MATLOCK BEND LANDFILL – PHASE I & PHASE II/IV UPGRADE
GROUNDWATER MONITORING REPORT
1st SEMI-ANNUAL EVENT - 2016

SANTEK PROJECT NO. 200-1610.1 & 200-1610.2

PREPARED BY:
SANTEK WASTE SERVICES
650 25TH STREET NW, SUITE 100
CLEVELAND, TN 37311

AUGUST 2016

SANTEK
WasteServices

650 25th Street, N.W., Suite 100
Cleveland, Tennessee 37311
(423) 303-7101

Email: mail@santekenviro.com
Internet: www.santekenviro.com

August 3, 2016

Mr. Ryan Miller
Tennessee Department of Environment and Conservation
Division of Solid Waste Management
3711 Middlebrook Pike
Knoxville, TN 37921-5602

RE: Groundwater Monitoring Report – 1st Semi-Annual Event
Matlock Bend Landfill – Phase I
SNL #53-103-0203

Dear Mr. Miller:

Please find enclosed a copy of the groundwater monitoring report generated from the first semi-annual groundwater event of 2016 at the Matlock Bend Landfill – Phase I. This package includes data pertaining to site information, geologic summary, groundwater sampling, analytical laboratory reports, statistical analysis, and groundwater elevations and flow.

If you have any questions and/or comments, please feel free to call at (423) 303-7101.

Sincerely,

Robert Hudson

Robert Hudson
Environmental Compliance Coordinator

Enclosures

cc: Steve Field, Loudon County Solid Waste Department Chairman
Matt Dillard, Executive V.P. of Operations, Santek
Ron E. Vail, P.E., V.P. of Engineering, Santek
Raymond Givens, Landfill Manager, Santek

TABLE OF CONTENTS

Phase I

Phase II/IV Upgrade

Leachate

MATLOCK BEND LANDFILL

PHASE I

MATLOCK BEND LANDFILL – PHASE I
GROUNDWATER MONITORING REPORT
1st SEMI-ANNUAL EVENT - 2016

SANTEK PROJECT NO. 200-1610.1

PREPARED BY:
SANTEK WASTE SERVICES
650 25TH STREET NW, SUITE 100
CLEVELAND, TN 37311

AUGUST 2016

1.0 INTRODUCTION

In accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rule 0400-11-01-.04(7), Santek Waste Services, Inc. (Santek) is submitting the groundwater monitoring report for the first semi-annual event for 2016 at the Matlock Bend Landfill - Phase I. The sampling and analytical were performed in accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rules as well as the site's approved groundwater monitoring plan dated December 1996. The groundwater monitoring plan is incorporated in the landfill's Operations Plan. The site's groundwater monitoring network consists of MW-01, MW-1A, MW-02 and MW-03. Santek contracted with Environmental Monitoring Services, LLC (EMS) to perform the sampling. Statistical analyses were performed by Santek. Santek contracted with Analytical Environmental Services, Inc. (AES) to perform all analytical testing.

1.1 SITE INFORMATION

Phase I of the Matlock Bend Landfill is located approximately five miles west of Loudon, TN, at latitude N 35° 44' 48" and longitude W 84° 24' 43". The site consists of 23 constructed acres of ridge-top and sloped hillside topography bordering Tennessee Highway 72 for approximately 250 feet extending northward 4,800 feet.

2.0 SAMPLING AND ANALYTICAL

The groundwater sampling event was performed by EMS on May 24 & 25, 2016. Santek conducted re-sampling of all Phase I groundwater wells on June 27, 2016 as a result of EMS not sampling for the full list of parameters. Samples were analyzed for Appendix I constituents, as well as the required additional 14 parameters. All samples were submitted to AES for analysis. A duplicate was obtained from MW-03. Field sampling logs are provided in Appendix A. Analytical results are provided in Appendix B. Data pertaining to leachate monitoring is provided in the Appendix labeled Leachate.

3.0 STATISTICAL ANALYSIS

3.1 Statistical Analysis Method

Santek is submitting a control chart approach to satisfy the statistical analysis requirement. Well #03 is the upgradient (background) well. Wells #01, #1A and #02 are the downgradient (compliance) wells. The Appendix I analytical results for this sampling event are used to compare the compliance wells to the background well concentrations for each constituent elevated above detection limit. Parameters not detected above the reporting limits are not included in the control chart comparison. Parameters detected above the reporting limits are compared to the average background concentration. The mean (average) for each well is determined by using the actual analytical value if it exceeds the detection limit, or by using the method detection limit (MDL) if the result was a nondetect. If the average background concentration is greater than the results for the compliance well, then no significant increase is indicated. If the average background concentration is less than the results of the compliance well, then the Tennessee (TN) Regulatory Limits of the Tennessee Solid Waste regulations are used for additional comparison to indicate potentially elevated concentrations. Control charts are provided in Appendix C.

3.2 Statistical Analysis Summary

MW-01
There were no inorganic or organic constituents detected above the report limits during this event.

MW-1A
There were no inorganic or organic constituents detected above the report limits during this event.

MW-02
The control chart for MW-02 indicates zinc* is above the report limit and the background well's average. However, it is felt that the result of this constituent is not indicative of a release from the landfill, but rather attributable to local soil constituents.

MW-03
MW-03 is the upgradient (background) well.

4.0 FLOW DIRECTION AND RATES

Geological Summary:
Geologic information of Phase I is based on a Hydrogeologic Evaluation dated January 18, 1984, by G.N. Pruitt (TNDSWM). Phase I is located on a discontinuous, highly dissected upland with elevations ranging from approximately 865 feet (MSL) to 1,020 feet (MSL). The evaluation indicates a thick cover of silty-clayey soil which covers the majority of the site, the absence of shallow groundwater, and the absence of perennial springs and streams. No bedrock outcrops were viewed on site; however, an exposed dolomite limestone ledge resides east of the southeast property boundary. This rock exposure appears to originate from either the uppermost part of the Longview dolomite formation or the lower portion of the Newalla dolomite formation, both belonging to the Knox Group. Phase I is located in the Valley and Ridge physiographic region consisting of northeast/southwest trending valleys and ridges.

The overall groundwater flow of Phase I is towards the southwest and will eventually flow to the Tennessee River. The groundwater flow rate ranges from 1.88×10^{-3} ft/day at MW-03 to 3.38×10^{-3} ft/day at MW-02. Groundwater flow rate and direction have been determined for each well and are included in Appendix D. A groundwater potentiometric contour map is included in Appendix E.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater monitoring network at this site is adequately monitoring the uppermost aquifer and no changes are recommended at this time.

**Indicates TN Regulatory limit is not available.*

APPENDIX A

EMServices

Environmental Monitoring Services, LLC
Phone (770) 516-2081 Fax (678) 445-3276

June 1, 2016

Robert Hudson
Santek Waste Services
650 25th Street NW, Suite 100
Cleveland, TN 37311

RE: Groundwater monitoring at Loudon County Phase I Landfill

Robert,

On May 24th and 25th, we completed the semi-annual groundwater monitoring at the referenced site. The sampling activities were performed in accordance with the site's operating permit and EPA Region IV SESD SOP's.

After collecting the water level, we calculated the purge volume to three well volumes using a standard formula. At each well, purging continued until at least three well volumes were removed and the field parameters were stable, or until the well was dry. The purge water was captured in 5 gallon buckets to quantify the purge volumes.

We employed a submersible pump for the purging of wells MW-01, 1A, 02, and 03. The pump used was attached to Teflon-lined tubing. The tubing and pump were washed after sampling the well using a Liquinox soap solution followed by a water rinse.

The wells were sampled using the same pump used to purge the well. The VOC and fluoride samples were collected immediately. If turbidity was at an unacceptable level when purging was complete (all other parameters stable), the well was allowed to settle for several hours or overnight, but less than 24 hours. The wells that were initially purged and sampled with a submersible pump but had high turbidities later had metals samples collected using a new disposable poly bailer attached to new nylon string.

During the purging process, pH, conductivity, temperature and turbidity readings were collected and recorded in the logbook. Turbidity readings were again recorded at the time of metals sample collection if the well was allowed to settle. Field readings were recorded from the initial water pulled (0 gallons), well volume 1, well volume 2, well volume 2.5 and well volume 3. Stability was based on volume, rather than time (though the time between measurements fell within range of accepted guidance). The stability criteria used based on accepted guidance was at least 3 sets of readings within the following ranges: pH (± 0.1 SU), SC (± 10%), Temperature (± 1°C), and Turbidity (<10 NTU). If the measurements weren't stable as defined by the above criteria at the completion of purging 3 well volumes, purging continued and readings recorded generally every 0.5 well volume up to 5 well volumes. These readings were recorded from YSI 556MPS which was calibrated each morning. Turbidity readings were collected using a Hach DR-820, which is zeroed periodically throughout the day. The Hach DR-820 contains a factory calibration which is checked in-house using formazine standards.

The samples were collected in containers provided by the laboratory. These containers were of types, sizes and preserved in a manner consistent with SW-846 and other guidance. Upon filling, the containers were placed on ice. The samples were hand-delivered under chain of custody to Analytical Environmental Services, (AES), located in Atlanta, Georgia.

We appreciate the opportunity to work with you on this project, and look forward to any feedback you have.

Respectfully,

Jeff Johnson

Attachments: Groundwater Field Data

FIELD SAMPLING LOG	WELL NO: MW-01
Location: Loudon County Landfill	Site: Matlock Bend Phase I
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 5-24-16 (Time) 1342	Purge End: (Date) 5-24-16 (Time) 1435
Purged by: CDC	
Depth Measurement Ref. Point* 830.87 ft	Well Casing. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI

Measure Well TD: 45.00 (-)Orig. DTW: 8.23 (=) Wtr. Col. Thick: 36.77

2"=0.163 Gals./ft. (=) 5.99 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 17.96 Total Purge Gals.

GW elev. Ref. 830.87 ft.(-) DTW: 8.23 ft. = 822.64 ft.

Purge/Sample Method: Disposable Poly Bailer or SS Electric Submersible Pump
Decon. Method: Field Appendix B
Purge Water Containerized? (No)

Average Purge Rate: 0.57 (gallons per minute)
Weather: Sunny (75 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1342	0.0	5.97	536	15.8	4		Clear. No odor.
1345	6.00	6.35	593	14.7	274		Beige. No odor.
1352	9.00	6.39	597	14.8	1138		Beige. No odor.
1355	12.00	6.47	596	14.8	1095		Red. No odor.
1357	15.00	6.48	601	14.8	21100		Red. No odor.
1400	18.00	6.51	603	15.0	436		Beige. No odor

Turbidity at metals sample collection: 8 NTU's 5/25/16 0930

Comments: Allowed to settle for metals collection.

*All Depths in Feet below Ref. Point on Wellhead, Generally Top of Casing (TOC) DTW= Depth to Water

1405	21.00	6.50	607	15.0	274	Beige. No odor.
1410	24.00	6.51	611	15.1	162	White. No odor.
1421	27.00	6.50	615	15.2	74	Clear. No odor.
1435	30.00	6.48	617	15.3	34	Clear. No odor.

FIELD SAMPLING LOG	WELL NO: MW-1A
Location: Loudon County Landfill	Site: Matlock Bend Phase I
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 5-24-16 (Time) 1505	Purge End: (Date) 5-24-16 (Time) 1529
Purged by: GWC	
Depth Measurement Ref. Point* 805.13 ft	Well Casing. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI .

Measure Well TD: 38.00 (-)Orig. DTW: 14.12 (=) Wtr. Col. Thick 23.88.

2"=0.163 Gals./ft. (=) 3.89 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 11.66 Total Purge Gals.

GW elev. Ref. 805.13 ft.(-) DTW: 14.12 ft. = 791.01 ft.

Purge/Sample Method: Disposable Poly Bailer or ~~SS Electric Submersible Pump~~
Decon. Method: Field Appendix B
Purge Water Containerized? (No)

Average Purge Rate: 0.67 (gallons per minute)
Weather: Sunny (75 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1505	0.0	6.74	1050	17.6	149		Beige. No odor.
1509	4.00	6.47	725	15.4	37		Clear, No odor.
1512	6.00	6.38	745	15.4	46		Clear, No odor
1515	8.00	6.37	764	15.4	56		White. No odor.
1518	10.00	6.47	799	15.4	45		White, No odor.
1521	12.00	6.53	819	15.4	14		Clear, No odor.

Turbidity at metals sample collection: 5 NTU's

Comments: _____

*All Depths in Feet below Ref. Point on Wellhead, Generally Top of Casing (TOC) DTW= Depth to Water

1525	14.00	6.54	843	15.6	12	Clear. No odor.
1529	16.00	6.56	845	15.8	5	Clear. No odor.

~~18.00~~

FIELD SAMPLING LOG	WELL NO: MW-02
Location: Loudon County Landfill	Site: Matlock Bend Phase I
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 5-24-16 (Time) 1254	Purge End: (Date) 5-24-16 (Time) 1310
Purged by: GWES	
Depth Measurement Ref. Point* 825.20 ft	Well Casing. ID: 4"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI .

Measure Well TD: 43.10 (-)Orig. DTW: 13.05 (=) Wtr. Col. Thick: 30.05

2"=~~0.653~~ 0.163 Gals./ft. (=) 4.90 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 14.69 Total Purge Gals.

GW elev. Ref. 825.20 ft.(-) DTW: 13.05 ft. = 812.15 ft.

Purge/Sample Method: Disposable Poly Bailer or ~~SS Electric Submersible Pump~~
Decon. Method: Field Appendix B
Purge Water Containerized? (No)

Average Purge Rate: 0.47 (gallons per minute)
Weather: Sunny (75 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1254	0.0	5.21	36	17.6	2		clear. No odor.
1300	5.00	4.56	54	16.0	5		Clear. No odor.
1310	7.50	4.48	54	16.1	2		Clear. No odor.
	~~10.00~~						
	~~12.50~~						
	~~15.00~~						

Turbidity at metals sample collection: 2 NTU's

Comments: Purged dry @ 1.5 w.

*All Depths in Feet below Ref. Point on Wellhead, Generally Top of Casing (TOC) DTW= Depth to Water

FIELD SAMPLING LOG	WELL NO: MW-03
Location: Loudon County Landfill	Site: Matlock Bend Phases I / II / IV
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 5-24-16 (Time) 1508	Purge End: (Date) 5-24-16 (Time) 1519
Purged by: A. Howard	
Depth Measurement Ref. Point* 867.86 ft	Well Casing. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI .

Measure Well TD: 41.60 (-)Orig. DTW: 19.43 (=) Wtr. Col. Thick: 22.17

2"=0.163 Gals./ft. (=) 3.62 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 10.85 Total Purge Gals.

GW elev. Ref. 867.86 ft.(-) DTW: 19.43 ft. = 848.43 ft.

Purge/Sample Method: Disposable Poly Bailer or SS Electric Submersible Pump
Decon. Method: Field Appendix B
Purge Water Containerized? (No)

Average Purge Rate: _____ (gallons per minute)
Weather: Sunny (78 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1508	0	6.84	83	16.8	21		
1514	3.75	4.83	83	16.8	9		
1519	5.25	4.82	83	16.9	9		
	~~5.25~~						
	~~9.75~~						
	~~14.00~~						

Turbidity at metals sample collection: 9 NTU's

Comments: Purged dry at 5.25 gal
Dup taken here - 1700

*All Depths in Feet below Ref. Point on Wellhead, Generally Top of Casing (TOC) DTW= Depth to Water

SANTEK RE-SAMPLING

DATE: 6/27/16

FIELD SAMPLING LOG	WELL NO: MW-01
Location: Loudon County	Site: Matlock Bend
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 6/27/16 (Time) 2:01	Purge End: (Date) 6/27/16 (Time) 2:23
Purged by: Robert Hudson	
Depth Measurement Ref. Point* 830.87 ft	Well Csg. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 45.00 (-)Orig. DTW: 10.43 (=) Wtr. Col. Thick: 34.57 .

(x) 2"=0.16 4"=0.65 6"=1.47 Gals./ft. (=) 5.5 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 16.5 Total Purge Gals.

GW elev. Ref. 830.87 ft.(-) DTW 10.43 ft. = 820.44 ft.

Purge/Sample Method:
☐ Pump (indicate type) _____.
☒ Bailer (indicate type) Poly/Disposable .

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Partly Cloudy (90's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
2:03		-			18.52	6.45	0.464	3.6		Clear
2:08		5.5			17.71	6.51	0.471	342		Cloudy
2:14		11.0			17.76	6.56	0.489	930		Muddy
2:23		16.5			17.41	6.60	0.494	>1,000		Muddy

Average Linear velocity $v = \frac{Ki}{n}$ Where

K= Hydraulic Conductivity (ft/min)
i .= Gradient (ft/ft)
n = effective porosity

v=[K_____ft/min. (x) GW elev._____ft. (-) GW elev. _____ft] -_____
distance_____ft
v=_____ft./min. = _____ft day

.18 Clay/Silt
. 20 Silt w/sand
.25 sand
.3 sand and gravel

Comments: Samples taken on 6/27/16 @ 2:30 pm.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

DATE: 6/27/16

FIELD SAMPLING LOG	WELL NO: MW-1A
Location: Loudon County	Site: Matlock Bend
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 6/27/16 (Time) 3:24	Purge End: (Date) 6/27/16 (Time) 3:43
Purged by: Robert Hudson	
Depth Measurement Ref. Point* 805.13 ft	Well Csg. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 38.00 (-)Orig. DTW: 15.30 (=) Wtr. Col. Thick: 22.70 .

(x) 2"=0.16 4"=0.65 6"=1.47 Gals./ft. (=) 3.6 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 10.8 Total Purge Gals.

GW elev. Ref. 805.13 ft.(-) DTW 15.30 ft. = 789.83 ft.

Purge/Sample Method: ☐ Pump (indicate type) _____.
☒ Bailer (indicate type) Poly/Disposable .

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Partly Cloudy (90's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
3:26		-			18.91	6.40	0.577	7.5		Clear
3:31		3.5			17.06	6.49	0.658	330		Very cloudy
3:36		7.5			16.86	6.54	0.669	900		Muddy
3:43		11.0			16.41	6.58	0.684	>1,000		Muddy

Average Linear velocity $v = \frac{Ki}{n}$ Where

K= Hydraulic Conductivity (ft/min)
i = Gradient (ft/ft)
n = effective porosity

v=[K_____ft/min. (x) GW elev._____ft. (-) GW elev. _____ft] -_____
distance_____ft
v=_____ft./min. = _____ft day

.18 Clay/Silt
. 20 Silt w/sand
.25 sand
.3 sand and gravel

Comments: Samples taken on 6/27/16 @ 3:50 pm.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

DATE: 6/27/16

FIELD SAMPLING LOG	WELL NO: MW-02
Location: Loudon County	Site: Matlock Bend
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 6/27/16 (Time) 2:54	Purge End: (Date) 6/27/16 (Time) 3:05
Purged by: Robert Hudson	
Depth Measurement Ref. Point* 825.20 ft	Well Csg. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 43.10 (-)Orig. DTW: 17.25 (=) Wtr. Col. Thick: 25.85 .

(x) 2"=0.16 4"=0.65 6"=1.47 Gals./ft. (=) 4.1 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 12.3 Total Purge Gals.

GW elev. Ref. 825.20 ft.(-) DTW 17.25 ft. = 807.95 ft.

Purge/Sample Method: ☐ Pump (indicate type) _____.
☒ Bailer (indicate type) Poly/Disposable .

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Partly Cloudy (90's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
2:55		-			19.31	5.20	0.056	14.2		Clear
3:01		4.5			18.29	5.06	0.055	203		Cloudy
3:05		7.0			17.61	5.00	0.055	491		*purged dry

Average Linear velocity $v = \frac{Ki}{n}$ Where

*Purged dry at 7.0 gallons.

K= Hydraulic Conductivity (ft/min)
i = Gradient (ft/ft)
n = effective porosity

v=[K_____ft/min. (x) GW elev._____ft. (-) GW elev. _____ft] - _____
distance_____ft
v=_____ft./min. = _____ft day

.18 Clay/Silt
. 20 Silt w/sand
.25 sand
.3 sand and gravel

Comments: *Purged dry @ 7.0 gallons. Samples taken on 6/27/16 @ 3:10 pm.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

DATE: 6/27/16

FIELD SAMPLING LOG	WELL NO: MW-03
Location: Loudon County	Site: Matlock Bend
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 6/27/16 (Time) 1:22	Purge End: (Date) 6/27/16 (Time) 1:32
Purged by: Robert Hudson	
Depth Measurement Ref. Point* 867.86 ft	Well Csg. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 41.60 (-)Orig. DTW: 20.92 (=) Wtr. Col. Thick: 20.68 .

(x) 2"=0.16 4"=0.65 6"=1.47 Gals./ft. (=) 3.3 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 9.9 Total Purge Gals.

GW elev. Ref. 867.86 ft.(-) DTW 20.92 ft. = 846.94 ft.

Purge/Sample Method: ☐ Pump (indicate type) _____.
☒ Bailer (indicate type) Poly/Disposable .

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Sunny (90's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
1:24		-			18.69	5.31	0.095	9.2		Clear
1:29		3.5			18.38	5.17	0.096	138		Slightly cloudy
1:32		4.5			17.57	5.11	0.094	134		Cloudy, *purged dry

Average Linear velocity $v = \frac{Ki}{n}$ Where

*Purged dry at 4.5 gallons.

