SECOND QUARTER 2016 RAP REPORT

Old Bethpage
Solid Waste Disposal Complex
Groundwater Treatment Facility

TOWN OF OYSTER BAY

DEPARTMENT OF PUBLIC WORKS
SYOSSET, NEW YORK 11791

September 2016

LOCKWOOD
KESSLER &
BARTLETT, INC.
SYOSSET, NEW YORK 11791

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

B. Figure 2-1 and Tables 4.1 and 4.3 from "Town of Oyster Bay, Old Bethpage Solid Waste Disposal Complex, Ambient Air Quality Survey and Soil Gas Quality Survey, 2016 Second Quarter Report" RTP Environmental Associates, Inc., September 2016; and Table 2-1 from "Town of Oyster Bay, Old Bethpage Solid Waste Disposal Complex, Perimeter Landfill Gas Exhaust Vent Stack Test, 2016 Emissions Report", RTP Environmental Associates, Inc., August 2016.

1.0 INTRODUCTION

This document is the Old Bethpage Landfill (Landfill) Remedial Action Plan (RAP) Report for the second calendar quarter of 2016. This RAP Report was prepared on behalf of the Town of Oyster Bay (Town) by Lockwood, Kessler & Bartlett, Inc. (LKB). It is submitted to the New York State Department of Environmental Conservation (NYSDEC) pursuant to Consent Decree 83 Civ. 5357, Appendix A (OBSWDC Remedial Action Plan), Section D (Reporting), Subsection b (Operating Period), which requires the Town to submit the following information quarterly:

- Pumpage records.
- Treatment system air and water discharge data.
- Treatment system performance records.
- Data analysis (trends, position of plume, etc.).
- Modifications to system, including method and dates of approval.
- Ground water-quality monitoring data.
- Water-level data.
- Potentiometric surface maps, as revised.
- Records of all system downtime.

This information is summarized and evaluated in Sections 2.0 and 3.0 below, supported by figures and/or tables as appropriate. Conclusions and recommendations based on this quarter's findings are provided in Section 4.0. Operating records, self-monitoring data and monitoring reports are archived by the Town per Consent Decree requirements. Copies of selected figures and tables from the ground water- and air-monitoring consultants' quarterly reports are provided in Appendices A and B, respectively, and referenced below where appropriate.

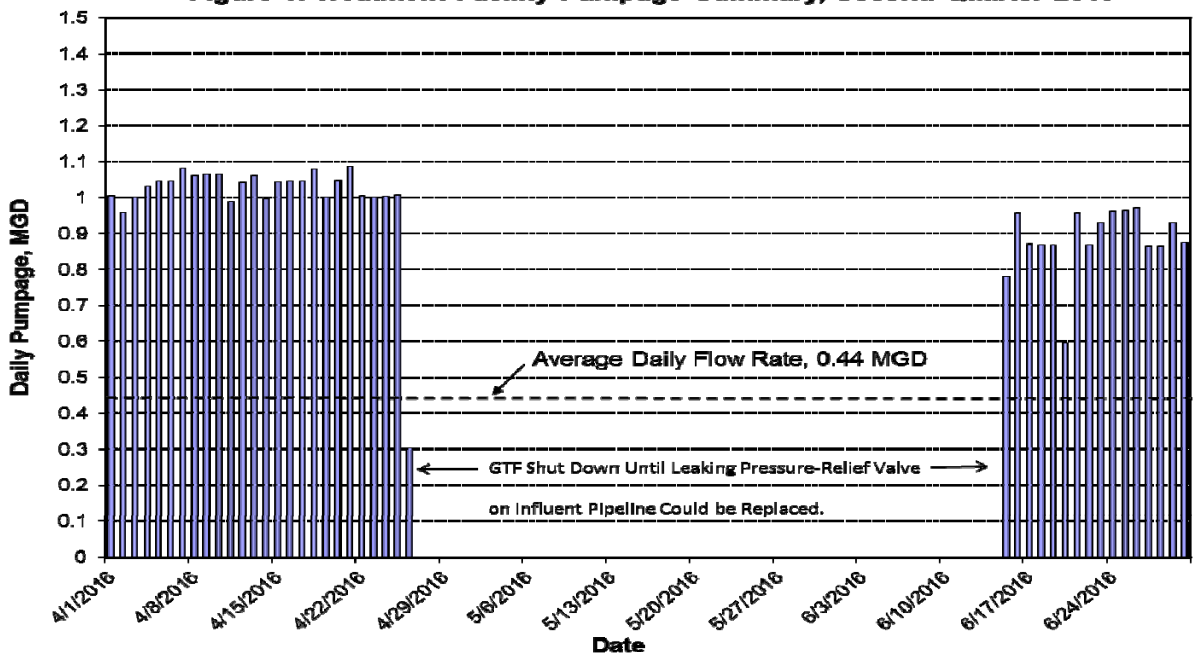
In a letter dated March 24, 2016, the NYSDEC approved the Town's request to reduce the frequency of ambient-air and soil-gas monitoring from quarterly to annually. Accordingly, the second quarter round will serve as the annual round for 2016. The next round of ambient-air and soil-gas monitoring will be performed during the third quarter of 2017. In that letter, the NYSDEC also required the Town to begin monitoring volatile organic compound (VOC) concentrations in the landfill gas collection system exhaust annually. The first annual round of this monitoring was performed this quarter, and the results are included in this report.

2.0 STATUS OF GROUND-WATER REMEDIATION

2.1 Ground Water-Treatment Facility Operation

The ground water-treatment facility (GTF) was on-line only 45% of the time this quarter, based on 981 hours of operation out of a possible 2,184 hours (i.e., 24 hours per day for 91 days). Moreover, one or two recovery wells were typically off-line each day that the facility operated. The facility pumpage records for this quarter are summarized in Figure 1 on the following page.

Figure 1. Treatment Facility Pumpage Summary, Second Quarter 2016



As shown in Figure 1, the average pumping rate was 0.44 Million Gallons per Day (MGD). When the GTF was in operation, the flow rate was approximately 0.9 to 1.0 MGD. The other key information regarding facility operation this quarter is summarized below:

- The GTF was off-line from April 26th through June 15th. It was shut down on April 26th because a leak was discovered in the pressure-relief valve on the influent pipeline connecting the recovery wells to the GTF. It was restarted on June 15th, after a new valve, which is a made-to-order item, was manufactured and installed.
- Recovery Well RW-3 was on-line 17 of 91 days this quarter, and continued to be operated on an approximately alternating basis with Recovery Wells RW-1 and RW-2.
- Recovery Wells RW-4 and RW-5 were on-line 42 of 91 days this quarter.
- Only three recovery wells were operated at a time to prevent "high water" alarms from occurring and triggering a shut-down of the facility. This was necessary because the air stripper pumps appear to no longer be able to keep up with the influent flow when more than three recovery wells are in continuous operation. (Postscript: In July 2016, the Town's on-call contractor investigated this issue and determined that air stripper pump flow was being restricted by a partially-clogged screen on the air stripper inlet pipeline. The screen was cleaned on July 15, 2016, which restored the air stripper pump flow rate. Since then, all five recovery wells can be operated simultaneously.)
- The pressure drop across the air stripper media was acceptably low, and averaged 5.60 inches of water this quarter.

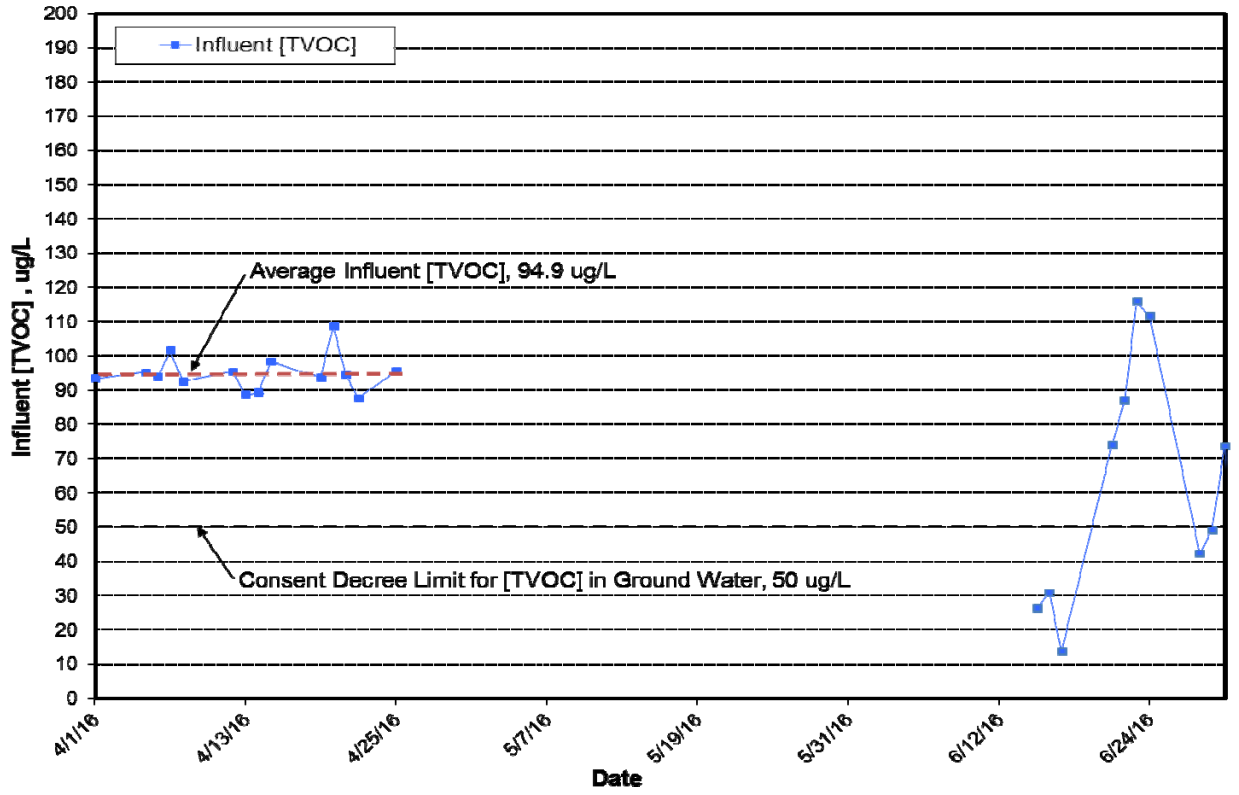
2.2 Ground Water-Treatment Facility Monitoring

The O&M Manual (Operation and Maintenance Manual) for the facility specifies that during normal operation, samples of the facility influent and effluent are to be collected three times per week and analyzed for VOCs at the on-site laboratory. This quarter, monitoring continued to be performed three to four times per week when the GTF was in operation. The facility influent and effluent were also tested approximately weekly on-site for pH, iron, manganese, dissolved oxygen, ammonia and chloride when the GTF was in operation. A total of six weekly influent/effluent samples were collected and analyzed for these other parameters this quarter.

Monthly samples of influent and effluent were also sent to an outside laboratory for VOC (influent and effluent) and inorganic/leachate (effluent only) parameter analyses, per SPDES-permit equivalency requirements. This quarter, samples were collected in April and June only because the GTF was off-line during the entire month of May. These samples were sent to an outside laboratory because the permit equivalency-required analytes include parameters that the Town's laboratory is not certified for and does not perform.

The [TVOC] results for the influent samples collected this quarter are plotted in Figure 2 below:

Figure 2. Facility Influent [TVOC] and Trend, Second Quarter 2016



The key information indicated by Figure 2 is summarized below:

- Prior to shutting down the GTF on April 26th, influent [TVOC] were higher than the 50-micrograms per Liter (ug/L) Consent Decree limit for ground water. During this period, they ranged from 87.7 to 109 ug/L and averaged 94.9 ug/L. They also exhibited a slightly increasing trend. The trend line is not shown on Figure 1 because it obscures the [Average] line.
- After restarting the GTF on June 15th, influent [TVOC] exhibited a fluctuating but generally increasing pattern, which is attributed to the recovery well capture zone being re-established. During this period, influent [TVOC] ranged from 13.7 to 116 ug/L.

This quarter, 24 effluent samples were analyzed for VOCs at the on-site laboratory and all of them were non-detectable for VOCs. Effluent [TVOC] were therefore below the 100-ug/L Consent Decree limit for discharge. The laboratory's method detection limit for individual VOCs is 1.0 ug/L (0.5 ug/L for 1,2-dichloroethane, which has a standard/discharge limit of 0.6 ug/L), which is the same or lower than the Class GA standard and/or the SPDES permit equivalency discharge limit for each VOC. Therefore, the concentrations of individual VOCs in the effluent also met discharge requirements this quarter.

The effluent inorganic/leachate indicator parameter results for the six self-monitoring samples collected this quarter are summarized and compared to the TOGS 1.1.1 ground-water discharge limits in Table 1, which follows this page. The key information indicated on Table 1 is summarized below:

- The pH of the effluent was within the range-based limit of 6.5 - 8.5 Standard Units (SU) and averaged 7.22 SU.
- Effluent [iron] remained very low this quarter, and were much lower than the 0.6-milligrams per Liter (mg/L) discharge limit. The average effluent [iron] was 0.01 mg/L.
- Effluent [manganese] were also lower than the 0.6-mg/L discharge limit this quarter. The average effluent [manganese] was 0.28 mg/L.
- Effluent [iron and manganese] were lower than the 1.0-mg/L discharge limit, and averaged 0.29 mg/L.
- The [dissolved oxygen] of the effluent averaged 12.3 mg/L, indicating full aeration of the effluent.
- The effluent [ammonia] ranged from 4.40 to 6.08 mg/L, and averaged 5.23 mg/L.
- Effluent [chloride] ranged from 117 to 147 mg/L, and averaged 129 mg/L. These results are lower than the 500-mg/L discharge limit, which is based on the Federal SMCL.

The results of the two monthly SPDES Permit Equivalency samples analyzed by an independent certified laboratory this quarter are compared to the permit equivalency limits in Table 2, which also follows this page. Review of Table 2 indicates that the concentrations of every equivalency-required parameter were lower than its respective discharge limit in both samples. Based on these results, the effluent complied with these discharge requirements this quarter.

TABLE 1
SECOND QUARTER 2016
EFFLUENT INORGANIC PARAMETER SELF-MONITORING RESULTS

Parameter	Limit	Avg. Conc.	4/6/16	4/13/16	4/20/16	6/16/16	6/22/16	6/29/16
pH	6.5 - 8.5	7.22	7.30	7.22	7.32	7.12	7.12	7.24
Iron	0.6	0.01	0	0	0.01	0.01	0.01	0
Manganese	0.6	0.28	0.1	0.2	0.1	0.4	0.6	0.3
Iron and Manganese	1.0	0.29	0.10	0.20	0	0.41	0.61	0
Dissolved Oxygen	No Std.	12.3	11	11.6	14.9	11	14	11.2
Ammonia	No Std.	5.23	4.48	6.08	4.88	6.08	4.40	5.44
Chloride	500	129	123	117	147	127	125	138

Notes: Limits are ground water discharge limits in NYSDEC TOGS 1.1.1.
pH data are in standard units, other data are in mg/L.

TABLE 2
SECOND QUARTER 2016
SPDES EQUVIALENCY PERMIT SELF-MONITORING RESULTS

Parameter	Units	Limit	Effluent Result			
			Average	4/1/16	May 2016	6/16/16
Flow	MGD	1.5	1.09*	--	--	--
pH (range)**	SU	6.5 to 8.5	7.21	7.30	NM	7.12
Nitrogen, Total (as N)	mg/L	10	8.97	9.29	NM	8.65
Phenolics, Total Recoverable	µg/L	8	<5.0	<5.0	NM	<5.0
cis-1,2-Dichloroethene	µg/L	5	<0.5	<0.50	NM	<0.50
Trichloroethene	µg/L	5	<0.5	<0.50	NM	<0.50
Tetrachloroethene	µg/L	5	<0.5	<0.50	NM	<0.50
Chloride	mg/L	500	113	114	NM	111
Sulfate	mg/L	500	19.9	18.6	NM	21.1
Magnesium	mg/L	35	7.7	7.0	NM	8.3
Iron	mg/L	0.6	0.048	<0.020	NM	0.096
Manganese	mg/L	0.6	0.29	0.15	NM	0.43
Iron and Manganese	mg/L	1	0.338	0.150	NM	0.526
Zinc	mg/L	5	<0.020	<0.020	NM	<0.020
MTBE	µg/L	10	<0.5	<0.50	NM	<0.50
Total Dissolved Solids	mg/L	1,000	263	255	NM	271

Notes:

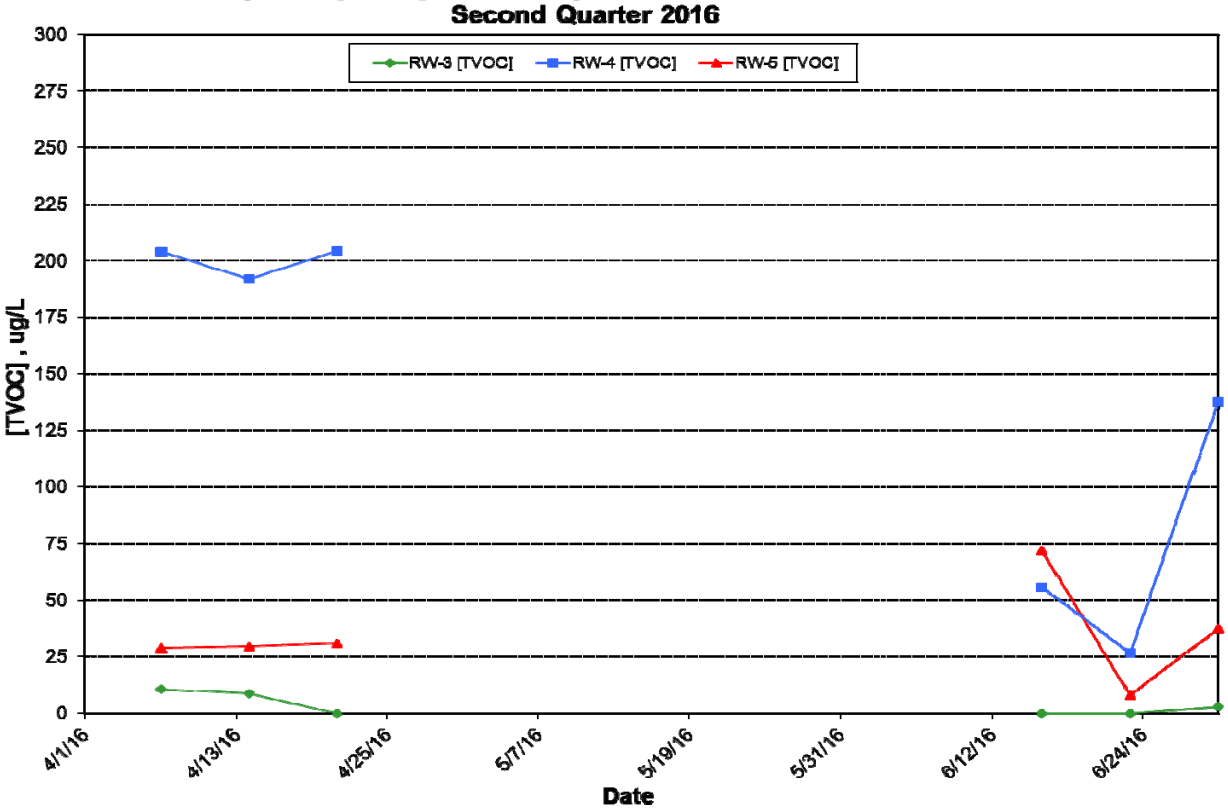
MGD = Million Gallons per Day.

