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Infrastructure, environment, facilities

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Mr. George Jacob
United States Environmental Protection Agency – Region 2
290 Broadway, 20th Floor
New York, New York 10007-1866

ENVIRONMENT

Subject:
Operational Year 5 Annual Monitoring Report,
Colesville Landfill, Broome County, New York. (Site No. 704010).

Dear Mr. Jacob:

Date:
June 12, 2008

On behalf of Broome County, ARCADIS is providing the Operational Year 5 Annual Monitoring Report for the Colesville Landfill, Broome County, New York.

Please feel free to contact me if you have any questions or comments.

Sincerely,

ARCADIS

Steven M. Feldman
Project Manager

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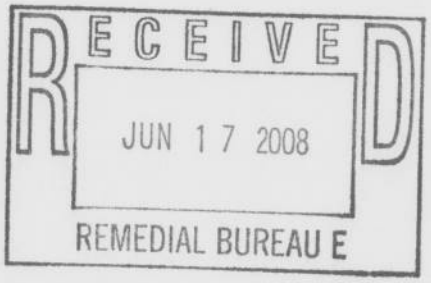

Broome County Division of Solid Waste Management

Operational Year 5 Annual Monitoring Report

Colesville Landfill, Broome County, New York
NYSDEC Site 704010

June 12, 2008

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Operational Year 5
Annual Monitoring Report
Colesville Landfill,
Broome County, New York
NYSDEC Site 704010

Prepared for:
Broome County Division of Solid Waste Management

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June 12, 2008

Tables

Figures

Appendices

1. Introduction

This Operational Year 5, Quarter Number 4 Annual Monitoring Report (Report) was prepared on behalf of the Broome County Division of Solid Waste Management for the Colesville Landfill, located in Broome County, New York (site) to evaluate and document long-term monitoring (LTM) activities at the site. Remediation and monitoring activities are being conducted pursuant to the Record of Decision (ROD) and Explanation of Significant Difference (ESD) that were issued in March 1991 and September 2000, respectively. LTM activities (which include environmental effectiveness and remediation system performance monitoring) were performed in accordance with the LTM Plan (ARCADIS G&M, Inc. 2002), LTM Plan Addendum for Spring Water Remediation Systems (ARCADIS 2003), and Interim Remedial Action Report (ARCADIS 2004), which were approved by the United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (NYSDEC). These documents provide a detailed description of the LTM program, methodology, and rationale. Where applicable these elements are either summarized or incorporated by reference herein.

This report provides the data collected from the September 2007 water-level measurement round and the groundwater quality monitoring event conducted during Operational Year 5, Quarter Number 4 (annual monitoring event). A description of the operation, maintenance, and monitoring (OM&M) associated with the Groundwater Remediation System during Operational Year 5, Quarter Number 4 has also been provided. Included in the analysis of the results is a summary and discussion of all data collected during Operational Year 5 (September 2006 through September 2007). Following the detailed data analysis and discussion is a summary of findings, conclusions, and recommendations.

As referenced in previous monitoring reports (ARCADIS 2007), damage occurred at the former SP-4 spring area and at recovery well GMPW-5 as a result of flooding of the North Stream. Further discussion of the repair of the flood damage is provided herein when applicable to the LTM program and/or OM&M of the Groundwater Remediation System.

2. Methodology

The following section provides a summary of the environmental effectiveness and remedial system performance monitoring methodology for Operational Year 5, Quarter

Number 4. A site plan, which shows the location of environmental effectiveness monitoring, is provided on Figure 1.

2.1 Environmental Effectiveness Monitoring

The environmental effectiveness monitoring performed during Operational Year 5, Quarter Number 4, included the following:

- Water-level (hydraulic) measurements were collected from 25 monitoring wells on September 19, 2007.
- Groundwater samples were collected from 17 monitoring wells (Year 5, Q4 list of wells) during the week of September 18, 2007 and were selectively analyzed for volatile organic compounds (VOCs), dissolved gases, and total organic carbon (TOC). Field parameters were also recorded at these monitoring locations.
- Samples (VOCs only) were collected at the SP-4 and F-6 surface water locations on September 20, 2007.

In accordance with the Proposed Modifications to the Long-Term Monitoring (LTM) Program (ARCADIS 2005), groundwater samples were collected from monitoring wells utilizing passive diffusive bag (PDB) samplers.

The depth to groundwater in monitoring wells was measured using methods consistent with those described in the LTM Program.

2.2 Groundwater Remediation System Performance Monitoring

Groundwater Remediation System performance monitoring activities during Operational Year 5, Quarter Number 4 were as follows:

- Pump-and-treat (PT) system recovery well influent and effluent samples were collected on September 19 and 20, 2007. The samples were selectively analyzed for VOCs and total iron.
- One vapor sample from the PT system air stripper effluent was collected on September 27, 2007. The sample was analyzed for VOCs.

- PT system operating parameters were recorded during the quarterly OM&M site visit.
- TOC samples were collected from select injection wells during the week of September 18, 2007.
- Automated reagent injection (ARI) system operating parameters were recorded during each injection event.
- A TOC sample was collected from alternate electron donor monitoring well TW-1 on September 18, 2007.

PT system groundwater samples were collected as grab samples directly from the individual recovery pipelines connected to recovery wells GMPW-3, GMPW-4, GMPW-5, the combined influent water to the low profile air stripper, and the combined effluent after the cartridge filters. The effluent air sample was collected as a grab sample directly from the designated point located on the low profile air stripper stack.

2.3 Spring Water Remediation System Performance Monitoring

SP-5 Spring Water Remediation System performance monitoring could not be conducted during the current reporting period due to a lack of flow at the SP-5 spring area. It is believed that the lack of flow is a direct result of an overall lower seasonal groundwater elevation at the site. Further discussion is provided in Section 9.0 of this report.

3. Groundwater Flow

Water-level measurements were made from existing wells on September 19, 2007. Water-level elevation data for Operational Year 5, Quarter Number 4 is provided in Table 1. A summary of water-level elevation data for Operational Year 5 is included in this table. Water-level elevations and the groundwater flow direction for the September 2007 monitoring event are shown on Figure 1. As shown on Figure 1, the groundwater flow direction in the project area (i.e., adjacent to the landfill western perimeter) and site-wide in the Operational Year 5, Quarter Number 4 round was consistent with previous rounds. The groundwater flow direction in the project area is toward the southwest from the western perimeter of the landfill. The groundwater flow direction in areas further to the east of the project area is toward the south/southwest.

Water-level elevation data for Operational Year 5 was similar to prior rounds of data. Seasonal fluctuations are observed during each operating quarter; however, the data generally indicate groundwater flow directions consistent with that observed during the Operational Year 4, Quarter Number 4 monitoring event.

4. Groundwater Quality

The following sections describe the analytical results for groundwater samples collected during the September 2007 monitoring round (Operational Year 5, Quarter Number 4). A discussion of analytical results for all data collected during Operational Year 5 is also provided. Groundwater analytical data for Operational Year 5, Quarter Number 4 is provided in Tables 2 and 3. A summary of all analytical data collected during Operational Year 5 is also provided on the referenced tables.

4.1 Volatile Organic Compounds

A comparison of Operational Year 5, Quarter Number 4 groundwater analytical results with previous analytical data indicate that the dissolved phase plume continues to be stable and that the anaerobic in-situ reactive zone (IRZ) is completely degrading contaminant mass. Specifically, total VOC (TVOC) concentrations for plume boundary, landfill interior, and landfill perimeter monitoring wells were stable to decreasing. TVOC concentrations for mid-plume monitoring wells generally decreased. Specific observations are provided below.

Plume boundary, landfill interior, and landfill perimeter monitoring data indicate that the dissolved phase plume is stable to decreasing in size. Total VOC (TVOC) concentrations for plume boundary monitoring wells W-17S and W-18 remained stable at 0.0 micrograms per liter (ug/L) and 75.2 ug/L, respectively. Offsite monitoring well W-20S remained stable at 0.0 ug/L. Landfill perimeter monitoring wells W-6, W-7, and W-13 slightly increased or remained stable at 65.0 ug/L, 11.5 ug/L, and 0.0 ug/L, respectively. Landfill perimeter monitoring well PW-7 significantly decreased from 532.5 ug/L in September 2006 to 190.8 ug/L. Landfill interior monitoring well PW-13 generally remained stable at 31.5 ug/L. Landfill interior monitoring well GMMW-7 increased from 258.8 ug/L in September 2006 to 370.8 ug/L in September 2007.

In general, TVOC concentrations in mid-plume monitoring wells located furthest from the IRZ were stable during the current reporting period. Specifically, mid-plume monitoring wells W-16S and PW-4 remained stable at 54.0 ug/L and 67.4 ug/L, respectively. TVOC concentrations in mid-plume monitoring well PW-3 increased from

86.1 ug/L in September 2006 to 163.4 ug/L in September 2007. TVOC concentrations in mid-plume monitoring wells located closest to the IRZ (GMMW-5, GMMW-6, W-5 and GMMW-2) were generally stable during September 2007 at 85.5 ug/L, 403.3 ug/L, 211.1 ug/L and 316.5 ug/L, respectively; mid-plume monitoring well PW-5 remained stable at 0.0 ug/L.

A comparative analysis of groundwater analytical data for VOCs during Operational Year 5 continues to corroborate historical data and indicate that the dissolved phase plume is stable to decreasing. The overall stable plume provides continued evidence that ongoing natural attenuation processes are effectively controlling the further migration of the plume. Data also indicate that the IRZ is completely degrading mass as observed by a continuing decreasing trend of VOCs in monitoring wells GMMW-5, GMMW-6, W-5 and to a lesser extent GMMW-2.

PT system VOC analytical results are provided in Table 4. During the current reporting period, TVOC concentration at recovery wells GMPW-3 and GMPW-4 were stable when compared to prior data. Specifically, TVOC concentrations in recovery wells GMPW-3, GMPW-4, and GMPW-5 were 179.8 ug/L, 245.2 ug/L, and 16.9 ug/L, respectively. A complete evaluation of performance monitoring conducted on the PT system is provided in Section 8.1.2 of this report.

4.2 Indicators of Reducing Conditions

Groundwater analytical results for biogeochemical parameters and field parameters were collected in accordance with the LTM plan and are provided in Table 3. In summary, field and laboratory groundwater data for Wells GMMW-5 and GMMW-6 indicate that strongly reducing conditions are being maintained within the IRZ. This is evidenced by the presence of reduced forms of alternate electron acceptors (i.e., methane). Further details of the ARI system performance monitoring are provided in Section 8.2.2 of this report.

4.3 Evidence of Biodegradation

Table 3 provides the results of biodegradation end product concentrations in monitoring wells and indicates the continued occurrence of bioactivity and biodegradation of VOCs within the IRZ. Specifically, the concentration of ethane and/or ethene within monitoring wells GMMW-5 and GMMW-6 continue to be elevated when compared to baseline conditions. GMMW-5 is located closest to the ARI injection wells and would be expected to be the first well to exhibit increases in

biodegradation end products. Ethene results for monitoring well GMMW-6 remained elevated during Operational Year 5, Quarter Number 4 and continue to indicate that the IRZ has extended to the vicinity of this well. Additional details on the results of biogeochemical monitoring as evidence of Groundwater Remediation System performance and effectiveness are discussed in Section 8.2.2 of this report.

5. Spring Water Quality

Spring water locations SP-2 and SP-3 were observed during the OM&M site visit on September 20, 2007. Spring water samples were not collected due to lack of flow at SP-2, and only a minimal puddle of stagnant water in a low-lying area at SP-3.

6. Surface Water Quality

Table 5 presents the analytical results for surface water sampling location F-6 and SP-4 during Operational Year 5. As shown in Table 5, surface water quality remained stable during the reporting period. Similarly, surface water quality remained stable during Operational Year 5 with VOC concentrations either not detected or slightly above the limits of detection. The data continue to indicate that surface water is not being adversely impacted by the dissolved phase groundwater plume or the former SP-4 spring water location.

7. Status of Flood Related Damages

As referenced in the Operational Year 5, Quarter Number 3, monitoring report, maintenance of the former SP-4 spring area was completed. Accordingly, ARCADIS completed an as-built survey of the Former SP-4 spring area improvement. The as-built survey of the SP-4 area provided in Figure 2.

8. Groundwater Remediation System Performance

The following section describes the results of the Groundwater Remediation System performance monitoring conducted during Operational Year 5, Quarter Number 4. A brief summary of system performance during Operational Year 5 is also provided.

8.1 PT System

The following section describes the results of the PT system performance monitoring conducted during Operational Year 5, Quarter Number 4.

8.1.1 Summary of Operation, Maintenance, and Monitoring

During Operational Year 5, Quarter Number 4, the PT system operated continuously with the exception of brief system shutdowns as a result of minor system alarms and routine OM&M activities.

PT system OM&M for Operational Year 5, Quarter Number 4 was conducted during the week of September 18, 2007 and included operation and maintenance of system equipment, the collection of system performance samples (water and vapor), and recording system operating parameters. Table 6 provides a summary of the recorded system operating parameters for the current operating period. As shown in Table 6, the total effluent groundwater recovery rate for Operational Year 5, Quarter Number 4 was approximately 0.30-gallon per minute (gpm), with individual recovery rates of 0.06-gpm, 0.17-gpm, and 0.03-gpm in GMPW-3, GMPW-4, and GMPW-5, respectively. The average recovery rates in recovery wells GMPW-3 and GMPW-5 were below system startup data. The average individual recovery well rate during Operational Year 5, Quarter Number 4 in recovery well GMPW-4 was consistent with system start up data.

A total of 40,444 gallons of groundwater was recovered during Operational Year 5, Quarter Number 4, and a total of 1,324,522 gallons of groundwater has been recovered since system startup. The low profile air stripper operated in accordance with the design specifications had a blower flow rate of 208 standard cubic feet per minute (scfm).

The overall system pumping rate during Operational Year 5 was higher when compared to previous operation (e.g. Operational Year 4) due to replacement of the recovery well pump in GMPW-3. Similar to the current reporting period, the PT system operated continuously during Operational Year 5 with minor system shutdown for system maintenance. As shown in Table 6, the total effluent groundwater recovery rate for Operational Year 5 was approximately 0.53-gpm, with individual recovery rates of 0.27-gpm, 0.20-gpm, and 0.07-gpm for recovery wells GMPW-3, GMPW-4, and GMPW-5, respectively. A total of 272,187 gallons of groundwater was recovered during Operational Year 5.

8.1.2 Results of Performance Sampling

PT system performance sampling for Operational Year 5, Quarter Number 4 was conducted on September 20, 2007. As discussed previously, five groundwater

samples and one vapor sample were collected. Groundwater samples included collection of individual recovery well samples (GMPW-3, GMPW-4, and GMPW-5), total influent, and total effluent after the cartridge filters. The vapor sample was collected from the effluent stack of the low profile air stripper.

Table 4 provides a summary of the PT system performance groundwater sampling analytical results. As shown in Table 4, all groundwater VOCs were treated to below their respective Best Professional Judgment (BPJ) limits via the low profile air stripper. Total iron concentration after the cartridge filter was 1.94 mg/L for the fourth quarter sampling event, which is above the BPJ recommended daily average limit of 0.61 mg/L and recommended daily limit of 1.2 mg/L. The cartridge filters were replaced shortly after the quarterly sampling event. Based on the total groundwater recovered during the reporting period and total influent groundwater concentration, an estimated 0.05 pounds (lbs) of VOC mass were removed from the subsurface during the quarterly reporting period, as shown in Table 7. A total of approximately 2.59 lbs of VOCs have been removed from the subsurface since system startup. A total of approximately 0.56 lbs of mass were recovered during Operational Year 5.