K= Hydraulic Conductivity (ft/min)
i = Gradient (ft/ft)
n = effective porosity

v=[K_____ft/min. (x) GW elev._____ft. (-) GW elev. _____ft] - _____
distance_____ft

v=_____ft./min. = _____ft day

.18 Clay/Silt
. 20 Silt w/sand
.25 sand
.3 sand and gravel

Comments: *Purged dry @ 4.5 gallons. Samples taken on 6/27/16 @ 1:38 pm.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

APPENDIX B

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

AES

July 21, 2016

Robert Hudson
Santek Environmental Inc.
650 25th Street NW, Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon County Landfill (Phase I)

Dear Robert Hudson: Order No: 1605N42

Analytical Environmental Services, Inc. received 7 samples on 5/27/2016 12:47:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAC/Florida State Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, and Drinking Water Microbiology, effective 07/01/16-06/30/17.
-NELAC/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/16-06/30/17.
-NELAC/Texas Certificate No. T104704509-16-6 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 03/01/16-02/28/17.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

CK Kanhai

Chantelle Kanhai
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1605N42

Date: 5-26-16 Page 1 of 1

COMPANY: Santek Environmental Inc
ADDRESS: 650 25th St NW Ste 100, Cleveland, TN, 373 11
PHONE: 423-303-7101
FAX:
SAMPLED BY: A. Howard, Eward
SIGNATURE:

ANALYSIS REQUESTED: TN Appl VOC (8260) | TN Appl VOC (8011) | TN Appl Metals (6010) | Fluoride

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	PRESERVATION (See codes) H+I	I	N	S	REMARKS	No # of Containers
1	MW-01	5-24-16	1435	X		GW	2	2	1	1		
2	MW-1A	5-24-16	1529	X		GW	2	2	1	1		
3	MW-02	5-24-16	1310	X		GW	2	2	1	1		
4	MW-03	5-24-16	1519	X		GW	2	2	1	1	Shared w/ Phase II/IV	
5	Duplicate	5-24-16	1700	X		GW	2	2	1	1		
6	Equipment Blank	5-23-16	0900	X		W	2	2	1	1	Shared w/ Phase II/IV	
7	Trip Blank	5-23-16	0900	X		W	2	2	1	1	Shared w/ Phase II/IV	
8												
9	MW-01 (Metals)	5-25-16	0930									
10												
11												
12												
13												
14												

RELINQUISHED BY: DATE/TIME
1: 5-27-16/1247
2:
3:

RECEIVED BY: DATE/TIME
1: 5/27/16 1247
2:
3:

PROJECT INFORMATION
PROJECT NAME: Loudon County Landfill (Phase I)
PROJECT #:
SITE ADDRESS: 21712 Hwy 72N, Loudon TN, 37774
SEND REPORT TO: Robert Hudson
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT
Total # of Containers:

Turnaround Time Request
- (X) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush (auth req.)
- ( ) Other

STATE PROGRAM (if any): TN
E-mail? (Y)/N: Fax? Y/N
DATA PACKAGE: I (II) III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
(CLIENT) FedEx UPS MAIL COURIER
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Client: Santek Environmental Inc.
Project: Loudon County Landfill (Phase I)
Lab ID: 1605N42

Case Narrative

Sample Receiving Nonconformance:

The vials submitted for 1605N42-002 and -003 were received with headspace present as signified by >1/4 inch bubble present. Per Robert Hudson on 5/31/16 via email, we proceeded with the analysis.

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Santek Work Order Number 1605A42

Checklist completed by Christ Jett 5-27-16
Signature Date

Carrier name: FedEx __ UPS __ Courier __ Client ✓ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes ✓ No __

Cooler #1 1.9°C Cooler #2 2.8°C Cooler #3 0.9°C Cooler #4 1.5°C Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __ 5/27

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes __ No ✓

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by MP

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No __

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

July 14, 2016

Robert Hudson
Santek Environmental Inc.
650 25th Street NW. Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon (Matlock Bend) LF GW Event

Dear Robert Hudson: Order No: 1606R21

Analytical Environmental Services, Inc. received 4 samples on 6/28/2016 9:45:00 AM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAC/Florida State Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, and Drinking Water Microbiology, effective 07/01/16-06/30/17.
-NELAC/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/16-06/30/17.
-NELAC/Texas Certificate No. T104704509-16-6 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 03/01/16-02/28/17.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

Chantelle Kanhai
Project Manager

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 16[illegible]R21

Date: 6/27/16 Page 1 of 1

Inorganic Anions by IC
TDS by TGR/MS
Total Metals by ICP/MS
Dissolved Metals by ICP/MS
Nitrogen, Ammonia
TOC
COD
Cyanide

COMPANY:	ADDRESS:
Santek Waste Services, Inc.	650 25th Street NW, Suite 100, Cleveland, TN 37311
PHONE: (423) 303-7101	FAX: (423) 479-1952
SAMPLED BY: R. Hudson	SIGNATURE: Robert Hudson

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	PRESERVATION (See codes)	REMARKS	No. # of Containers
1	MW-01	6/27/16	2:30	X		GW	X X X X X X X X		5
2	MW-1A	6/27/16	3:50	X		GW	X X X X X X X X		5
3	MW-02	6/27/16	3:10	X		GW	X X X X X X X X		5
4	MW-03	6/27/16	1:38	X		GW	X X X X X X X X		5
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Robert Hudson	6/27/16 5:30pm	1: Fedex	6/28/16 9:45
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Louden (Matlock Bend) LF GW
PROJECT #: Event
SITE ADDRESS:
SEND REPORT TO: Robert Hudson
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT

Total # of Containers

Turnaround Time Request
- (●) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush (auth req.)
- ( ) Other

STATE PROGRAM (if any):
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:
See bottles, Chantelle K. and Project History

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
CLIENT FedEx UPS MAIL COURIER
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Client: Santek Environmental Inc.
Project: Loudon (Matlock Bend) LF GW Event
Lab ID: 1606R21

Case Narrative

Ion Chromotograhy Analysis by Method 300:

Due to sample matrix, samples 1606R21-001 and -002 required dilution during preparation and/or analysis resulting in elevated reporting limits.

Analytical Environmental Services, Inc.

Sample/Cooler Rece Checklist

Client SANTEK Work Order Number 1606R21

Checklist completed by _____ 6/28/2016
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes ✓ No __

Cooler #1 1.8°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted ✓ Yes __ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance. — —

* Samples do not have to comply with the given range for certain parameters.

\\Aes_server\I\Sample Receipt\My Documents\COCs and pH Adjustment Sheet\Sample_Cooler_Recipt_Checklist_Rev1.rtf

Client: Santek Environmental Inc.
Project Name: Loudon (Matlock Bend) LF GW Event
Lab Order: 1606R21

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1606R21-001A	MW-01	6/27/2016 2:30:00PM	Groundwater	Inorganic Anions by IC			06/28/2016
1606R21-001A	MW-01	6/27/2016 2:30:00PM	Groundwater	Inorganic Anions by IC			06/30/2016
1606R21-001A	MW-01	6/27/2016 2:30:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		7/1/2016 4:00:00PM	07/01/2016
1606R21-001B	MW-01	6/27/2016 2:30:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/05/2016
1606R21-001C	MW-01	6/27/2016 2:30:00PM	Groundwater	Dissolved Metals by ICP/MS		7/5/2016 1:40:00PM	07/09/2016
1606R21-001D	MW-01	6/27/2016 2:30:00PM	Groundwater	Nitrogen, Ammonia (as N)			07/01/2016
1606R21-001D	MW-01	6/27/2016 2:30:00PM	Groundwater	Chemical Oxygen Demand (COD)			07/01/2016
1606R21-001D	MW-01	6/27/2016 2:30:00PM	Groundwater	Total Organic Carbon by SM5310B			07/01/2016
1606R21-001E	MW-01	6/27/2016 2:30:00PM	Groundwater	Cyanide		7/6/2016 11:00:00AM	07/06/2016
1606R21-002A	MW-1A	6/27/2016 3:50:00PM	Groundwater	Inorganic Anions by IC			06/28/2016
1606R21-002A	MW-1A	6/27/2016 3:50:00PM	Groundwater	Inorganic Anions by IC			06/30/2016
1606R21-002A	MW-1A	6/27/2016 3:50:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		7/1/2016 4:00:00PM	07/01/2016
1606R21-002B	MW-1A	6/27/2016 3:50:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/05/2016
1606R21-002C	MW-1A	6/27/2016 3:50:00PM	Groundwater	Dissolved Metals by ICP/MS		7/5/2016 1:40:00PM	07/09/2016
1606R21-002D	MW-1A	6/27/2016 3:50:00PM	Groundwater	Nitrogen, Ammonia (as N)			07/01/2016
1606R21-002D	MW-1A	6/27/2016 3:50:00PM	Groundwater	Chemical Oxygen Demand (COD)			07/01/2016
1606R21-002D	MW-1A	6/27/2016 3:50:00PM	Groundwater	Total Organic Carbon by SM5310B			07/01/2016
1606R21-002E	MW-1A	6/27/2016 3:50:00PM	Groundwater	Cyanide		7/6/2016 11:00:00AM	07/06/2016
1606R21-003A	MW-02	6/27/2016 3:10:00PM	Groundwater	Inorganic Anions by IC			06/28/2016
1606R21-003A	MW-02	6/27/2016 3:10:00PM	Groundwater	Inorganic Anions by IC			06/30/2016
1606R21-003A	MW-02	6/27/2016 3:10:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		7/1/2016 4:00:00PM	07/01/2016
1606R21-003B	MW-02	6/27/2016 3:10:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/05/2016
1606R21-003B	MW-02	6/27/2016 3:10:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/07/2016
1606R21-003C	MW-02	6/27/2016 3:10:00PM	Groundwater	Dissolved Metals by ICP/MS		7/5/2016 1:40:00PM	07/09/2016
1606R21-003D	MW-02	6/27/2016 3:10:00PM	Groundwater	Nitrogen, Ammonia (as N)			07/01/2016
1606R21-003D	MW-02	6/27/2016 3:10:00PM	Groundwater	Chemical Oxygen Demand (COD)			07/01/2016
1606R21-003D	MW-02	6/27/2016 3:10:00PM	Groundwater	Total Organic Carbon by SM5310B			07/01/2016
1606R21-003E	MW-02	6/27/2016 3:10:00PM	Groundwater	Cyanide		7/6/2016 11:00:00AM	07/06/2016
1606R21-004A	MW-03	6/27/2016 1:38:00PM	Groundwater	Inorganic Anions by IC			06/28/2016

Client: Santek Environmental Inc.
Project Name: Loudon (Matlock Bend) LF GW Event
Lab Order: 1606R21

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1606R21-004A	MW-03	6/27/2016 1:38:00PM	Groundwater	Inorganic Anions by IC			06/30/2016
1606R21-004A	MW-03	6/27/2016 1:38:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		7/1/2016 4:00:00PM	07/01/2016
1606R21-004B	MW-03	6/27/2016 1:38:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/05/2016
1606R21-004B	MW-03	6/27/2016 1:38:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/07/2016
1606R21-004C	MW-03	6/27/2016 1:38:00PM	Groundwater	Dissolved Metals by ICP/MS		7/5/2016 1:40:00PM	07/09/2016
1606R21-004D	MW-03	6/27/2016 1:38:00PM	Groundwater	Nitrogen, Ammonia (as N)			07/01/2016
1606R21-004D	MW-03	6/27/2016 1:38:00PM	Groundwater	Chemical Oxygen Demand (COD)			07/01/2016
1606R21-004D	MW-03	6/27/2016 1:38:00PM	Groundwater	Total Organic Carbon by SM5310B			07/01/2016
1606R21-004E	MW-03	6/27/2016 1:38:00PM	Groundwater	Cyanide		7/6/2016 11:00:00AM	07/06/2016

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-01
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 2:35:00 PM
Lab ID:	1605N42-001A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
1,1,1-Trichloroethane	BRL	200		ug/L	224810	1	06/02/2016 12:18	JE
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
1,1,2-Trichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 12:18	JE
1,1-Dichloroethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
1,1-Dichloroethene	BRL	7.0		ug/L	224810	1	06/02/2016 12:18	JE
1,2,3-Trichloropropane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
1,2-Dichlorobenzene	BRL	600		ug/L	224810	1	06/02/2016 12:18	JE
1,2-Dichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 12:18	JE
1,2-Dichloropropane	BRL	5.0		ug/L	224810	1	06/02/2016 12:18	JE
1,4-Dichlorobenzene	BRL	75		ug/L	224810	1	06/02/2016 12:18	JE
2-Butanone	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
2-Hexanone	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
4-Methyl-2-pentanone	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Acetone	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Acrylonitrile	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Benzene	BRL	5.0		ug/L	224810	1	06/02/2016 12:18	JE
Bromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Bromodichloromethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Bromoform	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Bromomethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Carbon disulfide	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Carbon tetrachloride	BRL	5.0		ug/L	224810	1	06/02/2016 12:18	JE
Chlorobenzene	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Chloroethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Chloroform	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Chloromethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
cis-1,2-Dichloroethene	BRL	70		ug/L	224810	1	06/02/2016 12:18	JE
cis-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Dibromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Dibromomethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Ethylbenzene	BRL	700		ug/L	224810	1	06/02/2016 12:18	JE
Iodomethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Methylene chloride	BRL	5.0		ug/L	224810	1	06/02/2016 12:18	JE
Styrene	BRL	100		ug/L	224810	1	06/02/2016 12:18	JE
Tetrachloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 12:18	JE
Toluene	BRL	1000		ug/L	224810	1	06/02/2016 12:18	JE
trans-1,2-Dichloroethene	BRL	100		ug/L	224810	1	06/02/2016 12:18	JE
trans-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-01
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 2:35:00 PM
Lab ID:	1605N42-001A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Trichloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 12:18	JE
Trichlorofluoromethane	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Vinyl acetate	BRL	10		ug/L	224810	1	06/02/2016 12:18	JE
Vinyl chloride	BRL	2.0		ug/L	224810	1	06/02/2016 12:18	JE
Xylenes, Total	BRL	10000		ug/L	224810	1	06/02/2016 12:18	JE
Surr: 4-Bromofluorobenzene	95.2	70.7-125		%REC	224810	1	06/02/2016 12:18	JE
Surr: Dibromofluoromethane	95.3	82.2-120		%REC	224810	1	06/02/2016 12:18	JE
Surr: Toluene-d8	101	81.8-120		%REC	224810	1	06/02/2016 12:18	JE

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-01
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 2:35:00 PM
Lab ID:	1605N42-001B	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.200		ug/L	224642	1	05/31/2016 23:56	AW
1,2-Dibromoethane	BRL	0.050		ug/L	224642	1	05/31/2016 23:56	AW
Surr: 4-Bromofluorobenzene	103	64.9-131		%REC	224642	1	05/31/2016 23:56	AW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-01
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/25/2016 9:30:00 AM
Lab ID:	1605N42-001C	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	224776	1	06/02/2016 16:58	JR
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00600		mg/L	224806	1	06/10/2016 21:24	JS
Arsenic	BRL	0.0500		mg/L	224806	1	06/10/2016 21:24	JS
Barium	BRL	2.00		mg/L	224806	1	06/10/2016 21:24	JS
Beryllium	BRL	0.00400		mg/L	224806	1	06/10/2016 21:24	JS
Cadmium	BRL	0.00500		mg/L	224806	1	06/10/2016 21:24	JS
Chromium	BRL	0.100		mg/L	224806	1	06/10/2016 21:24	JS
Cobalt	BRL	0.0100		mg/L	224806	1	06/10/2016 21:24	JS
Copper	BRL	0.0100		mg/L	224806	1	06/10/2016 21:24	JS
Lead	BRL	0.0150		mg/L	224806	1	06/10/2016 21:24	JS
Nickel	BRL	0.100		mg/L	224806	1	06/10/2016 21:24	JS
Selenium	BRL	0.0100		mg/L	224806	1	06/10/2016 21:24	JS
Silver	BRL	0.0500		mg/L	224806	1	06/12/2016 19:00	JS
Thallium	BRL	0.00200		mg/L	224806	1	06/10/2016 21:24	JS
Vanadium	BRL	0.0100		mg/L	224806	1	06/10/2016 21:24	JS
Zinc	BRL	0.0200		mg/L	224806	1	06/10/2016 21:24	JS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-01
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 2:35:00 PM
Lab ID:	1605N42-001D	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318168	1	06/01/2016 00:14	JW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 14-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-01
Project Name:	Loudon (Matlock Bend) LF GW Event	**Collection Date:**	6/27/2016 2:30:00 PM
Lab ID:	1606R21-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R320336	1	07/01/2016 15:49	JW
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	40200	100		ug/L	226247	1	07/05/2016 21:27	JS
Iron	21200	100		ug/L	226247	1	07/05/2016 21:27	JS
Magnesium	27100	100		ug/L	226247	1	07/05/2016 21:27	JS
Potassium	5240	500		ug/L	226247	1	07/05/2016 21:27	JS
Sodium	9380	500		ug/L	226247	1	07/05/2016 21:27	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	296	1		mg/L	226376	1	07/01/2016 16:00	JS
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	R320215	1	07/01/2016 16:36	FS
Inorganic Anions by IC E300.0								
Chloride	24.1	1.00		mg/L	R320244	1	06/28/2016 12:27	JW
Fluoride	BRL	8.00		mg/L	R320194	2	06/30/2016 10:21	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R320244	1	06/28/2016 12:27	JW
Sulfate	3.52	1.00		mg/L	R320244	1	06/28/2016 12:27	JW
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	BRL	10.0		ug/L	226377	1	07/09/2016 21:45	JS
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	226483	1	07/06/2016 11:00	BD
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	78.3	10.0		mg/L	R320289	1	07/01/2016 16:00	AW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-1A
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 3:29:00 PM
Lab ID:	1605N42-002A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
1,1,1-Trichloroethane	BRL	200		ug/L	224810	1	06/02/2016 01:47	NH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 01:47	NH
1,1-Dichloroethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
1,1-Dichloroethene	BRL	7.0		ug/L	224810	1	06/02/2016 01:47	NH
1,2,3-Trichloropropane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
1,2-Dichlorobenzene	BRL	600		ug/L	224810	1	06/02/2016 01:47	NH
1,2-Dichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 01:47	NH
1,2-Dichloropropane	BRL	5.0		ug/L	224810	1	06/02/2016 01:47	NH
1,4-Dichlorobenzene	BRL	75		ug/L	224810	1	06/02/2016 01:47	NH
2-Butanone	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
2-Hexanone	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
4-Methyl-2-pentanone	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Acetone	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Acrylonitrile	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Benzene	BRL	5.0		ug/L	224810	1	06/02/2016 01:47	NH
Bromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Bromodichloromethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Bromoform	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Bromomethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Carbon disulfide	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Carbon tetrachloride	BRL	5.0		ug/L	224810	1	06/02/2016 01:47	NH
Chlorobenzene	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Chloroethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Chloroform	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Chloromethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
cis-1,2-Dichloroethene	BRL	70		ug/L	224810	1	06/02/2016 01:47	NH
cis-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Dibromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Dibromomethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Ethylbenzene	BRL	700		ug/L	224810	1	06/02/2016 01:47	NH
Iodomethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Methylene chloride	BRL	5.0		ug/L	224810	1	06/02/2016 01:47	NH
Styrene	BRL	100		ug/L	224810	1	06/02/2016 01:47	NH
Tetrachloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 01:47	NH
Toluene	BRL	1000		ug/L	224810	1	06/02/2016 01:47	NH
trans-1,2-Dichloroethene	BRL	100		ug/L	224810	1	06/02/2016 01:47	NH
trans-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-1A
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 3:29:00 PM
Lab ID:	1605N42-002A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Trichloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 01:47	NH
Trichlorofluoromethane	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Vinyl acetate	BRL	10		ug/L	224810	1	06/02/2016 01:47	NH
Vinyl chloride	BRL	2.0		ug/L	224810	1	06/02/2016 01:47	NH
Xylenes, Total	BRL	10000		ug/L	224810	1	06/02/2016 01:47	NH
Surr: 4-Bromofluorobenzene	91.3	70.7-125		%REC	224810	1	06/02/2016 01:47	NH
Surr: Dibromofluoromethane	95.9	82.2-120		%REC	224810	1	06/02/2016 01:47	NH
Surr: Toluene-d8	104	81.8-120		%REC	224810	1	06/02/2016 01:47	NH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-1A
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 3:29:00 PM
Lab ID:	1605N42-002B	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.200		ug/L	224642	1	06/01/2016 00:25	AW
1,2-Dibromoethane	BRL	0.050		ug/L	224642	1	06/01/2016 00:25	AW
Surr: 4-Bromofluorobenzene	99.5	64.9-131		%REC	224642	1	06/01/2016 00:25	AW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-1A
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 3:29:00 PM
Lab ID:	1605N42-002C	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	224776	1	06/02/2016 17:00	JR
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00600		mg/L	224806	1	06/10/2016 21:56	JS
Arsenic	BRL	0.0500		mg/L	224806	1	06/10/2016 21:56	JS
Barium	BRL	2.00		mg/L	224806	1	06/10/2016 21:56	JS
Beryllium	BRL	0.00400		mg/L	224806	1	06/10/2016 21:56	JS
Cadmium	BRL	0.00500		mg/L	224806	1	06/10/2016 21:56	JS
Chromium	BRL	0.100		mg/L	224806	1	06/10/2016 21:56	JS
Cobalt	BRL	0.0100		mg/L	224806	1	06/10/2016 21:56	JS
Copper	BRL	0.0100		mg/L	224806	1	06/10/2016 21:56	JS
Lead	BRL	0.0150		mg/L	224806	1	06/10/2016 21:56	JS
Nickel	BRL	0.100		mg/L	224806	1	06/10/2016 21:56	JS
Selenium	BRL	0.0100		mg/L	224806	1	06/10/2016 21:56	JS
Silver	BRL	0.0500		mg/L	224806	1	06/12/2016 19:06	JS
Thallium	BRL	0.00200		mg/L	224806	1	06/10/2016 21:56	JS
Vanadium	BRL	0.0100		mg/L	224806	1	06/10/2016 21:56	JS
Zinc	BRL	0.0200		mg/L	224806	1	06/10/2016 21:56	JS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-1A
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 3:29:00 PM
Lab ID:	1605N42-002D	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318168	1	06/01/2016 00:29	JW

