
Fall 2008	433
Fall 2009	304
Fall 2010	339
Fall 2011	12 J



TMC-5	
1994 RI	NS
Fall 2006	111
Fall 2007	116
Fall 2008	74.6
Fall 2009	211
Fall 2010	604 J
Fall 2011	27 J





Site Location

Legend

- Suface Water/Sediment Sample Location
- Suface Water/Sediment/Fish/Benthic Sample Location
- Pond/Canal
- Landfill
- Creek/Culvert
- Airfield/Road
- Air Force Boundary
- Fish Sampling Stretch

ND - not detected
NS - indicates that a sample was not collected
PCB concentrations in µg/Kg

N

300 150 0 300
Feet

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ROME,NEW YORK

Figure 2-3
Three Mile Creek
Sediment PCB
Concentrations (µg/kg)

FPM CAPE

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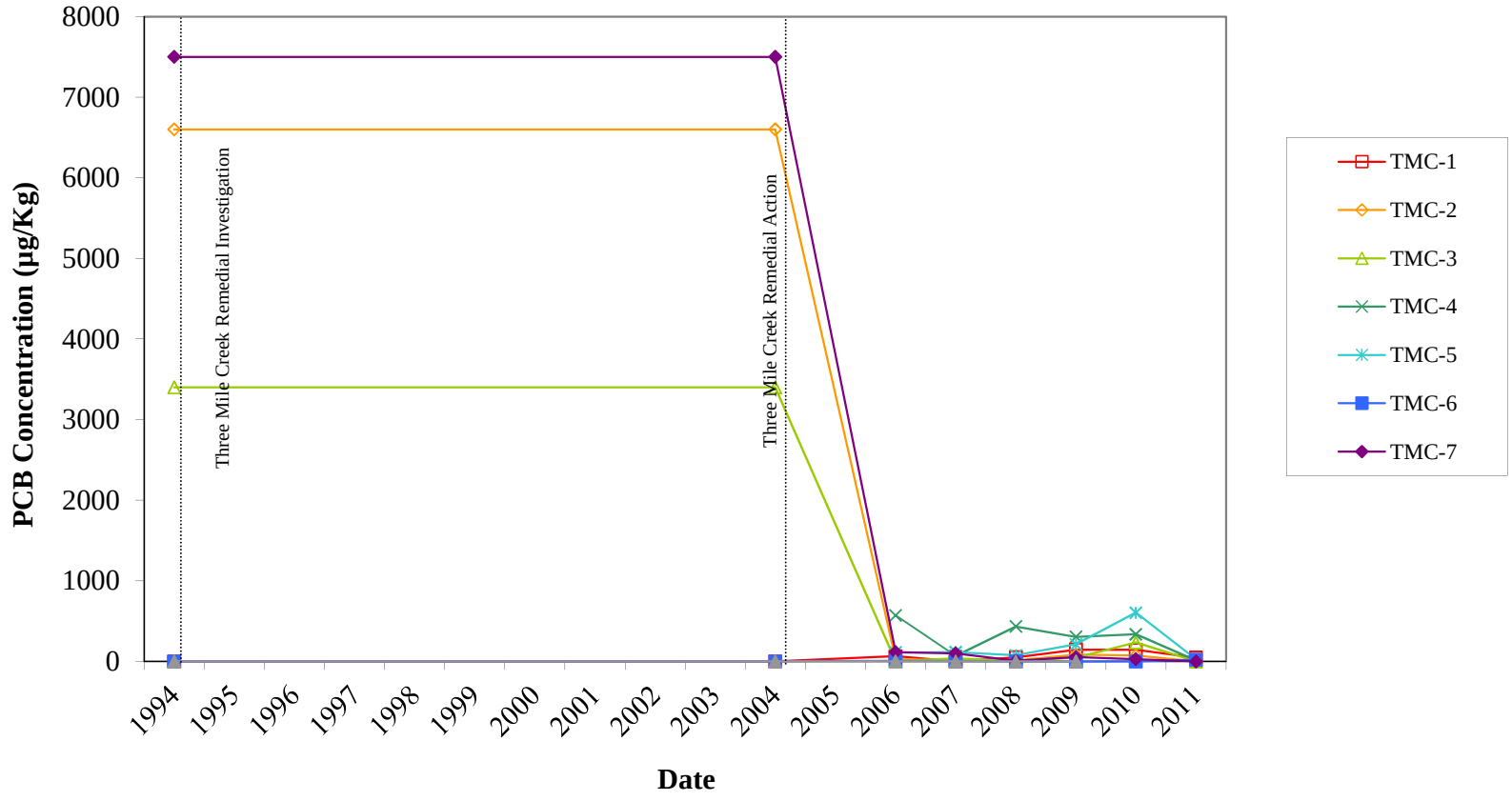
Figure 2-4
Three Mile Creek Sediment PCB Concentration Trends



Note: Sampling Locations TMC-4 and TMC-5 were not sampled during the 1993/94 RI.

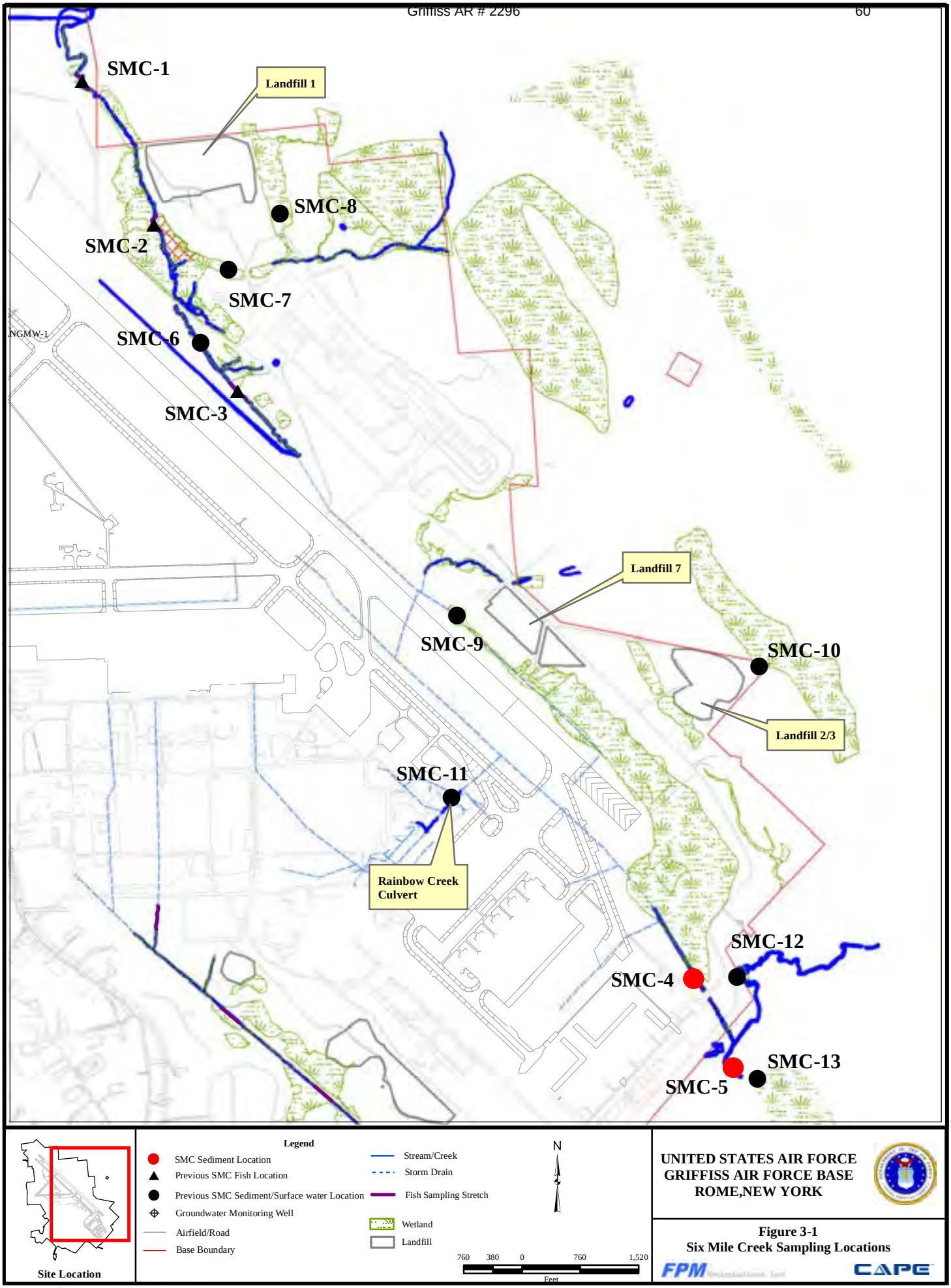


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Figure 3-1
Six Mile Creek Sampling Locations

FPM CAPE

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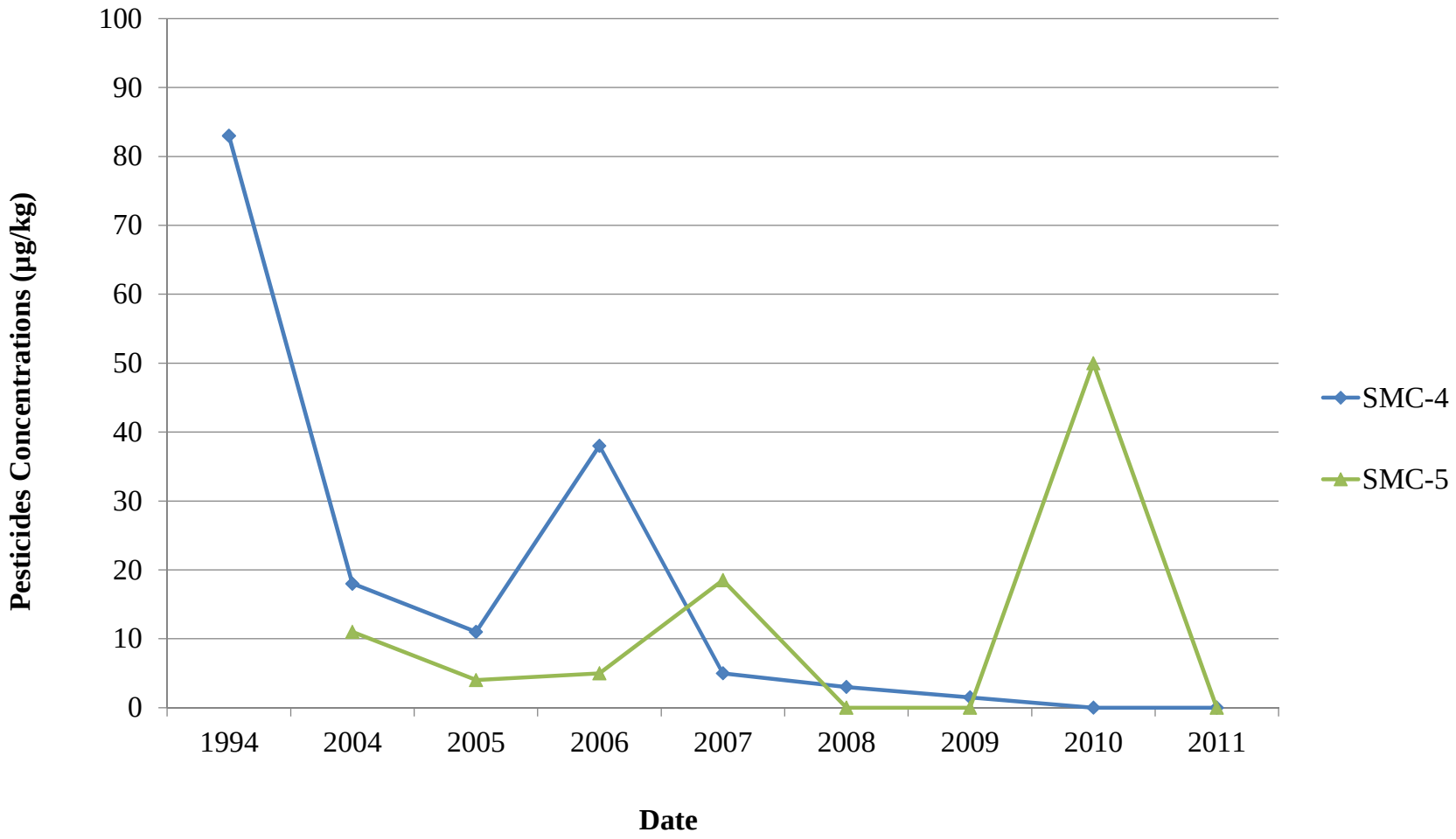
Figure 3-2
Six Mile Creek Sediment PCB Concentration Trends



APPENDIX A

Daily Chemical Quality Control Reports

Daily Chemical Quality Control Report

Project/Delivery Order Number: FA8903-10-D-8595-0014 Date: 09/06/11

Project Name/Site Number: Griffiss Creek AOC LTM sampling (SD031 – Three Mile Creek and SD032 – Six Mile Creek sites).

Weather conditions: Average temperature: 66 Average barometric reading: 30.10
Wind direction and speed: North 6 mph
Significant wind changes: none.

General description of tasks completed: Sediment sampling with dutch auger at SD031 (TMC-1, -2, -3, -4, -5, -6, and -7) and at SD032 (SMC-4 and -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 Test America Courier.

DCQCR Prepared by: Daniel Baldyga, FPM, Technical Lead Date: September 6, 2011

CQCC Signature:_____ Date:_____

ATTACHMENTS:

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

Daily Chemical Quality Control Report

Project/Delivery Order Number: FA8903-10-D-8595-0014 Date: 09/06/11

Project Name/Site Number: Griffiss Petroleum Spill Site LTM sampling (SS070-Building 150).

Weather conditions: Average temperature: 66 Average barometric reading: 30.10
Wind direction and speed: North 6 mph
Significant wind changes: none.

General description of tasks completed: Bailer sampling at SS070 (150MW-2, -3, and -4).

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 Test America Courier.

DCQCR Prepared by: Daniel Baldyga, FPM, Technical Lead Date: September 6, 2011

CQCC Signature:_____ Date:_____

ATTACHMENTS:

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

SOIL / SEDIMENT SAMPLING FORM

Project: 1015-11-01 Sampled by: DB / JW

Site and Site Code (**SITEID**): TMC

Sampling Location ID. (**LOCID**): TMCSW-13 (TMC-1)

Date (**LOGDATE**): 9/6/11 Time: _____

FIELD OBSERVATIONS:

Sample Depth or Interval	Material Description/ Color
0.5 ft	

Comments/Observations:

Cad / mercury = 4 oz

PCBs / SVOCs / Pest = 8 oz

Sample Time: 1300 Sample ID: TMCSD0101FA

SOIL / SEDIMENT SAMPLING FORM

Project: 1015-16-01 Sampled by: ~~RB~~ / JW

Site and Site Code (**SITEID**): TMC

Sampling Location ID. (**LOCID**): TMCSW-903 (TMC-2)

Date (**LOGDATE**): 9/6/11 Time: _____

FIELD OBSERVATIONS:

Sample Depth or Interval	Material Description/ Color
0.5 Ft	

Comments/Observations:

Cad / mer = 4oz

PCBs, SVOCs, Pest = 8oz

Sample Time: 1400 Sample ID: TMCSD0201FA

SOIL / SEDIMENT SAMPLING FORM

Project: 1015-11-01 Sampled by: DB / JW

Site and Site Code (**SITEID**): TMC

Sampling Location ID. (**LOCID**): TMCSW-902 (TMC-3)

Date (**LOGDATE**): 9/6/11 Time: _____

FIELD OBSERVATIONS:

Sample Depth or Interval	Material Description/ Color
0.5 ft	

Comments/Observations:

cad / mer = 4oz

Pest / SVOCs / Pest = 8oz

Sample Time: 1420 Sample ID: TMCSD0301FA

SOIL / SEDIMENT SAMPLING FORM

Project: 1015-11-01 Sampled by: DB / JW

Site and Site Code (**SITEID**): _____

Sampling Location ID. (**LOCID**): RV-TMCFSS-4 (TMC-4)

Date (**LOGDATE**): 9/6/11 Time: _____

FIELD OBSERVATIONS:

Sample Depth or Interval	Material Description/ Color
0.5 ft	Sand

Comments/Observations:

cad / mer = 4 oz

PCBs / SVOCs / Pest = 8 oz

Sample Time: 1250 Sample ID: TMCSD0401FA

SOIL / SEDIMENT SAMPLING FORM

Project: 1015-11-01 Sampled by: DB / JW

Site and Site Code (**SITEID**): TMC / SD031

Sampling Location ID. (**LOCID**): RV-TMCFSS-5 (TMC-5)

Date (**LOGDATE**): 9/6/11 Time: _____

FIELD OBSERVATIONS:

Sample Depth or Interval	Material Description/ Color
0.5 ft	sand / mucky on top

Comments/Observations:

cad / mer = 4oz

PCBs / SVOCs / Pest = 8oz

Sample Time: 1230 Sample ID: TMCSD0501FA

SOIL / SEDIMENT SAMPLING FORM

Project: 1015-11-01 Sampled by: DB/SW

Site and Site Code (**SITEID**): TMC

Sampling Location ID. (**LOCID**): TMCSW-14 (TMC-6)

Date (**LOGDATE**): 9/6/11 Time: _____

FIELD OBSERVATIONS:

Sample Depth or Interval	Material Description/ Color
0.5 ft	

Comments/Observations:

cad/mer = 4oz

PCBs/Pest/SVOCs = 8oz

Sample Time: 1320 Sample ID: TMCSD0601EA

SOIL / SEDIMENT SAMPLING FORM

Project: 1015-11-01 Sampled by: DB/JW

Site and Site Code (**SITEID**): TMC (SD031)

Sampling Location ID. (**LOCID**): RV-TMCSS-7 (TMC-7)

Date (**LOGDATE**): 9/6/11 Time:

FIELD OBSERVATIONS:

Sample Depth or Interval	Material Description/ Color
0.5 ft	

Comments/Observations:

cond /mer = 4oz

PCBs/SVOCs/Pest = 8oz

Sample Time: 1345 Sample ID: TMCSD0701 FA

SOIL / SEDIMENT SAMPLING FORM

Project: 1015-11-01 Sampled by: DB / JW

Site and Site Code (**SITEID**): SMC (SD032)

Sampling Location ID. (**LOCID**): SMCSD-13 (SMC-4)

Date (**LOGDATE**): 9/6/11 Time: _____

FIELD OBSERVATIONS:

Sample Depth or Interval	Material Description/ Color
0.5 ft	Sandy

Comments/Observations:

Sample Time: 1500 Sample ID: SMCSD04011HA

HC

SOIL / SEDIMENT SAMPLING FORM

Project: 1015-11-01 Sampled by: DB / JW

Site and Site Code (**SITEID**): SMC (SD032)

Sampling Location ID. (**LOCID**): SMCSD - 14 (SMC-5)

Date (**LOGDATE**): 9/6/11 Time: _____

FIELD OBSERVATIONS:

Sample Depth or Interval	Material Description/ Color
0.5 ft	

Comments/Observations:

_____

_____

_____

_____

Sample Time: 1445 Sample ID: SMCSD 0501 HA

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _1_ SDG#:_272_ Cooler ID#: _A_

Ship to: Elaine Walker Test America Laboratories, Inc. 4955 Yarrow Street Arvada, Colorado Tel: 303-736-0156	Project Name: Griffiss AFB Three Mile Creek (SD031) Sampler Name: Daniel Baldyga	Send Results to: Daniel Baldyga FPM Remediations, Inc 584 Phoenix Drive Rome, NY 13441
Carrier: Test America courier.	Sampler Signature: Daniel Baldyga	Phone: (315) 336-7721 Ext. 207

Analyses requested

Field Sample ID	LocID	Date 2011	Time	MATRIX	SMCODE	SACODE	SBD/SED	# of Containers	SVOCs, PCBs, Pest., note 2 8 oz glass jar	cadmium, mercury note 3 4 oz glass jar	Comments
TMCSD0101FA	TMCSW-13	9/6	1300	SE	G	N	0/0.5	2	1	1	
TMCSD0201FA	TMCSW-903	9/6	1400	SE	G	N	0/0.5	2	1	1	
TMCSD0301FA	TMCSW-902	9/6	1420	SE	G	N	0/0.5	2	1	1	
TMCSD0401FA	RV-TMCFSS-4	9/6	1250	SE	G	N	0/0.5	2	1	1	
TMCSD0501FA	RV-TMCFSS-5	9/6	1230	SE	G	N	0/0.5	2	1	1	
TMCSD0601FA	TMCSW-14	9/6	1320	SE	G	N	0/0.5	2	1	1	
TMCSD0701FA	RV-TMCSS-7	9/6	1345	SE	G	N	0/0.5	2	1	1	

Sample Condition Upon Receipt at Laboratory: Cooler temperature:

Special Instructions/Comments: Parameter List: (According to AFCEE QAPP 4.0)
Note 1: VOCs: Method SW8260 for AFCEE QAPP 4.0 List.
Note 2: SVOCs: Method SW8270 for AFCEE QAPP 4.0 List, PCBs: Method SW8082 for AFCEE QAPP 4.0 List, Pesticides: Method SW8081 for AFCEE QAPP 4.0 List.
Note 3: Metals: Method SW6010B for AFCEE QAPP 4.0 List and Mercury: Method SW7471.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 9/7/11	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM	Time: 1200	Company Name:	Time:
#1 Received by: (Sig) Daniel Baldyga	Date: 9/1/11	#2 Received by: (Sig)	Date: 9-7-11	#3 Received by: (Sig)	Date:
Company Name: FPM	Time: 1030	Company Name: TAL SYR	Time: 1201	Company Name:	Time:

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

SMCODE
B = Bailer
G = Grab
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#: _272_ Cooler ID#: _A_

Ship to: Elaine Walker Test America Laboratories, Inc. 4955 Yarrow Street Arvada, Colorado Tel: 303-736-0156	Project Name: Griffiss AFB Six Mile Creek (SD032) Sampler Name: Daniel Baldyga	Send Results to: Daniel Baldyga FPM Remediations, Inc 584 Phoenix Drive Rome, NY 13441 Phone: (315) 336-7721 Ext. 207
Carrier: Test America courier.	Sampler Signature: Daniel Baldyga	

Analyses requested

Field Sample ID	LocID	Date 2011	Time	MATRIX	SMCODE	SACODE	SBD/SED	# of Containers	VOCs note 1 4 oz glass jar	VOCs note 1 40 mL vial	PCBs note 2 8 oz glass jar	Comments
SMCSD0401HA	SMCSD-13	9/6	1500	SE	G	N	0/0.5	1	-	-	1	
SMCSD0401HC	SMCSD-13	9/6	1500	SE	G	FD	0/0.5	1	-	-	1	
SMCSD0501HA	SMCSD-14	9/6	1445	SE	G	N	0/0.5	1	-	-	1	

Sample Condition Upon Receipt at Laboratory: **Cooler temperature:**

Special Instructions/Comments: Parameter List: (According to AFCEE QAPP 4.0)
Note 1: VOCs: Method SW8260 for AFCEE QAPP 4.0 List.
Note 2: SVOCs: Method SW8270 for AFCEE QAPP 4.0 List, PCBs: Method SW8082 for AFCEE QAPP 4.0 List, Pesticides: Method SW8081 for AFCEE QAPP 4.0 List.
Note 3: Metals: Method SW6010B for AFCEE QAPP 4.0 List and Mercury: Method SW7471.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 9/7/11	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 1200	Company Name:	Time:
#1 Received by: (Sig) Daniel Baldyga	Date: 9/6/11	#2 Received by: (Sig)	Date: 9-7-11	#3 Received by: (Sig)	Date:
Company Name: FPM	Time: 1030	Company Name: TACSEC	Time: 12:00	Company Name:	Time:

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

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

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

Griffiss AR # 2296

Page ___ of ___

WELL PURGING & SAMPLING FORM

Project: 1015-11-01 Sampled by: DB / SW

Location and Site Code (**SITEID**): ~~WL-150MW-2~~ DB 8150

Well No. (**LOCID**): WL-150MW-2 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 9/6/11 Weather: 70° / 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:

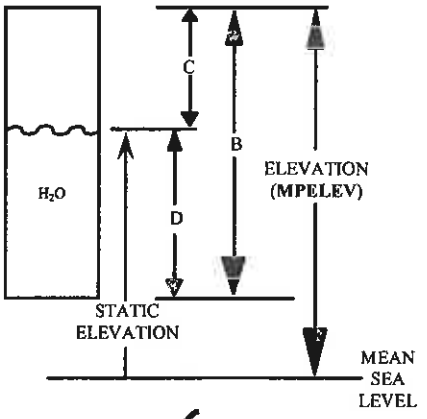
Measured Well Depth (B) (**TOTDEPTH**) 15.24 ft.

Measured Water Level Depth (C) (**STATDEP**) 23.51 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 8.27 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 1.3 gal

Minimum Purge Volume = 4.5 gal (3 well volumes)



Purge Date and Method: Bailer / 9/6/11

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)
0951	1	5.97	0.312	17.29	384	11.84	71
0954	2	6.00	0.327	15.49	479	3.44	73
0956	3	6.05	0.329	14.87	411	8.95	85
0958	4	6.06	0.331	14.77	672	10.95	103
1000	5	6.07	0.330	14.81	499	10.56	114

Sample Time: 1000 Sample ID: 150M0215CA

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

Page ___ of ___

WELL PURGING & SAMPLING FORM

Project: 1015-11-01 Sampled by: DB / JW

Location and Site Code (SITEID): 150

Well No. (LOCID): WL-150MW-3 Well Diameter (SDIAM): 2"

Date (LOGDATE): 9/6/11 Weather: 70 / 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:

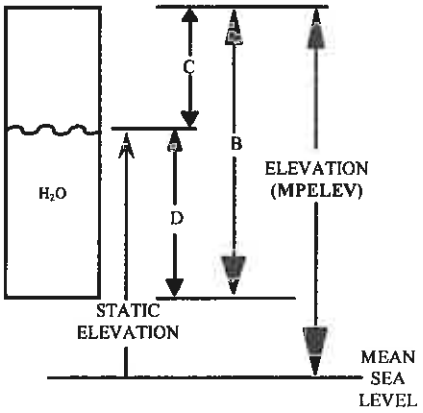
Measured Well Depth (B) (TOTDEPTH) 15.27 ft.

Measured Water Level Depth (C) (STATDEP) 22.03 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 6.76 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 1.08 gal

Minimum Purge Volume = 4.10 gal (3 well volumes)



Purge Date and Method: Bailer / 9/6/11

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)
1015	0.75	6.21	0.289	15.01	>999	2.66	169
1016	1.50	6.16	0.286	14.87	>999	9.57	171
1018	2.25	6.22	0.285	14.88	>999	7.88	173
1019	3.0	6.25	0.286	14.89	>999	9.61	173
1021	3.75	6.27	0.286	14.76	>999	9.93	178
1024	4.5	6.27	0.283	14.73	>999	10.03	178

Sample Time: 1025 Sample ID: 150M0315CA

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

Page ___ of ___

WELL PURGING & SAMPLING FORM

Project: 1015-11-01 Sampled by: DB/JW

Location and Site Code (**SITEID**): 150

Well No. (**LOCID**): WL-150MW-4 Well Diameter (**SDIAM**): 2"

Date (**LOGDATE**): 9/6/11 Weather: 70 / 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:

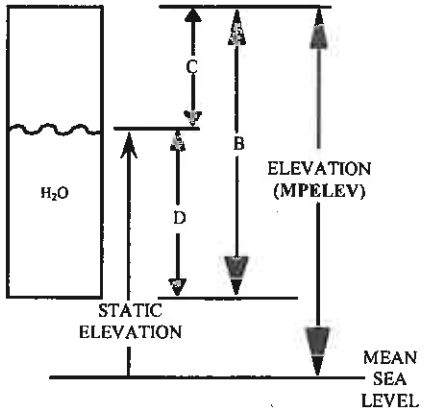
Measured Well Depth (B) (**TOTDEPTH**) 21.85 ft.

Measured Water Level Depth (C) (**STATDEP**) 15.22 ft.

Length of Static Water Column (D) = ____ (B) - ____ (C) = 6.63 (D) ft.

Casing Water Volume (E) = ____ (A) x ____ (D) = 1.06 gal

Minimum Purge Volume = 3.18 gal (3 well volumes)



Purge Date and Method: Bailer / 9/6/11

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)
1036	1	6.52	0.279	14.10	>999	11.63	183
1038	2	6.48	0.279	14.04	>999	10.73	188
1040	3	6.47	0.282	13.89	>999	10.09	191
1042	4	6.46	0.282	13.87	>999	10.34	194

Sample Time: 1045 Sample ID: 150M0415CA

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.

CHAIN OF CUSTODY RECORD

COC#: _3_ SDG#: _272_ Cooler ID: _A_

Ship to: Elaine Walker Test America Laboratories, Inc. 4955 Yarrow Street Arvada, Colorado Tel: 303-736-0156	Project Name: Griffiss AFB B150 Sampler Name: Daniel Baldyga	Send Results to: Daniel Baldyga FPM Remediations, Inc 584 Phoenix Drive Rome, NY 13441 Phone: (315) 336-7721 Ext. 207
Carrier: Test America courier.	Sampler Signature:	

Analyses Requested

Field Sample ID	Location ID (LOCID)	Date 2011	Time	MATRIX	SMCODE	SBD/SED	SACODE	No. of Containers	VOCs Note 1 40 mL glass vial	SVOCs Note 2 1 L amber glass	Comments
150M0215CA	WL-150MW-02	9/6	1000	WG	B	0/0	N	5	3	2	
150M0315CA	WL-150MW-03	9/6	1025	WG	B	0/0	N	5	3	2	
150M0415CA	WL-150MW-04	9/6	1045	WG	B	0/0	N	5	3	2	
090611CE	FIELDQC	9/6	1145	WQ	B	0/0	EB	5	3	2	
090611CR	FIELDQC	9/6	0900	WQ	NA	0/0	TB	2	2	-	
090611CF	FIELDQC	9/6	1200	WQ	NA	0/0	AB	3	3	-	

Sample Condition Upon Receipt at Laboratory: Cooler temperature:

Note 1: VOCs: method SW 8260 (AFCEE QAPP 4.0 List).
Note 2: SVOCs: method SW 8270 (AFCEE QAPP 4.0 List).

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 9/7/11	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Remediations	Time: 1200	Company Name:	Time:
#1 Received by: (Sig) Dan Baldygya	Date: 9/6/11	#2 Received by: (Sig)	Date: 9-7-11	#3 Received by: (Sig)	Date:
Company Name: FPM Remediations	Time: 1030	Company Name:	Time: 1200	Company Name:	Time:

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

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

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

Daily Health and Safety Meeting Form

Date: 9/6/2011 Time Start: 800

Time End: 805

Location: FPM Remediations office

Weather Conditions: sun / 70

Meeting Type: Health and Safety

Personnel Present: Dan Baldyga and Josh Wenzel

Visitors Present: /

Visitor Training: /

PPE Required: waders / DB ~~got~~ gloves

Possible risks, injuries, concerns: PCBs in sediment, drowning, Biological hazards (bees / poisonous plants), falling

Anticipated Releases to Environment (if so, describe and detail response action/control measures implemented): None

Daily Health and Safety Meeting Form (Page 2)

Property Damage: X None

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

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

Report made by (Name): Jon Baldizon

SSHP Organization Title: Health and safety officer

APPENDIX B

Validated Lab Data

FPM Remediations
Data Verification and Usability Report
GRIFFISS AIR FORCE BASE
Site Griffiss AFB LTM Annual Sampling
Sediment Sampling
Contract No. FA8903-10-D-8595, Delivery Order No. 0014

FPM Project No. 1015-11-01

TestAmerica Job # 280-20042-1

Laboratory:	TestAmerica Laboratories, Inc.
Sample Matrix:	Sediment
Number of Samples:	7
Analytical Protocol:	DOD QSM, version 4.2, as per project-specific UFP QAPP
Data Reviewer:	Connie van Hoesel
Sample Date:	September 6, 2011

LIST OF DATA VERIFICATION SAMPLES

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

Sample ID	Date	QC Samples	Date
TMCSD0101FA	9/6/11		
TMCSD0201FA	9/6/11		
TMCSD0301FA	9/6/11		
TMCSD0401FA	9/6/11		
TMCSD0501FA	9/6/11		
TMCSD0601FA	9/6/11		
TMCSD0701FA	9/6/11		

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 DOD QSM, version 4.2, as specified in the project-specific QAPP. 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 sample analyses were per methods as specified in the DOD QSM, version 4.2, with project-specific modifications as listed in the project-specific QAPP. The analytical methods employed included SW-846: Semivolatile Organic Compounds by Method SW8270, Pesticides by Method SW8081A, Polychlorinated Biphenyls (PCBs) by Method SW8082, Cadmium by Method SW6010B and Mercury by Method SW7471A.

VERIFICATION GUIDANCE

The analytical work was performed by TestAmerica Laboratories, Inc. in accordance with the DOD QSM, version 4.2, and QC requirements of the respective analytical methods and of the project-specific 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 DOD QSM, and the criteria as listed in the project-specific QAPP.

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 DOD QSM, version 4.2, and project-specific QAPP 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.

SAMPLE LABELING

No problems were encountered with sample labeling and transcription to laboratory forms.

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.

MS/MSD

For SVOCs, the lab performed matrix spike and matrix spike duplicate samples for parent sample TMCSD0201FA. However, these samples were not requested by the client in the chain-of-custody; therefore, no action was taken for the MS/MSD criterion.

