

SYOSSET LANDFILL

2024 ANNUAL POST-CLOSURE SUMMARY REPORT

Volume 2 of 2

Ground Water-Monitoring Program



TOWN OF OYSTER BAY

**DEPARTMENT OF PUBLIC WORKS
SYOSSET, NEW YORK 11791**

June 2025



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SYOSSET LANDFILL

**2024 ANNUAL POST-CLOSURE
SUMMARY REPORT**

**VOLUME 2 OF 2
GROUND WATER-MONITORING PROGRAM**

June 2025

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SECTION 1

INTRODUCTION

The Town of Oyster Bay (Town) is required to perform ground-water monitoring at the Syosset Landfill (Landfill) during the post-closure period pursuant to two Records of Decision (RODs) from the United States Environmental Protection Agency (USEPA) Region II for the Landfill. These RODs are enforceable under a Consent Decree (CV-90-4183) entered into by the Town and the USEPA.

The scope of the ground water-monitoring program is specified in Section 4 (Groundwater Monitoring System) of the Post-Closure Monitoring and Maintenance Operations Manual (O&M Manual), prepared by Lockwood, Kessler and Bartlett, Inc. (LKB), dated April 2003. The main purpose of the ground water-monitoring program is to track ground water-flow and quality conditions now that capping has been completed, to ensure that the Landfill continues to not pose a threat to public health and the environment via the ground-water pathway. The Landfill was removed from the National Priorities List on April 28, 2005.

The ground water-monitoring system for the Landfill is comprised of 20 wells. The locations of the wells are indicated in Figure 1. As shown in this figure, twelve of the wells are located onsite, along the upgradient (south) boundary, within, and along the downgradient (north) boundary of the Landfill. Note that on-site Well SY-1 can no longer be located and is presumed to no longer exist. The other eight wells are located offsite downgradient of the Landfill, in three clusters. The on-site wells are screened in either the shallow, intermediate or deep zone of the Magothy Aquifer, which is the uppermost aquifer as the overlying Upper Glacial Formation is unsaturated beneath the Landfill. All of the off-site downgradient wells are screened in the Magothy Aquifer.

The post-closure monitoring well network is comprised of the following 11 wells:

- SY-6 (Upgradient Well);
- SY-2R, SY-2D, SY-3, SY-3D and SY-3DD (On-Site Downgradient Wells); and
- PK-10S, PK-10I, PK-10D, RW-12I and RW-12D (Off-Site Downgradient Wells).

This Report presents the results of the 2024 annual well inspection and ground water-monitoring round, which were performed on April 5th and 18th, May 20th and 21st, and June 4th. The scope of work followed Section 4.0 of the O&M Manual and incorporated the recommendations in the 2023 ground water-monitoring round report. Sections 2.0 through 4.0 of this Report summarize the results of monitoring well inspections and/or repairs, water-level measurements, and ground-water sampling, respectively. Section 5.0 compares the 2024 results to the previous annual post-closure monitoring results obtained since 2003, and to the 1988 OU-1 RI and the 1993 OU-2 RI results. Conclusions and recommendations based on the results are provided in Section 6.0. Each section is supported by tables, figures, and appendices, as appropriate.

SECTION 2

RESULTS OF TASK 1 – WELL INSPECTION, MODIFICATION AND/OR REPAIR

Prior to performing the 2024 ground water-monitoring round, the 19 existing monitoring wells were located and inspected on April 5th and 18th. One well, SY-1, was not able to be found since 2021 and is presumed to no longer exist. The 19 existing wells were in usable condition. In terms of repairs, the locks need to be replaced on the wells. The inspection information for each ground water-monitoring well was recorded on a Well Inspection Checklist form, which is included in Appendix A.

SECTION 3

RESULTS OF TASK 2 – WATER-LEVEL MEASUREMENT

The 2024 synoptic water-level round was performed on April 5th and 18th. Measurements were made to the nearest 0.01-foot utilizing an electronic water-level meter. Water-level measurements were obtained from all 19 existing monitoring wells.

The 2024 water-level data are summarized in Table 1. Monitoring well construction details are provided in Table 2. Ground water-flow maps for the shallow, intermediate, and deep zones of the Magothy Aquifer in the vicinity of the Landfill, based on the 2024 water-level measurements, are provided in Figures 2, 3 and 4, respectively.

3.1 Horizontal Ground Water-Flow Directions and Gradients

3.1.1 Shallow Zone

As shown in Figure 2, the overall horizontal ground water-flow direction in the shallow zone of the Magothy Aquifer beneath the Landfill is from south to north. Downgradient of the Landfill, horizontal ground water-flow directions converge slightly in the vicinity of Well Cluster PK-10 and then appear to shift in direction to the north-northwest. Moreover, based on the ground water-flow directions shown in Figure 2, Well Cluster RW-12 is located side-gradient to, rather than directly downgradient of, the Landfill.

The converging ground water-flow pattern observed in the shallow zone of the Magothy Aquifer downgradient of the Landfill is attributed to the influence of a buried glacial valley that begins beneath the western half of the Landfill and appears to trend to the north-northeast. The Upper Glacial Formation is unconfined and more permeable than the Magothy Formation, which is locally semi-confined. Therefore, in the vicinity of the buried glacial valley, ground water tends to flow out of the section of Magothy Formation in contact with the buried glacial valley and into the Upper Glacial Formation, resulting in the converging flow pattern observed. The buried glacial valley is discussed in more detail in Section 3.3 below.

The horizontal hydraulic gradient for the shallow zone of the Magothy Aquifer, calculated by dividing the difference in water-level elevation between Well SY-6 and Well PK-10S in 2024 (1.71 feet) by the distance between the two wells (1,975 feet), is 0.0009. This gradient is similar to the gradients (0.0008 – 0.0012) observed from 2013 through 2023, and during the pre-2011 monitoring rounds. Therefore, it appears to represent typical conditions. In contrast, in 2011 and 2012, lower horizontal hydraulic gradients (0.0003 and 0.0002, respectively) were observed in this aquifer zone. They were attributed to the unusually rapid rises in the water-table elevation in late 2011 and late 2012 due to the above-normal infiltration from the hurricanes and nor'easters that occurred earlier in those years.

Table 1
Summary of Water-Level Results
Syosset Landfill 2024 Annual Post-Closure Ground Water-Monitoring Report

Well No.	MP Elev.	MP Description	WL Depth	WL Elev.	Vertical Gradient (ft/ft)
On-Site Wells					
SY-1	198.48	Top of 2-inch steel casing.	NM*	NA	
SY-1D	197.02	Top of 4-inch PVC cap.	111.55	85.47	
SY-2R	190.86	Top of 4-inch PVC casing.	105.90	84.96	0.0007 (SY-2R / SY-2D)
SY-2D	190.91	Top of 3-inch PVC casing.	106.00	84.91	
SY-3	193.96	Top of 2-inch steel casing.	108.60	85.36	0.0146 (SY-3 / SY-3D)
SY-3D	194.47	Top of 3-inch PVC casing.	109.90	84.57	0.0017 (SY-3D / SY-3DD)
SY-3DD	193.95	Top of 2-inch PVC casing.	109.95	84.00	
SY-4	192.39	Top of 2-inch steel casing.	106.10	86.29	
SY-6	186.94	Top of 2-inch steel casing.	101.15	85.79	
SY-7	197.46	Top of 2-inch steel casing.	110.14	87.32	
SY-8	197.94	Top of 4-inch PVC cap.	113.75	84.19	
SY-9	202.41	Top of 4-inch PVC casing.	116.70	85.71	
Off-Site Wells					
PK-10S	188.73	Top of 4-inch PVC casing.	104.65	84.08	0.0020 (PK-10S / PK-10I)
PK-10I	187.10	Top of 4-inch PVC casing.	103.45	83.65	0.0004 (PK-10I / PK-10D)
PK-10D	188.25	Top of 4-inch PVC casing.	104.65	83.60	
RW-12I	197.32	Top of 4-inch PVC casing.	113.90	83.42	0.0009 (RW-12I / RW-12D)
RW-12D	197.29	Top of 4-inch PVC casing.	114.00	83.29	
RB-11S	189.91	Top of 4-inch PVC cap.	104.70	85.21	0.0074 (RB-11S / RB-11I)
RB-11I**	190.22	Top of 4-inch PVC casing.	106.60	83.62	-0.0006 (RB-11I / RB-11D)
RB-11D**	190.50	Top of 4-inch PVC casing.	106.80	83.70	

Notes:

Water-level data collected on April 5, 2024.

MP - Measuring Point. Some elevations differ from the ones shown in Table 2 due to more recent repairs.

*Unable to locate Well SY-1, it appears to have been destroyed.

** MP elevation decreased by 0.1 feet to account for removal of pumps and PVC caps in early 2019.

Table 2
Summary of Construction Details for Monitoring Wells Installed at and Near the Syosset Landfill
(Reference: OU-2 RI Report, 1993)

Well Designation	Completion Date	Well Diameter (inches)	Total Depth (feet below land surface)	Screen Setting (feet below land surface)	Interval Gravel Packed (feet below land surface)	Interval Sealed With Bentonite Pellets (feet below land surface)	Interval Sealed With Bentonite Slurry/Volclay (feet below land surface)	Height of Measuring Point (a) (relative to land surface)	Elevation of Measuring Point (b) (feet above mean sea level)	Well Casing and Screen Material
SY-1 (c)	10/19/82	2	135	125 - 135 (d)	35 - 135 (d)	34 - 35	8 - 34 (e)	-0.15	194.52	Black steel
SY-1D	2/2/88	4	218	182 - 192	179 - 218	177 - 179	2 - 177	+2.31	197.36	PVC
SY-2R	2/12/88	4	150	115 - 125	112 - 150	110 - 112	2 - 110	+1.95	187.12	PVC
SY-2D	2/9/88	3	215	190 - 200	187 - 215	185 - 187	2 - 185	+2.18	186.33	PVC
SY-3 (c)	10/20/82	2	145	135 - 145	47 - 145 (d)	45 - 47	4 - 45 (e)	-0.50	191.38	Black steel
SY-3D	2/25/88	3	240	189 - 199	184 - 240	181 - 184	2 - 181	+2.45	194.74	PVC
SY-3DD	12/9/92	2	540	530 - 540	517 - 540	512 - 517 (f)	2 - 512	0	194.23	PVC, stainless steel
SY-4	10/20/82	2	153	143 - 153 (d)	57 - 153 (d)	54 - 57	4 - 54 (e)	-0.20	193.32	Black steel
SY-5 (c) (h)	10/20/82	2.5	135	125 - 135 (d)	46 - 135 (d)	44 - 46	5 - 44 (e)	+4.20	188.07	Galvanized steel
SY-6 (c)	10/19/82	2	145	135 - 145 (d)	31 - 145 (d)	28 - 31	5 - 28 (e)	-0.10	185.92	Black steel
SY-6D	3/9/88	4	215	195 - 205	192 - 215	190 - 192	3 - 192	-0.30	185.60	PVC
SY-7 (c)	10/21/82	2	145	135 - 145 (d)	52 - 145 (d)	49 - 52	5 - 49 (e)	-0.25	197.46	Black steel
SY-8	12/19/87	4	142	127 - 137	125 - 142	122 - 125	2 - 122	+2.25	195.84	PVC
SY-9	1/29/88	4	140	110 - 120	107 - 140	105 - 107	2 - 105	-0.70	199.41	PVC
W-3	11/10/87	2	120	105 - 115	102 - 120	100 - 102	2 - 100	+2.63	190.61	PVC
W-4 (h)	11/18/87	2	120	104 - 114	102 - 120	100 - 102	2 - 100	+2.56	192.82	PVC
PK-10S	3/25/93	4	149	139 - 149	5 - 149	(i)	(i)	-0.40	188.70	PVC, stainless steel
PK-10I	4/14/93	4	362	352 - 362	346.5 - 363	341.5 - 346.5 (f)	2 - 341.5 (g)	0	187.62	PVC, stainless steel
PK-10D	12/31/92	4	499	489 - 499	477 - 500	472 - 477 (f)	2 - 472 (g)	0	188.23	PVC, stainless steel
RB-11S	8/26/93	4	143	133 - 143	120 - 144	115 - 120 (f)	2 - 115 (g)	0	189.91	PVC, stainless steel
RB-11I	8/19/93	4	358.5	348.5 - 358.5	339 - 359	333 - 339 (f)	2 - 333 (g)	0	190.32	PVC, stainless steel
RB-11D	8/9/93	4	503	493 - 503	487 - 509	480 - 487 (f)	2 - 480 (g)	0	190.60	PVC, stainless steel
RW-12I	10/7/93	4	360	350 - 360	338 - 364	330 - 338 (f)	2 - 330 (g)	0	197.76	PVC, stainless steel
RW-12D	9/27/93	4	500	490 - 500	482 - 508	475 - 482 (f)	2 - 482 (g)	0	197.72	PVC, stainless steel

- (a) The measuring point of each well is the top of the well casing.
 (b) Survey performed to U.S. Geological Survey (USGS) datum.
 (c) Well installed during the ERM-Northeast site investigation.
 (d) It appears that this interval consists of formation collapse.
 (e) Information not available as to whether grout or backfill (drill cuttings) was used to fill the annular space in this interval.
 (f) #00 Sand used above J. Morie, Co. No. 1 Sand.
 (g) Volclay grout sealant used (composed of 100 percent bentonite).
 (h) Destroyed.
 (i) Well PK-10S was installed in the initial PK-10I borehole, which had collapsed at 328 feet due to unstable formation; PK-10S was constructed with the gravel pack extending to within 5 feet of land surface to allow for the gravel pack to stabilize before a permanent seal was installed. PK-10S is currently sealed at the land surface with a steel plate and rubber gasket. Gravel can be monitored/added through a 1-inch diameter access port.
- PVC Polyvinyl chloride.