Qualifiers:
- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 14-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-1A
Project Name:	Loudon (Matlock Bend) LF GW Event	**Collection Date:**	6/27/2016 3:50:00 PM
Lab ID:	1606R21-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R320336	1	07/01/2016 16:08	JW
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	85400	100		ug/L	226247	1	07/05/2016 21:33	JS
Iron	17000	100		ug/L	226247	1	07/05/2016 21:33	JS
Magnesium	44500	100		ug/L	226247	1	07/05/2016 21:33	JS
Potassium	11300	500		ug/L	226247	1	07/05/2016 21:33	JS
Sodium	23200	500		ug/L	226247	1	07/05/2016 21:33	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	467	1		mg/L	226376	1	07/01/2016 16:00	JS
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	R320215	1	07/01/2016 16:37	FS
Inorganic Anions by IC E300.0								
Chloride	59.4	2.00		mg/L	R320244	2	06/28/2016 15:28	JW
Fluoride	BRL	8.00		mg/L	R320194	2	06/30/2016 10:36	JW
Nitrogen, Nitrate (As N)	BRL	20.0		mg/L	R320244	2	06/28/2016 15:28	JW
Sulfate	21.5	2.00		mg/L	R320244	2	06/28/2016 15:28	JW
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	BRL	10.0		ug/L	226377	1	07/09/2016 21:51	JS
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	226483	1	07/06/2016 11:00	BD
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	33.9	10.0		mg/L	R320289	1	07/01/2016 16:00	AW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-02
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 1:10:00 PM
Lab ID:	1605N42-003A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
1,1,1-Trichloroethane	BRL	200		ug/L	224810	1	06/02/2016 03:42	NH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 03:42	NH
1,1-Dichloroethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
1,1-Dichloroethene	BRL	7.0		ug/L	224810	1	06/02/2016 03:42	NH
1,2,3-Trichloropropane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
1,2-Dichlorobenzene	BRL	600		ug/L	224810	1	06/02/2016 03:42	NH
1,2-Dichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 03:42	NH
1,2-Dichloropropane	BRL	5.0		ug/L	224810	1	06/02/2016 03:42	NH
1,4-Dichlorobenzene	BRL	75		ug/L	224810	1	06/02/2016 03:42	NH
2-Butanone	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
2-Hexanone	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
4-Methyl-2-pentanone	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Acetone	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Acrylonitrile	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Benzene	BRL	5.0		ug/L	224810	1	06/02/2016 03:42	NH
Bromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Bromodichloromethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Bromoform	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Bromomethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Carbon disulfide	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Carbon tetrachloride	BRL	5.0		ug/L	224810	1	06/02/2016 03:42	NH
Chlorobenzene	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Chloroethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Chloroform	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Chloromethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
cis-1,2-Dichloroethene	BRL	70		ug/L	224810	1	06/02/2016 03:42	NH
cis-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Dibromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Dibromomethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Ethylbenzene	BRL	700		ug/L	224810	1	06/02/2016 03:42	NH
Iodomethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Methylene chloride	BRL	5.0		ug/L	224810	1	06/02/2016 03:42	NH
Styrene	BRL	100		ug/L	224810	1	06/02/2016 03:42	NH
Tetrachloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 03:42	NH
Toluene	BRL	1000		ug/L	224810	1	06/02/2016 03:42	NH
trans-1,2-Dichloroethene	BRL	100		ug/L	224810	1	06/02/2016 03:42	NH
trans-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-02
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 1:10:00 PM
Lab ID:	1605N42-003A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Trichloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 03:42	NH
Trichlorofluoromethane	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Vinyl acetate	BRL	10		ug/L	224810	1	06/02/2016 03:42	NH
Vinyl chloride	BRL	2.0		ug/L	224810	1	06/02/2016 03:42	NH
Xylenes, Total	BRL	10000		ug/L	224810	1	06/02/2016 03:42	NH
Surr: 4-Bromofluorobenzene	93.2	70.7-125		%REC	224810	1	06/02/2016 03:42	NH
Surr: Dibromofluoromethane	96.3	82.2-120		%REC	224810	1	06/02/2016 03:42	NH
Surr: Toluene-d8	104	81.8-120		%REC	224810	1	06/02/2016 03:42	NH

Qualifiers:
- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-02
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 1:10:00 PM
Lab ID:	1605N42-003B	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.205		ug/L	224642	1	06/01/2016 00:54	AW
1,2-Dibromoethane	BRL	0.051		ug/L	224642	1	06/01/2016 00:54	AW
Surr: 4-Bromofluorobenzene	102	64.9-131		%REC	224642	1	06/01/2016 00:54	AW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-02
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 1:10:00 PM
Lab ID:	1605N42-003C	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	224776	1	06/02/2016 17:02	JR
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00600		mg/L	224806	1	06/10/2016 22:02	JS
Arsenic	BRL	0.0500		mg/L	224806	1	06/10/2016 22:02	JS
Barium	BRL	2.00		mg/L	224806	1	06/10/2016 22:02	JS
Beryllium	BRL	0.00400		mg/L	224806	1	06/10/2016 22:02	JS
Cadmium	BRL	0.00500		mg/L	224806	1	06/10/2016 22:02	JS
Chromium	BRL	0.100		mg/L	224806	1	06/10/2016 22:02	JS
Cobalt	BRL	0.0100		mg/L	224806	1	06/10/2016 22:02	JS
Copper	BRL	0.0100		mg/L	224806	1	06/10/2016 22:02	JS
Lead	BRL	0.0150		mg/L	224806	1	06/10/2016 22:02	JS
Nickel	BRL	0.100		mg/L	224806	1	06/10/2016 22:02	JS
Selenium	BRL	0.0100		mg/L	224806	1	06/10/2016 22:02	JS
Silver	BRL	0.0500		mg/L	224806	1	06/12/2016 19:12	JS
Thallium	BRL	0.00200		mg/L	224806	1	06/10/2016 22:02	JS
Vanadium	BRL	0.0100		mg/L	224806	1	06/10/2016 22:02	JS
Zinc	0.224	0.0200		mg/L	224806	1	06/10/2016 22:02	JS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-02
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 1:10:00 PM
Lab ID:	1605N42-003D	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318168	1	06/01/2016 00:44	JW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 14-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-02
Project Name:	Loudon (Matlock Bend) LF GW Event	**Collection Date:**	6/27/2016 3:10:00 PM
Lab ID:	1606R21-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	1.75	1.00		mg/L	R320336	1	07/01/2016 16:26	JW
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	1890	100		ug/L	226247	1	07/05/2016 21:58	JS
Iron	1310	100		ug/L	226247	1	07/05/2016 21:58	JS
Magnesium	1660	100		ug/L	226247	1	07/05/2016 21:58	JS
Potassium	2730	500		ug/L	226247	1	07/05/2016 21:58	JS
Sodium	3120	500		ug/L	226247	1	07/07/2016 19:33	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	85	1		mg/L	226376	1	07/01/2016 16:00	JS
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	R320215	1	07/01/2016 16:38	FS
Inorganic Anions by IC E300.0								
Chloride	2.77	1.00		mg/L	R320244	1	06/28/2016 12:57	JW
Fluoride	BRL	4.00		mg/L	R320194	1	06/30/2016 10:51	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R320244	1	06/28/2016 12:57	JW
Sulfate	BRL	1.00		mg/L	R320244	1	06/28/2016 12:57	JW
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	74.2	10.0		ug/L	226377	1	07/09/2016 21:14	JS
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	226483	1	07/06/2016 11:00	BD
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	11.7	10.0		mg/L	R320289	1	07/01/2016 16:00	AW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 3:19:00 PM
Lab ID:	1605N42-004A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS	**SW8260B**				**(SW5030B)**			
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
1,1,1-Trichloroethane	BRL	200		ug/L	224810	1	06/02/2016 04:11	NH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
1,1-Dichloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
1,1-Dichloroethene	BRL	7.0		ug/L	224810	1	06/02/2016 04:11	NH
1,2,3-Trichloropropane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
1,2-Dichlorobenzene	BRL	600		ug/L	224810	1	06/02/2016 04:11	NH
1,2-Dichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
1,2-Dichloropropane	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
1,4-Dichlorobenzene	BRL	75		ug/L	224810	1	06/02/2016 04:11	NH
2-Butanone	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
2-Hexanone	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
4-Methyl-2-pentanone	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Acetone	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Acrylonitrile	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Benzene	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
Bromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Bromodichloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Bromoform	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Bromomethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Carbon disulfide	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Carbon tetrachloride	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
Chlorobenzene	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Chloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Chloroform	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Chloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
cis-1,2-Dichloroethene	BRL	70		ug/L	224810	1	06/02/2016 04:11	NH
cis-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Dibromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Dibromomethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Ethylbenzene	BRL	700		ug/L	224810	1	06/02/2016 04:11	NH
Iodomethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Methylene chloride	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
Styrene	BRL	100		ug/L	224810	1	06/02/2016 04:11	NH
Tetrachloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
Toluene	BRL	1000		ug/L	224810	1	06/02/2016 04:11	NH
trans-1,2-Dichloroethene	BRL	100		ug/L	224810	1	06/02/2016 04:11	NH
trans-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 3:19:00 PM
Lab ID:	1605N42-004A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Trichloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
Trichlorofluoromethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Vinyl acetate	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Vinyl chloride	BRL	2.0		ug/L	224810	1	06/02/2016 04:11	NH
Xylenes, Total	BRL	10000		ug/L	224810	1	06/02/2016 04:11	NH
Surr: 4-Bromofluorobenzene	93.5	70.7-125		%REC	224810	1	06/02/2016 04:11	NH
Surr: Dibromofluoromethane	95.9	82.2-120		%REC	224810	1	06/02/2016 04:11	NH
Surr: Toluene-d8	104	81.8-120		%REC	224810	1	06/02/2016 04:11	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 3:19:00 PM
Lab ID:	1605N42-004B	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.200		ug/L	224642	1	06/01/2016 01:23	AW
1,2-Dibromoethane	BRL	0.050		ug/L	224642	1	06/01/2016 01:23	AW
Surr: 4-Bromofluorobenzene	107	64.9-131		%REC	224642	1	06/01/2016 01:23	AW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 3:19:00 PM
Lab ID:	1605N42-004C	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	224776	1	06/02/2016 17:04	JR
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00600		mg/L	224806	1	06/10/2016 22:08	JS
Arsenic	BRL	0.0500		mg/L	224806	1	06/10/2016 22:08	JS
Barium	BRL	2.00		mg/L	224806	1	06/10/2016 22:08	JS
Beryllium	BRL	0.00400		mg/L	224806	1	06/10/2016 22:08	JS
Cadmium	BRL	0.00500		mg/L	224806	1	06/10/2016 22:08	JS
Chromium	BRL	0.100		mg/L	224806	1	06/10/2016 22:08	JS
Cobalt	BRL	0.0100		mg/L	224806	1	06/10/2016 22:08	JS
Copper	BRL	0.0100		mg/L	224806	1	06/10/2016 22:08	JS
Lead	BRL	0.0150		mg/L	224806	1	06/10/2016 22:08	JS
Nickel	BRL	0.100		mg/L	224806	1	06/10/2016 22:08	JS
Selenium	BRL	0.0100		mg/L	224806	1	06/10/2016 22:08	JS
Silver	BRL	0.0500		mg/L	224806	1	06/12/2016 19:19	JS
Thallium	BRL	0.00200		mg/L	224806	1	06/10/2016 22:08	JS
Vanadium	BRL	0.0100		mg/L	224806	1	06/10/2016 22:08	JS
Zinc	0.0244	0.0200		mg/L	224806	1	06/10/2016 22:08	JS

Qualifiers:

- `*` Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 3:19:00 PM
Lab ID:	1605N42-004D	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318180	1	06/02/2016 11:58	JW

Qualifiers:
- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 14-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Project Name:	Loudon (Matlock Bend) LF GW Event	**Collection Date:**	6/27/2016 1:38:00 PM
Lab ID:	1606R21-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R320336	1	07/01/2016 16:44	JW
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	1370	100		ug/L	226247	1	07/05/2016 22:05	JS
Iron	2480	100		ug/L	226247	1	07/05/2016 22:05	JS
Magnesium	1100	100		ug/L	226247	1	07/05/2016 22:05	JS
Potassium	972	500		ug/L	226247	1	07/05/2016 22:05	JS
Sodium	15400	500		ug/L	226247	1	07/07/2016 19:39	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	34	1		mg/L	226376	1	07/01/2016 16:00	JS
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	R320215	1	07/01/2016 16:39	FS
Inorganic Anions by IC E300.0								
Chloride	18.0	1.00		mg/L	R320244	1	06/28/2016 13:11	JW
Fluoride	BRL	4.00		mg/L	R320194	1	06/30/2016 11:07	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R320244	1	06/28/2016 13:11	JW
Sulfate	2.71	1.00		mg/L	R320244	1	06/28/2016 13:11	JW
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	189	10.0		ug/L	226377	1	07/09/2016 21:58	JS
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	226483	1	07/06/2016 11:00	BD
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R320289	1	07/01/2016 16:00	AW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	DUPLICATE
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 5:00:00 PM
Lab ID:	1605N42-005A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
1,1,1-Trichloroethane	BRL	200		ug/L	224810	1	06/02/2016 04:40	NH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 04:40	NH
1,1-Dichloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
1,1-Dichloroethene	BRL	7.0		ug/L	224810	1	06/02/2016 04:40	NH
1,2,3-Trichloropropane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
1,2-Dichlorobenzene	BRL	600		ug/L	224810	1	06/02/2016 04:40	NH
1,2-Dichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 04:40	NH
1,2-Dichloropropane	BRL	5.0		ug/L	224810	1	06/02/2016 04:40	NH
1,4-Dichlorobenzene	BRL	75		ug/L	224810	1	06/02/2016 04:40	NH
2-Butanone	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
2-Hexanone	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
4-Methyl-2-pentanone	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Acetone	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Acrylonitrile	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Benzene	BRL	5.0		ug/L	224810	1	06/02/2016 04:40	NH
Bromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Bromodichloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Bromoform	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Bromomethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Carbon disulfide	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Carbon tetrachloride	BRL	5.0		ug/L	224810	1	06/02/2016 04:40	NH
Chlorobenzene	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Chloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Chloroform	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Chloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
cis-1,2-Dichloroethene	BRL	70		ug/L	224810	1	06/02/2016 04:40	NH
cis-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Dibromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Dibromomethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Ethylbenzene	BRL	700		ug/L	224810	1	06/02/2016 04:40	NH
Iodomethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Methylene chloride	BRL	5.0		ug/L	224810	1	06/02/2016 04:40	NH
Styrene	BRL	100		ug/L	224810	1	06/02/2016 04:40	NH
Tetrachloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 04:40	NH
Toluene	BRL	1000		ug/L	224810	1	06/02/2016 04:40	NH
trans-1,2-Dichloroethene	BRL	100		ug/L	224810	1	06/02/2016 04:40	NH
trans-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	DUPLICATE
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 5:00:00 PM
Lab ID:	1605N42-005A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Trichloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 04:40	NH
Trichlorofluoromethane	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Vinyl acetate	BRL	10		ug/L	224810	1	06/02/2016 04:40	NH
Vinyl chloride	BRL	2.0		ug/L	224810	1	06/02/2016 04:40	NH
Xylenes, Total	BRL	10000		ug/L	224810	1	06/02/2016 04:40	NH
Surr: 4-Bromofluorobenzene	94.9	70.7-125		%REC	224810	1	06/02/2016 04:40	NH
Surr: Dibromofluoromethane	96.7	82.2-120		%REC	224810	1	06/02/2016 04:40	NH
Surr: Toluene-d8	104	81.8-120		%REC	224810	1	06/02/2016 04:40	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	DUPLICATE
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 5:00:00 PM
Lab ID:	1605N42-005B	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.202		ug/L	224642	1	06/01/2016 01:52	AW
1,2-Dibromoethane	BRL	0.050		ug/L	224642	1	06/01/2016 01:52	AW
Surr: 4-Bromofluorobenzene	106	64.9-131		%REC	224642	1	06/01/2016 01:52	AW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	DUPLICATE
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 5:00:00 PM
Lab ID:	1605N42-005C	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	224776	1	06/02/2016 17:06	JR
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00600		mg/L	224806	1	06/10/2016 07:04	JS
Arsenic	BRL	0.0500		mg/L	224806	1	06/10/2016 07:04	JS
Barium	BRL	2.00		mg/L	224806	1	06/10/2016 07:04	JS
Beryllium	BRL	0.00400		mg/L	224806	1	06/10/2016 07:04	JS
Cadmium	BRL	0.00500		mg/L	224806	1	06/10/2016 07:04	JS
Chromium	BRL	0.100		mg/L	224806	1	06/10/2016 07:04	JS
Cobalt	BRL	0.0100		mg/L	224806	1	06/10/2016 07:04	JS
Copper	BRL	0.0100		mg/L	224806	1	06/10/2016 07:04	JS
Lead	BRL	0.0150		mg/L	224806	1	06/10/2016 07:04	JS
Nickel	BRL	0.100		mg/L	224806	1	06/10/2016 07:04	JS
Selenium	BRL	0.0100		mg/L	224806	1	06/10/2016 07:04	JS
Silver	BRL	0.0500		mg/L	224806	1	06/10/2016 07:04	JS
Thallium	BRL	0.00200		mg/L	224806	1	06/10/2016 07:04	JS
Vanadium	BRL	0.0100		mg/L	224806	1	06/10/2016 07:04	JS
Zinc	0.0226	0.0200		mg/L	224806	1	06/10/2016 07:04	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	DUPLICATE
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/24/2016 5:00:00 PM
Lab ID:	1605N42-005D	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318180	1	06/02/2016 12:13	JW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N42-006A	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
1,1,1-Trichloroethane	BRL	200		ug/L	224912	1	06/03/2016 13:05	JE
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
1,1,2-Trichloroethane	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
1,1-Dichloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
1,1-Dichloroethene	BRL	7.0		ug/L	224912	1	06/03/2016 13:05	JE
1,2,3-Trichloropropane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
1,2-Dichlorobenzene	BRL	600		ug/L	224912	1	06/03/2016 13:05	JE
1,2-Dichloroethane	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
1,2-Dichloropropane	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
1,4-Dichlorobenzene	BRL	75		ug/L	224912	1	06/03/2016 13:05	JE
2-Butanone	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
2-Hexanone	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
4-Methyl-2-pentanone	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Acetone	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Acrylonitrile	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Benzene	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
Bromochloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Bromodichloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Bromoform	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Bromomethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Carbon disulfide	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Carbon tetrachloride	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
Chlorobenzene	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Chloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Chloroform	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Chloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
cis-1,2-Dichloroethene	BRL	70		ug/L	224912	1	06/03/2016 13:05	JE
cis-1,3-Dichloropropene	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Dibromochloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Dibromomethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Ethylbenzene	BRL	700		ug/L	224912	1	06/03/2016 13:05	JE
Iodomethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Methylene chloride	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
Styrene	BRL	100		ug/L	224912	1	06/03/2016 13:05	JE
Tetrachloroethene	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
Toluene	BRL	1000		ug/L	224912	1	06/03/2016 13:05	JE
trans-1,2-Dichloroethene	BRL	100		ug/L	224912	1	06/03/2016 13:05	JE
trans-1,3-Dichloropropene	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N42-006A	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Trichloroethene	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
Trichlorofluoromethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Vinyl acetate	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Vinyl chloride	BRL	2.0		ug/L	224912	1	06/03/2016 13:05	JE
Xylenes, Total	BRL	10000		ug/L	224912	1	06/03/2016 13:05	JE
Surr: 4-Bromofluorobenzene	94.4	70.7-125		%REC	224912	1	06/03/2016 13:05	JE
Surr: Dibromofluoromethane	95.7	82.2-120		%REC	224912	1	06/03/2016 13:05	JE
Surr: Toluene-d8	100	81.8-120		%REC	224912	1	06/03/2016 13:05	JE

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N42-006B	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.204		ug/L	224743	1	06/02/2016 20:13	AW
1,2-Dibromoethane	BRL	0.051		ug/L	224743	1	06/02/2016 20:13	AW
Surr: 4-Bromofluorobenzene	100	64.9-131		%REC	224743	1	06/02/2016 20:13	AW

Qualifiers:
- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N42-006C	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	224776	1	06/02/2016 17:07	JR
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00600		mg/L	224806	1	06/10/2016 07:10	JS
Arsenic	BRL	0.0500		mg/L	224806	1	06/10/2016 07:10	JS
Barium	BRL	2.00		mg/L	224806	1	06/10/2016 07:10	JS
Beryllium	BRL	0.00400		mg/L	224806	1	06/10/2016 07:10	JS
Cadmium	BRL	0.00500		mg/L	224806	1	06/10/2016 07:10	JS
Chromium	BRL	0.100		mg/L	224806	1	06/10/2016 07:10	JS
Cobalt	BRL	0.0100		mg/L	224806	1	06/10/2016 07:10	JS
Copper	BRL	0.0100		mg/L	224806	1	06/10/2016 07:10	JS
Lead	BRL	0.0150		mg/L	224806	1	06/10/2016 07:10	JS
Nickel	BRL	0.100		mg/L	224806	1	06/10/2016 07:10	JS
Selenium	BRL	0.0100		mg/L	224806	1	06/10/2016 07:10	JS
Silver	BRL	0.0500		mg/L	224806	1	06/10/2016 07:10	JS
Thallium	BRL	0.00200		mg/L	224806	1	06/10/2016 07:10	JS
Vanadium	BRL	0.0100		mg/L	224806	1	06/10/2016 07:10	JS
Zinc	BRL	0.0200		mg/L	224806	1	06/10/2016 07:10	JS