For pesticides, the lab performed matrix spike and matrix spike duplicate samples for parent samples TMCSD0101FA and TMCSD0201FA. However, these samples were not requested by the client in the chain-of-custody; therefore, no action was taken for the MS/MSD criterion.

For cadmium, the lab performed matrix spike and matrix spike duplicate samples for parent sample TMCSD0101FA. However, these samples were not requested by the client in the chain-of-custody; therefore, no action was taken for the MS/MSD criterion.

For mercury, the lab performed matrix spike and matrix spike duplicate samples for parent sample TMCSD0701FA. However, these samples were not requested by the client in the chain-of-custody; therefore, no action was taken for the MS/MSD criterion.

SVOCs

- According to the case narrative, the following field samples were analyzed at dilution: TMCSD0101FA (1:4), TMCSD0501FA (1:4) and TMCSD0601FA (1:10). The dilution results only are reported and are used in data verification as representing original results. The case narrative describes that these samples were analyzed at dilution due to sample matrix interference. No corrective action is deemed necessary.

- According to the case narrative, surrogate recoveries could not be calculated accurately in samples TMCSD0101FA, TMCSD0501FA, and TMCSD0601FA due to the surrogate being diluted out (the samples were diluted at least 1:4). According to the case narrative, the dilutions were performed due to sample matrix interference. Because surrogate recoveries in the LCS and associated blanks were acceptable, no further action was deemed required.

- According to the case narrative, due to matrix interference in samples TMCSD0101FA, TMCSD0201FA, TMCSD0301FA, TMCSD0401FA, and TMCSD0501FA, benzo(b)fluoranthene and benzo(k)fluoranthene were unresolved. According to the laboratory case narrative, the combined peak was reported as benzo(b)fluoranthene, and benzo(k)fluoranthene was reported as non-detect, although it may be present.
  Corrective Action: No corrective action is necessary. Using professional judgment, the associated results, flagged "K" by the laboratory, were instead flagged "J" to indicate that the results are estimated.

PESTICIDES

- According to the case narrative, all field samples were analyzed at a dilution of 1:50. The dilution results only are reported and are used in data verification as representing original results. The case narrative describes that these samples were analyzed at dilution due to sample matrix interference. No corrective action is deemed necessary.

- According to the case narrative, surrogate recoveries were below control limits in all samples due to the surrogate being diluted out (the samples were diluted 1:50). According to the case narrative, the dilution was performed due to sample matrix interference. Because surrogate recoveries in the LCS and associated blanks were acceptable, no further action was deemed required.

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

Sample ID	Surrogate	%Rec	QC Limits (%)	Flag Applied	Rationale
TMCSD0101FA, Primary Column	DCB Decachlorobiphenyl	*0*	55-130	J/UJ	Matrix interference;

Sample ID	Surrogate	%Rec	QC Limits (%)	Flag Applied	Rationale
					TCMX recovery within internal control limits
	TCMX	***68***	70-125	J/UJ	%Rec less than LCL but above 10%; within internal control limits (55-125)
TMCSD0101FA, Secondary Column	DCB Decachlorobiphenyl	***0***	55-130	J/UJ	Matrix interference; TCMX recovery within internal control limits
	TCMX	***47***	70-125	J/UJ	%Rec less than LCL but above 10%; within internal control limits (55-125)
TMCSD0101FA, Primary Column 1:10 DL	DCB Decachlorobiphenyl	***311***	55-130	None	Surrogate diluted out; recovery calculation could not be accurately calculated
	TCMX	***59***	70-125	None	Surrogate diluted out; recovery calculation could not be accurately calculated
TMCSD0101FA, Secondary Column 1:10 DL	DCB Decachlorobiphenyl	***1375***	55-130	None	Surrogate diluted out; recovery calculation could not be accurately calculated
	TCMX	***66***	70-125	None	Surrogate diluted out; recovery calculation could not be accurately calculated
TMCSD0201FA, Primary Column	TCMX	***57***	70-125	None	DCB surrogate recovery within control limits; %Rec within internal control limits (55-125)
TMCSD0301FA, Primary Column	TCMX	***64***	70-125	None	DCB surrogate recovery within control limits; %Rec within internal control limits (55-125)
TMCSD0401FA, Primary Column	TCMX	***62***	70-125	None	DCB surrogate recovery within

Sample ID	Surrogate	%Rec	QC Limits (%)	Flag Applied	Rationale
					control limits; %Rec within internal control limits (55-125)
TMCSD0401FA, Secondary Column	TCMX	*52*	70-125	R	Primary column results used
TMCSD0501FA, Primary Column	TCMX	*59*	70-125	None	DCB surrogate recovery within control limits; %Rec within internal control limits (55-125)
TMCSD0601FA, Primary Column	TCMX	*68*	70-125	None	DCB surrogate recovery within control limits; %Rec within internal control limits (55-125)
TMCSD0601FA, Secondary Column	TCMX	*53*	70-125	R	Primary column results used
TMCSD0601FA, Primary Column 1:10 DL	TCMX	*62*	70-125	None	Surrogate diluted out; recovery calculation could not be accurately calculated
TMCSD0501FA, Primary Column	TCMX	*66*	70-125	None	DCB surrogate recovery within control limits; %Rec within internal control limits (55-125)

If the surrogate recovery is not within DOD limits, corrective action shall be implemented: the sample shall be reextracted and reanalyzed. If the corrective action is ineffective in resolving the exceedance, then all analytes associated with the surrogate in that sample are qualified. As per the QAPP, for samples with recoveries greater than the upper control limit, positive sample results are considered estimated (flagged "J"). For samples with surrogate recoveries greater than 10% but less than the lower control limit, positive results are considered estimated (flagged "J") and non-detect results are considered estimated (flagged "UJ"). For samples with surrogate recoveries less than 10%, the results are rejected for the analytes. However, using professional judgment, no corrective action and/or flagging is required for minimal exceedances (i.e., within 1% of the control limits).

Corrective Action: According to the case narrative, no corrective action was performed for sample TMCSD0101FA, which exhibited surrogate exceedances for both TCMX and DCB Decachlorobiphenyl, since there was obvious matrix interference. Results are flagged "J" to indicate the results are considered estimated. According to the case narrative, the recoveries for TCMX were all within internal control limits for all primary column results, indicating that the method was in control. Since the other surrogate, DCB Decachlorobiphenyl, did meet QC recovery criteria in both columns for all other samples, no flagging was deemed necessary.

- According to the case narrative, in the following continuing calibration verification (CCV), the following analytes exceeded the control limit of ±20%D:

Type of Calibration Exceedance Affected Analytes	%D/ %RSD	QC Limit	Flag Applied	Rationale
CCV 280-87288/46				
4,4'-DDT, Front column	***-25.0***	±20	R	Results from dilution considered usable results (bracketed by CCVs within control limits)
4,4'-DDT, Rear column	***-30.4***	±20	R	Results from dilution considered usable results (bracketed by CCVs within control limits)
Methoxychlor, Rear column	***-21.0***	±20	R	Results from front column considered usable results (bracketed by CCVs within control limits)

Corrective Action: In accordance with the case narrative, results were reported from column bracketed by compliant CCVs. Since both the front and rear columns were non-compliant for 4,4'-DDT, results for this compound only were reported from the dilution result, which was bracketed by compliant CCVs.

- The QAPP requires second column confirmation for organochlorine pesticides, with the exceptions of chlordane and toxaphene. The QAPP specifies that "J" flags are required for results with an RPD greater than 40%, and a "Q" flag for analytes whose detections were not confirmed. The following table lists RPD exceedances for analytes in field samples, along with the associated flags assigned and the rationale pertaining thereto:

Sample ID	Analyte	First Column Result	Second Column Result	RPD	Flag	Rationale
TMCSD0101FA	Endosulfan II	0.68	8.9	***171.5***	J	RPD > 40%, result < RL
	4,4'-DDT	17	9.1	***62.8***	J	RPD > 40%, result < RL
TMCSD0201FA	beta-BHC	5.8	1.9	***101.9***	J	RPD > 40%, result < RL
	Dieldrin	0.63	0.32	***65.7***	J	RPD > 40%, result < RL
TMCSD0401FA	Dieldrin	1.1	0.49	***75.1***	J	RPD > 40%, result < RL
TMCSD0701FA	Heptachlor	1.1	0.66	49.1	J	RPD > 40%, result < RL

Corrective Action: "J" flags were appled to all results since the RPD exceeded 40%. However, "J" flags had already been applied to all results since the reported result was greater than the DL but less than the LOQ.

PCBs

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

Sample ID	Surrogate	%Rec	QC Limits (%)	Flag Applied	Rationale
TMCSD0101FA, Primary column	DCB Decachlorobiphenyl	*323*	60-125	J	%Rec greater than upper control limit

If the surrogate recovery is not within QC limits, corrective action shall be implemented: the sample shall be reextracted and reanalyzed. If the corrective action is ineffective in resolving the exceedance, then all analytes associated with the surrogate in that sample are qualified. As per the QAPP, for samples with recoveries greater than the upper control limit, positive sample results are considered estimated (flagged "J"). For samples with surrogate recoveries greater than 10% but less than the lower control limit, positive results are considered estimated (flagged "J") and non-detect results are considered estimated (flagged "UJ"). For samples with surrogate recoveries less than 10%, the results are rejected for the analytes. However, using professional judgment, no corrective action and/or flagging is required for minimal exceedances (i.e., within 1% of the control limits).

Corrective Action: According to the case narrative, no corrective action was performed since the surrogate failure was verified as sample matrix effects. The original results shall be flagged in accordance with the qualifiers as discussed above: "J" qualifiers were applied to positive results since the surrogate recovery is greater than the upper control limit.

- The QAPP requires second column confirmation. The QAPP specifies that "J" flags are required for results with an RPD greater than 40%, and a "Q" flag for analytes whose detections were not confirmed. The following table lists RPD exceedances for analytes in field samples, along with the associated flags assigned and the rationale pertaining thereto:

Sample ID	Analyte	First Column Result	Second Column Result	RPD	Flag	Rationale
TMCSD0401FA	PCB-1260	12	19	*45.1*	J	RPD > 40%, result < RL

Corrective Action: "J" flags were appled to all results since the RPD exceeded 40%. However, "J" flags had already been applied to all results since the reported result was greater than the DL but less than the LOQ.

CADMIUM

- An Inductively Coupled Plasma (ICP) Serial Dilution Test (1:5 dilution) is required to be run for each sample matrix that is analyzed for metals, and is applicable only for those analytes

with concentrations greater than 50 times the limit of quantitation (LOQ). The dilution test was performed on sample TMCSD0101FA and indicated the percent difference (%D) between the original result and the five-times (5x) serial dilution result was greater than the QAPP limit of ±10%:

Analyte	Initial Sample Result (mg/kg)	Serial Dilution Result (mg/kg)	% Difference	LOQ (mg/kg)	50 x LOQ	Post-Digestion Spike %Rec
Cadmium	0.18 J	0.56	NC	0.56	28	95

The QAPP also requires that a post-digestion spike addition be performed when the concentration in all samples within the batch were less than 50x the limit of detection (LOD), and the recovery must be within 75-125% of the expected result. The QAPP requires that for all sample results for the specific analytes for all samples associated with the post-digestion spike addition that do not meet the acceptance criteria (i.e., 75-125%), that a "J" be applied to the results, and that they be considered estimated.

Corrective Action: Applying the data qualification approach for the serial dilution result exceedances per the QAPP, the dilution test results are only applicable if the analytes in the original, undiluted sample are reported greater than 50 times the LOQ. Hence, the dilution test results were not applicable. The post-digestion spike recovery was within acceptable control limits, so no corrective action is deemed necessary for this criterion.

MERCURY

- An Inductively Coupled Plasma (ICP) Serial Dilution Test (1:5 dilution) is required to be run for each sample matrix that is analyzed for metals, and is applicable only for those analytes with concentrations greater than 50 times the limit of quantitation (LOQ). The dilution test was performed on sample TMCSD0701FA and indicated the percent difference (%D) between the original result and the five-times (5x) serial dilution result was greater than the QAPP limit of ±10%:

Analyte	Initial Sample Result (µg/kg)	Serial Dilution Result (µg/kg)	% Difference	LOQ (mg/kg)	50 x LOQ	Post-Digestion Spike %Rec
Mercury	9.3	46	NC	40	2000	N/A

The QAPP also requires that a post-digestion spike addition be performed when the concentration in all samples within the batch were less than 50x the limit of detection (LOD), and the recovery must be within 75-125% of the expected result. The QAPP requires that for all sample results for the specific analytes for all samples associated with the post-digestion spike addition that do not meet the acceptance criteria (i.e., 75-125%), that a "J" be applied to the results, and that they be considered estimated.

Corrective Action: Applying the data qualification approach for the serial dilution result exceedances per the QAPP, the dilution test results are only applicable if the analytes in the original, undiluted sample are reported greater than 50 times the LOQ. Hence, the dilution test results were not applicable. The post-digestion spike was not required since some results within the analytical batch exceeded 50x the LOD.

DATA USABILITY RESULTS

SVOCs

Based on the evaluation of all information in the analytical data groups, the results of the samples for SVOCs 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.

PESTICIDES

Based on the evaluation of all information in the analytical data groups, the results of the samples for pesticides 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.

PCBs

Based on the evaluation of all information in the analytical data groups, the results of the samples for PCBs 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.

CADMIUM

Based on the evaluation of all information in the analytical data groups, the results of the samples for metals 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.

MERCURY

Based on the evaluation of all information in the analytical data groups, the results of the samples for mercury 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.

DATA USABILITY SUMMARY

All data in Job # 280-20042-1 are valid and usable with qualifications as noted in the data review.

Signed: Concordia van Hoesel Date: 11-21-11

ATTACHMENTS

- Chain-of-Custody
- Laboratory's Case Narrative
- Qualified final data verification results on annotated Lab Sheet 2s

CASE NARRATIVE
Client: FPM Remediations Inc
Project: Griffiss AFB Three Mile Creek (SD031)
Report Number: 280-20042-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
Seven samples were received on 09/08/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 2.7°C, and 2.8°C.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples TMCSD0101FA (280-20042-1), TMCSD0201FA (280-20042-2), TMCSD0301FA (280-20042-3), TMCSD0401FA (280-20042-4), TMCSD0501FA (280-20042-5), TMCSD0601FA (280-20042-6) and TMCSD0701FA (280-20042-7) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were analyzed on 09/21/2011 and 09/22/2011.

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to matrix interference, the following samples had to be analyzed at a dilution as detailed below. The reporting limits have been adjusted relative to the dilution required. The laboratory noted that the sample extract was viscous, and analysis at a lesser dilution would jeopardize the integrity of the instrument.

TMCSD0101FA (280-20042-1) was analyzed at a 4X dilution
TMCSD0501FA (280-20042-5) was analyzed at a 4X dilution
TMCSD0601FA (280-20042-6) was analyzed at a 10X dilution

Surrogate recoveries could not be accurately calculated for the diluted analyses of samples TMCSD0101FA (280-20042-1), TMCSD0501FA (280-20042-5) and TMCSD0601FA (280-20042-6) because the extracts were diluted beyond the ability to quantitate recoveries.

Compounds Benzo(b)fluoranthene and Benzo(k)fluoranthene were unresolved in samples TMCSD0101FA (280-20042-1), TMCSD0201FA (280-20042-2), TMCSD0301FA (280-20042-3), TMCSD0401FA (280-20042-4) and TMCSD0501FA (280-20042-5) due to matrix interferences. It can be noted that these compounds were adequately resolved in associated standards, indicating the instrument is achieving separation. The combined peak was reported as Benzo(b)fluoranthene, while Benzo(k)fluoranthene was reported as undetected even though it may be present. Associated results in the analytical report have been flagged with a "K".

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for prep batch 280-86705, performed on sample TMCSD0201FA (280-20042-2), were outside control limits for Hexachlorocyclopentadiene. Additionally, the MS/MSD exhibited relative percent difference (RPD) data outside the control limits for Hexachloroethane. The associated laboratory control sample (LCS) recoveries met acceptance criteria, and the sample results have been flagged accordingly.

No other difficulties were encountered during the SVOC analyses.

All other quality control parameters were within the acceptance limits.

ORGANOPHOSPHORUS PESTICIDES
Samples TMCSD0101FA (280-20042-1), TMCSD0201FA (280-20042-2), TMCSD0301FA (280-20042-3), TMCSD0401FA (280-20042-4), TMCSD0501FA (280-20042-5), TMCSD0601FA (280-20042-6) and TMCSD0701FA (280-20042-7) were analyzed for organophosphorus pesticides in accordance with EPA SW-846 Method 8081A. The samples were analyzed on 09/21/2011 and 09/22/2011.

Please note samples TMCSD0101FA (280-20042-1), TMCSD0201FA (280-20042-2), TMCSD0301FA (280-20042-3), TMCSD0401FA (280-20042-4), TMCSD0501FA (280-20042-5) and TMCSD0601FA (280-20042-6) required a sulfuric acid clean-up to reduce matrix interferences.