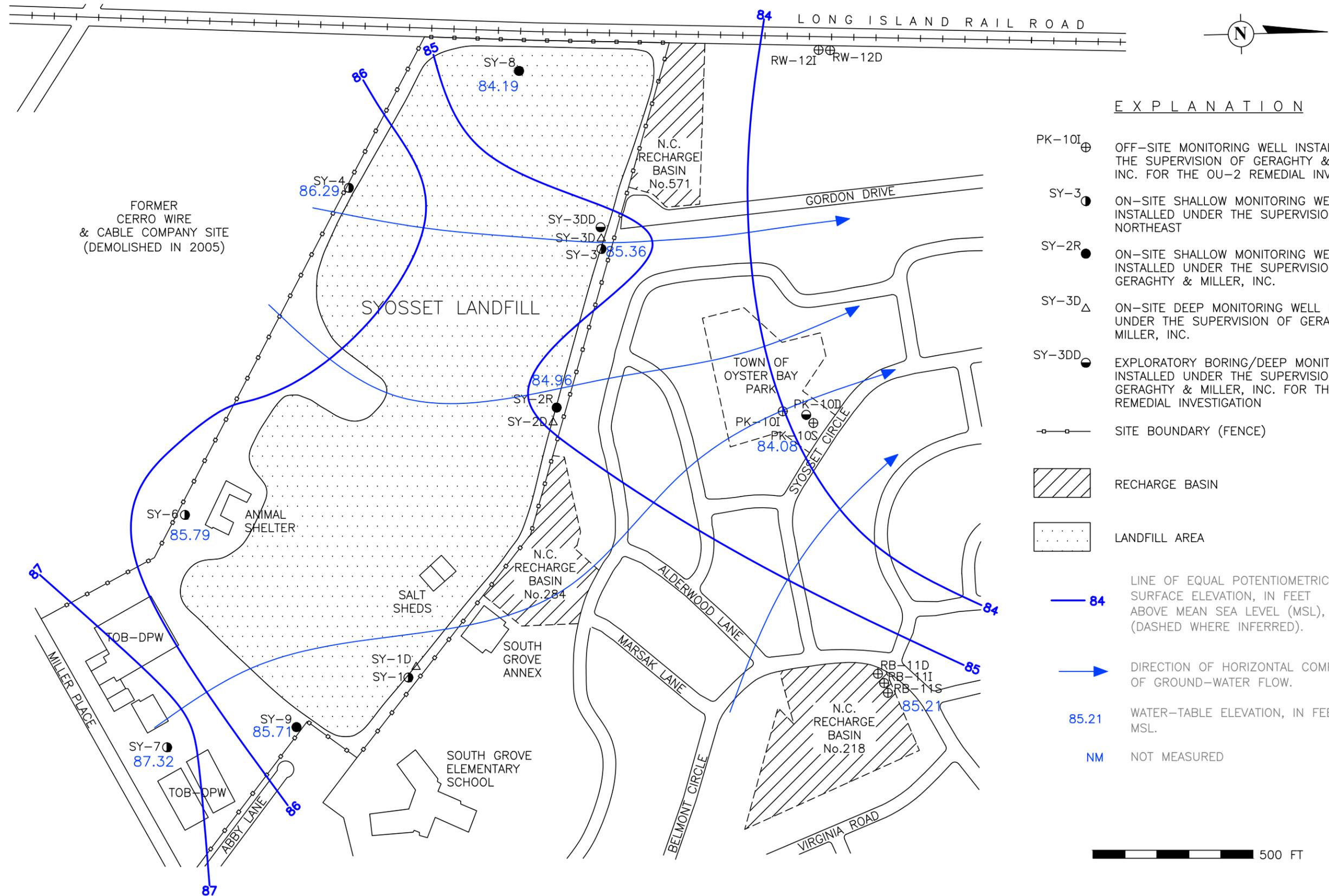


FIGURE 2

POTENTIOMETRIC SURFACE OF THE SHALLOW ZONE OF THE MAGOTHY AQUIFER ON APRIL 5, 2024
 SYOSSET LANDFILL, SYOSSET, NY

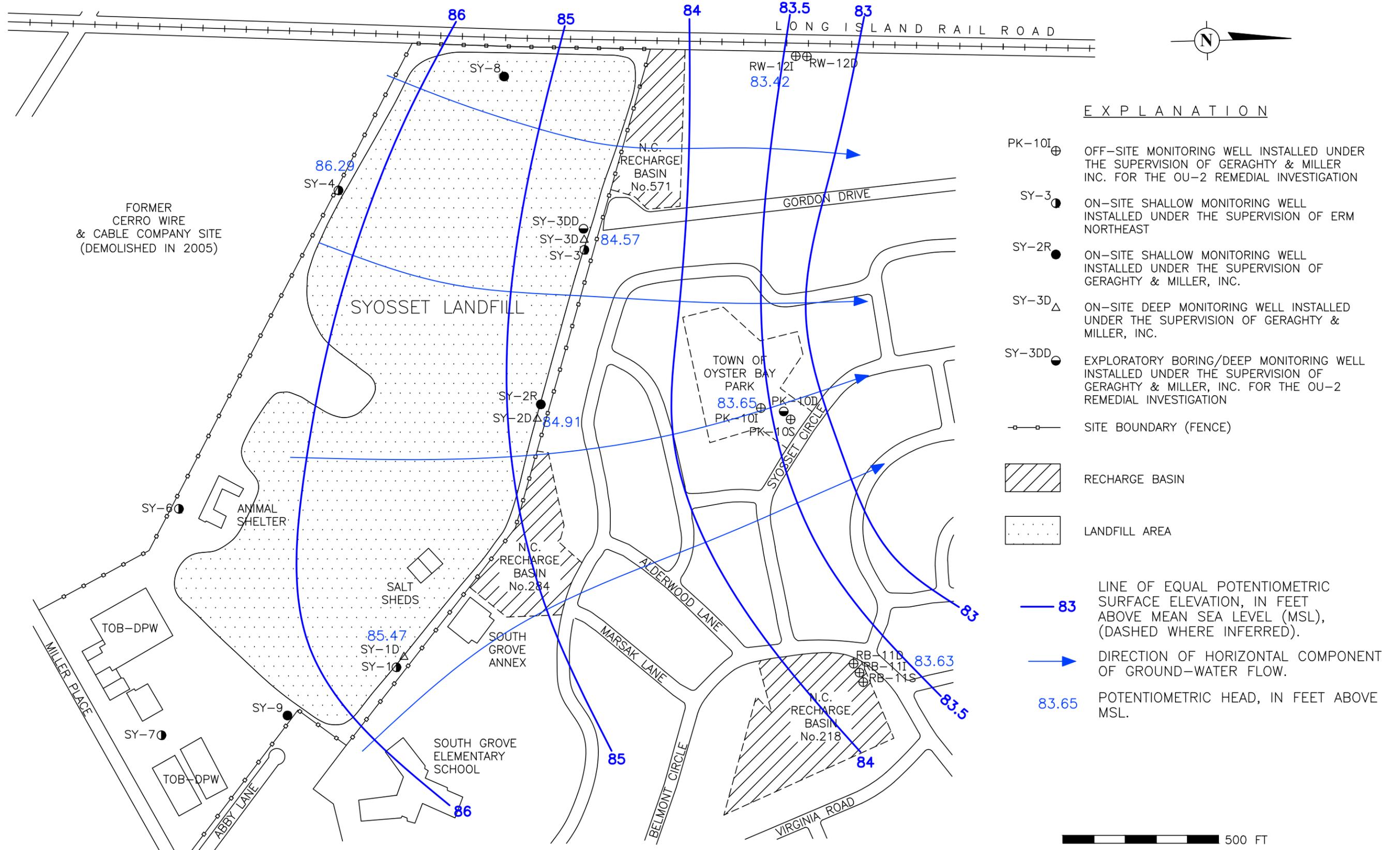


FIGURE 3

**POTENTIOMETRIC SURFACE OF THE INTERMEDIATE ZONE OF THE MAGOTHY AQUIFER ON APRIL 5, 2024
SYOSSET LANDFILL, SYOSSET, NY**

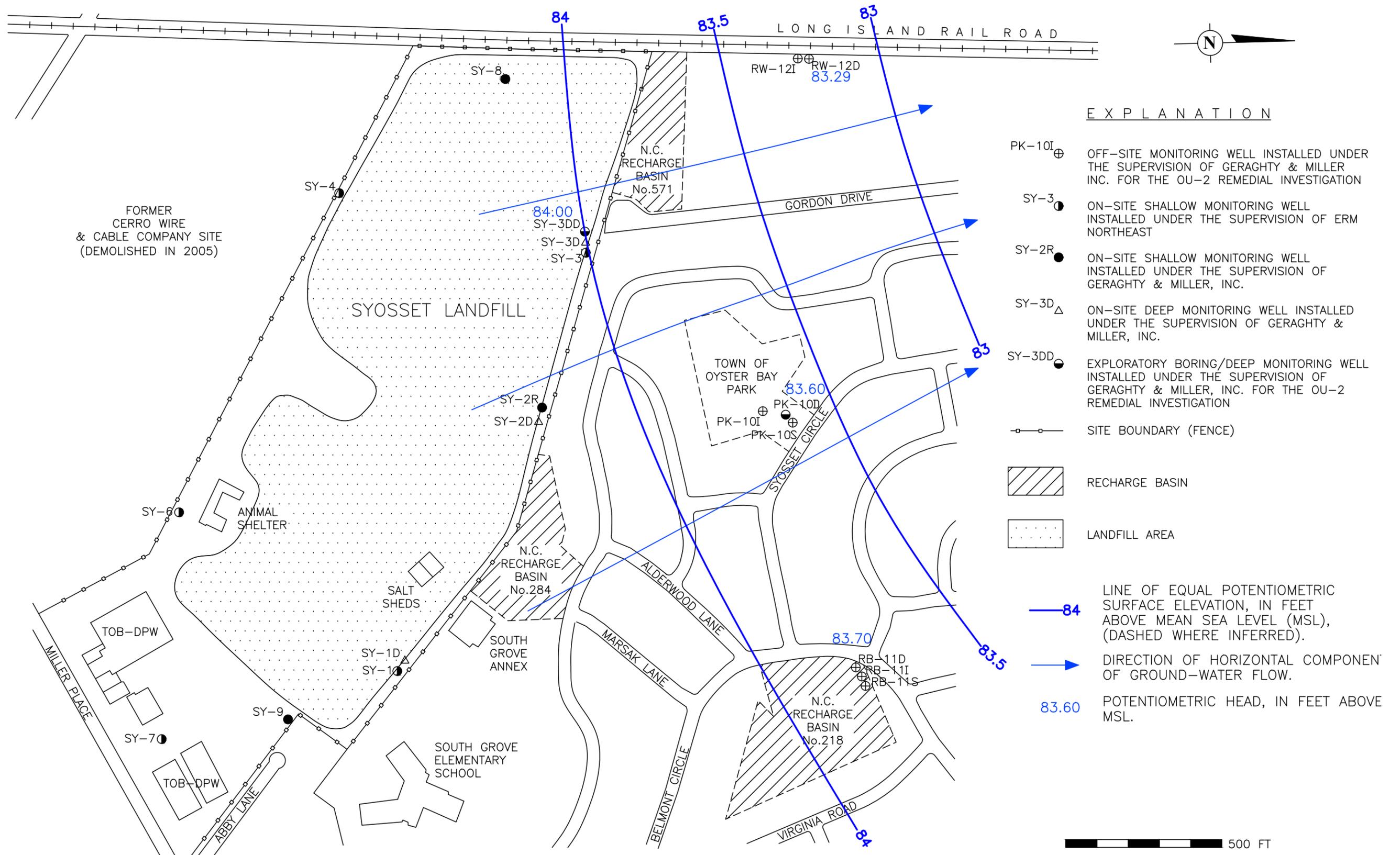


FIGURE 4

**DEEP POTENTIOMETRIC SURFACE ZONE OF THE MAGOTHY AQUIFER ON APRIL 5, 2024
SYOSSET LANDFILL, SYOSSET, NY**

3.1.2 Intermediate Zone

As shown in Figure 3, based on the 2024 data, horizontal ground water-flow directions in the intermediate zone of the Magothy Aquifer are also generally from south to north beneath the Landfill. They also converge slightly downgradient of the Landfill in the vicinity of Well Cluster PK-10, although the degree of convergence appears to be less than that observed in the shallow zone of the Magothy Aquifer, and they do not appear to then shift direction to the northwest.

The horizontal hydraulic gradient for the intermediate zone of the Magothy Aquifer, based on difference in water-level elevation in Wells SY-1D and PK-10I (1.82 feet) and the distance between the wells (1,400 feet), is 0.0013, which is slightly higher than the shallow zone gradient.

3.1.3 Deep Zone

As shown in Figure 4, based on the 2024 data, the horizontal ground water-flow direction in the deep zone of the Magothy Aquifer is generally from south-southeast to north-northwest in the vicinity of the Landfill. This flow direction is based on data from just four downgradient wells and should therefore be considered approximate. However, it is consistent with the shallow and intermediate zone results, as well as the results from previous monitoring rounds. The convergence noted in the shallower zones of the Magothy Aquifer is not observed in this zone. This finding is consistent with the fact that the deep zone of the Magothy Aquifer is not bisected by the buried glacial valley.

The horizontal hydraulic gradient for the deep zone of the Magothy Aquifer, based on the difference in the water-level elevation in Wells SY-3DD and RW-12D (0.71 feet) and the distance between the wells (900 feet), is 0.0008, which is slightly lower than the horizontal hydraulic gradient in the intermediate zone of the aquifer, but similar to the horizontal hydraulic gradient in the shallow zone of the aquifer.

3.2 Vertical Hydraulic Gradients

Vertical hydraulic gradients are an indication of whether vertical ground water-flow directions, in the absence of confining units, are upward, downward or negligible. Vertical hydraulic gradients calculated using the 2024 water-level data are included in Table 1. A positive value indicates a downward gradient, whereas a negative value indicates an upward gradient. The vertical hydraulic gradients shown in Table 1 indicate that flat to downward gradients predominate, and that the highest-magnitude downward gradients occur between the shallow and intermediate zones of the Magothy Aquifer at On-Site Downgradient Well Cluster SY-3. The vertical hydraulic gradient between the shallow and intermediate zones of the Magothy Aquifer is not calculated for Well Cluster RW-12 because there is no shallow zone well at this location.

Vertical hydraulic gradients between the intermediate and deep zones of the Magothy Aquifer are lower in magnitude and varied from slightly downward to slightly upward at the four downgradient well clusters for which data are available. The only upward gradient was between the intermediate and deep zone wells at Well Cluster RB-11.

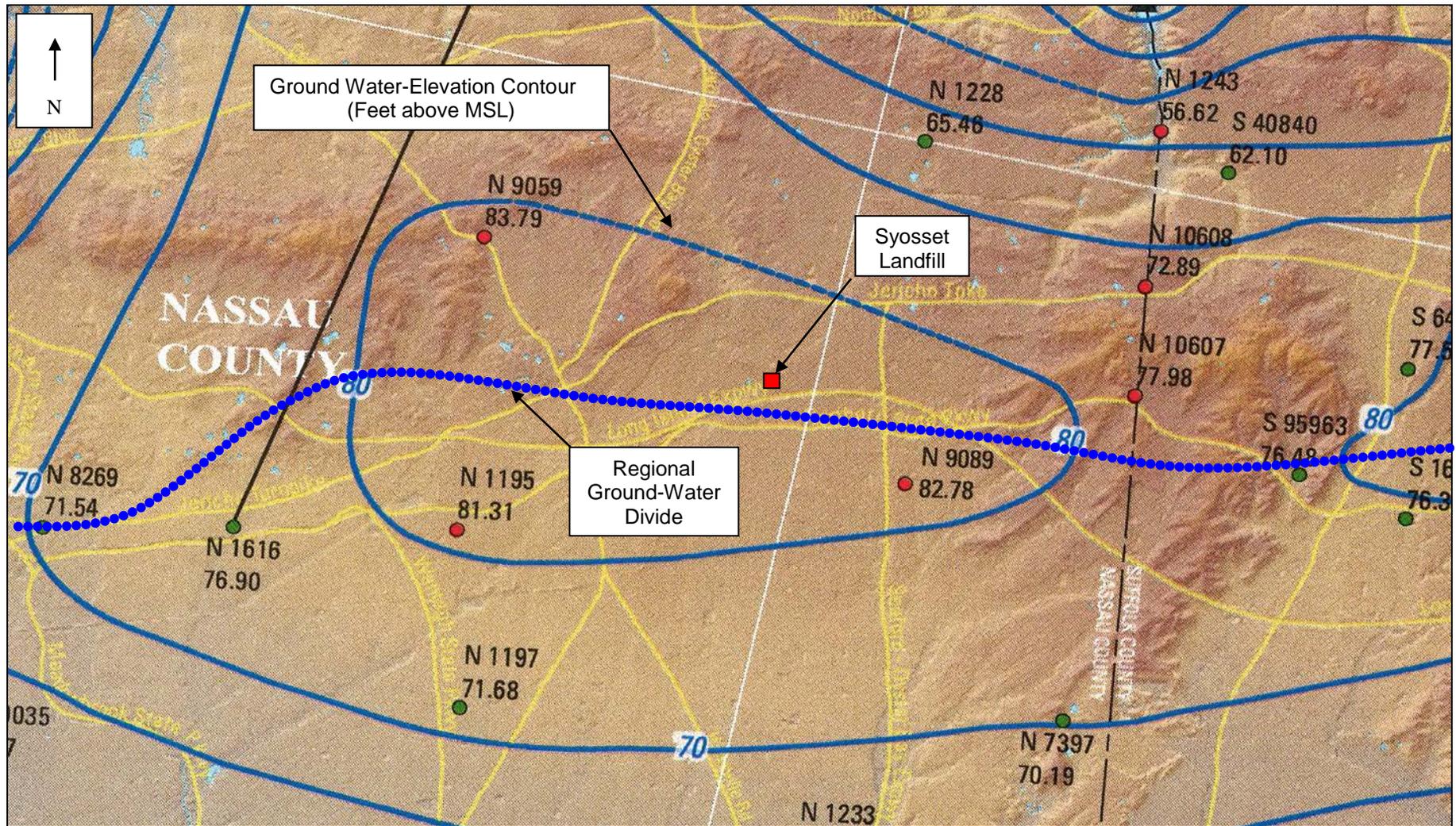
The predominance of downward vertical hydraulic gradients indicates the potential for ground water to migrate vertically downward in the absence of hydraulic barriers such as clay layers. Comparison of the average vertical gradient between the shallow and intermediate zone wells at the well clusters (0.0062) to the horizontal gradient of the shallow zone of the Magothy Aquifer (0.0009) indicates that it is seven times higher. This finding is consistent with the Landfill being located near the regional ground-water divide, as shown in Figure 5. Typically, ground water-flow directions in such areas have a stronger downward component. For this reason, assessment of impacts to the intermediate and deep zone wells must also take ground water-flow patterns in the shallow zone of the Magothy Aquifer into consideration.

3.3 Influence of the Buried Glacial Valley on Ground Water-Flow Patterns

Figure 6 shows a generalized structure contour map of the top of Magothy Formation based on the soil-boring logs from the OU-1 and OU-2 RIs. As shown in Figure 6, a trough in the Magothy Formation begins beneath the western portion of the Landfill and extends off-site, apparently to the north-northeast. This feature was formed by erosion of the Magothy Formation by the overlying Upper Glacial Formation and is known as a buried glacial valley.

Due to differences in the hydraulic properties of Upper Glacial and Magothy Formations, the buried glacial valley influences local ground water-flow patterns. Specifically, the Upper Glacial Formation is more permeable than the Magothy Formation, which is finer-grained and contains localized clay layers that can cause semi-confined conditions. Therefore, in the vicinity of the buried glacial valley, ground water tends to flow out of the Magothy Aquifer and into the Upper Glacial Formation due to the hydraulic pressure differential between the formations. The influence of the buried glacial valley is most pronounced where it intersects the water table. Comparison of the structural contours in Figure 6 to the water-level data in Figure 2 indicates that the buried glacial valley gets deeper to the north-northeast and intersects the water table downgradient of the Landfill. This finding explains the converging ground water-flow patterns in the shallow and intermediate zones of the Magothy Aquifer downgradient of the Landfill.

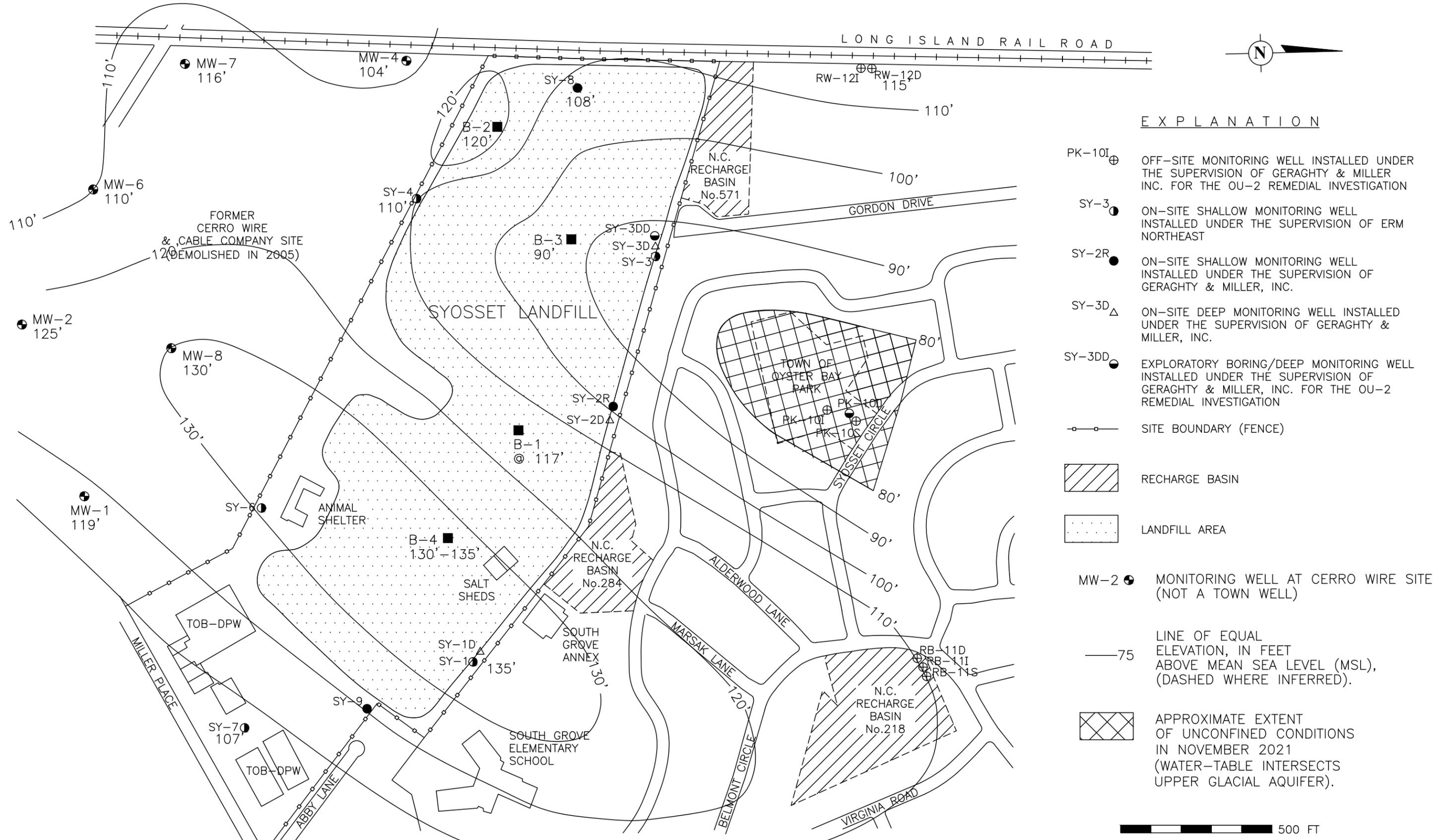
Moreover, it should be noted that as a result of the tendency for horizontal ground water-flow directions in the shallow and intermediate zones of the Magothy Aquifer to converge downgradient of the Landfill, there is potential for contaminants that are not associated with the Landfill to migrate into the area downgradient of the Landfill. For example, in 2005, the gasoline service station located on the northwest corner of the intersection of South Oyster Bay Road and Miller Place replaced its underground storage tanks. LKB personnel noted that the excavated soil stockpile exhibited a very strong gasoline odor, indicating that a release had occurred. This gasoline service-



Source: Sheet 1 of USGS Scientific Investigations Map 3326, showing water table-elevation contours during April-May 2013.