Qualifiers:

- * Value exceeds maximum contaminact level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N42-006D	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318180	1	06/02/2016 12:27	JW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N42-007A	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
1,1,1-Trichloroethane	BRL	200		ug/L	224912	1	06/03/2016 13:29	JE
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
1,1,2-Trichloroethane	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
1,1-Dichloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
1,1-Dichloroethene	BRL	7.0		ug/L	224912	1	06/03/2016 13:29	JE
1,2,3-Trichloropropane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
1,2-Dichlorobenzene	BRL	600		ug/L	224912	1	06/03/2016 13:29	JE
1,2-Dichloroethane	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
1,2-Dichloropropane	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
1,4-Dichlorobenzene	BRL	75		ug/L	224912	1	06/03/2016 13:29	JE
2-Butanone	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
2-Hexanone	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
4-Methyl-2-pentanone	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Acetone	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Acrylonitrile	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Benzene	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
Bromochloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Bromodichloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Bromoform	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Bromomethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Carbon disulfide	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Carbon tetrachloride	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
Chlorobenzene	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Chloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Chloroform	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Chloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
cis-1,2-Dichloroethene	BRL	70		ug/L	224912	1	06/03/2016 13:29	JE
cis-1,3-Dichloropropene	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Dibromochloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Dibromomethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Ethylbenzene	BRL	700		ug/L	224912	1	06/03/2016 13:29	JE
Iodomethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Methylene chloride	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
Styrene	BRL	100		ug/L	224912	1	06/03/2016 13:29	JE
Tetrachloroethene	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
Toluene	BRL	1000		ug/L	224912	1	06/03/2016 13:29	JE
trans-1,2-Dichloroethene	BRL	100		ug/L	224912	1	06/03/2016 13:29	JE
trans-1,3-Dichloropropene	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N42-007A	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Trichloroethene	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
Trichlorofluoromethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Vinyl acetate	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Vinyl chloride	BRL	2.0		ug/L	224912	1	06/03/2016 13:29	JE
Xylenes, Total	BRL	10000		ug/L	224912	1	06/03/2016 13:29	JE
Surr: 4-Bromofluorobenzene	95.5	70.7-125		%REC	224912	1	06/03/2016 13:29	JE
Surr: Dibromofluoromethane	96.3	82.2-120		%REC	224912	1	06/03/2016 13:29	JE
Surr: Toluene-d8	100	81.8-120		%REC	224912	1	06/03/2016 13:29	JE

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N42-007B	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.202		ug/L	224743	1	06/02/2016 20:42	AW
1,2-Dibromoethane	BRL	0.050		ug/L	224743	1	06/02/2016 20:42	AW
Surr: 4-Bromofluorobenzene	99.1	64.9-131		%REC	224743	1	06/02/2016 20:42	AW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N42-007C	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00200		mg/L	224776	1	06/02/2016 17:09	JR
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00600		mg/L	224806	1	06/10/2016 07:16	JS
Arsenic	BRL	0.0500		mg/L	224806	1	06/10/2016 07:16	JS
Barium	BRL	2.00		mg/L	224806	1	06/10/2016 07:16	JS
Beryllium	BRL	0.00400		mg/L	224806	1	06/10/2016 07:16	JS
Cadmium	BRL	0.00500		mg/L	224806	1	06/10/2016 07:16	JS
Chromium	BRL	0.100		mg/L	224806	1	06/10/2016 07:16	JS
Cobalt	BRL	0.0100		mg/L	224806	1	06/10/2016 07:16	JS
Copper	BRL	0.0100		mg/L	224806	1	06/10/2016 07:16	JS
Lead	BRL	0.0150		mg/L	224806	1	06/10/2016 07:16	JS
Nickel	BRL	0.100		mg/L	224806	1	06/10/2016 07:16	JS
Selenium	BRL	0.0100		mg/L	224806	1	06/10/2016 07:16	JS
Silver	BRL	0.0500		mg/L	224806	1	06/10/2016 07:16	JS
Thallium	BRL	0.00200		mg/L	224806	1	06/10/2016 07:16	JS
Vanadium	BRL	0.0100		mg/L	224806	1	06/10/2016 07:16	JS
Zinc	BRL	0.0200		mg/L	224806	1	06/10/2016 07:16	JS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Lab Order	1605N42	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase I)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N42-007D	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318180	1	06/02/2016 12:42	JW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

APPENDIX C

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #01

INORGANIC	TN REGULATORY LIMITS	3-23-94	9-2-94	**7-13-94	10-18-94	12-13-94	3-2-95	10-30-95	4-12-96	11-2-96	3-21-97	9-22-97	05-19-98	10-28-98	3-15-99	9-15-99	03-23-00	09-05-00	4-25-01	9-18-01	4-17-02	9-30-02	4-21-03	9-30-03	4-22-04	9-22-04	4-11-05	9-29-05	3-27-06	8-15-06	10-04-06	3-22-07	11-1-07	3-27-08	10-13-08	4-1-09	10-1-09	4-6-10	10-5-10	1-4-11	10-4-11	3-14-12	10-2-12	3-27-13	9-26-13	3-25-14	9-24-14	4-1-15	10-7-15	5-25-16	MW-01 AVG	MW-03 AVG
Nitrogen	6	1	1	1	1	5.4	1	1	3	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5.17	5.63
Arsenic	10	2	2	8.4	6.9	7.9	4	2	20	20	20	20	20	20	20	20	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	37.74	33.43
Barium	2000	22	18	280	110	68	33	80	41	50	80	20	20	20	50	55	1300	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	1429.90	1387.25
Beryllium	4	3	3	18	6.5	3	3	4	3	4	4	4	4	4	4	4	11	11	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4.44	3.83
Cadmium	5	5	5	19	2.5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.23	5.02
Chromium	100	8.5	10	60	43	21	10	11	10	10	10	10	10	10	10	10	13	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	74.97	73.35
Cobalt	NA	10	10	78	30	10	10	10	10	10	10	10	10	10	10	10	10	25	10	12	10	13	10	13	10	13	10	13.5	10.0	13.0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	12.13	14.15
Copper	NA	8.1	10	140	59	24	10	17	10	10	10	12	10	10	10	12	39	19.2	12	10	13.5	10.2	10.0	10.0	10.0	11.6	10.0	10.0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	14.96	21.15
Fluoride***	4	0.05	0.43	0.05	0.05	0.05	0.05	0.05	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	4	4	4	4	4	4	4	0.2	4.0	4.0	4.0	4.0	4.0	4.0	-	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.72	2.72
Lead	115	1	1	44	59	32	5	21	12	20	20	20	20	20	20	30	10	27	24	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	28.78	40.64
Mercury	2	0.3	*	2.4	0.69	0.44	0.2	0.5	0.2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.58	1.59
Nickel	100	8.1	10	190	73	35	20	22	10	20	20	10	10	10	43	12.7	40	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	80.02	77.81
Selenium	50	2	2	2.5	2	2	2	2	2	20	20	20	20	20	20	20	20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.50	10.50
Silver	2100	8	8	ND	8	8	8	8	8	5	5	5	5	5	5	5	5	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	37.27	36.35
Thallium	2	1	1	2.5	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.84	2.09
Vanadium	NA	8.4	10	200	74	40	13	31	10	30	10	12	12	10	10	10	75	27.8	10	10	23.5	23.2	10	13	10	10	10	23.6	10.0	10.0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	19.52	13.73
Zinc	NA	110	42	1700	690	270	76	818	89	150	190	40	110	220	47.4	287	611	170	35.1	34.4	133	205	69.8	47.1	20	55.2	78.6	215.0	20.0	267.00	33.50	50.90	42.90	28.50	20	20	20.9	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	147.50	67.41

† = TREATMENT TECHNIQUE ACTION LEVEL
‡ = NATIONAL SECONDARY DRINKING WATER STANDARD
* PARAMETER NOT TESTED FOR
** RESAMPLE DATE
*** ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)

ORGANIC	3-23-94	9-02-94	**7-13-94	10-18-94	12-13-94	3-02-95	10-30-95	4-12-96	11-2-96	3-21-97	9-22-97	05-19-98	10-28-98	3-15-99	9-15-99	03-23-00	9-6-00	4-25-01	9-18-01	4-17-02	9-30-02	4-21-03	9-30-03	4-22-04	9-22-04	4-11-05	9-29-05	3-27-06	8-15-06	10-04-06	3-22-07	11-1-07	3-27-08	10-13-08	4-1-09	10-1-09	4-6-10	10-5-10	1-4-11	10-4-11	3-14-12	10-2-12	3-27-13	9-26-13	3-25-14	9-24-14	4-1-15	10-7-15	5-24-16
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane, Ethyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene, 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane, Ethylidene chloride; Ethylidene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane, Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #1A

INORGANIC	TN REGULATORY LIMITS	1-17-07	3-22-07	5-15-07	6-14-07	11-1-07	3-27-08	10-13-08	4-2-09	10-2-09	4-7-10	10-6-10	1-5-11	10-5-11	3-15-12	10-3-12	3-28-13	9-25-13	3-25-14	9-24-14	4-1-15	10-7-15	5-24-16	MW-1A AVG	MW-03 AVG
Antimony	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6.00	5.10
Arsenic	10	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50.00	38.71
Barium	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000.00	1409.55
Beryllium	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4.00	3.84
Cadmium	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.00	5.02
Chromium	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100.00	73.90
Cobalt	NA	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.00	14.08
Copper	NA	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.00	20.93
Fluoride***	4	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.00	2.74
Lead	†15	50.0	50.0	50.0	50.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	21.36	40.41
Mercury	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.00	1.60
Nickel	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100.00	78.28
Selenium	50	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.00	10.49
Silver	‡100	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50.00	36.65
Thallium	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.00	2.09
Vanadium	NA	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.00	13.65
Zinc	NA	39.0	20.0	22.9	20.0	23.2	20.0	31.4	20.0	20.0	35.2	20.0	20.0	20.0	30.5	20.0	20.0	20.0	20.0	20.0	27.3	20.0	20.0	23.16	66.53

† = TREATMENT TECHNIQUE ACTION LEVEL
‡ = NATIONAL SECONDARY DRINKING WATER STANDARD
* PARAMETER NOT TESTED FOR
**RESAMPLE DATE
***ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)

ORGANIC	01-17-07	3-22-07	5-15-07	6-14-07	11-1-07	3-27-08	10-13-08	4-1-09	10-1-09	4-7-10	10-5-10	1-4-11	10-4-11	3-15-12	10-2-12	3-27-13	9-24-13	3-24-14	9-23-14	3-31-15	10-6-15	5-24-16
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
orobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
loroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
yl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #02

INORGANIC	TN REGULATORY LIMITS	3-23-94	6-2-94	**7-13-94	10-19-94	12-1-94	3-2-95	10-30-95	4-12-96	11-2-96	3-21-97	9-20-97	05-11-98	10-29-98	3-16-99	9-16-99	03-23-00	9-6-00	4-25-01	9-13-01	4-17-02	9-30-02	4-21-03	9-30-03	4-28-04	9-22-04
Antimony	6	1	1	1	1	9	1	1	3	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6
Arsenic	10	2	2	4.4	7.6	4.6	23	2	20	20	20	20	60	20	20	20	50	50	50	50	50	50	50	50	50	50
Barium	2000	94	87	420	360	290	99	79	38	50	20	50	130	50	36.7	34	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Beryllium	4	3	3	39	29	25	5	6	3	4	4	4	14	4	4	4	4	4	4	4	4	5.22	4	4	4	4
Cadmium	5	3.1	1.2	33	22	15	5	5	5	5	5	5	6	5	5	5	5	5	5	5	5	5	5	5	5	5
Chromium	100	36	26	130	110	110	25	12	10	10	10	10	40	10	10	10	100	100	100	100	100	100	100	100	100	100
Cobalt	NA	10	10	69	54	45	10	10	10	10	10	10	30	10	10	10	10	10	10	10	10	10	10	10	10	10
Copper	NA	140	10	200	150	120	30	17	10	10	10	10	60	10	10	10	10	10	10	10	15.7	18.8	10	10	10	10
	4	0.05	0.26	0.05	0.05	0.05	0.05	0.06	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	4	4	4	4	4	4	0.2	4.0	4.0	4.0
	†15	22	6.4	420	290	200	45	32	10	20	10	20	90	20	10	10	50	50	50	50	50	50	50	50	50	50
	2	0.2	*	1.6	2.6	0.2	0.2	0.2	0.2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
	100	130	20	340	290	260	60	45	20	30	10	30	120	30	20.6	18	100	100	100	100	100	100	100	100	100	100
Selenium	50	2	2	2	2	2	2	2	20	20	20	20	20	20	20	20	10	10	10	10	10	10	10	10	10	10
Silver	‡100	8	8	8	8	8	8	8	5	5	5	5	5	5	5	5	50	50	50	50	50	50	50	50	50	50
Thallium	2	1	1	2.7	2.6	3.2	1	2	2	2	2	3	14	2	2	2	2	2	2	2	2	2	2	2	2	2
Vanadium	NA	14	14	250	200	180	43	24	10	20	10	10	70	10	10	10	10	10	10	10	11.5	24.2	10	10	10	10
Zinc	NA	540	140	8200	12000	9900	1760	1130	351	650	120	570	2490	240	322	235	458	157	149	181	570	659	224	258	140	234

INORGANIC	4-11-05	9-29-05	3-28-06	8-15-06	12-04-06	3-22-07	11-1-07	3-27-08	10-13-08	4-2-09	10-2-09	4-7-10	12-6-10	1-5-11	12-5-11	3-15-12	12-3-12	3-28-13	9-25-13	3-25-14	9-24-14	4-1-15	12-7-15	6-24-16	MW-02 AVG	MW-03 AVG
Antimony	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5.24	5.10
Arsenic	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	39.71	39.71
Barium	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	1424.65	1409.55
Beryllium	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5.63	3.84
Cadmium	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6.03	5.02
Chromium	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	60.80	73.90
Cobalt	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	13.24	14.08
Copper	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	23.52	20.93
	4.0	4.0	4.0	-	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.72	2.74
	50	50	50	50	50	50	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	45.44	40.41
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.67	1.60
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99.23	78.23
Selenium	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.49	10.49
Silver	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	36.65	36.65
Thallium	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.25	2.09
Vanadium	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	25.22	13.65
Zinc	206	583	221	267	234	250	239	235	223	282	267	251	63.2	243.0	256.0	208.0	243.0	287.0	271.0	269.0	271.0	273.0	315.0	224.0	555.66	66.53

† = TREATMENT TECHNIQUE ACTION LEVEL
‡ = NATIONAL SECONDARY DRINKING WATER STANDARD
* PARAMETER NOT TESTED FOR
**RESAMPLE DATE
***ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)

ORGANIC	3-23-94	6-02-94	**7-13-94	10-19-94	12-1-94	3-02-95	10-30-95	4-12-96	11-2-96	3-21-97	9-22-97	05-13-98	10-23-98	3-16-99	9-15-99	03-23-00	9-6-00	4-25-01	9-18-01	4-17-02	9-30-02	4-21-03	9-30-03	4-27-04	9-22-04	4-11-05	9-29-05	3-28-06	8-15-06	12-04-06	3-22-07	11-1-07	3-27-08	10-13-08	4-2-09	10-1-09	4-7-10	10-5-10	1-4-11	12-4-11	3-15-12	12-3-12	3-27-13	9-25-13	3-25-14	9-24-14	3-31-15	12-6-15	6-24-16
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

LOUDOX COUNTY
(UPGRADIENT) BACKGROUND WELL
MONITORING WELL #3

| ANALYTE | IN REGULATORY LIMITS | 2-24-11 | 6-23-11 | 9-22-11 | 12-22-11 | 3-22-12 | 6-21-12 | 9-19-12 | 12-18-12 | 3-19-13 | 6-18-13 | 9-17-13 | 12-16-13 | 3-17-14 | 6-16-14 | 9-15-14 | 12-15-14 | 3-16-15 | 6-15-15 | 9-14-15 | 12-14-15 | 3-14-16 | 6-13-16 | 9-12-16 | 12-12-16 | 3-13-17 | 6-12-17 | 9-11-17 | 12-11-17 | 3-12-18 | 6-11-18 | 9-10-18 | 12-10-18 | 3-11-19 | 6-10-19 | 9-9-19 | 12-9-19 | 3-9-20 | 6-8-20 | 9-7-20 | 12-7-20 | 3-8-21 | 6-7-21 | 9-6-21 | 12-6-21 | 3-7-22 | 6-6-22 | 9-5-22 | 12-5-22 | 3-6-23 | 6-5-23 | 9-4-23 | 12-4-23 | 3-4-24 | 6-3-24 | 9-3-24 | 12-3-24 | 3-3-25 | 6-2-25 | 9-1-25 | 12-1-25 | 3-2-26 | 6-1-26 | MAX/AVG |
|---|---|---

APPENDIX D

GROUNDWATER DATA

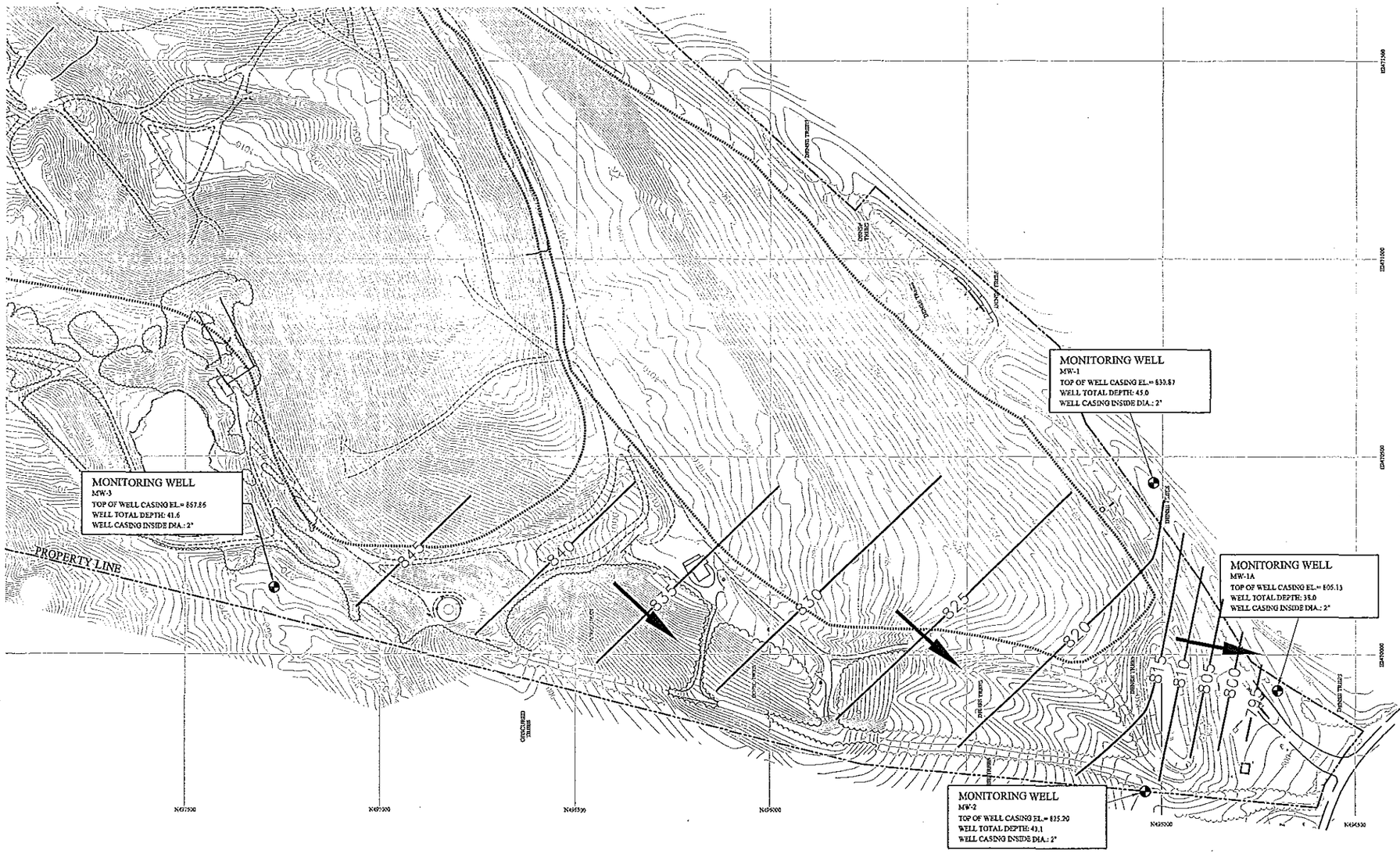
Matlock Bend Landfill (Phase I)

May 24, 2016

Well No.	Elev. Of TOC	Depth to GW (ft below TOC)	Water Elevation	Contour Elevation	Distance	Hydraulic Conductivity	Effective Porosity (n)	Hydraulic Gradient	Average Linear Velocity		Directions
									ft/min	ft/day	
MW-01	830.87	8.23	822.64	820	30	4.70E-06	0.18	8.80E-02	2.30E-06	3.31E-03	SW
MW-1A*	805.13	14.12	791.01	795	55	3.93E-06	0.18	7.25E-02	1.58E-06	2.28E-03	SW
MW-02	825.20	13.05	812.15	810	30	5.90E-06	0.18	7.17E-02	2.35E-06	3.38E-03	SW
MW-03	867.86	19.43	848.43	845	175	1.20E-05	0.18	1.96E-02	1.31E-06	1.88E-03	SW

*-The hydraulic conductivity for MW-1A is an average from monitoring wells MW-01, MW-02 and MW-03.