The following samples were analyzed at two different dilutions, due to the nature of the sample matrix interfering with some of the target compounds and an abundance of non-target analytes. Reporting limits were raised accordingly. Each compound was reported to achieve the lowest possible reporting limit within the constraints of the method. The laboratory noted that the extracts were dark yellow-brown in color. Historically, extracts this color have caused CCVs to recover outside the control limits for 4,4'-DDT and Methoxychlor.

TMCSD0101FA (280-20042-1) was analyzed at a 1X and a 10X dilution
TMCSD0601FA (280-20042-6) was analyzed at a 1X and a 10X dilution

Surrogate recoveries could not be accurately calculated for the diluted analyses of samples TMCSD0101FA (280-20042-1) and TMCSD0601FA (280-20042-6) because the extracts were diluted beyond the ability to quantitate recoveries.

The following samples exhibited surrogate recoveries outside the QC control limits as detailed below. Per TestAmerica Denver's proposed variance to DoD QSM Version 4, the acceptance limits for Tetrachloro-m-xylene in soil samples are 55-125%. The samples listed below met these wider control limits on the primary column, indicating the extraction process was in control. The chromatogram for sample TMCSD0101FA (280-20042-1) indicated obvious matrix interference; therefore corrective action is deemed unnecessary. The sample results associated with failing surrogate recoveries have been flagged "Q" per the DoD QSM.

TMCSD0101FA (280-20042-1) [1X] recovered Tetrachloro-m-xylene at 68% (limits 70-125%) on primary column
TMCSD0101FA (280-20042-1) [1X] recovered Decachlorobiphenyl at 0% (limits 55-130%) on primary column
TMCSD0101FA (280-20042-1) [1X] recovered Tetrachloro-m-xylene at 47% (limits 70-125%) on confirmation column
TMCSD0101FA (280-20042-1) [1X] recovered Decachlorobiphenyl at 0% (limits 55-130%) on confirmation column
TMCSD0101FA (280-20042-1) [10X] recovered Tetrachloro-m-xylene at 59% (limits 70-125%) on primary column
TMCSD0101FA (280-20042-1) [10X] recovered Decachlorobiphenyl at311% (limits 55-130%) on primary column
TMCSD0101FA (280-20042-1) [10X] recovered Tetrachloro-m-xylene at 66% (limits 70-125%) on confirmation column
TMCSD0101FA (280-20042-1) [10X] recovered Decachlorobiphenyl at 1375% (limits 55-130%) on confirmation column
TMCSD0201FA (280-20042-2) recovered Tetrachloro-m-xylene at 57% (limits 70-125%) on primary column
TMCSD0301FA (280-20042-3) recovered Tetrachloro-m-xylene at 64% (limits 70-125%) on primary column
TMCSD0401FA (280-20042-4) recovered Tetrachloro-m-xylene at 62% (limits 70-125%) on primary column
TMCSD0401FA (280-20042-4) recovered Tetrachloro-m-xylene at 52% (limits 70-125%) on confirmation column
TMCSD0501FA (280-20042-5) recovered Tetrachloro-m-xylene at 59% (limits 70-125%) on primary column
TMCSD0601FA (280-20042-6) [1X] recovered Tetrachloro-m-xylene at 68% (limits 70-125%) on primary column
TMCSD0601FA (280-20042-6) [1X] recovered Tetrachloro-m-xylene at 53% (limits 70-125%) on confirmation column
TMCSD0601FA (280-20042-6) [10X] recovered Tetrachloro-m-xylene at 62% (limits 70-125%) on primary column
TMCSD0701FA (280-20042-7) recovered Tetrachloro-m-xylene at 66% (limits 70-125%) on primary column

The Toxaphene matrix spike / matrix spike duplicate (MS/MSD) recoveries for prep batch 280-86062, performed on sample TMCSD0201FA (280-20042-2), were outside control limits for surrogate Tetrachloro-m-xylene. The associated laboratory control sample (LCS) recoveries met acceptance criteria. The results associated with failing surrogate recovery have been flagged "Q" per the DoD QSM.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for prep batch 280-86062, performed on sample TMCSD0101FA (280-20042-1), were outside control limits for several compounds. The associated laboratory control sample (LCS) recoveries met acceptance criteria, and the sample results have been flagged accordingly.

The Continuing Calibration Verifications (CCV) standards associated with samples TMCSD0101FA (280-20042-1) and TMCSD0601FA (280-20042-6) in analytical batch 280-87288 did not meet acceptance criteria for 4,4'-DDT and Methoxychlor as detailed below. Methoxychlor was reported from the front column, where the samples were non-detect (ND) for this analyte. 4,4'-DDT was reported from the diluted analysis of samples TMCSD0101FA (280-20042-1) and TMCSD0601FA (280-20042-6), that were bracketed by acceptable CCVs.

CCVRT	Front column	All compounds in control.
	Rear column	All compounds in control.
CCV2	Front column	All compounds in control.
	Rear column	All compounds in control.

Toxaphene LCS, LCS, 20042-5, -7, Method Blank

CCV3	Front column	All compounds in control.
	Rear column	All compounds in control.

20042-1 [10x], -2, -2 Toxaphene MS, -2 Toxaphene MSD, -3, -4, -6 [10x]

CCV4	Front column	All compounds in control.
	Rear column	All compounds in control.

20042-1 [1x], -1 MS, -1 MSD, -6 [1x]

CCV5	Front column	4,4'-DDT (-25.0%)
	Rear column	4,4'-DDT (-30.4%) and Methoxychlor (-21.0%)

No other difficulties were encountered during the pesticides analyses.

All other quality control parameters were within the acceptance limits.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples TMCSD0101FA (280-20042-1), TMCSD0201FA (280-20042-2), TMCSD0301FA (280-20042-3), TMCSD0401FA (280-20042-4), TMCSD0501FA (280-20042-5), TMCSD0601FA (280-20042-6) and TMCSD0701FA (280-20042-7) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082. The samples were analyzed on 09/21/2011 and 09/22/2011.

Please note samples TMCSD0101FA (280-20042-1), TMCSD0201FA (280-20042-2), TMCSD0301FA (280-20042-3), TMCSD0401FA (280-20042-4), TMCSD0501FA (280-20042-5), TMCSD0601FA (280-20042-6) and TMCSD0701FA (280-20042-7) required a sulfuric acid clean-up to reduce matrix interferences.

Surrogate Decachlorobiphenyl was recovered above the QC control limits in sample TMCSD0101FA (280-20042-1) at 323% (limits 60-125%). This anomaly is due to obvious matrix interferences; therefore, corrective action is deemed unnecessary. The associated data have been flagged "Q" in accordance with the DoD QSM.

No other difficulties were encountered during the PCBs analyses.

All other quality control parameters were within the acceptance limits.

TOTAL METALS

Samples TMCSD0101FA (280-20042-1), TMCSD0201FA (280-20042-2), TMCSD0301FA (280-20042-3), TMCSD0401FA (280-20042-4), TMCSD0501FA (280-20042-5), TMCSD0601FA (280-20042-6) and TMCSD0701FA (280-20042-7) were analyzed for total metals in accordance with EPA SW-846 Method 6010B. The samples were analyzed on 09/29/2011.

No difficulties were encountered during the metals analyses.

All quality control parameters were within the acceptance limits.

TOTAL MERCURY

Samples TMCSD0101FA (280-20042-1), TMCSD0201FA (280-20042-2), TMCSD0301FA (280-20042-3), TMCSD0401FA (280-20042-4), TMCSD0501FA (280-20042-5), TMCSD0601FA (280-20042-6) and TMCSD0701FA (280-20042-7) were analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The samples were analyzed on 09/15/2011.

No difficulties were encountered during the mercury analyses.

All quality control parameters were within the acceptance limits.

PERCENT SOLIDS

Samples TMCSD0101FA (280-20042-1), TMCSD0201FA (280-20042-2), TMCSD0301FA (280-20042-3), TMCSD0401FA (280-20042-4), TMCSD0501FA (280-20042-5), TMCSD0601FA (280-20042-6) and TMCSD0701FA (280-20042-7) were analyzed for percent solids in accordance with EPA SW846 3550C. The samples were analyzed on 09/09/2011.

No difficulties were encountered during the % solids analyses.

All quality control parameters were within the acceptance limits.

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _1_ SDG#:_272_ Cooler ID#: _A_

Ship to: Elaine Walker Test America Laboratories, Inc. 4955 Yarrow Street Arvada, Colorado Tel: 303-736-0156	Project Name: Griffiss AFB Three Mile Creek (SD031) Sampler Name: Daniel Baldyga	Send Results to: Daniel Baldyga FPM Remediations, Inc 584 Phoenix Drive Rome, NY 13441 Phone: (315) 336-7721 Ext. 207
Carrier: Test America courier.	Sampler Signature:	

Analyses requested

Field Sample ID	LocID	Date 2011	Time	MATRIX	SMCODE	SACODE	SED/SED	# of Containers	SVOCs, PCBs, Pest., note 2, 8 oz glass jar	cadmium, mercury, note 3, 4 oz glass jar	Comments
TMCSD0101FA	TMCSW-13	9/6	1300	SE	G	N	0/0.5	2	1	1	
TMCSD0201FA	TMCSW-903	9/6	1400	SE	G	N	0/0.5	2	1	1	
TMCSD0301FA	TMCSW-902	9/6	1420	SE	G	N	0/0.5	2	1	1	
TMCSD0401FA	RV-TMCFSS-4	9/6	1250	SE	G	N	0/0.5	2	1	1	
TMCSD0501FA	RV-TMCFSS-5	9/6	1230	SE	G	N	0/0.5	2	1	1	
TMCSD0601FA	TMCSW-14	9/6	1320	SE	G	N	0/0.5	2	1	1	
TMCSD0701FA	RV-TMCSS-7	9/6	1345	SE	G	N	0/0.5	2	1	1	

Sample Condition Upon Receipt at Laboratory: Cooler temperature:

Special Instructions/Comments: Parameter List: (According to AFCEE QAPP 4.0)
Note 1: VOCs: Method SW8260 for AFCEE QAPP 4.0 List.
Note 2: SVOCs: Method SW8270 for AFCEE QAPP 4.0 List, PCBs: Method SW8082 for AFCEE QAPP 4.0 List, Pesticides: Method SW8081 for AFCEE QAPP 4.0 List.
Note 3: Metals: Method SW6010B for AFCEE QAPP 4.0 List and Mercury: Method SW7471.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 9/7/11	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM	Time: 1200	Company Name:	Time:
#1 Received by: (Sig) Daniel Baldyga	Date: 9/1/11	#2 Received by: (Sig)	Date: 9-7-11	#3 Received by: (Sig)	Date:
Company Name: FPM	Time: 1030	Company Name: TA SVC	Time: 1200	Company Name:	Time:

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

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

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

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0101FA**

Lab Sample ID: 280-20042-1 Date Sampled: 09/06/2011 1300
Client Matrix: Solid % Moisture: 23.3 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1799.D
Dilution:	4.0			Initial Weight/Volume:	32.8 g
Analysis Date:	09/21/2011 2226			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
1,1'-Biphenyl		160	U D	240	1600
1,2,4,5-Tetrachlorobenzene		160	U D	230	1600
1,2,4-Trichlorobenzene		160	U D	130	1600
1,2-Dichlorobenzene		160	U D	100	1600
1,2-Diphenylhydrazine		160	U D	100	1600
1,3-Dichlorobenzene		160	U D	57	1600
1,4-Dichlorobenzene		160	U D	65	1600
2,2'-oxybis[1-chloropropane]		160	U D	110	1600
2,3,4,6-Tetrachlorophenol		160	U D	650	7600
2,4,5-Trichlorophenol		620	U D	48	1600
2,4,6-Trichlorophenol		310	U D	48	1600
2,4-Dichlorophenol		310	U D	48	1600
2,4-Dimethylphenol		620	U D	310	1600
2,4-Dinitrophenol		3200	U D	1600	7600
2,4-Dinitrotoluene		620	U D	310	1600
2,6-Dichlorophenol		620	U D	330	1600
2,6-Dinitrotoluene		310	U D	130	1600
2-Chloronaphthalene		160	U D	48	1600
2-Chlorophenol		160	U D	100	1600
2-Methylnaphthalene		160	U D	91	1600
2-Methylphenol		160	U D	62	1600
2-Nitroaniline		310	U D	240	7600
2-Nitrophenol		310	U D	48	1600
3 & 4 Methylphenol		310	U D	160	1600
3,3'-Dichlorobenzidine		1600	U D	430	7600
3-Nitroaniline		630	U D	350	7600
4,6-Dinitro-2-methylphenol		3100	U D	1600	7600
4-Bromophenyl phenyl ether		160	U D	91	1600
4-Chloro-3-methylphenol		620	U D	310	1600
4-Chloroaniline		620	U D	390	1600
4-Chlorophenyl phenyl ether		310	U D	100	1600
4-Nitroaniline		620	U D	350	7600
4-Nitrophenol		1600	U D	460	7600
Acenaphthene		62	J D	49	1600
Acenaphthylene		160	U D	81	1600
Acetophenone		160	U D	95	1600
Anthracene		170	J D	81	1600
Atrazine		620	U D	180	1600
Benzaldehyde		320	U M D	190	1600
Benzidine		19000	U D	4700	19000
Benzo[a]anthracene		460	J D	95	1600
Benzo[a]pyrene		370	J D	95	1600
Benzo[b]fluoranthene		670	J K D	120	1600
Benzo[g,h,i]perylene		210	J D	76	1600
Benzo[k]fluoranthene		310	U K D J	190	1600
Benzoic acid		3100	U D	1600	7600

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0101FA**

Lab Sample ID: 280-20042-1 Date Sampled: 09/06/2011 1300
Client Matrix: Solid % Moisture: 23.3 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1799.D
Dilution:	4.0			Initial Weight/Volume:	32.8 g
Analysis Date:	09/21/2011 2226			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Benzyl alcohol		160	U D	48	1600
Bis(2-chloroethoxy)methane		310	U D	110	1600
Bis(2-chloroethyl)ether		160	U D	79	1600
Bis(2-ethylhexyl) phthalate		310	U D	220	1600
Butyl benzyl phthalate		310	U D	210	1600
Caprolactam		1600	U D	510	7600
Carbazole		320	U D	170	1600
Chrysene		410	J D	130	1600
Dibenz(a,h)anthracene		160	U D	91	1600
Dibenzofuran		160	U D	95	1600
Diethyl phthalate		160	U D	120	3100
Dimethyl phthalate		160	U D	110	1600
Di-n-butyl phthalate		160	U D	140	1600
Di-n-octyl phthalate		310	U D	69	1600
Fluoranthene		930	J D	170	1600
Fluorene		160	U D	86	1600
Hexachlorobenzene		310	U D	140	1600
Hexachlorobutadiene		310	U D	48	1600
Hexachlorocyclopentadiene		310	U D	240	8100
Hexachloroethane		160	U D	100	1600
Indeno[1,2,3-cd]pyrene		190	J D	100	1600
Isophorone		160	U D	81	1600
Naphthalene		310	U D	150	1600
Nitrobenzene		160	U D	100	1600
N-Nitrosodimethylamine		310	U D	180	2500
N-Nitrosodi-n-propylamine		310	U D	150	1600
N-Nitrosodiphenylamine		160	U D	100	1600
N-Nitrosopyrrolidine		620	U D	310	1600
Pentachlorophenol		3200	U D	1600	7600
Phenanthrene		700	J D	81	1600
Phenol		160	U D	86	1600
Pyrene		740	J D	58	1900

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	88	D	35 - 125
2-Fluorobiphenyl	80	D	45 - 105
2-Fluorophenol (Surr)	70	D	35 - 105
Nitrobenzene-d5 (Surr)	70	D	35 - 100
Phenol-d5 (Surr)	78	D	40 - 100
Terphenyl-d14 (Surr)	94	D	30 - 125