FIGURE 5

LOCATION OF SYOSSET LANDFILL
RELATIVE TO REGIONAL GROUND-WATER DIVIDE



- EXPLANATION**
- PK-10I ⊕ OFF-SITE MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER INC. FOR THE OU-2 REMEDIAL INVESTIGATION
 - SY-3 ● ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF ERM NORTHEAST
 - SY-2R ● ON-SITE SHALLOW MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
 - SY-3D △ ON-SITE DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC.
 - SY-3DD ● EXPLORATORY BORING/DEEP MONITORING WELL INSTALLED UNDER THE SUPERVISION OF GERAGHTY & MILLER, INC. FOR THE OU-2 REMEDIAL INVESTIGATION
 - SITE BOUNDARY (FENCE)
 - RECHARGE BASIN
 - LANDFILL AREA
 - MW-2 ● MONITORING WELL AT CERRO WIRE SITE (NOT A TOWN WELL)
 - 75 LINE OF EQUAL ELEVATION, IN FEET ABOVE MEAN SEA LEVEL (MSL), (DASHED WHERE INFERRED).
 - APPROXIMATE EXTENT OF UNCONFINED CONDITIONS IN NOVEMBER 2021 (WATER-TABLE INTERSECTS UPPER GLACIAL AQUIFER).
- 500 FT

FIGURE 6
 GENERALIZED STRUCTURE CONTOUR MAP OF THE TOP OF THE MAGOTHY FORMATION
 SYOSSET LANDFILL, SYOSSET, NY

station site could potentially be a source of the gasoline-related VOCs that were previously detected periodically at Well Cluster PK-10. Also, during 2005, the former Cerro Wire site, located adjacent to and upgradient of the Landfill, and comprised of a large industrial building, water tower and paved parking areas, was demolished and a large quantity of contaminated soil was reportedly removed. The site was an open excavation for most of 2005, but was eventually re-graded, covered with topsoil and seeded. The changes at the Cerro Wire site in 2005 resulted in increased recharge directly upgradient of the Landfill and could have potentially resulted in the contamination plume from that site migrating north beneath the Landfill. Recently, this site was redeveloped as an Amazon.com distribution center.

SECTION 4

RESULTS OF TASK 3 – GROUND-WATER MONITORING

The 2024 ground water-quality monitoring round was performed on May 20th and 21st and June 4th, and included the following 11 wells specified in the O&M Manual:

- SY-6 (Upgradient Well);
- SY-2R, SY-2D, SY-3, SY-3D and SY-3DD (On-Site Downgradient Wells); and
- PK-10S, PK-10I, PK-10D, RW-12I and RW-12D (Off-Site Downgradient Wells).

Except for Well SY-3, which was sampled using a bailer due to its age, small diameter, and steel construction, the wells were purged and sampled utilizing the modified low-flow procedure. The purged water from the off-site downgradient wells was collected and disposed of at a licensed facility. A trip blank, a field blank, a matrix spike/matrix spike duplicate, and an anonymous duplicate sample from Well SY-2D, labeled “Well SY-7”, were also collected.

The samples were analyzed for the following parameters:

- USEPA Target Compound List (TCL) of Volatile Organic Compounds (VOCs)
- NYSDEC 6NYCRR Part 363 Baseline Field and Leachate Indicator Parameters
- Total and Dissolved USEPA Target Analyte List (TAL) Inorganic Parameters
- Total Cyanide

The ground-water samples were collected by LKB. The water purged from the off-site downgradient wells was collected and disposed of by Eastern Environmental Solutions, Inc. of Manorville, New York. Laboratory analyses were performed by CHEMTECH of Mountainside, New Jersey. The results were validated by the laboratory and Lockwood, Kessler and Bartlett, Inc.

The field parameter readings and validated laboratory results are summarized in Tables 3 through 6. The results are compared to NYSDEC Part 703 Ambient Water Quality Standards and TOGS 1.1.1 Guidance Values for Class GA (potable) ground water. The laboratory data and data usability summary report are provided in Appendix B.

4.1 Results of Field Parameter Measurements

Prior to collecting the field parameter readings, a minimum of one well casing volume plus ten percent was purged from each well. Field parameters were then monitored continuously utilizing a YSI Professional Handheld Multiparameter Water Quality Meter equipped with a flow-through cell until the readings stabilized. Turbidity was also measured with a Hach portable turbidity meter. The final field readings are provided in Table 3. Review of Table 3 indicates noticeable differences for certain field parameters

Table 3
 Summary of Field Parameter Monitoring Results
 Syosset Landfill 2024 Annual Post-Closure Ground Water-Monitoring Report

Field Parameter	Units	Water ¹ Quality Standard	Upgradient Well SY-6	Downgradient Wells									
				On-Site					Off-Site				
				SY-2R	SY-2D	SY-3	SY-3D	SY-3DD	PK-10S	PK-10I	PK-10D	RW-12I	RW-12D
Temperature	°C	--	17.1	15.9	17.2	17.7	19.1	23.1	18.5	19.4	25.4	17.6	18.7
Conductivity	mS/cm	--	0.195	1.07	0.628	0.862	2.73	0.043	0.161	2.06	0.471	1.82	1.08
Dissolved Oxygen	mg/L	--	0.88	2.34	1.51	1.76	1.02	1.02	4.28	0.39	0.78	0.60	0.76
pH	SU	6.5-8.5	<u>9.88</u>	<u>5.44</u>	<u>6.03</u>	6.65	6.66	<u>6.33</u>	<u>5.37</u>	<u>6.19</u>	<u>5.77</u>	6.64	<u>5.85</u>
Oxidation-Reduction Potential	mV	--	67.5	146	141	-1,060	-91.4	-25.8	168	91.1	127	86.7	189
Field Observations	NA	--	Sltly. Turbid,	Sltly. Turbid,	Clear,	Turbid,	Clear,	Clear,	Clear,	Clear,	Turbid,	Clear,	Clear,
		--	No Odor	No Odor	No Odor	No Odor	No Odor	No Odor	No Odor	No Odor	No Odor	No Odor	No Odor
Turbidity	NTU	5	<u>10.8</u>	<u>11.7</u>	0.02	<u>41.7</u>	0.49	2.42	0.38	0.02	0.02	0.02	0.43

Notes:

1 = NYSDEC Part 703 Ambient Water Quality Standards or TOGS 1.1.1 Guidance Value (GV) for Class GA (Potable) ground water.

°C = Degrees Celcius.

mS/cm = miliSiemens per centimeter.

mg/L = milligrams per Liter.

SU = Standard Units.

mV = milliVolts.

NA = Not applicable.

NTU = Nephelometric Turbidity Units.

Bold and Underlined = Exceeds ground water-quality standard or guidance value.

-- = No standard or guidance value.

The elevated turbidity in Well SY-3 this round is due to this well being sampled with a bailer instead of a submersible pump.

in certain downgradient wells, relative to Well SY-6. The specific differences vary by well and are summarized in the table below:

Well No.	Field Parameter Difference(s) Relative to Upgradient Well SY-6
SY-2R	Higher conductivity; higher dissolved oxygen (DO); lower pH; higher Oxidation Reduction Potential (ORP).
SY-2D	Higher conductivity; higher DO; lower pH; higher ORP
SY-3	Higher conductivity; higher DO; lower pH; lower (negative) ORP.
SY-3D	Higher temperature; higher conductivity; higher DO; lower pH; lower (negative) ORP.
SY-3DD	Higher temperature; lower conductivity; lower pH; lower (negative) ORP.
PK-10S	Higher temperature; higher DO; lower pH; higher ORP.
PK-10I	Higher temperature; higher conductivity; lower DO; lower pH; higher ORP.
PK-10D	Higher temperature; higher conductivity; lower pH; higher ORP.
RW-12I	Higher conductivity; lower DO; lower pH; higher ORP.
RW-12D	Higher temperature, higher conductivity; lower pH; higher ORP.

These differences include water-quality differences that appear to be Landfill-related, such as higher conductivity and negative ORP in the on-site downgradient wells screened in the shallow and intermediate zones of the Magothy Aquifer; and higher conductivity and lower DO in the off-site downgradient wells screened in the intermediate and deep zones of the Magothy Aquifer. Odor was not detected in any of the wells. There are also water-quality differences that are attributed to water-quality impacts that are not Landfill-related. Relative to the upgradient well, turbidity was lower in every downgradient well except for Well SY-2R, and Well SY-3 which was sampled with a bailer instead of a pump. Sampling with a bailer results in a higher turbidity. Overall, these findings are consistent with previous years' field parameter results.

Standards exist for two of the field parameters – pH and turbidity. The pH of ground water in the upgradient well was higher than the range maximum, whereas the pH of ground water in seven of the 10 downgradient wells was lower than the range minimum. The higher pH in the upgradient well is attributed to impacts from the Cerro Wire site. The lower pH in most of the downgradient wells is attributed to the naturally occurring low pH of the ground water on Long Island. Turbidity was higher than the 5-NTU limit only in the upgradient well and two on-site downgradient wells. The highest turbidity in

Well SY-3 is attributed to the sampling bailer resuspending sediment in the well. The slightly elevated turbidity in Well SY-2R may be Landfill-related.

4.2 Results of Volatile Organic Compound (VOC) Analyses

The 2024 VOC results are summarized in Table 4. As shown in Table 4, VOCs were not detected in the upgradient well or the on-site downgradient wells. At Off-Site Downgradient Well Cluster PK-10, VOCs were not detected in Well PK-10S, screened in the shallow zone of the Magothy Aquifer; and VOC detections in Wells PK-10I and PK-10D, screened in the intermediate and deep zones of the Magothy Aquifer, respectively, were limited to one and four VOCs, and total concentrations of 2.70 ug/L and 11.8 J ug/L, respectively. Except for a slight exceedance for chloroform in Well PK-10D, VOC concentrations in these two wells were lower than their Class GA standards.

At Off-Site Downgradient Well Cluster RW-12, a number of chlorinated solvents and aromatic hydrocarbons were detected in both wells. Specifically, nine VOCs were detected in the intermediate zone well (RW-12I) and ten VOCs were detected in the deep zone well (RW-12D). In general, the same VOCs were detected in both wells, however the highest concentrations of most of the VOCs detected in both wells occurred in the intermediate zone well. The total VOC concentration in Well RW-12I was 71.0 J ug/L, which is 16 ug/L higher than last year's result. The total VOC concentration in Well RW-12D was 67.0 J ug/L, which is the same as last year's result.

The concentrations of six VOCs in Well RW-12I (1,1-Dichloroethane, 1,2-dichlorobenzene, 1,3-Dichlorobenzene, 1,4-dichlorobenzene, chlorobenzene, and cis-1,2-Dichloroethene) and four VOCs in Well RW-12D (1,1-dichloroethane, 1,2-dichlorobenzene, 1,4-dichlorobenzene and chlorobenzene) were higher than their respective Class GA ground-water standards. The exceedances of chlorobenzene and 1,4-dichlorobenzene ranged from approximately three to six times higher than the standards. The exceedances for the other four VOCs ranged from to slightly higher to around two times higher than their standards.

In summary, the VOC results from the 2024 post-closure monitoring round continue to indicate that the Landfill is not a significant source of VOCs. Specifically, VOCs were not detected in the on-site downgradient wells. Moreover, the fact that the VOCs detected at the off-site downgradient well clusters are not present in the on-site downgradient wells indicates that they are not Landfill-related. This finding is consistent with the ground water-flow directions shown in Figures 2 through 4, which indicate that Well Cluster RW-12 is located side gradient to, rather than downgradient of, the Landfill; and that contamination not associated with the Landfill can occur at Off-Site Downgradient Well Cluster PK-10 due to the converging ground water-flow pattern caused by the buried glacial valley.

Table 4
Summary of Volatile Organic Compound (VOC) Results
Syosset Landfill 2024 Annual Post-Closure Ground Water-Monitoring Report

Analyte	Units	Water ¹ Quality Standard	Upgradient Well	Downgradient Wells											
				On-Site						Off-Site					
				SY-6	SY-2R	SY-2D	SY-7 ²	SY-3	SY-3D	SY-3DD	PK-10S	PK-10I	PK-10D	RW-12I	RW-12D
1,1,1-Trichloroethane	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,1,2,2-Tetrachloroethane	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,1,2-Trichloroethane	ug/L	1	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,1,2-Trichlorotrifluoroethane	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,1-Dichloroethane	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	5.20	6.50	
1,1-Dichloroethene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,2,3-Trichlorobenzene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,2,4-Trichlorobenzene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,2-Dibromo-3-chloropropane	ug/L	0.04	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,2-Dibromoethane	ug/L	--	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,2-Dichlorobenzene	ug/L	3	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	6.80	7.10	
1,2-Dichloroethane	ug/L	0.6	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,2-Dichloropropane	ug/L	1	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
1,3-Dichlorobenzene	ug/L	3	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	3.70	2.90	
1,4-Dichlorobenzene	ug/L	3	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	14.2	10.0	
2-Butanone	ug/L	50 ^{GV}	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	
2-Hexanone	ug/L	50 ^{GV}	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	
4-Methyl-2-pentanone	ug/L	--	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	
Acetone	ug/L	50 ^{GV}	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	
Benzene	ug/L	1	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.75 J	<1.00	
Bromochloromethane	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Bromodichloromethane	ug/L	50 ^{GV}	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Bromoform	ug/L	50 ^{GV}	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Bromomethane	ug/L	5	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	
Carbon disulfide	ug/L	60 ^{GV}	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Carbon tetrachloride	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Chlorobenzene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	2.70	0.99 J	30.2	26.4	
Chloroethane	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Chloroform	ug/L	7	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	9.90	<1.00	3.40	
Chloromethane	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
cis-1,2-Dichloroethene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	5.60	5.00	
cis-1,3-Dichloropropene	ug/L	0.4	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Cyclohexane	ug/L	--	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	
Dibromochloromethane	ug/L	50 ^{GV}	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Dichlorodifluoromethane	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Ethylbenzene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Isopropylbenzene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
m&p-xylenes	ug/L	10*	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	
Methyl acetate	ug/L	--	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Methyl tert-butyl ether	ug/L	10 ^{GV}	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Methylcyclohexane	ug/L	--	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Methylene chloride	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.74 J	
o-xylene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Styrene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Tetrachloroethene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.41 J	0.83 J	0.84 J
Toluene	ug/L	5 ^{GV}	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
trans-1,2-Dichloroethene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
trans-1,3-Dichloropropene	ug/L	0.4	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Trichloroethene	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.48 J	1.00	0.96 J
Trichlorofluoromethane	ug/L	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Vinyl chloride	ug/L	2	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
No. of Target VOCs Detected ³ :	out of 51	N/A	0/51	0/51	0/51	0/51	0/51	0/51	0/51	0/51	0/51	1/51	4/51	9/51	10/51
Total VOC Concentration ⁴ :	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.70	11.8 J	71.0 J	67.0 J

Notes:

ug/L = micrograms per Liter.

1 = NYSDEC Part 703 Ambient Water Quality Standards or TOGS 1.1.1. Guidance Value (GV) for Class GA (Potable) ground water.

2 = Duplicate sample collected from Well SY-2D.

3 = m- and p-xylene counted as one VOC.

4 = Based on all target VOCs detected, including estimated concentrations.

J = Estimated concentration.

Bold and Underlined = Exceeds ground water-quality standard or guidance value.

* = Based on 5-ug/L limit for each isomer.

NA = Not applicable.

ND = None detected.

-- = No standard or guidance value.

4.3 Results of NYSDEC 6NYCRR Part 363 Leachate Indicator Analyses

The leachate indicators analyzed for included alkalinity, ammonia, BOD (biological oxygen demand), bromide, chloride, color, COD (chemical oxygen demand), total hardness, nitrate, total phenols, sulfate, TDS (total dissolved solids), TKN (total Kjeldahl nitrogen) and TOC (total organic carbon).

Review of Table 5 indicates that Landfill-related exceedances were limited to ammonia, chloride, color, phenols and TDS in certain downgradient wells. Downgradient increases in concentration for the leachate indicators are primarily limited to On-Site Downgradient Wells SY-3 and SY-3D, and Off-Site Downgradient Wells PK-10I, RW-12I and RW-12D. In these wells, most of the leachate indicators were detected at higher concentrations than in Upgradient Well SY-6. The highest concentrations of most of these parameters occurred in Wells SY-3 and SY-3D. In contrast, except for chloride in Well SY-2D, no leachate indicators were detected at higher concentrations in Wells SY-2D, SY-3DD, PK-10S, and PK-10D. Moreover, only two parameters (chloride and TDS) were detected at higher concentrations in Well SY-2R.

Based on comparison of the leachate indicator results for the on-site and off-site downgradient wells, most of the parameters detected at elevated concentrations in On-Site Downgradient Wells SY-3 and SY-3D were detected at similar concentrations in Off-Site Downgradient Well PK-10I, indicating Landfill-related impacts in this well. However, this comparison also indicates that most of the parameters (e.g., alkalinity, ammonia, BOD, hardness, sulfate, TKN and TOC) were detected at higher concentrations in one or both wells at Well Cluster RW-12 than in the on-site downgradient wells. Moreover, at least one parameter (e.g., chloride) detected at relatively high concentrations in most on-site downgradient wells and Off-Site Downgradient Well PK-10I, was detected at much lower concentrations in Well Cluster RW-12. These disparities, together with the VOC and ground water-flow direction results, suggest that the leachate indicators detected at Well Cluster RW-12 are not Landfill-related.