APPENDIX E



LEGEND:

- PROPERTY BOUNDARY
- 830 WATER TABLE CONTOURS (INFERRED)
- AERIAL CONTOUR
- ROAD
- WASTE MANAGEMENT UNIT BOUNDARY
- GROUNDWATER MONITORING WELL
- GROUNDWATER FLOW DIRECTION

NOTES:

1. POTENTIOMETRIC CONTOURS DEVELOPED FROM WATER ELEVATIONS TAKEN MAY 24, 2016.
2. TOPOGRAPHIC CONTOURS SHOWN WERE PROVIDED BY SOUTHERN RESOURCES MAPPING CORP., NORTHPORT, ALABAMA. PHOTO DATED AUGUST 25, 2015.

GW.WELL NO.	WATER ELEV.
MW-1	822.64
MW-1A	791.01
MW-2	812.15
MW-3	848.43

0' 150' 300' 450'

DATE	DRWN	CHKD	REVISION

2016 SEMI-ANNUAL (SPRING) GROUNDWATER POTENTIOMETRIC CONTOUR MAP

MATLOCK BEND LANDFILL-PHASE I
LOUDON COUNTY, TENNESSEE

SANTEK ENVIRONMENTAL
650 25TH STREET NW
SUITE 100
CLEVELAND, TENNESSEE

SCALE: 1"=300'
DATE: 6/1/16
DRAWN BY: RH
CHECKED BY: RH
APPROVED BY: RV
FILE: 1610-S1
JOB NO: 200-1610

S-1
sheet number

MATLOCK BEND LANDFILL

PHASE II/IV

SANTEK
WasteServices
650 25th Street, N.W., Suite 100
Cleveland, Tennessee 37311
(423) 303-7101
Email: mail@santekenviro.com
Internet: www.santekenviro.com

August 3, 2016

Mr. Ryan Miller
Tennessee Department of Environment and Conservation
Division of Solid Waste Management
3711 Middlebrook Pike
Knoxville, TN 37921-5602

RE: Groundwater Monitoring Report – 1st Semi-Annual Event
Matlock Bend Landfill – Phase II/IV Upgrade
SNL #53-103-0203

Dear Mr. Miller:

Please find enclosed a copy of the groundwater monitoring report generated from the first semi-annual groundwater event of 2016 at the Matlock Bend Landfill – Phase II/IV. This package includes data pertaining to site information, geologic summary, groundwater sampling, analytical laboratory reports, statistical analysis, and groundwater elevations and flow.

If you have any questions and/or comments, please feel free to call at (423) 303-7101.

Sincerely,

Robert Hudson

Robert Hudson
Environmental Compliance Coordinator

Enclosures

cc: Steve Field, Loudon County Solid Waste Department Chairman
Matt Dillard, Executive V.P. of Operations, Santek
Ron E. Vail, P.E., V.P. of Operations, Santek
Raymond Givens, Landfill Manager, Santek

MATLOCK BEND LANDFILL – PHASE II/IV UPGRADE
GROUNDWATER MONITORING REPORT
1st SEMI-ANNUAL EVENT 2016

SANTEK PROJECT NO. 200-1610.2

PREPARED BY:
SANTEK WASTE SERVICES, INC.
650 25TH STREET NW, SUITE 100
CLEVELAND, TN 37311

AUGUST 2016

1.0 INTRODUCTION

In accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rule 0400-11-01-.04(7), Santek Waste Services, Inc. (Santek) is submitting the groundwater monitoring report for the first semi-annual event for 2016 at the Matlock Bend Landfill - Phase II/IV Upgrade. The sampling and analytical were performed in accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rules as well as the site's approved groundwater monitoring plan dated December 1996. The groundwater monitoring plan is incorporated in the landfill's Operations Plan. The site's groundwater monitoring network consists of MW-03, MW-4R and MW-05. According to the letter from TDEC dated December 11, 2008, Santek replaced MW-04 with MW-4R in the groundwater detection monitoring network. MW-04 is no longer being monitored. Historic results for MW-04 were taken between 11/2/96 through 3/27/08 and are included in the MW-4R control chart. Santek contracted with Environmental Monitoring Services, LLC (EMS) to perform the sampling. Santek performed the statistical analyses. Santek contracted with Analytical Environmental Services, Inc. (AES) to perform all analytical testing.

1.1 SITE INFORMATION

Phase II/IV Upgrade is located along the northwest border of Phase I as a portion of the Matlock Bend Landfill. The area is approximately five miles west of Loudon, TN, on Tennessee Highway 72, at latitude N 35° 44' 48" and longitude W 84° 24' 43".

2.0 SAMPLING AND ANALYTICAL

The groundwater sampling event was performed by EMS on May 24 & 25, 2016. Santek conducted re-sampling at MW-03 on June 27, 2016 as a result of EMS not sampling for the full list of parameters. Samples were analyzed for Appendix I constituents. All samples were submitted to AES for analysis. Field sampling logs are provided in Appendix A. Analytical results are provided in Appendix B. Data pertaining to leachate monitoring is provided in the Appendix labeled Leachate.

3.0 STATISTICAL ANALYSIS

3.1 Statistical Analysis Method

Santek is submitting a control chart approach to satisfy the statistical analysis requirement. Well #4R is the upgradient (background) well. Wells #03 and #05 are the downgradient (compliance) wells. The Appendix I analytical results for this sampling event are used to compare the compliance wells to the background well concentrations for each constituent elevated above detection limit. Parameters not detected above the reporting limits are not included in the control chart comparison. Parameters detected above the reporting limits are compared to the average background concentration. The mean (average) for each well is determined by using the actual analytical value if it exceeds the detection limit, or by using the method detection limit (MDL) if the result was a

nondetect. If the average background concentration is greater than the results for the compliance wells, then no significant increase is indicated. If the average background concentration is less than the results for the compliance well, then the Tennessee (TN) Regulatory Limits of the Tennessee Solid Waste regulations are used for additional comparison to indicate potentially elevated concentrations. Control charts are provided in Appendix C.

3.2 Statistical Analysis Summary

MW-03

The control chart for MW-03 indicates zinc* is above the report limit. However, the result of this constituent does not exceed the background well's average which establishes the ground water protection standards at this well.

MW-4R

MW-4R is the upgradient (background) well.

MW-05

The control chart for MW-05 indicates copper* and zinc* are above the report limit. However, the results of these constituents do not exceed the background well's average which establishes the groundwater protection standards at this well.

4.0 FLOW DIRECTION AND RATES

Geological Summary:

Geologic information for Phase II/IV is based on a Hydrogeologic Investigation Report prepared by Theta Engineering, Inc. dated January 11, 1996. Phase II/IV is located in the Valley and Ridge physiographic region consisting commonly of northeast/southwest trending valleys and ridges. This area consists of discontinuous, highly dissected upland with elevations ranging from approximately 865 feet to 1,020 feet. Bedrock formations include the Copper Ridge Dolomite Formation and the Longview Dolomite Formation, both of which belong to the Knox Group. The area is dominantly covered by silty-clayey soil originating from the Fullerton, Clarksville, and Nolichucky Series.

Groundwater flow direction of Phase II/IV locally flows towards the northwest and will ultimately flow to the Tennessee River. The groundwater flow rate ranges from 2.51×10^{-3} ft/day at MW-03 to 5.28×10^{-3} ft/day at MW-05. Groundwater flow rate and direction have been determined for each well and are included in Appendix D. A groundwater potentiometric contour map is included in Appendix E.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater monitoring network at this site is adequately monitoring the uppermost aquifer and no changes are recommended at this time.

**Indicates TN Regulatory limit is not available.*

APPENDIX A

EMServices

Environmental Monitoring Services, LLC
Phone (770) 516-2081 *Fax (678) 445-3276*

June 1, 2016

Robert Hudson
Santek Waste Services
650 25th Street NW, Suite 100
Cleveland, TN 37311

RE: Groundwater monitoring at Loudon County Phase II/IV Landfill

Robert,

On May 24th and 25th, we completed the semi-annual groundwater monitoring at the referenced site. The sampling activities were performed in accordance with the site's operating permit and EPA Region IV SESD SOP's.

After collecting the water level, we calculated the purge volume to three well volumes using a standard formula. At each well, purging continued until at least three well volumes were removed and the field parameters were stable, or until the well was dry. The purge water was captured in 5 gallon buckets to quantify the purge volumes.

We employed a submersible pump for the purging of wells MW-03, 04, and 05. The pump used was attached to Teflon-lined tubing. The tubing and pump were washed after sampling the well using a Liquinox soap solution followed by a water rinse. We also collected a leachate sample via direct grab.

The wells were sampled using the same pump used to purge the well. The VOC and fluoride samples were collected immediately. If turbidity was at an unacceptable level when purging was complete (all other parameters stable), the well was allowed to settle for several hours or overnight, but less than 24 hours. The wells that were initially purged and sampled with a submersible pump but had high turbidities later had metals samples collected using a new disposable poly bailer attached to new nylon string.

During the purging process, pH, conductivity, temperature and turbidity readings were collected and recorded in the logbook. Turbidity readings were again recorded at the time of metals sample collection if the well was allowed to settle. Field readings were recorded from the initial water pulled (0 gallons), well volume 1, well volume 2, well volume 2.5 and well volume 3. Stability was based on volume, rather than time (though the time between measurements fell within range of accepted guidance). The stability criteria used based on accepted guidance was at least 3 sets of readings within the following ranges: pH ($\pm$ 0.1 SU), SC ($\pm$ 10%), Temperature ($\pm$ 1°C), and Turbidity (<10 NTU). If the measurements weren't stable as defined by the above criteria at the completion of purging 3 well volumes, purging continued and readings recorded generally every 0.5 well volume up to 5 well volumes. These readings were recorded from YSI 556MPS which was calibrated each morning. Turbidity readings were collected using a Hach DR-820, which is

zeroed periodically throughout the day. The Hach DR-820 contains a factory calibration which is checked in-house using formazine standards.

The samples were collected in containers provided by the laboratory. These containers were of types, sizes and preserved in a manner consistent with SW-846 and other guidance. Upon filling, the containers were placed on ice. The samples were hand-delivered under chain of custody to Analytical Environmental Services, (AES), located in Atlanta, Georgia.

We appreciate the opportunity to work with you on this project, and look forward to any feedback you have.

Respectfully,

Jeff Johnson

Attachments: Groundwater Field Data

FIELD SAMPLING LOG	WELL NO: MW-03
Location: Loudon County Landfill	Site: Matlock Bend Phases I / II / IV
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 5-24-16 (Time) 1508	Purge End: (Date) 5-24-16 (Time) 1519
Purged by: A. Howard	
Depth Measurement Ref. Point* 867.86 ft	Well Casing. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI .

Measure Well TD: 41.60 (-)Orig. DTW: 19.43 (=) Wtr. Col. Thick: 22.17

2"=0.163 Gals./ft. (=) 3.62 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 10.85 Total Purge Gals.

GW elev. Ref. 867.86 ft.(-) DTW: 19.43 ft. = 848.43 ft.

Purge/Sample Method: Disposable Poly Bailer or SS Electric Submersible Pump
Decon. Method: Field Appendix B
Purge Water Containerized? (No)

Average Purge Rate: _____ (gallons per minute)
Weather: Sunny (78 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1508	0	6.84	83	16.8	21		
1514	3.75	4.83	83	16.8	9		
1519	5.25	4.82	83	16.9	9		
	~~5.25~~						
	~~9.75~~						
	~~10.00~~						

Turbidity at metals sample collection: 9 NTU's

Comments: Purged dry at 5.25 gal
Dup taken 1400

*All Depths in Feet below Ref. Point on Wellhead, Generally Top of Casing (TOC) DTW= Depth to Water

FIELD SAMPLING LOG	WELL NO: MW-4R
Location: Loudon County Landfill	Site: Matlock Bend Phases II/IV
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 5-24-16 (Time) 1413	Purge End: (Date) 5-24-16 (Time) 1423
Purged by: A. Howard	
Depth Measurement Ref. Point* 992.32 ft	Well Casing. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI

Measure Well TD: 106.50 (-)Orig. DTW: 96.51 (=) Wtr. Col. Thick: 9.99

2"=0.163 Gals./ft. (=) 1.63 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 4.89 Total Purge Gals.

GW elev. Ref. 992.32 ft.(-) DTW: 96.51 ft. =~~895.81~~ ft.

Purge/Sample Method: Disposable Poly Bailer or SS Electric Submersible Pump
Decon. Method: Field Appendix B
Purge Water Containerized? (No)

Average Purge Rate: 0.30 (gallons per minute)
Weather: Sunny (~~70~~ °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1413	0	7.20	129	22.1	200		
1418	1.75	6.80	107	22.8	651		
1423 ~~1424~~	~~2.25~~	6.49	113	22.7	697		
	~~3.50~~						
	~~4.25~~						
	~~5.00~~						

Turbidity at metals sample collection: 41 NTU's 5/25/16 0942

Comments: Purged dry at 2.25 gals metals collected w/ bailer
Heavy traffic area

*All Depths in Feet below Ref. Point on Wellhead, Generally Top of Casing (TOC) DTW= Depth to Water

FIELD SAMPLING LOG	WELL NO: MW-05
Location: Loudon County Landfill	Site: Matlock Bend Phases II/IV
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 5-24-16 (Time) 1226	Purge End: (Date) 5-24-16 (Time) 1318
Purged by: A. Howard	
Depth Measurement Ref. Point* 936.84 ft	Well Casing. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI

Measure Well TD: 172.71 (-)Orig. DTW: 82.44 (=) Wtr. Col. Thick: 90.27

(x) 2"=0.163 Gals./ft. (=) 14.72 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 44.15 Total Purge Gals.

GW elev. Ref. 936.84 ft.(-) DTW: 82.44 ft. = 854.40 ft.

Purge/Sample Method: Disposable Poly Bailer or SS Electric Submersible Pump
Decon. Method: Field Appendix B
Purge Water Containerized? (No)

Average Purge Rate: 1.00 (gallons per minute)
Weather: Sunny (85 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1228	0	6.15	300	20.2	144		
1242	15	6.70	261	17.5	140		
1249	~~30~~ 22.5	5.78	260	16.9	84		
1256	30	~~7.05~~	259	16.9	80		
1304	37.5	~~7.09~~	261	16.9	57		
1311	45	7.04	256	16.9	44		

1318 52.5 7.02 261 0 16.9 40

Turbidity at metals sample collection: ____ NTU's 5/25/16 0951

Comments: MW-249 metals collected via bailer ~~DUP collected here~~ NA

*All Depths in Feet below Ref. Point on Wellhead, Generally Top of Casing (TOC) DTW= Depth to Water

SANTEK RE-SAMPLING

DATE: 6/27/16

FIELD SAMPLING LOG	WELL NO: MW-03
Location: Loudon County	Site: Matlock Bend
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 6/27/16 (Time) 1:22	Purge End: (Date) 6/27/16 (Time) 1:32
Purged by: Robert Hudson	
Depth Measurement Ref. Point* 867.86 ft	Well Csg. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 41.60 (-)Orig. DTW: 20.92 (=) Wtr. Col. Thick: 20.68 .

(x) 2"=0.16 4"=0.65 6"=1.47 Gals./ft. (=) 3.3 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 9.9 Total Purge Gals.

GW elev. Ref. 867.86 ft.(-) DTW 20.92 ft. = 846.94 ft.

Purge/Sample Method: ☐ Pump (indicate type) _____.
☒ Bailer (indicate type) Poly/Disposable .

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Sunny (90's °F)

Actual Time	Elapsed Time	Vol. Purged (Gals)	Depth to Wtr (ft)	Depth of Pump Intake (ft)	Temp (°C)	pH	Cond. (umhos) mS/cm	Turbidity (NTU)	Other	Comments
1:24		-			18.69	5.31	0.095	9.2		Clear
1:29		3.5			18.38	5.17	0.096	138		Slightly cloudy
1:32		4.5			17.57	5.11	0.094	134		Cloudy, *purged dry

Average Linear velocity $v = \frac{Ki}{n}$ Where

*Purged dry at 4.5 gallons.

K= Hydraulic Conductivity (ft/min)
i = Gradient (ft/ft)
n = effective porosity

v=[K_____ft/min. (x) GW elev._____ft. (-) GW elev. _____ft] -_____
distance_____ft
v=_____ft./min. = _____ft day

.18 Clay/Silt
.20 Silt w/sand
.25 sand
.3 sand and gravel

Comments: *Purged dry @ 4.5 gallons. Samples taken on 6/27/16 @ 1:38 pm.

*All Depths in Feet below Ref. Point on Wellhead Generally Top of Casing (TOC) DTW= Depth to Water

APPENDIX B

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

July 21, 2016

Robert Hudson
Santek Environmental Inc.
650 25th Street NW. Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon County Landfill (Phase II/IV)

Dear Robert Hudson: Order No: 1605N47

Analytical Environmental Services, Inc. received 5 samples on 5/27/2016 12:47:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAC/Florida State Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, and Drinking Water Microbiology, effective 07/01/16-06/30/17.
-NELAC/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/16-06/30/17.
-NELAC/Texas Certificate No. T104704509-16-6 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 03/01/16-02/28/17.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

CRKanhai

Chantelle Kanhai
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1605147

Date: 5-26-16 Page 1 of 1

COMPANY:	ADDRESS:
Santek Environmental Inc	650 25th St NW Ste 100, Cleveland TN 37311
PHONE: 423-303-7101	FAX:
SAMPLED BY: A. Howard, F. Ward	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	TN App I VOC ($220)	TN App I VOC (Gen'l)	TN App I Methanol	Florida	PRESERVATION (See codes) H+I	I	N	T	REMARKS	No # of Containers
1	MW-03	5-24-16	1519	X		GW	2	2			2	2	1	1	Shared w/ Phase I	
2	MW-4R	5-24-16	1423	X		GW	2	2			2	2	1	1		
3	MW-05	5-24-16	1318	X		GW	2	2			2	2	1	1		
4	Equipment Blank	5-23-16	0900	X		W	2	2			2	2	1	1	Shared w/ Phase I	
5	Trip Blank	5-23-16	0900	X		W	2	2			2	2	1	1	Shared w/ Phase I	
6																
7	MW-4R (Metals)	5-25-16	0942	X		GW							1			
8	MW-05 (Metals)	5-25-16	0951	X		GW							1			
9																
10																
11																
12																
13																
14																

ANALYSIS REQUESTED

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	5-27-16/1257	1:	5/27/16 2:47
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Loudon County Landfill (Phase II/IV)
PROJECT #:
SITE ADDRESS: 2(712 Hwy 72N, Loudon TN, 37774
SEND REPORT TO: Robert Hudson
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT

Total # of Containers:

Turnaround Time Request
- (X) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush (auth req.)
- ( ) Other

STATE PROGRAM (if any): TN
E-mail? (Y)/N: Fax? Y/N
DATA PACKAGE: I (II) III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
(CLIENT) FedEx UPS MAIL COURIER
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Santek Work Order Number 1605M147

Checklist completed by Christ Test 5-27-16
Signature Date

Carrier name: FedEx __ UPS __ Courier __ Client ✓ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes ✓ No __

Cooler #1 1.9°C Cooler #2 2.8°C Cooler #3 1.9°C Cooler #4 1.5°C Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by MP

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No __

See Case Narrative for resolution of the Non-Conformance.

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

July 14, 2016

Robert Hudson
Santek Environmental Inc.
650 25th Street NW. Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon (Matlock Bend) LF GW Event

Dear Robert Hudson: Order No: 1606R21

Analytical Environmental Services, Inc. received 4 samples on 6/28/2016 9:45:00 AM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAC/Florida State Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, and Drinking Water Microbiology, effective 07/01/16-06/30/17.
-NELAC/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/16-06/30/17.
-NELAC/Texas Certificate No. T104704509-16-6 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 03/01/16-02/28/17.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

CKKanhai

Chantelle Kanhai
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC

308 sidential Drive, Atlanta GA 30340-3704

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 16041R21

Date: 6/27/16 Page 1 of 1

COMPANY:	ADDRESS:
Santek Waste Services, Inc.	650 25th Street NW, Suite 100, Cleveland, TN 37311
PHONE: (423) 303-7101	FAX: (423) 479-1952
SAMPLED BY: R. Hudson	SIGNATURE: Robert Hudson

ANALYSIS REQUESTED

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Inorganic Anions by IC	TDS	Total Metals by ICP/MS	Dissolved Metals by ICP/MS	Nitrogen, Ammonia	TOC	COD	Cyanide	REMARKS	No # of Containers
	PRESERVATION (See codes)															
1	MW-01	6/27/16	2:30	X		GW	X	X	X	X	X	X	X	X		5
2	MW-1A	6/27/16	3:50	X		GW	X	X	X	X	X	X	X	X		5
3	MW-02	6/27/16	3:10	X		GW	X	X	X	X	X	X	X	X		5
4	MW-03	6/27/16	1:38	X		GW	X	X	X	X	X	X	X	X		5
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Robert Hudson	6/27/16 5:30pm	1: Fedex	6/28/16 9:45
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Loudon 86 (Matlock Bend) LF GW

PROJECT #: Event

SITE ADDRESS:

SEND REPORT TO: Robert Hudson

INVOICE TO: (IF DIFFERENT FROM ABOVE)

QUOTE #: PO#:

RECEIPT

Total # of Containers:

Turnaround Time Request

- (●) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush (auth req.)
- ( ) Other

STATE PROGRAM (if any):

E-mail? Y / N; Fax? Y / N

DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS: See bottles, Chantelle K. and Project History

SHIPMENT METHOD

OUT / / VIA:

IN / / VIA:

CLIENT (FedEx) UPS MAIL COURIER

GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Client:	Santek Environmental Inc.
Project:	Loudon (Matlock Bend) LF GW Event
Lab ID:	1606R21

Case Narrative

Ion Chromotograhy Analysis by Method 300:

Due to sample matrix, samples 1606R21-001 and -002 required dilution during preparation and/or analysis resulting in elevated reporting limits.