Table 8 provides a summary of the PT system performance sampling vapor analytical results for the Operational Year 5, Quarter Number 4 monitoring event as well as a summary of all data for Operational Year 4. As shown in Table 8, VOCs were not detected above their respective detection limits during the current reporting period. To be conservative, NYSDEC DAR-1 air model calculations were performed using the actual analytical data for detected constituents and the detection limit of all constituents that were not detected but have historically been detected in the influent groundwater. All COCs were below their respective short-term guidance concentrations (SGCs) and annual guidance concentrations (AGCs). Appendix B contains the NYSDEC DAR-1 AGC screening simulation based on the hand calculations provided in the NYSDEC DAR-1 AGC/SGC tables dated December 22, 2003.

As shown in Table 4, the PT system operated effectively during Operational Year 5 and treated influent VOCs to below their respective BPJ limits during each operational period. As shown in Table 7, a total of approximately 0.56 lbs of VOC mass were recovered during Operational Year 5. An annual summary of NYSDEC DAR-1 screening simulations has been provided in Table B-2 of Appendix B, all COCs were below their respective SGCs and AGCs during each operating period of Operational Year 5.

8.2 ARI System

The following section describes the results of the ARI system performance monitoring conducted during Operational Year 5, Quarter Number 4. A brief summary of ARI system performance for Operational Year 5 has also been provided.

8.2.1 Summary of Operation, Maintenance, and Monitoring

ARI system OM&M was conducted during the Operational Year 5, Quarter Number 4 OM&M site visit during the week of September 18, 2007 and included operation and maintenance of system equipment and the collection of samples for analysis of TOC from injection wells IW-2, IW-3, IW-8, and IW-13. In addition, a TOC sample was collected from monitoring well TW-1 to evaluate the long- term performance of the alternate electron donor in providing TOC to the subsurface.

One reagent injection was conducted during Operational Year 5, Quarter Number 4. The injection was initiated on June 20, 2007 and was completed on July 12, 2007. As described in the Hydraulic Injection Test and Alternate Electron Donor Pilot Test Letter Work Plan (ARCADIS 2006), an alternate electron donor (e.g., emulsified edible oil [EOS]) was injected into existing injection well IW-8 during the week of December 18, 2006. Accordingly, IW-8 was not included in the current reagent injection to allow for long-term groundwater monitoring of the alternate electron donor.

Based on the number of injection events, quantity of molasses solution delivered to each injection well, and molasses solution percentage, approximately 13,705-gallons of molasses solution were delivered to the subsurface during Operational Year 5, Quarter Number 4. A total of 130,931-gallons of molasses solution have been injected since system startup. Appendix C provides a summary of the recorded system operating parameters for each of the injection events for Operational Year 5, Quarter Number 4.

8.2.2 Results of Performance Sampling

ARI system performance sampling was conducted on September 18, 2007 and included the collection of TOC samples from injection wells IW-2, IW-3, IW-8, and IW-13. In addition to performance sampling conducted explicitly for ARI system monitoring, analytical results from select wells sampled under the environmental effectiveness monitoring program were also utilized to determine the effectiveness of the ARI system.

As discussed previously, Tables 2 and 3 summarize the results of VOCs, and biogeochemical and field parameters, respectively, for the ARI system performance monitoring and environmental effectiveness Operational Year 5, Quarter Number 4 sampling event. Analytical results and field parameters indicate that geochemical conditions in the current area of ARI system influence exhibit sufficient TOC within injection wells, elevated chlorinated VOC (CVOC) degradation products (i.e., ethene and ethane), and elevated reduced forms of alternate electron acceptors (i.e., methane). Operational Year 5, Quarter Number 4 analytical data provide strong evidence that VOCs are being completely degraded within the IRZ along the downgradient flow path.

Key observations for Operational Year 5, Quarter Number 4, are as follows:

- The TOC concentration at monitoring well GMMW-5 (84 mg/L) and injection wells IW-3 (230 mg/L), IW-8 (1,600 mg/L), and IW-13 (34 mg/L) indicated that sufficient organic carbon is being delivered to the subsurface to maintain the IRZ.

- The TOC in monitoring well TW-1 was 120 mg/L. The data indicate that the alternate electron donor EOS continues to provide sufficient organic carbon to the subsurface following the one time injection in injection well IW-8.

- The methane concentration in monitoring wells GMMW-5 and GMMW-6 remained elevated at 24,000 ug/L and 1,700 ug/L, respectively. These data provide evidence that strongly reducing conditions (methanogenic) are being maintained within the IRZ.

- The ethene concentration in monitoring well GMMW-6 remained elevated at 73,000 ng/L. The concentration in monitoring well GMMW-6 remained an order of magnitude above baseline conditions during the operational year.

- The ethane concentration remained elevated in monitoring wells GMMW-5 and GMMW-6 at 14,000 and 5,200 ng/L, respectively.

- TVOC concentrations remained stable but significantly lower than baseline conditions in monitoring wells GMMW-5 and GMMW-6.

Figures D-1, D-2, D-3, and D-4 (see Appendix D) presents a summary of groundwater data for PCE and PCE related daughter compounds in monitoring wells GMMW-05,

GMMW-06, GMMW-02, and W-05 since the baseline monitoring event conducted in July 2002. As shown on Figures D-1 through D-4, the decline in contaminant mass (primarily 1,2-DCE) corresponds to a significant increase in methane and degradation end product (ethene/ethane). This trend is typical for successful IRZs.

9. Spring Water Remediation System Performance

In an effort to address the additional springs that were noted during the 5-year review inspection, SP-5 modifications were implemented during April and July, 2007. The riprap and filter fabric were removed and replaced, the spring water infiltration area was expanded and the ground elevation was raised, and an additional ring was added to the SP-5 manhole. An as built of the modified SP-5 Spring area is provided on Figure 3.

SP-5 Spring Water Remediation System OM&M could not be conducted during Operational Year 5, Quarter Number 4 due to a lack of water-flow from the system effluent discharge pipe. It is believed that the lack of flow is a direct result of the overall lower ground water table elevation observed at the site during the September 2007 water–level gauging event.

10. Conclusions

Based on the data obtained from the Operational Year 5, Quarter Number 4 monitoring and overall system performance during Operational Year 5, ARCADIS concluded the following:

- The groundwater flow direction in the project area (i.e., adjacent to the landfill western perimeter) and site-wide in the September 2007 round was consistent with previous rounds. The groundwater flow direction in the project area is toward the southwest from the western perimeter of the landfill. The groundwater flow direction in areas further to the east of the project area is toward the south/southwest.

- The anaerobic IRZ established downgradient of the injection transect is successfully reducing the concentration of site-related VOCs through enhanced reductive dechlorination. TVOC analytical results in monitoring wells GMMW-5 and GMMW-6 continued to decrease significantly during the operational year while the concentration of methane and ethane/ethane remained elevated.

- Site-wide groundwater analytical data for VOCs is consistent with site historical data and indicate that the dissolved phase plume is stable. This observation provides continued evidence that ongoing natural attenuation processes are effectively controlling the further migration of the plume in areas beyond the present-day influence of the IRZ.

- The PT system is operating as designed and is treating recovered groundwater VOCs to below BPJ limits prior to discharge.

- Sufficient organic carbon was delivered to the subsurface to maintain the IRZ as evidenced through the analytical data.

- Surface water quality continues to be consistent with historical data indicating that impacted groundwater and/or flood related damages are not causing an adverse impact to surface water along the North Stream.

11. Recommendations

The following recommendations are made for Operational Year 6, Quarter Number 1 activities:

- Continue to inspect the former spring locations and the side slopes of the north stream.

- Continue to operate the ARI system without injection well IW-8. Obtain and evaluate data related to the ongoing alternate electron donor pilot program.

- Continue to evaluate the performance of recovery well GMPW-5 to determine the cause of the decrease in groundwater recovery.

12. Project Schedule

Groundwater environmental effectiveness monitoring is scheduled to be conducted for Operational Year 5 on the quarterly schedule set forth in the Proposed Modifications to Long-Term Monitoring Program (ARCADIS 2005). System OM&M of the Groundwater Remediation System will continue to be performed on a quarterly basis consistent with the LTM Plan. Maintenance of the SP-5 spring water remediation system will be completed. 13.

13. References

ARCADIS G&M, Inc. 2002. Long-Term Monitoring Plan, Colesville Landfill, Broome County, New York, NYSDEC Site 704010. June 28, 2002.

ARCADIS G&M, Inc. 2003. Long-Term Monitoring Plan Addendum for Spring Water Remediation Systems, Colesville Landfill, Broome County, New York, NYSDEC Site 704010. November 3, 2003.

ARCADIS G&M, Inc. 2004. Interim Remedial Action Report, Colesville Landfill, Broome County, New York, NYSDEC Site 704010. September 22, 2004.

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ARCADIS G&M, Inc. 2006 Operational Year 3 Annual Monitoring Report, Broome County, New York, NYSDEC Site 704010. March 2, 2006.

ARCADIS G&M, Inc. 2006. Hydraulic Injection Test and Alternate Electron Donor Pilot Test, Colesville Landfill, Broome County, New York (Site No. 704010). November 30, 2006.

ARCADIS of New York, Inc. 2007. Operational Year 5, Quarter Number 1Monitoring Report, Colesville Landfill, Broome County, New York (Site No. 704010). July 26, 2007

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Table 1. Water-Level Measurements Collected During Opertational Year 5, Colesville Landfill, Broome County, New York.

Well Identification	MP Elevation (feet above msl)	3/26/2007 Depth to Water (feet below MP)	3/26/2007 Water-Table Elevation (feet above msl)	9/19/2007 Depth to Water (feet below MP)	9/19/2007 Water-Table Elevation (feet above msl)	MP Description
GMMW-2	1030.95	35.50	995.45	36.32	994.63	Inner casing
GMMW-3	1028.02	33.33	994.69	34.30	993.72	Inner casing
GMMW-4	1042.9	45.75	997.15	46.19	996.71	Inner casing
GMMW-5	1043.66	48.20	995.46	49.04	994.62	Inner casing
GMMW-6	1033.56	37.65	995.91	38.59	994.97	Inner casing
GMMW-7	1045.43	46.93	998.50	47.63	997.80	Inner casing
PW-1	976.23	NM	--	15.13	961.10	Inner casing
PW-2	975.28	NM	--	6.93	968.35	Inner casing
PW-3	988.92	9.45	979.47	13.67	975.25	Inner casing
PW-4	1001.75	16.02	985.73	18.14	983.61	Inner casing
PW-5	986.12	0	986.12	0.60	985.52	Inner casing
W-5	1051.41	51.00	1000.41	51.60	999.81	Inner casing
W-6	1050.38	48.24	1002.14	49.95	1000.43	Inner casing
PW-7	1042.47	38.99	1003.48	39.72	1002.75	Inner casing
PW-8	1049.73	NM	--	39.75	1009.98	Inner casing
W-7	1049.12	40.74	1008.38	43.20	1005.92	Inner casing
PW-10	1049.29	36.42	1012.87	39.00	1010.29	Inner casing
PW-11	1052.37	51.29	1001.08	52.15	1000.22	Inner casing
PW-13	1072.41	60.16	1012.25	61.45	1010.96	Inner casing
W-13	1053.43	45.61	1007.82	47.65	1005.78	Inner casing
W-14S	957.68	NM	--	10.35	947.33	Inner casing
W-16S	990.33	NM	--	9.76	980.57	Outer casing
W-17S	959.13	8.04	951.09	11.81	947.32	Inner casing
W-18	973.56	9.45	964.11	11.68	961.88	Inner casing
W-20S	952.88	7.05	945.83	11.54	941.34	Inner casing

msl Mean sea level.
MP Measuring point.
NM Not measured.
-- Water Level not Recorded

Table 2. Concentrations of Volatile Organic Compounds Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Constituents (units in ug/L)	Sample ID:	GMMW-02	GMMW-02	GMMW-02	GMMW-02	GMMW-05	GMMW-5	GMMW-05	GMMW-05	GMMW-06	GMMW-06
	Date:	12/8/2006	3/26/2007	6/19/2007	9/18/2007	12/7/2006	3/26/2007	6/19/2007	9/18/2007	12/7/2006	3/26/2007
1,1,1-Trichloroethane		**14**	**12**	**9.6**	**9.2**	<5.0	<1.0	<1.0	<1.0	**3.7**	**5.2**
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	**1.2**	**1.4**
1,1-Dichloroethane		**76**	**78**	**79**	**91**	**23**	**32**	<1.0	**16**	**200**	**170**
1,1-Dichloroethene		**1.3**	**1.3**	**1.3**	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane		<1.0	<1.0	<1.0	<1.1	<5.0	**2.1**	<1.0	**1**	**1.9**	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	**1.2**	**1.2**
Benzene		**2.7**	**2.5**	**2.4**	**1.3**	<5.0	**1.6**	<1.0	<1.0	**9.8**	**7.7**
Chlorobenzene		**32**	**32**	**31**	**31**	**21**	**26**	<1.0	**20**	**46**	**38**
Chloroethane		**23**	**24**	**29**	**26**	**150**	**120**	<1.0	**41**	**190**	**180**
Chloroform		<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	**1.3**
cis-1,2-Dichloroethene		**110**	**110**	**98**	**100**	<5.0	**2.7**	<1.0	**1.7**	**30**	**54**
Dichlorodifluoromethane		<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	**5.1**	**5.1**
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	**2.4**	**1.6**
Methylene chloride		<1.0	<1.0	**1.3**	<1.0	<5.0	**1.7**	<1.0	<1.0	**7.6**	**6.1**
Methyl tert-butyl ether		<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene		<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene		<1.0	<1.0	<1.0	<2.0	<5.0	**3**	<1.0	**2.5**	**3.1**	**1.4**
Tetrachloroethene		<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene		<1.0	<1.0	<1.0	<1.0	<5.0	**5.3**	<1.0	**3.3**	**3.3**	**2**
trans-1,2-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	**1.9**	**1.5**
Trichloroethene		**52**	**49**	**43**	**40**	<5.0	<1.0	<1.0	<1.0	**2**	**8.5**
Vinyl chloride		**13**	**15**	**18**	**18**	<5.0	**1.8**	<1.0	<1.0	**21**	**31**
p-Xylene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs		**324.0**	**323.8**	**312.6**	**316.5**	**194.0**	**196.2**	**0.0**	**85.5**	**530.2**	**516.0**

Bold	**Constituent detected above MDL.**
VOCs	Volatile Organic Compounds.
ug/L	Micrograms per liter.
*	Field replicate.
J	Estimated value.
MDL	Method detection limit.
NA	Not analyzed.