Taken as a whole, the 2024 leachate indicator results indicate that the Landfill continues to be a relatively minor source of the 6NYCRR Part 363 leachate-related contaminants.

4.4 Results of USEPA Target Analyte List (TAL) and Cyanide Analyses

The samples were analyzed for both total and dissolved TAL metals, and total cyanide. The RCRA (Resource Conservation and Recovery Act) and PPL (Priority Pollutant List) metals, which are a subset of 14 of the more toxic metals, are included in the TAL metals. The results are summarized in Table 6, and the RCRA and PPL metals are identified with asterisks.

As shown by the Table 6 total metals results, of the 24 parameters analyzed for, five (cadmium, lead, selenium, thallium, and vanadium) were not detected. Moreover, of the 19 detected metals, 11 (aluminum, antimony, barium, beryllium, copper, chromium,

Table 5
Summary of Leachate Indicator Results
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Analyte	Units	Water ¹ Quality Standard	Upgradient Well	Downgradient Wells										
				On-Site						Off-Site				
				SY-6	SY-2R	SY-2D	SY-7 ²	SY-3	SY-3D	SY-3DD	PK-10S	PK-10I	PK-10D	RW-12I
Alkalinity	mg/L	--	106	14.0	68.6	67.1	105	194	4.70	4.80	132	17.0	519	57.2
Ammonia	mg/L	2	0.085 J	<0.10	<0.10	<0.10	3.70	12.1	<0.10	<0.10	8.30	0.14	62.4	2.90
BOD	mg/L	--	26.0	16.3	<2.00	16.2*	18.7	5.20	10.9	<2.00	<2.00	<2.00	5.66	<2.00
Bromide	mg/L	2	0.48 J	0.28 J	<2.00	<2.00	0.31 J	0.46 J	<2.00	<2.00	0.68 J	0.39 J	1.50 J	0.60 J
Chloride	mg/L	250	9.90	287	129	129	267	675	4.90	14.8	520	96.5	148	165
COD	mg/L	--	5.58 J	<10.0	<10.0	3.57 J	29.7	19.6	<10.0	<10.0	6.58 J	2.57 J	26.7	<10.0
Color	cu	15	125	<5.00	<5.00	<5.00	600	400	5.0	<5.00	<5.00	<5.00	<5.00	<5.00
Hardness, Total	mg/L	--	144	61.5	68.9	67.8	76.1	204	6.38 J	40.9	178	66.8	293	237
Nitrate	mg/L	10	1.50	2.10	2.50	2.50	0.10 J	<0.50	<0.50	5.20	<0.05	7.20 J	<0.05	10.4
Phenols, Total	mg/L	0.001	<0.05	<0.05	<0.05	<0.05	0.44	0.29	<0.05	<0.05	0.26	<0.05	0.051	<0.05
Sulfate	mg/L	250	43.8	27.8	15.5	15.5	4.40	41.2	0.81 J	18.8	34.3	20.0	111	161
TDS	mg/L	500	250	626	302	317	360	1,400	77.0	192	1,050	299	717	630
TKN	mg/L	--	0.45 J	0.29 J	0.19 J	0.25 J	4.10	12.1	0.27 J	<0.50	8.30	<0.50	63.7	2.80
TOC	mg/L	--	1.80	1.70	2.40	2.80	3.10	3.90	0.43 J	0.83 J	3.10	1.00	13.8	2.90

Notes:

1 = NYSDEC Part 703 Ambient Water Quality Standards or TOGS 1.1.1 Guidance Value (GV) for Class GA (Potable) ground water.

2 = Duplicate sample collected from Well SY-2D.

mg/L = milligrams per Liter.

cu = color units.

J = Estimated concentration.

BOD = Biological oxygen demand.

COD = Chemical oxygen demand.

TDS = Total dissolved solids.

TKN = Total Kjeldhal nitrogen.

TOC = Total organic carbon.

Bold & Underlined = Exceeds ground water-quality standard or guidance value.

-- = No standard or guidance value.

* = The BOD duplicate result may be for Well SY-2R.

Table 6
Summary of Total and Dissolved Metals and Cyanide Results
Syosset Landfill 2024 Annual Post-Closure Ground Water-Monitoring Report

Analyte	Units	Water ¹ Quality Standard	Upgradient Well	Downgradient Wells										
				On-Site						Off-Site				
				SY-6	SY-2R	SY-2D	SY-7 ²	SY-3	SY-3D	SY-3DD	PK-10S	PK-10I	PK-10D	RW-12I
TOTAL METALS RESULTS														
Aluminum	ug/L	--	82.2	370	29.8 J	<50.0	52.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Antimony*	ug/L	3	<25.0	<25.0	<25.0	2.06 J	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Arsenic*	ug/L	10**	<10.0	<10.0	<10.0	<10.0	17.9	17.6	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Barium*	ug/L	1,000	112	74.5	33.6 J	32.4 J	104	239	<50.0	16.1 J	63.0	27.2 J	55.5	63.7
Beryllium*	ug/L	3 ^{GV}	<3.00	1.85 J	<3.00	<3.00	0.33 J	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00
Cadmium*	ug/L	5	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00
Calcium	ug/L	--	38,300	18,200	23,200	22,800	21,800	52,500	1,510	12,000	48,700	17,100	61,600	62,600
Chromium*	ug/L	50	3.35 J	4.51 J	1.23 J	3.15 J	11.7 J	<5.00	0.92 J	2.47 J	1.58 J	17.0 J	<5.00	<5.00
Cobalt	ug/L	--	0.57 J	10.2 J	<15.0	<15.0	3.21 J	22.8	0.87 J	<15.0	56.6	1.38 J	1.19 J	2.01 J
Copper*	ug/L	200	38.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Cyanide	ug/L	200	1.8 J	1.6 J	2.3 J	2.0 J	1.1 J	1.4 J	1.3 J	1.8 J	1.3 J	1.8 J	1.7 J	1.9 J
Iron	ug/L	300	8,090	89.5	66.9	79.4	83,000	28,900	493	19.6 J	115	197	48.7 J	<50.0
Lead*	ug/L	25	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00
Magnesium	ug/L	35,000 ^{GV}	11,800	3,910	2,660	2,650	5,250	17,800	633 J	2,650	13,800	5,860	33,900	19,700
Manganese	ug/L	300	52.7	35.0	7.72 J	7.32 J	3,290	2,090	30.8	9.84 J	1,650	30.5	60.9	11.8
Mercury*	ug/L	0.7	<0.20	<0.20	<0.20	<0.20	0.50	0.41	<0.20	<0.20	0.33	<0.20	<0.20	<0.20
Nickel*	ug/L	100	5.75 J	37.6	1.05 J	1.12 J	7.44 J	2.72 J	24.6	2.78 J	5.86 J	5.29 J	8.04 J	2.89 J
Potassium	ug/L	--	1,550	3,410	2,440	2,580	12,900	27,900	<1,000	1,900	22,000	1,690	71,100	5,210
Selenium*	ug/L	10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Silver*	ug/L	50	<5.00	<5.00	<5.00	<5.00	0.66 J	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Sodium	ug/L	20,000	13,200	194,000	91,500	99,200	100,000	452,000	3,850	9,030	336,000	58,300	147,000	148,000
Thallium*	ug/L	0.5	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
Vanadium	ug/L	--	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
Zinc*	ug/L	2,000 ^{GV}	1,210 J	91.2 J	4.31 J	6.74 J	<20.0	2.16 J	5.10 J	8.72 J	7.18 J	16.5 J	<20.0	5.63 J
DISSOLVED METALS RESULTS														
Aluminum	ug/L	--	<50.0	181	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0	<50.0
Antimony*	ug/L	3	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Arsenic*	ug/L	10	<10.0	<10.0	<10.0	<10.0	<10.0	14.2	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Barium*	ug/L	1,000	97.9	72.4	53.2	52.5	99.5	217	<50.0	16.3 J	61.0	28.7 J	59.9	53.6
Beryllium*	ug/L	3 ^{GV}	<3.00	3.68	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00
Cadmium*	ug/L	5	<3.00	<3.00	<3.00	<3.00	0.81 J	0.46 J	<3.00	<3.00	<3.00	<3.00	<3.00	<3.00
Calcium	ug/L	--	35,700	16,500	27,200	27,000	32,300	50,700	1,440	12,400	47,400	18,300	66,000	52,400
Chromium*	ug/L	50	<5.00	0.98 J	1.06 J	0.86 J	<5.00	<5.00	1.09 J	1.08 J	0.97 J	0.75 J	<5.00	5.43
Cobalt	ug/L	--	<15.0	11.9 J	<15.0	<15.0	2.31 J	21.0	0.76 J	<15.0	52.0	1.69 J	1.40 J	1.74 J
Copper*	ug/L	200	14.7	<10.0	<10.0	<10.0	9.48 J	<10.0	10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Iron	ug/L	300	202	20.5 J	<50.0	<50.0	43,000	27,900	346	<50.0	100	34.2 J	48.6 J	23.8 J
Lead*	ug/L	25	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00	<6.00
Magnesium	ug/L	35,000 ^{GV}	11,600	3,760	3,600	3,570	7,850	16,900	618 J	2,770	13,500	6,250	36,300	16,500
Manganese	ug/L	300	21.7	29.0	8.20 J	7.34 J	4,030	1,990	27.8	3.21 J	1,600	19.5	62.7	19.3
Mercury*	ug/L	0.7	<0.20	<0.20	<0.20	<0.20	0.10 J	0.34	<0.20	<0.20	0.25	<0.20	<0.20	<0.20
Nickel*	ug/L	100	4.80 J	38.6 J	2.34 J	1.63 J	4.58 J	2.88 J	24.2 J	2.20 J	4.46 J	4.98 J	8.41 J	5.55 J
Potassium	ug/L	--	1,260	2,830	3,340	3,310	17,100	26,100	<1,000	1,950	21,200	1,750	81,700	4,550
Selenium*	ug/L	10	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Silver*	ug/L	50	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Sodium	ug/L	20,000	10,200	163,000	146,000	145,000	135,000	425,000	4,080	9,230	323,000	60,500	167,000	130,000
Thallium*	ug/L	0.5	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
Vanadium	ug/L	--	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
Zinc*	ug/L	2,000 ^{GV}	1 460 J	83.0 J	9.02 J	12.1 J	30.6 J	7.59 J	3.54 J	4.41 J	3.20 J	8.81 J	2.46 J	5.83 J

Notes:

ug/L = micrograms per Liter.

1 = NYSDEC Part 703 Ambient Water Quality Standard or TOGS 1.1.1 Guidance Value (GV) for Class GA (Potable) ground water.

2 = Duplicate sample collected from Well SY-2D.

J = Estimated concentration.

Bold & Underlined = Exceeds ground water-quality standard or guidance value.

* = RCRA/PPL metal.

-- = No standard or guidance value.

cobalt, cyanide, mercury, nickel, and silver) were only detected sporadically and/or at low, estimated concentrations below their respective Class GA standard or guidance value. One additional parameter (zinc) was only detected at a significant concentration in the upgradient well. The remaining seven detected TAL parameters include one RCRA/PPL metal (arsenic) and six non-RCRA/PPL metals (calcium, iron, magnesium, manganese, potassium and sodium). The results for these eight parameters are discussed below.

Arsenic was detected in the unfiltered samples from On-Site Downgradient Wells SY-3 and SY-3D, and the filtered sample from Well SY-3D, at concentrations exceeding the 10-ug/L Federal MCL by factors of approximately 1.4 and 1.8.

Calcium, iron, magnesium, manganese, potassium and sodium were each detected in one or more downgradient wells at concentrations noticeably higher than in Upgradient Well SY-6. Except for sodium, which had a more widespread occurrence, the highest concentrations of these metals occurred in Wells SY-3, SY-3D, PK-10I, RW-12I and/or RW-12D.

Comparison of the results for the on-site and off-site downgradient wells indicates that Landfill-related off-site impacts are minimal. For example, the only metals occurring at higher concentration in off-site wells are calcium, magnesium and potassium. Moreover, the differences between the metals results for the on-site downgradient wells and Off-Site Downgradient Well Cluster RW-12 suggest that certain parameters detected at Well Cluster RW-12 are not Landfill-related. Review of Table 6 also indicates that overall, the detected TAL parameters were present at similar concentrations in unfiltered and filtered samples. This indicates that the detected TAL metals are primarily present in ground water in dissolved form.

Taken as a whole, the TAL metal and total cyanide results indicate that the Landfill continues to be a relatively minor source of certain metals/inorganic parameters but is not a significant source of the RCRA/PPL metals. The only Landfill-related exceedances for a RCRA/PPL metal in 2024 were low-magnitude exceedances for arsenic in Wells SY-3 and SY-3D.

SECTION 5

COMPARISON OF CURRENT MONITORING RESULTS TO PREVIOUS MONITORING RESULTS

The 2024 ground water-monitoring results were compared to previous post-closure monitoring results, and the OU-1 RI and the OU-2 RI results, to determine if ground water-flow patterns and/or quality conditions have changed significantly since the Landfill was capped. This entailed 1) comparison of the current and historical post-closure water-level data, 2) comparison of the current and previous overall results for each parameter group, 3) comparison, on a well-to-well basis, of the current and previous results for Landfill-related exceedances of the ground-water standards or guidance values, and 4) trend analyses for the leachate indicators that have historically been detected on a regular basis.

5.1 Temporal Variation in Water-Level Elevations

The 2024 water-level results are compared to post-closure water-level data collected since 2003 in Table 7. Review of Table 7 indicates that in April 2024 water-level elevations, on average, ranged from 8.28 feet higher relative to 2003 data, to -2.86 lower relative to the 2011 data. This fluctuation is attributed to natural temporal variations in recharge from precipitation, such as the below-normal precipitation from 2015 through late 2018, and the increased recharge directly upgradient of the Landfill since 2005 resulting from the prior demolition work at the former Cerro Wire property.

Review of the current ground water-contour maps (Figures 2, 3 and 4) indicates that, overall, ground water-flow directions remain consistent with prior years. One notable difference is that during the period from 2005 through 2008, ground water-flow directions in the shallow and intermediate zones of the Magothy Aquifer showed less convergence downgradient of the Landfill. This difference is attributed to the fact that the water-table elevation rose at a faster than normal rate during that period, which temporarily masked the influence of the buried glacial valley on ground water-flow patterns. The other notable difference is that in 2011 and 2012, water-level contours in the shallow and intermediate zones of the aquifer beneath the eastern half of the Landfill extended further south (upgradient) than is typically observed. This difference is attributed to the above-normal infiltration from the hurricanes and nor'easters that occurred earlier in these years.

5.2 Temporal Variation in Ground-Water Quality

The 2024 ground water-quality results are also consistent with the previous post-closure monitoring results and the OU-1 and OU-2 RI results; and continue to indicate that the Landfill is not a significant source of VOCs or toxic metals and only relatively minor Landfill-related impacts are present in Off-Site Downgradient Well PK-10I. Moreover, based on comparison of the results for on-site and off-site wells and examination of the ground water-flow directions, the elevated levels of some VOCs and certain leachate

indicator and TAL metals at Well Cluster RW-12 do not appear to be Landfill-related. The gasoline-related VOCs detected in Well PK-10S in 2003 and 2008 were, again, not detected in 2024. Semivolatile organic compounds, pesticides and polychlorinated biphenyls were not detected during the July 2003 initial (baseline) post-closure monitoring round, and with USEPA approval samples are no longer collected and analyzed for these parameters.

The 2024 total VOC results are compared to previous results in Table 8. Review of Table 8 indicates that relative to 2023, total VOC concentrations were unchanged in most of the wells. Off-Site Downgradient wells RW-12I and RW-12D had slightly higher VOC concentrations relative to 2023. The results for all wells were consistent with prior results, and overall total VOC concentrations in the downgradient wells continue to exhibit stable trends. Moreover, no exceedances of a VOC ground water-quality standard or guidance value have occurred in an on-site downgradient well since 2003.

The 2024 exceedances for leachate indicators are compared to previous exceedances in Table 9. Review of Table 9 indicates that exceedances in the downgradient wells are nearly identical to the 2023 data. Overall, the leachate indicators for which exceedances occur have been mostly stable over time. This finding indicates that, with respect to exceedances of the ground-water standards and guidance values for leachate indicators, ground water-quality downgradient of the Landfill has been consistent since 1993. Moreover, the relatively small number of exceedances listed in Table 9 demonstrates that the Landfill is not a significant source of leachate indicators at concentrations exceeding Class GA ground water-quality standards or guidance values.

With respect to TAL metals, the exceedances noted in the filtered samples from each well since 1993 are compared in Table 10. The results for the filtered samples are utilized because LKB noted that there were marked differences in the total results versus the dissolved results for certain samples collected during the OU-2 RI. This most likely was due to the presence of entrained sediment in the unfiltered samples as they were not collected utilizing a low-flow method. For this reason, only the TAL metals exceedances for filtered samples were compared.

Review of Table 10 indicates that the overall distribution of exceedances for dissolved TAL metals in 2024 is similar for all 18 post-closure monitoring rounds since 2003, particularly in the off-site downgradient wells. Taken as a whole, the results of this comparison indicate that the Landfill is not a significant source of the most toxic metals and is only a relatively minor source of certain other common metals at concentrations exceeding the Class GA ground-water standards and guidance values.

5.3 Results of Trend Analyses

Trend analyses were performed to further assess post-closure changes in ground water-quality conditions. The trend analyses were performed for nine leachate indicator parameters that have been detected on a relatively consistent basis during the post-closure monitoring rounds. A series of nine graphs showing the trends for each

Table 8
Comparison of Current Total VOC Results to Previous Results
Syosset Landfill 2024 Annual Post-Closure Ground Water-Monitoring Report

Well Number	Dec. 1993 Total VOC Results	Jul. 2003 Total VOC Results	Dec. 2005 Total VOC Results	Dec. 2006 Total VOC Results	Dec. 2007 Total VOC Results	Dec. 2008 Total VOC Results	Nov. 2009 Total VOC Results	Dec. 2010 Total VOC Results	Nov. 2011 Total VOC Results	Dec. 2012 Total VOC Results	Dec. 2013 Total VOC Results	Sept. 2014 Total VOC Results	Dec. 2015 Total VOC Results	Dec. 2016 Total VOC Results	Mar. 2018 Total VOC Results	Jun. 2019 Total VOC Results	Jul. 2020 Total VOC Results	Nov. 2021 Total VOC Results	Mar. 2023 Total VOC Results	Jun. 2024 Total VOC Results
Upgradient Well																				
SY-6	0.0	3.6	1.2	1.4	0.0	0.0	0.65	0.50	1.80	0.40	0.00	0.0	0.50	0.0	4.4 J	2.48 J	0.0	0.0	0.0	0.0
On-Site Downgradient Wells																				
SY-2R	0.6	3.6	0.0	0.2	0.0	4.2	0.0	0.0	0.0	0.0	0.72	0.0	0.0	0.0	0.0	3.6 J	0.0	0.67 J/0.65 J*	0.0/0.0*	0.0
SY-2D	7.9	2.8	4.9	3.9	2.1	1.5	0.0	0.0	0.25	0.0	0.2 / 0.0*	0.0	0.0	0.24	0.0	0.0	0.29 J	1.7	0.0	0.0/0.0*
SY-3	10.7	23.9	0.7	1.6	5.5	74.0	1.3	1.77	4.5 / 0.8*	0.0	1.26	0.0	0.74	1.04	0.0 / 0.0*	4.6 J/1.38 J*	0.0	7.4 J	3.3	0.0
SY-3D	11.4	20.9	6.0	3.8	3.9	2.2	1.9	7.98	2.9	0.7 / 0.0*	0.42	0.0	1.58	1.01 / 0.95*	10.8	0.0	0.0	0.0	0.0	0.0
SY-3DD	0.0	10.0	0.0	0.6	0.0	0.0	1.9	11.2	2.9	0.44	0.0	0.0	2.03	0.57	0.0	0.0	0.0/0.0*	0.0	0.0	0.0
Off-Site Downgradient Wells																				
PK-10S	13.9	218	0.3	0.5	0.0	102	0.5	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	7.38 J	0.34 J	0.0	0.0	0.0
PK-10I	15.6	33.4	17.0	15.0	11.0	13.6	7.7	5.25	3.4	2.7	4.34	2.2	4.3	7.99	2.10	6.69 J	2.81 J	4.33 J	3.10	2.70
PK-10D	6.5	21.8	1.8	2.0	3.1	10.2	5.1	5.41	4.4	3.9	1.69	2.7	4.27	5.18	4.02 J	8.52 J	11.0 J	9.9 J	9.9	11.8 J
RW-12I	260	154	134	88.0	72.6	72.2	62.4	66.4	53.1	69.5	62.5	30.7	41.0	53.9	29.5 J	46.3 J	47.0 J	48.9 J	55.0	71.0 J
RW-12D	31.9	200	111	73.0	65.8	87.6	60.8	41.3	64.0	80.5	64.4	34.8	63.2	96.5	47.0 J	84.0 J	74.9 J	57.0 J	67.0	67.0 J

Notes:

Results are in units of ug/L.

Totals include estimated concentrations, totals for 2003-2010 include TICs.

* = Results for duplicate sample.

Monitoring was not performed in 2017 or 2022, in accordance with the current every-fifth-calendar-quarter monitoring schedule.

Table 9
Comparison of Current Leachate Indicator Exceedances to Previous Exceedances
Syosset Landfill 2024 Annual Post-Closure Ground Water-Monitoring Report

Well Number	Exceedances In July/Dec.'93	Exceedances In July 2003	Exceedances In Dec. 2005	Exceedances In Dec. 2006	Exceedances In Dec. 2007	Exceedances In Dec. 2008	Exceedances In Nov. 2009	Exceedances In Dec. 2010	Exceedances In Nov. 2011	Exceedances In Dec. 2012	Exceedances In Dec. 2013	Exceedances In Sept. 2014	Exceedances In Dec. 2015	Exceedances In Dec. 2016	Exceedances In Mar. 2018	Exceedances In June 2019	Exceedances In July 2020	Exceedances In Nov. 2021	Exceedances In Mar 2023	Exceedances In June 2024
Upgradient Well																				
SY-6	None Noted	Color	None Noted	None Noted	None Noted	None Noted	Phenols	Phenols	None Noted	None Noted	None Noted	None Noted	Phenols	None Noted	None Noted	Color and Phenols	Color	Color and TDS	None Noted	Color
On-Site Downgradient Wells																				
SY-2R	Chloride and TDS	Color	Bromide (Slight)	Chloride and TDS	Chloride and TDS	Bromide Chloride and TDS	Chloride and TDS	None Noted	None Noted	Chloride and TDS	None Noted	Chloride and TDS	Chloride Phenols and TDS	Chloride and TDS	Chloride and TDS	Chloride and TDS	Chloride and TDS	Chloride and TDS	Chloride and TDS	Chloride and TDS
SY-2D	Ammonia	Ammonia	Ammonia	Ammonia (Very Slight)	Ammonia (Very Slight)	None Noted	None Noted	TDS	Chloride and TDS	Chloride and TDS	Chloride and TDS	Chloride and TDS	Chloride Phenols and TDS	Chloride and TDS	Chloride, Color and TDS	Chloride and TDS	Chloride and TDS	Chloride, Phenols, and TDS	None Noted	None Noted
SY-3	Ammonia Chloride and TDS	Ammonia Chloride Color and TDS	Ammonia Bromide Chloride and TDS	Ammonia Chloride and TDS	Ammonia Chloride and TDS	Ammonia and TDS	Ammonia and Color	Ammonia Color and TDS	Ammonia Color, Phenols and TDS	Ammonia Color and TDS	Ammonia Color and TDS	Ammonia Color and TDS	Ammonia, Color Phenols and TDS	Ammonia, Color and TDS	Ammonia, Chloride, Color and TDS	Ammonia, Chloride, Color and TDS	Ammonia, Chloride, Color and TDS	Ammonia, Chloride, Color, Phenols, and TDS	Ammonia, Chloride, Color, Phenols, and TDS	Ammonia, Chloride, Color, and Phenols
SY-3D	Ammonia Chloride and TDS	Ammonia Bromide Chloride and TDS	Ammonia Bromide Chloride and TDS	Ammonia Chloride and TDS	Ammonia Chloride and TDS	Ammonia Chloride and TDS	Ammonia Chloride, Color and TDS	Ammonia Chloride, Color and TDS	Ammonia Chloride Color, Phenols and TDS	Ammonia Chloride Color and TDS	Ammonia Chloride Color and TDS	Ammonia Chloride Color and TDS	Ammonia Chloride Color, Phenols and TDS	Ammonia Chloride Color and TDS	Ammonia, Chloride, Color, Phenols, and TDS	Ammonia, Chloride, Color, Phenols, and TDS	Ammonia, Chloride, Color, Phenols, and TDS			
SY-3DD	None Noted	Color	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	Phenols	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted
Off-Site Downgradient Wells																				
PK-10S	Sulfate*	Color	None Noted	None Noted	None Noted	None Noted	Color	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	Phenols	Phenols	None Noted	None Noted	None Noted	None Noted	None Noted
PK-10I	Ammonia Chloride and TDS	Ammonia Color and TDS	Ammonia Chloride and TDS	Ammonia Chloride and TDS	Ammonia Chloride and TDS	Ammonia Bromide Chloride and TDS	Ammonia Chloride and TDS	Ammonia Chloride and TDS	Ammonia Chloride and TDS	Ammonia Chloride Phenols and TDS	Ammonia Chloride and TDS	Ammonia Chloride and TDS	Ammonia Chloride and TDS	Ammonia Chloride and TDS	Ammonia Bromide Chloride and TDS	Ammonia, Chloride and TDS	Ammonia, Chloride and TDS	Ammonia, Chloride and TDS	Ammonia, Chloride, Phenols, and TDS	Ammonia, Chloride, and Phenols
PK-10D	None Noted	None Noted	Color	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	Phenols	None Noted	None Noted	None Noted	Phenols	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted
RW-12I	Ammonia	Ammonia Bromide and TDS	Ammonia and Color	Ammonia Bromide and TDS	Ammonia Bromide and TDS	Ammonia Bromide and TDS	Ammonia Bromide and TDS	Ammonia Bromide and TDS	Ammonia Bromide and TDS	Ammonia Bromide Phenols and TDS	Ammonia Bromide Phenols and TDS	Ammonia Bromide and TDS	Ammonia, Color Phenols and TDS	Ammonia Bromide and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia, Phenols, and TDS	Ammonia, TDS, and Phenols	Ammonia, TDS, and Phenols
RW-12D	Ammonia and TDS	Ammonia and TDS	Ammonia Color and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia Phenols and TDS	Ammonia and TDS	Ammonia Phenols and TDS	Ammonia and TDS	Ammonia Bromide and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia and TDS	Ammonia, Nitrate and TDS

Notes:
 * = Not Landfill-related.

Table 10
Comparison of Filtered Sample Metal Exceedances to Previous Exceedances
Syosset Landfill 2024 Annual Post-Closure Ground Water-Monitoring Report

Well Number	Exceedances In July/Dec.'93	Exceedances In July 2003	Exceedances In Dec. 2005	Exceedances In Dec. 2006	Exceedances In Dec. 2007	Exceedances In Dec. 2008	Exceedances In Nov. 2009	Exceedances In Dec. 2010	Exceedances In Nov. 2011	Exceedances In Dec. 2012	Exceedances In Dec. 2013	Exceedances In Sept. 2014	Exceedances In Dec. 2015	Exceedances In Dec. 2016	Exceedances In Mar. 2018	Exceedances In June 2019	Exceedances In July 2020	Exceedances In Nov. 2021	Exceedances In Mar. 2023	Exceedances In June 2024	
Upgradient Well																					
SY-6	Sodium	None Noted	Iron	Iron	Iron and Zinc	Iron and Zinc	Iron and Zinc	Zinc	Antimony and Zinc	Zinc	None Noted	Zinc	Iron and Zinc	None Noted	None Noted	Iron	None Noted	None Noted	Sodium	None Noted	
On-Site Downgradient Wells																					
SY-2R	Iron and Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium and Thallium	Sodium	Antimony and Sodium	Sodium	Sodium	Sodium	Beryllium, Nickel and Sodium	Beryllium and Sodium	Beryllium and Sodium	Sodium	Sodium	Sodium	Beryllium and Sodium	Beryllium and Sodium	
SY-2D	Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese Sodium and Thallium	Manganese and Sodium	Manganese Sodium and Thallium	Manganese and Sodium	Antimony Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Iron Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Sodium	Sodium	
SY-3	Antimony Arsenic, Iron Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Iron Manganese and Sodium	Iron Manganese and Sodium	Arsenic, Iron Manganese and Sodium	Arsenic, Iron Manganese Sodium and Thallium	Arsenic, Iron Manganese and Sodium	Antimony Arsenic, Iron Manganese and Sodium	Arsenic, Iron Manganese and Sodium	Arsenic, Iron Manganese and Sodium	Arsenic, Iron Manganese and Sodium	Iron Manganese and Sodium	Arsenic, Iron Manganese and Sodium	Arsenic, Iron, Manganese, and Sodium	Iron, Manganese, and Sodium	Iron, Manganese, and Sodium				
SY-3D	Iron Magnesium Manganese and Sodium	Magnesium Manganese and Sodium	Manganese and Sodium	Iron Magnesium Manganese and Sodium	Iron Magnesium Manganese and Sodium	Arsenic, Iron Magnesium Manganese and Sodium	Arsenic, Iron Manganese Sodium and Thallium	Arsenic, Iron Manganese and Sodium	Antimony, Iron Manganese and Sodium	Arsenic, Iron Manganese and Sodium	Arsenic, Iron Manganese and Sodium	Arsenic, Iron Manganese and Sodium	Arsenic, Iron Manganese Sodium and Thallium	Arsenic, Iron Manganese and Sodium	Arsenic, Iron Manganese and Sodium	Iron, Manganese and Sodium	Arsenic, Iron Manganese and Sodium	Iron, Manganese, and Sodium	Iron, Manganese, and Sodium	Arsenic, Iron Manganese and Sodium	
SY-3DD	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	Thallium	None Noted	Thallium	None Noted	None Noted	None Noted	None Noted	Iron	
Off-Site Downgradient Wells																					
PK-10S	Iron and Sodium	None Noted	Selenium (slight)	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	None Noted	
PK-10I	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese Sodium and Thallium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	Manganese and Sodium	
PK-10D	Nickel*	Nickel*	Mercury* and Nickel*	Nickel* and Sodium (slight)	Mercury* and Sodium (slight)	Mercury* and Sodium (slight)	Mercury* and Sodium	Mercury* and Sodium	Mercury* and Sodium	Mercury* and Sodium	Mercury* and Sodium	Mercury* and Sodium	Mercury*, Iron and Sodium	Mercury* and Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	
RW-12I	Sodium	Sodium	Sodium	Magnesium and Sodium	Magnesium and Sodium	Magnesium and Sodium	Magnesium Sodium and Thallium	Iron Magnesium and Sodium	Magnesium and Sodium	Magnesium and Sodium	Magnesium and Sodium	Magnesium and Sodium	Magnesium and Sodium	Magnesium and Sodium	Magnesium and Sodium	Magnesium Selenum and Sodium**	Magnesium and Sodium	Magnesium and Sodium	Sodium	Sodium	Magnesium and Sodium
RW-12D	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	Sodium	

Notes:
 * = Not Landfill-related.
 ** = In 2018, an exceedance for arsenic also occurred in Well RW-12I, but was considered spurious because arsenic was not detected in the unfiltered sample from this well.
 The 2003 iron results were qualified as rejected by data validator. The 2003 iron concentrations in Wells SY-3, SY-3D, RW-12I and RW-12D likely exceeded the limit but are not listed above.
 Prior to 2006, the limit for arsenic was 25 ug/L. In 2006 it was lowered to 10 ug/L (new MCL). The 2003 arsenic concentrations in Wells SY-3 and SY-3D exceeded the current limit.

parameter in all wells from 2003 through 2024 is provided in Appendix C. These results are also summarized in Table 11. The prior results from the 1988 OU-1 RI ground water-monitoring events and the 1993 OU-2 RI ground water-monitoring events, if available for a parameter and/or well, are also summarized in Table 11. Table 11 also identifies long-term trends (based on all available data) and trends since 2005 (to differentiate changes that may be related to the 2005 demolition work at the upgradient former Cerro Wire Site) for each parameter and well, and summarizes the numbers of parameters with flat, decreasing or increasing trends in each well for both time frames.

Review of the 2003 to 2024 trend graphs in Appendix C, and the Long-Term Trend Summary in Table 11, indicates that over the long term, a majority of the parameters in most of the wells exhibit flat or decreasing trends. Except for chloride in four on-site downgradient wells, and TDS in three off-site downgradient wells, nearly all parameters and wells show flat or decreasing trends, and the Long Term Trend Summary indicates that all the wells exhibit more flat and decreasing trends than increasing trends.

Review of the Trend Since 2005 Summary in Table 11 indicates that all the wells also exhibit more flat and decreasing trends than increasing trends. Based on this finding, the short-term impacts previously attributed to the increased recharge associated with the demolition work at the former Cerro Wire Site in 2005 have dissipated, as predicted in the 2008 Report, and ground water-quality conditions downgradient of the Landfill continue to be stable or improving over time. The possible impacts of redevelopment of the former Cerro Wire Site on ground water-quality trends will be evaluated based on future monitoring results.

Table 11
Trend Analysis Summary for Selected Part 363 Leachate Indicator Parameters
Syosset Landfill 2024 Annual Post-Closure Ground Water-Monitoring Report

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Date*	Upgradient Well	Downgradient Wells										
		On-Site					Off-Site					
		SY-6	SY-2R	SY-2D	SY-3	SY-3D	SY-3DD	PK-10S	PK-10I	PK-10D	RW-12I	RW-12D
Chemical Oxygen Demand												
OU1 RI 5/2/1988	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OU1 RI 6/6/1988	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OU2 RI 11/2/1993	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OU2 RI 12/1/1993	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/26/2003	2.5	2.5	2.5	45	6	2.5	2.5	29	2.5	2.5	13	
12/27/2005	38	2.5	2.5	5	25	2.5	2.5	2.5	2.5	39	17	
12/27/2006	2.5	2.5	2.5	8	27	2.5	2.5	15	2.5	46	27	
12/21/2007	2.5	2.5	2.5	38	21	2.5	2.5	9.13	2.5	65	18	
12/29/2008	5.92	5.92	2.5	26	22	2.5	2.5	2.5	2.5	16	18	
11/3/2009	2.5	5.98	2.5	38	26	2.5	2.5	5.98	2.5	67	9.83	
12/6/2010	2.5	2.5	2.5	10.8	18.1	2.5	2.5	2.5	2.5	62.2	2.5	
11/15/2011	1.20	1.20	3.79	11.6	14.6	1.20	4.77	5.75	2.81	71.4	16.5	
12/13/2012	1.255	5.56	6.55	2.58	17.3	1.25	1.25	1.25	1.25	54.1	7.68	
11/11/2013	3.03	4.97	4	11.8	18.5	2.5	2.5	7.88	2.5	52.5	9.82	
9/24/2014	2.5	2.5	2.5	5.76	5.76	2.5	2.5	9.76	2.5	52.8	10.8	
12/4/2015	5	6.59	15.5	15.5	14.5	2.5	2.5	2.5	2.5	31.4	2.5	
6/24/2019	5	12.2	5	145	11.2	5	5	5	5	46.5	13.3	
7/23/2020	9	5	4	10	13	5	5	6	4	31	12	
11/9/2021	5	6.18	6.18	90.3	9.15	5	5	5.19	5	34.9	6.18	
3/30/2023	5.0	5.00	5.00	23	6.97	5	5	5.97	3.96	35	5.97	
6/4/2024	5.58	5	5	29.7	19.6	5	5	6.58	2.57	26.7	5	
Long-Term Trend:	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Trend Since 2005:	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Chloride												
OU1 RI 5/2/1988	30	52	220	99	340	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OU1 RI 6/6/1988	20	57	200	110	330	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OU2 RI 11/2/1993	43	449	108	136	269	4.2	15	291	14	106	122	
OU2 RI 12/1/1993	34	613	97	176	265	4.5	14	287	14.2	118	139	
6/26/2003	19	140	120	380	300	3.5	7.8	19	19	26	150	
12/27/2005	18	180	160	380	510	4.1	10	340	47	190	160	
12/27/2006	3.4	470	140	430	680	3.3	8.9	350	64	170	190	
12/21/2007	7.2	480	150	490	770	3.9	11	390	90	240	190	
12/29/2008	10	640	170	210	820	4.3	7.2	370	91	170	170	
11/3/2009	7.8	420	200	160	910	4.1	7.9	450	120	190	200	
12/6/2010	14	160	230	170	860	4.71	9.09	440	110	170	170	
11/15/2011	4.7	220	310	180	820	4.5	13	490	110	170	200	
12/13/2012	12	400	320	230	800	4.6	14	470	120	170	200	
11/11/2013	9.54	218	291	228	820	4.15	12.5	469	118	160	199	
9/24/2014	7.47	322	278	200	749	4.22	14.6	504	133	163	207	
12/4/2015	5.14	399	252	190	524	4.5	11.8	506	128	146	197	
12/8/2016	4.94	398	266	199	549	4.75	11.8	556	119	147	210	
3/27/2018	6.9	461	461	372	508	4.8	12.3	583	112	144	206	
6/24/2019	5.5	334	398	557	525	4.9	14.3	647	101	159	221	
7/23/2020	7.8	312	339	419	708	4.7	7.8	601	105	141	189	
11/9/2021	17.5	371	268	400	608	4.9	8.3	608	110	154	189	
3/30/2023	34.8	511	118	335	640	4.7	8.6	506	99.9	136	151	
6/4/2024	9.9	287	129	267	675	4.9	14.8	520	96.5	148	165	
Long-Term Trend:	Flat	Inc.	Inc.	Inc.	Inc.	Flat	Flat	Inc.	Flat	Flat	Flat	Flat
Trend Since 2005:	Flat	Flat	Inc.	Flat	Dec.	Flat	Flat	Inc.	Flat	Flat	Flat	Flat