Analytical Environmental Services, Inc.

Sample/Cooler Rec Checklist

Client SANTEK Work Order Number 1606R21

Checklist completed by _____ 6/28/16
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition?	Yes ✓	No __	Not Present __
Custody seals intact on shipping container/cooler?	Yes __	No __	Not Present ✓
Custody seals intact on sample bottles?	Yes __	No __	Not Present ✓
Container/Temp Blank temperature in compliance? (0°≤6°C)*	Yes ✓	No __	

Cooler #1 1.8°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present?	Yes ✓	No __
Chain of custody signed when relinquished and received?	Yes ✓	No __
Chain of custody agrees with sample labels?	Yes ✓	No __
Samples in proper container/bottle?	Yes ✓	No __
Sample containers intact?	Yes ✓	No __
Sufficient sample volume for indicated test?	Yes ✓	No __
All samples received within holding time?	Yes ✓	No __
Was TAT marked on the COC?	Yes ✓	No __
Proceed with Standard TAT as per project history?	Yes __	No __ Not Applicable ✓
Water - VOA vials have zero headspace?	No VOA vials submitted ✓	Yes __ No __
Water - pH acceptable upon receipt?	Yes ✓	No __ Not Applicable __

Adjusted? _____ Checked by _____

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance. — —

* Samples do not have to comply with the given range for certain parameters.

\\Aes_server\I\Sample Receipt\My Documents\COCs and pH Adjustment Sheet\Sample_Cooler_Recipt_Checklist_Rev1.rtf

Client: Santek Environmental Inc.
Project Name: Loudon (Matlock Bend) LF GW Event
Lab Order: 1606R21

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1606R21-001A	MW-01	6/27/2016 2:30:00PM	Groundwater	Inorganic Anions by IC			06/28/2016
1606R21-001A	MW-01	6/27/2016 2:30:00PM	Groundwater	Inorganic Anions by IC			06/30/2016
1606R21-001A	MW-01	6/27/2016 2:30:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		7/1/2016 4:00:00PM	07/01/2016
1606R21-001B	MW-01	6/27/2016 2:30:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/05/2016
1606R21-001C	MW-01	6/27/2016 2:30:00PM	Groundwater	Dissolved Metals by ICP/MS		7/5/2016 1:40:00PM	07/09/2016
1606R21-001D	MW-01	6/27/2016 2:30:00PM	Groundwater	Nitrogen, Ammonia (as N)			07/01/2016
1606R21-001D	MW-01	6/27/2016 2:30:00PM	Groundwater	Chemical Oxygen Demand (COD)			07/01/2016
1606R21-001D	MW-01	6/27/2016 2:30:00PM	Groundwater	Total Organic Carbon by SM5310B			07/01/2016
1606R21-001E	MW-01	6/27/2016 2:30:00PM	Groundwater	Cyanide		7/6/2016 11:00:00AM	07/06/2016
1606R21-002A	MW-1A	6/27/2016 3:50:00PM	Groundwater	Inorganic Anions by IC			06/28/2016
1606R21-002A	MW-1A	6/27/2016 3:50:00PM	Groundwater	Inorganic Anions by IC			06/30/2016
1606R21-002A	MW-1A	6/27/2016 3:50:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		7/1/2016 4:00:00PM	07/01/2016
1606R21-002B	MW-1A	6/27/2016 3:50:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/05/2016
1606R21-002C	MW-1A	6/27/2016 3:50:00PM	Groundwater	Dissolved Metals by ICP/MS		7/5/2016 1:40:00PM	07/09/2016
1606R21-002D	MW-1A	6/27/2016 3:50:00PM	Groundwater	Nitrogen, Ammonia (as N)			07/01/2016
1606R21-002D	MW-1A	6/27/2016 3:50:00PM	Groundwater	Chemical Oxygen Demand (COD)			07/01/2016
1606R21-002D	MW-1A	6/27/2016 3:50:00PM	Groundwater	Total Organic Carbon by SM5310B			07/01/2016
1606R21-002E	MW-1A	6/27/2016 3:50:00PM	Groundwater	Cyanide		7/6/2016 11:00:00AM	07/06/2016
1606R21-003A	MW-02	6/27/2016 3:10:00PM	Groundwater	Inorganic Anions by IC			06/28/2016
1606R21-003A	MW-02	6/27/2016 3:10:00PM	Groundwater	Inorganic Anions by IC			06/30/2016
1606R21-003A	MW-02	6/27/2016 3:10:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		7/1/2016 4:00:00PM	07/01/2016
1606R21-003B	MW-02	6/27/2016 3:10:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/05/2016
1606R21-003B	MW-02	6/27/2016 3:10:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/07/2016
1606R21-003C	MW-02	6/27/2016 3:10:00PM	Groundwater	Dissolved Metals by ICP/MS		7/5/2016 1:40:00PM	07/09/2016
1606R21-003D	MW-02	6/27/2016 3:10:00PM	Groundwater	Nitrogen, Ammonia (as N)			07/01/2016
1606R21-003D	MW-02	6/27/2016 3:10:00PM	Groundwater	Chemical Oxygen Demand (COD)			07/01/2016
1606R21-003D	MW-02	6/27/2016 3:10:00PM	Groundwater	Total Organic Carbon by SM5310B			07/01/2016
1606R21-003E	MW-02	6/27/2016 3:10:00PM	Groundwater	Cyanide		7/6/2016 11:00:00AM	07/06/2016
1606R21-004A	MW-03	6/27/2016 1:38:00PM	Groundwater	Inorganic Anions by IC			06/28/2016

Client: Santek Environmental Inc.
Project Name: Loudon (Matlock Bend) LF GW Event
Lab Order: 1606R21

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1606R21-004A	MW-03	6/27/2016 1:38:00PM	Groundwater	Inorganic Anions by IC			06/30/2016
1606R21-004A	MW-03	6/27/2016 1:38:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		7/1/2016 4:00:00PM	07/01/2016
1606R21-004B	MW-03	6/27/2016 1:38:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/05/2016
1606R21-004B	MW-03	6/27/2016 1:38:00PM	Groundwater	Total Metals by ICP/MS		6/30/2016 4:12:00PM	07/07/2016
1606R21-004C	MW-03	6/27/2016 1:38:00PM	Groundwater	Dissolved Metals by ICP/MS		7/5/2016 1:40:00PM	07/09/2016
1606R21-004D	MW-03	6/27/2016 1:38:00PM	Groundwater	Nitrogen, Ammonia (as N)			07/01/2016
1606R21-004D	MW-03	6/27/2016 1:38:00PM	Groundwater	Chemical Oxygen Demand (COD)			07/01/2016
1606R21-004D	MW-03	6/27/2016 1:38:00PM	Groundwater	Total Organic Carbon by SM5310B			07/01/2016
1606R21-004E	MW-03	6/27/2016 1:38:00PM	Groundwater	Cyanide		7/6/2016 11:00:00AM	07/06/2016

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 3:19:00 PM
Lab ID:	1605N47-001A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
1,1,1-Trichloroethane	BRL	200		ug/L	224810	1	06/02/2016 04:11	NH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
1,1-Dichloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
1,1-Dichloroethene	BRL	7.0		ug/L	224810	1	06/02/2016 04:11	NH
1,2,3-Trichloropropane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
1,2-Dichlorobenzene	BRL	600		ug/L	224810	1	06/02/2016 04:11	NH
1,2-Dichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
1,2-Dichloropropane	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
1,4-Dichlorobenzene	BRL	75		ug/L	224810	1	06/02/2016 04:11	NH
2-Butanone	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
2-Hexanone	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
4-Methyl-2-pentanone	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Acetone	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Acrylonitrile	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Benzene	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
Bromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Bromodichloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Bromoform	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Bromomethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Carbon disulfide	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Carbon tetrachloride	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
Chlorobenzene	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Chloroethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Chloroform	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Chloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
cis-1,2-Dichloroethene	BRL	70		ug/L	224810	1	06/02/2016 04:11	NH
cis-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Dibromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Dibromomethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Ethylbenzene	BRL	700		ug/L	224810	1	06/02/2016 04:11	NH
Iodomethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Methylene chloride	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
Styrene	BRL	100		ug/L	224810	1	06/02/2016 04:11	NH
Tetrachloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
Toluene	BRL	1000		ug/L	224810	1	06/02/2016 04:11	NH
trans-1,2-Dichloroethene	BRL	100		ug/L	224810	1	06/02/2016 04:11	NH
trans-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 3:19:00 PM
Lab ID:	1605N47-001A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
Trichloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 04:11	NH
Trichlorofluoromethane	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Vinyl acetate	BRL	10		ug/L	224810	1	06/02/2016 04:11	NH
Vinyl chloride	BRL	2.0		ug/L	224810	1	06/02/2016 04:11	NH
Xylenes, Total	BRL	10000		ug/L	224810	1	06/02/2016 04:11	NH
Surr: 4-Bromofluorobenzene	93.5	70.7-125		%REC	224810	1	06/02/2016 04:11	NH
Surr: Dibromofluoromethane	95.9	82.2-120		%REC	224810	1	06/02/2016 04:11	NH
Surr: Toluene-d8	104	81.8-120		%REC	224810	1	06/02/2016 04:11	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 3:19:00 PM
Lab ID:	1605N47-001B	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.200		ug/L	224642	1	06/01/2016 01:23	AW
1,2-Dibromoethane	BRL	0.050		ug/L	224642	1	06/01/2016 01:23	AW
Surr: 4-Bromofluorobenzene	107	64.9-131		%REC	224642	1	06/01/2016 01:23	AW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 3:19:00 PM
Lab ID:	1605N47-001C	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					**(SW7470A)**			
Mercury	BRL	0.00200		mg/L	224776	1	06/02/2016 17:04	JR
APPENDIX I METALS SW6020B					**(SW3005A)**			
Antimony	BRL	0.00600		mg/L	224806	1	06/10/2016 22:08	JS
Arsenic	BRL	0.0500		mg/L	224806	1	06/10/2016 22:08	JS
Barium	BRL	2.00		mg/L	224806	1	06/10/2016 22:08	JS
Beryllium	BRL	0.00400		mg/L	224806	1	06/10/2016 22:08	JS
Cadmium	BRL	0.00500		mg/L	224806	1	06/10/2016 22:08	JS
Chromium	BRL	0.100		mg/L	224806	1	06/10/2016 22:08	JS
Cobalt	BRL	0.0100		mg/L	224806	1	06/10/2016 22:08	JS
Copper	BRL	0.0100		mg/L	224806	1	06/10/2016 22:08	JS
Lead	BRL	0.0150		mg/L	224806	1	06/10/2016 22:08	JS
Nickel	BRL	0.100		mg/L	224806	1	06/10/2016 22:08	JS
Selenium	BRL	0.0100		mg/L	224806	1	06/10/2016 22:08	JS
Silver	BRL	0.0500		mg/L	224806	1	06/12/2016 19:19	JS
Thallium	BRL	0.00200		mg/L	224806	1	06/10/2016 22:08	JS
Vanadium	BRL	0.0100		mg/L	224806	1	06/10/2016 22:08	JS
Zinc	0.0244	0.0200		mg/L	224806	1	06/10/2016 22:08	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 3:19:00 PM
Lab ID:	1605N47-001D	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318181	1	06/02/2016 11:58	JW

Qualifiers:
- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 14-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Project Name:	Loudon (Matlock Bend) LF GW Event	**Collection Date:**	6/27/2016 1:38:00 PM
Lab ID:	1606R21-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R320336	1	07/01/2016 16:44	JW
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	1370	100		ug/L	226247	1	07/05/2016 22:05	JS
Iron	2480	100		ug/L	226247	1	07/05/2016 22:05	JS
Magnesium	1100	100		ug/L	226247	1	07/05/2016 22:05	JS
Potassium	972	500		ug/L	226247	1	07/05/2016 22:05	JS
Sodium	15400	500		ug/L	226247	1	07/07/2016 19:39	JS
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	34	1		mg/L	226376	1	07/01/2016 16:00	JS
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	R320215	1	07/01/2016 16:39	FS
Inorganic Anions by IC E300.0								
Chloride	18.0	1.00		mg/L	R320244	1	06/28/2016 13:11	JW
Fluoride	BRL	4.00		mg/L	R320194	1	06/30/2016 11:07	JW
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R320244	1	06/28/2016 13:11	JW
Sulfate	2.71	1.00		mg/L	R320244	1	06/28/2016 13:11	JW
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	189	10.0		ug/L	226377	1	07/09/2016 21:58	JS
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	226483	1	07/06/2016 11:00	BD
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R320289	1	07/01/2016 16:00	AW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-4R
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 2:23:00 PM
Lab ID:	1605N47-002A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
1,1,1-Trichloroethane	BRL	200		ug/L	224810	1	06/02/2016 06:06	NH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 06:06	NH
1,1-Dichloroethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
1,1-Dichloroethene	BRL	7.0		ug/L	224810	1	06/02/2016 06:06	NH
1,2,3-Trichloropropane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
1,2-Dichlorobenzene	BRL	600		ug/L	224810	1	06/02/2016 06:06	NH
1,2-Dichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 06:06	NH
1,2-Dichloropropane	BRL	5.0		ug/L	224810	1	06/02/2016 06:06	NH
1,4-Dichlorobenzene	BRL	75		ug/L	224810	1	06/02/2016 06:06	NH
2-Butanone	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
2-Hexanone	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
4-Methyl-2-pentanone	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Acetone	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Acrylonitrile	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Benzene	BRL	5.0		ug/L	224810	1	06/02/2016 06:06	NH
Bromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Bromodichloromethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Bromoform	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Bromomethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Carbon disulfide	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Carbon tetrachloride	BRL	5.0		ug/L	224810	1	06/02/2016 06:06	NH
Chlorobenzene	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Chloroethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Chloroform	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Chloromethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
cis-1,2-Dichloroethene	BRL	70		ug/L	224810	1	06/02/2016 06:06	NH
cis-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Dibromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Dibromomethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Ethylbenzene	BRL	700		ug/L	224810	1	06/02/2016 06:06	NH
Iodomethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Methylene chloride	BRL	5.0		ug/L	224810	1	06/02/2016 06:06	NH
Styrene	BRL	100		ug/L	224810	1	06/02/2016 06:06	NH
Tetrachloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 06:06	NH
Toluene	BRL	1000		ug/L	224810	1	06/02/2016 06:06	NH
trans-1,2-Dichloroethene	BRL	100		ug/L	224810	1	06/02/2016 06:06	NH
trans-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-4R
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 2:23:00 PM
Lab ID:	1605N47-002A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Trichloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 06:06	NH
Trichlorofluoromethane	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Vinyl acetate	BRL	10		ug/L	224810	1	06/02/2016 06:06	NH
Vinyl chloride	BRL	2.0		ug/L	224810	1	06/02/2016 06:06	NH
Xylenes, Total	BRL	10000		ug/L	224810	1	06/02/2016 06:06	NH
Surr: 4-Bromofluorobenzene	95.5	70.7-125		%REC	224810	1	06/02/2016 06:06	NH
Surr: Dibromofluoromethane	99	82.2-120		%REC	224810	1	06/02/2016 06:06	NH
Surr: Toluene-d8	105	81.8-120		%REC	224810	1	06/02/2016 06:06	NH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-4R
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 2:23:00 PM
Lab ID:	1605N47-002B	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.202		ug/L	224645	1	06/01/2016 10:58	AW
1,2-Dibromoethane	BRL	0.051		ug/L	224645	1	06/01/2016 10:58	AW
Surr: 4-Bromofluorobenzene	101	64.9-131		%REC	224645	1	06/01/2016 10:58	AW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-4R
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/25/2016 9:42:00 AM
Lab ID:	1605N47-002C	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					**(SW7470A)**			
Mercury	BRL	0.00200		mg/L	224852	1	06/03/2016 15:41	JR
APPENDIX I METALS SW6020B					**(SW3005A)**			
Antimony	BRL	0.00600		mg/L	224808	1	06/10/2016 11:03	JS
Arsenic	BRL	0.0500		mg/L	224808	1	06/10/2016 11:03	JS
Barium	BRL	2.00		mg/L	224808	1	06/10/2016 11:03	JS
Beryllium	BRL	0.00400		mg/L	224808	1	06/10/2016 11:03	JS
Cadmium	BRL	0.00500		mg/L	224808	1	06/10/2016 11:03	JS
Chromium	BRL	0.100		mg/L	224808	1	06/10/2016 11:03	JS
Cobalt	BRL	0.0100		mg/L	224808	1	06/10/2016 11:03	JS
Copper	BRL	0.0100		mg/L	224808	1	06/10/2016 11:03	JS
Lead	BRL	0.0150		mg/L	224808	1	06/10/2016 11:03	JS
Nickel	BRL	0.100		mg/L	224808	1	06/10/2016 11:03	JS
Selenium	BRL	0.0100		mg/L	224808	1	06/10/2016 11:03	JS
Silver	BRL	0.0500		mg/L	224808	1	06/10/2016 11:03	JS
Thallium	BRL	0.00200		mg/L	224808	1	06/10/2016 11:03	JS
Vanadium	BRL	0.0100		mg/L	224808	1	06/10/2016 11:03	JS
Zinc	0.0310	0.0200		mg/L	224808	1	06/10/2016 11:03	JS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-4R
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 2:23:00 PM
Lab ID:	1605N47-002D	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318182	1	06/02/2016 19:19	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-05
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 1:18:00 PM
Lab ID:	1605N47-003A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
1,1,1-Trichloroethane	BRL	200		ug/L	224810	1	06/02/2016 06:35	NH
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 06:35	NH
1,1-Dichloroethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
1,1-Dichloroethene	BRL	7.0		ug/L	224810	1	06/02/2016 06:35	NH
1,2,3-Trichloropropane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
1,2-Dichlorobenzene	BRL	600		ug/L	224810	1	06/02/2016 06:35	NH
1,2-Dichloroethane	BRL	5.0		ug/L	224810	1	06/02/2016 06:35	NH
1,2-Dichloropropane	BRL	5.0		ug/L	224810	1	06/02/2016 06:35	NH
1,4-Dichlorobenzene	BRL	75		ug/L	224810	1	06/02/2016 06:35	NH
2-Butanone	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
2-Hexanone	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
4-Methyl-2-pentanone	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Acetone	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Acrylonitrile	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Benzene	BRL	5.0		ug/L	224810	1	06/02/2016 06:35	NH
Bromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Bromodichloromethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Bromoform	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Bromomethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Carbon disulfide	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Carbon tetrachloride	BRL	5.0		ug/L	224810	1	06/02/2016 06:35	NH
Chlorobenzene	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Chloroethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Chloroform	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Chloromethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
cis-1,2-Dichloroethene	BRL	70		ug/L	224810	1	06/02/2016 06:35	NH
cis-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Dibromochloromethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Dibromomethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Ethylbenzene	BRL	700		ug/L	224810	1	06/02/2016 06:35	NH
Iodomethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Methylene chloride	BRL	5.0		ug/L	224810	1	06/02/2016 06:35	NH
Styrene	BRL	100		ug/L	224810	1	06/02/2016 06:35	NH
Tetrachloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 06:35	NH
Toluene	BRL	1000		ug/L	224810	1	06/02/2016 06:35	NH
trans-1,2-Dichloroethene	BRL	100		ug/L	224810	1	06/02/2016 06:35	NH
trans-1,3-Dichloropropene	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-05
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 1:18:00 PM
Lab ID:	1605N47-003A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Trichloroethene	BRL	5.0		ug/L	224810	1	06/02/2016 06:35	NH
Trichlorofluoromethane	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Vinyl acetate	BRL	10		ug/L	224810	1	06/02/2016 06:35	NH
Vinyl chloride	BRL	2.0		ug/L	224810	1	06/02/2016 06:35	NH
Xylenes, Total	BRL	10000		ug/L	224810	1	06/02/2016 06:35	NH
Surr: 4-Bromofluorobenzene	94.4	70.7-125		%REC	224810	1	06/02/2016 06:35	NH
Surr: Dibromofluoromethane	98.7	82.2-120		%REC	224810	1	06/02/2016 06:35	NH
Surr: Toluene-d8	103	81.8-120		%REC	224810	1	06/02/2016 06:35	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-05
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 1:18:00 PM
Lab ID:	1605N47-003B	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.200		ug/L	224645	1	06/01/2016 11:27	AW
1,2-Dibromoethane	BRL	0.050		ug/L	224645	1	06/01/2016 11:27	AW
Surr: 4-Bromofluorobenzene	103	64.9-131		%REC	224645	1	06/01/2016 11:27	AW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-05
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/25/2016 9:51:00 AM
Lab ID:	1605N47-003C	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					**(SW7470A)**			
Mercury	BRL	0.00200		mg/L	224852	1	06/03/2016 15:43	JR
APPENDIX I METALS SW6020B					**(SW3005A)**			
Antimony	BRL	0.00600		mg/L	224808	1	06/10/2016 11:35	JS
Arsenic	BRL	0.0500		mg/L	224808	1	06/10/2016 11:35	JS
Barium	BRL	2.00		mg/L	224808	1	06/10/2016 11:35	JS
Beryllium	BRL	0.00400		mg/L	224808	1	06/10/2016 11:35	JS
Cadmium	BRL	0.00500		mg/L	224808	1	06/10/2016 11:35	JS
Chromium	BRL	0.100		mg/L	224808	1	06/10/2016 11:35	JS
Cobalt	BRL	0.0100		mg/L	224808	1	06/10/2016 11:35	JS
Copper	0.0138	0.0100		mg/L	224808	1	06/10/2016 11:35	JS
Lead	BRL	0.0150		mg/L	224808	1	06/10/2016 11:35	JS
Nickel	BRL	0.100		mg/L	224808	1	06/10/2016 11:35	JS
Selenium	BRL	0.0100		mg/L	224808	1	06/10/2016 11:35	JS
Silver	BRL	0.0500		mg/L	224808	1	06/10/2016 11:35	JS
Thallium	BRL	0.00200		mg/L	224808	1	06/10/2016 11:35	JS
Vanadium	BRL	0.0100		mg/L	224808	1	06/10/2016 11:35	JS
Zinc	0.0402	0.0200		mg/L	224808	1	06/10/2016 11:35	JS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-05
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/24/2016 1:18:00 PM
Lab ID:	1605N47-003D	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318182	1	06/02/2016 19:34	JW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N47-004A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
1,1,1-Trichloroethane	BRL	200		ug/L	224912	1	06/03/2016 13:05	JE
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
1,1,2-Trichloroethane	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
1,1-Dichloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
1,1-Dichloroethene	BRL	7.0		ug/L	224912	1	06/03/2016 13:05	JE
1,2,3-Trichloropropane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
1,2-Dichlorobenzene	BRL	600		ug/L	224912	1	06/03/2016 13:05	JE
1,2-Dichloroethane	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
1,2-Dichloropropane	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
1,4-Dichlorobenzene	BRL	75		ug/L	224912	1	06/03/2016 13:05	JE
2-Butanone	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
2-Hexanone	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
4-Methyl-2-pentanone	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Acetone	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Acrylonitrile	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Benzene	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
Bromochloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Bromodichloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Bromoform	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Bromomethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Carbon disulfide	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Carbon tetrachloride	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
Chlorobenzene	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Chloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Chloroform	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Chloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
cis-1,2-Dichloroethene	BRL	70		ug/L	224912	1	06/03/2016 13:05	JE
cis-1,3-Dichloropropene	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Dibromochloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Dibromomethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Ethylbenzene	BRL	700		ug/L	224912	1	06/03/2016 13:05	JE
Iodomethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Methylene chloride	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
Styrene	BRL	100		ug/L	224912	1	06/03/2016 13:05	JE
Tetrachloroethene	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
Toluene	BRL	1000		ug/L	224912	1	06/03/2016 13:05	JE
trans-1,2-Dichloroethene	BRL	100		ug/L	224912	1	06/03/2016 13:05	JE
trans-1,3-Dichloropropene	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N47-004A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Trichloroethene	BRL	5.0		ug/L	224912	1	06/03/2016 13:05	JE
Trichlorofluoromethane	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Vinyl acetate	BRL	10		ug/L	224912	1	06/03/2016 13:05	JE
Vinyl chloride	BRL	2.0		ug/L	224912	1	06/03/2016 13:05	JE
Xylenes, Total	BRL	10000		ug/L	224912	1	06/03/2016 13:05	JE
Surr: 4-Bromofluorobenzene	94.4	70.7-125		%REC	224912	1	06/03/2016 13:05	JE
Surr: Dibromofluoromethane	95.7	82.2-120		%REC	224912	1	06/03/2016 13:05	JE
Surr: Toluene-d8	100	81.8-120		%REC	224912	1	06/03/2016 13:05	JE