SU = Standard Units.

* - Maximum daily flow recorded during second quarter 2016, average flow was 0.44 MGD.

Also in accordance with the O&M Plan for the facility, samples from each recovery well were collected on an approximately weekly basis when the GTF was in operation, and analyzed for VOCs at the on-site laboratory. VOCs were not detected in Recovery Wells RW-1 and RW-2 this quarter. VOCs were detected sporadically in Recovery Well RW-3, and on a regular basis in Recovery Wells RW-4 and RW-5. Therefore, the [TVOC] results for these three recovery wells are plotted in Figure 3 below. Since the GTF was shut down mid-quarter, and only three weekly samples were collected from each well at the beginning and end of the quarter, trends are not provided for these recovery wells this quarter.

Figure 3. [TVOC] in Recovery Wells RW-3, RW-4 and RW-5
Second Quarter 2016



As shown in Figure 3, prior to shutting down the GTF on April 26th, [TVOC] continued to be highest in Recovery Well RW-4, and much lower in Recovery Wells RW-3 and RW-5. [TVOC] in these three recovery wells were also relatively constant prior to the shut-down, and were in the range of 10 ug/L, 30 ug/L and 200 ug/L, respectively. After the GTF was restarted on June 15th, [TVOC] in Recovery Well RW-3 remained low, [TVOC] in Recovery Well RW-4 were initially lower but then began to increase, and [TVOC] in Recovery Well RW-5 appeared to decrease.

Three individual VOCs were detected at concentrations exceeding their 5-ug/L Class GA ground-water standard in at least one of these three recovery wells this quarter. Specifically, exceedances occurred for trichloroethene (TCE) in Recovery Wells RW-3, RW-4 and RW-5; tetrachloroethene (PCE) in Recovery Wells RW-4 and RW-5; and cis-1,2-dichloroethene (cis-1,2-DCE) in Recovery Well RW-4. The results for these three VOCs, in these three recovery wells, are plotted in Figures 4 through 6 on the following pages.

Figure 4. [TCE] in RW-3, RW-4 and RW-5, Second Quarter 2016

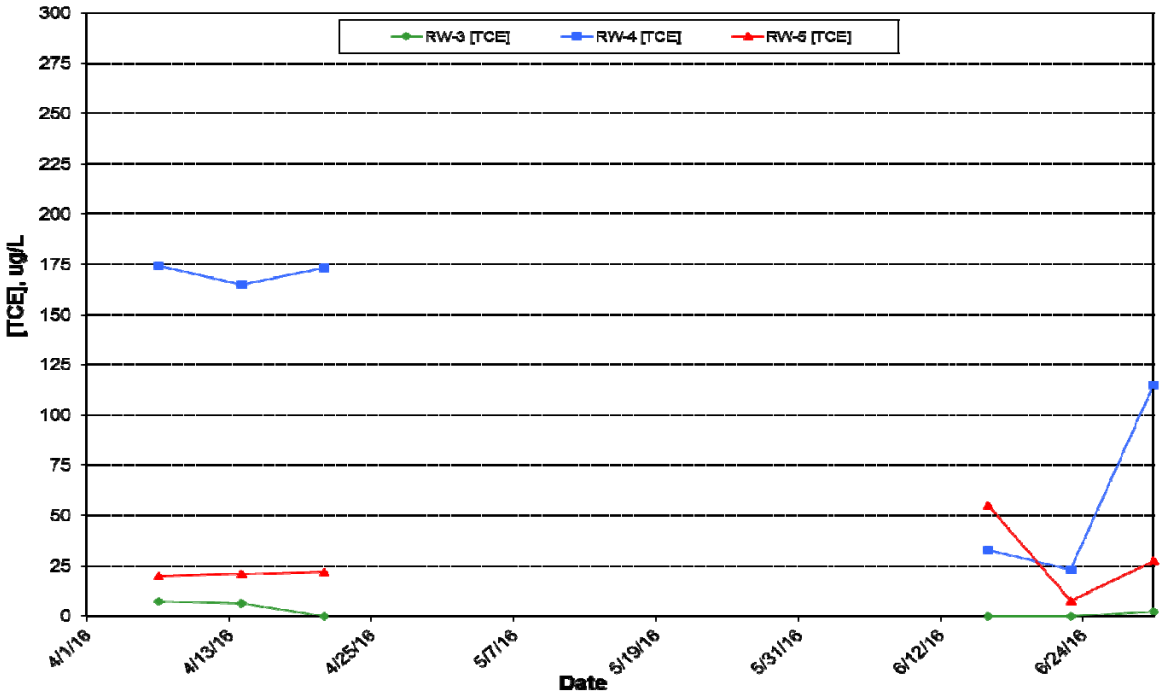
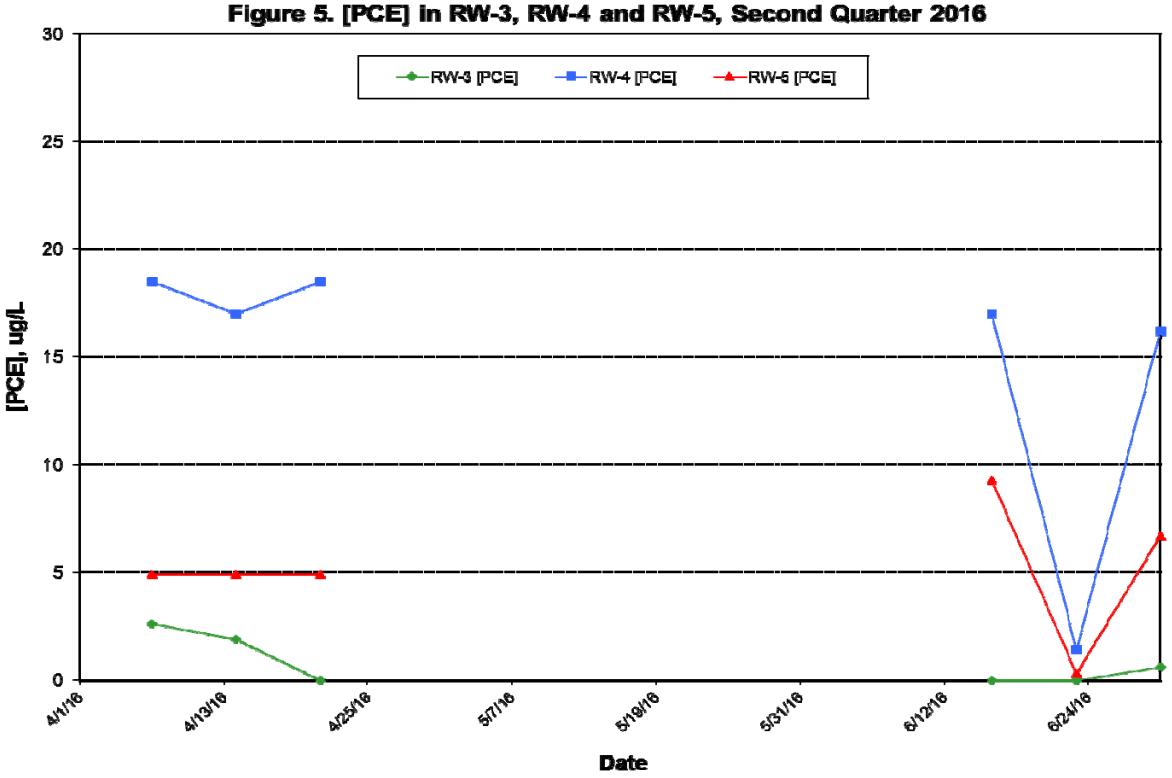


Figure 5. [PCE] in RW-3, RW-4 and RW-5, Second Quarter 2016

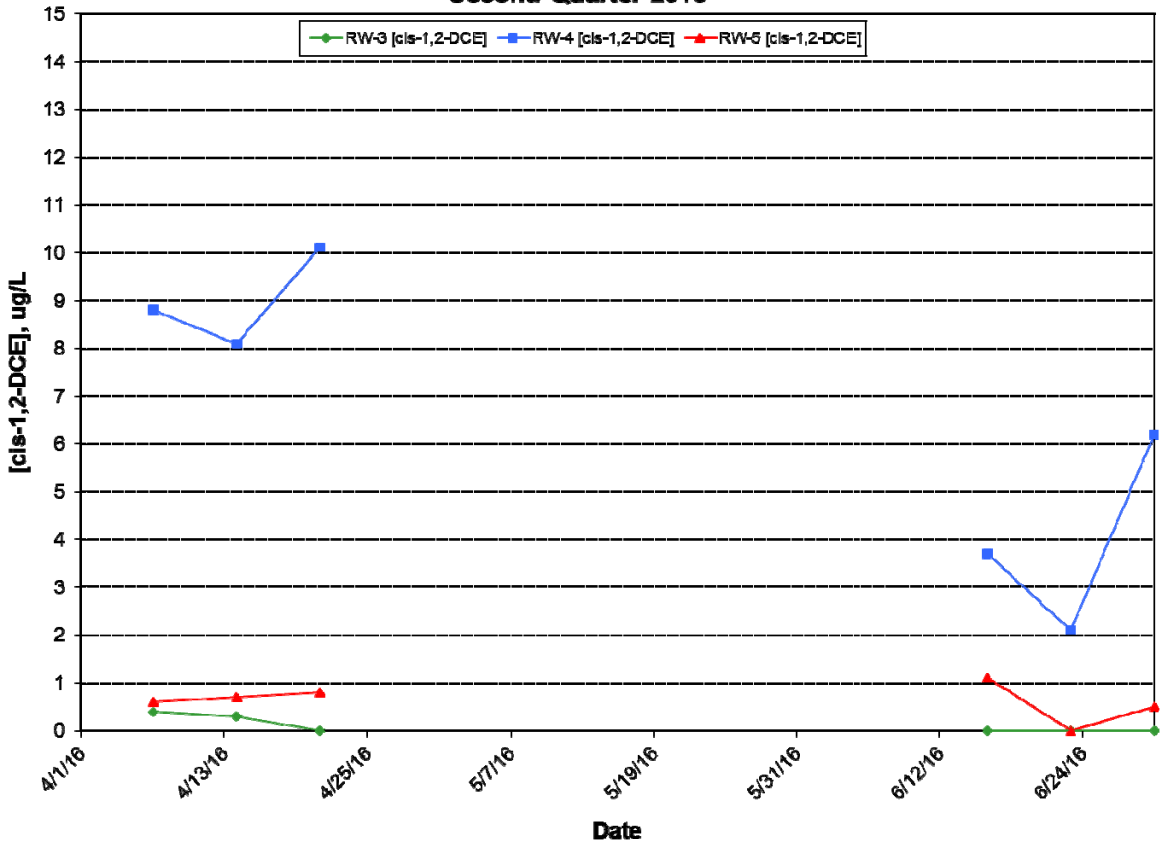


As shown in Figure 4 on the previous page, the [TCE] results for these three recovery wells are very similar to the [TVOC] results, which is expected since TCE accounts for most of the [TVOC] in them. Prior to shutting down the GTF on April 26th, [TCE] were also highest in Recovery Well RW-4, and much lower in Recovery Wells RW-3 and RW-5. [TCE] in these three recovery wells were also relatively constant prior to the shut-down, and were in the range of 5 ug/L, 20 ug/L and 170 ug/L, respectively. After the GTF was restarted on June 15th, [TCE] in Recovery Well RW-3 also remained low, [TVOC] in Recovery Well RW-4 were also initially lower but then began to increase, and [TVOC] in Recovery Well RW-5 appeared to decrease.

As shown in Figure 5 on the previous page, prior to shutting down the GTF on April 26th, [PCE] were also highest in Recovery Well RW-4 and much lower in Recovery Wells Recovery Wells RW-3 and RW-5. During this period, [PCE] in Recovery Wells RW-4 and RW-5 were relatively constant and in the 5 ug/L and 17 ug/L range, respectively. [PCE] in Recovery Well RW-3 decreased during this period. After the GTF was restarted on June 15th, [PCE] in these three recovery wells exhibited fluctuation attributed to the recovery well plume being re-established.

As shown in Figure 6 below, [cis-1,2-DCE] in Recovery Wells RW-3, RW-4 and RW-5 showed patterns similar to the other VOCs. Prior to shutting down the GTF, they were highest in Recovery Well RW-4 (around 9 ug/L) and much lower in Recovery Wells RW-3 and RW-5 (estimated at less than 1 ug/L). After the GTF was restarted, [cis-1,2-DCE] in Recovery Well RW-4 fluctuated, and [cis-1,2-DCE] in Recovery Wells RW-3 and RW-5 remained very low.

Figure 6. [cis-1,2-DCE] In RW-3, RW-4 and RW-5
Second Quarter 2016



Two other VOCs, specifically 1,1-dichloroethene (1,1-DCE) and 1,1,1-trichloroethane (1,1,1-TCA), were also detected in Recovery Wells RW-4 and RW-5 this quarter, but only sporadically and typically at concentrations lower than their 5-ug/L Class GA ground-water standards. Therefore, a figure for these results is not provided in this RAP Report.

To assess emissions from the air stripper stack, the average stack emission concentration of each VOC detected on a regular basis in the facility influent was calculated utilizing the data from the on-site laboratory and the pumpage data maintained by the Town. In Table 3, which follows this page, the results are compared to the stack emissions limits in Appendix A, Table 1 of the Consent Decree. As shown in Table 3, the average concentration of each VOC was lower than its stack discharge limit this quarter.

2.3 Ground Water-Quality Monitoring

The 2016 second quarter monitoring round was performed on May 25th, 26th and 27th, and entailed collecting samples from the 16 wells the Town is required to monitor. The samples were analyzed for VOCs and the required Part 360 leachate indicator and inorganic parameters. In addition, split-samples from 14 selected Claremont Site monitoring wells (which include some Town wells that the Town is not required to monitor), collected on June 21st and provided to the Town, were analyzed for VOCs.

The VOC results for the Town's samples are summarized by well and parameter group below:

Well Number	[TVOC]	[Total VHO]*	[Total Aromatics]	[PCE] / [TCE]
Limits:	50	N/A	N/A	5 / 5
LF-1	1.7	ND	1.7	ND / ND
M-30B-R	1.0	ND	ND	ND / 1.0
MW-5B	ND	ND	ND	ND / ND
MW-6A	17.3	ND	ND	ND / **17.3**
MW-6B	4.6	ND	4.6	ND / ND
MW-6C	ND	ND	ND	ND / ND
MW-6E	ND	ND	ND	ND / ND
MW-6F	ND	ND	ND	ND / ND
MW-7B-R	**413**	36.5	ND	**19.6** / **357**
MW-8A	1.2	ND	ND	1.2 / ND
MW-8B	0.3 J	ND	0.3 J	ND / ND
MW-9B	ND	ND	ND	ND / ND
MW-9C	ND	ND	ND	ND / ND
MW-11A	15.7 J	15.7 J	ND	ND / ND
MW-11B	1.4	ND	1.4	ND / ND
OBS-1	ND	ND	ND	ND / ND

Notes: Results are in micrograms per Liter (ug/L); bold font indicates exceedance of Limit.
VHO = Volatile Halogenated Organics.
*Excluding PCE and TCE.
[PCE] / [TCE] = Tetrachloroethene concentration / Trichloroethene concentration.
N/A = Not Applicable, these standards are compound-specific.
ND = Not Detected.
J = Estimated Concentration.