Table 11
Trend Analysis Summary for Selected Part 363 Leachate Indicator Parameters
Syosset Landfill 2024 Annual Post-Closure Ground Water-Monitoring Report

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Date*	Upgradient Well	Downgradient Wells										
		On-Site					Off-Site					
		SY-6	SY-2R	SY-2D	SY-3	SY-3D	SY-3DD	PK-10S	PK-10I	PK-10D	RW-12I	RW-12D
Total Organic Carbon												
OU1 RI 5/2/1988	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OU1 RI 6/6/1988	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OU2 RI 11/2/1993	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OU2 RI 12/1/1993	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/26/2003	1.24	0.74	1.05	17	3.19	0.4	0.4	5.17	0.4	1.27	6.73	
12/27/2005	8.88	1.03	1.31	2.61	9.72	0.4	0.603	5.21	0.58	17	8.43	
12/27/2006	0.4	0.5	0.459	2.43	6.51	0.4	0.4	3.65	0.4	16	7.27	
12/21/2007	0.75	1.13	0.88	2.63	6.13	0.4	0.438	3.18	0.527	3.83	8.14	
12/29/2008	1.49	1.21	1.08	3.55	6.4	0.4	0.701	2.63	0.885	4.34	7.23	
11/3/2009	2.81	2.13	1.55	7.09	9.57	0.4	0.721	3.04	1.06	41	7.01	
12/6/2010	1.2	1.1	0.859	3	4.3	0.196	0.416	1.7	0.944	24	3.3	
11/15/2011	0.79	0.88	1	2.6	3.8	0.29	0.82	1.7	1	27	4.5	
12/13/2012	1.2	1.3	1.2	3.7	4.3	0.35	0.71	2.1	1.3	22	5.6	
11/11/2013	1.25	1.2	0.863	4.27	4.1	0.755	0.903	2.33	1.36	22	4.39	
9/24/2014	1.55	1.07	0.84	4.2	5.25	0.236	0.566	2.25	1.53	21.9	4.81	
12/4/2015	2.18	1.53	1.05	3.65	5.04	0.705	0.567	2.43	1.37	19.9	4.78	
12/8/2016	2.01	1.94	4.23	4.23	4.91	0.311	0.522	2.41	1.1	19.4	4.42	
3/27/2018	1.8	2.2	2.2	5.3	4.5	0.63	0.62	2.6	1.3	17.2	5.2	
6/24/2019	2.2	3.1	1.3	4.2	4.7	0.5	0.67	3.3	1.2	18.8	5.1	
7/23/2020	1.6	1.8	1	2.9	3.9	0.39	0.59	3	1.1	15.3	4.7	
11/9/2021	1.5	1.7	1.3	6	4.5	0.62	1	3.2	1.3	11.9	3.6	
3/30/2023	1.9	2.40	5	4.4	5.1	0.63	1.00	3	1.30	13.3	4.30	
6/4/2024	1.8	1.70	2.4	3.1	3.9	0.43	0.83	3.1	1.00	13.8	2.90	
Long-Term Trend:	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Trend Since 2005:	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Long-Term Trend Summary												
Total Flat:	9	7	7	5	6	9	8	7	8	6	7	
Total Decreasing:	0	0	1	3	2	0	1	1	0	0	0	
Total Increasing:	0	2	1	1	1	0	0	1	1	3	2	
Trend Since 2005 Summary												
Total Flat:	7	9	7	9	5	9	9	6	9	6	8	
Total Decreasing:	0	0	0	0	4	0	0	1	0	3	1	
Total Increasing:	2	0	2	0	0	0	0	2	0	0	0	

Notes:

All results are in units of milligrams per Liter (mg/L). Data qualifiers are omitted from this table to allow trend calculations.

Non-detectable results are listed as one-half the method detection limit.

N/A = Not Available (Well not installed yet, not sampled during monitoring round, or sample not analyzed for that parameter).

* = Approximate date (Monitoring rounds typically take place over several days).

SECTION 6

CONCLUSIONS AND RECOMENDATIONS

Based on the above results from the 2024 annual post-closure ground water-monitoring round, LKB concludes the following:

1. The ground water-monitoring system, specifically the existing monitoring well network and modified low-flow purging and sampling method specified in the O&M Manual, continues to provide ground water-flow and ground water-quality data of sufficient quantity and quality to monitor the Landfill during the post-closure period.
2. The Landfill is not a significant source of VOCs or the toxic RCRA/PPL metals and is only a relatively minor source of certain leachate-related contaminants and common TAL metals at concentrations exceeding Class GA ground-water standards and guidance values.
3. Overall, the current results show stable or improving ground water-quality conditions at the downgradient well locations relative to the previous post-closure monitoring rounds, the 1988 OU-1 RI results and the 1993 OU-2 RI results. This finding indicates that the selected remedy has been effective in mitigating ground water-quality impacts associated with the Landfill.
4. Based on the distribution of contaminants in ground water and the ground water-flow directions, a majority of the contaminants detected in Well Cluster RW-12 do not appear to be Landfill-related. This conclusion is consistent with the conclusions of previous post-closure monitoring reports and the OU-2 RI Report.
5. Taken as a whole, the results of the 2024 ground water-monitoring round continue to support the de-listing of the Landfill from the NPL, which occurred on April 28, 2005.
6. The stable or improving ground water-quality conditions in the upgradient and on-site downgradient wells continue to indicate that ground-water conditions have equilibrated following the demolition work at the adjacent Cerro Wire site in 2005. However, since Cerro Wire site-related impacts, such as zinc, are still evident in Upgradient Well SY-6, the redevelopment of the Cerro Wire site still has potential to impact ground-water quality beneath the Landfill.

Beginning with the 2018 monitoring round, ground-water monitoring is performed every fifth calendar quarter to provide data for all four seasons and calendar quarters during each five-year review period. Accordingly, the next round of ground-water monitoring will be performed during the third quarter of 2025.

Based on the above information, LKB recommends that the following work items be implemented during the 2025 annual monitoring round:

1. Continue to collect the duplicate sample from one of the on-site downgradient wells as these wells exhibit the highest degree of Landfill-related impacts.
2. Continue to collect and dispose of the purged ground water from the off-site downgradient wells, but discharge the purged ground water from the on-site wells onto the ground surface due to the low levels of contaminants encountered.
3. Continue to evaluate ground-water quality conditions at the upgradient well and the on-site downgradient wells for influences related to the development of the Cerro Wire site.

APPENDIX A

Completed Well Inspection Checklist Forms

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. SY-1 - couldn't locate

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
Cracked	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
Missing	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
Lock – Intact	<input type="checkbox"/>	<input type="checkbox"/>	
4. Steel Casing (Stick-up) Straight	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
5. Designated Leveling Point Clearly Marked	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
6. PVC Cap Vented Properly	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
7. Well is Protected	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
8. Well is Clearly Marked	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>N/A</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>N/A</u>
5. Depth to Water from Top of PVC	<u>N/A</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. SY-1D
DATE: 4/18/2024
PERSONNEL: J. Gerlach

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Lock cut off</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>OK</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>OK</u>
5. Depth to Water from Top of PVC	<u>111.55'</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. SY-2D

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>(Presumed, under veg/soil)</u>
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Lock cut off</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>On cap</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>OK</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>OK</u>
5. Depth to Water from Top of PVC	<u>106.00'</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. SY-3

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>(Presumed, under veg/soil)</u>
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>_____</u>
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>_____</u>
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>_____</u>
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Lock cut off</u>
4. Steel Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>On Cap</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>OK</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>OK</u>
5. Depth to Water from Top of PVC	<u>108.60'</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. SY-3D

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>(Presumed, under veg/soil)</u>
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>_____</u>
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>_____</u>
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>_____</u>
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Lock cut off</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Inside of Lid</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>OK</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>OK</u>
5. Depth to Water from Top of PVC	<u>109.90'</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. SY-4

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>(Presumed, under rip-rap)</u>
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Lock cut off</u>
4. Steel Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>On cap</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>OK</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>OK</u>
5. Depth to Water from Top of PVC	<u>106.10'</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. SY-6

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Lock cut off</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>On cap</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>OK</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>OK</u>
5. Depth to Water from Top of PVC	<u>101.15'</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. SY-7

DATE: 4/18/2024

PERSONNEL: J. Gerlach

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Not used, flush mount</u>
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Curb box, bolted, bolts frozen</u>
4. Steel Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>N/A (Flush-Mount)</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>Sediment accumulates in curb box</u>
5. Depth to Water from Top of PVC	<u>110.14'</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. SY-8
DATE: 4/18/2024
PERSONNEL: J. Gerlach

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>(Presumed, under veg/soil)</u>
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>_____</u>
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>_____</u>
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>_____</u>
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Lock cut off</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>OK</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>OK</u>
5. Depth to Water from Top of PVC	<u>113.75'</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. PK-101

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Bolted, flush-mount, can't tighten bolts</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. Well is Clearly Marked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Closest well to Ball Court</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>N/A (Flush-Mount)</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>OK</u>
5. Depth to Water from Top of PVC	<u>103.45'</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. PK-10D

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Bolt holes stripped, no bolts</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>On cap</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u>N/A</u>
2. Stick-Up	<u>N/A (Flush-Mount)</u>
3. Bottom of Well Below Grade	<u>N/A</u>
4. Remarks on Integrity of Casing	<u>OK</u>
5. Depth to Water from Top of PVC	<u>104.65'</u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. PK-10S

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Missing 1 Bolt, Bolt Won't Tighten</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	N/A
2. Stick-Up	N/A (Flush-Mount)
3. Bottom of Well Below Grade	N/A
4. Remarks on Integrity of Casing	OK
5. Depth to Water from Top of PVC	104.65'

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. RW-12I

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Bolted, flush-mount, threads worn, can't secure bolts</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>On cap</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	N/A	_____
2. Stick-Up	N/A (Flush-Mount)	_____
3. Bottom of Well Below Grade	N/A	_____
4. Remarks on Integrity of Casing	OK	_____
5. Depth to Water from Top of PVC	113.90'	_____

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. RW-12D

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Lock – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Bolted, flush-mount</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. Well is Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>On cap</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	<u> N/A </u>
2. Stick-Up	<u> N/A (Flush-Mount) </u>
3. Bottom of Well Below Grade	<u> N/A </u>
4. Remarks on Integrity of Casing	<u> OK </u>
5. Depth to Water from Top of PVC	<u> 114.00' </u>

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. RB-11S

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>1 bolt missing, flush-mount</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8. Well is Clearly Marked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	N/A	_____
2. Stick-Up	N/A (Flush-Mount)	_____
3. Bottom of Well Below Grade	N/A	_____
4. Remarks on Integrity of Casing	OK	_____
5. Depth to Water from Top of PVC	104.70'	_____

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. RB-111

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>One Bolt Missing</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8. Well is Clearly Marked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Not labeled</u>

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	_____ <u>N/A</u> _____
2. Stick-Up	_____ <u>N/A (Flush-Mount)</u> _____
3. Bottom of Well Below Grade	_____ <u>N/A</u> _____
4. Remarks on Integrity of Casing	_____ <u>OK</u> _____
5. Depth to Water from Top of PVC	_____ <u>106.60'</u> _____

**SYOSSET LANDFILL
POST-CLOSURE MONITORING AND MAINTENANCE PROGRAM**

**2024 GROUNDWATER MONITORING WELL
INSPECTION CHECKLIST**

WELL NO. RB-11D

DATE: 4/5/2024

PERSONNEL: G. Varghese and C. Blachly

**CHECKLIST FOR INSPECTION OF
OUTSIDE OF EXISTING WELLS**

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
1. Cement Seal			
Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Missing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2. Ponding of Water Around Cement Seal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3. Protective Steel Pipe & Lock (if used)			
Pipe – Intact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Lock – Intact	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>Bolted, 1 Bolt Missing</u>
4. PVC Casing (Stick-up) Straight	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
5. Designated Leveling Point Clearly Marked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
6. PVC Cap Vented Properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
7. Well is Protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
8. Well is Clearly Marked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

**CHECKLIST FOR INSPECTION OF
INSIDE OF EXISTING WELLS**

1. Bottom of Well from Top of PVC Casing	N/A	_____
2. Stick-Up	N/A (Flush-Mount)	_____
3. Bottom of Well Below Grade	N/A	_____
4. Remarks on Integrity of Casing	OK	_____
5. Depth to Water from Top of PVC	106.80'	_____

APPENDIX B

Validated Laboratory Results and Data Useability Summary Report

Report of Analysis

Client:	Lockwood, Kessler & Bartlett, Inc.	Date Collected:	06/04/24
Project:	Syosset Landfill 2024	Date Received:	06/04/24
Client Sample ID:	TRIP-BLANK-2	SDG No.:	P2749
Lab Sample ID:	P2749-11	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX041775.D	1		06/06/24 14:46	VX060624

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
10061-02-6	t-1,3-Dichloropropene	1.00	U	0.21	1.00	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.00	U	0.18	1.00	ug/L
79-00-5	1,1,2-Trichloroethane	1.00	U	0.21	1.00	ug/L
591-78-6	2-Hexanone	5.00	U	1.10	5.00	ug/L
124-48-1	Dibromochloromethane	1.00	U	0.18	1.00	ug/L
106-93-4	1,2-Dibromoethane	1.00	U	0.16	1.00	ug/L
127-18-4	Tetrachloroethene	1.00	U	0.25	1.00	ug/L
108-90-7	Chlorobenzene	1.00	U	0.13	1.00	ug/L
100-41-4	Ethyl Benzene	1.00	U	0.16	1.00	ug/L
179601-23-1	m/p-Xylenes	2.00	U	0.31	2.00	ug/L
95-47-6	o-Xylene	1.00	U	0.14	1.00	ug/L
100-42-5	Styrene	1.00	U	0.16	1.00	ug/L
75-25-2	Bromoform	1.00	U	0.21	1.00	ug/L
98-82-8	Isopropylbenzene	1.00	U	0.13	1.00	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	0.27	1.00	ug/L
541-73-1	1,3-Dichlorobenzene	1.00	U	0.24	1.00	ug/L
106-46-7	1,4-Dichlorobenzene	1.00	U	0.27	1.00	ug/L
95-50-1	1,2-Dichlorobenzene	1.00	U	0.19	1.00	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	1.00	U	0.46	1.00	ug/L
120-82-1	1,2,4-Trichlorobenzene	1.00	U	0.42	1.00	ug/L
87-61-6	1,2,3-Trichlorobenzene	1.00	U	0.51	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	48.2		74 - 125	96%	SPK: 50
1868-53-7	Dibromofluoromethane	45.4		75 - 124	91%	SPK: 50
2037-26-5	Toluene-d8	49.2		86 - 113	98%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.6		64 - 133	101%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	137000	5.544			
540-36-3	1,4-Difluorobenzene	212000	6.757			
3114-55-4	Chlorobenzene-d5	211000	10.055			
3855-82-1	1,4-Dichlorobenzene-d4	105000	12.024			

- 1 Analysis of Lab Reports P2561 (On-Site Wells SY-2R, SY-2D and SY -7 (Duplicate of SY-2D), P2562 (On-Site Wells SY-6, SY-3DD, SY-3D, Field Blank), and P2582 (On-Site Well SY-3).

1a Volatile Organic Compounds (VOCs):

Results of Internal Laboratory Validation:

- √ The Holding Times were met for all analysis.
- √ The Surrogate recoveries met the acceptable criteria.
- √ The Internal Standards Areas met the acceptable requirements.
- √ The Retention Times were acceptable for all samples.
- √ The MS/MSD recoveries met the acceptable requirements .
- √ The RPD met criteria .
- √ The Blank analysis did not indicate the presence of lab contamination.
- √ The Continuous Calibration met the requirements .
- √ The Tuning criteria met requirements.
- X Acetone and 2-butanone were detected in the field blank.

Action(s) Taken:

All acetone detections less than 10X blank concentration qualified as non-detect.
2-butanone was not detected in any of the samples.

1b TAL Metals and Mercury (Total and Dissolved):

Results of Internal Laboratory Validation:

- √ The Holding Times were met for all analysis.
- √ The Blank Spike met requirements for all samples.
- √ The Duplicate analysis met criteria for all samples.
- √ The Matrix Spike analysis met criteria for all samples.
- √ The Matrix Spike Duplicate analysis met criteria for all samples.
- √ The Blank analysis did not indicate the presence of lab contamination.
- √ The Calibration met the requirements.
- √ The Serial Dilution met the acceptable requirements.

Action(s) Taken:

None required.

1c Leachate Indicator Parameters:

Results of Internal Laboratory Validation:

- √ The Holding Times were met for all analysis.
- √ Some samples were diluted due to high concentrations of certain parameters.
- √ The MS/MSD analysis met criteria for all samples except for Chloride due to matrix interference.
- √ The Blank analysis did not indicate the presence of lab contamination.
- √ The Calibration met the requirements.

Action(s) Taken:

None required.

2 Analysis of Lab Report P2749 (Off-Site Wells 10S, 10D, 10I, 12D, and 12I, Trip Blank).

2a Volatile Organic Compounds (VOCs):

Results of Internal Laboratory Validation:

- √ The Holding Times were met for all analysis.
- √ The Surrogate recoveries met the acceptable criteria.
- √ The Internal Standards Areas met the acceptable requirements.
- √ The Retention Times were acceptable for all samples.
- √ The RPD met criteria.
- √ The Blank Spike met requirements for all samples .
- √ The Blank Spike Duplicate met requirements for all samples .
- X The Blank analysis indicated presence of Acetone [4.1 ug/L]
- X The Results for Trip Blank 2 also indicated the presence of acetone [50.3 ug/L].
- √ The Continuous Calibration met the requirements .
- √ The Tuning criteria met requirements.

Action(s) Taken:

Acetone detections <41 ug/L (10X blank concentration) qualified as non-detect.

2b TAL Metals and Mercury (Total and Dissolved):

Results of Internal Laboratory Validation:

- √ The Holding Times were met for all analysis.
- √ The Blank Spike met requirements for all samples.
- √ The Duplicate analysis met criteria for all samples.
- √ The Matrix Spike analysis met criteria for all samples.
- √ The Matrix Spike Duplicate analysis met criteria for all samples.
- √ The Blank analysis did not indicate the presence of lab contamination.
- √ The Calibration met the requirements.
- √ The Serial Dilution met the acceptable requirements.

Action(s) Taken:

None required.

2c Leachate Indicator Parameters:

Results of Internal Laboratory Validation:

- √ The Holding Times were met for all samples except for SY-10DDL for Nitrate.
- √ Some samples were diluted due to high concentrations of certain parameters.
- √ The Blank Spike met requirements for all samples.
- √ The Duplicate analysis met criteria for all samples.
- √ The Matrix Spike analysis met criteria for all samples.
- √ The Matrix Spike Duplicate analysis met criteria for all samples.
- √ The Blank analysis did not indicate the presence of lab contamination.
- √ The Calibration met the requirements.

Action(s) Taken:

Nitrate result for sample from Well PK-10D qualified as estimated.

3 Duplicate Comparison

3a Volatile Organic Compounds (VOCs):

VOCs were not detected in the sample from Well SY-2D or the blind duplicate (Sample SY-7).

Action(s) Taken: None.

3b TAL Metals and Mercury (Total and Dissolved):

Total Metals and Cyanide:

Parameter	Units	SY-2D	SY-7	RDP
Aluminum	ug/L	29.8 J	<50.0	0.0%
Antimony	ug/L	<25.0	2.06 J	0.0%
Arsenic	ug/L	<10.0	<10.0	0.0%
Barium	ug/L	33.6 J	32.4 J	-3.6
Beryllium	ug/L	<3.00	<3.00	0.0%
Cadmium	ug/L	<3.00	<3.00	0.0%
Calcium	ug/L	23,200	22,800	-1.7%
Chromium	ug/L	1.23 J	3.15 J	156%
Cobalt	ug/L	<15.0	<15.0	0.0%
Copper	ug/L	<10.0	<10.0	0.0%
Cyanide	ug/L	2.3 J	2.0 J	-13.0%
Iron	ug/L	66.9	79.4	18.7%
Lead	ug/L	<6.00	<6.00	0.0%
Magnesium	ug/L	2,660	2,650	-0.4%
Manganese	ug/L	7.72 J	7.32 J	5.2%
Mercury	ug/L	<0.20	<0.20	0.0%
Nickel	ug/L	1.05 J	1.12 J	6.7%
Potassium	ug/L	2,440	2,580	5.7%
Selenium	ug/L	<10.0	<10.0	0.0%
Silver	ug/L	<5.00	<5.00	0.0%
Sodium	ug/L	91,500	99,200	8.4%
Thallium	ug/L	<20.0	<20.0	0.0%
Vanadium	ug/L	<20.0	<20.0	0.0%
Zinc	ug/L	4.31 J	6.74 J	56.4%

Dissolved Metals:

SY-2D	SY-7	RDP
<50.0	<50.0	0.0%
<25.0	<25.0	0.0%
<10.0	<10.0	0.0%
53.2	52.5	-1.3%
<3.00	<3.00	0.0%
<3.00	<3.00	0.0%
27,200	27,000	-0.7%
1.06 J	0.86 J	-18.9%
<15.0	<15.0	0.0%
<10.0	<10.0	0.0%
<50.0	<50.0	0.0%
<6.00	<6.00	0.0%
3600	3570	-0.8%
8.2 J	7.34 J	-10.5%
<0.20	<0.20	0.0%
2.34 J	1.63 J	-30.3%
3340	3310	-0.9%
<10.0	<10.0	0.0%
<5.00	<5.00	0.0%
146000	145000	-0.7%
<20.0	<20.0	0.0%
<20.0	<20.0	0.0%
9.02 J	12.1 J	34.1%

Action(s) Taken:

Total chromium and zinc detections qualified as estimated.
Dissolved nickel and zinc detections qualified as estimated.

3c Leachate Indicator Parameters:

Parameter	Units	SY-2D	SY-7	RDP
Alkalinity	mg/L	68.6	67.1	-2.2%
Ammonia	mg/L	<0.10	<0.10	0.0%
BOD	mg/L	<2.0	16.2	1,520%
Bromide	mg/L	<2.00	<2.00	0.0%
Chloride	mg/L	129	129	0.0%
COD	mg/L	<10.0	3.57 J	0.0%
Color	cu	<5.00	<5.00	0.0%
Hardness, Total	mg/L	68.9	67.8	-1.6%
Nitrate	mg/L	2.50	2.50	0.0%
Phenols, Total	mg/L	<0.05	<0.05	0.0%
Sulfate	mg/L	15.5	15.5	0.0%
TDS	mg/L	302	317	5.0%
TKN	mg/L	0.19 J	0.25 J	0.0%
TOC	mg/L	2.40	2.80	16.7%

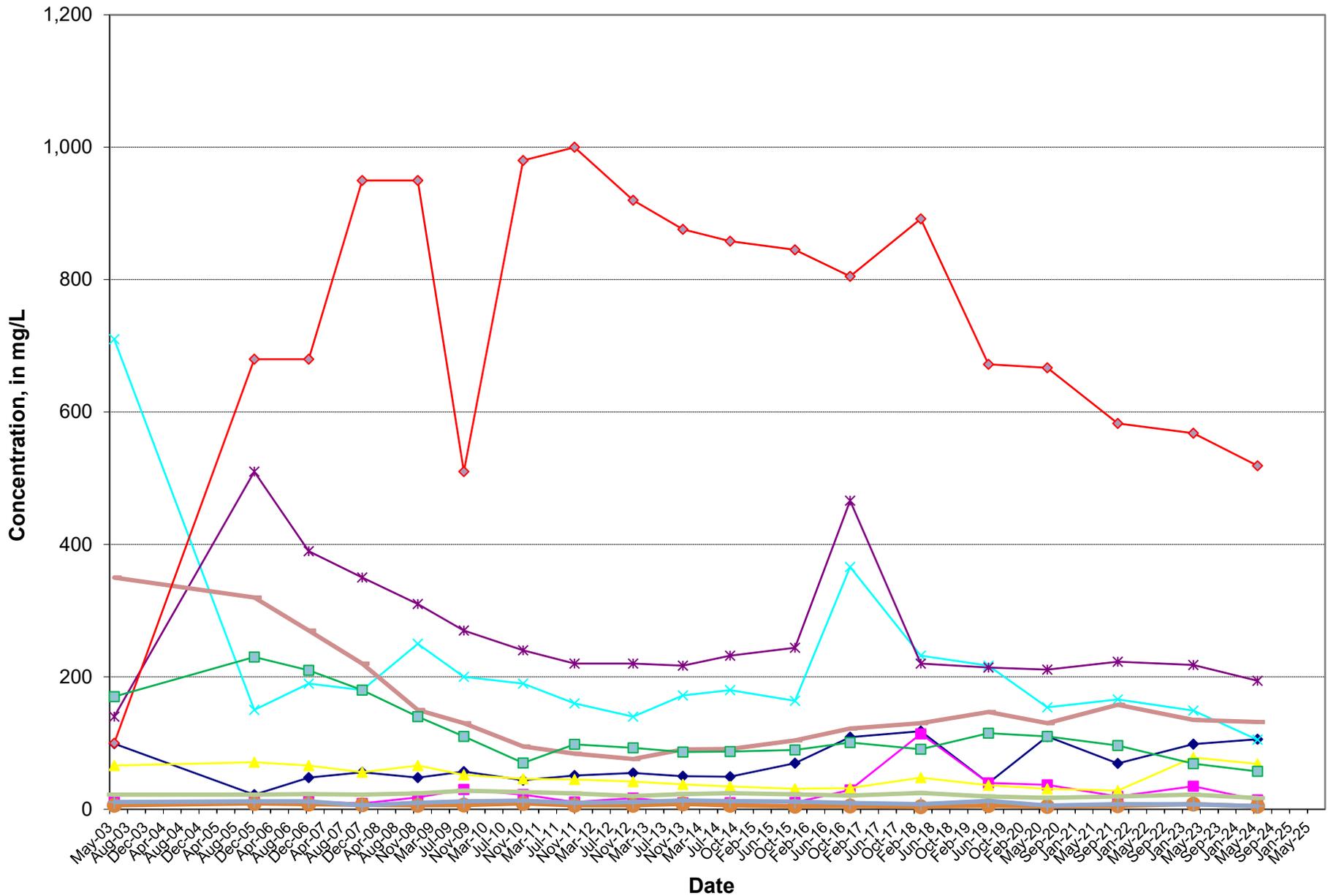
Action(s) Taken:

Duplicate BOD result may be for Well SY-2R instead.
Noted in Table 5 and report text.

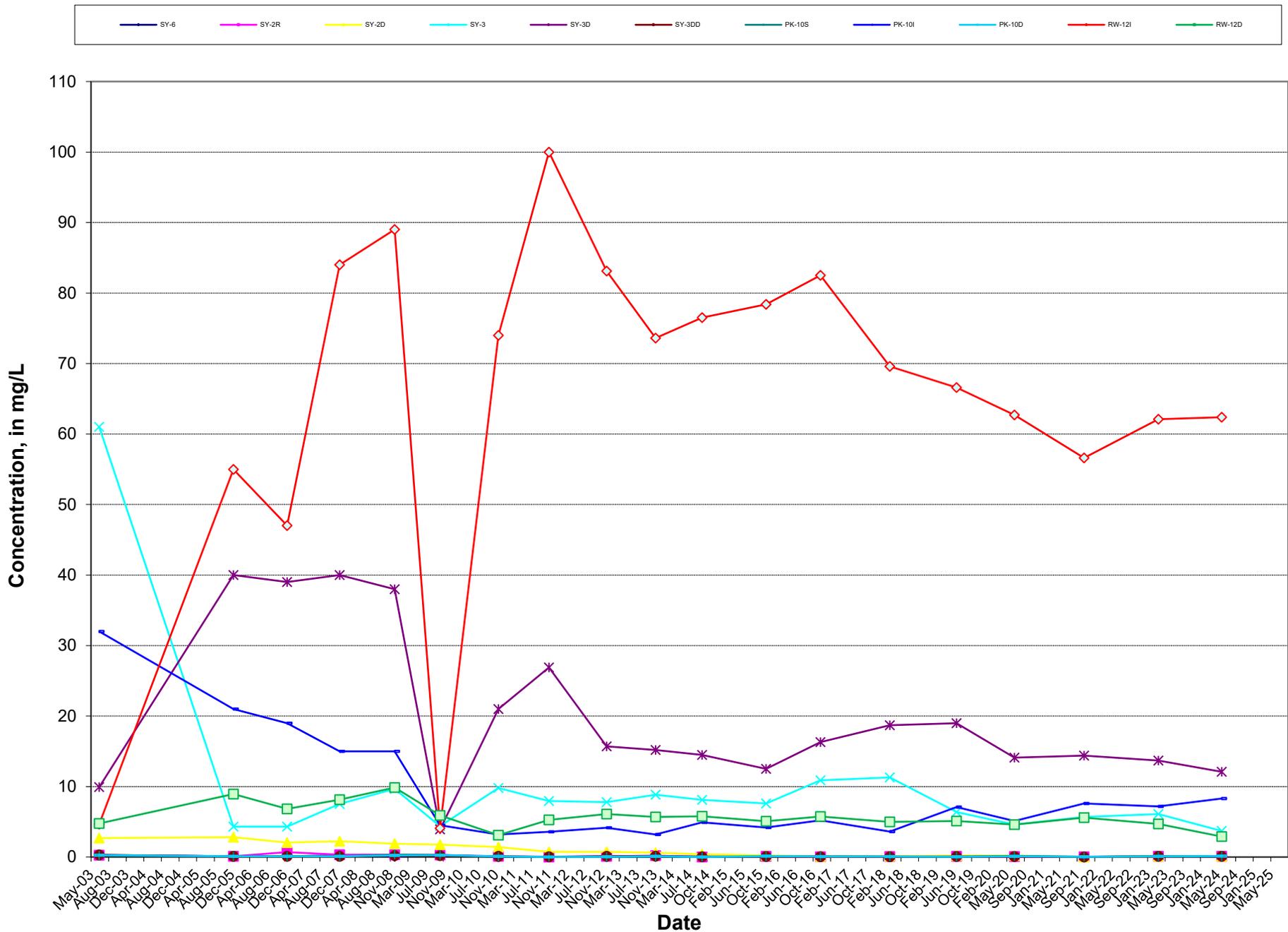
APPENDIX C

Trend Analysis Charts

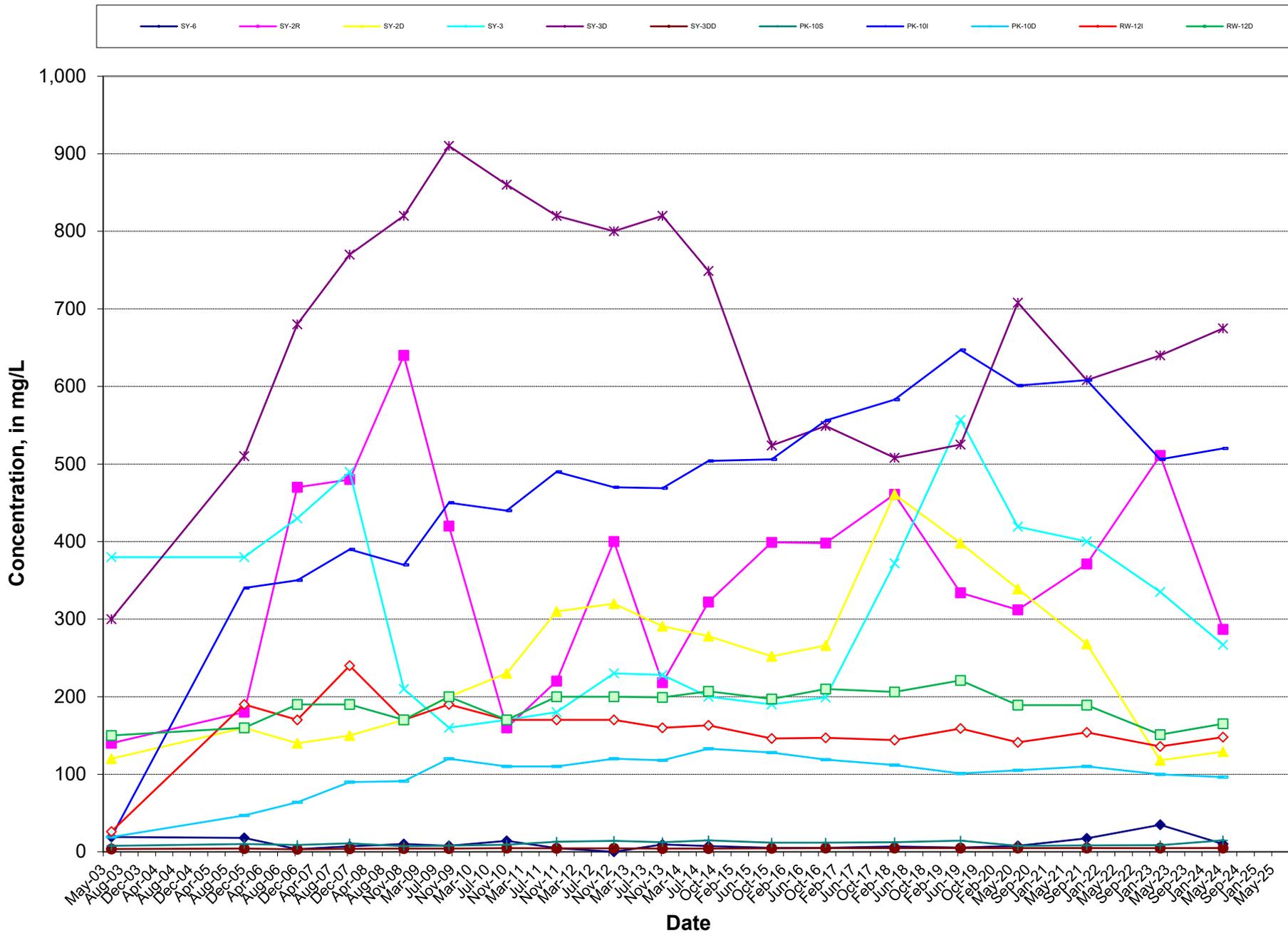
Post-Closure Alkalinity Concentrations in Syosset Landfill Ground Water-Monitoring Wells



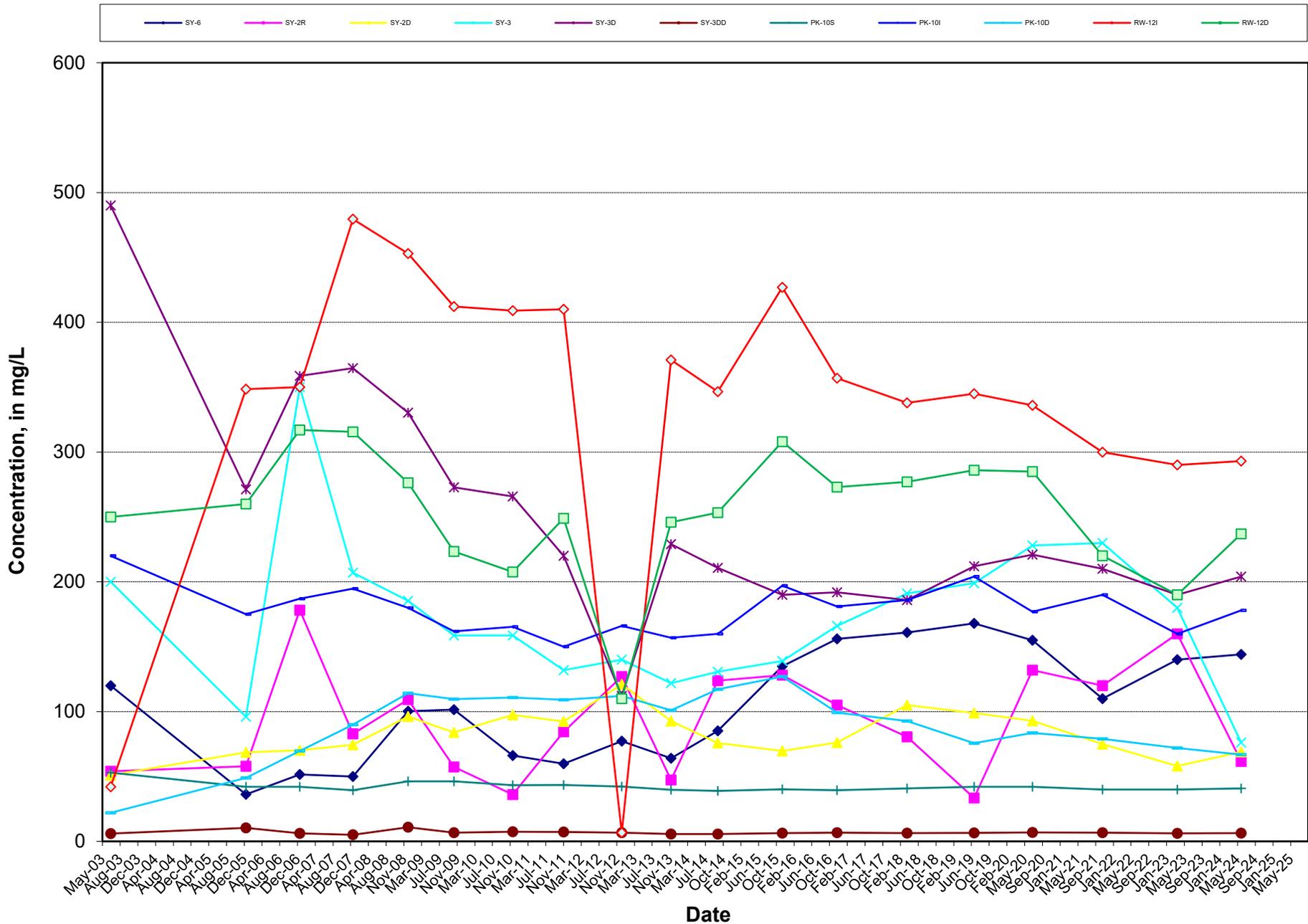
Post-Closure Ammonia Concentrations in Syosset Landfill Ground Water-Monitoring Wells



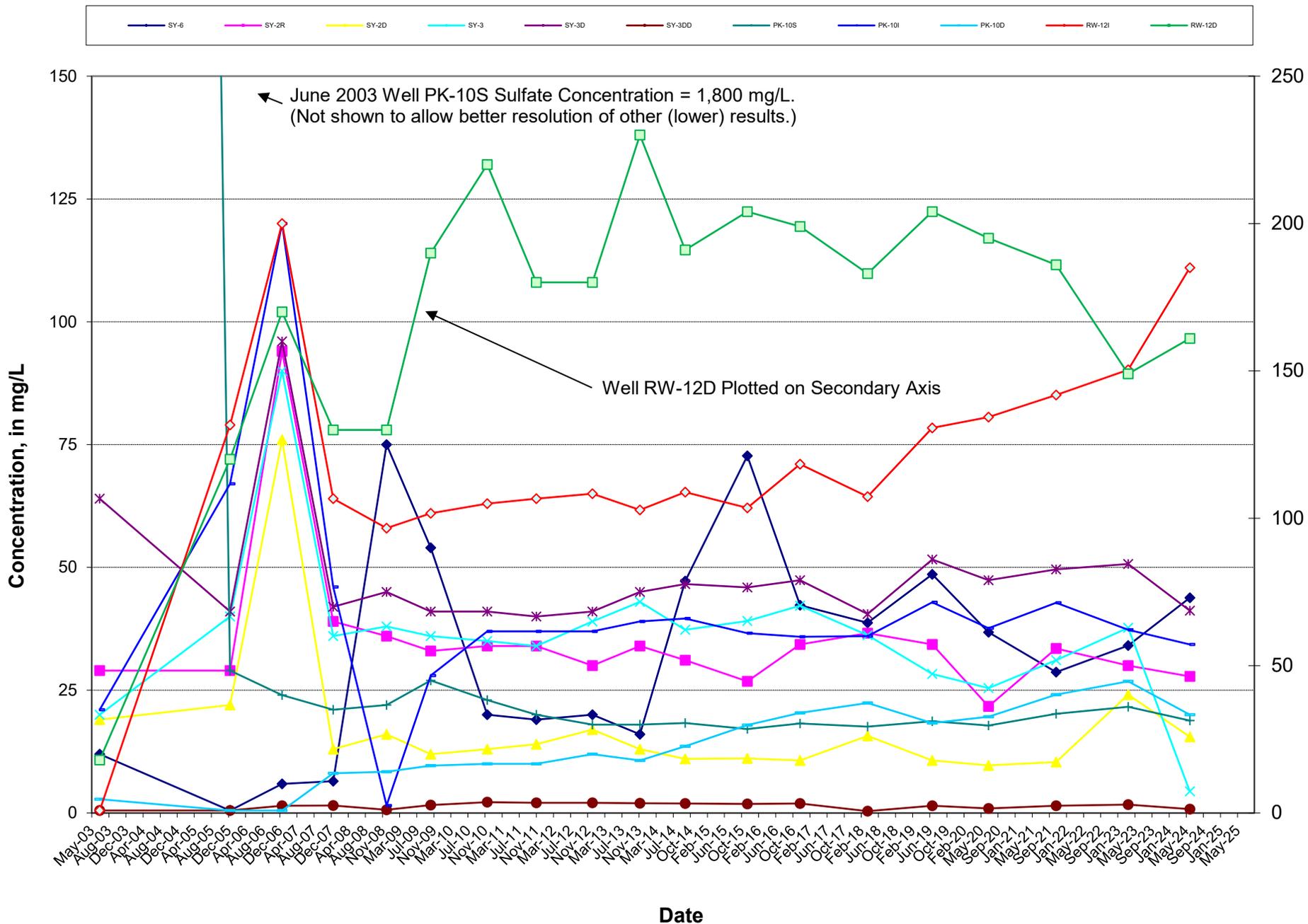
Post-Closure Chloride Concentrations in Syosset Landfill Ground Water-Monitoring Wells



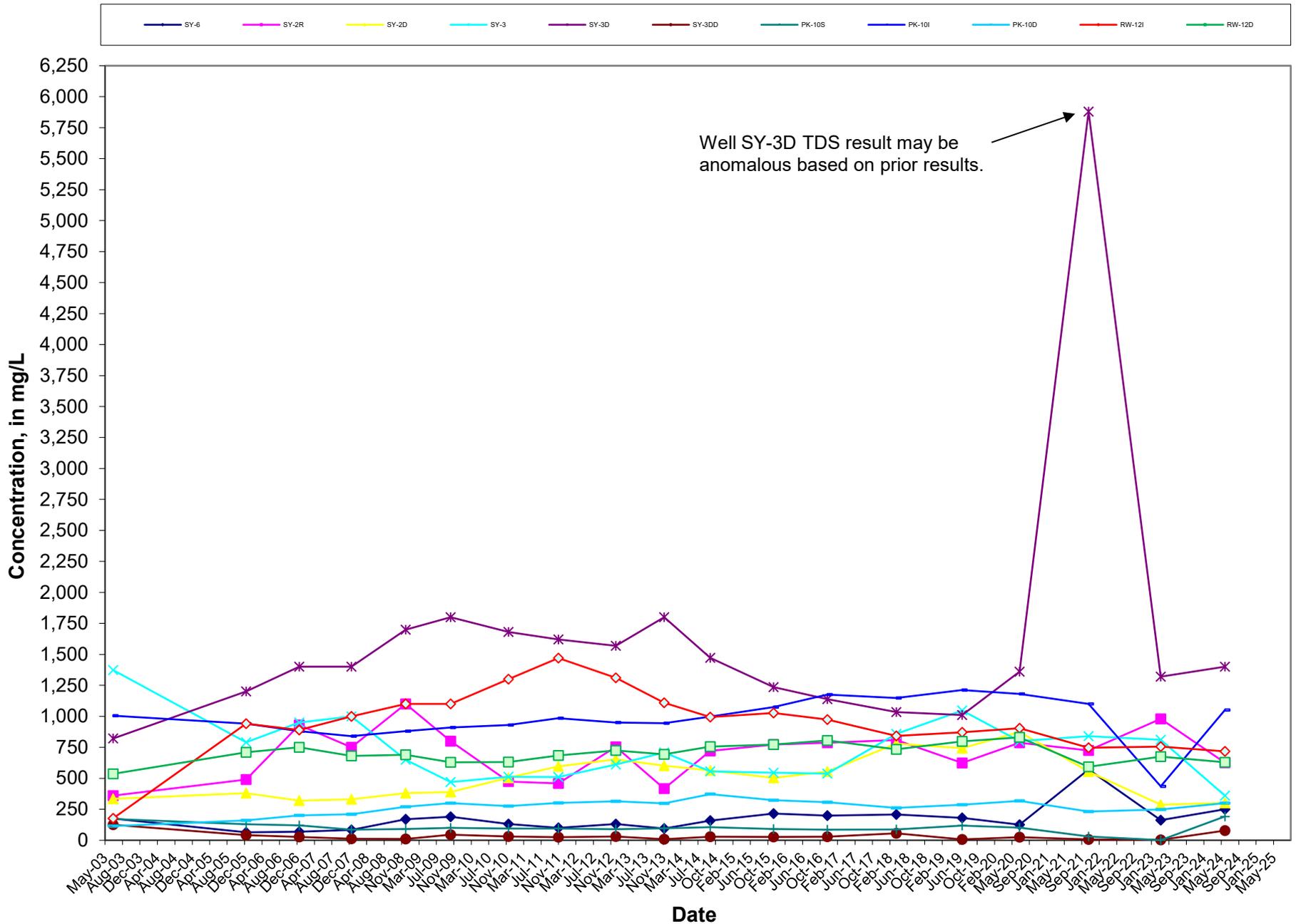
Post-Closure Hardness Concentrations in Syosset Landfill Ground Water-Monitoring Wells



Post-Closure Sulfate Concentrations in Syosset Landfill Ground Water-Monitoring Wells

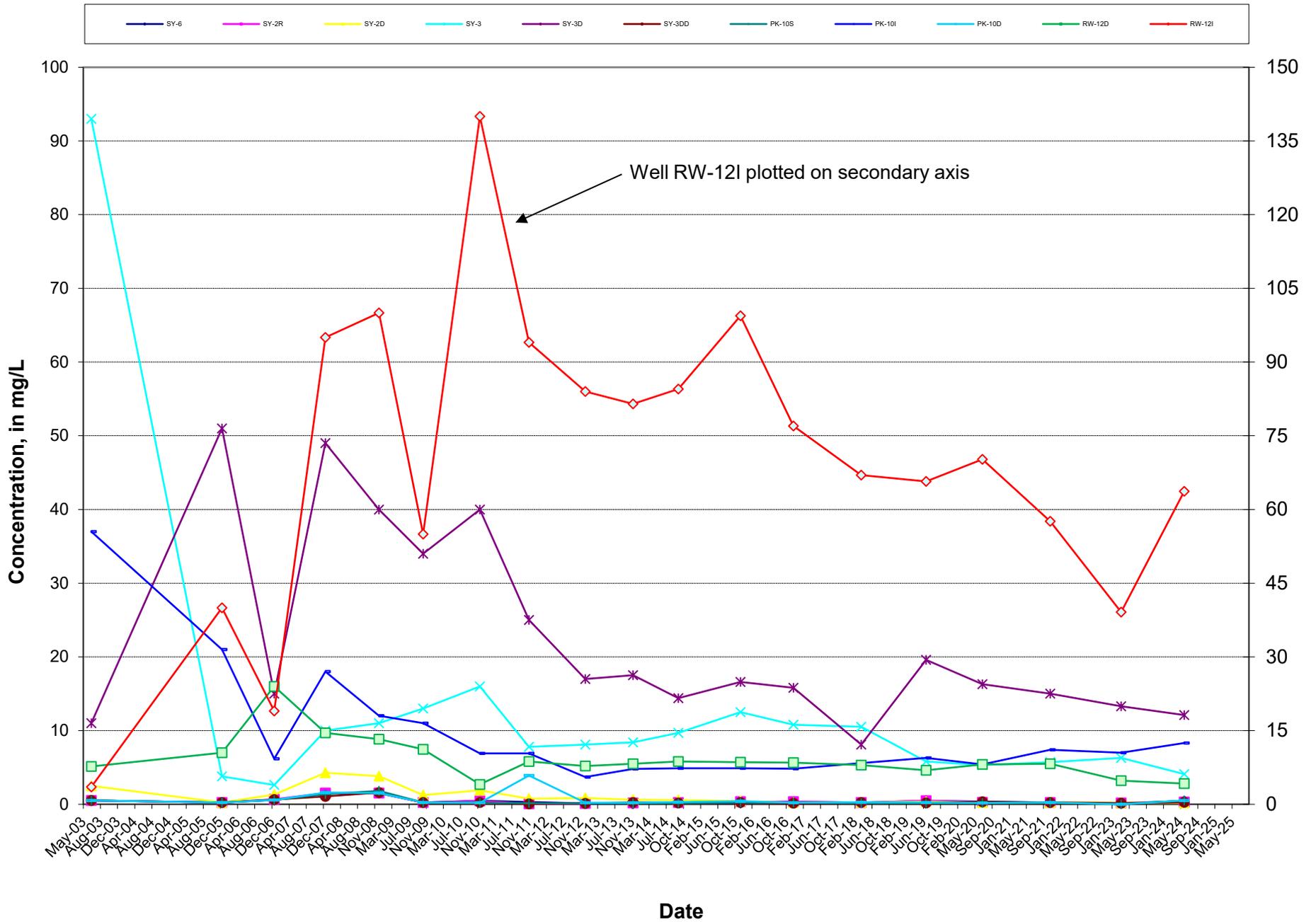


Post-Closure TDS Concentrations in Syosset Landfill Ground Water-Monitoring Wells

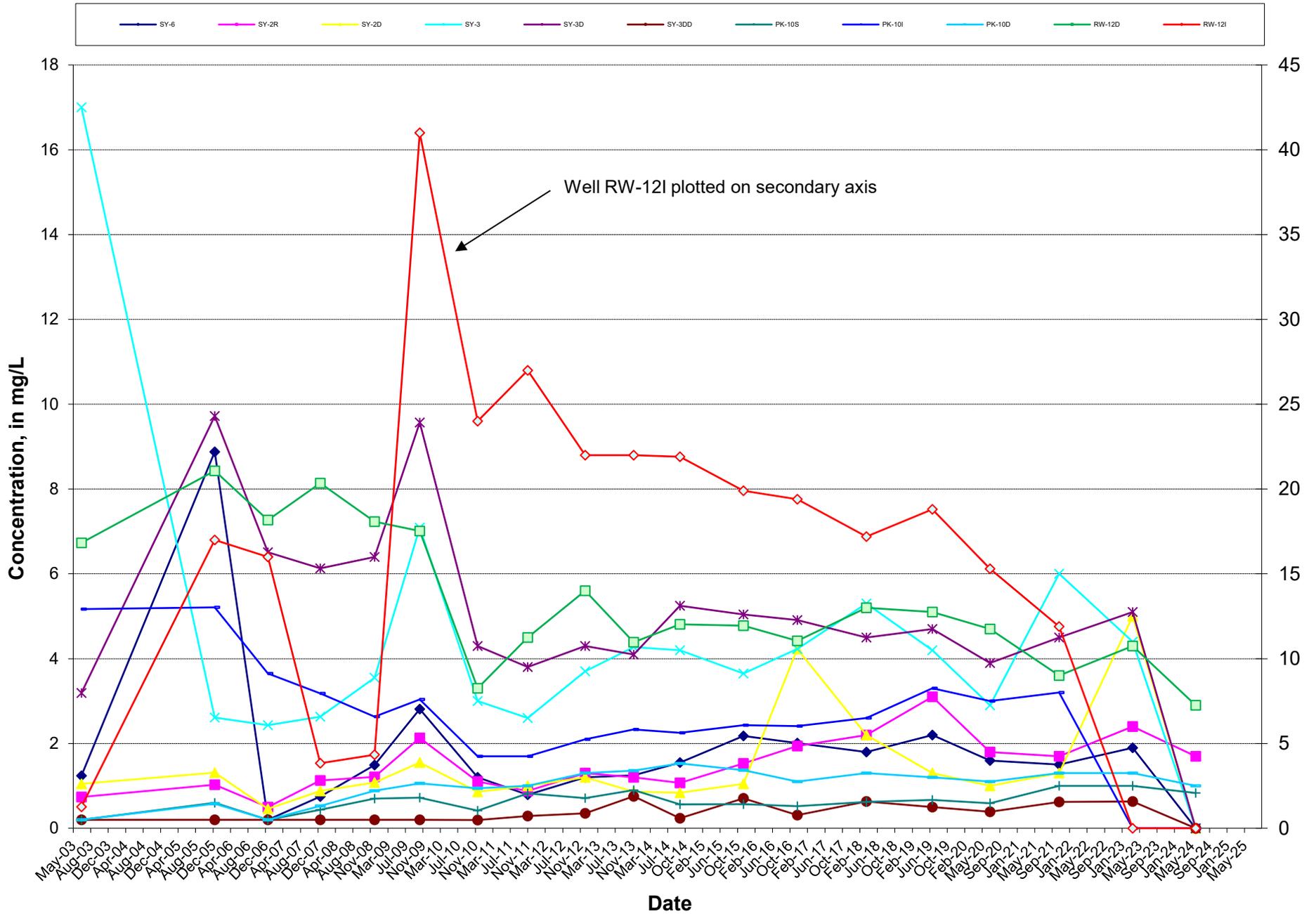


Well SY-3D TDS result may be anomalous based on prior results.

Post-Closure TKN Concentrations in Syosset Landfill Ground Water-Monitoring Wells



Post-Closure TOC Concentrations in Syosset Landfill Ground Water-Monitoring Wells





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