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N47-004B	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.204		ug/L	224743	1	06/02/2016 20:42	AW
1,2-Dibromoethane	BRL	0.051		ug/L	224743	1	06/02/2016 20:42	AW
Surr: 4-Bromofluorobenzene	99.1	64.9-131		%REC	224743	1	06/02/2016 20:42	AW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N47-004C	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					**(SW7470A)**			
Mercury	BRL	0.00200		mg/L	224776	1	06/02/2016 17:07	JR
APPENDIX I METALS SW6020B					**(SW3005A)**			
Antimony	BRL	0.00600		mg/L	224806	1	06/10/2016 07:10	JS
Arsenic	BRL	0.0500		mg/L	224806	1	06/10/2016 07:10	JS
Barium	BRL	2.00		mg/L	224806	1	06/10/2016 07:10	JS
Beryllium	BRL	0.00400		mg/L	224806	1	06/10/2016 07:10	JS
Cadmium	BRL	0.00500		mg/L	224806	1	06/10/2016 07:10	JS
Chromium	BRL	0.100		mg/L	224806	1	06/10/2016 07:10	JS
Cobalt	BRL	0.0100		mg/L	224806	1	06/10/2016 07:10	JS
Copper	BRL	0.0100		mg/L	224806	1	06/10/2016 07:10	JS
Lead	BRL	0.0150		mg/L	224806	1	06/10/2016 07:10	JS
Nickel	BRL	0.100		mg/L	224806	1	06/10/2016 07:10	JS
Selenium	BRL	0.0100		mg/L	224806	1	06/10/2016 07:10	JS
Silver	BRL	0.0500		mg/L	224806	1	06/10/2016 07:10	JS
Thallium	BRL	0.00200		mg/L	224806	1	06/10/2016 07:10	JS
Vanadium	BRL	0.0100		mg/L	224806	1	06/10/2016 07:10	JS
Zinc	BRL	0.0200		mg/L	224806	1	06/10/2016 07:10	JS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N47-004D	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318181	1	06/02/2016 12:27	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N47-005A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
1,1,1-Trichloroethane	BRL	200		ug/L	224912	1	06/03/2016 13:29	JE
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
1,1,2-Trichloroethane	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
1,1-Dichloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
1,1-Dichloroethene	BRL	7.0		ug/L	224912	1	06/03/2016 13:29	JE
1,2,3-Trichloropropane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
1,2-Dichlorobenzene	BRL	600		ug/L	224912	1	06/03/2016 13:29	JE
1,2-Dichloroethane	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
1,2-Dichloropropane	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
1,4-Dichlorobenzene	BRL	75		ug/L	224912	1	06/03/2016 13:29	JE
2-Butanone	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
2-Hexanone	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
4-Methyl-2-pentanone	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Acetone	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Acrylonitrile	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Benzene	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
Bromochloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Bromodichloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Bromoform	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Bromomethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Carbon disulfide	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Carbon tetrachloride	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
Chlorobenzene	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Chloroethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Chloroform	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Chloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
cis-1,2-Dichloroethene	BRL	70		ug/L	224912	1	06/03/2016 13:29	JE
cis-1,3-Dichloropropene	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Dibromochloromethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Dibromomethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Ethylbenzene	BRL	700		ug/L	224912	1	06/03/2016 13:29	JE
Iodomethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Methylene chloride	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
Styrene	BRL	100		ug/L	224912	1	06/03/2016 13:29	JE
Tetrachloroethene	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
Toluene	BRL	1000		ug/L	224912	1	06/03/2016 13:29	JE
trans-1,2-Dichloroethene	BRL	100		ug/L	224912	1	06/03/2016 13:29	JE
trans-1,3-Dichloropropene	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N47-005A	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Trichloroethene	BRL	5.0		ug/L	224912	1	06/03/2016 13:29	JE
Trichlorofluoromethane	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Vinyl acetate	BRL	10		ug/L	224912	1	06/03/2016 13:29	JE
Vinyl chloride	BRL	2.0		ug/L	224912	1	06/03/2016 13:29	JE
Xylenes, Total	BRL	10000		ug/L	224912	1	06/03/2016 13:29	JE
Surr: 4-Bromofluorobenzene	95.5	70.7-125		%REC	224912	1	06/03/2016 13:29	JE
Surr: Dibromofluoromethane	96.3	82.2-120		%REC	224912	1	06/03/2016 13:29	JE
Surr: Toluene-d8	100	81.8-120		%REC	224912	1	06/03/2016 13:29	JE

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N47-005B	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.202		ug/L	224743	1	06/02/2016 20:13	AW
1,2-Dibromoethane	BRL	0.050		ug/L	224743	1	06/02/2016 20:13	AW
Surr: 4-Bromofluorobenzene	100	64.9-131		%REC	224743	1	06/02/2016 20:13	AW

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N47-005C	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					**(SW7470A)**			
Mercury	BRL	0.00200		mg/L	224776	1	06/02/2016 17:09	JR
APPENDIX I METALS SW6020B					**(SW3005A)**			
Antimony	BRL	0.00600		mg/L	224806	1	06/10/2016 07:16	JS
Arsenic	BRL	0.0500		mg/L	224806	1	06/10/2016 07:16	JS
Barium	BRL	2.00		mg/L	224806	1	06/10/2016 07:16	JS
Beryllium	BRL	0.00400		mg/L	224806	1	06/10/2016 07:16	JS
Cadmium	BRL	0.00500		mg/L	224806	1	06/10/2016 07:16	JS
Chromium	BRL	0.100		mg/L	224806	1	06/10/2016 07:16	JS
Cobalt	BRL	0.0100		mg/L	224806	1	06/10/2016 07:16	JS
Copper	BRL	0.0100		mg/L	224806	1	06/10/2016 07:16	JS
Lead	BRL	0.0150		mg/L	224806	1	06/10/2016 07:16	JS
Nickel	BRL	0.100		mg/L	224806	1	06/10/2016 07:16	JS
Selenium	BRL	0.0100		mg/L	224806	1	06/10/2016 07:16	JS
Silver	BRL	0.0500		mg/L	224806	1	06/10/2016 07:16	JS
Thallium	BRL	0.00200		mg/L	224806	1	06/10/2016 07:16	JS
Vanadium	BRL	0.0100		mg/L	224806	1	06/10/2016 07:16	JS
Zinc	BRL	0.0200		mg/L	224806	1	06/10/2016 07:16	JS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 21-Jul-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Lab Order	1605N47	**Tag Number:**	
Project Name:	Loudon County Landfill (Phase II/IV)	**Collection Date:**	5/23/2016 9:00:00 AM
Lab ID:	1605N47-005D	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Inorganic Anions by IC E300.0								
Fluoride	BRL	4.00		mg/L	R318181	1	06/02/2016 12:42	JW

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

APPENDIX C

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #23

INORGANIC	TN REGULATORY LIMITS	3-23-84	6-3-84	**7-11-84	10-10-84	12-1-84	3-2-85	10-30-85	4-12-86	11-2-86	3-21-87	9-22-87	05-19-88	12-23-88	3-15-89	9-15-89	03-21-90	9-6-90	3-10-91	4-25-91	9-13-91	4-17-92	9-30-92	4-21-93	9-30-93	4-28-94	9-22-94	4-11-95	9-29-95	3-27-96	10-04-96	3-22-97	11-1-97	3-31-98	10-13-98	4-1-99	10-2-99	4-7-10	10-6-10	1-5-11	10-5-11	3-15-12	10-3-12	3-22-13	9-25-13	3-20-14	9-26-14	4-1-15	10-7-15	6-24-16	MW01 AVG	MW24 AVG
Antimony	6	1	1	1	1	1	1	1	4	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5.10	5.66
Arsenic	10	3.2	2	6.8	7.8	3.2	10	2	20	20	20	20	20	20	20	20	50	50	50	50	50	50	50	50	50	53	53	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	33.71	43.00
Barium	2000	143	10	300	100	50	40	57	63	40	50	33	60	50	39.1	39	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	1438.55	1566.45
Beryllium	4	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	7.64	7.02
Cadmium	5	4.4	5	6.6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.02	5.07
Chromium	100	27	10	42	32	12	15	10	10	10	10	10	10	10	10	10	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	73.90	86.67
Cobalt	NA	24	12	62	28	12	12	10	13	10	10	10	10	10	19	19	19	19	19	12	19	10	10	13	50.5	12.0	28.0	13.0	48.4	12.0	12.0	10.0	12.0	12.0	12.0	10	10	12	10	12	10	10	13	10	12	12	12	12	10	14.68	15.60
Copper	NA	43	10	150	160	28	10	10	25	10	10	10	10	10	20	10	10	12	20.4	10	12	10	13.6	18.0	12.0	26.4	19.0	23.6	10.0	43.8	50.0	50.0	10.0	12.0	12.0	13	10	10	10	10	12	10	10	12	10	13	12	12	10	20.93	17.87
Fluoride**	4	0.05	0.22	0.05	0.05	0.05	0.05	0.05	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	4	4	4	4	4	4	5	4.0	4.0	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.74	3.05
Lead	115	45	8.7	350	97	32	29	17	34	20	10	10	10	10	40	10	10	50	50	50	53	50	50	50	135	50	59.4	50.0	111.0	50.0	50.0	50.0	15.0	15.0	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	42.41	26.83
Mercury	2	0.2	*	0.65	0.2	0.2	0.4	0.2	0.2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.60	1.77
Nickel	100	33	10	100	57	23	20	12	20	10	10	10	23	50	50	11	100	100	100	100	100	100	100	100	100	100	100	120	120	100	100	100	120	120	100	100	100	100	120	100	100	100	120	100	100	100	100	76.25	139.25
Selenium	50	3	2	2	3	2	2	2	20	20	20	20	20	20	20	20	10	10	13	12	10	10	10	10	10	12	13	10	10	10	10	10	10	10	12	10	12	12	10	12	12	10	10	12	12	10	10	10.63	12.22
Silver	2120	8	6	8	6	6	6	6	5	5	5	5	5	5	5	5	5	5	5	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	36.85	43.02
Thallium	2	1	1	2.4	1	1	1	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.09	2.09
Vanadium	NA	25	10	78	43	15	13	10	16	10	10	10	23	20	10	10	10	13.3	19	10	10	10	14.6	13.0	15.6	13.0	15.3	13.0	24.1	12.0	10.0	10.0	10.0	19.0	13.0	13	13	10	12	10	12	13	10	10	13	13	10	10	10	13.65	21.76
Zinc	NA	170	30	420	240	95	50	164	114	70	50	50	190	150	24.4	54	55	69.1	20	27.1	47.6	53.6	14.6	131	46	68.0	53.6	71.3	33.6	156.0	28.6	23.9	47.0	43.6	20.0	20.1	23.0	29.0	56.8	23.0	21.3	20.0	20.0	23.0	30.0	30.0	30.0	30.0	24.4	68.83	199.83

† = TREATMENT TECHNIQUE ACTION LEVEL
‡ = NATIONAL SECONDARY DRINKING WATER STANDARD
*PARAMETER NOT TESTED FOR
**RESAMPLE DATE
***ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)

ORGANIC	3-23-84	6-03-84	**7-11-84	10-10-84	12-1-84	3-02-85	10-30-85	4-12-86	11-2-86	3-21-87	9-22-87	05-19-88	12-23-88	3-15-89	9-15-89	03-21-90	9-6-90	3-10-91	4-25-91	9-13-91	4-17-92	9-30-92	4-21-93	9-30-93	4-28-94	9-22-94	4-11-95	9-29-95	3-27-96	10-04-96	3-22-97	11-1-97	3-31-98	10-13-98	4-1-99	10-2-99	4-7-10	10-6-10	1-5-11	10-5-11	3-15-12	10-3-12	3-22-13	9-25-13	3-20-14	9-26-14	4-1-15	10-7-15	6-24-16
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chloro-Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

LOUDON COUNTY
BACKGROUND WELL
MONITORING WELL #4R

INORGANIC	TN REGULATORY LIMITS	11-2-95	12-13-95	12-19-95	12-10-96	3-21-97	10-10-97	05-18-98	11-5-98	3-16-99	6-18-99	03-23-00	2-10-01	4-25-01	9-18-01	4-17-02	9-23-02	4-21-03	9-30-03	4-22-04	9-22-04	4-11-05	9-29-05	3-27-06	10-04-06	1-3-07	3-22-07	11-1-07	3-27-08	6-25-08	9-23-08	10-2-08	10-13-08	4-2-09	10-2-09	4-7-10	10-5-10	1-6-11	10-5-11	3-15-12	10-7-12	3-21-13	9-25-13	3-25-14	9-24-14	4-1-15	10-7-15	3-25-16	MW-4R AVG.
Antimony	6	5	13	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	DRY	6	6	DRY	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5.65
Arsenic	10	130	40	60	50	20	20	20	30	20	20	50	50	50	50	50	50	50	50	50	50	50	50	DRY	50	50	DRY	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	48.00
Barium	2000	120	50	90	60	40	20	20	50	20.5	20	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	DRY	2000	2000	DRY	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	1859.45
Beryllium	4	54	10	43	25	14	4	4	11	4	4	4	4	4	4	4	4	4	4	4	4	4	4	DRY	4	4	DRY	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	7.02
Cadmium	5	6	5	5	7	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	DRY	5	5	DRY	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.07
Chromium	100	130	50	63	42	30	10	10	30	10	10	100	100	100	100	100	100	100	100	100	100	100	100	DRY	100	100	DRY	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	85.67
Cobalt	NA	70	33	50	30	20	10	10	20	10	10	10	10	10	10	10	10	10	10	10	10	10	20.6	DRY	10	10	DRY	50.6	10	10	10	10	10	50.1	13.0	10.0	10.0	14.0	10.0	10.0	10.0	13.3	10.0	10.0	13.0	28.6	10.0	12.0	15.60
Copper	NA	140	50	99	60	30	20	10	30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	DRY	10	10	DRY	14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	17.87
Fluoride	4	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	4	4	4	DRY	4	4	0.2	4.0	4.0	4.0	4.0	4.0	DRY	4	4	DRY	4	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.05
Lead	15	200	70	140	60	60	20	10	60	17.9	10	50	63.8	50	50	50	50	50	50	50	50	50	60.6	50.0	DRY	50	50	DRY	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	33.83
Mercury	2	1	1	1	1	1	1	1	1	1	0.5	2	2	2	2	2	2	2	2	2	2	2	2	DRY	2	2	DRY	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.77
Nickel	100	310	110	210	120	90	30	20	90	21.3	10	100	100	100	100	100	100	100	100	100	100	100	100	DRY	100	100	DRY	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100.25
Selenium	50	20	20	20	22	20	20	20	20	20	20	10	10	10	10	10	10	10	10	10	10	10	10	DRY	10	10	DRY	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	12.22
Silver	‡100	5	6	5	5	5	5	5	5	5	5	50	50	50	50	50	50	50	50	50	50	50	50	DRY	50	50	DRY	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	43.02
Thallium	2	18	9	17	9	6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	DRY	2	2	DRY	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3.09
Vanadium	NA	200	70	130	60	50	10	10	60	10	10	10	10	10	10	10	10	10	10	10	10	10	10	DRY	10	10	DRY	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	10.0	10.0	10.0	10.0	10.0	10.0	10.0	21.78
Zinc	NA	1950	700	1370	740	420	330	200	590	55	69	129	128	79.4	230.0	143.0	305.0	57.4	91.0	37.3	20.0	56.7	144.0	76.2	DRY	63.7	81.1	DRY	43.9	32.1	54.3	23.0	68.0	83.9	100.0	25.4	29.0	74.8	41.3	20.0	32.0	82.4	20.0	24.1	28.4	63.3	21.8	31.0	199.53

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
† = TREATMENT TECHNIQUE ACTION LEVEL
‡ = NATIONAL SECONDARY DRINKING WATER STANDARD
Note: Results from 11-2-95 to 3-27-08 were taken from MW-04. MW-04 was replaced by MW-4R.