TABLE 3
SECOND QUARTER 2016
COMPARISON OF AVERAGE STACK CONCENTRATIONS TO STACK DISCHARGE REQUIREMENTS

Parameter	Average Stack Concentration* (ug/m^3)	Stack Discharge Requirements** (ug/m^3)
Benzene	ND	100
Bromodichloromethane	ND	0.03
Bromoform	ND	16.7
Carbon Tetrachloride	ND	100
Chlorobenzene	ND	1,170
Chloroethane	ND	52,000
Chloroform	ND	167
Dibromochloromethane	ND	0.03
1,2-Dichlorobenzene (o)	ND	1,000
1,3-Dichlorobenzene (m)	ND	0.03
1,4-Dichlorobenzene (p)	ND	1,500
1,1-Dichloroethane	ND	2,700
1,2-Dichloroethane	ND	20
1,1-Dichloroethene	0.6	66.7
1,2-Dichloroethene	14.6	2,630***
1,2-Dichloropropane	ND	1,170
Ethylbenzene	ND	1,450
Methylene Chloride	ND	1,170
Tetrachloroethene	40.3	1,120
Toluene	ND	7,500
1,1,1-Trichloroethane	0.1	38,000
Trichloroethene	286	900
Vinyl Chloride	ND	0.4
Xylenes (Total)	ND	1,450

FOOTNOTES:

* based on average influent concentrations and flow rates.

** per Table 1 of Consent Decree.

*** total for cis- and trans- isomers.

ND = not detectable.

ug/m^3 = micrograms per cubic meter.

Shaded values are higher than their respective stack discharge limit.

Review of the table on the previous page indicates that VOCs are currently at very low or non-detectable levels in 12 of the 16 wells monitored, and that [TVOC] in three of the four other wells are much lower than the 50-ug/L Consent Decree Limit for ground water. The [TVOC] in Well MW-7B-R is approximately eight times higher than this limit, primarily due to TCE. The lower [TVOC] in Well MW-6A is also due to TCE. In contrast, the [TVOC] in Well MW-11A is primarily due to cis-1,2-DCE; and the [TVOC] in Well MW-6B is due to aromatic hydrocarbons. In addition to the exceedances noted in the table above, the concentrations of cis-1,2-DCE in Wells MW-7B-R and MW-11A exceeded the 5-ug/L Class GA standard this quarter. The VOCs detected in Wells MW-7B-R and MW-11A are not Landfill-related.

The VOC results for the Claremont Site split-samples are summarized below:

Well Number	[TVOC]	[Total VHO]*	[Total Aromatics]	[PCE] / [TCE]
Limits:	50	N/A	N/A	5 / 5
EW-1A	8.8	3.3	ND	4.4 / 1.1
EW-1B	ND	ND	ND	ND / ND
EW-1C	0.5 J	ND	ND	ND / 0.5 J
EW-2A	0.6 J	0.6 J	ND	ND / ND
EW-2B	ND	ND	ND	ND / ND
EW-2C	ND	ND	ND	ND / ND
EW-2D	ND	ND	ND	ND / ND
BP-3A	ND	ND	ND	ND / ND
BP-3B	**315**	97.3	ND	**206** / **12.0**
BP-3C	74.4	27.4	ND	**45.6** / 1.4
MW-8A	1.5	ND	ND	1.5 / ND
MW-8B	ND	ND	ND	ND / ND
MW-8C	ND	ND	ND	ND / ND
MW-10D	ND	ND	ND	ND / ND

Notes: Results are in micrograms per Liter (ug/L); bold font indicates exceedance of Limit.
VHO = Volatile Halogenated Organics.
*Excluding PCE and TCE.
[PCE] / [TCE] = Tetrachloroethene concentration / Trichloroethene concentration.
N/A = Not Applicable, these standards are compound-specific.
ND = Not Detected.
J = Estimated Concentration.

Review of the above table indicates that [TVOC] in 11 of these 14 wells are currently at very low to non-detectable levels, and that the [TVOC] in one of the other three wells is much lower than the 50-ug/L Consent Decree limit for ground water. [TVOC] in Wells BP-3B and BP-3C were approximately six and 1.5 times higher than this limit, respectively, this quarter. [TVOC] in Wells EW-1A, BP-3B and BP-3C were primarily due to PCE and cis-1,2-DCE.

In addition to the above-noted exceedances, the [cis-1,2-DCE] in Wells BP-3B and BP-3C, and the [1,1,-Dichloroethane] in Well BP-3B exceeded these VOC's 5-ug/L Class GA ground-water standard this quarter. Since a relatively high [TVOC] was detected in Well BP-3C, it appears that the vertical extent of VOCs at this location has not been fully delineated. The VOCs at this location are also not Landfill-related.

Review of the total (unfiltered) leachate indicator and inorganic parameter result summary tables in Appendix A indicates that most of these parameters were either not detected, or only detected sporadically at low concentrations below their respective Class GA standard or guidance value. The highest concentration(s) of each detected parameter, as well as most of the exceedances, occurred in the wells located directly downgradient of the Landfill and within the capture zone of the Town's recovery wellfield (e.g., Wells MW-6B through MW-6E). The specific inorganic parameter exceedances that occurred this quarter are listed by well and parameter below:

- Well MW-5B – Manganese and sodium
- Well MW-6A – Phenols and sodium
- Well MW-6B – Ammonia, chloride, iron, phenols and sodium
- Well MW-6C – Ammonia, iron, phenols and sodium
- Well MW-6E – Ammonia, chloride, iron, manganese, phenols and sodium
- Well MW-6F – Chloride, phenols and sodium
- Well MW-7B-R – Phenols
- Well MW-8A – Phenols and sodium
- Well MW-8B – Chloride, manganese and sodium
- Well MW-9B – Manganese and sodium
- Well MW-9C – Ammonia, phenols and sodium
- Well OBS-1 – Ammonia, manganese, phenols and sodium

Comparison of the total (unfiltered) metals results to the dissolved (filtered) metals results for these wells indicates that most of the metals exceedances were due to dissolved metals.

No exceedances of the Class GA inorganic/leachate indicator parameter standards occurred in Wells LF-1, MW-11A or MW-11B this quarter. Well LF-1 was only sampled for leachate indicator parameters, per the RAP requirements. Well Cluster 11 is located downgradient of the Town's recovery wellfield. Well MW-11A is screened just above the deep potentiometric zone of the aquifer, and Well MW-11B is screened in the deep potentiometric zone of the aquifer. The fact that elevated levels of inorganic/leachate parameters are not detected in these wells indicates that the inorganic portion of the Landfill plume is also being captured by the recovery wellfield.

Figures 1 through 6 in Appendix A depict the ground water-flow patterns and plume boundaries within each of the three aquifer zones based on the Town's second quarter 2016 monitoring results, the corresponding water-level data for selected County monitoring wells for the adjacent Fireman's Training Center Site, and the second quarter VOC results for the Claremont Site split-samples. Review of these figures indicates the following key findings:

1. Ground water-flow directions in the water-table zone of the aquifer continue to be from northwest to southeast, consistent with the regional ground water-flow direction reported by the U.S. Geological Survey in Scientific Investigations Map 3066 (Water-Table and Potentiometric-Surface Altitudes of the Upper Glacial, Magothy, and Lloyd Aquifers beneath Long Island, New York, March-April 2006, Water-Table – SHEET 1 of 4).
2. Ground water-flow directions in the shallow and deep potentiometric zones of the aquifer also continue to be generally from northwest to southeast, except in the vicinity of the capture zone of the Town's recovery wellfield, where some radial flow is still occurring. The smaller, shallower capture zone shown in Figures 2 and 3 this quarter reflects the

fact that the GTF had been shut down for approximately one month prior to the synoptic water-level round, and in the interim the water-levels within the dewatered capture zone had partially returned to their pre-pumping elevations.

3. In the water-table zone of the aquifer, the areal extent of VOC detections in ground water is limited to the area immediately downgradient of the Claremont Site (Based on Wells MW-8A, EW-1A and EW-2A). Well MW-6A is included in this plume area, but the low [TCE] in this well may also be due to the nearby leak in the influent line discovered this quarter.
4. In the shallow and deep potentiometric zones of the aquifer, VOC detections are the most widespread and occur in the areas downgradient of the Landfill and the Claremont Site that are within the capture zone of the Town's recovery wellfield. As noted in previous RAP Reports, based on available data, a portion of the off-site VOC plume from the Claremont Site is too far to the northeast to be captured by the Town's recovery wellfield. Moreover, the USEPA has indicated that there appears to be at least one other VOC source area in the vicinity of the Landfill. Accordingly, the eastern portion of the VOC plume, which is shown in Appendix A, Figures 2 and 4 as extending downgradient to Well Cluster MW-11, is not associated with the Landfill.

3.0 RESULTS OF AMBIENT-AIR, SOIL-GAS AND LANDFILL-GAS MONITORING

This section presents the results of the second quarter ambient-air and soil-gas monitoring round, the weekly collection system exhaust methane monitoring performed by the Town this quarter, and the first round of annual collection system exhaust VOC monitoring.

3.1 Ambient Air-Monitoring Results

The scope of this monitoring, which was developed based on the general requirements in the Consent Decree and accepted by the NYSDEC, entails sorbent-tube sampling for VOCs at one upwind and two downwind locations over a 24-hour period during a low/falling barometer, laboratory analysis of the samples, and comparison of the results to the NYSDEC DAR-1 short-term (8-hour) and long-term (annual) guideline concentrations (SGCs and AGCs, respectively). Sample locations are pre-selected based on the National Weather Service forecast. Meteorological conditions are monitored during the monitoring period for comparison to forecasted conditions. In a letter dated March 24, 2016, the NYSDEC approved the Town's request to reduce the frequency of this monitoring from quarterly to annually. Accordingly, the second quarter round also serves as annual monitoring round for 2016. The next round of annual ambient-air and soil-gas monitoring will be performed during the third quarter of 2017.

The 2016 second quarter monitoring round was performed on June 7th and 8th. Based on the forecast southwesterly wind direction at light to moderate speeds, the upwind sample was collected south of the Landfill on the Bethpage State Park golf course, and the downwind samples were collected along the east boundary of the Landfill. The actual wind directions ranged from southerly to northwesterly during the test period, and speeds were higher than forecast. The downwind samplers were downwind of the Landfill for all of the test period. The barometric pressure decreased during the first six hours of the test period, became steady for the next four hours, and then rose during the remainder of the test period, resulting in a net increase in pressure of 0.07 inches of mercury.

A number of target VOCs were detected in both the upwind and downwind samples. All VOC concentrations were much lower than the DAR-1 SGCs. The concentrations of four target VOCs (benzaldehyde, benzene, carbon tetrachloride and 1,2-dichloroethane) were higher than the DAR-1 AGCs in all of the samples. However, the concentrations in the upwind and downwind samples were basically identical. These results indicate that the Landfill did not have a significant impact on ambient air quality.

Copies of Figure 2.1 and Table 4.1 from the air-monitoring consultant's report, which depict the sample locations and summarize the ambient air-monitoring results, respectively, are provided in Appendix B.

3.2 Soil-Gas Quality Monitoring Results

The scope of this monitoring entails sorbent-tube grab-sampling (approximately 10-minute sampling interval) for VOCs at 15 perimeter gas monitoring well locations, including multiple-depth sampling at one location (Well M9), and comparison of the results to the NYSDEC DAR-1 SGCs and AGCs. (Note: This comparison is made for informational purposes only. There are no New York State standards for VOCs in soil gas.)

The 2016 second quarter soil-gas monitoring round was performed on June 7th. All wells were sampled. A relatively small number of VOCs were detected, generally at low concentrations, in most of the soil-gas samples. However, all VOC detections were much lower than the DAR-1 SGCs and only four target VOCs were detected at concentrations higher than their DAR-1 AGCs. These "exceedances" were sporadic and relatively low in magnitude.

Based on the results, overall, [VOC] in soil gas are low and consistent with an old MSW landfill with a perimeter gas collection system, and are not a concern for construction-related excavation should it be required. A copy of Table 4.3 from the air-monitoring consultant's report, which summarizes the soil gas-monitoring results, is provided in Appendix B.

3.3 Soil-Gas Pressure Monitoring Results

The scope of this monitoring entailed duplicate field measurements of pressure in a total of six gas monitoring wells at three locations (one 10 feet deep and one 20 feet deep at each location) around the Landfill utilizing an inclined manometer to verify zero or negative (vacuum) pressure readings in the vicinity of the perimeter landfill gas collection system. The 2016 second quarter monitoring round was performed on June 8th.

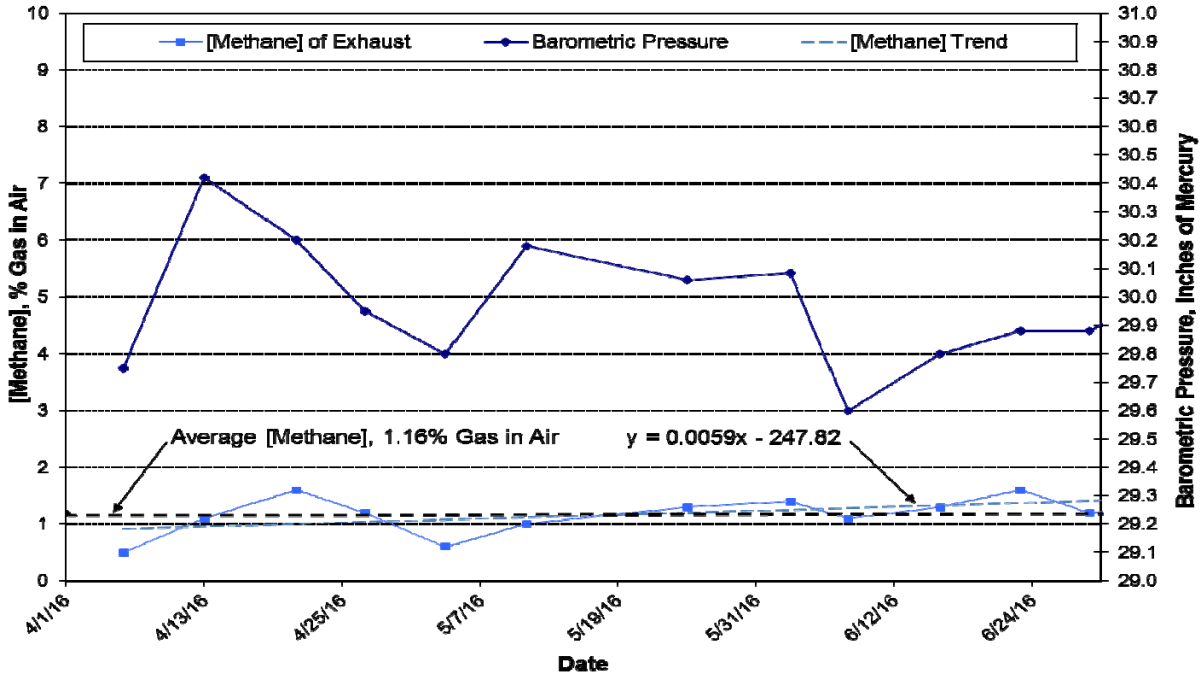
Zero or negative pressure readings were measured at both depth zones at all three locations. Based on these results, the perimeter landfill gas collection system is functioning properly and is preventing off-site migration. A copy of Table 5.1 from the air-monitoring consultant's report, which summarizes the soil gas pressure-monitoring results, is provided in Appendix B.

3.4 Methane-Monitoring Results

In a letter dated October 17, 2012, the NYSDEC approved the Town's request to discontinue operation of the landfill gas thermal oxidizer on a permanent basis, but requested that the Town monitor the perimeter gas collection system exhaust for methane on a weekly basis and include the results and a statement of inferred compliance in this section of each RAP report and in the annual zero gas migration reports.

This monitoring was performed by Town personnel utilizing a calibrated RAE Systems MultiRAE Lite meter equipped with LEL and percent-gas-in-air sensors. The monitoring results for this quarter, as percent gas in air, and the local barometric pressures when the monitoring was performed, are summarized in Figure 7 below.

Figure 7. [Methane] of Landfill Gas Collection System Exhaust, Second Quarter 2016



Review of Figure 7 indicates that this quarter the [methane] of the perimeter collection system exhaust were typically in the range of 0.5% to 1.5% gas in air and averaged 1.16% gas in air, which is 1.04% lower than last quarter's average. The [methane] exhibited a very slight increasing trend, which appears to coincide with an overall decreasing trend in barometric pressure. As requested by the NYSDEC in a letter dated March 27, 2015, the Town will continue to evaluate the weekly landfill gas-monitoring results to determine if shutting down the perimeter collection system is feasible.

The 1.16% gas in air average [methane] this quarter is approximately 3.3% to 4.3% gas in air lower than the two readings of 4.5% and 5.5% gas in air measured during the fourth quarter of 2011 and reported in the 2011 Annual Summary Report of landfill gas monitoring results. Moreover, it is consistent with the fact that the Landfill closed more than 25 years ago and continues to age. Previous analysis of the exhaust from the perimeter gas collection system indicated that it did not exceed permitting or regulatory thresholds, and did not significantly impact ambient air quality. Since current [methane] are even lower, and the blower flow rate is the same or lower. LKB concludes that this assessment is still valid.

3.6 VOC-Monitoring Results

In a letter dated March 24, 2016 the NYSDEC requires the Town to monitor VOC concentrations in the landfill gas collection system exhaust annually to verify that they continue to be very low, as indicated by historical monitoring. The Town developed a protocol for this monitoring, which was accepted by the NYSDEC. It entails collecting three 60-minute grab samples of the exhaust using Summa canisters, analyzing them for VOCs at a State-certified environmental laboratory using Method TO-15, measuring the flow rate, converting the laboratory results into emission rates, and comparing the emission rates to permitting thresholds and the laboratory results to the DAR-1 annual and short-term guideline concentrations (AGCs and SGCs, respectively). Note that Method TO-15 is an updated version of the Method 14A specified in the test protocol. It includes more analytes, and requires use of a mass spectrometer as the detector.