Table 2. Concentrations of Volatile Organic Compounds Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Constituents (units in ug/L)	Sample ID: / Date:	GMMW-06 6/19/2007	GMMW-06 9/19/2007	GMMW-07 9/19/07	PW-03 9/19/07	PW-04 12/7/2006	PW-04 3/26/2007	PW-04 6/19/2007	PW-04 9/19/2007	PW-05 9/19/2007	PW-07 9/19/07
1,1,1-Trichloroethane		**6.1**	**7.2**	**6.5**	**17**	**13**	**10**	**9.8**	**10**	<1.0	**4.5**
1,1,2-Trichloroethane		**1.6**	**1.1**	**1.0**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		**180**	**150**	**110**	**47**	**8.8**	**9.3**	**10**	**11**	<1.0	**92**
1,1-Dichloroethene		<1.0	<1.0	**1.4**	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane		<1.0	**1.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		**1.3**	**1.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene		**7.2**	**7.8**	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		**33**	**37**	**12**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**11**
Chloroethane		**150**	**120**	**34**	**7.1**	**3.8**	**3**	**4.6**	**3.8**	<1.0	**40**
Chloroform		**1.1**	<1.0	<1.0	**1.1**	**1.2**	**1.0**	**1.0**	**1.0**	<1.0	<1.0
cis-1,2-Dichloroethene		**45**	**36**	**130**	**50**	**14**	**9.2**	**11**	**12**	<1.0	**20**
Dichlorodifluoromethane		**4.6**	**5.5**	**1.1**	**1.4**	**1.7**	**1.5**	**2.5**	**1.5**	<1.0	<1.0
Ethylbenzene		**1.7**	**2.8**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene chloride		**4.9**	**5**	**1.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl tert-butyl ether		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene		**1.7**	**2.7**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		<1.0	<1.0	<1.0	**3.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene		**1.9**	**2.5**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene		**1.4**	**1.8**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene		**9.6**	**4.5**	**37**	**32**	**24**	**24**	**21**	**22**	<1.0	**9.3**
Vinyl chloride		**29**	**17**	**35**	**3.2**	<1.0	<1.0	**1.1**	<1.0	<1.0	**14**
p-Xylene		<1.0	**3.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.8**	<1.0	<1.0
Total VOCs		**480.1**	**403.1**	**370.8**	**163.4**	**66.5**	**58.0**	**61.0**	**61.3**	**0.0**	**190.8**

Bold	**Constituent detected above MDL.**
VOCs	Volatile Organic Compounds.
ug/L	Micrograms per liter.
*	Field replicate.
J	Estimated value.
MDL	Method detection limit.
NA	Not analyzed.

Table 2. Concentrations of Volatile Organic Compounds Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Constituents (units in ug/L)	Sample ID: / Date:	PW-13 9/19/07	W-05 12/8/2006	W-05 3/26/2007	W-05 6/19/2007	W-05 9/19/2007	W-06 9/18/2007	W-07 9/19/07	W-13 9/19/2007	W-16S 9/19/07	W-17S 9/19/2007	W-18 9/19/2007
1,1,1-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**18**
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		**6.9**	**79**	**66**	**67**	**66**	**21**	**3.1**	<1.0	**17**	<1.0	**17**
1,1-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane		**1.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	**1.2**	<1.0	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene		<1.0	**6.8**	**5.8**	**6.4**	**6.2**	**3.9**	<1.0	<1.0	**2.2**	<1.0	<1.0
Chlorobenzene		**14**	**16**	**13**	**13**	**11**	**14**	**2.6**	<1.0	**24**	<1.0	<1.0
Chloroethane		**3.1**	**120**	**120**	**150**	**120**	**8.2**	**4.4**	<1.0	**5.6**	<1.0	**2.2**
Chloroform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene		**1.9**	**2.7**	**2.8**	**2.4**	**2.4**	**6.0**	<1.0	<1.0	**1.6**	<1.0	**16**
Dichlorodifluoromethane		<1.0	<1.0	<1.0	<1.0	<1.0	**3.8**	<1.0	<1.0	**1.2**	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene chloride		<1.0	**3**	**2.8**	**3.5**	**3.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl tert-butyl ether		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene		<1.0	<1.0	**1.7**	**2.6**	**2.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene		<1.0	**1.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene		**2.5**	**1.5**	**1.7**	<1.0	<1.0	**6.9**	**1.4**	<1.0	**2.4**	<1.0	**22**
Vinyl chloride		**1.5**	<1.0	**1.4**	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-Xylene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs		**31.5**	**230.1**	**215.2**	**247.3**	**211.1**	**65.0**	**11.5**	**0.0**	**54.0**	**0.0**	**75.2**

Bold	**Constituent detected above MDL.**
VOCs	Volatile Organic Compounds.
ug/L	Micrograms per liter.
*	Field replicate.
J	Estimated value.
MDL	Method detection limit.
NA	Not analyzed.

Table 2. Concentrations of Volatile Organic Compounds Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Constituents (units in ug/L)	Sample ID: / Date:	W-20S 9/19/07	FBV122105 9/19/2007
1,1,1-Trichloroethane		<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0
1,1-Dichloroethane		<1.0	<1.0
1,1-Dichloroethene		<1.0	<1.0
1,2-Dichloroethane		<1.0	<1.0
1,2-Dichloropropane		<1.0	<1.0
Benzene		<1.0	<1.0
Chlorobenzene		<1.0	<1.0
Chloroethane		<1.0	<1.0
Chloroform		<1.0	<1.0
cis-1,2-Dichloroethene		<1.0	<1.0
Dichlorodifluoromethane		<1.0	<1.0
Ethylbenzene		<1.0	<1.0
Methylene chloride		<1.0	<1.0
Methyl tert-butyl ether		<1.0	<1.0
Naphthalene		<1.0	<1.0
o-Xylene		<1.0	<1.0
Tetrachloroethene		<1.0	<1.0
Toluene		<1.0	<1.0
trans-1,2-Dichloroethene		<1.0	<1.0
Trichloroethene		<1.0	<1.0
Vinyl chloride		<1.0	<1.0
p-Xylene		<1.0	<1.0
Carbon Tetrachloride		<1.0	<1.0
Total VOCs		**0.0**	**0.0**

Bold	**Constituent detected above MDL.**
VOCs	Volatile Organic Compounds.
ug/L	Micrograms per liter.
*	Field replicate.
J	Estimated value.
MDL	Method detection limit.
NA	Not analyzed.

Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Parameters	Sample ID: / Date:	GMMW-02 12/8/06	GMMW-02 3/26/07	GMMW-02 6/19/07	GMMW-02 9/19/07	GMMW-04 6/18/07	GMMW-04 9/19/07
GENERAL CHEMISTRY							
Total Organic Carbon	mg/L	**4.38**	<2.00	<2.00	**8.8**	**7.6**	**6.9**
FIELD PARAMETERS							
pH	Standard units	**5.89**	**6.56**	**6.29**	**6.48**	**6.57**	**6.76**
Specific Conductance	mmhos/cm	**0.628**	**0.442**	**0.558**	**0.746**	**0.553**	**0.621**
Turbidity	NTU	--	**4.9**	--	**9.7**	--	**13.2**
Dissolved Oxygen	mg/L	--	--	**2.74**	**12.3**	**3.5**	**5.05**
Temperature	deg C	**7.1**	**10.4**	**13.23**	**11.1**	**12.78**	**11.4**
ORP	mV	--	--	**79**	**15**	**-70**	**-96**
DISSOLVED GASES							
Carbon dioxide	mg/L	--	--	<5.00	--	--	--
Carbon monoxide	mg/L	--	--	<1.00	--	--	--
Ethane	ng/L	**740**	**830**	**800**	**670**	--	--
Ethene	ng/L	**5,300**	**5,300**	**6,400**	**7,500**	--	--
Methane	ug/L	**2,900**	**4,000**	**4,100**	**3,900**	--	--
Nitrogen	mg/L	--	--	**21**	--	--	--
Oxygen	mg/L	--	--	**2.7**	--	--	--

Bold	**Constituent detected above MDL.**
mg/L	Milligrams per liter.
mmhos/cm	Millimhos per centimeter.
NTU	Nephelometric Turbidity Units.
deg C	Degrees Celsius.
mV	Millivolts.
ng/L	Nanograms per liter.
--	Not analyzed or collected.
ug/L	Micrograms per liter.
IW	Injection well.
ORP	Oxidation-reduction potential.
J	Qualifier assigned to analytical data indicating result is estimated.

Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Parameters	Sample ID: / Date:	GMMW-05 12/7/06	GMMW-05 3/26/07	GMMW-05 6/19/07	GMMW-05 9/19/07	GMMW-06 12/7/06	GMMW-06 3/26/07
GENERAL CHEMISTRY							
Total Organic Carbon	mg/L	**28**	**96.4**	**130**	**84**	**246**	**4.55**
FIELD PARAMETERS							
pH	Standard units	**7.2**	**6.56**	**6.40**	**6.41**	**6.9**	**6.61**
Specific Conductance	mmhos/cm	**0.713**	**0.754**	**0.843**	**1.9**	**0.814**	**0.821**
Turbidity	NTU	--	**13.3**	--	**33.8**	--	**8.1**
Dissolved Oxygen	mg/L	--	--	**3.9**	**13.39**	--	--
Temperature	deg C	**6.1**	**10.5**	**14.95**	**12.7**	**9.4**	**10.3**
ORP	mV	--	--	**-71**	**-94**	--	--
DISSOLVED GASES							
Carbon dioxide	mg/L	--	--	<5.00	--	--	--
Carbon monoxide	mg/L	--	--	<1.00	--	--	--
Ethane	ng/L	**86,000**	**20,000**	**13,000**	**14,000**	**6,700**	**4,800**
Ethene	ng/L	**15,000**	**6,200**	**1,500**	**370**	**120,000**	**100,000**
Methane	ug/L	**17,000**	**29,000**	**25,000**	**24,000**	**7,800**	**1,800**
Nitrogen	mg/L	--	--	**4.4**	--	--	--
Oxygen	mg/L	--	--	**1.5**	--	--	--

Bold	**Constituent detected above MDL.**
mg/L	Milligrams per liter.
mmhos/cm	Millimhos per centimeter.
NTU	Nephelometric Turbidity Units.
deg C	Degrees Celsius.
mV	Millivolts.
ng/L	Nanograms per liter.
--	Not analyzed or collected.
ug/L	Micrograms per liter.
IW	Injection well.
ORP	Oxidation-reduction potential.
J	Qualifier assigned to analytical data indicating result is estimated.

Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Parameters	Sample ID: / Date:	GMMW-06 6/19/07	GMMW-06 9/18/07	GMMW-07 9/19/07	PW-03 9/19/07	PW-04 12/7/06	PW-04 3/26/07
GENERAL CHEMISTRY							
Total Organic Carbon	mg/L	**2.4**	--	**5.6**	--	**3.59**	<2.00
FIELD PARAMETERS							
pH	Standard units	**6.38**	**6.47**	**6.69**	**6.39**	**5.38**	**5.56**
Specific Conductance	mmhos/cm	**0.88**	**0.799**	**0.29**	**0.621**	**0.961**	**1.82**
Turbidity	NTU	--	**16.3**	**30.1**	**455**	--	**126**
Dissolved Oxygen	mg/L	**4.45**	**13.01**	**4.7**	**7.8**	--	--
Temperature	deg C	**14.07**	**11.2**	**10.6**	**13.7**	**8.6**	**9.9**
ORP	mV	**-6**	**-63**	**-7**	**36**	--	--
DISSOLVED GASES							
Carbon dioxide	mg/L	<5.00	--	--	--	--	--
Carbon monoxide	mg/L	<1.00	--	--	--	--	--
Ethane	ng/L	**3,800**	**5,200**	**710**	--	**52**	**62**
Ethene	ng/L	**85,000**	**73,000**	**5,400**	--	**290**	**150**
Methane	ug/L	**1,700**	**1,700**	**1,100**	--	**12**	**12**
Nitrogen	mg/L	**20**	--	--	--	--	--
Oxygen	mg/L	**1.9**	--	--	--	--	--

Bold	**Constituent detected above MDL.**
mg/L	Milligrams per liter.
mmhos/cm	Millimhos per centimeter.
NTU	Nephelometric Turbidity Units.
deg C	Degrees Celsius.
mV	Millivolts.
ng/L	Nanograms per liter.
--	Not analyzed or collected.
ug/L	Micrograms per liter.
IW	Injection well.
ORP	Oxidation-reduction potential.
J	Qualifier assigned to analytical data indicating result is estimated.

Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Parameters	Sample ID: / Date:	PW-04 6/19/07	PW-04 9/18/07	PW-05 9/19/07	PW-07 9/19/07	PW-13 9/19/07	W-05 12/8/06
GENERAL CHEMISTRY							
Total Organic Carbon	mg/L	<2.00	**8.0**	**6.0**	--	--	--
FIELD PARAMETERS							
pH	Standard units	**5.41**	**5.69**	**7.73**	**6.21**	**5.93**	**6.19**
Specific Conductance	mmhos/cm	**1.65**	**1.28**	**0.297**	**0.285**	**0.26**	**1.059**
Turbidity	NTU	--	**35.1**	**16.7**	**371**	**44**	--
Dissolved Oxygen	mg/L	**4.5**	**8.95**	**6.12**	**2.52**	**2.65**	--
Temperature	deg C	**13.27**	**12.6**	**16.9**	**9.7**	**10.1**	**7.2**
ORP	mV	**160**	**131**	**103**	**-25**	**22**	--
DISSOLVED GASES							
Carbon dioxide	mg/L	<5.00	--	--	--	--	--
Carbon monoxide	mg/L	<1.00	--	--	--	--	--
Ethane	ng/L	**58**	<25	<25	--	--	**18,000**
Ethene	ng/L	**74**	<25	<25	--	--	**4,600**
Methane	ug/L	**17**	**0.940**	**1.2**	--	--	**2,000**
Nitrogen	mg/L	**19**	--	--	--	--	--
Oxygen	mg/L	**4**	--	--	--	--	--

Bold	**Constituent detected above MDL.**
mg/L	Milligrams per liter.
mmhos/cm	Millimhos per centimeter.
NTU	Nephelometric Turbidity Units.
deg C	Degrees Celsius.
mV	Millivolts.
ng/L	Nanograms per liter.
--	Not analyzed or collected.
ug/L	Micrograms per liter.
IW	Injection well.
ORP	Oxidation-reduction potential.
J	Qualifier assigned to analytical data indicating result is estimated.

Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Parameters	Sample ID: / Date:	W-05 3/26/07	W-05 6/19/07	W-05 9/19/07	W-06 9/19/07	W-07 9/19/07	W-13 9/19/07
GENERAL CHEMISTRY							
Total Organic Carbon	mg/L	**7.61**	**9.51**	**13**	--	--	--
FIELD PARAMETERS							
pH	Standard units	**6.46**	**6.31**	**6.17**	**6.09**	**6.11**	**6.07**
Specific Conductance	mmhos/cm	**0.829**	**0.95**	**0.945**	**0.5**	**0.438**	**0.826**
Turbidity	NTU	**41**	--	**950**	**7.4**	**49.4**	**13.1**
Dissolved Oxygen	mg/L	--	**2.5**	**11.91**	**2.46**	**3.64**	**4.15**
Temperature	deg C	**10.6**	**15.66**	**12.4**	**10.8**	**10.6**	**11.3**
ORP	mV	--	**-36**	**-84**	**-32**	**21**	**-1**
DISSOLVED GASES							
Carbon dioxide	mg/L	--	<5.00	--	--	--	--
Carbon monoxide	mg/L	--	<1.00	--	--	--	--
Ethane	ng/L	**20,000**	**22,000**	**20,000**	--	--	--
Ethene	ng/L	**4,400**	**3,600**	**2,300**	--	--	--
Methane	ug/L	**2,300**	**2,400**	**3,000**	--	--	--
Nitrogen	mg/L	--	**21**	--	--	--	--
Oxygen	mg/L	--	**2.4**	--	--	--	--

Bold	**Constituent detected above MDL.**
mg/L	Milligrams per liter.
mmhos/cm	Millimhos per centimeter.
NTU	Nephelometric Turbidity Units.
deg C	Degrees Celsius.
mV	Millivolts.
ng/L	Nanograms per liter.
--	Not analyzed or collected.
ug/L	Micrograms per liter.
IW	Injection well.
ORP	Oxidation-reduction potential.
J	Qualifier assigned to analytical data indicating result is estimated.

Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Parameters	Sample ID: / Date:	W-14S 9/19/07	W-16S 9/19/07	W-17S 9/19/07	W-18 9/19/07	W-20S 9/19/07	IW-2 6/19/07
GENERAL CHEMISTRY							
Total Organic Carbon	mg/L	--	--	--	--	--	**26.3**
FIELD PARAMETERS							
pH	Standard units	**5.57**	**6.32**	**6.33**	**6.2**	**5.92**	**5.33**
Specific Conductance	mmhos/cm	**0.075**	**0.424**	**0.224**	**0.434**	**0.096**	**0.182**
Turbidity	NTU	**>999**	**155.2**	**72.7**	**240**	**20**	--
Dissolved Oxygen	mg/L	**7.45**	**3**	**4.81**	**7.41**	**7.01**	**2.72**
Temperature	deg C	**15**	**15**	**13.6**	**15.7**	**14.2**	**13.25**
ORP	mV	**171**	**102**	**133**	**144**	**132**	**92**
DISSOLVED GASES							
Carbon dioxide	mg/L	--	--	--	--	--	--
Carbon monoxide	mg/L	--	--	--	--	--	--
Ethane	ng/L	--	--	--	--	--	--
Ethene	ng/L	--	--	--	--	--	--
Methane	ug/L	--	--	--	--	--	--
Nitrogen	mg/L	--	--	--	--	--	--
Oxygen	mg/L	--	--	--	--	--	--

Bold	**Constituent detected above MDL.**
mg/L	Milligrams per liter.
mmhos/cm	Millimhos per centimeter.
NTU	Nephelometric Turbidity Units.
deg C	Degrees Celsius.
mV	Millivolts.
ng/L	Nanograms per liter.
--	Not analyzed or collected.
ug/L	Micrograms per liter.
IW	Injection well.
ORP	Oxidation-reduction potential.
J	Qualifier assigned to analytical data indicating result is estimated.

Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Parameters	Sample ID: / Date:	IW-2 9/18/07	IW-03 12/8/06	IW-03 3/27/07	IW-03 6/18/07	IW-03 9/19/07	IW-08 12/8/06
GENERAL CHEMISTRY							
Total Organic Carbon	mg/L	**240**	**3780**	**32.5**	**227**	**230**	**5,890**
FIELD PARAMETERS							
pH	Standard units	**5.71**	**4.06**	**5.64**	**5.27**	**5.5**	**3.51**
Specific Conductance	mmhos/cm	**1.08**	**1.81**	**0.376**	**0.634**	**0.802**	**2.19**
Turbidity	NTU	**177**	--	--	--	**170**	--
Dissolved Oxygen	mg/L	**14.02**	--	--	**2.9**	**3.21**	--
Temperature	deg C	**11.6**	**9.3**	--	**12.59**	**11.5**	**6.60**
ORP	mV	**-37**	--	--	**68**	**7**	--
DISSOLVED GASES							
Carbon dioxide	mg/L	--	--		--	--	--
Carbon monoxide	mg/L	--	--		--	--	--
Ethane	ng/L	--	--		--	--	--
Ethene	ng/L	--	--		--	--	--
Methane	ug/L	--	--		--	--	--
Nitrogen	mg/L	--	--		--	--	--
Oxygen	mg/L	--	--		--	--	--

Bold	**Constituent detected above MDL.**
mg/L	Milligrams per liter.
mmhos/cm	Millimhos per centimeter.
NTU	Nephelometric Turbidity Units.
deg C	Degrees Celsius.
mV	Millivolts.
ng/L	Nanograms per liter.
--	Not analyzed or collected.
ug/L	Micrograms per liter.
IW	Injection well.
ORP	Oxidation-reduction potential.
J	Qualifier assigned to analytical data indicating result is estimated.

Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Parameters	Sample ID: / Date:	IW-08 3/18/07	IW-08 6/19/07	IW-08 9/19/07	IW-09 3/27/07	IW-13 12/8/06
GENERAL CHEMISTRY						
Total Organic Carbon	mg/L	**1.59**	**1,370**	**1,600**	**426**	**22**
FIELD PARAMETERS						
pH	Standard units	**4.42**	**4.42**	**4.4**	**3.51**	**5.89**
Specific Conductance	mmhos/cm	**1.176**	**1.176**	**1.64**	**2.19**	**0.722**
Turbidity	NTU	--	--	**770**	--	--
Dissolved Oxygen	mg/L	**3.35**	**3.35**	**2.63**	--	--
Temperature	deg C	**13.94**	**13.94**	**11.20**	**6.60**	**6.20**
ORP	mV	**105**	**3.35**	**82**	--	--
DISSOLVED GASES						
Carbon dioxide	mg/L	--	--	--	--	--
Carbon monoxide	mg/L	--	--	--	--	--
Ethane	ng/L	--	--	--	--	--
Ethene	ng/L	--	--	--	--	--
Methane	ug/L	--	--	--	--	--
Nitrogen	mg/L	--	--	--	--	--
Oxygen	mg/L	--	--	--	--	--

Bold	**Constituent detected above MDL.**
mg/L	Milligrams per liter.
mmhos/cm	Millimhos per centimeter.
NTU	Nephelometric Turbidity Units.
deg C	Degrees Celsius.
mV	Millivolts.
ng/L	Nanograms per liter.
--	Not analyzed or collected.
ug/L	Micrograms per liter.
IW	Injection well.
ORP	Oxidation-reduction potential.
J	Qualifier assigned to analytical data indicating result is estimated.

Table 3. Concentrations of General Chemistry, Field Parameters, and Dissolved Gases Detected in Groundwater, Operational Year 5, Colesville Landfill, Broome County, New York.

Parameters	Sample ID: / Date:	IW-13 3/27/07	IW-13 6/18/07	IW-13 9/19/07	TW-1 6/18/07	TW-1 9/19/07
GENERAL CHEMISTRY						
Total Organic Carbon	mg/L	**13**	**17.2**	**34**	**169**	**120**
FIELD PARAMETERS						
pH	Standard units	**5.87**	**5.78**	**5.98**	**6.17**	**6.33**
Specific Conductance	mmhos/cm	**0.473**	**0.436**	**0.51**	**1.016**	**1.21**
Turbidity	NTU	**86**	--	**273**	--	**440**
Dissolved Oxygen	mg/L	--	**3.06**	**3.21**	**3.75**	**2.74**
Temperature	deg C	--	**14.27**	**13.00**	**15.67**	**11.10**
ORP	mV	--	**-2**	**-26**	**-67**	**-98**
DISSOLVED GASES						
Carbon dioxide	mg/L	--	--	--	--	--
Carbon monoxide	mg/L	--	--	--	--	--
Ethane	ng/L	--	--	--	--	--
Ethene	ng/L	--	--	--	--	--
Methane	ug/L	--	--	--	--	--
Nitrogen	mg/L	--	--	--	--	--
Oxygen	mg/L	--	--	--	--	--

Bold	**Constituent detected above MDL.**
mg/L	Milligrams per liter.
mmhos/cm	Millimhos per centimeter.
NTU	Nephelometric Turbidity Units.
deg C	Degrees Celsius.
mV	Millivolts.
ng/L	Nanograms per liter.
--	Not analyzed or collected.
ug/L	Micrograms per liter.
IW	Injection well.
ORP	Oxidation-reduction potential.
J	Qualifier assigned to analytical data indicating result is estimated.

Table 4. Concentrations of Volatile Organic Compounds and Selected Metals Detected in Aqueous Samples Collected from the PT System, Operational Year 5, Colesville Landfill, Broome County, New York. 5,6

Constituents	Model Technology BPJ Limits[1,2] (ug/L)	Sample ID: / Date:	GMPW-3 12/17/2006	GMPW-3 3/9/2007	GMPW-3 6/19/2007	GMPW-3 9/20/2007	GMPW-4 12/17/2006	GMPW-4 3/9/2007	GMPW-4 6/19/2007	GMPW-4 9/19/2007
1,1,1-Trichloroethane	10-20		**32**	**31**	**20**	**23**	**27**	**31**	**19**	**23**
1,1,2-Trichloroethane	10		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	10		**56**	**53**	**44**	**45**	**82**	**84**	**78**	**67**
1,1-Dichloroethene	10		**2.7**	**2.5**	**2.2**	**1.6**	**2.5**	**2.6**	**2.2**	**1.7**
1,2-Dichloroethane	10-30		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	NA		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	5		**4.5**	**4.5**	**3.3**	<1.0	**4.6**	**4.8**	**3.9**	**2.2**
Chlorobenzene	NA		**2.7**	<1.0	<1.0	<1.0	**5.8**	**9.6**	**7.1**	**4.9**
Chloroethane	NA		**20**	**14**	**20**	**14**	**34**	**32**	**42**	**28**
Chloroform	NA		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	10		**84**	**84**	**61**	**53**	**77**	**92**	**68**	**54**
Dichlorodifluoromethane	NA		<1.0	<1.0	**1.7**	**1.8**	**<1.0**	**1.5**	**2.4**	**2**
Ethylbenzene	5		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	10-50		**2.8**	**2.1**	**2.4**	**1.9**	**2.9**	**2.4**	**2.6**	**1.5**
Methyl tert-butyl ether	50		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	10		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene	5		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	10		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	5		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	10-50		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	10		**67**	**73**	**48**	**40**	**68**	**110**	**64**	**56**
Vinyl Chloride	10-50		**9.7**	**7.8**	**11**	<1.0	**38**	**25**	**37**	**9.8**
Total VOCs			**281.4**	**271.9**	**213.6**	**180.3**	**341.8**	**394.9**	**326.2**	**250.1**
Metals (units in mg/L)	Model Technology BPJ Limits[3,4] (mg/L)									
Total Iron	1.2 / 0.61		**0.27**	**1.17**	**1.23**	**16.7**	**6.7**	**0.775**	**0.607**	**8.98**

See Notes on Last Page.

Table 4. Concentrations of Volatile Organic Compounds and Selected Metals Detected in Aqueous Samples Collected from the PT System, Operational Year 5, Colesville Landfill, Broome County, New York. 5,6

Constituents	Model Technolog BPJ Limits[1,2] (ug/L)	Sample ID: Date:	GMPW-5 12/17/2006	GMPW-5 3/9/2007	GMPW-5 6/19/2007	GMPW-5 9/19/2007	COMBINED INF 12/17/2006	COMBINED INF 3/9/2007	COMBINED INF 6/19/2007	COMBINED INF 9/20/2007
1,1,1-Trichloroethane	10-20		<1.0	<1.0	<1.0	**2.9**	**21**	**31**	**17**	**9.3**
1,1,2-Trichloroethane	10		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	10		<1.0	<1.0	**21**	<1.0	**48**	**65**	**50**	**25**
1,1-Dichloroethene	10		<1.0	<1.0	<1.0	<1.0	**1.8**	**2.9**	**1.8**	<1.0
1,2-Dichloroethane	10-30		<1.0	<1.0	<1.0	**4.6**	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	NA		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	5		<1.0	<1.0	<1.0	<1.0	**3.1**	**4.4**	**3.1**	**1.3**
Chlorobenzene	NA		<1.0	<1.0	**20**	<1.0	**1.8**	**5**	**3.5**	**1.4**
Chloroethane	NA		<1.0	<1.0	**70**	<1.0	**18**	**28**	**28**	**9.0**
Chloroform	NA		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	10		<1.0	<1.0	**2.4**	**4.1**	**58**	**82**	**56**	**23**
Dichlorodifluoromethane	NA		<1.0	<1.0	<1.0	<1.0	<1.0	**1.9**	**1.6**	<1.0
Ethylbenzene	5		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	10-50		<1.0	<1.0	**1.1**	<1.0	**2.1**	**2.4**	**2.2**	<1.0
Methyl tert-butyl ether	50		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	10		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene	5		<1.0	<1.0	**2.5**	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	10		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	5		<1.0	<1.0	**3.5**	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	10-50		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	10		<1.0	<1.0	<1.0	**5.3**	**47**	**78**	**51**	**20**
Vinyl Chloride	10-50		<1.0	<1.0	**1.3**	<1.0	**15**	**19**	**15**	**4.3**
Total VOCs			**0.0**	**0.0**	**121.8**	**16.9**	**215.8**	**319.6**	**229.2**	**93.3**
Metals (units in mg/L)	Model Technology BPJ Limits[3,4] (mg/L)									
Total Iron	1.2 / 0.61		**0.575**	**2.44**	**0.541**	**2.93**	**1.52**	**0.294**	**0.719**	**10.8**

See Notes on Last Page.

Table 4. Concentrations of Volatile Organic Compounds and Selected Metals Detected in Aqueous Samples Collected from the PT System, Operational Year 5, Colesville Landfill, Broome County, New York. 5,6

Constituents	Model Technolog BPJ Limits[1,2] (ug/L)	Sample ID:	EFFLUENT AC II	EFFLUENT AC II	EFFLUENT AC II	EFFLUENT AC II
		Date:	12/17/2006	3/9/2007	6/19/2007	9/20/2007
1,1,1-Trichloroethane	10-20		<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	10		<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	10		<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	10		<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	10-30		<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	NA		<1.0	<1.0	<1.0	<1.0
Benzene	5		<1.0	<1.0	<1.0	<1.0
Chlorobenzene	NA		<1.0	<1.0	<1.0	<1.0
Chloroethane	NA		<1.0	<1.0	<1.0	<1.0
Chloroform	NA		<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	10		<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	NA		<1.0	<1.0	<1.0	<1.0
Ethylbenzene	5		<1.0	**3.5**	<1.0	<1.0
Methylene Chloride	10-50		<1.0	<1.0	<1.0	<1.0
Methyl tert-butyl ether	50		<1.0	<1.0	<1.0	<1.0
Naphthalene	10		<1.0	<1.0	<1.0	<1.0
o-Xylene	5		<1.0	**2.9**	<1.0	<1.0
Tetrachloroethene	10		<1.0	<1.0	<1.0	<1.0
Toluene	5		<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	10-50		<1.0	<1.0	<1.0	<1.0
Trichloroethene	10		<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	10-50		<1.0	<1.0	<1.0	<1.0
Total VOCs			**0**	**6.4**	**0.0**	**0.0**
Metals (units in mg/L)	Model Technology BPJ Limits[3,4] (mg/L)					
Total Iron	1.2 / 0.61		**0.442**	**0.477**	**1.57**	**1.94**

See Notes on Last Page.

Table 4. Concentrations of Volatile Organic Compounds and Selected Metals Detected in Aqueous Samples Collected from the PT System, Operational Year 5, Colesville Landfill, Broome County, New York. 5,6

Notes:

1. Model Technology Best Professional Judgment (BPJ) Limits recommended for Air Stripping with appropriate pretreatment from Attachment C of TOGS 1.2.1.
2. When a range is listed for the BPJ limit, a variation in available references was found. Recommended daily maximum limits should be in this range.
3. Model Technology BPJ Limits recommended for Lime, Settle and Filter treatment.
4. The recommended daily maximum permit limit is 1.2 mg/L and the recommended daily average permit limit is 0.61 mg/L.
5. Production wells were sampled in accordance with the schedule set forth in Table 3 of the Long-Term Monitoring Plan (ARCADIS 2002).
6. Bold values indicate compound detected above method detection limit.

NA	No BPJ limit listed.
J	Estimated Value.
ug/L	Micrograms Per Liter.
mg/L	Milligrams Per Liter.
VOCs	Volatile Organic Compounds.
AC	After Cartridge Filter.
PT	Pump and Treat.
--	Not Analyzed or Collected.

ARCADIS

Table 5. Concentrations of Volatile Organic Compounds Detected in Surface Water, Operational Year 5, Colesville Landfill, Broome County, New York.