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0201FA**

Lab Sample ID: 280-20042-2 Date Sampled: 09/06/2011 1400
Client Matrix: Solid % Moisture: 21.8 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87836	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1847.D
Dilution:	1.0			Initial Weight/Volume:	32.2 g
Analysis Date:	09/22/2011 2030			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
1,1'-Biphenyl		39	U	60	390
1,2,4,5-Tetrachlorobenzene		39	U	58	390
1,2,4-Trichlorobenzene		39	U	33	390
1,2-Dichlorobenzene		39	U	26	390
1,2-Diphenylhydrazine		39	U	26	390
1,3-Dichlorobenzene		39	U	14	390
1,4-Dichlorobenzene		39	U	16	390
2,2'-oxybis[1-chloropropane]		39	U	27	390
2,3,4,6-Tetrachlorophenol		39	U	160	1900
2,4,5-Trichlorophenol		150	U	12	390
2,4,6-Trichlorophenol		79	U	12	390
2,4-Dichlorophenol		79	U	12	390
2,4-Dimethylphenol		150	U	79	390
2,4-Dinitrophenol		800	U	400	1900
2,4-Dinitrotoluene		150	U	79	390
2,6-Dichlorophenol		150	U	82	390
2,6-Dinitrotoluene		79	U	33	390
2-Chloronaphthalene		39	U	12	390
2-Chlorophenol		39	U	25	390
2-Methylnaphthalene		39	U	23	390
2-Methylphenol		39	U	15	390
2-Nitroaniline		79	U	60	1900
2-Nitrophenol		79	U	12	390
3 & 4 Methylphenol		79	U	39	390
3,3'-Dichlorobenzidine		390	U	110	1900
3-Nitroaniline		160	U	87	1900
4,6-Dinitro-2-methylphenol		790	U	390	1900
4-Bromophenyl phenyl ether		39	U	23	390
4-Chloro-3-methylphenol		150	U	79	390
4-Chloroaniline		150	U	98	390
4-Chlorophenyl phenyl ether		79	U	25	390
4-Nitroaniline		150	U	86	1900
4-Nitrophenol		390	U	120	1900
Acenaphthene		20	U	12	390
Acenaphthylene		39	U	20	390
Acetophenone		39	U	24	390
Anthracene		39	U	20	390
Atrazine		150	U	44	390
Benzaldehyde		80	U	46	390
Benzidine		4700	U	1200	4800
Benzo[a]anthracene		45	J	24	390
Benzo[a]pyrene		43	J	24	390
Benzo[b]fluoranthene		86	J k	31	390
Benzo[g,h,i]perylene		31	J	19	390
Benzo[k]fluoranthene		79	U kJ	48	390
Benzoic acid		790	U	390	1900

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0201FA**

Lab Sample ID: 280-20042-2
Client Matrix: Solid

% Moisture: 21.8

Date Sampled: 09/06/2011 1400
Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87836	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1847.D
Dilution:	1.0			Initial Weight/Volume:	32.2 g
Analysis Date:	09/22/2011 2030			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Benzyl alcohol		39	U	12	390
Bis(2-chloroethoxy)methane		79	U	27	390
Bis(2-chloroethyl)ether		39	U	20	390
Bis(2-ethylhexyl) phthalate		130	J	55	390
Butyl benzyl phthalate		79	U	51	390
Caprolactam		390	U	130	1900
Carbazole		80	U	43	390
Chrysene		58	J	32	390
Dibenz(a,h)anthracene		39	U	23	390
Dibenzofuran		39	U	24	390
Diethyl phthalate		39	U	31	790
Dimethyl phthalate		39	U	27	390
Di-n-butyl phthalate		39	U	35	390
Di-n-octyl phthalate		79	U	17	390
Fluoranthene		91	J	43	390
Fluorene		39	U	21	390
Hexachlorobenzene		79	U	35	390
Hexachlorobutadiene		79	U	12	390
Hexachlorocyclopentadiene		79	UX	60	2000
Hexachloroethane		39	UX	25	390
Indeno[1,2,3-cd]pyrene		28	J	26	390
Isophorone		39	U	20	390
Naphthalene		79	U	37	390
Nitrobenzene		39	U	26	390
N-Nitrosodimethylamine		79	U	44	620
N-Nitrosodi-n-propylamine		79	U	37	390
N-Nitrosodiphenylamine		39	U	25	390
N-Nitrosopyrrolidine		150	U	76	390
Pentachlorophenol		800	U	390	1900
Phenanthrene		48	J	20	390
Phenol		23	J	21	390
Pyrene		73	J	14	480

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	86		35 - 125
2-Fluorobiphenyl	60		45 - 105
2-Fluorophenol (Surr)	53		35 - 105
Nitrobenzene-d5 (Surr)	53		35 - 100
Phenol-d5 (Surr)	58		40 - 100
Terphenyl-d14 (Surr)	79		30 - 125

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: TMCSD0301FA

Lab Sample ID: 280-20042-3 Date Sampled: 09/06/2011 1420
Client Matrix: Solid % Moisture: 21.6 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1803.D
Dilution:	1.0			Initial Weight/Volume:	30.5 g
Analysis Date:	09/21/2011 2346			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
1,1'-Biphenyl		41	U	63	410
1,2,4,5-Tetrachlorobenzene		41	U	62	410
1,2,4-Trichlorobenzene		41	U	35	410
1,2-Dichlorobenzene		41	U	28	410
1,2-Diphenylhydrazine		41	U	28	410
1,3-Dichlorobenzene		41	U	15	410
1,4-Dichlorobenzene		41	U	17	410
2,2'-oxybis[1-chloropropane]		41	U	29	410
2,3,4,6-Tetrachlorophenol		41	U	170	2000
2,4,5-Trichlorophenol		160	U	13	410
2,4,6-Trichlorophenol		83	U	13	410
2,4-Dichlorophenol		83	U	13	410
2,4-Dimethylphenol		160	U	83	410
2,4-Dinitrophenol		840	U	420	2000
2,4-Dinitrotoluene		160	U	83	410
2,6-Dichlorophenol		160	U	87	410
2,6-Dinitrotoluene		83	U	35	410
2-Chloronaphthalene		41	U	13	410
2-Chlorophenol		41	U	26	410
2-Methylnaphthalene		41	U	24	410
2-Methylphenol		41	U	16	410
2-Nitroaniline		83	U	63	2000
2-Nitrophenol		83	U	13	410
3 & 4 Methylphenol		83	U	41	410
3,3'-Dichlorobenzidine		410	U	110	2000
3-Nitroaniline		170	U	92	2000
4,6-Dinitro-2-methylphenol		830	U	410	2000
4-Bromophenyl phenyl ether		41	U	24	410
4-Chloro-3-methylphenol		160	U	83	410
4-Chloroaniline		160	U	100	410
4-Chlorophenyl phenyl ether		83	U	26	410
4-Nitroaniline		160	U	91	2000
4-Nitrophenol		410	U	120	2000
Acenaphthene		21	U	13	410
Acenaphthylene		41	U	21	410
Acetophenone		41	U	25	410
Anthracene		41	U	21	410
Atrazine		160	U	46	410
Benzaldehyde		84	U M	49	410
Benzidine		5000	U	1200	5000
Benzo[a]anthracene		36	J	25	410
Benzo[a]pyrene		38	J	25	410
Benzo[b]fluoranthene		76	J k	33	410
Benzo[g,h,i]perylene		31	J	20	410
Benzo[k]fluoranthene		83	U k J	50	410
Benzoic acid		830	U	410	2000

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0301FA**

Lab Sample ID: 280-20042-3
Client Matrix: Solid

% Moisture: 21.6

Date Sampled: 09/06/2011 1420
Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1803.D
Dilution:	1.0			Initial Weight/Volume:	30.5 g
Analysis Date:	09/21/2011 2346			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Benzyl alcohol		14	J	13	410
Bis(2-chloroethoxy)methane		83	U	29	410
Bis(2-chloroethyl)ether		41	U	21	410
Bis(2-ethylhexyl) phthalate		83	U	58	410
Butyl benzyl phthalate		83	U	54	410
Caprolactam		410	U	130	2000
Carbazole		84	U	45	410
Chrysene		45	J	34	410
Dibenz(a,h)anthracene		41	U	24	410
Dibenzofuran		41	U	25	410
Diethyl phthalate		41	U	33	830
Dimethyl phthalate		41	U	29	410
Di-n-butyl phthalate		41	U	36	410
Di-n-octyl phthalate		83	U	18	410
Fluoranthene		68	J	45	410
Fluorene		41	U	23	410
Hexachlorobenzene		83	U	36	410
Hexachlorobutadiene		83	U	13	410
Hexachlorocyclopentadiene		83	U	63	2100
Hexachloroethane		41	U	27	410
Indeno[1,2,3-cd]pyrene		41	U	28	410
Isophorone		41	U	21	410
Naphthalene		83	U	39	410
Nitrobenzene		41	U	28	410
N-Nitrosodimethylamine		83	U	46	650
N-Nitrosodi-n-propylamine		83	U	39	410
N-Nitrosodiphenylamine		41	U	26	410
N-Nitrosopyrrolidine		160	U	80	410
Pentachlorophenol		840	U	410	2000
Phenanthrene		35	J	21	410
Phenol		36	J	23	410
Pyrene		60	J	15	500

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	83		35 - 125
2-Fluorobiphenyl	72		45 - 105
2-Fluorophenol (Surr)	70		35 - 105
Nitrobenzene-d5 (Surr)	71		35 - 100
Phenol-d5 (Surr)	74		40 - 100
Terphenyl-d14 (Surr)	86		30 - 125

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0401FA**

Lab Sample ID: 280-20042-4 Date Sampled: 09/06/2011 1250
Client Matrix: Solid % Moisture: 23.8 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1804.D
Dilution:	1.0			Initial Weight/Volume:	31.1 g
Analysis Date:	09/22/2011 0006			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
1,1'-Biphenyl		42	U	63	420
1,2,4,5-Tetrachlorobenzene		42	U	62	420
1,2,4-Trichlorobenzene		42	U	35	420
1,2-Dichlorobenzene		42	U	28	420
1,2-Diphenylhydrazine		42	U	28	420
1,3-Dichlorobenzene		42	U	15	420
1,4-Dichlorobenzene		42	U	17	420
2,2'-oxybis[1-chloropropane]		42	U	29	420
2,3,4,6-Tetrachlorophenol		42	U	170	2000
2,4,5-Trichlorophenol		160	U	13	420
2,4,6-Trichlorophenol		84	U	13	420
2,4-Dichlorophenol		84	U	13	420
2,4-Dimethylphenol		160	U	84	420
2,4-Dinitrophenol		850	U	420	2000
2,4-Dinitrotoluene		160	U	84	420
2,6-Dichlorophenol		160	U	87	420
2,6-Dinitrotoluene		84	U	35	420
2-Chloronaphthalene		42	U	13	420
2-Chlorophenol		42	U	27	420
2-Methylnaphthalene		42	U	24	420
2-Methylphenol		42	U	16	420
2-Nitroaniline		84	U	63	2000
2-Nitrophenol		84	U	13	420
3 & 4 Methylphenol		84	U	42	420
3,3'-Dichlorobenzidine		420	U	110	2000
3-Nitroaniline		170	U	92	2000
4,6-Dinitro-2-methylphenol		840	U	420	2000
4-Bromophenyl phenyl ether		42	U	24	420
4-Chloro-3-methylphenol		160	U	84	420
4-Chloroaniline		160	U	100	420
4-Chlorophenyl phenyl ether		84	U	27	420
4-Nitroaniline		160	U	92	2000
4-Nitrophenol		420	U	120	2000
Acenaphthene		22	U	13	420
Acenaphthylene		42	U	22	420
Acetophenone		42	U	25	420
Anthracene		42	U	22	420
Atrazine		160	U	47	420
Benzaldehyde		85	U M	49	420
Benzidine		5000	U	1300	5100
Benzo[a]anthracene		59	J	25	420
Benzo[a]pyrene		61	J	25	420
Benzo[b]fluoranthene		110	J K	33	420
Benzo[g,h,i]perylene		43	J	20	420
Benzo[k]fluoranthene		84	U KJ	51	420
Benzoic acid		840	U	420	2000

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0401FA**

Lab Sample ID: 280-20042-4 Date Sampled: 09/06/2011 1250
Client Matrix: Solid % Moisture: 23.8 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1804.D
Dilution:	1.0			Initial Weight/Volume:	31.1 g
Analysis Date:	09/22/2011 0006			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Benzyl alcohol		13	J	13	420
Bis(2-chloroethoxy)methane		84	U	29	420
Bis(2-chloroethyl)ether		42	U	21	420
Bis(2-ethylhexyl) phthalate		88	J	58	420
Butyl benzyl phthalate		84	U	54	420
Caprolactam		420	U	130	2000
Carbazole		85	U	46	420
Chrysene		77	J	34	420
Dibenz(a,h)anthracene		42	U	24	420
Dibenzofuran		42	U	25	420
Diethyl phthalate		42	U	33	840
Dimethyl phthalate		42	U	29	420
Di-n-butyl phthalate		42	U	37	420
Di-n-octyl phthalate		84	U	18	420
Fluoranthene		120	J	46	420
Fluorene		42	U	23	420
Hexachlorobenzene		84	U	37	420
Hexachlorobutadiene		84	U	13	420
Hexachlorocyclopentadiene		84	U	63	2200
Hexachloroethane		42	U	27	420
Indeno[1,2,3-cd]pyrene		35	J	28	420
Isophorone		42	U	22	420
Naphthalene		84	U	39	420
Nitrobenzene		42	U	28	420
N-Nitrosodimethylamine		84	U	47	660
N-Nitrosodi-n-propylamine		84	U	39	420
N-Nitrosodiphenylamine		42	U	27	420
N-Nitrosopyrrolidine		160	U	81	420
Pentachlorophenol		850	U	420	2000
Phenanthrene		64	J	22	420
Phenol		31	J	23	420
Pyrene		110	J	15	510

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	87		35 - 125
2-Fluorobiphenyl	79		45 - 105
2-Fluorophenol (Surr)	73		35 - 105
Nitrobenzene-d5 (Surr)	77		35 - 100
Phenol-d5 (Surr)	78		40 - 100
Terphenyl-d14 (Surr)	86		30 - 125

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0501FA**

Lab Sample ID: 280-20042-5 Date Sampled: 09/06/2011 1230
Client Matrix: Solid % Moisture: 50.5 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1805.D
Dilution:	4.0			Initial Weight/Volume:	30.5 g
Analysis Date:	09/22/2011 0026			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
1,1'-Biphenyl		260	U D	400	2600
1,2,4,5-Tetrachlorobenzene		260	U D	390	2600
1,2,4-Trichlorobenzene		260	U D	220	2600
1,2-Dichlorobenzene		260	U D	170	2600
1,2-Diphenylhydrazine		260	U D	170	2600
1,3-Dichlorobenzene		260	U D	95	2600
1,4-Dichlorobenzene		260	U D	110	2600
2,2'-oxybis[1-chloropropane]		260	U D	180	2600
2,3,4,6-Tetrachlorophenol		260	U D	1100	13000
2,4,5-Trichlorophenol		1000	U D	80	2600
2,4,6-Trichlorophenol		520	U D	80	2600
2,4-Dichlorophenol		520	U D	80	2600
2,4-Dimethylphenol		1000	U D	520	2600
2,4-Dinitrophenol		5300	U D	2600	13000
2,4-Dinitrotoluene		1000	U D	520	2600
2,6-Dichlorophenol		1000	U D	550	2600
2,6-Dinitrotoluene		520	U D	220	2600
2-Chloronaphthalene		260	U D	80	2600
2-Chlorophenol		260	U D	170	2600
2-Methylnaphthalene		260	U D	150	2600
2-Methylphenol		260	U D	100	2600
2-Nitroaniline		520	U D	400	13000
2-Nitrophenol		520	U D	80	2600
3 & 4 Methylphenol		520	U D	260	2600
3,3'-Dichlorobenzidine		2600	U D	720	13000
3-Nitroaniline		1100	U D	580	13000
4,6-Dinitro-2-methylphenol		5200	U D	2600	13000
4-Bromophenyl phenyl ether		260	U D	150	2600
4-Chloro-3-methylphenol		1000	U D	520	2600
4-Chloroaniline		1000	U D	650	2600
4-Chlorophenyl phenyl ether		520	U D	170	2600
4-Nitroaniline		1000	U D	580	13000
4-Nitrophenol		2600	U D	770	13000
Acenaphthene		89	J D	82	2600
Acenaphthylene		260	U D	140	2600
Acetophenone		260	U D	160	2600
Anthracene		300	J D	140	2600
Atrazine		1000	U D	290	2600
Benzaldehyde		530	U M D	310	2600
Benzidine		31000	U D	7900	32000
Benzo[a]anthracene		1100	J D	160	2600
Benzo[a]pyrene		1000	J D	160	2600
Benzo[b]fluoranthene		1900	J K D	210	2600
Benzo[g,h,i]perylene		600	J D	130	2600
Benzo[k]fluoranthene		520	U K D J	320	2600
Benzoic acid		5200	U D	2600	13000