The annual monitoring for 2016 was performed on June 29th and 30th. As expected, the results show that the landfill collection system exhaust emissions (2,176 pounds per year) are well below the Tittle V permit threshold for non-category sources (25 tons per year) and the hazardous air pollutant (HAP) emission thresholds for individual air pollutants (10 tons per year) and combined HAPs (25 tons per year). The concentrations of three VOCs (benzene, vinyl chloride and 1,4-dichlorobenzene) exceeded their AGCs for ambient air, but this is not a concern as previous dispersion modeling of similar or higher concentrations has shown that concentrations at the downwind property line are lower than the AGCs. A copy of Table 2-1 from the air-monitoring consultant's report is provided in Appendix B of this RAP Report.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions of this RAP Report, based on the above information, are:

1. The facility was on-line only 45% of the time this quarter, and had an average flow rate of 0.44 MGD. All of the downtime was associated with having to shut down the GTF from April 26th through June 15th until the leaking pressure-relief on the influent pipeline could be replaced. When the GTF was in operation, the flow rate was approximately 0.9 to 1.0 MGD and only three of the five recovery wells were typically operated.
2. Recovery Well RW-3 was operated 17 of 91 days, and continued to be operated on an approximately rotating basis with Recovery Wells RW-1 and RW-2. Recovery Wells RW-4 and RW-5 were each operated 42 of 91 days this quarter.
3. The cause of the air stripper pumps not being able to keep up with the influent flow was subsequently determined to be a partially-clogged screen on the air-stripper inlet pipeline. The screen was cleaned on July 15, 2016, and since then all five recovery wells can be operated simultaneously.
4. Prior shutting down the GTF on April 26th, the [TVOC] of the facility influent was higher than the 50-ug/L limit for ground water listed in Appendix A, Table 2 of the Consent Decree this quarter, averaged 94.9 ug/L, and exhibited a slight increasing trend. After the GTF was restarted on June 15th, the influent [TVOC] exhibited a fluctuating but generally increasing pattern, which is attributed to the recovery well capture zone being re-established. During this period, influent [TVOC] ranged from 13.7 to 116 ug/L. TCE continued to be the main VOC detected in the facility influent.

5. VOCs were not detected in the 24 facility effluent samples collected this quarter. The effluent quality complied with Consent Decree and SPDES permit equivalency discharge limits this quarter.
6. VOCs were not detected in Recovery Wells RW-1 and RW-2 this quarter. However, certain Consent Decree inorganic parameters in these two recovery wells (e.g., ammonia, iron and manganese) continue to exceed Class GA ground-water standards.
7. VOCs continued to be detected sporadically in Recovery Well RW-3 and on a regular basis in Recovery Wells RW-4 and RW-5 this quarter. Prior to shutting down the GTF on April 26th, [TVOC] continued to be highest in Recovery Well RW-4, and much lower in the other two recovery wells. [TVOC} were also relatively constant, and in the range of 10 ug/L, 30 ug/L and 200 ug/L, respectively. After the GTF was restarted on June 15th, [TVOC] in Recovery Well RW-3 remained low, [TVOC] in Recovery Well RW-4 were initially lower but then began to increase, and [TVOC] in Recovery Well RW-5 appeared to decrease.
8. TCE, PCE and cis-1,2-DCE continued to be the three VOC detected most frequently and at the highest concentrations in Recovery Wells RW-3, RW-4 and RW-5. Prior to shutting down the GTF on April 26th, [TCE] in all three of these recovery well typically exceeded the 5-ug/L Class GA standards for this VOC. [PCE] and [cis-1,2-DCE] in Recovery Wells RW-4 also exceeded the 5-ug/L Class GA standard for these VOCs. After the GTF was restarted on June 15th, the concentrations of these VOCs remained low in Recovery Well RW-3, fluctuated but generally increased in Recovery RW-4, and appeared to decrease in Recovery Well RW-5.
9. The average concentration of each VOC in the air stripper exhaust was lower than its stack discharge limit this quarter.
10. [TVOC] are currently at very low or non-detectable levels in 12 of the 16 monitoring wells sampled by the Town per the Consent Decree, and the [TVOC] in three of the four other wells are much lower than the 50-ug/L Consent Decree Limit for ground water. The [TVOC] in Well MW-7B-R (413 ug/L) is approximately eight times higher than this limit, primarily due to TCE. The lower [TVOC] in Well MW-6A is also due to TCE. In contrast, the [TVOC] in Well MW-11A is primarily due to cis-1,2-DCE; and the [TVOC] in Well MW-6B is due to aromatic hydrocarbons. The [TCE] in Well MW-6A, the [TVOC], [TCE], [PCE] and [cis-1,2-DCE] in Well MW-7B-R, and the [cis-1,2-DCE] in MW-11A exceeded their 5-ug/L Class GA standards this quarter. The VOCs in Wells MW-7B-R and MW-11A are not Landfill-related.
11. [TVOC] in 11 of the 14 Claremont Site split-samples were also currently at very low or non-detectable levels, and [TVOC] in one of the other three wells is much lower than the 50-ug/L Consent Decree limit for ground water. [TVOC] in Wells BP-3B and BP-3C were approximately six and 1.5 times higher than this limit, respectively, this quarter. [TVOC] in Wells EW-1A, BP-3B and BP-3C were primarily due to PCE and cis-1,2-DCE. The [TCE], [PCE], [cis-1,2-DCE] and [1,1-DCA] in Well MW-3B, and the [PCE] and [cis-1,2-DCE] in Well BP-3C exceeded their 5-ug/L Class GA ground-water standard. Since a relatively high [TVOC] was detected in Well BP-3C, it appears that the vertical extent of VOCs at this location has not been fully delineated. The VOCs at this location are not Landfill-related.
12. The total (unfiltered) leachate indicator and inorganic parameter results indicate that most of these parameters were either not detected, or only detected sporadically at low concentrations below their respective Class GA standard or guidance value. The highest concentration(s) of each detected parameter, as well as most of the exceedances, occurred in the wells located directly downgradient of the Landfill and within the capture zone of the Town's recovery wellfield (e.g., Wells MW-6B through MW-6E). No exceedances of the Class GA inorganic/leachate indicator parameter standards occurred in Wells LF-1, MW-11A

or MW-11B this quarter. The fact that elevated levels of inorganic/leachate parameters are not detected in these wells indicates that the inorganic portion of the Landfill plume is also being captured by the recovery wellfield.

13. The results of the ambient-air and soil-gas monitoring performed this quarter continued to indicate that the Landfill is not a significant source of VOC releases to ambient-air or soil-gas, and that migration of landfill gas is being prevented by the perimeter collection system
14. The results of the perimeter landfill gas collection system exhaust [methane] monitoring performed this quarter verify that the average [methane] of the vented gas continues to be very low, appears to be gradually decreasing over time as expected for an aging closed and capped landfill, and is lower than previous [methane] that were determined to be acceptable.
15. The results of the 2016 annual perimeter landfill gas collection system exhaust (VOC) monitoring, performed this quarter, verified that the [VOC] in the exhaust are much lower than the applicable air permitting thresholds. The concentrations of three VOCs are higher than their DAR-1 AGCs, which are ambient air guidelines, but this is not a concern because dispersion will occur prior to the downwind property line.

Accordingly, this RAP Report recommends the following for the third quarter of 2016, pending takeover of the facility by the NYSDEC per a stipulation agreement:

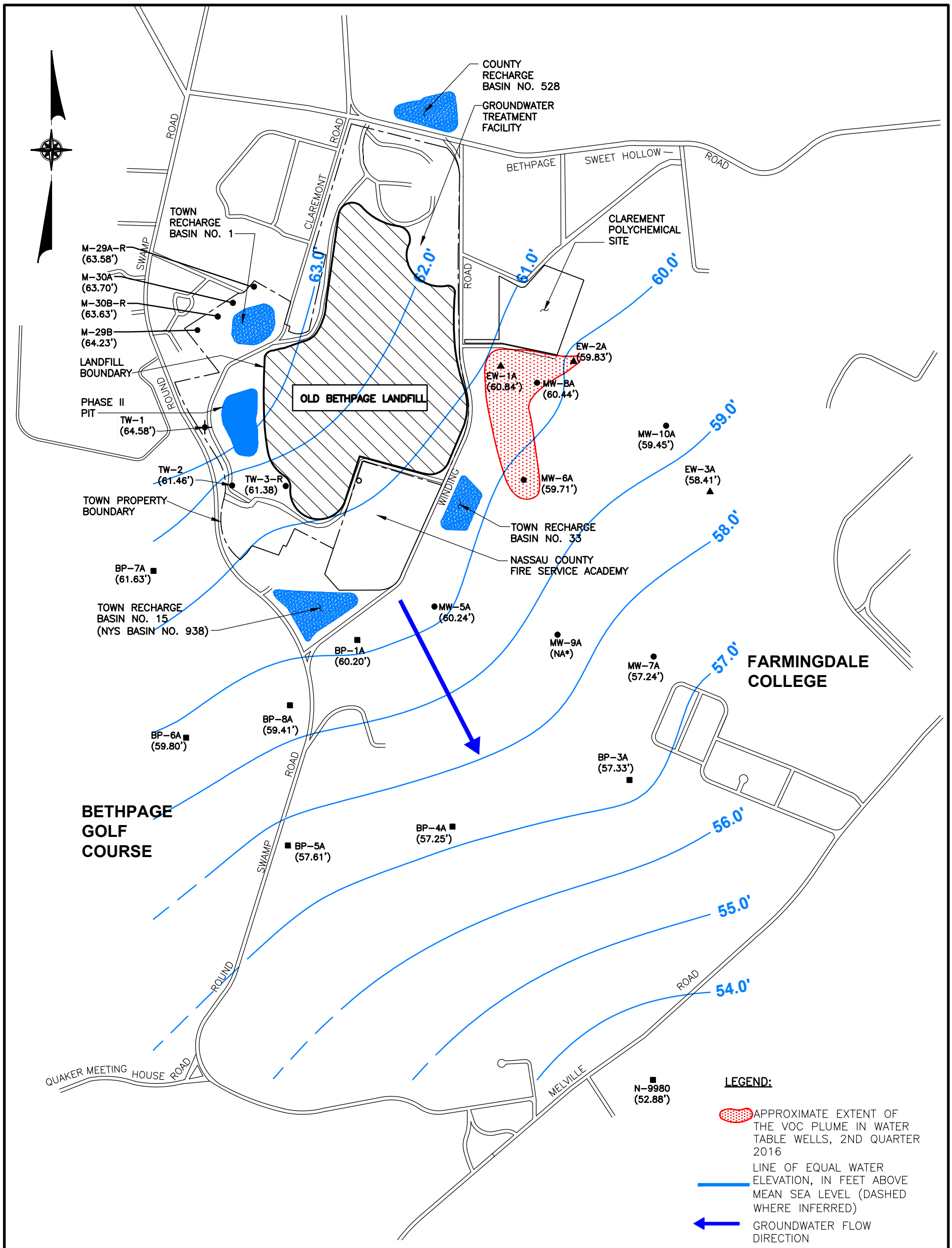
1. Continue to operate and monitor the facility in accordance with the RAP in Appendix A of the Consent Decree and subsequent related protocols, including the exhaust from the perimeter landfill gas collection system, pending the NYSDEC taking over operation of the GTF.
2. Continue to periodically inspect the air stripper media via a hatch, and monitor the pressure differential across the air stripper media regularly using the installed pressure-monitoring ports to detect the buildup of fouling, and perform an acid-rinse if warranted.
3. Continue to evaluate the [methane] of the exhaust from the perimeter landfill gas collection system to determine if shutting down this system is feasible.
4. Continue to analyze split-samples from selected Claremont Site monitoring wells for VOCs to provide current ground-water VOC data for these locations.
5. Continue to incorporate water-level data from selected County monitoring wells for the Fireman's Training Center Site to augment the Town's water-level data for the area.

APPENDIX A

Figures 1 Through 6
Showing Second Quarter 2016 Water-Level Contours and Plume Boundaries

Tables 1 and 3 Through 8
Summarizing Second Quarter 2016 Water-Level and Water-Chemistry Results

Provided by D&B Engineers and Architects, PC



LEGEND:

- APPROXIMATE EXTENT OF THE VOC PLUME IN WATER TABLE WELLS, 2ND QUARTER 2016
- LINE OF EQUAL WATER ELEVATION, IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- MW-5A (60.24') ● OLD BETHPAGE LANDFILL MONITORING WELL WITH WATER LEVEL ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- BP-1A ■ NASSAU COUNTY MONITORING WELL
- EW-3A ▲ CLAREMONT POLYCHEMICAL SITE MONITORING WELL
- (NA*) WELL MW-9A WAS DRY, AND NOT USED TO DEVELOP CONTOURS

NOTE:

BASE MAP WITH WELL LOCATIONS PROVIDED BY LKB IN DRAWING 101, DATED AUGUST 2005

D&B ENGINEERS AND ARCHITECTS, P.C.

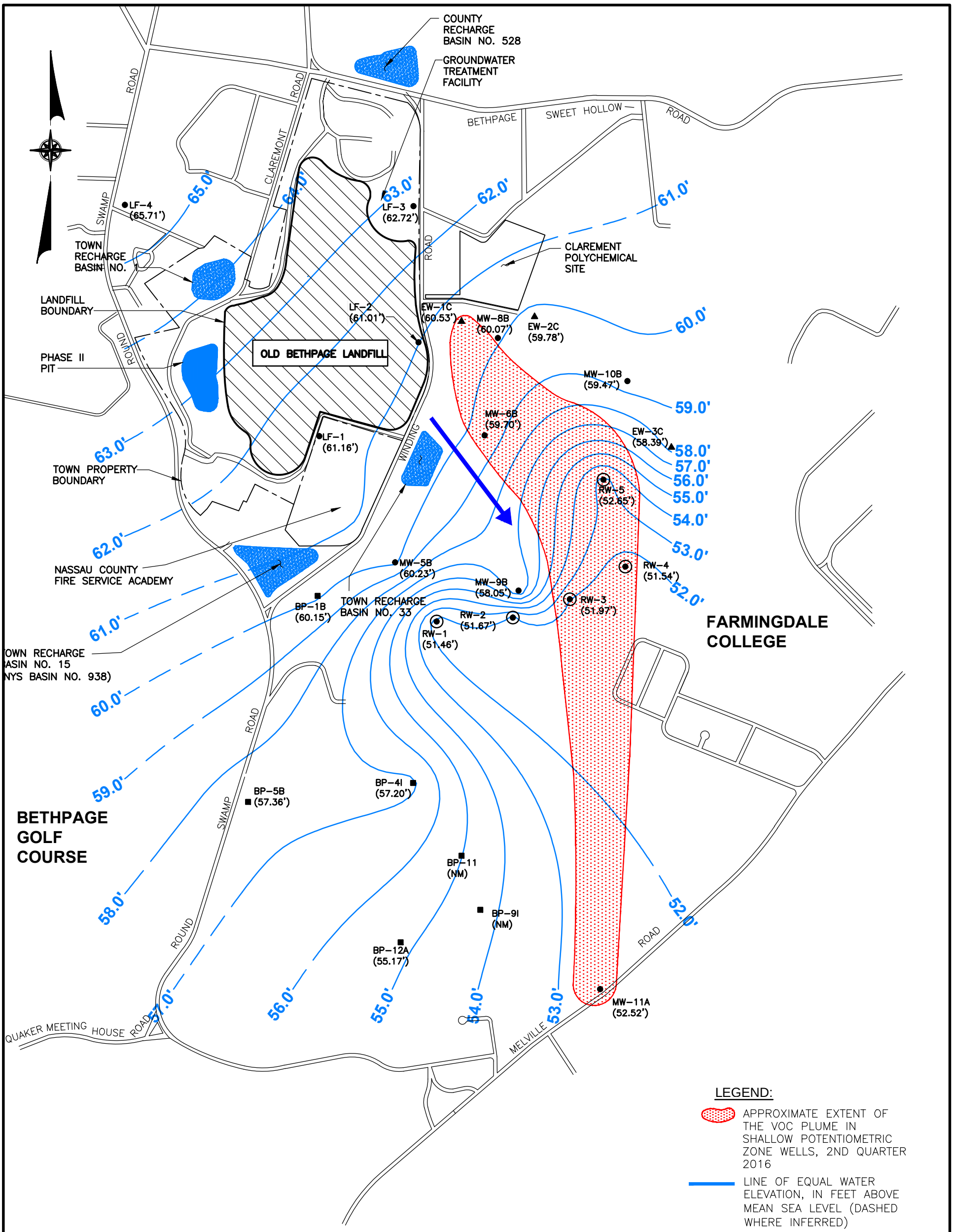
OLD BETHPAGE LANDFILL
TOWN OF OYSTER BAY, NEW YORK

WATER TABLE FLOW MAP
SECOND QUARTER 2016

SCALE: 1"=800'

FIGURE 1

F:\3617\3617-C-PL01A_WATER TABLE CONTOUR 2Q 2016.dwg, 7/14/2016 9:35:31 AM, DWG to PDF.pc3



LEGEND:

- APPROXIMATE EXTENT OF THE VOC PLUME IN SHALLOW POTENTIOMETRIC ZONE WELLS, 2ND QUARTER 2016
- LINE OF EQUAL WATER ELEVATION, IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- MW-5B (60.23') ● OLD BETHPAGE LANDFILL MONITORING WELL WITH WATER LEVEL ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- RW-1 ◎ RECOVERY WELL
- BP-12A ■ NASSAU COUNTY MONITORING WELL
- EW-1C ▲ CLAREMONT POLYCHEMICAL SITE MONITORING WELL
- (NM) NOT MEASURED

NOTE:

BASE MAP WITH WELL LOCATIONS PROVIDED BY LKB IN DRAWING 101, DATED AUGUST 2005

D&B ENGINEERS AND ARCHITECTS, P.C.

OLD BETHPAGE LANDFILL
TOWN OF OYSTER BAY, NEW YORK

SHALLOW POTENTIOMETRIC FLOW MAP SECOND QUARTER 2016

SCALE: 1"=800'

FIGURE 2

F:\3617\3617-C-PL01A_SHALLOW CONTOUR 2Q 2016.dwg, 7/14/2016 9:46:18 AM, DWG to PDF.pc3

COUNTY RECHARGE BASIN NO. 528

GROUNDWATER TREATMENT FACILITY

TOWN RECHARGE BASIN NO. 1

CLAREMONT ROAD

SWAMP ROAD

BETHPAGE SWEET HOLLOW ROAD

CLAREMENT POLYCHEMICAL SITE

LANDFILL BOUNDARY

OLD BETHPAGE LANDFILL

PHASE II PIT

ROUND SWAMP ROAD

WINDING ROAD

TOWN PROPERTY BOUNDARY

NASSAU COUNTY FIRE SERVICE ACADEMY

TOWN RECHARGE BASIN NO. 15 (NYS BASIN NO. 938)

TOWN RECHARGE BASIN NO. 33

FARMINGDALE COLLEGE

BETHPAGE GOLF COURSE

QUAKER MEETING HOUSE ROAD

MELVILLE ROAD

61.0'
60.0'
59.0'
58.0'
57.0'
56.0'
55.0'
54.0'
53.0'

MW-8C (60.29')
MW-10D (58.87')
MW-6C (59.74')
RW-5 (52.65')
RW-4 (51.54')
RW-3 (51.97')
MW-9C (57.76')
RW-1 (51.46')
RW-2 (51.67')
MW-7B-R (57.00')
OBS-1 (56.90')
BP-3B (55.78')
BP-7B (61.25')
BP-6B (59.21')
BP-5B (57.36')
BP-4B (57.16')
BP-15B (56.09')
BP-14B (55.66')
BP-9B (55.53')
BP-12B (54.99')
MW-11B (52.56')

NOTE:

BASE MAP WITH WELL LOCATIONS PROVIDED BY LKB IN DRAWING 101, DATED AUGUST 2005

LEGEND:

- APPROXIMATE EXTENT OF THE VOC PLUME IN DEEP POTENTIOMETRIC ZONE WELLS, 2ND QUARTER 2016
- LINE OF EQUAL WATER ELEVATION, IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- MW-8C (60.29') OLD BETHPAGE LANDFILL MONITORING WELL WITH WATER LEVEL ELEVATION IN FEET ABOVE MEAN SEA LEVEL.
- RW-1 RECOVERY WELL
- BP-14B NASSAU COUNTY MONITORING WELL

D&B ENGINEERS AND ARCHITECTS, P.C.

OLD BETHPAGE LANDFILL
TOWN OF OYSTER BAY, NEW YORK

DEEP POTENTIOMETRIC FLOW MAP SECOND QUARTER 2016

SCALE: 1"=800'

FIGURE 3

F:\3617\3617-C-PL01A_DEEP CONTOUR 2Q 2016.dwg, 7/14/2016 9:47:40 AM, DWG to PDF.pc3

COUNTY RECHARGE BASIN NO. 528
GROUNDWATER TREATMENT FACILITY
BETHPAGE SWEET HOLLOW ROAD
CLAREMONT ROAD
SWAMP ROAD
ROUND SWAMP ROAD
WINDING ROAD
TOWN RECHARGE BASIN NO. 1
M-30B-R (1.0)
LANDFILL BOUNDARY
PHASE II PIT
TOWN PROPERTY BOUNDARY
NASSAU COUNTY FIRE SERVICE ACADEMY
TOWN RECHARGE BASIN NO. 33
TOWN RECHARGE BASIN NO. 15 (NYS BASIN NO. 938)
OLD BETHPAGE LANDFILL
CLAREMENT POLYCHEMICAL SITE
EW-1A,B,C (4.4,ND,0.5)*
MW-8A,B,C (ND,ND,ND*)
EW-2A,B,C,D (0.6,ND,ND,ND)*
LF-2 (NS)*
MW-10A,B,C,D (NS,NS,NS,ND)*
MW-6A,B,C,D,E,F (17.3,ND,ND,NS*,ND,ND)
LF-1 (ND)
EW-3A,B,C (NS,NS,NS)*
RW-5 (26.1)*
MW-5B (ND)
MW-9B,C (ND,ND)
RW-4 (185.9)*
RW-3 (6.7)*
RW-1 (ND)*
RW-2 (ND)*
MW-7B-R (393.5)
OBS-1 (ND)
BETHPAGE GOLF COURSE
BP-3A,B,C (ND,109,28.8)*
MW-11A,B (13.4,ND)
QUAKER MEETING HOUSE ROAD
MELVILLE ROAD

LEGEND:

- APPROXIMATE EXTENT OF VOLATILE HALOGENATED ORGANIC PLUME, 2ND QUARTER 2016
- MW-9B,C (ND,ND) — OLD BETHPAGE LANDFILL MONITORING WELL WITH TOTAL VOLATILE HALOGENATED ORGANICS CONCENTRATION IN PPB
- RW-1 — RECOVERY WELL
- EW-1A,B,C — CLAREMONT POLYCHEMICAL SITE MONITORING WELL
- BP-3A,B,C — NASSAU COUNTY MONITORING WELL
- * — DATA PROVIDED BY TOWN OF OYSTER BAY
- (NS) — NOT SAMPLED
- (ND) — NOT DETECTED

NOTE:

BASE MAP WITH WELL LOCATIONS PROVIDED BY LKB IN DRAWING 101, DATED AUGUST 2005

PLUME LIMIT IS BASED ON TOTAL VOLATILE HALOGENATED ORGANICS CONCENTRATIONS IN THE MONITORING AND RECOVERY WELLS.

D&B ENGINEERS AND ARCHITECTS, P.C.

OLD BETHPAGE LANDFILL
TOWN OF OYSTER BAY, NEW YORK

APPROXIMATE EXTENT AND DISTRIBUTION OF TOTAL VOLATILE HALOGENATED ORGANICS, SECOND QUARTER 2016

SCALE: 1"=800'

FIGURE 4

F:\3617\3617-C-PL02-HALOGENTED ORGANICS_2Q 2016.dwg, 7/14/2016 9:48:12 AM, DWG to PDF.pc3

COUNTY RECHARGE BASIN NO. 528

GROUNDWATER TREATMENT FACILITY

TOWN RECHARGE BASIN NO. 1

M–30B–R (ND)

LANDFILL BOUNDARY

PHASE II PIT

OLD BETHPAGE LANDFILL

LF–1 (1.7)

TOWN PROPERTY BOUNDARY

NASSAU COUNTY FIRE SERVICE ACADEMY

TOWN RECHARGE BASIN NO. 33

TOWN RECHARGE BASIN NO. 15 (NYS BASIN NO. 938)

CLAREMENT POLYCHEMICAL SITE

EW–1A,B,C (ND,ND,ND)*

EW–2A,B,C,D (ND,ND,ND,ND)*

LF–2 (NS)*

MW–8A,B,C (ND,0.3,ND*)

MW–10A,B,C,D (NS,NS,NS,ND)*

MW–6A,B,C,D,E,F (ND,4.6,ND,NS*,ND,ND)

EW–3A,B,C (NS,NS,NS)*

RW–5 (ND)*

MW–5B (ND)

MW–9B,C (ND,ND)

RW–4 (ND)*

RW–3 (ND)*

RW–1 (ND)*

RW–2 (ND)*

MW–7B–R (ND)

OBS–1 (ND)

BP–3A,B,C (ND,ND,ND)*

MW–11A,B (2.3,1.4)

FARMINGDALE COLLEGE

BETHPAGE GOLF COURSE

BETHPAGE ROAD

SWEET HOLLOW ROAD

CLAREMONT ROAD

SWAMP ROAD

ROUND SWAMP ROAD

WINDING ROAD

MELVILLE ROAD

QUAKER MEETING HOUSE ROAD

LEGEND:

- APPROXIMATE EXTENT OF AROMATIC HYDROCARBON PLUME, 2ND QUARTER 2016
- MW–9B,C (ND,ND) ● OLD BETHPAGE LANDFILL MONITORING WELL WITH TOTAL AROMATIC HYDROCARBON CONCENTRATION IN PPB
- RW–1 ◉ RECOVERY WELL
- EW–1A,B,C ▲ CLAREMONT POLYCHEMICAL SITE MONITORING WELL
- BP–3A,B,C ■ NASSAU COUNTY MONITORING WELL
- * DATA PROVIDED BY TOWN OF OYSTER BAY
- (NS) NOT SAMPLED
- (ND) NOT DETECTED

NOTE:

BASE MAP WITH WELL LOCATIONS PROVIDED BY LKB IN DRAWING 101, DATED AUGUST 2005.

PLUME LIMIT IS BASED ON TOTAL AROMATIC HYDROCARBON CONCENTRATIONS IN THE MONITORING AND RECOVERY WELLS.

D&B ENGINEERS AND ARCHITECTS, P.C.

OLD BETHPAGE LANDFILL
TOWN OF OYSTER BAY, NEW YORK

APPROXIMATE EXTENT AND DISTRIBUTION OF TOTAL AROMATIC HYDROCARBONS, SECOND QUARTER 2016

SCALE: 1"=800'

FIGURE 5

F:\3617\3617-C-PL02-AROMATIC HYDRO CARBONS_2Q 2016.dwg, 7/14/2016 9:48:49 AM, DWG to PDF.pc3

COUNTY RECHARGE BASIN NO. 528

GROUNDWATER TREATMENT FACILITY

ROAD

BETHPAGE

SWEET HOLLOW ROAD

CLAREMONT ROAD

TOWN RECHARGE BASIN NO. 1

SWAMP ROAD

M-30B-R (ND)

LANDFILL BOUNDARY

ROUND SWAMP ROAD

PHASE II PIT

OLD BETHPAGE LANDFILL

CLAREMENT POLYCHEMICAL SITE

EW-2A,B,C,D (ND,ND,ND,ND)*

EW-1A,B,C (4.4,ND,ND)*

MW-8A,B,C (1.2,ND,ND*)

LF-2 (NS)*

MW-10A,B,C,D (NS,NS,NS,ND)*

LF-1 (ND)

WINDING ROAD

MW-6A,B,C,D,E,F (ND,ND,ND,NS*,ND,ND)

RW-5 (4.9)*

EW-3A,B,C (NS,NS,NS)*

TOWN PROPERTY BOUNDARY

NASSAU COUNTY FIRE SERVICE ACADEMY

TOWN RECHARGE BASIN NO. 33

RW-4 (18.5)*

TOWN RECHARGE BASIN NO. 15 (NYS BASIN NO. 938)

MW-5B (ND)

MW-9B,C (ND,ND)

RW-3 (1.9)*

MW-7B-R (19.6)

FARMINGDALE COLLEGE

RW-1 (ND)*

RW-2 (ND)*

BETHPAGE GOLF COURSE

OBS-1 (ND)

BP-3A,B,C (ND,206,45.6)*

ROUND SWAMP ROAD

QUAKER MEETING HOUSE ROAD

MELVILLE ROAD

MW-11A,B (ND,ND)

LEGEND:

- APPROXIMATE EXTENT OF TETRACHLOROETHENE PLUME, 2ND QUARTER 2016
- MW-11A,B (ND,ND) — OLD BETHPAGE LANDFILL MONITORING WELL WITH TETRACHLOROETHENE CONCENTRATION IN PPB
- RW-1 — RECOVERY WELL
- EW-1A,B,C — CLAREMONT POLYCHEMICAL SITE MONITORING WELL
- BP-3A,B,C — NASSAU COUNTY MONITORING WELL
- * — DATA PROVIDED BY TOWN OF OYSTER BAY
- (NS) — NOT SAMPLED
- (ND) — NOT DETECTED

NOTE:

BASE MAP WITH WELL LOCATIONS PROVIDED BY LKB IN DRAWING 101, DATED AUGUST 2005

PLUME LIMIT IS BASED ON TETRACHLOROETHENE CONCENTRATIONS IN THE MONITORING AND RECOVERY WELLS.

D&B ENGINEERS AND ARCHITECTS, P.C.

OLD BETHPAGE LANDFILL
TOWN OF OYSTER BAY, NEW YORK

APPROXIMATE EXTENT AND DISTRIBUTION OF TETRACHLOROETHENE, SECOND QUARTER 2016

SCALE: 1"=800'

FIGURE 6

F:\3617\3617-C-PL02-TETRACHLOROETHENE_2Q2016.dwg, 7/14/2016 9:50:20 AM, DWG to PDF.pc3

TABLE 1
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - SECOND QUARTER 2016

Well Identification	Date	Measuring Point Elevation (feet)	Depth to Water (feet)	Water Elevation (feet)	Change in Water Elevation (feet)
EW-01A	2/26/2016	128.59	67.67	60.92	
EW-01A	5/23/2016	128.59	67.75	60.84	-0.08
EW-01B	2/26/2016	129.11	68.21	60.90	
EW-01B	5/23/2016	129.11	68.26	60.85	-0.05
EW-01C	2/26/2016	129.02	68.30	60.72	
EW-01C	5/23/2016	129.02	68.49	60.53	-0.19
EW-02A	2/26/2016	155.94	96.27	59.67	
EW-02A	5/23/2016	155.94	96.11	59.83	0.16
EW-02B	2/26/2016	156.33	96.25	60.08	
EW-02B	5/23/2016	156.33	96.17	60.16	0.08
EW-02C	2/26/2016	156.27	96.09	60.18	
EW-02C	5/23/2016	156.27	96.49	59.78	-0.40
EW-03A	2/26/2016	157.71	99.72	57.99	
EW-03A	5/23/2016	157.71	99.30	58.41	0.42
EW-03B	2/26/2016	157.84	99.83	58.01	
EW-03B	5/23/2016	157.84	99.44	58.40	0.39
EW-03C	2/26/2016	157.72	99.68	58.04	
EW-03C	5/23/2016	157.72	99.33	58.39	0.35
M-29A-R	2/26/2016	157.83	92.97	64.86	
M-29A-R	5/23/2016	157.83	94.25	63.58	-1.28
M-29B	2/26/2016	149.67	85.06	64.61	
M-29B	5/23/2016	149.67	85.44	64.23	-0.38
MW-30A	2/26/2016	155.95	91.02	64.93	
MW-30A	5/23/2016	155.95	92.25	63.70	-1.23
M-30B-R	2/26/2016	153.15	88.65	64.50	
M-30B-R	5/23/2016	153.15	89.52	63.63	-0.87
MW-05A	2/26/2016	135.83	75.34	60.49	
MW-05A	5/23/2016	135.83	75.59	60.24	-0.25
MW-05B	2/26/2016	137.05	76.59	60.46	
MW-05B	5/23/2016	137.05	76.82	60.23	-0.23
MW-06A	2/26/2016	158.74	99.20	59.54	
MW-06A	5/23/2016	158.74	99.03	59.71	0.17
MW-06B	2/26/2016	159.02	99.46	59.56	
MW-06B	5/23/2016	159.02	99.32	59.70	0.14
MW-06C	2/26/2016	158.59	98.97	59.62	
MW-06C	5/23/2016	158.59	98.85	59.74	0.12

TABLE 1
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - SECOND QUARTER 2016

Well Identification	Date	Measuring Point Elevation (feet)	Depth to Water (feet)	Water Elevation (feet)	Change in Water Elevation (feet)
MW-06D	2/26/2016	158.90	99.36	59.54	
MW-06D	5/23/2016	158.90	99.26	59.64	0.10
MW-06E	2/26/2016	159.69	99.98	59.71	
MW-06E	5/23/2016	159.69	99.93	59.76	0.05
MW-06F	2/26/2016	158.66	99.21	59.45	
MW-06F	5/23/2016	158.66	99.32	59.34	-0.11
MW-07A	2/26/2016	147.09	90.76	56.33	
MW-07A	5/23/2016	147.09	89.85	57.24	0.91
MW-07B-R	2/26/2016	146.42	90.63	55.79	
MW-07B-R	5/23/2016	146.42	89.42	57.00	1.21
MW-08A	2/26/2016	133.55	73.25	60.30	
MW-08A	5/23/2016	133.55	73.11	60.44	0.14
MW-08B	2/26/2016	132.85	72.74	60.11	
MW-08B	5/23/2016	132.85	72.78	60.07	-0.04
MW-08C	2/26/2016	134.34	73.90	60.44	
MW-08C	5/23/2016	134.34	74.05	60.29	-0.15
MW-09A	2/26/2016	151.98	95.00*	<56.98	
MW-09A	5/23/2016	151.98	95.00*	<56.98	NA
MW-09B	2/26/2016	152.07	95.18	56.89	
MW-09B	5/23/2016	152.07	94.02	58.05	1.16
MW-09C	2/26/2016	152.23	96.16	56.07	
MW-09C	5/23/2016	152.23	94.47	57.76	1.69
MW-09D	2/26/2016	151.68	94.88	56.80	
MW-09D	5/23/2016	151.68	94.43	57.25	0.45
MW-10A	2/26/2016	159.82	100.65	59.17	
MW-10A	5/23/2016	159.82	100.37	59.45	0.28
MW-10B	2/26/2016	160.01	100.85	59.16	
MW-10B	5/23/2016	160.01	100.54	59.47	0.31
MW-10C	2/26/2016	159.00	99.91	59.09	
MW-10C	5/23/2016	159.00	99.67	59.33	0.24
MW-10D	2/26/2016	159.81	100.67	59.14	
MW-10D	5/23/2016	159.81	100.94	58.87	-0.27
MW-11A	2/26/2016	78.71	29.54	49.17	
MW-11A	5/23/2016	78.71	26.19	52.52	3.35
MW-11B	2/26/2016	78.51	25.75	52.76	
MW-11B	5/23/2016	78.51	25.95	52.56	-0.20

TABLE 1
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL

WATER LEVEL MEASUREMENTS - SECOND QUARTER 2016

Well Identification	Date	Measuring Point Elevation (feet)	Depth to Water (feet)	Water Elevation (feet)	Change in Water Elevation (feet)
N-9980	2/26/2016	80.14	27.02	53.12	
N-9980	5/23/2016	80.14	27.26	52.88	-0.24
OBS-1	2/26/2016	108.59	51.90	56.69	
OBS-1	5/23/2016	108.59	51.69	56.90	0.21
RW-01	2/26/2016	110.94	59.80	51.14	
RW-01	5/23/2016	110.94	59.48	51.46	0.32
RW-02	2/26/2016	145.31	108.69	36.62	
RW-02	5/23/2016	145.31	93.64	51.67	15.05
RW-03	2/26/2016	120.92	69.75	51.17	
RW-03	5/23/2016	120.92	68.95	51.97	0.80
RW-04	2/26/2016	144.82	100.15*	<44.67	
RW-04	5/23/2016	144.82	93.28	51.54	>6.87
RW-05	2/26/2016	149.74	106.92*	<42.82	
RW-05	5/23/2016	149.74	97.09	52.65	>9.83
TW-1	2/26/2016	119.56	55.13	64.43	
TW-1	5/23/2016	119.56	54.98	64.58	0.15
TW-2	2/26/2016	116.02	54.07	61.95	
TW-2	5/23/2016	116.02	54.56	61.46	-0.49
TW-3-R	2/26/2016	132.82	76.96**	55.86	
TW-3-R	5/23/2016	132.82	71.44	61.38	5.52
LF-1	2/26/2016	109.92	48.29	61.63	
LF-1	5/23/2016	109.92	48.76	61.16	-0.47
LF-2	2/26/2016	117.26	56.06	61.20	
LF-2	5/23/2016	117.26	56.25	61.01	-0.19
LF-3	2/26/2016	124.95	61.83	63.12	
LF-3	5/23/2016	124.95	62.23	62.72	-0.40
LF-4	2/26/2016	149.93	83.55	66.38	
LF-4	5/23/2016	149.93	84.22	65.71	-0.67

Measuring Point Elevation and Water Elevation are in feet above mean sea level.
Measuring Point is typically top of casing.
NM: Not Measured
N/A: Not Applicable
*: Monitoring Well/ Recovery Well Dry
**: Water level reading suspected to be anomalous.

TABLE 3
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL
GROUNDWATER ANALYTICAL RESULTS - SECOND QUARTER 2016
VOLATILE HALOGENATED ORGANIC COMPOUNDS

Sample ID	MW-05B	MW-06A	MW-06B	MW-06C	MW-06E	MW-06F	MW-07B-R	MW-07B-R (DUP)	MW-08A	MW-08B	MW-09B	NYSDEC Class GA
Sampling Date	5/25/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/25/2016	5/25/2016	5/26/2016	5/26/2016	5/25/2016	Standard or Guidance Value
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	50
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	50
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Chlorodibromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	50
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	7
Dichlorodifluoromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	5.0	3.5	1 U	1 U	1 U	5
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.6
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	***30.4***	***27.2***	1 U	1 U	1 U	5
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1
Methylene chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1.1	1.0	1 U	1 U	1 U	5
Trichloroethylene	1 U	***17.3***	1 U	1 U	1 U	1 U	***357***	***364***	1 U	1 U	1 U	5
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2
Total Volatile Compounds	ND	17.3	ND	ND	ND	ND	393.5	395.7	ND	ND	ND	--

Footnotes/Qualifiers:

ug/l: Micrograms per liter
U: Analyzed for but not detected
J: Estimated value
--: No standard
ND: Not detected
Exceeds NYSDEC Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS, P.C.

TABLE 3
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL
GROUNDWATER ANALYTICAL RESULTS - SECOND QUARTER 2016
VOLATILE HALOGENATED ORGANIC COMPOUNDS

Sample ID Sampling Date Units	MW-09C 5/25/2016 ug/l	MW-11A 5/27/2016 ug/l	MW-11B 5/27/2016 ug/l	MW-30B-R 5/25/2016 ug/l	LF-1 5/27/2016 ug/l	OBS-1 5/25/2016 ug/l	Field Blank 5/27/2016 ug/l	Trip Blank 5/25/2016 ug/l	Trip Blank 5/26/2016 ug/l	Trip Blank 5/27/2016 ug/l	NYSDEC Class GA Standard or Guidance Value ug/l
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	50
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	50
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Chlorodibromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	50
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	7
Dichlorodifluoromethane	1 U	0.3 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.6
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
cis-1,2-Dichloroethene	1 U	***13.1***	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1
Methylene chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Trichloroethylene	1 U	1 U	1 U	1.0	1 U	1 U	1 U	1 U	1 U	1 U	5
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2
Total Volatile Compounds	ND	13.4	ND	1.0	ND	ND	ND	ND	ND	ND	--

Footnotes/Qualifiers:

ug/l: Micrograms per liter

U: Analyzed for but not detected

J: Estimated value

--: No standard

ND: Not detected

Exceeds NYSDEC Class GA Standard or Guidance Value

TABLE 4
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL
GROUNDWATER ANALYTICAL RESULTS - SECOND QUARTER 2016
AROMATIC HYDROCARBONS

Sample ID	MW-05B	MW-06A	MW-06B	MW-06C	MW-06E	MW-06F	MW-07B-R	MW-07B-R (DUP)	MW-08A	MW-08B	MW-09B	NYSDEC Class GA Standard or Guidance Value
Sampling Date	5/25/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/25/2016	5/25/2016	5/26/2016	5/26/2016	5/25/2016	
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1
n-Butylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
tert-Butylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Chlorobenzene	1 U	1 U	2.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Dichlorobenzene,o&p	1 U	1 U	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3**
Dichlorobenzene,o,m&p	1 U	1 U	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3**
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Isopropylbenzene	1 U	1 U	1.0	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.3 J	1 U	5
m/p-Xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
o-Xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Total Volatile Compounds	ND	ND	4.6	ND	ND	ND	ND	ND	ND	0.3	ND	--

Footnotes/Qualifiers:

ug/l: Micrograms per liter
U: Analyzed for but not detected
J: Estimated value
--: No standard
**: Applies to each isomer individually
ND: Not detected

Exceeds NYSDEC Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS, P.C.

TABLE 4
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL
GROUNDWATER ANALYTICAL RESULTS - SECOND QUARTER 2016
AROMATIC HYDROCARBONS

Sample ID / Sampling Date / Units	MW-09C 5/25/2016 ug/l	MW-11A 5/27/2016 ug/l	MW-11B 5/27/2016 ug/l	MW-30B-R 5/25/2016 ug/l	LF-1 5/27/2016 ug/l	OBS-1 5/25/2016 ug/l	Field Blank 5/27/2016 ug/l	Trip Blank 5/25/2016 ug/l	Trip Blank 5/26/2016 ug/l	Trip Blank 5/27/2016 ug/l	NYSDEC Class GA Standard or Guidance Value ug/l
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1
n-Butylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
tert-Butylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Dichlorobenzene,o&p	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3**
Dichlorobenzene,o,m&p	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3**
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Isopropylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Toluene	1 U	2.3	1.4	1 U	1.7	1 U	1 U	1 U	1 U	1 U	5
m/p-Xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
o-Xylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5
Total Volatile Compounds	ND	2.3	1.4	ND	1.7	ND	ND	ND	ND	ND	--

Footnotes/Qualifiers:

ug/l: Micrograms per liter
U: Analyzed for but not detected
J: Estimated value
--: No standard
**: Applies to each isomer individually
ND: Not detected

Exceeds NYSDEC Class GA Standard or Guidance Value

D&B Engineers and Architects, P.C.

TABLE 5
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL
GROUNDWATER ANALYTICAL RESULTS - SECOND QUARTER 2016
TETRACHLOROETHENE

Sample ID	MW-05B	MW-06A	MW-06B	MW-06C	MW-06E	MW-06F	MW-07B-R	MW-07B-R (DUP)	MW-08A	MW-08B	MW-09B	NYSDEC Class GA
Sampling Date	5/25/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/26/2016	5/25/2016	5/25/2016	5/26/2016	5/26/2016	5/25/2016	Standard or Guidance Value
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	***19.6***	***14.9***	1.2	1 U	1 U	5

Sample ID	MW-09C	MW-11A	MW-11B	M-30B-R	LF-1	OBS-1	Field Blank	Trip Blank	Trip Blank	Trip Blank		NYSDEC Class GA
Sampling Date	5/25/2016	5/27/2016	5/27/2016	5/25/2016	5/27/2016	5/25/2016	5/27/2016	5/25/2016	5/26/2016	5/27/2016		Standard or Guidance Value
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		ug/l
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		5

Footnotes/Qualifiers:
- ug/l: Micrograms per liter
- U: Analyzed for but not detected
- J: Estimated value

Exceeds NYSDEC Class GA Standard or Guidance Value

TABLE 6
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL
RECOVERY WELL SAMPLING RESULTS - SECOND QUARTER 2016
VOLATILE ORGANIC COMPOUNDS

Sample ID	RW-01	RW-02	RW-03	RW-04	RW-05	NYSDEC Class GA Standard or Guidance Value
Sampling Date	4/21/2016	4/21/2016	4/14/2016	4/21/2016	4/21/2016	
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Volatile Halogenated Organic Compounds						
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	50
Bromoform	1 U	1 U	1 U	1 U	1 U	50
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	5
Chlorodibromomethane	1 U	1 U	1 U	1 U	1 U	50
Chloroethane	1 U	1 U	1 U	1 U	1 U	5
Chloroform	1 U	1 U	1 U	1 U	1 U	7
Dichlorodifluoromethane	1 U	1 U	1 U	1 U	1 U	5
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	5
1,1-Dichloroethene	1 U	1 U	1 U	1.7	2.3	5
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.6
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	5
cis-1,2-Dichloroethene	1 U	1 U	0.3 J	***10.1***	0.8 J	5
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1
Methylene chloride	1 U	1 U	1 U	1 U	1 U	5
Tetrachloroethene	1 U	1 U	1.9	***18.5***	4.9	5
1,1,1-Trichloroethane	1 U	1 U	1 U	1.1	0.9 J	5
Trichloroethylene	1 U	1 U	***6.4***	***173***	***22.1***	5
Vinyl chloride	1 U	1 U	U	1 U	1 U	2
Total Volatile Halogenated Organic Compounds	ND	ND	8.6	204.4	31.0	--
Aromatic Hydrocarbons						
Benzene	1 U	1 U	1 U	1 U	1 U	1
n-Butylbenzene	1 U	1 U	1 U	1 U	1 U	5
tert-Butylbenzene	1 U	1 U	1 U	1 U	1 U	5
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	5
Dichlorobenzene,o&p	1 U	1 U	1 U	1 U	1 U	3**
Dichlorobenzene,o,m&p	1 U	1 U	1 U	1 U	1 U	3**
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	5
Isopropylbenzene	1 U	1 U	1 U	1 U	1 U	5
Toluene	1 U	1 U	1 U	1 U	1 U	5
m/p-Xylene	1 U	1 U	1 U	1 U	1 U	5
o-Xylene	1 U	1 U	1 U	1 U	1 U	5
Total Aromatic Hydrocarbons	ND	ND	ND	ND	ND	--

Footnotes/Qualifiers:

ug/l: Micrograms per liter
U: Analyzed for but not detected
J: Estimated value
--: No standard
ND: Not detected
Exceeds NYSDEC Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS, P.C.

TABLE 7
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL
GROUNDWATER ANALYTICAL RESULTS - SECOND QUARTER 2016
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

Sample ID Sampling Date Units	MW-05B 5/25/2016 mg/l	MW-06A 5/26/2016 mg/l	MW-06B 5/26/2016 mg/l	MW-06C 5/26/2016 mg/l	MW-06E 5/26/2016 mg/l	MW-06F 5/26/2016 mg/l	MW-07B-R 5/25/2016 mg/l	MW-07B-R (DUP) 5/25/2016 mg/l	MW-08A 5/26/2016 mg/l	NYSDEC Class GA Standard or Guidance Value mg/l
Total (Unfiltered) Metals										
Aluminum	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
Barium	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U	1
Calcium	15	5.1	19	12	30	32	5.6	5.4	30	--
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05
Chromium, Hexavalent	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.05
Copper	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.2
Iron	0.038	0.11	***10***	***6.5***	***2.8***	0.16	0.11	0.12	0.3	0.3
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.0053	0.005	0.005 U	0.005 U	0.005 U	0.025
Magnesium	6.8	5.2	17	9.8	13	12	2.6	2.5	9.5	35
Manganese	***6.7***	0.03	0.06	0.019	***0.54***	0.11	0.051	0.053	0.099	0.3
Mercury	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0007
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.1
Potassium	9.6	5 U	120	58	20	6.8	5 U	5 U	14	--
Sodium	***55***	***39***	***320***	***220***	***150***	***110***	11	11	***66***	20
Zinc	0.02 U	0.02 U	0.02 U	0.022	0.031	0.036	0.02	0.02 U	0.087	2
Leachate Indicators										
Alkalinity, Total (as CaCO3)	31.1	2.6	500	465	78.7	1 U	2.5	2.2	65.7	--
Bicarbonate	31.1	2.6	499	463	78.7	1 U	2.5	2.2	65.7	--
Carbonate	1 U	1 U	1.2	1.4	1 U	1 U	1 U	1 U	1 U	--
Chloride	95.6 D	62.6 D	***282*** **D**	210 D	***297*** ***D***	***252*** ***D***	23.6	23.3	105 D	250
Cyanide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.2
Hardness (as CaCO3)	66 D	28	100 D	58 D	104 D	114 D	18	19	102 D	--
Nitrate as N	3.67 D	3.28 D	0.1 U	0.12	1.89 D	4.17 D	2.61 D	2.44 D	4.83 D	10
Nitrite as N	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1
Nitrogen, Ammonia (as N)	0.14	0.21	***180*** **D**	***92.4*** ***D***	***15.9*** ***D***	0.19	0.17	0.15	0.12	2
Nitrogen, Kjeldahl, Total	0.1 U	2.32	128 D	56 D	12.4 D	0.1 U	0.1 U	0.1 U	11 D	--
Phenolics, Total Recoverable	0.005 U	***0.0053***	***0.0332*** ***D***	***0.0439***	***0.007***	***0.0115***	***0.008***	***0.0106***	***0.0059***	0.001
Sulfate	17.9	11	5 U	18.3	27.9	5 U	5.37	5.72	31.1	250
Total Dissolved Solids	289	157	996	732	574	593	75	81	341	--

Footnotes/Qualifiers:

mg/l: Milligrams per liter

U: Analyzed for but not detected

D: Analyzed at a secondary dilution

--: No standard or not analyzed

Exceeds NYSDEC Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS, P.C.

TABLE 7
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL
GROUNDWATER ANALYTICAL RESULTS - SECOND QUARTER 2016
TOTAL (UNFILTERED) METALS AND LEACHATE INDICATORS

Sample ID / Sampling Date / Units	MW-08B 5/26/2016 mg/l	MW-09B 5/25/2016 mg/l	MW-09C 5/25/2016 mg/l	MW-11A 5/27/2016 mg/l	MW-11B 5/27/2016 mg/l	MW-30B-R 5/25/2016 mg/l	LF-1 5/27/2016 mg/l	OBS-1 5/25/2016 mg/l	Field Blank 5/27/2016 mg/l	NYSDEC Class GA Standard or Guidance Value mg/l
Total (Unfiltered) Metals										
Aluminum	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Barium	0.25	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1
Calcium	31	15	6.5	3.7	3.7	13	--	21	7.9	--
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	--	0.01 U	0.01 U	0.05
Chromium, Hexavalent	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	0.05
Copper	0.025 U	0.025 U	0.025 U	0.02 U	0.02 U	0.025 U	--	0.025 U	0.02 U	0.2
Iron	0.027	0.026	0.15	0.034	0.065	0.077	--	0.02 U	0.02 U	0.3
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	--	0.005 U	0.005 U	0.025
Magnesium	10	5.8	6.6	2	1.8	3.9	--	14	0.56	35
Manganese	***1.5***	***3.6***	0.21	0.015 U	0.015 U	0.062	--	***2.2***	0.015 U	0.3
Mercury	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	--	0.0002 U	0.0002 U	0.0007
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	--	0.04 U	0.04 U	0.1
Potassium	12	9.2	13	5 U	5 U	5 U	--	20	5 U	--
Sodium	***170***	***63***	***60***	5 U	6.1	***53***	--	***56***	5 U	20
Zinc	0.1	0.02 U	0.02 U	0.02 U	0.02 U	0.02	--	0.02 U	0.02 U	2
Leachate Indicators										
Alkalinity, Total (as CaCO3)	5.2	32.4	34.1	1.7	1.5	5.5	55.4	113	1 U	--
Bicarbonate	5.2	32.4	34.1	1.7	1.5	5.5	55.4	113	1 U	--
Carbonate	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Chloride	***276 D***	91.6 D	87.1 D	11.7	17.5	73.3 D	106 D	76.4 D	2 U	250
Cyanide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.2
Hardness (as CaCO3)	100 D	52 D	32	16	16	34 D	90 D	100 D	5 U	--
Nitrate as N	2.18 D	3.33 D	1.01	2.43 D	1.17 D	5.23 D	0.1 U	0.49	0.1 U	10
Nitrite as N	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1
Nitrogen, Ammonia (as N)	0.19	0.52	***3.66***	0.18	0.25	0.16	0.49	***14.4 D***	0.2	2
Nitrogen, Kjeldahl, Total	0.22	0.1	3.48	0.1 U	0.1 U	0.1 U	0.41	11.6 D	0.1 U	--
Phenolics, Total Recoverable	0.0050 U	0.005 U	***0.01***	0.005 U	0.005 U	***0.0062***	0.005 U	***0.0122***	***0.0057***	0.001
Sulfate	23.9	23.2	19.1	5 U	5 U	29.3	29.6	56.2 D	5 U	250
Total Dissolved Solids	653	255	213	66	59	199	288	308	10 U	--

Footnotes/Qualifiers:

mg/l: Milligrams per liter

U: Analyzed for but not detected

D: Analyzed at a secondary dilution

--: No standard or not analyzed

Exceeds NYSDEC Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS, P.C.

TABLE 8
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL
GROUNDWATER ANALYTICAL RESULTS - SECOND QUARTER 2016
DISSOLVED (FILTERED) METALS

Sample ID / Sampling Date / Units	MW-05B 5/25/2016 mg/l	MW-06A 5/26/2016 mg/l	MW-06B 5/26/2016 mg/l	MW-06C 5/26/2016 mg/l	MW-06E 5/26/2016 mg/l	MW-06F 5/26/2016 mg/l	MW-07B-R 5/25/2016 mg/l	MW-07B-R (DUP) 5/25/2016 mg/l	MW-08A 5/26/2016 mg/l	NYSDEC Class GA Standard or Guidance Value mg/l
Dissolved (Filtered) Metals										
Aluminum	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
Barium	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1
Calcium	14	5.4	18	12	29	32	5.3	5.3	30	--
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05
Chromium, Hexavalent	0.020 U	0.020 U	0.05	0.03	0.020 U	0.020 U	0.02 U	0.020 U	0.02 U	0.05
Copper	***0.21***	0.071	0.053	0.11	0.085	0.096	0.11	0.16	***0.21***	0.2
Iron	0.3	0.3	***9.3***	***6.2***	***2.5***	0.19	0.23	***0.53***	0.088	0.3
Lead	0.0096	0.005 U	0.005 U	0.005 U	0.0055	0.0061	0.0067	0.01	0.0061	0.025
Magnesium	6.3	5.4	16	9.3	12	12	2.2	2.3	9.6	35
Manganese	***6.1***	0.031	0.057	0.028	***0.51***	0.12	0.096	0.14	0.12	0.3
Mercury	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0007
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.1
Potassium	8.3	5.7	110	49	18	6.7	5 U	5 U	13	--
Sodium	***50***	***46***	***290***	***200***	***140***	***110***	10	9.8	***68***	20
Zinc	0.18	0.027	0.02 U	0.03	0.042	0.046	0.12	0.13	0.27	2

Footnotes/Qualifiers:

mg/l: Milligrams per liter

U: Analyzed for but not detected

--: No standard

Exceeds NYSDEC Class GA Standard or Guidance Value

D&B ENGINEERS AND ARCHITECTS, P.C.

TABLE 8
TOWN OF OYSTER BAY
OLD BETHPAGE LANDFILL
GROUNDWATER ANALYTICAL RESULTS - SECOND QUARTER 2016
DISSOLVED (FILTERED) METALS

Sample ID / Sampling Date / Units	MW-08B 5/26/2016 mg/l	MW-09B 5/25/2016 mg/l	MW-09C 5/25/2016 mg/l	MW-11A 5/27/2016 mg/l	MW-11B 5/27/2016 mg/l	MW-30B-R 5/25/2016 mg/l	OBS-1 5/25/2016 mg/l	Field Blank 5/27/2016 mg/l	NYSDEC Class GA Standard or Guidance Value mg/l
Dissolved (Filtered) Metals									
Aluminum	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
Barium	0.22	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1
Calcium	29	13	4.5	3.8	3.5	13	20	0.26	--
Chromium	0.01 U	0.01 U	0.01 U	0.011	0.011	0.01 U	0.01 U	0.01 U	0.05
Chromium, Hexavalent	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.05
Copper	***0.62***	0.07	0.083	0.15	0.082	***1.2***	***0.3***	0.064	0.2
Iron	0.087	0.2	0.17	***0.61***	0.16	***0.33***	0.2	0.053	0.3
Lead	0.0096	0.005 U	0.005 U	0.0094	0.0084	0.02	0.0093	0.005 U	0.025
Magnesium	10	5.3	5.6	1.9	1.6	3.7	13	0.2 U	35
Manganese	***1.4***	***3.1***	0.19	0.018	0.015 U	0.11	***2.1***	0.015 U	0.3
Mercury	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0007
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.1
Potassium	10	7.8	12	5 U	5 U	5 U	17	5 U	--
Sodium	***150***	***55***	***54***	6.7	6.4	***40***	***51***	5 U	20
Zinc	0.13	0.044	0.038	0.049	0.032	***2.8***	0.3	0.02 U	2

Footnotes/Qualifiers:

mg/l: Milligrams per liter

U: Analyzed for but not detected

--: No standard

Exceeds NYSDEC Class GA Standard or Guidance Value

APPENDIX B

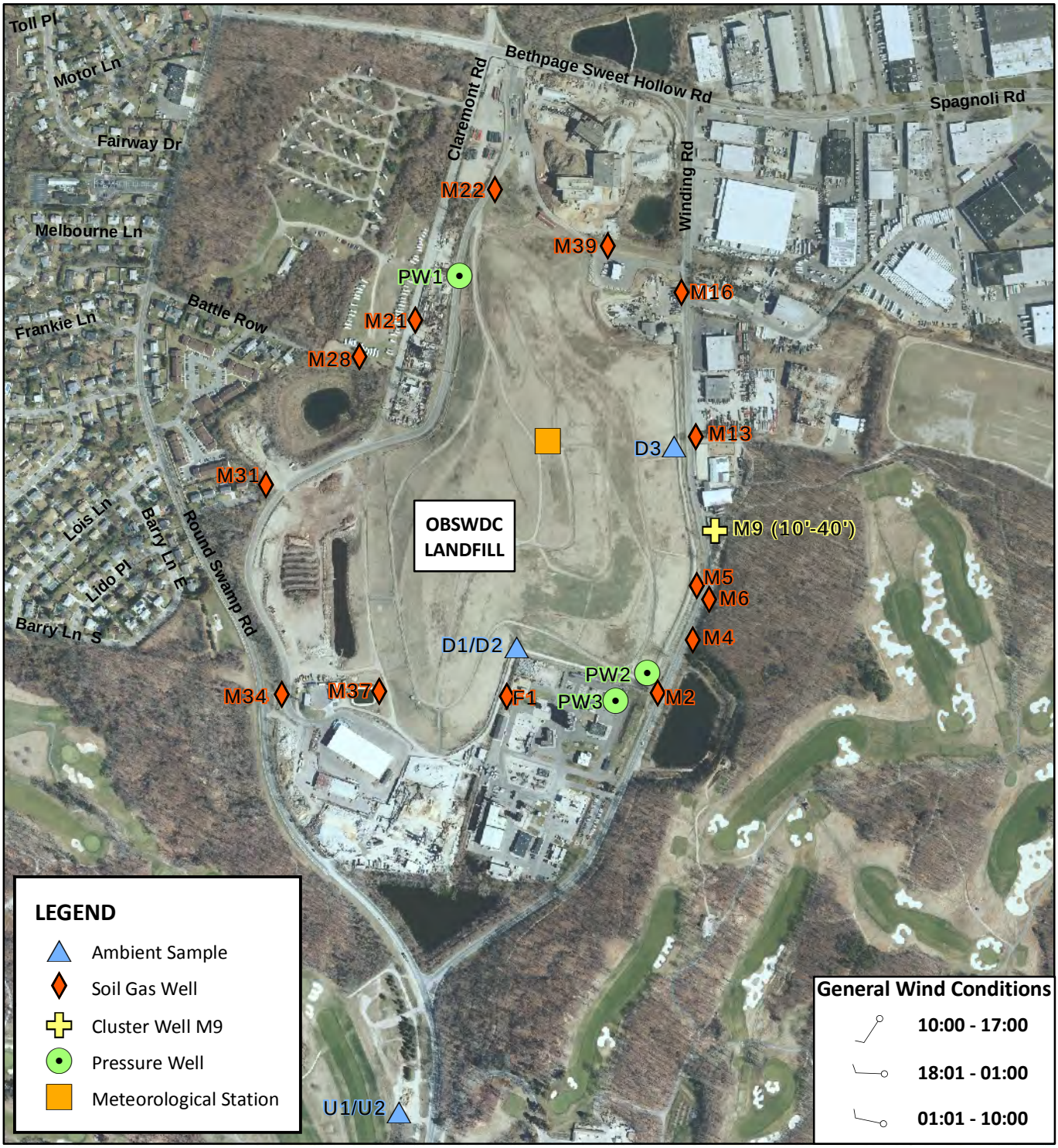
Figure 2.1 and Tables 4.1 and 4.3
from
"Town of Oyster Bay
Old Bethpage Solid Waste Disposal Complex
Ambient Air Quality Survey and Soil Gas Quality Survey
2016 Second Quarter Report"

RTP Environmental Associates, Inc.
September 2016

AND

Table 2-1
from
"Town of Oyster Bay
Old Bethpage Solid Waste Disposal Complex
Perimeter Landfll Gas Exhaust Vent Stack Test
2016 Emissions Report"

RTP Environmental Associates, Inc.
August 2016



N

0 400 800 1,600 Feet

NOTES:

ORTHOIMAGERY SOURCE:
NYSGIS 2013

TESTING DATES:
JUNE 7-8, 2016

RTP Environmental Associates, Inc.
Westbury, New York

FIGURE 2.1

ANNUAL 2016
AMBIENT AIR AND SOIL GAS
MONITORING LOCATIONS

TOWN OF OYSTER BAY LANDFILL
BETHPAGE, NEW YORK

TABLE 4.1

TOWN OF OYSTER BAY

OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

AMBIENT AIR VOST SAMPLE RESULTS

2016 ANNUAL

	24 HOUR AMBIENT AIR SAMPLE					BLANK		CURRENT	24 HOUR
SAMPLE IDENTIFICATION[1]	U1	U2	D1	D2	D3	FB3	TB1	AGC	SGC[4]
LOWER QUANTITATION LIMIT (LQL)	0.0150	0.0339	0.0155	0.0303	0.0337	5	5		
PRACTICAL QUANTITATION LIMIT (PQL)	0.0240	0.0542	0.0248	0.0485	0.0539	8	8		
TARGETED TIC LQL	0.0751	0.1695	0.0774	0.1515	0.168	25	25		
VOC COMPOUND NAME	(µg/std-m^3)	(µg/std-m^3)	(µg/std-m^3)	(µg/std-m^3)	(µg/std-m^3)	(ng)	(ng)	(µg/m^3)	(µg/m^3)
Acetone[2]	1.08	1.73	1.52	2.18	2.29	24	43	30,000	180,000
Benzaldehyde[3]	**0.30**	**< 0.34**	**0.34**	**0.29**	**< 0.59**		31	0.10	----
Benzene	**0.33**	**< 0.32**	**0.18**	**< 0.21**	**< 0.17**			0.13	1,300
Bromodichloromethane								70.0	---
Bromoform[2]								0.91	---
Bromomethane								5.00	3,900
2-Butanone[2]	0.26	0.35	0.37	0.56	0.35			5,000	13,000
Carbon Disulfide								700.0	6,200
Carbon Tetrachloride	**0.39**	**0.35**	**0.40**	**0.39**	**0.34**			0.17	1,900
Chlorobenzene								60.0	---
Chloroethane								10,000	---
2-Chloroethyl Vinyl Ether[3]								0.10	----
Chloroform	0.08	< 0.09	0.09	0.10	0.09			14.7	150
Chloromethane	0.03	< 0.06	0.04	< 0.05	< 0.06			90.0	22,000
Dibromochloromethane								0.10	---
1,2-Dichlorobenzene (o)								200.0	30,000
1,3-Dichlorobenzene (m)								10.0	---
1,4-Dichlorobenzene (p)	0.03		0.03	< 0.04	< 0.04			0.09	---
1,1-Dichloroethane								0.63	---
1,2-Dichloroethane	**0.042**	**< 0.050**	**0.043**	**< 0.061**	**< 0.054**			0.038	---
1,1-Dichloroethene								200.0	---
cis-1,2-Dichloroethene								63.0	---
trans-1,2-Dichloroethene								63.0	----
1,2-Dichloropropane				< 0.03				4.00	----
1,3-Dichloropropene, cis & trans isomers								0.25	---
Ethylbenzene	0.10		0.10	< 0.12	< 0.10			1,000	---
2/4-Ethyltoluene (total)	0.03		0.03	< 0.08	< 0.07			0.10	----
Freon 13[3]								5,000	9,000
2-Hexanone[2]								30.0	4,000
Methylene Chloride	0.14	0.19	0.16	0.20	0.19			60.0	14,000
4-Methyl-2-Pentanone[2]			0.02	< 0.05				3,000	31,000
Styrene								1,000	17,000
1,1,2,2-Tetrachloroethane								16.0	---
Tetrachloroethene	0.11		0.11	< 0.12	< 0.09			4.00	300
Toluene	0.48	< 0.09	0.46	< 0.53	< 0.45			5,000	37,000
1,1,1-Trichloroethane								5,000	9,000
1,1,2-Trichloroethane								1.40	---
Trichloroethene								0.20	14,000
Trichlorofluoromethane	1.17	1.11	1.11	1.17	1.16			5,000	9,000
Vinyl Chloride								0.068	180,000
Xylenes (Total)	0.51		0.50	< 0.50	< 0.45			100.0	22,000
Decane[3]	0.11		0.14	< 0.20	< 0.18			700.0	---

TABLE 4.1
Continued

TOWN OF OYSTER BAY

OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

AMBIENT AIR VOST SAMPLE RESULTS

2016 ANNUAL

SAMPLE TYPE	24 HOUR AMBIENT AIR SAMPLE					BLANK		CURRENT	24 HOUR
SAMPLE IDENTIFICATION[1]	U1	U2	D1	D2	D3	FB3	TB1	AGC	SGC[4]
ADDITIONAL TIC LQL	0.075	0.169	0.077	0.152	0.168	25	25		
VOC COMPOUND NAME	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	(ng)	(ng)	($\mu g/m^3$)	($\mu g/m^3$)
Nonanal	2.13			< 1.47	< 0.93			---	---
Pentane	0.81	0.88	0.80	< 0.86	< 0.72			42,000	---
(DEL) Alkane: Cyclic		< 0.32			< 0.34			---	---
2-Methyl-butane	1.65	< 1.54	1.67	< 1.95	< 1.60			42,000	---
Hexane		< 0.76		< 0.71	< 0.59			700.0	---
2-Methyl-pentane		< 0.46		0.67	< 0.45			---	---
Isobutane		< 0.97	1.30		< 1.20			---	238,000
Dichlorodifluoromethane		< 1.88	1.70	< 1.59	< 1.94			12,000	---
Hexanal				< 0.59				---	---
Heptanal	1.17			< 0.77				---	---
Unknown Diene (RT: 2.39)	1.86	1.73	1.92	2.15	1.78			---	---
Ethane, 1,1,2-trichloro-1,2,2-triflu	0.96	< 0.80	0.80	< 0.95	< 0.86			180,000	960,000
Butane	1.05	< 1.31	1.36	< 1.71	< 1.30			---	238,000
2-Butenal		< 0.33						---	86.0
Unknown silane (RT: 12.30)					< 0.45			---	---
Unknown (RT: 2.37 - 12.87)		< 0.46		< 0.56	< 0.45			---	---

NOTES:

[1] See Figure 2.1 for ambient air sampling locations.

[2] An 8 (splitless) nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.

[3] Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.

[4] This 24 hour guideline concentration was calculated by multiplying the current SGC value (last revised February 2014 and still current as of July 2016) by 0.4 (EPA averaging time adjustment factor).

U1/U2: Adjoining the east fence of the 15th hole fairway of the Bethpage State Park Black Golf Course, approximately 200 feet west of Round Swamp Road.
D1/D2: Approximately 75 feet southwest of the southwest corner of the Groundwater Treatment Building.
D3: At the fifth footbridge along Landfill Haul Road, approximately 75 feet west of Winding Road.