Constituents (units in ug/L)	Sample ID: Date:	F-6 12/13/2006	F-6 3/27/2007	F-6 6/19/2007	SP-4 12/13/2006	SP-4 3/27/2007	SP-4 6/19/07	SP-4 9/20/07
1,1,1-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane		<1.0	<1.0	**1.2**	<1.0	<1.0	**2.4**	**3.8**
1,1-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.1
Chloroform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.1**
Dichlorodifluoromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl tert-butyl ether		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total VOCs		**0.0**	**0.0**	**1.2**	**0.0**	**0.0**	**2.4**	**4.9**

Bold **Constituent detected above MDL.**
VOCs Volatile Organic Compounds.
ug/L Micrograms per liter.

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Table 6. PT System Operating Parameters, Operational Year 5, Quarter Number 4 and Annual Summary, Groundwater Remediation System, Colesville Landfill, Broome County, New York.

Date	Time Recorded	Air Stripper Measurements: Blower Discharge Pressure PI-301 (i.w.c.)	Air Stripper Measurements: Blower Effluent Flowrate (scfm)	Flow Measurements: Total[1] Effluent Totalizer FQI-401 (gallons)	Water Bypass[2] Totalizer FQI-402 (gallons)	GMPW-3 Totalizer FQI-101 (gallons)	GMPW-4 Totalizer FQI-102 (gallons)	GMPW-5 Totalizer FQI-103 (gallons)
12/17/2006	10:00 AM	NM	349.0	1,175,830.0	1,023,400.0	379,055.0	108,500.0	399,822.0
3/27/2007	3:00 PM	8.9	NM	NM	NM	437,782.2	118,370.7	408,216.7
6/18/2007	12:00 PM	8.9	313.4	108,248.2	NM	506,371.0	159,041.5	415,950.3
9/20/2007	2:00 PM	8.5	208.4	148,692.6	NM	515,116.9	181,497.3	420,576.2
	Average Daily Flowrate During Reporting Period (gpm) =			**0.30**	NA	**0.06**	**0.17**	**0.03**
	Total Groundwater Recovered During Reporting Period (gallons) =			**40,444**	NA	**8,746**	**22,456**	**4,626**
	Average Daily Flowrate During Operational Year 5 (gpm) =			**0.53**	NA	**0.27**	**0.20**	**0.07**
	Total Groundwater Recovered During Operational Year 5 (gallons) =			**1,324,522**	NA	**140,972**	**103,710**	**35,716**

NA	Not applicable
NM	Not measured.
gpm	Gallons per minute.
i.w.c.	Inches of water column.
scfm	Standard cubic feet per minute.

Notes:

1. Total effluent totalizer replaced on 12/23/2005.
2. Water bypass totalizer damaged as a result of freezing in February, 2007.

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Table 7. PT System Mass Removal Rate of Volatile Organic Compounds, Operational Year 5, Quarter Number 4 and Annual Summary, Groundwater Remediation System, Colesville Landfill, Broome County, New York.

Date Sampled	Total VOC Influent Concentration (ug/L)	Total Effluent Totalizer FQI-401 (gallons)	Total Groundwater Recovered[1] Between Sampling Intervals (gal)	Influent Concentration[2] Geometric Mean (ug/L)	Total Estimated Mass[3] Removed (lbs)
6/18/2007	232.3	NA	NA	NA	NA
9/20/2007	93.3	148,692.6	40,444.6	147.2	0.05
			Total Estimated Mass Removed During Operational Year 5, Quarter Number 4 (lbs) =		**0.05**
			Total Estimated Mass Removed During Operational Year 5 (lbs) =		**0.56**
			Total Estimated Mass Removed Since System Startup (lbs) =		**2.59**

Notes:

NA	Not applicable.
ug/L	Micrograms per liter.
gal	Gallons.
lbs	Pounds.
VOC	Volatile organic compound.

1. Total Groundwater Recovered Between Sampling Intervals = Well Totalizer Reading for current sampling event - Well Totalizer Reading for prior sampling event.
2. Influent Concentration Geometric Mean = (Influent Concentration for prior sampling event x Influent Concentration for current sampling event) ^ (1/2).
3. Total Mass Removed = (Total Groundwater Recovered Between Sampling Intervals) x Influent Concentration Geometric Mean x 3.7854 L/gallon x (1 lb / 453,592,370 ug).

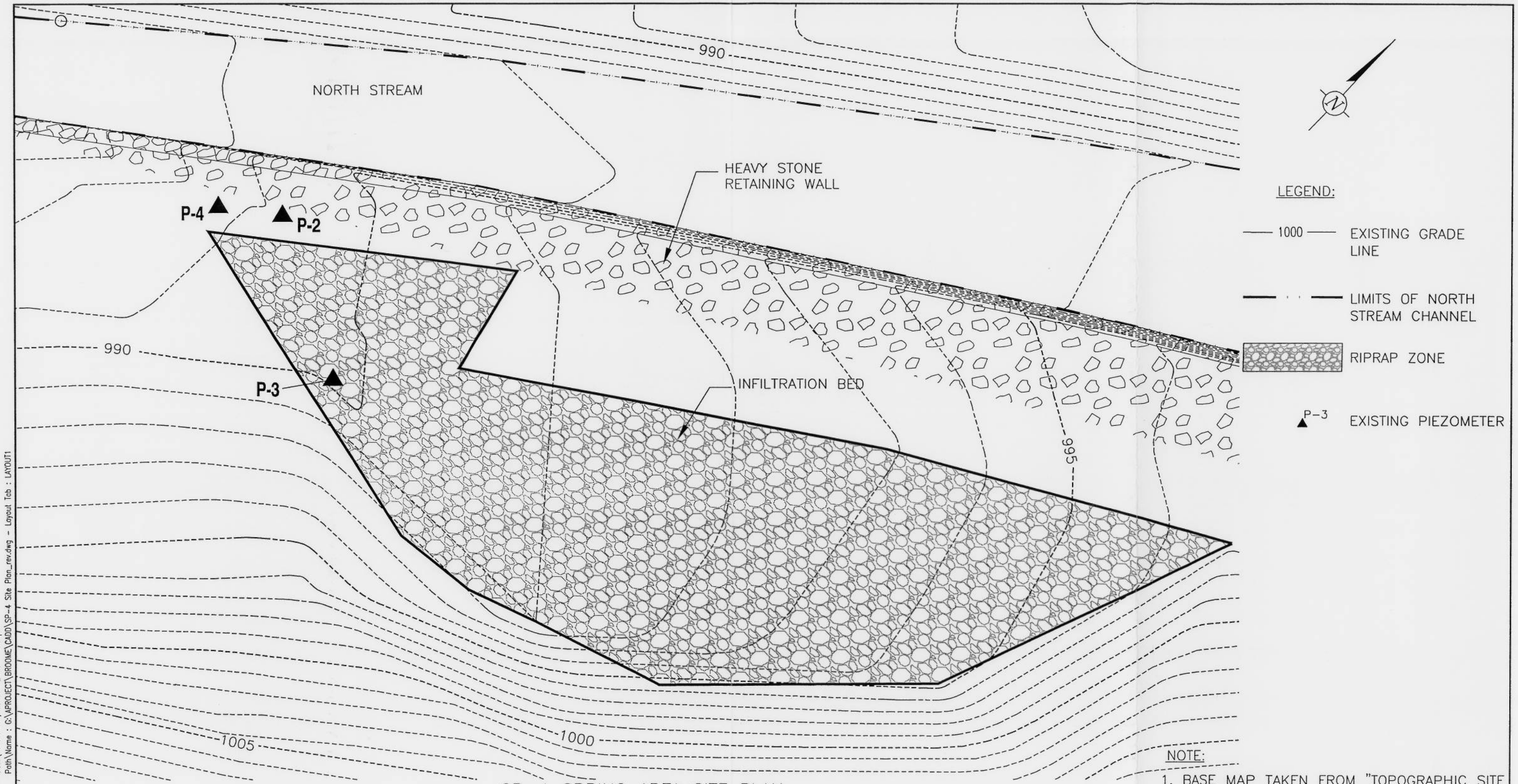
Table 8. Concentrations of Volatile Organic Compounds Detected in Air Stripper Effluent, Operational Year 5, Quarter Number 4 and Annual Summary, Groundwater Remediation System, Colesville Landfill, Broome County, New York.

Compounds	CAS Numbers	Sample ID: Date Sampled:	Effluent 12/17/2006 ppbv	Effluent 3/9/2007 ppbv	Effluent 6/19/2007 ppbv	Effluent 9/27/2007 ppbv
Vinyl Chloride	75-01-4		<7.2	<7.2	<7.0	<7.3
Chloroethane(Ethyl Chloride)	75-00-3		<7.2	<7.2	<7.0	<7.3
1,1-Dichloroethene(Vinylidene Chloride)	75-35-4		<7.2	<7.2	<7.0	<7.3
Methylene Chloride(Dichloromethane)	75-09-2		<7.2	<7.2	<7.0	<7.3
1,1-Dichloroethane	75-34-3		<7.2	<7.2	<7.0	<7.3
cis-1,2-Dichloroethylene	156-59-2		<7.2	<7.2	<7.0	<7.3
Chloroform	67-66-3		<7.2	<7.2	<7.0	<7.3
1,1,1-Trichloroethane(Methyl Chloroform)	71-55-6		<7.2	<7.2	<7.0	<7.3
Benzene	71-43-2		<7.2	<7.2	<7.0	<7.3
Trichloroethene	79-01-6		<7.2	<7.2	<7.0	<7.3
Toluene	108-88-3		<7.2	<7.2	<7.0	<7.3
Ethyl benzene	100-41-4		<7.2	<7.2	<7.0	<7.3
m,p-Xylene	108-38-3/106-42-3		<7.2	**56**	<7.0	<7.3
o-Xylene	95-47-6		<7.2	<7.2	<7.0	<7.3
1,2,4-Trimethylbenzene	95-63-6		<7.2	<7.2	<7.0	<7.3
2-Propanol (Isopropyl alcohol)	67-63-0		<7.2	<7.2	<7.0	<7.3
Dichlorodifluoromethane(Freon 12)	75-71-8		<7.2	<7.2	<7.0	<7.3

Bold Constituent detected above MDL.
ppbv: parts per billion by volume

Notes/Assumptions:

1. Samples collected by ARCADIS personnel on the dates shown and submitted to Air Toxics Laboratories LTD. for volatile organic compound (VOC) analyses using a modified USEPA Method TO-14A.



SP-4 SPRING AREA SITE PLAN

NOTE:

1. BASE MAP TAKEN FROM "TOPOGRAPHIC SITE SURVEY, COLESVILLE LANDFILL." BY RONALD SCHIESS, PLS, NY LIC NO. 049554, SOURTHERN TIER SURVEYING, LLP, DATED DECEMBER 14, 1999, REVISED AUGUST 2004, DECEMBER 2007 AND APRIL 2008.

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REV.	ISSUED	DATE	DESCRIPTION
2		05/08	AS BUILT JH/KZ
1		8/19/04	AS BUILT JH/KZ

KEYPLAN

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Melville, NY 11747
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PROJECT TITLE
COLESVILLE LANDFILL
BROOME COUNTY, NEW YORK

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED
S. FELDMAN	N. VALKENBURG	C. TUOHY	K. ZEGEL
SHEET TITLE		TASK/PHASE NUMBER	DRAWN BY
SP-4 SPRNG AREA AS-BUILT SITE PLAN		00007	T. PERRET
		PROJECT NUMBER	DRAWING NUMBER
		NY000949.0017	2

Acad Version : R17.1s (LMS Tech)
User Name : alsanchez
Date\Time : Fri, 06 Jun 2008 - 10:29am
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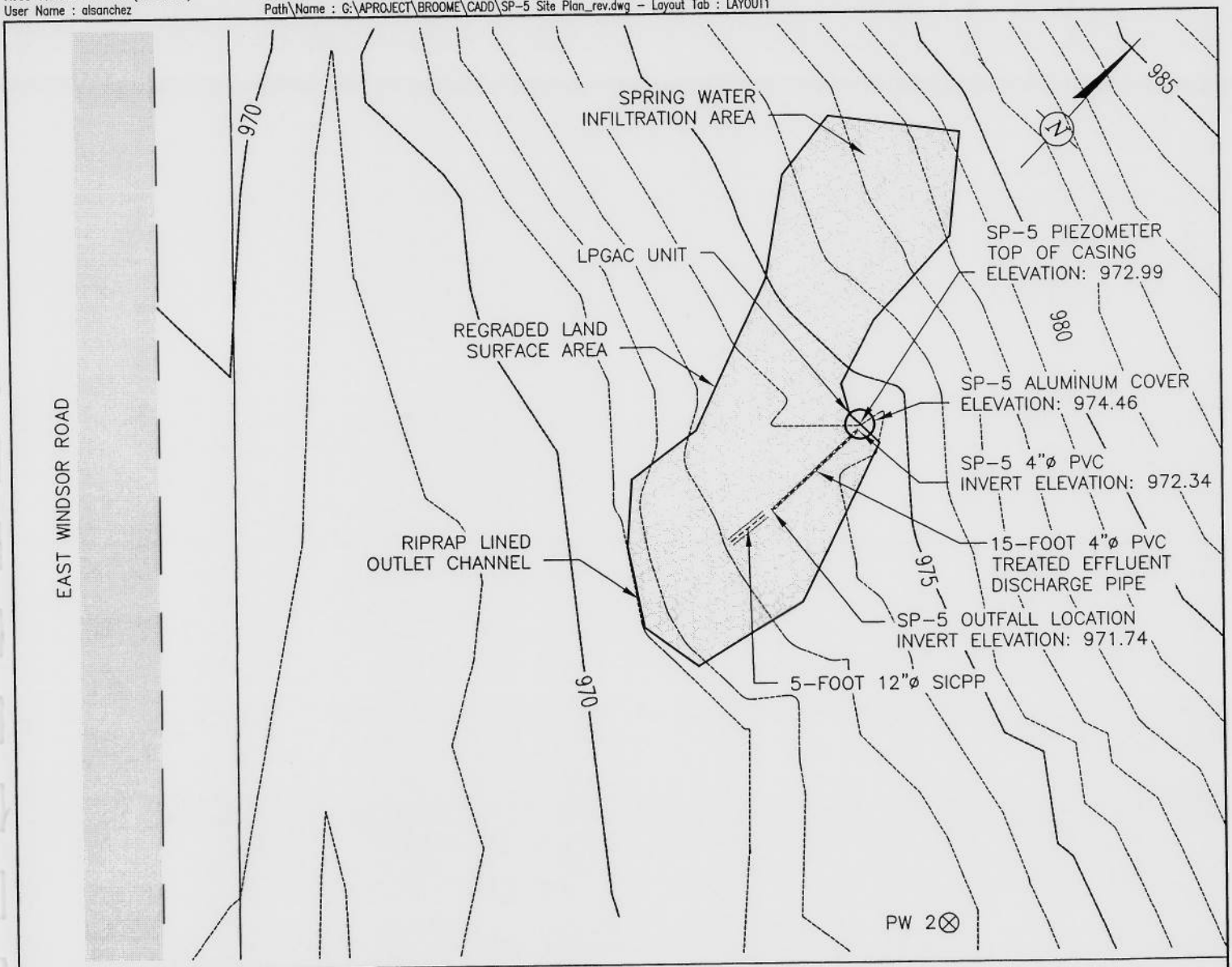

SP-5 SPRING AREA SITE PLAN

LEGEND

- TREATED WATER DISCHARGE LINE
- 980 — EXISTING GRADE LINE
- RIPRAP AREA
- ASPHALT
- PW 2 ⊗ — EXISTING MONITORING WELL

NOTE:

1. BASE MAP TAKEN FROM "TOPOGRAPHIC SITE SURVEY, COLESVILLE LANDFILL." BY RONALD SCHIESS, PLS, NY LIC NO. 049554, SOURTHERN TIER SURVEYING, LLP, DATED DECEMBER 14, 1999, REVISED AUGUST 2004, DECEMBER 2007 AND APRIL 2008.

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0 20
SCALE IN FEET

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PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
S. FELDMAN	N. VALKENBURG	C. TUOHY	K. ZEGEL
SHEET TITLE: SP-5 SPRING AREA AS-BUILT SITE PLAN COLESVILLE LANDFILL BROOME COUNTY, NEW YORK		TASK/PHASE NUMBER 00007	DRAWN BY T. PERRET
		PROJECT NUMBER NY000949.0017	DRAWING NUMBER 3

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Appendix A

Groundwater Sampling Logs

Table 3. Field Measurements of Depth to Water in Select Wells, Colesville Landfill, Broome County, New York.

Date: 9/15/07

Well Identification		Depth to Water (feet below MP)	Comments
GMMW-2		36.32	
GMMW-3		34.30	
GMMW-4		46.19	
GMMW-5		49.04	
GMMW-6		38.59	
GMMW-7		47.63	
PW-1		15.13	
PW-2		6.93	
PW-3		13.67	
PW-4		18.14	
PW-5		0.6	
PW-7		39.72	
PW-8		39.75	
PW-10		39.00	
PW-11		52.15	
PW-13		61.45	
W-5		51.60	
W-6		49.95	
W-7		43.20	
W-13		47.65	
W-14S		10.35	
W-16S		9.76	Top of Casing
W-17S		~~11.81~~	~~Top of Casing~~
W-18		11.68	Top of Casing
W-20S		11.54	
TW-1		51.39	

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/18/07

Site/Well No.: Gmm w-5 | Replicate No.: REPV180907 | Code No.: —

Weather: Sun 75° | Sampling Time: Begin 1300 | End 1306

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	49.04
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	4 Brown tint
Odor	Mod
Appearance	Small pieces
pH (s.u.)	6.41
Conductivity (mS/cm)	19.0
(µmhos/cm)	
Turbidity (NTU)	33.8
Temperature (°C)	12.7
Dissolved Oxygen (mg/L)	~~12.8~~ 13.39
ORP	-94
Sampling Method	Bailer 1 PDB
Remarks	PDB - VOC's / microscops
	Redeployed new PDB

Constituents Sampled	Container Description	Number	Preservative	Dup
8021 VOLATILES	40 ML VOA VIALS	3	HCL	X 2
Methane, Ethane, Ethene		2		X
TOC		1		X 2
Bromide		1		

Sampling Personnel: ~~DD/TM~~ KA / Fran

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/18/07

Site/Well No.: MW-5 | Replicate No.: — | Code No.: —

Weather: SW 75 | Sampling Time: Begin _____ End 1340

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	51.60
Water-Level Elevation (ft)	—
Water Column in Well (ft)	
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin _____ end _____
Pumping Rate (gpm)	
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Clear
Odor	Slight
Appearance	Cloudy
pH (s.u.)	6.17
Conductivity (mS/cm)	0.945
(µmhos/cm)	
Turbidity (NTU)	950
Temperature (°C)	12.40
Dissolved Oxygen (mg/L)	11.91
ORP	-84
Sampling Method	Bailer / PDB
Remarks	PDB - VOC's Micro SCOPS
	Rede played a PDB

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL
Micro Seeps		2	
TOC		1	
Bromide		1	

Sampling Personnel: ~~DD/TM~~ KA / Fran

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/18/07

Site/Well No.: TW-1 | Replicate No.: — | Code No.: ____

Weather: SW & 75° | Sampling Time: Begin ____ End 1400

Evacuation Data

Measuring Point	TOP OF PVC
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	~~47~~ 51.39
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Lt Brown
Odor	Med
Appearance	cloudy
pH (s.u.)	6.33
Conductivity (mS/cm)	1.21
(µmhos/cm)	
Turbidity (NTU)	440.
Temperature (°C)	11.1
Dissolved Oxygen (mg/L)	2.74
ORP	-98
Sampling Method	Bailer / PDB
Remarks	Redeployed PDB

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL
TOC		1	
Bromide		1	

Sampling Personnel: DD/TM

Well Casing Volumes

Gal./Ft.			
1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	mililiter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page: 1 of 1

Site Location: Harpursville, NY | Date: 9/18/07

Site/Well No.: GMMW-6 | Replicate No.: MS/MSD | Code No.: —

Weather: Sun 75° | Sampling Time: Begin: ____ End: 1440

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	38.59
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Clear
Odor	Slight
Appearance	Clear
pH (s.u.)	6.47
Conductivity (mS/cm)	0.799
(µmhos/cm)	
Turbidity (NTU)	16.3
Temperature (°C)	11.2
Dissolved Oxygen (mg/L)	13.01
ORP	-63
Sampling Method	Bailer / PDB
Remarks	PDB: VOCs - MW-6-PS Redeployed PDB

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL x 3 (MS/MSD)
Methane Ethane Ethene		2	
TOC		1	

Sampling Personnel: DD/TM

Well Casing Volumes

Gal./Ft.			
1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 7/18/07

Site/Well No.: GMW-2 | Replicate No.: — | Code No.: —

Weather: Sun 75° | Sampling Time: Begin — | End 1500

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	36.32
Water-Level Elevation (ft)	
Water Column in Well (ft)	
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin — end —
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Clear
Odor	
Appearance	
pH (s.u.)	6.48
Conductivity (mS/cm)	0.746
(µmhos/cm)	
Turbidity (NTU)	9.7
Temperature (°C)	11.1
Dissolved Oxygen (mg/L)	12.30
ORP	15
Sampling Method	Bailer / PDB
Remarks	PDB - VOCs
	Redeployed PDB

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL
Ethane Ethene Methane		2	Na_2PO_4
TOC		1	H_2SO_4

Sampling Personnel: ~~DD/TM~~ KA / Fran

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	mililiter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/18/07
Site/Well No.	PW-4	Replicate No.	—	Code No.	—
Weather	Sun 75°	Sampling Time: Begin	—	End	1520

Evacuation Data

Measuring Point	Top of Pvc
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	18.14
Water-Level Elevation (ft)	
Water Column in Well (ft)	
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Clear
Odor	none
Appearance	Little Sediment
pH (s.u.)	5.69
Conductivity (mS/cm)	1.28
(µmhos/cm)	
Turbidity (NTU)	35.1
Temperature (°C)	12.6
Dissolved Oxygen (mg/L)	8.95
ORP	131
Sampling Method	Bailer / PDB - VOC's Microscreens
Remarks	Redeployed PDB

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL
Methane Ethane Ethene		2	Na_3PO_4
TOC		1	H_2SO_4

Sampling Personnel ~~DD/FM~~ KA / Fran

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

ARCADIS

Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/19/07

Site/Well No.: PW-13 | Replicate No.: — | Code No.: —

Weather: foggy 55° | Sampling Time: Begin ____ End 850

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	61.45
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer / PDB

Field Parameters

Color	clear
Odor	Slight
Appearance	orange Iron pieces
pH (s.u.)	5.93
Conductivity (mS/cm)	0.260
(µmhos/cm)	
Turbidity (NTU)	44.0
Temperature (°C)	10.1
Dissolved Oxygen (mg/L)	2.65
ORP	22
Sampling Method	~~Bailer~~ - PDB
Remarks	PDB covered in orange

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel: ~~DD/TM~~ KAI Fcw

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS

Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/19/07
Site/Well No.	PW-7	Replicate No.	—	Code No.	—
Weather	Foggy 55°	Sampling Time: Begin		End	0925

Evacuation Data		Field Parameters	
Measuring Point	Top of PVC	Color	Orange/Brown
MP Elevation (ft)	—	Odor	none
Land Surface Elevation (ft)	—	Appearance	Iron/Orange pieces
Sounded Well Depth (ft bmp)	—	pH (s.u.)	6.21
Depth to Water (ft bmp)		Conductivity (mS/cm)	0.285
		(µmhos/cm)	
Water-Level Elevation (ft)		Turbidity (NTU)	371.0
Water Column in Well (ft)	39.72	Temperature (°C)	9.7
Casing Diameter/Type	2"	Dissolved Oxygen (mg/L)	2.52
Gallons in Well	—	ORP	-25
Gallons Pumped/Bailed Prior to Sampling	—	Sampling Method	Bailer / PDB
Sample Pump Intake Setting (ft bmp)	—	Remarks	PDB covered in orange
Purge Time	begin ___ end ___		
Pumping Rate (gpm)	—		
Evacuation Method	2" Disposable poly bailer PDB		

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel ~~DD/TM~~ KA / Fran

Well Casing Volumes

Gal./Ft.	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	mililiter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/19/07

Site/Well No.: GMMW-7 | Replicate No.: — | Code No.: —

Weather: Foggy 55° | Sampling Time: Begin: — | End: 0945

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	47.63
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer PDB

Field Parameters

Color	Clear
Odor	Slight
Appearance	Clear
pH (s.u.)	Ca. 6.9
Conductivity (mS/cm)	0.290
(µmhos/cm)	
Turbidity (NTU)	~~360~~ 30.1
Temperature (°C)	10.6
Dissolved Oxygen (mg/L)	4.70
ORP	-7.0
Sampling Method	Bailer / PDB
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL
Methyl Ethyl Ether		2	
TOC		1	

Sampling Personnel: ~~DD/TM~~ KA / Fran

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/19/07

Site/Well No.: W-7 | Replicate No.: — | Code No.: —

Weather: Foggy/SW 55° | Sampling Time: Begin ____ End 10:00

Evacuation Data

Measuring Point	Top of Pvc
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	43.20
Water-Level Elevation (ft)	~~43.20~~ —
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	2" Disposable poly bailer PDB

Field Parameters

Color	Clear
Odor	None
Appearance	Clear
pH (s.u.)	6.11
Conductivity (mS/cm)	0.438
(µmhos/cm)	
Turbidity (NTU)	49.4
Temperature (°C)	10.6
Dissolved Oxygen (mg/L)	KA ~~Duplicate~~ 3.64
ORP	21.0
Sampling Method	Bailer / PDB
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel: ~~DD/TM~~ KA / Fran

Well Casing Volumes

Gal./Ft.			
1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/19/07
Site/Well No.	LW-6	Replicate No.	—	Code No.	—
Weather	Sun 60°	Sampling Time: Begin	—	End	1020

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	49.95
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer / PDB

Field Parameters

Color	Clear
Odor	None
Appearance	Clear
pH (s.u.)	6.09
Conductivity (mS/cm)	0.500
(µmhos/cm)	
Turbidity (NTU)	7.4
Temperature (°C)	10.8
Dissolved Oxygen (mg/L)	2.46
ORP	-32
Sampling Method	Bailer / PDB
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel: DD/TM

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/19/07
Site/Well No.	PW-3	Replicate No.	—	Code No.	—
Weather	Sun 65°	Sampling Time: Begin	—	End	1030

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	13.67
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer PDB

Field Parameters

Color	Lt Brown
Odor	None
Appearance	cloudy
pH (s.u.)	6.39
Conductivity (mS/cm)	0.621
(µmhos/cm)	
Turbidity (NTU)	455.0
Temperature (°C)	13.7
Dissolved Oxygen (mg/L)	7.80
ORP	36
Sampling Method	Bailer PDB
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel ~~DD/TM~~ KA | Fran

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/14/07
Site/Well No.	GMW-4	Replicate No.	—	Code No.	—
Weather	Sun 70°	Sampling Time: Begin		End	11:00

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	46.19
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Clear
Odor	Slight
Appearance	Clear
pH (s.u.)	6.76
Conductivity (mS/cm)	0.621
(µmhos/cm)	
Turbidity (NTU)	13.2
Temperature (°C)	11.4
Dissolved Oxygen (mg/L)	5.05
ORP	-96
Sampling Method	Bailer
Remarks	

Constituents Sampled	Container Description	Number	Preservative
~~8021 VOLATILES~~	40 ~~ML VOA VIALS~~	6	~~HCL~~
TOC		1	H_2SO_4
Bromide		1	

Sampling Personnel ~~DD/TM~~ KA/FRM

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	mililiter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/19/07

Site/Well No.: W-14S | Replicate No.: — | Code No.: ____

Weather: Sun 75 | Sampling Time: Begin ____ End 1240

Evacuation Data

Measuring Point	Top of Pvc
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	10.35
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer / PDB

Field Parameters

Color	Brown
Odor	None
Appearance	Brown
pH (s.u.)	5.57
Conductivity (mS/cm)	0.075
(µmhos/cm)	
Turbidity (NTU)	>999
Temperature (°C)	15.0
Dissolved Oxygen (mg/L)	7.45
ORP	171
Sampling Method	Bailer / PDB
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel: DD/TM

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

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Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/19/07
Site/Well No.	W-205	Replicate No.	—	Code No.	—
Weather	Sun 70°	Sampling Time: Begin	—	End	1217

Evacuation Data

Measuring Point	Top of
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	11.54
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer PDB

Field Parameters

Color	Clear
Odor	none
Appearance	Tiny Black flecks
pH (s.u.)	~~6.08~~ 5.92
Conductivity (mS/cm)	0.096
(µmhos/cm)	
Turbidity (NTU)	20.0
Temperature (°C)	14.2
Dissolved Oxygen (mg/L)	7.01
ORP	132
Sampling Method	Bailer / PDB
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel ~~DD~~/TM KA / FRM

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

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Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/19/07
Site/Well No.	W-175	Replicate No.	—	Code No.	—
Weather	SW 70°	Sampling Time: Begin	—	End	1300

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	11.81
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Clear to Cloudy
Odor	none
Appearance	~~clear~~, organics
pH (s.u.)	6.33
Conductivity (mS/cm)	0.224
(µmhos/cm)	
Turbidity (NTU)	72.7
Temperature (°C)	13.6
Dissolved Oxygen (mg/L)	4.81
ORP	133
Sampling Method	Bailer / PDB
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel: ~~DD/TM~~ KA / FSW

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/19/07

Site/Well No.: W-13 | Replicate No.: — | Code No.: —

Weather: Foggy 55° | Sampling Time: Begin _____ End 9:10

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	47.65
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin _____ end _____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer PDB

Field Parameters

Color	Clear
Odor	Slight
Appearance	Clear
pH (s.u.)	6.07
Conductivity (mS/cm)	0.826
(µmhos/cm)	
Turbidity (NTU)	13.1
Temperature (°C)	11.3
Dissolved Oxygen (mg/L)	4.15
ORP	-1
Sampling Method	Bailer PDB

Remarks: 2" bailer gets Stuck about 7' down well *use 1" bailer*

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel: ~~DD/TM~~ KA/Crew

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/19/07

Site/Well No.: LW-18 | Replicate No.: — | Code No.: —

Weather: Sun 70° | Sampling Time: Begin: — | End: 1340

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	11.68
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer / PDB

Field Parameters

Color	Lt Brown
Odor	none
Appearance	Cloudy
pH (s.u.)	6.28
Conductivity (mS/cm)	0.434
(µmhos/cm)	
Turbidity (NTU)	240.0
Temperature (°C)	15.7
Dissolved Oxygen (mg/L)	7.41
ORP	144
Sampling Method	Bailer / PDB
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel: ~~DDTM~~ KA / Fran

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

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Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/19/07
Site/Well No.	MW-16S	Replicate No.	—	Code No.	—
Weather	Sun 75°	Sampling Time: Begin	—	End	1322

Evacuation Data

Measuring Point	Top of Casing Pipe
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	9.76
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer / PDB

Field Parameters

Color	Cloudy white
Odor	Slight
Appearance	tiny silt + tiny white bugs
pH (s.u.)	6.32
Conductivity (mS/cm)	0.424
(µmhos/cm)	
Turbidity (NTU)	155.2
Temperature (°C)	15.0
Dissolved Oxygen (mg/L)	3.00
ORP	102
Sampling Method	Bailer / PDB
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel ~~DD/TM~~ KA / FCW

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS

Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/17/07
Site/Well No.	PW-5	Replicate No.	—	Code No.	—
Weather	Sun	Sampling Time: Begin	—	End	1405

Evacuation Data

Measuring Point	Top of PVC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	0.6
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	2" Disposable poly bailer / POB

Field Parameters

Color	Clear
Odor	None
Appearance	Slight - cloudy
pH (s.u.)	7.73
Conductivity (mS/cm)	0.297
(µmhos/cm)	
Turbidity (NTU)	16.7
Temperature (°C)	16.9
Dissolved Oxygen (mg/L)	6.12
ORP	103
Sampling Method	Bailer / POB
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL
TOC		1	H_2SO_4
Methane, Ethene, Ethane		2	

Sampling Personnel: DD/TM

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/19/07

Site/Well No.: IW-2 | Replicate No.: — | Code No.: —

Weather: Sun 80° | Sampling Time: Begin: — | End: 1500

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	—
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Brown
Odor	Strong
Appearance	Brown
pH (s.u.)	5.71
Conductivity (mS/cm)	1.08
(µmhos/cm)	
Turbidity (NTU)	177.0
Temperature (°C)	11.6
Dissolved Oxygen (mg/L)	14.02
ORP	-37
Sampling Method	Bailer
Remarks	

Constituents Sampled	Container Description	Number	Preservative
~~8021 VOLATILES~~	~~40 ML VOA VIALS~~	6	~~HCl~~
TOC		1	H_2SO_4
Bromide		1	—

Sampling Personnel: ~~DD/TM~~ KAL

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS

Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/19/07

Site/Well No.: IW-3 | Replicate No.: — | Code No.: —

Weather: Sun 75 | Sampling Time: Begin: — | End: 1520

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	—
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Brown
Odor	Strong
Appearance	Brown
pH (s.u.)	5.50
Conductivity (mS/cm)	0.802
(µmhos/cm)	
Turbidity (NTU)	170.0
Temperature (°C)	11.5
Dissolved Oxygen (mg/L)	3.21
ORP	7.0
Sampling Method	Bailer
Remarks	

Constituents Sampled	Container Description	Number	Preservative
~~8021 VOLATILES~~	~~40 ML VOA VIALS~~	3	~~HCL~~
TOC		1	H_2SO_4

Sampling Personnel: ~~DD/TM~~ KA

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/19/07

Site/Well No.: IW-13 | Replicate No.: — | Code No.: —

Weather: SW 70° | Sampling Time: Begin _____ End 1600

Evacuation Data

Measuring Point	
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	
Water-Level Elevation (ft)	
Water Column in Well (ft)	
Casing Diameter/Type	2"
Gallons in Well	
Gallons Pumped/Bailed Prior to Sampling	
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin _____ end _____
Pumping Rate (gpm)	
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Cloudy & Brown/grey
Odor	Sl Mod - to Strong
Appearance	cloudy
pH (s.u.)	5.98
Conductivity (mS/cm)	0.510
(µmhos/cm)	
Turbidity (NTU)	273.0
Temperature (°C)	13.0
Dissolved Oxygen (mg/L)	3.21
ORP	-26
Sampling Method	Bailer
Remarks	Very little water Bailer was hitting the Bottom

Constituents Sampled	Container Description	Number	Preservative
~~8021 VOLATILES~~	~~40 ML VOA~~ VIALS		HCL
TOC		1	H_2SO_4

Sampling Personnel: ~~DB/TM~~ KA

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

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Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/20/07
Site/Well No.	IW-8	Replicate No.	—	Code No.	—
Weather	SW 70°	Sampling Time: Begin	—	End	0944

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	—
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	2"
Gallons in Well	—
Gallons Pumped/Bailed Prior to Sampling	—
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ____ end ____
Pumping Rate (gpm)	—
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	Brown
Odor	Strong
Appearance	Brown
pH (s.u.)	4.40
Conductivity (mS/cm)	1.64
(µmhos/cm)	
Turbidity (NTU)	770.0
Temperature (°C)	11.2
Dissolved Oxygen (mg/L)	2.63
ORP	82
Sampling Method	Bailer

Remarks: pulled 1st Bailer
well ran dry after that
will let recharge overnight
Bailer seems to get stuck on something
get heavy comes up empty.

Constituents Sampled	Container Description	Number	Preservative
~~8021 VOLATILES~~	40 ~~ML VOA VIALS~~	0	~~HCl~~
TOC		1	H_2SO_4
Bromide		1	

Bailer was with the Bottom

Sampling Personnel: DD/TM

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units

ARCADIS

Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/20/07

Site/Well No.: GM PW-5 | Replicate No.: — | Code No.: —

Weather: Sun 75 | Sampling Time: Begin _____ End 11:30

Evacuation Data

Measuring Point _____

MP Elevation (ft) _____

Land Surface Elevation (ft) _____

Sounded Well Depth (ft bmp) _____

Depth to Water (ft bmp) _____

Water-Level Elevation (ft) _____

Water Column in Well (ft) _____

Casing Diameter/Type 2"

Gallons in Well _____

Gallons Pumped/Bailed Prior to Sampling _____

Sample Pump Intake Setting (ft bmp) _____

Purge Time begin _____ end _____

Pumping Rate (gpm) _____

Evacuation Method ~~2" Disposable poly bailer~~ System

Field Parameters

Color _____

Odor _____

Appearance _____

pH (s.u.) 6.92

Conductivity (mS/cm) _____

(µmhos/cm) _____

Turbidity (NTU) _____

Temperature (°C) _____

Dissolved Oxygen (mg/L) _____

ORP _____

Sampling Method ~~Bailer~~ System

Remarks _____

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	~~40 ML VOA~~ VIALS	3	HCL
Total IRON		1	HNO3

Sampling Personnel ~~DD/TM~~ DM/KA/Brian

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

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Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/20/07

Site/Well No.: GMPW-4 | Replicate No.: — | Code No.: —

Weather: Sun 75 | Sampling Time: Begin _____ End 1140

Evacuation Data

Measuring Point

MP Elevation (ft)

Land Surface Elevation (ft)

Sounded Well Depth (ft bmp)

Depth to Water (ft bmp)

Water-Level Elevation (ft)

Water Column in Well (ft)

Casing Diameter/Type 2"

Gallons in Well

Gallons Pumped/Bailed Prior to Sampling

Sample Pump Intake Setting (ft bmp)

Purge Time begin _____ end _____

Pumping Rate (gpm)

Evacuation Method ~~2" Disposable poly bailer~~ System

Field Parameters

Color

Odor

Appearance

pH (s.u.) 6.04

Conductivity (mS/cm)

(µmhos/cm)

Turbidity (NTU)

Temperature (°C)

Dissolved Oxygen (mg/L)

ORP

Sampling Method ~~Bailer~~ System

Remarks

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL
Total Iron		1	HNO3

Sampling Personnel ~~DD/TM~~ DM / Bruce / KA

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS

Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/20/07
Site/Well No.	GMPW-3	Replicate No.	—	Code No.	9/20/07
Weather	SW 75°	Sampling Time: Begin		End	11:35

Evacuation Data

Measuring Point	
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	
Water-Level Elevation (ft)	
Water Column in Well (ft)	
Casing Diameter/Type	2"
Gallons in Well	
Gallons Pumped/Bailed Prior to Sampling	
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	~~2" Disposable poly bailer~~ System

Field Parameters

Color	
Odor	
Appearance	
pH (s.u.)	5.82
Conductivity (mS/cm)	
(µmhos/cm)	
Turbidity (NTU)	
Temperature (°C)	
Dissolved Oxygen (mg/L)	
ORP	
Sampling Method	~~Bailer~~ System
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL
Total IRON		1	HNO3

Sampling Personnel ~~DD/TM~~ DM | Bruce | EA

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS

Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/20/07
Site/Well No.	Combined Effluent	Replicate No.	—	Code No.	—
Weather	Sun 75	Sampling Time: Begin		End	1145

Evacuation Data

Measuring Point

MP Elevation (ft)

Land Surface Elevation (ft)

Sounded Well Depth (ft bmp)

Depth to Water (ft bmp)

Water-Level Elevation (ft)

Water Column in Well (ft)

Casing Diameter/Type 2"

Gallons in Well

Gallons Pumped/Bailed Prior to Sampling

Sample Pump Intake Setting (ft bmp)

Purge Time begin _____ end _____

Pumping Rate (gpm)

Evacuation Method ~~2" Disposable poly bailer~~ System

Field Parameters

Color —

Odor —

Appearance —

pH (s.u.) —

Conductivity (mS/cm) —

(µmhos/cm) —

Turbidity (NTU) —

Temperature (°C) —

Dissolved Oxygen (mg/L) —

ORP —

Sampling Method ~~Bailer~~ System

Remarks

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL
Total Iron		1	HNO3

Sampling Personnel ~~DB/TM~~ KA/DM/Bruce

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS

Water Sampling Log

Project: Colesville Landfill | Project No.: NY000949.0020 | Page 1 of 1

Site Location: Harpursville, NY | Date: 9/20/07

Site/Well No.: Effluent water | Replicate No.: — | Code No.: —

Weather: Sun 75° | Sampling Time: Begin _____ End 1315

Evacuation Data

Measuring Point	
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	
Water-Level Elevation (ft)	
Water Column in Well (ft)	
Casing Diameter/Type	2"
Gallons in Well	
Gallons Pumped/Bailed Prior to Sampling	
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin _____ end _____
Pumping Rate (gpm)	
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	
Odor	
Appearance	
pH (s.u.)	
Conductivity (mS/cm)	
(µmhos/cm)	
Turbidity (NTU)	
Temperature (°C)	
Dissolved Oxygen (mg/L)	
ORP	
Sampling Method	Bailer
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL
Total IRON		1	HNO3

Sampling Personnel: ~~BD/TM~~ Bruce DM/KA

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS

Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/20/07
Site/Well No.	SP-4	Replicate No.	—	Code No.	—
Weather	Sun 80	Sampling Time: Begin		End	1410

Evacuation Data

Measuring Point	
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	
Water-Level Elevation (ft)	
Water Column in Well (ft)	
Casing Diameter/Type	2"
Gallons in Well	
Gallons Pumped/Bailed Prior to Sampling	
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	~~2" Disposable poly~~ bailer Direct

Field Parameters

Color	Clear
Odor	none
Appearance	Clear
pH (s.u.)	7.12
Conductivity (mS/cm)	0.210
(µmhos/cm)	
Turbidity (NTU)	1.9
Temperature (°C)	15.7
Dissolved Oxygen (mg/L)	10.89
ORP	51
Sampling Method	~~Bailer~~ Direct grab
Remarks	

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	3	HCL

Sampling Personnel ~~RD/TM~~ KA/OM/BL

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

ARCADIS

Water Sampling Log

Project	Colesville Landfill	Project No.	NY000949.0020	Page	1 of 1
Site Location	Harpursville, NY			Date	9/20/07
Site/Well No.	SP-5	Replicate No.	—	Code No.	
Weather	Sun 80	Sampling Time: Begin		End	—

Evacuation Data

Measuring Point	
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	
Depth to Water (ft bmp)	
Water-Level Elevation (ft)	
Water Column in Well (ft)	
Casing Diameter/Type	2"
Gallons in Well	
Gallons Pumped/Bailed Prior to Sampling	
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin ____ end ____
Pumping Rate (gpm)	
Evacuation Method	2" Disposable poly bailer

Field Parameters

Color	
Odor	
Appearance	
pH (s.u.)	
Conductivity (mS/cm)	
(µmhos/cm)	
Turbidity (NTU)	
Temperature (°C)	
Dissolved Oxygen (mg/L)	
ORP	
Sampling Method	~~Bailer~~
Remarks	Did Not Sample

Constituents Sampled	Container Description	Number	Preservative
8021 VOLATILES	40 ML VOA VIALS	6	HCL

Sampling Personnel ~~BD/TM~~ KA/DM/BL

Well Casing Volumes

Gal./Ft.				
	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds

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Appendix B

New York State Department of Environmental Conservation DAR-1 Air Modeling Data

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Table B-1. NYSDEC DAR-1 Air Modeling Data, Operational Year 5, Quarter Number 4, Colesville Landfill, Broome County, New York.

Parameters for 9/20/2007 Sampling Event				
Discharge Temperature		T	515	°R
Ambient Temperature		Ta	539	°R
Stack Diameter		D	6	in
Stack Radius		R	0.25	ft
Stack Area		A	0.20	ft^2
Exit Velocity		V	17.3	fps
Exit Flow		Q	203	acfm
Exit Flow		Q	208	scfm
Stack Height		h_s	17	ft
Building Height		h_b	13.25	ft
Ratio of Heights		h_s/h_b	1.28	
Plume rise credit? $h_s/h_b > 1.5$?		(If no, $h_e=h_s$)	(If Yes, $h_e = h_s + 1.1 (F_m)^{1/3}$)	
Momentum Flux	Fm = Ta/T * V2 * R2		n/a	ft^4/s^2
Effective Stack Height		h_e	17.0	ft
Reduction Factor? $2.5 > h_s/h_b > 1.5$?			No, do not reduce impact	
Actual Annual Impact		C_a	$RF*6*Q_a/h_e^{2.25}$	
Mass Flow		Q_a	S lbs emitted for last 12 months	

fps: feet per second
acfm: actual cubic feet per minute
ug/m^3: micrograms per cubic meter
lb/yr: pounds per year
lb/hr: pounds per hour
ppb: parts per billion

Notes/Assumptions:

1. The stack discharge temperature is 55°F based on recorded parameters.
2. The ambient temperature is approximately 79°F based on recorded conditions.
3. Calculations assume that the system will run with the maximum allowable concentrations between quarterly readings.
4. AGC refers to the Annual Guideline Concentration as determined using the hand calculations in the DAR-1 AGC/SGC Tables dated December 22, 2003.
5. To be conservative the lower detection limit was used for compounds that were below the limit of detection, but are found in the influent groundwater of the Groundwater Remediation System.

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Table B-2. NYSDEC DAR-1 Air Modeling Data, Operational Year 5, Quarter Number 4, Colesville Landfill, Broome County, New York.

Calculation of AGC based on 9/20/2007 Sampling Event

Compounds	CAS Numbers	Maximum Limit on C_a (AGC[4]) ug/m^3	Maximum Mass Flow Q_a lb/yr	Lab Data ppb	Detection Limit Used[5]	Actual Emissions C_a ug/m^3	Actual Mass Flow per Hour lb/hr	Actual Mass Flow per Year lb/yr	**Percent of Annual** %
Vinyl Chloride	75-01-4	0.11	10.76	7.3	*	18.97	1.48E-05	0.12647	**1.18**
Chloroethane(Ethyl Chloride)	75-00-3	10,000	978,044.97	7.3	*	19.58	1.53E-05	0.13056	**0.00**
1,1-Dichloroethene(Vinylidene Chloride)	75-35-4	70	6,846.31	7.3	*	29.42	2.30E-05	0.19619	**0.00**
Methylene Chloride(Dichloromethane)	75-09-2	2.1	205.39	7.3	*	25.78	2.01E-05	0.17188	**0.08**
1,1-Dichloroethane	75-34-3	0.63	61.62	7.3	*	30.03	2.34E-05	0.20027	**0.33**
cis-1,2-Dichloroethylene	156-59-2	1,900	185,828.54	7.3	*	29.42	2.30E-05	0.19619	**0.00**
1,1,1-Trichloroethane(Methyl Chloroform)	71-55-6	1,000	97,804.50	7.3	*	40.49	3.16E-05	0.26999	**0.00**
Trichloroethene	79-01-6	0.5	48.90	7.3	*	39.88	3.11E-05	0.26590	**0.54**
m,p-Xylene	108-38-3/106-42-3	700	68,463.15	7.3	*	31.60	2.47E-05	0.21074	**0.00**
Dichlorodifluoromethane(Freon 12)	75-71-8	12,000	1,173,653.96	7.3	*	18.24	1.42E-05	0.12162	**0.00**

fps: feet per second
acfm: actual cubic feet per minute
ug/m^3: micrograms per cubic meter
lb/yr: pounds per year
lb/hr: pounds per hour
ppb: parts per billion

Notes/Assumptions:

1. The stack discharge temperature is 55°F based on recorded parameters.
2. The ambient temperature is approximately 79°F based on recorded conditions.
3. Calculations assume that the system will run with the maximum allowable concentrations between quarterly readings.
4. AGC refers to the Annual Guideline Concentration as determined using the hand calculations in the DAR-1 AGC/SGC Tables dated December 22, 2003.
5. To be conservative the lower detection limit was used for compounds that were below the limit of detection, but are found in the influent groundwater of the Groundwater Remediation System.

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Appendix C

Automated Reagent Injection System
Operating Parameters

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Table C-1. Automated Reagent Injection System Summary of Operational Year 5, Quarter Number 4 Injection Quantities, Groundwater Remediation System, Colesville Landfill, Broome County, New York.

Summary of Automated Reagant Injections

Date	Total Quantity of Molasses Solution Injected (gal.)	Total Quantity of Molasses Injected (gal.)	Total Quantity of Rinse Water Injected (gal.)
7/12/2008	13,705	157	137
Quarter Totals (gal.) =	**13,705**	**157**	**137**
Totals For Operational Year 5 (gal.) =	**27,411**	**305**	**285**
Totals Since Startup (gal.) =	**130,931**	**8,586**	**7,966**

Notes:

gal. Gallons

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Table C-2. Automated Reagent Injection System, Operational Year 5, Quarter Number 4 Operating Parameters, Groundwater Remediation System, Colesville Landfill, Broome County, New York.

Injection Number 55

Injection Start Date = 6/20/2007
Injection Completion Date = 7/12/2008

Molasses to Water Ratio (%) = 1.0 Programmed Mixing Time (min.)[1] = 60

Injection Well ID	Molasses Solution Injection Quantity (gal.)	Rinse[2] Quantity (gal.)	Raw Molasses Per Well (gal.)	Min. Injection[3] Flowrate (gpm)	Max. Injection Pressure (psi)
PW-6	530	5	5.3	NM	28
IW-3	530	5	5.3	NM	28
IW-1	210	4	2.1	NM	29
IW-2	210	3	2.1	NM	28
GMMW-1	140	3	1.4	NM	7
IW-4	989	4	9.9	NM	29
IW-5	989	5	9.9	NM	29
IW-6	989	7	9.9	NM	30
IW-7	989	8	9.9	NM	29
IW-8[4]	0	9	0.0	NM	0
IW-9	1,230	11	12.3	NM	32
IW-10	1,230	12	12.3	NM	29
IW-11	1,230	13	12.3	NM	29
IW-12	1,230	15	12.3	NM	29
IW-13	1,230	16	12.3	NM	30
IW-14	989	18	9.9	NM	29
IW-15	989	19	9.9	NM	39
Totals (gal.) =	13,705	157	137.1	NA	NA

Notes:

gal.	Gallons.
min.	Minutes.
i.w.c.	Inches of water column.
psi	Pounds per square inch.
gpm	Gallons per minute.
NA	Not applicable.
NM	Not measured.
1.	Programmed mixing time is calculated from the expiration time of the molasses injection countdown timer to the startup of transfer pump TP-900 during an injection sequence or from the end of transfer pump TP-600 operation to the restart of an injection during a mixing sequence.
2.	Rinse quantity is approximately 1-pipeline volume for each injection well.
3.	Parameter not measured due to SCADA system malfunction.
4.	Injection not conducted into IW-8 for ongoing Alternate Electron Donor Pilot test evaluation.

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Appendix D

Degradation Trend Figures

Figure D-1. Concentrations of PCE Daughter Products Versus Time in GMMW-5

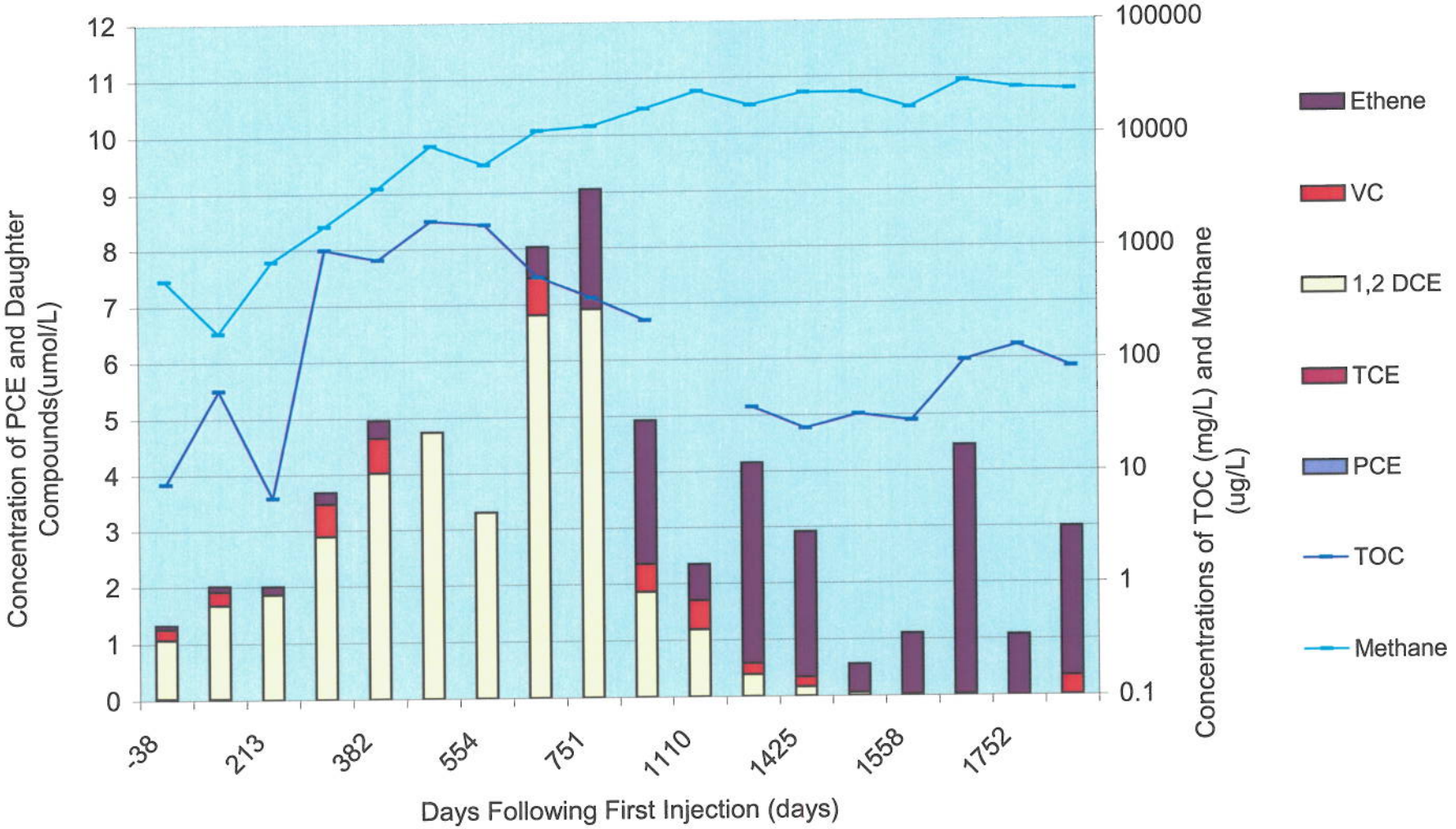

Figure D-2. Concentrations of PCE Daughter Products Versus Time in GMMW-6

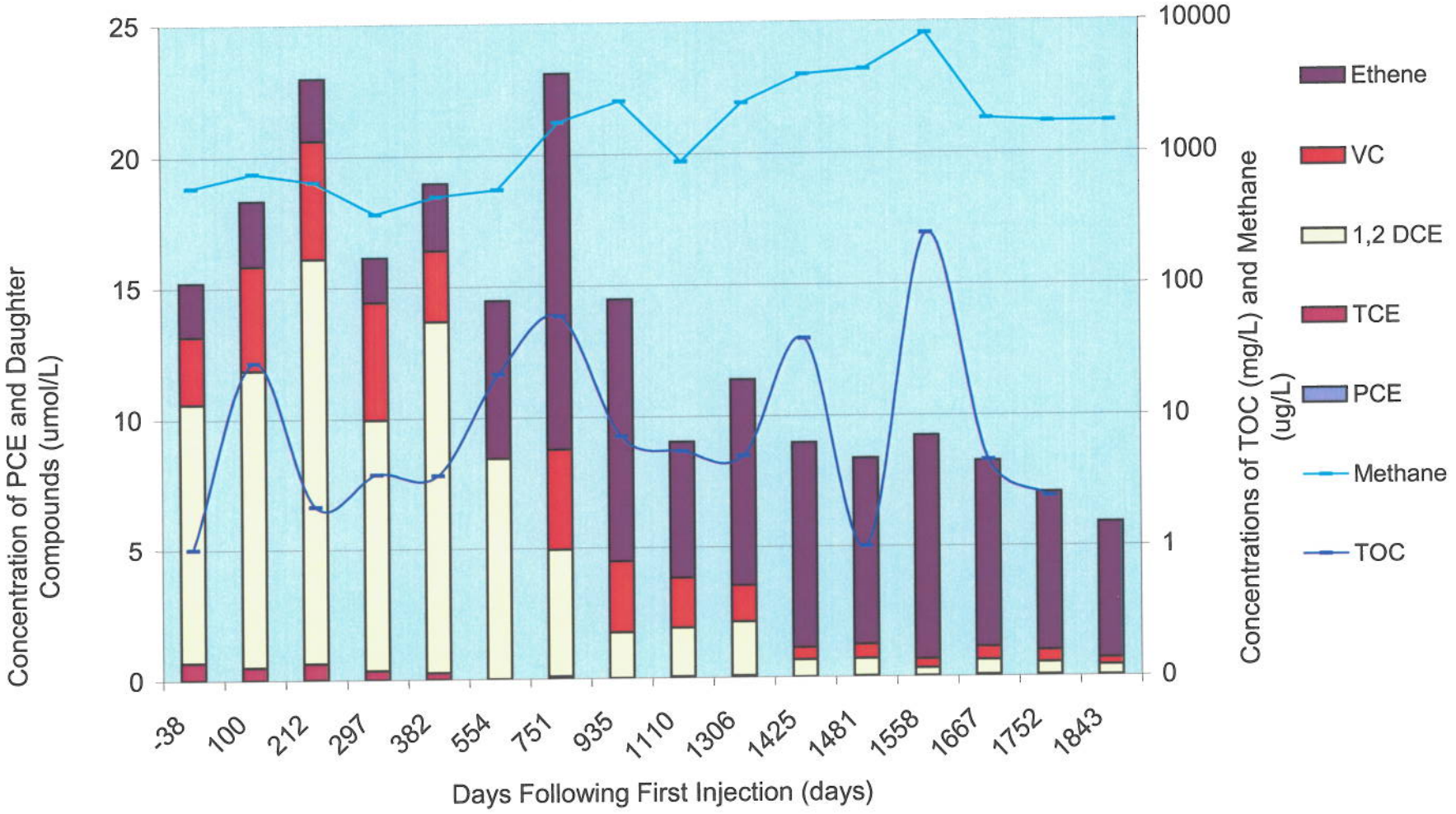

Figure D-3. Concentrations of PCE Daughter Products Versus Time in GMMW-02

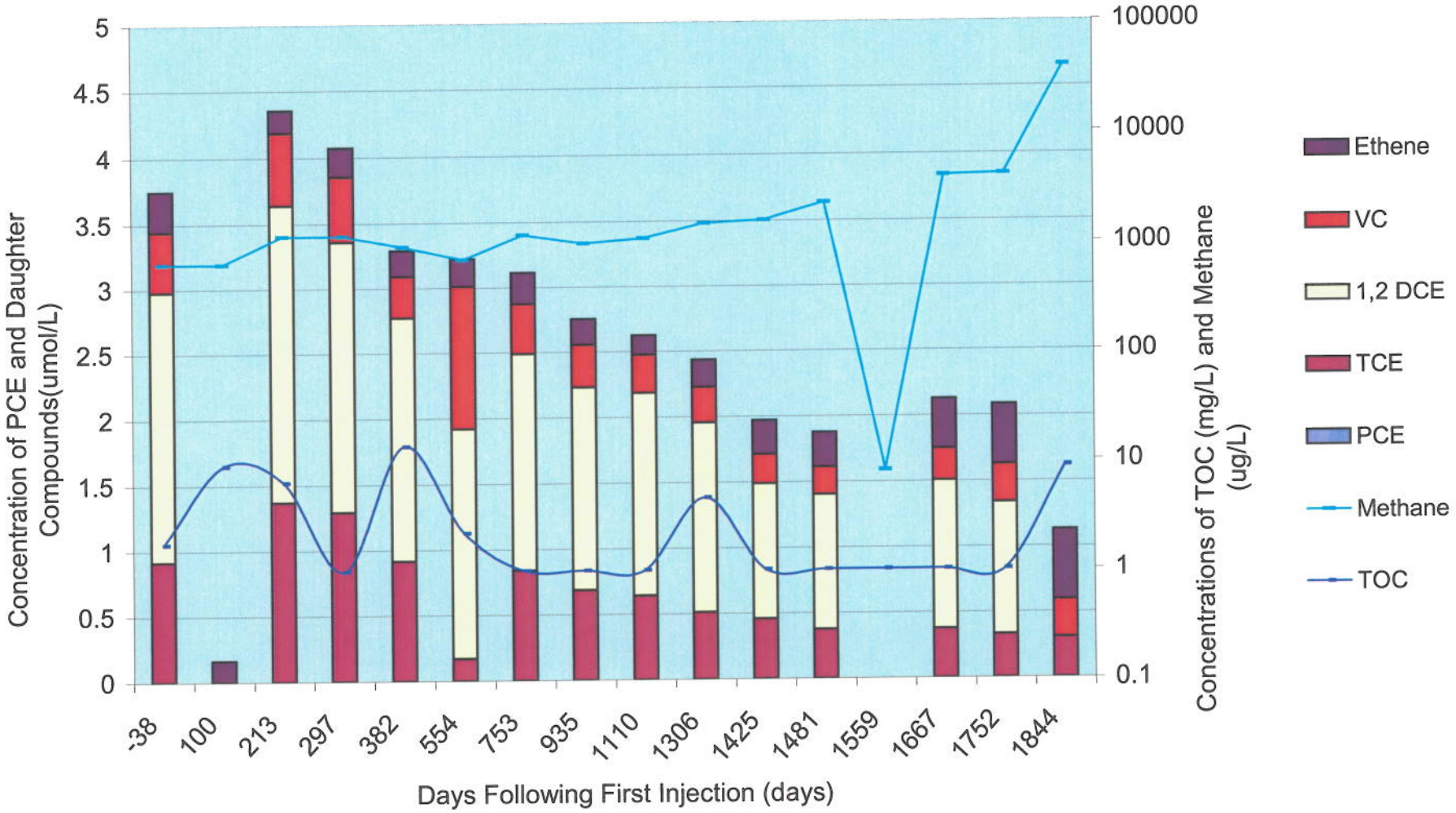

Figure D-4. Concentrations of PCE Daughter Products Versus Time in W-05