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0501FA**

Lab Sample ID: 280-20042-5 Date Sampled: 09/06/2011 1230
Client Matrix: Solid % Moisture: 50.5 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1805.D
Dilution:	4.0			Initial Weight/Volume:	30.5 g
Analysis Date:	09/22/2011 0026			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Benzyl alcohol		260	U D	80	2600
Bis(2-chloroethoxy)methane		520	U D	180	2600
Bis(2-chloroethyl)ether		260	U D	130	2600
Bis(2-ethylhexyl) phthalate		520	U D	370	2600
Butyl benzyl phthalate		520	U D	340	2600
Caprolactam		2600	U D	840	13000
Carbazole		530	U D	290	2600
Chrysene		1200	J D	210	2600
Dibenz(a,h)anthracene		260	U D	150	2600
Dibenzofuran		260	U D	160	2600
Diethyl phthalate		260	U D	210	5200
Dimethyl phthalate		260	U D	180	2600
Di-n-butyl phthalate		260	U D	230	2600
Di-n-octyl phthalate		520	U D	110	2600
Fluoranthene		2200	J D	290	2600
Fluorene		260	U D	140	2600
Hexachlorobenzene		520	U D	230	2600
Hexachlorobutadiene		520	U D	80	2600
Hexachlorocyclopentadiene		520	U D	400	14000
Hexachloroethane		260	U D	170	2600
Indeno[1,2,3-cd]pyrene		550	J D	170	2600
Isophorone		260	U D	140	2600
Naphthalene		520	U D	250	2600
Nitrobenzene		260	U D	170	2600
N-Nitrosodimethylamine		520	U D	290	4100
N-Nitrosodi-n-propylamine		520	U D	250	2600
N-Nitrosodiphenylamine		260	U D	170	2600
N-Nitrosopyrrolidine		1000	U D	510	2600
Pentachlorophenol		5300	U D	2600	13000
Phenanthrene		1200	J D	140	2600
Phenol		260	U D	140	2600
Pyrene		1900	J D	96	3200

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	81	D	35 - 125
2-Fluorobiphenyl	77	D	45 - 105
2-Fluorophenol (Surr)	68	D	35 - 105
Nitrobenzene-d5 (Surr)	69	D	35 - 100
Phenol-d5 (Surr)	77	D	40 - 100
Terphenyl-d14 (Surr)	86	D	30 - 125

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0601FA**

Lab Sample ID: 280-20042-6 Date Sampled: 09/06/2011 1320
Client Matrix: Solid % Moisture: 20.8 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1806.D
Dilution:	10			Initial Weight/Volume:	31.3 g
Analysis Date:	09/22/2011 0046			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
1,1'-Biphenyl		400	U D	610	4000
1,2,4,5-Tetrachlorobenzene		400	U D	590	4000
1,2,4-Trichlorobenzene		400	U D	340	4000
1,2-Dichlorobenzene		400	U D	270	4000
1,2-Diphenylhydrazine		400	U D	270	4000
1,3-Dichlorobenzene		400	U D	150	4000
1,4-Dichlorobenzene		400	U D	160	4000
2,2'-oxybis[1-chloropropane]		400	U D	280	4000
2,3,4,6-Tetrachlorophenol		400	U D	1700	19000
2,4,5-Trichlorophenol		1600	U D	120	4000
2,4,6-Trichlorophenol		800	U D	120	4000
2,4-Dichlorophenol		800	U D	120	4000
2,4-Dimethylphenol		1600	U D	800	4000
2,4-Dinitrophenol		8100	U D	4000	19000
2,4-Dinitrotoluene		1600	U D	800	4000
2,6-Dichlorophenol		1600	U D	840	4000
2,6-Dinitrotoluene		800	U D	340	4000
2-Chloronaphthalene		400	U D	120	4000
2-Chlorophenol		400	U D	250	4000
2-Methylnaphthalene		400	U D	230	4000
2-Methylphenol		400	U D	160	4000
2-Nitroaniline		800	U D	610	19000
2-Nitrophenol		800	U D	120	4000
3 & 4 Methylphenol		800	U D	400	4000
3,3'-Dichlorobenzidine		4000	U D	1100	19000
3-Nitroaniline		1600	U D	880	19000
4,6-Dinitro-2-methylphenol		8000	U D	4000	19000
4-Bromophenyl phenyl ether		400	U D	230	4000
4-Chloro-3-methylphenol		1600	U D	800	4000
4-Chloroaniline		1600	U D	990	4000
4-Chlorophenyl phenyl ether		800	U D	250	4000
4-Nitroaniline		1600	U D	880	19000
4-Nitrophenol		4000	U D	1200	19000
Acenaphthene		210	U D	120	4000
Acenaphthylene		400	U D	210	4000
Acetophenone		400	U D	240	4000
Anthracene		400	U D	210	4000
Atrazine		1600	U D	450	4000
Benzaldehyde		810	U MD	470	4000
Benzidine		48000	U D	12000	48000
Benzo[a]anthracene		400	U D	240	4000
Benzo[a]pyrene		400	U D	240	4000
Benzo[b]fluoranthene		400	U D	320	4000
Benzo[g,h,i]perylene		400	U D	190	4000
Benzo[k]fluoranthene		800	U D	480	4000
Benzoic acid		8000	U D	4000	19000

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0601FA**

Lab Sample ID: 280-20042-6
Client Matrix: Solid

% Moisture: 20.8

Date Sampled: 09/06/2011 1320
Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1806.D
Dilution:	10			Initial Weight/Volume:	31.3 g
Analysis Date:	09/22/2011 0046			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Benzyl alcohol		400	U D	120	4000
Bis(2-chloroethoxy)methane		800	U D	280	4000
Bis(2-chloroethyl)ether		400	U D	200	4000
Bis(2-ethylhexyl) phthalate		800	U D	560	4000
Butyl benzyl phthalate		800	U D	520	4000
Caprolactam		4000	U D	1300	19000
Carbazole		810	U D	440	4000
Chrysene		400	U D	330	4000
Dibenz(a,h)anthracene		400	U D	230	4000
Dibenzofuran		400	U D	240	4000
Diethyl phthalate		400	U D	310	8000
Dimethyl phthalate		400	U D	280	4000
Di-n-butyl phthalate		400	U D	350	4000
Di-n-octyl phthalate		800	U D	170	4000
Fluoranthene		800	U D	440	4000
Fluorene		400	U D	220	4000
Hexachlorobenzene		800	U D	350	4000
Hexachlorobutadiene		800	U D	120	4000
Hexachlorocyclopentadiene		800	U D	610	21000
Hexachloroethane		400	U D	260	4000
Indeno[1,2,3-cd]pyrene		400	U D	270	4000
Isophorone		400	U D	210	4000
Naphthalene		800	U D	380	4000
Nitrobenzene		400	U D	270	4000
N-Nitrosodimethylamine		800	U D	450	6300
N-Nitrosodi-n-propylamine		800	U D	380	4000
N-Nitrosodiphenylamine		400	U D	250	4000
N-Nitrosopyrrolidine		1600	U D	770	4000
Pentachlorophenol		8100	U D	4000	19000
Phenanthrene		400	U D	210	4000
Phenol		400	U D	220	4000
Pyrene		150	J D	150	4800

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	79	D	35 - 125
2-Fluorobiphenyl	84	D	45 - 105
2-Fluorophenol (Surr)	76	D	35 - 105
Nitrobenzene-d5 (Surr)	78	D	35 - 100
Phenol-d5 (Surr)	84	D	40 - 100
Terphenyl-d14 (Surr)	92	D	30 - 125

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0701FA**

Lab Sample ID: 280-20042-7 Date Sampled: 09/06/2011 1345
Client Matrix: Solid % Moisture: 22.0 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1807.D
Dilution:	1.0			Initial Weight/Volume:	32.0 g
Analysis Date:	09/22/2011 0106			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
1,1'-Biphenyl		40	U	60	400
1,2,4,5-Tetrachlorobenzene		40	U	59	400
1,2,4-Trichlorobenzene		40	U	34	400
1,2-Dichlorobenzene		40	U	26	400
1,2-Diphenylhydrazine		40	U	26	400
1,3-Dichlorobenzene		40	U	14	400
1,4-Dichlorobenzene		40	U	16	400
2,2'-oxybis[1-chloropropane]		40	U	28	400
2,3,4,6-Tetrachlorophenol		40	U	160	1900
2,4,5-Trichlorophenol		160	U	12	400
2,4,6-Trichlorophenol		79	U	12	400
2,4-Dichlorophenol		79	U	12	400
2,4-Dimethylphenol		160	U	79	400
2,4-Dinitrophenol		810	U	400	1900
2,4-Dinitrotoluene		160	U	79	400
2,6-Dichlorophenol		160	U	83	400
2,6-Dinitrotoluene		79	U	34	400
2-Chloronaphthalene		40	U	12	400
2-Chlorophenol		40	U	25	400
2-Methylnaphthalene		40	U	23	400
2-Methylphenol		40	U	16	400
2-Nitroaniline		79	U	60	1900
2-Nitrophenol		79	U	12	400
3 & 4 Methylphenol		79	U	40	400
3,3'-Dichlorobenzidine		400	U	110	1900
3-Nitroaniline		160	U	88	1900
4,6-Dinitro-2-methylphenol		790	U	400	1900
4-Bromophenyl phenyl ether		40	U	23	400
4-Chloro-3-methylphenol		160	U	79	400
4-Chloroaniline		160	U	98	400
4-Chlorophenyl phenyl ether		79	U	25	400
4-Nitroaniline		160	U	87	1900
4-Nitrophenol		400	U	120	1900
Acenaphthene		20	U	12	400
Acenaphthylene		40	U	20	400
Acetophenone		40	U	24	400
Anthracene		40	U	20	400
Atrazine		160	U	44	400
Benzaldehyde		81	U	47	400
Benzidine		4800	U	1200	4800
Benzo[a]anthracene		40	U	24	400
Benzo[a]pyrene		40	U	24	400
Benzo[b]fluoranthene		40	U	32	400
Benzo[g,h,i]perylene		40	U	19	400
Benzo[k]fluoranthene		79	U	48	400
Benzoic acid		790	U	400	1900

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0701FA**

Lab Sample ID: 280-20042-7 Date Sampled: 09/06/2011 1345
Client Matrix: Solid % Moisture: 22.0 Date Received: 09/08/2011 0900

8270C/DoD Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C/DoD	Analysis Batch:	280-87309	Instrument ID:	MSS_K
Prep Method:	3550C	Prep Batch:	280-86705	Lab File ID:	K1807.D
Dilution:	1.0			Initial Weight/Volume:	32.0 g
Analysis Date:	09/22/2011 0106			Final Weight/Volume:	1000 uL
Prep Date:	09/19/2011 1118			Injection Volume:	0.5 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Benzyl alcohol		40	U	12	400
Bis(2-chloroethoxy)methane		79	U	28	400
Bis(2-chloroethyl)ether		40	U	20	400
Bis(2-ethylhexyl) phthalate		79	U	55	400
Butyl benzyl phthalate		79	U	52	400
Caprolactam		400	U	130	1900
Carbazole		81	U	43	400
Chrysene		40	U	32	400
Dibenz(a,h)anthracene		40	U	23	400
Dibenzofuran		40	U	24	400
Diethyl phthalate		40	U	31	790
Dimethyl phthalate		40	U	28	400
Di-n-butyl phthalate		40	U	35	400
Di-n-octyl phthalate		79	U	17	400
Fluoranthene		79	U	43	400
Fluorene		40	U	22	400
Hexachlorobenzene		79	U	35	400
Hexachlorobutadiene		79	U	12	400
Hexachlorocyclopentadiene		79	U	60	2000
Hexachloroethane		40	U	26	400
Indeno[1,2,3-cd]pyrene		40	U	26	400
Isophorone		40	U	20	400
Naphthalene		79	U	37	400
Nitrobenzene		40	U	26	400
N-Nitrosodimethylamine		79	U	44	630
N-Nitrosodi-n-propylamine		79	U	37	400
N-Nitrosodiphenylamine		40	U	25	400
N-Nitrosopyrrolidine		160	U	77	400
Pentachlorophenol		810	U	400	1900
Phenanthrene		40	U	20	400
Phenol		36	J	22	400
Pyrene		40	U	15	480

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol (Surr)	83		35 - 125
2-Fluorobiphenyl	72		45 - 105
2-Fluorophenol (Surr)	72		35 - 105
Nitrobenzene-d5 (Surr)	75		35 - 100
Phenol-d5 (Surr)	74		40 - 100
Terphenyl-d14 (Surr)	80		30 - 125

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0101FA**

Lab Sample ID: 280-20042-1 Date Sampled: 09/06/2011 1300
Client Matrix: Solid % Moisture: 23.3 Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0248			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
4,4'-DDD		0.90	U Q J	0.71	2.2
4,4'-DDE		0.60	U Q J	0.31	2.2
Aldrin		0.60	U Q J	0.33	2.2
alpha-BHC		0.60	U Q J	0.28	2.2
beta-BHC		0.90	U Q J	0.86	2.2
delta-BHC		0.90	U Q J	0.52	2.2
gamma-BHC (Lindane)		0.90	U Q J	0.60	2.2
Heptachlor		0.60	U Q J	0.28	2.2
Heptachlor epoxide		0.90	U Q J	0.55	2.2
Endosulfan I		0.60	U Q J	0.23	2.2
Endosulfan II		0.68	Q J	0.37	2.2
Endosulfan sulfate		0.60	U Q J	0.36	2.2
Endrin		0.60	U Q J	0.40	2.2
Endrin aldehyde		0.60	U Q J	0.22	2.2
Endrin ketone		0.90	U Q J	0.64	2.2
gamma-Chlordane		0.90	U Q J	0.35	2.2
Methoxychlor		0.90	U Q J	0.58	4.3
alpha-Chlordane		0.60	U Q J	0.42	2.2
Dieldrin		0.60	U Q J	0.27	2.2

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	68	Q	70 - 125
DCB Decachlorobiphenyl	0	Q	55 - 130

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Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0101FA**

Lab Sample ID: 280-20042-1 Date Sampled: 09/06/2011 1300
Client Matrix: Solid % Moisture: 23.3 Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0248			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	47	Q	70 - 125
DCB Decachlorobiphenyl	0	Q	55 - 130

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0101FA**

Lab Sample ID: 280-20042-1 Date Sampled: 09/06/2011 1300
Client Matrix: Solid % Moisture: 23.3 Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	30.1 g
Dilution:	10			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0003	Run Type:	DL	Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
4,4'-DDT		9.1	~~Q J B M~~ J	7.7	26
Toxaphene		350	~~U Q~~ U	210	2200

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	59	Q D	70 - 125
DCB Decachlorobiphenyl	311	D Q	55 - 130

11/16/11

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0101FA**

Lab Sample ID: 280-20042-1 Date Sampled: 09/06/2011 1300
Client Matrix: Solid % Moisture: 23.3 Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	30.1 g
Dilution:	10			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0003	Run Type:	DL	Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	66	Q D	70 - 125
DCB Decachlorobiphenyl	1375	D Q	55 - 130

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: TMCSD0201FA

Lab Sample ID: 280-20042-2
Client Matrix: Solid

% Moisture: 21.8

Date Sampled: 09/06/2011 1400
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0019			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
4,4'-DDD		0.85	U Q	0.67	2.1
4,4'-DDE		0.57	U Q	0.29	2.1
4,4'-DDT		0.85	U Q	0.73	2.5
Aldrin		0.57	U Q	0.31	2.1
alpha-BHC		0.57	U Q	0.26	2.1
beta-BHC		1.9	J	0.82	2.1
delta-BHC		0.85	U Q	0.49	2.1
gamma-BHC (Lindane)		0.85	U Q	0.57	2.1
Heptachlor		0.57	U Q	0.26	2.1
Heptachlor epoxide		0.85	U Q	0.53	2.1
Endosulfan I		0.57	U Q	0.22	2.1
Endosulfan II		0.57	U Q	0.35	2.1
Endosulfan sulfate		0.57	U Q	0.34	2.1
Endrin		0.57	U Q	0.38	2.1
Endrin aldehyde		0.57	U	0.21	2.1
Endrin ketone		0.85	U Q	0.60	2.1
gamma-Chlordane		0.85	U Q	0.33	2.1
Methoxychlor		0.85	U Q	0.56	4.1
alpha-Chlordane		0.57	U Q	0.40	2.1
Dieldrin		0.32	J	0.26	2.1
Toxaphene		33	U Q	19	210

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	57	Q	70 - 125
DCB Decachlorobiphenyl	84		55 - 130

11/16/11

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0201FA**

Lab Sample ID: 280-20042-2
Client Matrix: Solid

% Moisture: 21.8

Date Sampled: 09/06/2011 1400
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0019			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	71		70 - 125
DCB Decachlorobiphenyl	78		55 - 130

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0301FA**

Lab Sample ID: 280-20042-3
Client Matrix: Solid

% Moisture: 21.6

Date Sampled: 09/06/2011 1420
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	32.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0109			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
4,4'-DDD		0.82	U Q	0.65	2.0
4,4'-DDE		0.55	U Q	0.28	2.0
4,4'-DDT		0.82	U Q	0.70	2.4
Aldrin		0.55	U Q	0.30	2.0
alpha-BHC		0.55	U Q	0.26	2.0
beta-BHC		0.82	U Q	0.79	2.0
delta-BHC		0.82	U Q	0.48	2.0
gamma-BHC (Lindane)		0.82	U Q	0.55	2.0
Heptachlor		0.55	U	0.26	2.0
Heptachlor epoxide		0.82	U	0.51	2.0
Endosulfan I		0.55	U Q	0.21	2.0
Endosulfan II		0.55	U Q	0.34	2.0
Endosulfan sulfate		0.55	U Q	0.33	2.0
Endrin		0.55	U Q	0.36	2.0
Endrin aldehyde		0.55	U Q	0.20	2.0
Endrin ketone		0.82	U Q	0.58	2.0
gamma-Chlordane		0.82	U Q	0.32	2.0
Methoxychlor		0.82	U Q	0.54	3.9
alpha-Chlordane		0.55	U Q	0.39	2.0
Dieldrin		0.55	U Q	0.25	2.0
Toxaphene		32	U Q	19	200

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	64	Q	70 - 125
DCB Decachlorobiphenyl	92		55 - 130

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0301FA**

Lab Sample ID: 280-20042-3
Client Matrix: Solid

% Moisture: 21.6

Date Sampled: 09/06/2011 1420
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	32.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0109			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	71		70 - 125
DCB Decachlorobiphenyl	84		55 - 130

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0401FA**

Lab Sample ID: 280-20042-4 Date Sampled: 09/06/2011 1250
Client Matrix: Solid % Moisture: 23.8 Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.6 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0125			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
4,4'-DDD		0.86	U Q	0.68	2.1
4,4'-DDE		0.57	U Q	0.30	2.1
4,4'-DDT		1.8	J Q	0.73	2.5
Aldrin		0.57	U Q	0.31	2.1
alpha-BHC		0.57	U Q	0.27	2.1
beta-BHC		0.86	U Q	0.83	2.1
delta-BHC		0.86	U Q	0.50	2.1
gamma-BHC (Lindane)		0.86	U Q	0.58	2.1
Heptachlor		0.57	U Q	0.27	2.1
Heptachlor epoxide		0.86	U Q	0.53	2.1
Endosulfan I		0.57	U Q	0.22	2.1
Endosulfan II		0.57	U Q	0.36	2.1
Endosulfan sulfate		0.57	U Q	0.34	2.1
Endrin		0.57	U Q	0.38	2.1
Endrin aldehyde		0.57	U Q	0.21	2.1
Endrin ketone		0.86	U Q	0.61	2.1
gamma-Chlordane		0.86	U Q	0.33	2.1
Methoxychlor		0.86	U Q	0.56	4.1
alpha-Chlordane		0.57	U Q	0.40	2.1
Dieldrin		0.49	J Q	0.26	2.1
Toxaphene		34	U Q	20	210

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	62	Q	70 - 125
DCB Decachlorobiphenyl	79		55 - 130

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0401FA**

Lab Sample ID: 280-20042-4 Date Sampled: 09/06/2011 1250
Client Matrix: Solid % Moisture: 23.8 Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.6 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0125			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	52	Q	70 - 125
DCB Decachlorobiphenyl	71		55 - 130

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0501FA**

Lab Sample ID: 280-20042-5
Client Matrix: Solid

% Moisture: 50.5

Date Sampled: 09/06/2011 1230
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.3 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 2224			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
4,4'-DDD		1.3	U Q	1.1	3.3
4,4'-DDE		0.89	U Q	0.46	3.3
4,4'-DDT		1.3	U Q	1.1	3.9
Aldrin		0.89	U Q	0.49	3.3
alpha-BHC		0.89	U Q	0.41	3.3
beta-BHC		1.3	U Q	1.3	3.3
delta-BHC		1.3	U Q	0.78	3.3
gamma-BHC (Lindane)		1.3	U Q	0.90	3.3
Heptachlor		0.89	U	0.41	3.3
Heptachlor epoxide		1.3	U Q	0.83	3.3
Endosulfan I		0.89	U Q	0.34	3.3
Endosulfan II		0.89	U Q	0.56	3.3
Endosulfan sulfate		0.89	U Q	0.53	3.3
Endrin		0.89	U Q	0.59	3.3
Endrin aldehyde		0.89	U Q	0.33	3.3
Endrin ketone		1.3	U Q	0.95	3.3
gamma-Chlordane		1.3	U Q	0.52	3.3
Methoxychlor		1.3	U Q	0.87	6.4
alpha-Chlordane		0.89	U Q	0.63	3.3
Dieldrin		0.89	U Q	0.41	3.3
Toxaphene		52	U Q	31	330

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	59	Q	70 - 125
DCB Decachlorobiphenyl	92		55 - 130

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0501FA**

Lab Sample ID: 280-20042-5
Client Matrix: Solid

% Moisture: 50.5

Date Sampled: 09/06/2011 1230
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.3 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 2224			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	73		70 - 125
DCB Decachlorobiphenyl	84		55 - 130

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0601FA**

Lab Sample ID: 280-20042-6
Client Matrix: Solid

% Moisture: 20.8

Date Sampled: 09/06/2011 1320
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.4 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0337			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
4,4'-DDD		0.83	U Q	0.66	2.1
4,4'-DDE		0.56	U Q	0.29	2.1
Aldrin		0.56	U Q	0.30	2.1
alpha-BHC		0.56	U Q	0.26	2.1
beta-BHC		0.83	U Q	0.80	2.1
delta-BHC		0.83	U Q	0.48	2.1
gamma-BHC (Lindane)		0.83	U Q	0.56	2.1
Heptachlor		0.56	U Q	0.26	2.1
Heptachlor epoxide		0.83	U Q	0.51	2.1
Endosulfan I		0.56	U Q	0.21	2.1
Endosulfan II		0.56	U Q	0.35	2.1
Endosulfan sulfate		0.56	U Q	0.33	2.1
Endrin		0.56	U Q	0.37	2.1
Endrin aldehyde		0.56	U Q	0.21	2.1
Endrin ketone		0.83	U Q	0.59	2.1
gamma-Chlordane		0.83	U Q	0.32	2.1
Methoxychlor		0.83	U Q	0.54	4.0
alpha-Chlordane		0.56	U Q	0.39	2.1
Dieldrin		0.56	U Q	0.25	2.1
Toxaphene		33	U Q	19	210

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	68	Q	70 - 125
DCB Decachlorobiphenyl	72		55 - 130

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0601FA**

Lab Sample ID: 280-20042-6
Client Matrix: Solid

% Moisture: 20.8

Date Sampled: 09/06/2011 1320
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.4 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0337			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	53	Q	70 - 125
DCB Decachlorobiphenyl	104		55 - 130

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0601FA**

Lab Sample ID: 280-20042-6
Client Matrix: Solid

% Moisture: 20.8

Date Sampled: 09/06/2011 1320
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.4 g
Dilution:	10			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0142	Run Type:	DL	Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
4,4'-DDT		8.3	U Q	7.1	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	62	Q D	70 - 125
DCB Decachlorobiphenyl	78	D	55 - 130

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0601FA**

Lab Sample ID: 280-20042-6
Client Matrix: Solid

% Moisture: 20.8

Date Sampled: 09/06/2011 1320
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.4 g
Dilution:	10			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0142	Run Type:	DL	Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	76	D	70 - 125
DCB Decachlorobiphenyl	62	D	55 - 130

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0701FA**

Lab Sample ID: 280-20042-7
Client Matrix: Solid

% Moisture: 22.0

Date Sampled: 09/06/2011 1345
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	32.5 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 2241			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
4,4'-DDD		0.82	U Q	0.65	2.0
4,4'-DDE		0.54	U Q	0.28	2.0
4,4'-DDT		0.82	U Q	0.70	2.4
Aldrin		0.54	U Q	0.30	2.0
alpha-BHC		0.54	U Q	0.25	2.0
beta-BHC		0.82	U Q	0.79	2.0
delta-BHC		0.82	U Q	0.47	2.0
gamma-BHC (Lindane)		0.82	U Q	0.55	2.0
Heptachlor		0.66	J	0.25	2.0
Heptachlor epoxide		0.82	U	0.50	2.0
Endosulfan I		0.54	U Q	0.21	2.0
Endosulfan II		0.54	U Q	0.34	2.0
Endosulfan sulfate		0.54	U Q	0.33	2.0
Endrin		0.54	U Q	0.36	2.0
Endrin aldehyde		0.54	U Q	0.20	2.0
Endrin ketone		0.82	U Q	0.58	2.0
gamma-Chlordane		0.82	U Q	0.31	2.0
Methoxychlor		0.82	U Q	0.53	3.9
alpha-Chlordane		0.54	U Q	0.38	2.0
Dieldrin		0.54	U Q	0.25	2.0
Toxaphene		32	U Q	19	200

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	66	Q	70 - 125
DCB Decachlorobiphenyl	87		55 - 130

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0701FA**

Lab Sample ID: 280-20042-7
Client Matrix: Solid

% Moisture: 22.0

Date Sampled: 09/06/2011 1345
Date Received: 09/08/2011 0900

8081A Organochlorine Pesticides (GC)

Analysis Method:	8081A	Analysis Batch:	280-87288	Instrument ID:	CHGCS_P2
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	32.5 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 2241			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	80		70 - 125
DCB Decachlorobiphenyl	81		55 - 130

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: TMCSD0101FA

Lab Sample ID: 280-20042-1
Client Matrix: Solid

% Moisture: 23.3

Date Sampled: 09/06/2011 1300
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 2225			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
PCB-1016		13	U Q	6.6	43
PCB-1221		26	U Q	20	43
PCB-1232		13	U Q	6.7	43
PCB-1242		13	U Q	12	43
PCB-1248		13	U Q	7.3	43
PCB-1254		13	U Q	7.2	43
PCB-1260		49	J Q	3.4	43

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	323	J Q	60 - 125
Tetrachloro-m-xylene	71		53 - 128

11/16/11

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: TMCSD0201FA

Lab Sample ID: 280-20042-2
Client Matrix: Solid

% Moisture: 21.8

Date Sampled: 09/06/2011 1400
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 2328			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
PCB-1016		12	U	6.3	41
PCB-1221		25	U	19	41
PCB-1232		12	U	6.3	41
PCB-1242		12	U	11	41
PCB-1248		12	U	6.9	41
PCB-1254		12	U	6.8	41
PCB-1260		12	U	3.3	41

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	85		60 - 125
Tetrachloro-m-xylene	91		53 - 128

11/16/11

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0301FA**

Lab Sample ID: 280-20042-3
Client Matrix: Solid

% Moisture: 21.6

Date Sampled: 09/06/2011 1420
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	32.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0000			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
PCB-1016		12	U	6.1	39
PCB-1221		24	U	19	39
PCB-1232		12	U	6.1	39
PCB-1242		12	U	11	39
PCB-1248		12	U	6.7	39
PCB-1254		12	U	6.6	39
PCB-1260		12	U	3.2	39

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	99		60 - 125
Tetrachloro-m-xylene	98		53 - 128

11/16/11

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0401FA**

Lab Sample ID: 280-20042-4
Client Matrix: Solid

% Moisture: 23.8

Date Sampled: 09/06/2011 1250
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.6 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0032			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
PCB-1016		12	U	6.3	41
PCB-1221		25	U	19	41
PCB-1232		12	U	6.4	41
PCB-1242		12	U	11	41
PCB-1248		12	U	7.0	41
PCB-1254		12	U	6.9	41
PCB-1260		12	J	3.3	41

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	72		60 - 125
Tetrachloro-m-xylene	84		53 - 128

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11/16/11

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0401FA**

Lab Sample ID: 280-20042-4
Client Matrix: Solid

% Moisture: 23.8

Date Sampled: 09/06/2011 1250
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.6 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0032			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	78		60 - 125
Tetrachloro-m-xylene	81		53 - 128

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: TMCSD0501FA

Lab Sample ID: 280-20042-5
Client Matrix: Solid

% Moisture: 50.5

Date Sampled: 09/06/2011 1230
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.3 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0104			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
PCB-1016		19	U	9.9	64
PCB-1221		39	U	30	64
PCB-1232		19	U	9.9	64
PCB-1242		19	U	18	64
PCB-1248		19	U	11	64
PCB-1254		19	U	11	64
PCB-1260		27	J	5.1	64

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	87		60 - 125
Tetrachloro-m-xylene	93		53 - 128

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11/16/11

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0501FA**

Lab Sample ID: 280-20042-5 Date Sampled: 09/06/2011 1230
Client Matrix: Solid % Moisture: 50.5 Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.3 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0104			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	89		60 - 125
Tetrachloro-m-xylene	92		53 - 128

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: TMCSD0601FA

Lab Sample ID: 280-20042-6
Client Matrix: Solid

% Moisture: 20.8

Date Sampled: 09/06/2011 1320
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.4 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0136			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
PCB-1016		12	U	6.1	40
PCB-1221		24	U	19	40
PCB-1232		12	U	6.2	40
PCB-1242		12	U	11	40
PCB-1248		12	U	6.8	40
PCB-1254		21	J	6.7	40
PCB-1260		12	U	3.2	40

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	70		60 - 125
Tetrachloro-m-xylene	88		53 - 128

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0601FA**

Lab Sample ID: 280-20042-6
Client Matrix: Solid

% Moisture: 20.8

Date Sampled: 09/06/2011 1320
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.4 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0136			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	SECONDARY

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	62		60 - 125
Tetrachloro-m-xylene	86		53 - 128

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0701FA**

Lab Sample ID: 280-20042-7
Client Matrix: Solid % Moisture: 22.0

Date Sampled: 09/06/2011 1345
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	32.5 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0208			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
PCB-1016		12	U	6.0	39
PCB-1221		24	U	18	39
PCB-1232		12	U	6.1	39
PCB-1242		12	U	11	39
PCB-1248		12	U	6.6	39
PCB-1254		12	U	6.5	39
PCB-1260		12	U	3.1	39

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	85		60 - 125
Tetrachloro-m-xylene	87		53 - 128

11/11/11

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0101FA**

Lab Sample ID: 280-20042-1
Client Matrix: Solid

% Moisture: 23.3

Date Sampled: 09/06/2011 1300
Date Received: 09/08/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88573	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-87698	Lab File ID:	26b092911.asc
Dilution:	1.0			Initial Weight/Volume:	1.17 g
Analysis Date:	09/29/2011 2146			Final Weight/Volume:	100 mL
Prep Date:	09/29/2011 0945				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Cadmium		0.18	J	0.046	0.56

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86371	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-85917	Lab File ID:	34A091511.txt
Dilution:	1.0			Initial Weight/Volume:	0.65 g
Analysis Date:	09/15/2011 1639			Final Weight/Volume:	50 mL
Prep Date:	09/15/2011 0925				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Mercury		7.8	J	6.7	40

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: TMCSD0201FA

Lab Sample ID: 280-20042-2
Client Matrix: Solid

% Moisture: 21.8

Date Sampled: 09/06/2011 1400
Date Received: 09/08/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88573	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-87698	Lab File ID:	26b092911.asc
Dilution:	1.0			Initial Weight/Volume:	1.10 g
Analysis Date:	09/29/2011 2210			Final Weight/Volume:	100 mL
Prep Date:	09/29/2011 0945				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Cadmium		0.17	J	0.048	0.58

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86371	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-85917	Lab File ID:	34A091511.txt
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	09/15/2011 1641			Final Weight/Volume:	50 mL
Prep Date:	09/15/2011 0925				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Mercury		10	U	6.8	41

11/16/11

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: TMCSD0301FA

Lab Sample ID: 280-20042-3
Client Matrix: Solid

% Moisture: 21.6

Date Sampled: 09/06/2011 1420
Date Received: 09/08/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88573	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-87698	Lab File ID:	26b092911.asc
Dilution:	1.0			Initial Weight/Volume:	1.07 g
Analysis Date:	09/29/2011 2212			Final Weight/Volume:	100 mL
Prep Date:	09/29/2011 0945				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Cadmium		0.10	J	0.049	0.60

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86371	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-85917	Lab File ID:	34A091511.txt
Dilution:	1.0			Initial Weight/Volume:	0.63 g
Analysis Date:	09/15/2011 1644			Final Weight/Volume:	50 mL
Prep Date:	09/15/2011 0925				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Mercury		13	J	6.7	40

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20042-1

Client Sample ID: **TMCSD0401FA**

Lab Sample ID: 280-20042-4 Date Sampled: 09/06/2011 1250
Client Matrix: Solid % Moisture: 23.8 Date Received: 09/08/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88573	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-87698	Lab File ID:	26b092911.asc
Dilution:	1.0			Initial Weight/Volume:	1.03 g
Analysis Date:	09/29/2011 2215			Final Weight/Volume:	100 mL
Prep Date:	09/29/2011 0945				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Cadmium		0.61	J	0.052	0.64

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86371	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-85917	Lab File ID:	34A091511.txt
Dilution:	1.0			Initial Weight/Volume:	0.66 g
Analysis Date:	09/15/2011 1646			Final Weight/Volume:	50 mL
Prep Date:	09/15/2011 0925				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Mercury		25	J	6.6	39

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: TMCSD0501FA

Lab Sample ID: 280-20042-5
Client Matrix: Solid

% Moisture: 50.5

Date Sampled: 09/06/2011 1230
Date Received: 09/08/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88573	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-87698	Lab File ID:	26b092911.asc
Dilution:	1.0			Initial Weight/Volume:	1.04 g
Analysis Date:	09/29/2011 2217			Final Weight/Volume:	100 mL
Prep Date:	09/29/2011 0945				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Cadmium		5.2		0.080	0.97

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86371	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-85917	Lab File ID:	34A091511.txt
Dilution:	1.0			Initial Weight/Volume:	0.66 g
Analysis Date:	09/15/2011 1648			Final Weight/Volume:	50 mL
Prep Date:	09/15/2011 0925				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Mercury		170		10	61

11/16/11

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0601FA**

Lab Sample ID: 280-20042-6
Client Matrix: Solid

% Moisture: 20.8

Date Sampled: 09/06/2011 1320
Date Received: 09/08/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88573	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-87698	Lab File ID:	26b092911.asc
Dilution:	1.0			Initial Weight/Volume:	1.13 g
Analysis Date:	09/29/2011 2220			Final Weight/Volume:	100 mL
Prep Date:	09/29/2011 0945				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Cadmium		0.23	J	0.046	0.56

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86371	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-85917	Lab File ID:	34A091511.txt
Dilution:	1.0			Initial Weight/Volume:	0.63 g
Analysis Date:	09/15/2011 1651			Final Weight/Volume:	50 mL
Prep Date:	09/15/2011 0925				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Mercury		180		6.7	40

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

Client Sample ID: **TMCSD0701FA**

Lab Sample ID: 280-20042-7
Client Matrix: Solid

% Moisture: 22.0

Date Sampled: 09/06/2011 1345
Date Received: 09/08/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88573	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-87698	Lab File ID:	26b092911.asc
Dilution:	1.0			Initial Weight/Volume:	1.15 g
Analysis Date:	09/29/2011 2224			Final Weight/Volume:	100 mL
Prep Date:	09/29/2011 0945				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Cadmium		0.11	U	0.046	0.56

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86371	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-85917	Lab File ID:	34A091511.txt
Dilution:	1.0			Initial Weight/Volume:	0.69 g
Analysis Date:	09/15/2011 1653			Final Weight/Volume:	50 mL
Prep Date:	09/15/2011 0925				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
Mercury		9.3	U	6.2	37

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Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

General Chemistry

Client Sample ID: **TMCSD0101FA**

Lab Sample ID: 280-20042-1
Client Matrix: Solid

Date Sampled: 09/06/2011 1300
Date Received: 09/08/2011 0900

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Moisture	23		%	0.10	0.10	1.0	Moisture
Analysis Batch: 280-85304	Analysis Date: 09/09/2011 1344						DryWt Corrected: N
Percent Solids	77		%	0.10	0.10	1.0	Moisture
Analysis Batch: 280-85304	Analysis Date: 09/09/2011 1344						DryWt Corrected: N

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

General Chemistry

Client Sample ID: **TMCSD0201FA**

Lab Sample ID: 280-20042-2
Client Matrix: Solid

Date Sampled: 09/06/2011 1400
Date Received: 09/08/2011 0900

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Moisture	22		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304		Analysis Date: 09/09/2011 1344				DryWt Corrected: N
Percent Solids	78		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304		Analysis Date: 09/09/2011 1344				DryWt Corrected: N

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

General Chemistry

Client Sample ID: **TMCSD0301FA**

Lab Sample ID: 280-20042-3
Client Matrix: Solid

Date Sampled: 09/06/2011 1420
Date Received: 09/08/2011 0900

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Moisture	22		%	0.10	0.10	1.0	Moisture
Analysis Batch: 280-85304	Analysis Date: 09/09/2011 1344						DryWt Corrected: N
Percent Solids	78		%	0.10	0.10	1.0	Moisture
Analysis Batch: 280-85304	Analysis Date: 09/09/2011 1344						DryWt Corrected: N

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

General Chemistry

Client Sample ID: **TMCSD0401FA**

Lab Sample ID: 280-20042-4
Client Matrix: Solid

Date Sampled: 09/06/2011 1250
Date Received: 09/08/2011 0900

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Moisture	24		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304		Analysis Date: 09/09/2011 1344				DryWt Corrected: N
Percent Solids	76		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304		Analysis Date: 09/09/2011 1344				DryWt Corrected: N

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

General Chemistry

Client Sample ID: **TMCSD0501FA**

Lab Sample ID: 280-20042-5
Client Matrix: Solid

Date Sampled: 09/06/2011 1230
Date Received: 09/08/2011 0900

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Moisture	51		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304		Analysis Date: 09/09/2011 1344				DryWt Corrected: N
Percent Solids	49		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304		Analysis Date: 09/09/2011 1344				DryWt Corrected: N

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

General Chemistry

Client Sample ID: **TMCSD0601FA**

Lab Sample ID: 280-20042-6
Client Matrix: Solid

Date Sampled: 09/06/2011 1320
Date Received: 09/08/2011 0900

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Moisture	21		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304		Analysis Date: 09/09/2011 1344				DryWt Corrected: N
Percent Solids	79		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304		Analysis Date: 09/09/2011 1344				DryWt Corrected: N

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20042-1

General Chemistry

Client Sample ID: **TMCSD0701FA**

Lab Sample ID: 280-20042-7
Client Matrix: Solid

Date Sampled: 09/06/2011 1345
Date Received: 09/08/2011 0900

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Moisture	22		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304	Analysis Date: 09/09/2011 1344					DryWt Corrected: N
Percent Solids	78		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304	Analysis Date: 09/09/2011 1344					DryWt Corrected: N

FPM Remediations
Data Verification and Usability Report
GRIFFISS AIR FORCE BASE
Site Griffiss AFB LTM Annual Sampling
Sediment Sampling
Contract No. FA8903-10-D-8595, Delivery Order No. 0014

FPM Project No. 1015-11-01

TestAmerica Job # 280-20041-1

Laboratory:	TestAmerica Laboratories, Inc.
Sample Matrix:	Sediment
Number of Samples:	3
Analytical Protocol:	DOD QSM, version 4.2, as per project-specific UFP QAPP
Data Reviewer:	Connie van Hoesel
Sample Date:	September 6, 2011

LIST OF DATA VERIFICATION SAMPLES

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

Sample ID	Date	QC Samples	Date
SMCSD0401HA	9/6/11	SMCSD0401HC	9/6/11
SMCSD0501HA	9/6/11		

Notes:

Refer to attached chain-of-custody for detailed sampling information and sample specific analyses requested.
HA – Primary environmental samples
HC – Field duplicate sample

DELIVERABLES

The data deliverable report was per requirements of the DOD QSM, version 4.2, as specified in the project-specific QAPP. 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 sample analyses were per methods as specified in the DOD QSM, version 4.2, with project-specific modifications as listed in the project-specific QAPP. The analytical methods employed included SW-846: Polychlorinated Biphenyls (PCBs) by Method SW8082.

VERIFICATION GUIDANCE

The analytical work was performed by TestAmerica Laboratories, Inc. in accordance with the DOD QSM, version 4.2, and QC requirements of the respective analytical methods and of the project-specific 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 DOD QSM, and the criteria as listed in the project-specific QAPP.

QA/QC CRITERIA

The following QA/QC criteria were reviewed for the SVOCs analyses, as applicable:

- Method detection limits and reporting limits (MDL, RL)
- Holding times
- GC/MS tune performance
- Initial and Continuing calibration summaries
- Method blanks
- Field duplicate results
- Matrix spike/matrix spike duplicate (MS/MSD) analysis
- Surrogate spike recoveries
- Internal standard areas counts and retention times
- Laboratory control samples (LCS)
- Results reported between MDL and RL (J-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 DOD QSM, version 4.2, and project-specific QAPP 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:

SAMPLE LABELING/CHAIN-OF-CUSTODY

No errors in the chain-of-custody were noted. There were no discrepancies noted between the sample labels and the chain-of-custody, or the cooler contents and the chain-of-custody.

PCBs

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

Sample ID	Surrogate	%Rec	AFCEE QC Limits (%)	Flag Applied	Rationale
SMCSD0501HA (1:1)	Tetrachloro-m-xylene	*46*	53-128	UJ	%Rec less than lower control limit; all results non-detect

If the surrogate recovery is not within AFCEE limits, corrective action shall be implemented: the sample shall be reextracted and reanalyzed. If the corrective action is ineffective in resolving the exceedance, then all analytes associated with the surrogate in that sample are qualified. As per the QAPP, for samples with recoveries greater than the upper control limit, positive sample results are considered estimated (flagged "J"). For samples with surrogate recoveries greater than 10% but less than the lower control limit, positive results are considered estimated (flagged "J") and non-detect results are considered estimated (flagged "UJ"). For samples with surrogate recoveries less than 10%, the results are rejected for the analytes. However, using professional judgment, no corrective action and/or flagging is required for minimal exceedances (i.e., within 1% of the control limits).

Corrective Action: According to the case narrative, the surrogate exceedance can be attributed to obvious matrix interferences, so no corrective action was performed. In accordance with the qualifiers as discussed above for surrogate exceedances below the lower control limit, "UJ" flags for non-detect results would be applicable.

- The normal/field duplicate sample set SMCSD0401HA/SMCSD0401HC was evaluated for RPD exceedances and all results were less than the RL. Therefore, no flagging was deemed necessary.

DATA USABILITY RESULTS

PCBs

Based on the evaluation of all information in the analytical data groups, the results of the samples for PCBs 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.

DATA USABILITY SUMMARY

All data in Job # 280-20041-1 are valid and usable with qualifications as noted in the data review.

Signed: Concordia van Hoesel Date: 11-21-11

ATTACHMENTS

- Chain-of-Custody
- Laboratory's Case Narrative
- Qualified final data verification results on annotated Lab Sheet 2s

CASE NARRATIVE
Client: FPM Remediations Inc
Project: Griffiss AFB Six Mile Creek (SD032)
Report Number: 280-20041-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
Three samples were received on 09/08/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 2.8oC.

POLYCHLORINATED BIPHENYLS (PCBS)
Samples SMCSD0401HA (280-20041-1), SMCSD0401HC (280-20041-2) and SMCSD0501HA (280-20041-3) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082. The samples were analyzed on 09/22/2011.

Please note samples SMCSD0401HA (280-20041-1), SMCSD0401HC (280-20041-2) and SMCSD0501HA (280-20041-3) required a sulfuric acid clean-up to reduce matrix interferences.

Surrogate Tetrachloro-m-xylene was recovered below the QC control limits in sample SMCSD0501HA (280-20041-3). This is an indicator that data may be biased low. This anomaly is due to obvious matrix interferences; therefore, corrective action is deemed unnecessary. The associated data have been flagged "Q" in accordance with the DoD QSM.

No other difficulties were encountered during the PCBs analyses.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS
Samples SMCSD0401HA (280-20041-1), SMCSD0401HC (280-20041-2) and SMCSD0501HA (280-20041-3) were analyzed for percent solids in accordance with EPA SW846 3550C. The samples were analyzed on 09/09/2011.

No difficulties were encountered during the % solids analyses.

All quality control parameters were within the acceptance limits.

AFCEE
CHAIN OF CUSTODY RECORD

COC#: _3_ SDG#: _272_ Cooler ID#: _A_

Ship to: Elaine Walker Test America Laboratories, Inc. 4955 Yarrow Street Arvada, Colorado Tel: 303-736-0156	Project Name: Griffiss AFB Six Mile Creek (SD032) Sampler Name: Daniel Baldyga	Send Results to: Daniel Baldyga FPM Remediations, Inc 584 Phoenix Drive Rome, NY 13441 Phone: (315) 336-7721 Ext. 207
Carrier: Test America courier.	Sampler Signature:	

Analyses requested

Field Sample ID	LocID	Date 2011	Time	MATRIX	SMCODE	SACODE	SBD/SED	# of Containers	VOCs note 1 4 oz glass jar	VOCs note 1 40 mL vial	PCBs note 2 8 oz glass jar	Comments
SMCSD0401HA	SMCSD-13	9/6	1500	SE	G	N	0/0.5	1	-	-	1	
SMCSD0401HC	SMCSD-13	9/6	1500	SE	G	FD	0/0.5	1	-	-	1	
SMCSD0501HA	SMCSD-14	9/6	1445	SE	G	N	0/0.5	1	-	-	1	

Sample Condition Upon Receipt at Laboratory: Cooler temperature:

Special Instructions/Comments: Parameter List: (According to AFCEE QAPP 4.0)

Note 1: VOCs: Method SW8260 for AFCEE QAPP 4.0 List.

Note 2: SVOCs: Method SW8270 for AFCEE QAPP 4.0 List, PCBs: Method SW8082 for AFCEE QAPP 4.0 List, Pesticides: Method SW8081 for AFCEE QAPP 4.0 List.

Note 3: Metals: Method SW6010B for AFCEE QAPP 4.0 List and Mercury: Method SW7471.

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date: 9/7/11	#3 Released by: (Sig)	Date:
Company Name:	Time:	Company Name: FPM Group Ltd	Time: 1200	Company Name:	Time:
#1 Received by: (Sig) Daniel Baldyga	Date: 9/6/11	#2 Received by: (Sig)	Date: 9-7-11	#3 Received by: (Sig)	Date:
Company Name: FPM	Time: 1030	Company Name: TA-SEC	Time: 1200	Company Name:	Time:

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

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

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

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20041-1

Client Sample ID: **SMCSD0401HA**

Lab Sample ID: 280-20041-1 Date Sampled: 09/06/2011 1500
Client Matrix: Solid % Moisture: 18.1 Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	30.8 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0240			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
PCB-1016		12	U	6.1	39
PCB-1221		24	U	19	39
PCB-1232		12	U	6.1	39
PCB-1242		12	U	11	39
PCB-1248		12	U	6.7	39
PCB-1254		12	U	6.6	39
PCB-1260		12	U	3.2	39

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	79		60 - 125
Tetrachloro-m-xylene	97		53 - 128

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20041-1

Client Sample ID: **SMCSD0401HC**

Lab Sample ID: 280-20041-2
Client Matrix: Solid

% Moisture: 21.7

Date Sampled: 09/06/2011 1500
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	31.0 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0311			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
PCB-1016		12	U	6.3	41
PCB-1221		25	U	19	41
PCB-1232		12	U	6.3	41
PCB-1242		12	U	11	41
PCB-1248		12	U	6.9	41
PCB-1254		12	U	6.8	41
PCB-1260		12	U	3.3	41

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	84		60 - 125
Tetrachloro-m-xylene	100		53 - 128

11/7/11

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20041-1

Client Sample ID: **SMCSD0501HA**

Lab Sample ID: 280-20041-3
Client Matrix: Solid

% Moisture: 25.3

Date Sampled: 09/06/2011 1445
Date Received: 09/08/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87305	Instrument ID:	GCS_W
Prep Method:	3546	Prep Batch:	280-86062	Initial Weight/Volume:	32.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/22/2011 0343			Injection Volume:	1 uL
Prep Date:	09/14/2011 2125			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	DL	LOQ
PCB-1016		13	~~U~~ UJ	6.4	41
PCB-1221		25	~~U~~	20	41
PCB-1232		13	~~U~~	6.4	41
PCB-1242		13	~~U~~	11	41
PCB-1248		13	~~U~~	7.0	41
PCB-1254		13	~~U~~	6.9	41
PCB-1260		13	~~U~~	3.3	41

Surrogate	%Rec	Qualifier	Acceptance Limits
DCB Decachlorobiphenyl	87		60 - 125
Tetrachloro-m-xylene	46	Q	53 - 128

wk 11/7/11

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20041-1

General Chemistry

Client Sample ID: **SMCSD0401HA**

Lab Sample ID: 280-20041-1 Date Sampled: 09/06/2011 1500
Client Matrix: Solid Date Received: 09/08/2011 0900

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Moisture	18		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304		Analysis Date: 09/09/2011 1344				DryWt Corrected: N
Percent Solids	82		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304		Analysis Date: 09/09/2011 1344				DryWt Corrected: N

Analytical Data

Client: FPM Remediations Inc Job Number: 280-20041-1

General Chemistry

Client Sample ID: **SMCSD0401HC**

Lab Sample ID: 280-20041-2 Date Sampled: 09/06/2011 1500
Client Matrix: Solid Date Received: 09/08/2011 0900

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Moisture	22		%	0.10	0.10	1.0	Moisture
Analysis Batch: 280-85304	Analysis Date: 09/09/2011 1344						DryWt Corrected: N
Percent Solids	78		%	0.10	0.10	1.0	Moisture
Analysis Batch: 280-85304	Analysis Date: 09/09/2011 1344						DryWt Corrected: N

Analytical Data

Client: FPM Remediations Inc

Job Number: 280-20041-1

General Chemistry

Client Sample ID: **SMCSD0501HA**

Lab Sample ID: 280-20041-3
Client Matrix: Solid

Date Sampled: 09/06/2011 1445
Date Received: 09/08/2011 0900

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Moisture	25		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304	Analysis Date: 09/09/2011 1344					DryWt Corrected: N
Percent Solids	75		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 280-85304	Analysis Date: 09/09/2011 1344					DryWt Corrected: N

FINAL PAGE

ADMINISTRATIVE RECORD

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