- All values are reported in micrograms per standard cubic meter ($\mu g/std\text{-}m^3$) except for the field blank and trip blank mass loading results which are reported in nanograms (ng).
- Blank values:
  Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Chloroethyl vinyl ether, Freon 13 and Decane). Benzaldehyde has a LQL two (2) times the targeted TIC LQL.
  Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where fewer than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample.
- Values in shaded areas are at or exceed the level of the current (last revised February 2014 and still current as of July 2016) and/or previous ambient air Annual Guideline Concentration (AGC) values.
- Less than values (<) are used where the Lower Quantitation Limit, the Target TIC Lower Quantitation Limit, or the Practical Quantitation Limit is averaged with the reported values.
- Freon 13 is listed as Chlorotrifluoromethane in the analytical results, Appendix C.
- ($\mu g/std\text{-}m^3$): micrograms per standard cubic meter
- (ng): nanograms

TABLE 4.3

TOWN OF OYSTER BAY
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS
2016 ANNUAL

SOIL GAS WELL ID	F1	M2	M4	M5	M6	M9(10)	M9(20)	M9(30)	M9(40)	FB1	Current	Current
LOWER QUANTITATION LIMIT (LQL)	0.519	0.519	0.517	0.521	0.524	0.528	0.530	1.063	0.529	5	AGC	SGC
PRACTICAL QUANTITATION LIMIT (PQL)	0.831	0.830	0.827	0.833	0.839	0.845	0.848	1.700	0.846	8	---	---
TARGETED TIC LQL	2.60	2.59	2.59	2.60	2.62	2.64	2.65	5.31	2.64	25	---	---
VOC COMPOUND NAME	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(ng)	(μg/std-m^3)	(μg/std-m^3)
Acetone*	6.13	9.96	4.24	6.98	5.35	7.18	6.47	5.74	5.07	29	30,000	180,000
Benzaldehyde* **	**3.43**			**4.06**		**3.17**	**3.39**			43	0.10	----
Benzene											0.13	1,300
Bromodichloromethane											70.0	---
Bromoform*											0.91	---
Bromomethane											5.00	3,900
2-Butanone*											5,000	13,000
Carbon Disulfide											700	6,200
Carbon Tetrachloride											0.17	1,900
Chlorobenzene											60.0	---
Chloroethane											10,000	---
2-Chloroethyl Vinyl Ether**											0.10	----
Chloroform	2.28	1.04		12.50							14.7	150
Chloromethane											90.0	22,000
Dibromochloromethane											0.10	---
1,2-Dichlorobenzene (o)											200	30,000
1,3-Dichlorobenzene (m)											10.0	---
1,4-Dichlorobenzene (p)											0.09	---
1,1-Dichloroethane											0.63	---
1,2-Dichloroethane											0.038	---
1,1-Dichloroethene											200	---
cis-1,2-Dichloroethene											63.0	---
trans-1,2-Dichloroethene									0.60		63.0	----
1,2-Dichloropropane											4.00	----
1,3-Dichloropropene, cis & trans isomers											0.25	---
Ethylbenzene											1,000	---
2/4-Ethyltoluene (total)											0.10	----
Freon 13**											5,000	9,000
2-Hexanone*											30.0	4,000
Methylene Chloride	1.35										60.0	14,000
4-Methyl-2-Pentanone*											3,000	31,000
Styrene											1,000	17,000
1,1,2,2-Tetrachloroethane											16.0	---
Tetrachloroethene	**8.31**	1.04		3.54	0.90	2.01	1.27	**< 4.99**	**13.74**		4.00	300
Toluene	0.59										5,000	37,000
1,1,1-Trichloroethane											5,000	9,000
1,1,2-Trichloroethane											1.40	---
Trichloroethene											0.20	14,000
Trichlorofluoromethane	1.87	1.14	0.73	1.98	1.36	1.90	1.06	< 1.39	1.59		5,000	9,000
Vinyl Chloride											0.068	180,000
Xylenes (Total)	1.04										100	22,000
Decane**	0.57										700	---

TABLE 4.3
(Continued)

TOWN OF OYSTER BAY
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS
ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS
2016 ANNUAL

SOIL GAS WELL ID	F1	M2	M4	M5	M6	M9(10)	M9(20)	M9(30)	M9(40)	FB1	Current	Current
ADDITIONAL TIC LQL	2.60	2.59	2.59	2.60	2.62	2.64	2.65	5.31	2.64	25	AGC	SGC
VOC COMPOUND NAME	(µg/std-m^3)	(µg/std-m^3)	(µg/std-m^3)	(µg/std-m^3)	(µg/std-m^3)	(µg/std-m^3)	(µg/std-m^3)	(µg/std-m^3)	(µg/std-m^3)	(ng)	(µg/std-m^3)	(µg/std-m^3)
Unknown Siloxane (RT: 12.86)				2.81							---	---
5-Hepten-2-one, 6-methyl-											---	---
Nonanal											---	---
Trisiloxane, octamethyl-											---	---
Ethane, 1-1-difluoro-											40,000	---
Isobutane											---	238,000
Dichlorodifluoromethane	7.89	6.74	3.62	12.50	6.60	7.07	6.79	< 8.93	9.30		12,000	---
Ethane, 1-chloro-1,1-difluoro-											50,000	---
Cyclotetrasiloxane, octamethyl-				9.27							360	---
Heptanal											---	---
Butane											---	238,000
Cyclotrisiloxane, hexamethyl-	2.80	4.77		2.60			5.20	< 5.53		26	---	---
Ethane, 1,2-dichloro-1,1,2,2-tetrafluoro				3.13	2.62				2.85		17,000	---
Santolina triene											---	---
6-Octenal, 3,7-dimethyl- + unknown			2.79								40,000	---
Unknown + chlorofluoroethene isomer	2.91										---	---
Unknown (RT: 2.37 - 12.87)	3.84										---	---

TABLE 4.3
(Continued)

TOWN OF OYSTER BAY
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS
2016 ANNUAL

SOIL GAS WELL ID	M13	M16	M21	M22	M28	M31	M34	M37	M39	FB2	Current AGC	Current SGC
LOWER QUANTITATION LIMIT (LQL)	0.522	0.533	0.510	1.272	0.508	0.509	0.513	0.508	1.016	5		
PRACTICAL QUANTITATION LIMIT (PQL)	0.835	0.853	0.815	2.036	0.812	0.81	0.821	0.813	1.626	8		
TARGETED TIC LQL	2.61	2.67	2.55	6.36	2.54	2.54	2.57	2.54	5.08	25		
VOC COMPOUND NAME	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)	(ng)	($\mu g/std\text{-}m^3$)	($\mu g/std\text{-}m^3$)
Acetone*	5.64	4.80	7.85	17.56	11.17	29.50	8.32	9.86	8.13	22	30,000	180,000
Benzaldehyde**				**9.16**					**6.10**		0.10	----
Benzene											0.13	1300
Bromodichloromethane											70.0	---
Bromoform*											0.91	---
Bromomethane											5.00	3900
2-Butanone*					1.42	3.26					5000	13,000
Carbon Disulfide											700	6200
Carbon Tetrachloride											0.17	1,900
Chlorobenzene											60	---
Chloroethane											10,000	---
2-Chloroethyl Vinyl Ether**											0.10	----
Chloroform	6.58	4.80	0.73	2.54		0.76	0.85	4.98	< 1.52		14.7	150
Chloromethane											90.0	22,000
Dibromochloromethane											0.10	---
1,2-Dichlorobenzene (o)											200	30,000
1,3-Dichlorobenzene (m)											10.0	---
1,4-Dichlorobenzene (p)											0.09	---
1,1-Dichloroethane	**0.73**										0.63	---
1,2-Dichloroethane											0.038	---
1,1-Dichloroethene											200.0	---
cis-1,2-Dichloroethene											63.0	---
trans-1,2-Dichloroethene											63.0	----
1,2-Dichloropropane											4.00	----
1,3-Dichloropropene, cis & trans isomers											0.25	---
Ethylbenzene											1,000	---
2/4-Ethyltoluene (total)											0.10	----
Freon 13**											5,000	9,000
2-Hexanone*											30.0	4000
Methylene Chloride											60.00	14,000
4-Methyl-2-Pentanone*					487.31	7.83					3,000	31,000
Styrene											1,000	17,000
1,1,2,2-Tetrachloroethane											16.0	---
Tetrachloroethene	**21.92**	**9.59**	1.83				0.81	1.42	**< 15.75**		4.00	300
Toluene					0.92				< 1.20		5,000	37,000
1,1,1-Trichloroethane	2.19										5,000	9,000
1,1,2-Trichloroethane											1.40	---
Trichloroethene	**1.15**										0.20	14,000
Trichlorofluoromethane	2.19	1.92	1.73	1.45	1.12	1.32	1.44	1.63	1.29		5,000	9,000
Vinyl Chloride											0.068	180,000
Xylenes (Total)											100	22,000
Decane**											700	---

TABLE 4.3
(Concluded)

TOWN OF OYSTER BAY
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SOIL GAS VOST SAMPLE RESULTS
ADDITIONAL TENTATIVELY IDENTIFIED COMPOUNDS
2016 ANNUAL

SOIL GAS WELL ID	M13	M16	M21	M22	M28	M31	M34	M37	M39	FB2	Current	Current
ADDITIONAL TIC LQL	2.61	2.67	2.55	6.36	2.54	2.54	2.57	2.54	5.08	25	AGC	SGC
VOC COMPOUND NAME	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(μg/std-m^3)	(ng)	(mg/m^3)	(mg/m^3)
Unknown Siloxane (RT: 12.86)			2.75								---	---
5-Hepten-2-one, 6-methyl-					456.85	457.78	29.77	13.21			---	---
Nonanal									< 6.30		---	---
Trisiloxane, octamethyl-							5.13				---	---
Ethane, 1-1-difluoro-								17.28			40,000	---
Isobutane								8.03			---	238,000
Dichlorodifluoromethane	9.19	4.69	5.40				5.85		< 10.16		12,000	---
Ethane, 1-chloro-1,1-difluoro-			7.44								50,000	---
Cyclotetrasiloxane, octamethyl-	4.38		8.36								360	---
Heptanal											---	---
Butane								3.96			---	238,000
Cyclotrisiloxane, hexamethyl-		2.77	3.98								---	---
Ethane, 1,2-dichloro-1,1,2,2-tetrafluoro	9.50										17,000	---
Santolina triene		25.59									---	---
6-Octenal, 3,7-dimethyl- + unknown											40,000	---
Unknown + chlorofluoroethene isomer											---	---
Unknown (RT: 2.37 - 12.87)	4.07	2.77	3.87			19.33	5.95	3.66	7.93		---	---

Notes:

* An 8 nanogram practical quantitation limit has been assigned to these compounds due to their poor responses during laboratory analysis.

** Targeted Tentatively Identified Compound (TIC). As reported by the laboratory, Targeted TICs have a Lower Quantitation Limit that is five (5) times the targeted compound Lower Quantitation Limit.

- All values are reported in micrograms per standard cubic meter (mg/std-m^3).
- Blank values:
  Targeted Compounds and Targeted TICs- All blank values are below the Lower Quantitation Limit, Practical Quantitation Limit (applies to Acetone, Bromoform, 2-Butanone, 4-Methyl-2-Pentanone and 2-Hexanone), or the Targeted TIC Lower Quantitation Limit (applies to Chloroethyl vinyl ether, Freon 13 and Decane). Benzaldehyde has a LQL 2 times the targeted TIC LQL.
  Additional Tentatively Identified Compounds- All blank values are either below the Targeted TIC Lower Quantitation Limit where fewer than six (6) additional TICs are reported for a particular sample or below the lowest reported additional TIC value, where six (6) or more additional TICs are reported for a particular sample.
- Values in shaded areas are at or exceed the level of the current (last revised February 2014 and still current as of July 2016) and/or previous ambient air Annual Guideline Concentration (AGC) values.
- Less than values (<) are used where the Lower Quantitation Limit, the Target TIC Lower Quantitation Limit, or the Practical Quantitation Limit is averaged with the reported values.
- Freon 13 is listed as Chlorotrifluoromethane in the Analytical Results, Appendix C.
- (μg/std-m^3): micrograms per standard cubic meter
- (ng): nanograms

TABLE 5.1

TOWN OF OYSTER BAY
OLD BETHPAGE SOLID WASTE DISPOSAL COMPLEX

SUMMARY OF SOIL GAS PRESSURE TESTS

2016 ANNUAL

SAMPLE ID	DATE (mm/dd/yy)	TIME (EST)	WELL ID	WELL LOCATION	WELL DEPTH (feet)	PRESSURE* (inches water)
P1	6/8/16	7:26 AM	PW1	NW corner of the landfill on Haul Road	10	-0.03
P2	6/8/16	7:26 AM	PW1	NW corner of the landfill on Haul Road	20	-0.04
P3	6/8/16	7:28 AM	PW1	NW corner of the landfill on Haul Road	10	-0.04
P4	6/8/16	7:28 AM	PW1	NW corner of the landfill on Haul Road	20	-0.05
P5	6/8/16	7:14 AM	PW2	SE corner of the landfill NW of Well M2	10	0.00
P6	6/8/16	7:14 AM	PW2	SE corner of the landfill NW of Well M2	20	0.00
P7	6/8/16	7:15 AM	PW2	SE corner of the landfill NW of Well M2	10	0.00
P8	6/8/16	7:15 AM	PW2	SE corner of the landfill NW of Well M2	20	0.00
P9	6/8/16	7:02 AM	PW3	Nassau County Fire Service Academy	10	0.00
P10	6/8/16	7:02 AM	PW3	Nassau County Fire Service Academy	20	-0.09
P11	6/8/16	7:04 AM	PW3	Nassau County Fire Service Academy	10	0.00
P12	6/8/16	7:04 AM	PW3	Nassau County Fire Service Academy	20	-0.09

NOTES:

- Measurements taken using a ten inch Dwyer inclined manometer.
- Leak checks were performed on the manometer before testing each well.

* The differential pressure of a well is relative to ambient pressure.

TABLE 2-1

EMISSIONS SUMMARY FROM OBSWDC GCCS VENT STACK

Town of Oyster Bay OBSWDC Facility

Melville, New York

June 29-30, 2016

PERIMETER LANDFILL GAS SUMMA CANISTER SAMPLE RESULTS

FOR SPECIATED VOLATILE ORGANIC COMPOUNDS (VOCs)

All values in µg/std-m^3

DATE:	June 29, 2016	June 30, 2016	June 30, 2016	**CURRENT AGC**	**24-HOUR SGC**	ANNUAL EMISSION RATE CALCUATION	
LOCATION:	Thermal Oxidizer	Thermal Oxidizer	Thermal Oxidizer				
SAMPLE ID:	OBSWDC:LFGV1	OBSWDC:LFGV2	OBSWDC:LFGV3				
VACUUM START:	-31.00	-27.50	-30.50				
TIME START:	10:34	11:27	12:37				
VACUUM END:	-9.20	-4.00	-7.00				
TIME END:	11:34	12:27	13:37			Flow Rate Average	**689.17**
WIND DIRECTION/SPEED:	W (var) / Calm	NNE / 5 mph	NNE / 5 mph			Test Avg.	lbs/yr
Acetone	24.6	23.6	20.6	30,000	180,000	22.93	646.67
Benzene	**4.27**	**4.11**	**2.25**	0.13	1,300	3.54	99.91
Bromodichloromethane				70.0	---		
Bromoform				0.91	---		
Bromomethane				5.0	3,900		
Carbon Disulfide				700	6,200		
Carbon Tetrachloride				0.17	1,900		
Chlorobenzene	4.39	4.22	1.92	60.0	---	3.51	98.97
Chloroethane				10,000	---		
Chloroform	1.01			14.7	150	1.01	28.48
Chloromethane	1.52	1.54	1.53	90.0	22,000	1.53	43.14
cis-1,2-Dichloroethene				63.0	---		
cis-1,3-Dichloropropene				0.25	---		
Dibromochloromethane				0.10	---		
Dichlorodifluoromethane (CFC 12)	4.82	3.80	3.86	12,000	---	4.16	117.30
Ethylbenzene	1.59	1.66		1,000	---	1.63	45.82
m,p-Xylenes	2.03	2.23	1.47	100	22,000	1.91	53.86
Methyl tert-Butyl Ether	1.19	1.08	1.01	3.8	---	1.09	30.83
Methylene Chloride	8.51	6.62	5.17	60.0	14,000	6.77	190.80
o-Xylene	1.07	1.16		100	22,000	1.12	31.44
Styrene				1,000	17,000		
Tetrachloroethene				4.0	300		
Toluene	1.49	1.60	1.95	5,000	37,000	1.68	47.37
trans-1,2-Dichloroethene				63.0	---		
trans-1,3-Dichloropropene				0.25	---		
Trichloroethene				0.20	14,000		
Trichlorofluoromethane	1.83	1.91	1.78	5,000	9,000	1.84	51.88
Vinyl Acetate				200	5,300		
Vinyl Chloride	**1.36**	**1.29**	**0.58**	0.068	180,000	1.08	30.36
1,1,1-Trichloroethane				5,000	9,000		
1,1,2,2-Tetrachloroethane				16.0	---		
1,1,2-Trichloro-1,2,2-trifluoroethane				---	---		
1,1,2-Trichloroethane				1.4	---		
1,1-Dichloroethane				0.63	---		
1,1-Dichloroethene				200	---		
1,2,4-Trichlorobenzene				---	3,700		
1,2,4-Trimethylbenzene	2.35	2.55	1.90	6.0	---	2.27	63.91
1,2-Dibromoethane				0.0017	---		
1,2-Dichlorotetrafluoroethane	20.3	20.2	10.1	17,000	---	16.87	475.60
1,2-Dichlorobenzene				200	30,000		
1,2-Dichloroethane				0.038	---		
1,2-Dichloropropane				4.0	---		
1,3,5-Trimethylbenzene				6.0	---		
1,3-Dichlorobenzene				10.0	---		
Hexachlorobutadiene				0.045	---		
1,4-Dichlorobenzene	**3.31**	**3.38**	**1.55**	0.09	---	2.75	77.45
2-Butanone (Methyl ethyl ketone)	1.58	1.65	1.29	5,000	13,000	1.51	42.48
2-Hexanone (Methyl butyl ketone)				30.0	4,000		
4-Methyl-2-pentanone (Methyl isobutyl ketone)				3,000	31,000		
						Total Target lbs / yr	2,176.30

Notes: Flow rate average is in scfm.

- All samples were tested by Pace Analytical for VOCs using EPA TO-15 with TIC analysis.