ORGANIC	11-2-95	12-13-95	12-19-95	12-10-96	3-21-97	10-10-97	05-18-98	11-5-98	3-16-99	6-18-99	03-23-00	2-10-01	4-25-01	9-18-01	4-17-02	9-23-02	4-21-03	9-30-03	4-22-04	9-22-04	4-11-05	9-29-05	3-27-06	10-04-06	1-3-07	3-22-07	11-1-07	3-27-08	6-25-08	9-23-08	9-23-08	9-23-08	4-1-09	10-1-09	4-6-10	10-5-10	1-4-11	10-4-11	3-16-12	10-2-12	3-27-13	9-24-13	3-24-14	9-23-14	3-31-15	10-5-15	3-24-16
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
oform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ochloromethane; Chlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
...bromo-3-chloropropane, DBCP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl Isobutyl Ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	DRY	ND	ND	DRY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL 805

INORGANIC	TN REGULATORY LIMITS	2-10-01	4-25-01	6-13-01	9-18-01	4-17-02	9-30-02	4-21-03	9-30-03	4-28-04	9-22-04	4-11-05	9-29-05	3-27-06	10-04-06	3-22-07	11-1-07	3-27-08	10-13-08	4-1-09	10-2-09	4-7-10	10-6-10	10-6-10	1-5-11	10-5-11	3-15-12	10-3-12	3-28-13	9-25-13	3-25-14	9-24-14	4-1-15	10-7-15	5-25-16	MW-05 AVG.	MW-4R AVG.
Al	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6.00	5.96
Arsenic	10	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50.00	48.00
Barium	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000.00	1566.45
Beryllium	4	4	8.62	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4.14	7.02
Cadmium	5	5	5.35	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.01	5.07
Chromium	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100.00	86.67
Cobalt	NA	10	25.1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10.44	15.60
Copper	NA	10	11.5	10	10	21.4		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	13.8	10.51	17.67
Fluoride*	4	4	4	4	4	4	4	0.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.89	3.05
Lead	†15	50	77.4	50	50	50	50	50	50	50	50	50	50	50	50	50	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	31.25	38.83
Thallium	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.00	1.77
Nickel	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100.00	100.25
Selenium	50	10	10	50	50	50	50	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	14.71	12.22
Silver	‡100	50	50	10	10	10	10	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	45.29	40.02
Thallium	2	2	3.65	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.05	3.09
Vanadium	NA	10	10	10	10	27.1	17.7	10	10	10	11.9	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.79	21.78
Zinc	NA	258	693	361	260	360	288	231	20	20	195	91.4	109.0	116.0	61.2	64.7	138.0	39.9	91.0	88.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	25.6	40.2	112.09	189.93

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
† = TREATMENT TECHNIQUE ACTION LEVEL
‡ = NATIONAL SECONDARY DRINKING WATER STANDARD

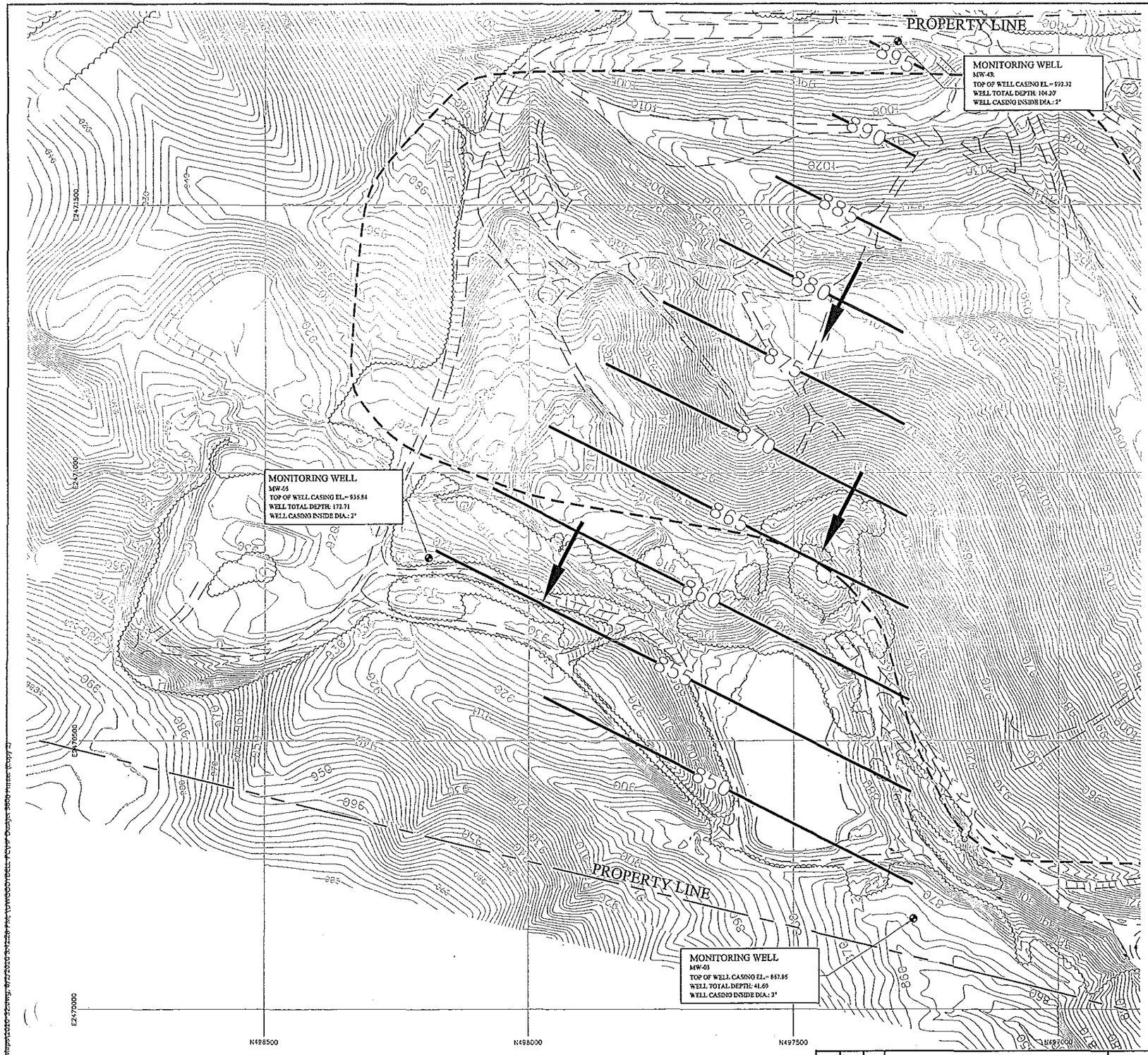
ORGANIC	2-10-01	4-25-01	6-13-01	9-18-01	4-17-02	9-30-02	4-21-03	9-30-03	4-28-04	9-22-04	4-11-05	9-29-05	3-27-06	10-04-06	3-22-07	11-1-07	3-27-08	10-13-08	4-1-09	10-1-09	4-6-10	10-5-10	10-5-10	1-4-11	10-4-11	3-14-12	10-2-12	3-27-13	9-24-13	3-24-14	9-23-14	3-31-15	10-6-15	5-24-16
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	18	ND	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M mide; Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M ride; Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M s bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX D

GROUNDWATER DATA
Matlock Bend Landfill (Phase II/IV)
May 24, 2016

Well No.	Elev. Of TOC	Depth to GW (ft below TOC)	Water Elevation	Contour Elevation	Distance	Hydraulic Conductivity	Effective Porosity (n)	Hydraulic Gradient	Average Linear Velocity		Directions
									ft/min	ft/day	
MW-03	867.86	19.43	848.43	850	60	1.20E-05	0.18	2.62E-02	1.74E-06	2.51E-03	NW
MW-4R*	992.32	96.51	895.81	895	25	1.90E-05	0.18	3.24E-02	3.42E-06	4.92E-03	NW
MW-05	936.84	82.44	854.40	855	20	2.20E-05	0.18	3.00E-02	3.67E-06	5.28E-03	NW

*-Hydraulic conductivity for MW-4R is from MW-04



LEGEND:

- PROPERTY BOUNDARY
- 880 WATER TABLE CONTOURS (INFERRED)
- 950 AERIAL INDEX CONTOUR
- AERIAL CONTOUR
- ROAD
- GROUNDWATER MONITORING WELL
- GROUNDWATER FLOW DIRECTION
- PERMITTED LIMITS OF WASTE

NOTES:

1. POTENTIOMETRIC CONTOURS DEVELOPED FROM WATER ELEVATIONS TAKEN MAY 24, 2016.
2. TOPOGRAPHIC CONTOURS SHOWN WERE PROVIDED BY SOUTHERN RESOURCES MAPPING CORP., NORTHPORT, ALABAMA, DATED AUGUST 25, 2015.

G.W. WELL NO.	WATER ELEV.
MW-03	848.43
MW-4R	895.81
MW-05	854.40

0' 100' 200' 300'

DATE	DRWN	CHKD	REVISION

2016 SEMI-ANNUAL (SPRING) GROUNDWATER POTENTIOMETRIC CONTOUR MAP

MATLOCK BEND LANDFILL-PHASE II / IV
LOUDON COUNTY, TENNESSEE

SANTEK ENVIRONMENTAL
659 25TH STREET NW
SUITE 159
CLEVELAND, TENNESSEE

SCALE: 1"=200'
DATE: 6/1/16
DRAWN BY: RH
CHECKED BY: RH
APPROVED BY: RV
FILE: 1610-S2
JOB NO: 200-1610

S-2
sheet number

LEACHATE

LEACHATE FIELD LOG

FIELD SAMPLING LOG	WELL NO: Leachate
Location: Loudon County Landfill	Site: Matlock Bend
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 5-24-16 (Time) 1602	Purge End: (Date) 5-24 (Time) 1605 HR
Purged by:	
Depth Measurement Ref. Point* N/A ft	Well Casing. ID: N/A

Equipment Used to Measure (Make, Model, etc)

DTW N/A pH YSI Cond. YSI T° YSI .

Measure Well TD: N/A (-)Orig. DTW: N/A (=) Wtr. Col. Thick: N/A .

(x) 2"=0.163 Gals./ft. (=) N/A Gals./Csg. Vol. (x) 3 Csg. Vol. (=) N/A Total Purge Gals.

GW elev. Ref. N/A ft.(-) DTW: N/A ft. = N/A ft.

Purge/Sample Method: Directly into bottles
Decon. Method: Field Appendix B
Purge Water Containerized? (No)

Average Purge Rate: N/A (gallons per minute)
Weather: Sunny (95 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1602	0	7.42	19378	24.2	771		

Turbidity at metals sample collection: 771 NTU's

Comments: _____

*All Depths in Feet below Ref. Point on Wellhead, Generally Top of Casing (TOC) DTW= Depth to Water

LEACHATE ANALYTICAL DATA

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

June 15, 2016

Robert Hudson
Santek Environmental Inc.
650 25th Street NW. Suite 100
Cleveland TN 37311

TEL: (423) 476-9160
FAX: (423) 479-1952

RE: Loudon County Landfill

Dear Robert Hudson: Order No: 1605N45

Analytical Environmental Services, Inc. received 1 samples on 5/27/2016 12:47:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-NELAC/Florida State Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, and Drinking Water Microbiology, effective 07/01/15-06/30/16.
-NELAC/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/15-06/30/16.
-NELAC/Texas Certificate No. T104704509-16-6 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 03/01/16-02/28/17.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

CRKanhai

Chantelle Kanhai
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1605A145

Date: 5-26-16 Page 1 of 1

COMPANY:	ADDRESS:
Santek Environmental Inc	650 25th St NW Ste 100, Cleveland, TN. 37311
PHONE: 423-303-7101	FAX:
SAMPLED BY: A. Howard, F. Ward	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	PRESERVATION (See codes) H+I	I	N	S	TN App Fixed (solid)	TN App Fixed (soil)	TN Appl Methyl	Fluoride	REMARKS	No # of Containers
1	Leachate	5-27-16	1602	X		GW	2	2	1	1						
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																

ANALYSIS REQUESTED

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	5-27-16/1247	1:	5/27/16 1247
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Loudon County landfill
PROJECT #:
SITE ADDRESS: 21712 Hwy 72 N, Loudon TN 37774
SEND REPORT TO: Robert Hudson
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT

Total # of Containers

Turnaround Time Request
- (X) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush (auth req.)
- ( ) Other

STATE PROGRAM (if any): TN
E-mail? (Y)/N: Fax? Y/N
DATA PACKAGE: I (II) III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
(CLIENT) FedEx UPS MAIL COURIER
GREYHOUND OTHER_____

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Client: Santek Environmental Inc.
Project: Loudon County Landfill
Lab ID: 1605N45

Case Narrative

Sample Receiving Nonconformance:

Both of the vials received for Appendix I analysis were received with headspace present as signified by >1/4 inch bubble present. We proceeded with the analysis per Robert Hudson on 5/31/16 via email.

The container submitted for Appendix I Metals analysis as received did not meet specified pH range for the requested test method of <2. Lab attempted to adjust pH at receipt using the maximum allowable amount of preservative, however, the required pH was not obtained. We proceeded with the analysis per Robert Hudson on 5/31/16 via email.

Inorganic Anions by IC Analysis by Method 300:

Due to sample matrix, sample 1605N45-001 required dilution during preparation and/or analysis resulting in elevated reporting limits.

Volatiles Organic Compounds Analysis by Method 8260B:

Due to sample matrix, sample 1605N45-001 required dilution during preparation and/or analysis resulting in elevated reporting limits.

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Santek Work Order Number 1605N45

Checklist completed by Christ Jost 5-27-16
Signature Date

Carrier name: FedEx __ UPS __ Courier __ Client ✓ US Mail __ Other _____

Shipping container/cooler in good condition?	Yes ✓	No __	Not Present __
Custody seals intact on shipping container/cooler?	Yes __	No __	Not Present ✓
Custody seals intact on sample bottles?	Yes __	No __	Not Present ✓
Container/Temp Blank temperature in compliance? (0°≤6°C)*	Yes ✓	No __	

Cooler #1 1.9°C Cooler #2 2.8°C Cooler #3 0.9°C Cooler #4 1.5°C Cooler#5 _____ Cooler #6 _____

Chain of custody present?	Yes ✓	No __
Chain of custody signed when relinquished and received?	Yes ✓	No __
Chain of custody agrees with sample labels?	Yes ✓	No __
Samples in proper container/bottle?	Yes ✓	No __
Sample containers intact?	Yes ✓	No __
Sufficient sample volume for indicated test?	Yes ✓	No __
All samples received within holding time?	Yes ✓	No __
Was TAT marked on the COC?	Yes ✓	No __
Proceed with Standard TAT as per project history?	Yes __	No __ Not Applicable ✓
Water - VOA vials have zero headspace?	No VOA vials submitted __	Yes __ No ✓
Water - pH acceptable upon receipt?	Yes __	No ✓ Not Applicable __

Adjusted? AM Checked by MP

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes ✓ No __

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

AES, Inc.
3080 Presidential Drive
Atlanta GA 30340

pH Adjustment Sheet

ABES Sample ID number	Test Requested	pH as Received	Required pH	Preservative Required	Lot # of Preservative	Amount Added mL or Pellets*	Final pH	Tech's Initials	Date	Time
160SN45-001C	6020 AI	6	1	HNO_3	MET-668-05	0.5 mL Pellets	6	PM	9/28	11:29
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				
						mL Pellets				

* Number of Pellets when adding NAOH

Analytical Environmental Services, Inc **Date:** 15-Jun-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	LEACHATE
Project Name:	Loudon County Landfill	**Collection Date:**	5/24/2016 4:02:00 PM
Lab ID:	1605N45-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.207		ug/L	224645	1	06/01/2016 08:06	AW
1,2-Dibromoethane	BRL	0.052		ug/L	224645	1	06/01/2016 08:06	AW
Surr: 4-Bromofluorobenzene	98.6	64.9-131		%REC	224645	1	06/01/2016 08:06	AW
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00200		mg/L	224855	1	06/03/2016 14:31	JR
Inorganic Anions by IC E300.0								
Fluoride	BRL	200		mg/L	R318180	50	06/02/2016 18:05	JW
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
1,1,1-Trichloroethane	BRL	2000		ug/L	224912	10	06/03/2016 15:45	AR
1,1,2,2-Tetrachloroethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
1,1,2-Trichloroethane	BRL	50		ug/L	224912	10	06/03/2016 15:45	AR
1,1-Dichloroethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
1,1-Dichloroethene	BRL	70		ug/L	224912	10	06/03/2016 15:45	AR
1,2,3-Trichloropropane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
1,2-Dichlorobenzene	BRL	6000		ug/L	224912	10	06/03/2016 15:45	AR
1,2-Dichloroethane	BRL	50		ug/L	224912	10	06/03/2016 15:45	AR
1,2-Dichloropropane	BRL	50		ug/L	224912	10	06/03/2016 15:45	AR
1,4-Dichlorobenzene	BRL	750		ug/L	224912	10	06/03/2016 15:45	AR
2-Butanone	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
2-Hexanone	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
4-Methyl-2-pentanone	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Acetone	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Acrylonitrile	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Benzene	BRL	50		ug/L	224912	10	06/03/2016 15:45	AR
Bromochloromethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Bromodichloromethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Bromoform	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Bromomethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Carbon disulfide	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Carbon tetrachloride	BRL	50		ug/L	224912	10	06/03/2016 15:45	AR
Chlorobenzene	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Chloroethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Chloroform	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Chloromethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
cis-1,2-Dichloroethene	BRL	700		ug/L	224912	10	06/03/2016 15:45	AR
cis-1,3-Dichloropropene	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Dibromochloromethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc Date: 15-Jun-16

Client:	Santek Environmental Inc.	**Client Sample ID:**	LEACHATE
Project Name:	Loudon County Landfill	**Collection Date:**	5/24/2016 4:02:00 PM
Lab ID:	1605N45-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Dibromomethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Ethylbenzene	BRL	7000		ug/L	224912	10	06/03/2016 15:45	AR
Iodomethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Methylene chloride	BRL	50		ug/L	224912	10	06/03/2016 15:45	AR
Styrene	BRL	1000		ug/L	224912	10	06/03/2016 15:45	AR
Tetrachloroethene	BRL	50		ug/L	224912	10	06/03/2016 15:45	AR
Toluene	BRL	10000		ug/L	224912	10	06/03/2016 15:45	AR
trans-1,2-Dichloroethene	BRL	1000		ug/L	224912	10	06/03/2016 15:45	AR
trans-1,3-Dichloropropene	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
trans-1,4-Dichloro-2-butene	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Trichloroethene	BRL	50		ug/L	224912	10	06/03/2016 15:45	AR
Trichlorofluoromethane	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Vinyl acetate	BRL	100		ug/L	224912	10	06/03/2016 15:45	AR
Vinyl chloride	BRL	20		ug/L	224912	10	06/03/2016 15:45	AR
Xylenes, Total	BRL	100000		ug/L	224912	10	06/03/2016 15:45	AR
Surr: 4-Bromofluorobenzene	92.5	70.7-125		%REC	224912	10	06/03/2016 15:45	AR
Surr: Dibromofluoromethane	110	82.2-120		%REC	224912	10	06/03/2016 15:45	AR
Surr: Toluene-d8	93.3	81.8-120		%REC	224912	10	06/03/2016 15:45	AR
APPENDIX I METALS SW6020B				(SW3005A)				
Antimony	0.00823	0.00600		mg/L	224806	10	06/10/2016 22:43	JS
Arsenic	0.116	0.100		mg/L	224806	10	06/10/2016 22:43	JS
Barium	0.687	0.200		mg/L	224806	10	06/10/2016 22:43	JS
Beryllium	BRL	0.00400		mg/L	224806	10	06/10/2016 08:00	JS
Cadmium	BRL	0.00500		mg/L	224806	10	06/10/2016 22:43	JS
Chromium	0.584	0.200		mg/L	224806	10	06/10/2016 22:43	JS
Cobalt	0.151	0.100		mg/L	224806	10	06/10/2016 22:43	JS
Copper	0.0883	0.0100		mg/L	224806	10	06/10/2016 22:43	JS
Lead	0.116	0.100		mg/L	224806	10	06/10/2016 22:43	JS
Nickel	0.618	0.400		mg/L	224806	10	06/10/2016 22:43	JS
Selenium	0.0697	0.0100		mg/L	224806	10	06/10/2016 22:43	JS
Silver	BRL	0.00500		mg/L	224806	10	06/10/2016 22:43	JS
Thallium	BRL	0.00200		mg/L	224806	10	06/10/2016 22:43	JS
Vanadium	0.158	0.100		mg/L	224806	10	06/10/2016 22:43	JS
Zinc	0.770	0.200		mg/L	224806	10	06/10/2016 22:43	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

LEACHATE CONTROL CHART

LOUDON COUNTY
LEACHATE

INORGANIC	APPENDIX I LIMITS	4-17-02	4-29-04	4-11-05	3-27-06	3-22-07	3-27-08	4-2-09	4-7-10	1-5-11	3-15-12	3-28-13	3-25-14	4-1-15	5-24-16	Leachate AVG
Antimony	6	6	6	6	6	6	6	6	60	6	6	8.75	60.00	6	8.23	14.07
Arsenic	50	50	224	168	79.3	50.7	50.0	50.0	500.0	50.0	50.0	69.7	500.0	69.6	116.0	144.81
Barium	2000	2000	2610	2790	2000	2000	2000	2000	20000	2000	2000	2000	2000	2000	687	3291.93
Beryllium	4	4	4	4	4	4	4	4	40	4	4	4	4	4	4	6.57
Cadmium	5	5	5	5	5	5	5	5	50	5	5	5	5	5	5	8.21
Chromium	100	100	106	145	100	100	100	100	1000	100	100	136	1000	230	584	278.64
Cobalt	NA	19.5	36.5	53.0	40.1	30.6	25.5	14.4	1000.0	37.2	10.0	87.1	100.0	82.6	151.0	120.54
Copper	NA	10	31.9	14.6	10	10	10	10	1000	10	10	15.9	100.0	25.3	88.3	96.14
Flouride*	4	4	4	4	4	4	80	80	40	400	40	40	400	200	200	107.14
Lead	†15	50	57.1	50	50	50	15	15	150	15	15	15	150	30.4	116.0	55.61
Mercury	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.00
Nickel	100	100	100	144	114	100	100	100	1000	100	100	258	1000	240	618	291.00
Selenium	10	10	10	10.5	20.2	12.2	21.3	10.0	100.0	12.8	10.0	14.1	100.0	13.1	69.7	29.56
Silver	50	50	50	50	50	50	50	50	500	50	50	50	500	50	5	111.07
Thallium	2	2	3.5	2	2	10.5	2.0	2.0	20.0	2.0	2.0	2.0	20.0	2.0	2.0	5.29
Vanadium	NA	10	55.4	34.3	14.2	14.2	11.4	10.0	100.0	25.5	10.0	48.5	108.0	101.0	158.0	50.04
Zinc	‡5000	44.4	918	209	66.5	32.5	66.8	67.5	420.0	176.0	191.0	1640.0	922.0	512.0	770.0	431.12

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
† = TREATMENT TECHNIQUE ACTION LEVEL
‡ = NATIONAL SECONDARY DRINKING WATER STANDARD
4/7/10 reporting limits for some constituents are elevated due to a high dilution factor

ORGANIC	4-17-02	4-29-04	4-11-05	3-27-06	3-22-07	3-27-08	4-2-09	4-7-10	1-5-11	3-15-12	3-28-13	3-25-14	4-1-15	5-24-16
Acetone	ND	360	140	25	130	160	230	1300	230	1500	2000	2000	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform; Tribomomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND	26	10	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	200	1900	420	3200	3500	3800	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	180	110	ND	37	11	ND	20	ND	ND	ND	ND	22	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND