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Cleveland, Tennessee 37311
(423) 303-7101

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January 11, 2019

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

RE: Groundwater Monitoring Report –2nd Semi-Annual Event
Matlock Bend Landfill
SNL #53-103-0203

Dear Mr. Mulligan:

Please find enclosed a copy of the groundwater monitoring report generated from the second semi-annual groundwater event of 2018 at the Matlock Bend Landfill. 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,

A handwritten signature in blue ink that reads "Robert Hudson".

Robert Hudson
Environmental Compliance Coordinator

Enclosure

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

**MATLOCK BEND LANDFILL – PHASE I & PHASE II/IV UPGRADE
GROUNDWATER MONITORING REPORT
2nd SEMI-ANNUAL EVENT - 2018**

SANTEK PROJECT NO. 200-1810.3



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

JANUARY 2019

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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, LLC (Santek) is submitting the groundwater monitoring report for the second semi-annual event for 2018 at the Matlock Bend Landfill. 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 six monitoring wells, three downgradient wells for Phase I, two downgradient wells for Phase II/IV, with one upgradient well for both phases. MW-4R is the upgradient well for Phase I and Phase II/IV. MW-01, MW-1A, and MW-02 are the downgradient wells for Phase I; MW-03 and MW-05 are the downgradient wells for Phase II/IV. In accordance with the TDEC groundwater report review dated September 30, 2016, Santek is now monitoring the facility as one unit with one upgradient monitoring location (MW-4R). However, once Phase I ends the post-closure care period on January 21, 2028, the downgradient monitoring wells associated with Phase I will no longer continue to be monitored. 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

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 37.4 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 November 13 & 14, 2018. All samples were analyzed for Appendix I constituents, as well as the required additional 14 parameters at the Phase I wells (MW-01, MW-1A, MW-02, and MW-03). All samples were submitted to AES for analysis. Field sampling logs are provided in Appendix A. Analytical results are provided in Appendix B.

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 #01, #1A, #02, #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 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. If there is no published TN Regulatory Limit, the EPA Region 4 Screening Level is used.

In accordance with the February 23, 2018 TDEC Groundwater Report Review and the March 7, 2018 email to Mr. Patrick Mulligan, Santek instructed AES to lower the reporting limits for Appendix I VOCs and metals to the lab's practical quantification limit (PQL). Using the revised reporting limits, Santek recalculated the background data for all groundwater wells. The revised control charts are provided in Appendix C.

3.2 Statistical Analysis Summary

MW-01

The control chart for MW-01 indicates barium is above the report limit and background well's average. However, the result of this constituent does not exceed the TN Regulatory Limit which establishes the groundwater protection standards at this well.

MW-1A

The control chart for MW-1A indicates barium is above the report limit and background well's average. However, the result of this constituent does not exceed the TN Regulatory limit which establishes the groundwater protection standards at this well.

The control chart for MW-1A indicates zinc is above the report limit. However, the result of this constituent does not exceed the background well's average which establishes the groundwater protection standards at this well.

MW-02

The control chart for MW-02 indicates barium, beryllium, cadmium and nickel are above the report limit and background well's average. However, the results of these constituents do not exceed the TN Regulatory Limit which establishes the groundwater protection standards at this well.

The control chart for MW-02 indicates copper and zinc are above the report limit and the background well's average. However, the results of these constituents do not exceed the EPA Region 4 Screening Level which establishes the groundwater protection standards at this well.

MW-03

The control chart for MW-03 indicates barium and nickel are above the report limit and background well's average. However, the results of these constituents do not exceed the TN Regulatory Limit which establishes the groundwater protection standards at this well.

The control chart for MW-03 indicates copper is above the report limit and the background well's average. However, the result of this constituent does not exceed the EPA Region 4 Screening Level which establishes the groundwater protection standards at this well.

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 groundwater protection standards at this well.

The control chart for MW-03 indicates cobalt is above the report limit, background well's average and EPA Region 4 Screening Level. However, this detection is attributed to cobalt levels in the soils at the Landfill. Appendix G contains an Alternate Source Demonstration using soil samples collected from the Borrow Area at the Landfill. Table 1 in Appendix G details the cobalt levels for MW-03 on 11/13/18, the leachate collected on 5/23/18, and the soil samples. The results indicate cobalt is naturally occurring in the soils approximately 247 times higher than the groundwater. Furthermore, cobalt is present in the leachate as well. However, the presence of this constituent in the leachate is attributable to the use of soils as daily and intermediate cover. Santek believes this report adequately identifies the source of cobalt being the site's natural soil. Therefore, no additional sampling and analysis is recommended for cobalt in MW-03.

MW-4R

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

MW-05

The control chart for MW-05 indicates barium 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

Phase I 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.

Phase II/IV 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:

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 1.15×10^{-3} ft/day at MW-02 to 2.34×10^{-3} ft/day at MW-01. 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 1.97×10^{-3} ft/day at MW-03 to 7.46×10^{-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 along with the Phase I and Phase II/IV limits 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.

APPENDIX A

EMServices

Environmental Monitoring Services, LLC
Phone (770) 823-7174

November 19, 2018

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 November 13th – 14th, 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 all wells. The pump used was attached to Teflon-lined tubing. The tubing and pump were rinsed after sampling each well. The bailers and new nylon string were discarded upon completion of the sampling event.

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 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 (MW-01, 1A, 03).

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 ($\pm 10\%$), Temperature ($\pm 1^{\circ}\text{C}$), 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 556 MPS which was calibrated each morning. Turbidity readings were collected using a Hach DR-820, which is cal-checked before use. The Hach DR-820 contains a factory calibration which is checked in-house using formazine standards.

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106A Hartwood Drive
Woodstock, GA 30189
inquiry@emservicesonline.com

Page 1 of 2

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

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-01
Date	11/13/2018
DTW ¹	4.00
DTB ²	45.00
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN App I VOC/Metals/F + NO ₃ , SO ₄ , TDS, NH ₃ , TOC, COD, CN, D. Mn, Ca, Fe, Mg, K, Na

Time	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC ($\mu\text{S}/\text{cm}$)	T ($^{\circ}\text{C}$)	Turbidity (NTU)
1035	0.68	0.00	6.00	422	10.4	530
1045	0.68	6.75	6.22	426	14.8	748
1050	0.68	10.25	6.25	431	14.9	516
1055	0.68	13.50	6.26	434	14.9	336
1100	0.68	16.75	6.27	439	15.0	333
1105	0.68	20.25	6.28	440	15.0	211

Metals sample collection if allowed to settle:

Date: 11/14/2018 Time: 0912 NTU: 8

Comments
Cloudy, no odor, allowed to settle overnight, metals collected using a poly bailer

Field Tech: B. Arbo, M. Young

¹ Depth to water as measured in feet from top of casing

² Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-1A
Date	11/13/2018
DTW ¹	7.49
DTB ²	38.00
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN App I VOC/Metals/F + NO ₃ , SO ₄ , TDS, NH ₃ , TOC, COD, CN, D. Mn, Ca, Fe, Mg, K, Na

DTW ¹	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
1225	0.00	0.00	5.01	758	14.2	50
1230	0.83	5.00	6.41	777	16.5	38
1233	0.83	7.50	6.43	810	16.7	36
1236	0.83	10.00	6.45	817	16.7	40
1239	0.83	12.50	6.48	818	16.7	40
1242	0.83	15.00	6.48	818	16.7	39

Metals sample collection if allowed to settle:

Date: 11/14/2018 Time: 0858 NTU: 6

Comments

Slightly cloudy, no odor, allowed to settle overnight, metals collected using a poly bailer

Field Tech: B. Arbo, M. Young

¹ Depth to water as measured in feet from top of casing

² Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-02
Date	11/13/2018
DTW ¹	11.91
DTB ²	43.10
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN App I VOC/Metals/F + NO ₃ , SO ₄ , TDS, NH ₃ , TOC, COD, CN, D. Mn, Ca, Fe, Mg, K, Na

DTW ¹	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
1136	0.00	0.00	6.74	195	12.7	51
1148	1.05	5.25	4.62	59	15.4	10
1154	1.05	7.75	4.66	60	15.7	4
1200	1.05	10.25	4.61	61	15.6	0
1206	1.05	12.75	4.62	61	15.6	0
1212	1.05	15.25	4.62	60	15.6	0

Metals sample collection if allowed to settle:

Date: _____ Time: _____ NTU: _____

Comments
Clear, no odor

Field Tech: B. Arbo, M. Young

¹ Depth to water as measured in feet from top of casing

² Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-03
Date	11/13/2018
DTW ¹	13.27
DTB ²	41.60
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN App I VOC/Metals/F + NO ₃ , SO ₄ , TDS, NH ₃ , TOC, COD, CN, D. Mn, Ca, Fe, Mg, K, Na

DTW ¹	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
1328	0.00	0.00	7.61	367	11.6	755
1332	1.00	4.75	5.85	314	11.4	10

Metals sample collection if allowed to settle:

Date: _____ Time: _____ NTU: _____

Comments
Clear, slight odor, purged dry

Field Tech: B. Arbo, M. Young

¹ Depth to water as measured in feet from top of casing

² Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Sample ID	Equipment Blank
Date / Time	11/13/18 15:35
Sample Method	Directly into bottles
Parameters	TN Appendix I VOCs / Metals

Comments

DI Water provided by AES

Field Tech: B. Arbo, M. Young

EM Services

Environmental Monitoring Services, LLC

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Date	11/13/2018

Well ID	TOC Elevation ¹	DTW ²	Water Level FMSL
MW-01	830.87	4.00	826.87
MW-1A	805.13	7.49	797.64
MW-02	825.20	11.91	813.29

Well	TOC Elevation ¹	DTW ²	Water Level FMSL
MW-03	867.86	13.27	854.59
MW-4R	992.32	102.98	889.34
MW-05	936.84	100.23	836.61

1 Elevation of Reference Point on Wellhead, Generally Top of Casing

2 Measured in feet from Top of Casing

EMServices

Environmental Monitoring Services, LLC
Phone (770) 823-7174

November 19, 2018

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 November 13th and 14th, 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 and 05 and a disposable poly bailer for purging well MW-4R. The pump used was attached to Teflon-lined tubing. The tubing and pump were rinsed after sampling the well. The disposable bailer and nylon string were discarded upon completion of the sampling event.

The wells were sampled using the same pump or bailer 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 overnight, but less than 24 hours (MW-03, 4R).

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 ($\pm 10\%$), Temperature ($\pm 1^{\circ}\text{C}$), 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 cal-checked prior to use. The Hach DR-820 contains a factory calibration which is checked in-house using formazine standards.

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Page 1 of 2

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 delivered via lab courier 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

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-03
Date	11/13/2018
DTW ¹	13.27
DTB ²	41.60
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN App I VOC/Metals/F + NO ₃ , SO ₄ , TDS, NH ₃ , TOC, COD, CN, D. Mn, Ca, Fe, Mg, K, Na

DTW ¹	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
1328	0.00	0.00	7.61	367	11.6	755
1332	1.00	4.75	5.85	314	11.4	10

Metals sample collection if allowed to settle:

Date: _____ Time: _____ NTU: _____

Comments
Clear, slight odor, purged dry

Field Tech: B. Arbo, M. Young

¹ Depth to water as measured in feet from top of casing
² Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-4R
Date	11/13/2018
DTW ¹	102.98
DTB ²	106.50
Purge/Sample Method	Disposable Bailer
Decon Method	Field Appendix B
Parameters	TN Appendix I VOCs / Metals / F

DTW ¹	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (μ S/cm)	T (°C)	Turbidity (NTU)
1515	-	0.00	7.20	222	13.8	29
1525	-	0.75	6.94	225	13.6	430

Metals sample collection if allowed to settle:

Date: 11/14/2018 Time: 0935 NTU: 22

Comments
Cloudy, no odor, purged dry, allowed to settle overnight; Dissolved metals sample collected because turbidity was greater than 10

Field Tech: B. Arbo, M. Young

¹ Depth to water as measured in feet from top of casing

² Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Sample ID	MW-05
Date	11/13/2018
DTW ¹	100.23
DTB ²	172.71
Purge/Sample Method	Stainless Steel Submersible Pump
Decon Method	Field Appendix B
Parameters	TN Appendix I VOCs / Metals / F

DTW ¹	Purge Rate (gpm)	Actual Volume (gallons)	pH	SC (µS/cm)	T (°C)	Turbidity (NTU)
1225	0.00	0.00	6.72	767	10.1	0
1230	0.80	12.00	7.60	239	16.2	0
1233	0.80	17.75	7.60	238	16.3	0
1236	0.80	23.75	7.62	239	16.3	0
1239	0.80	25.75	7.60	238	16.2	0
1242	0.80	35.50	7.60	238	16.3	0

Metals sample collection if allowed to settle:

Date: _____ Time: _____ NTU: _____

Comments
Clear, no odor

Field Tech: B. Arbo, M. Young

¹ Depth to water as measured in feet from top of casing

² Depth to bottom measured in feet from top of casing

EM Services

Environmental Monitoring Services, LLC

Field Data Sheet

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Sample ID	Equipment Blank
Date / Time	11/13/18 15:35
Sample Method	Directly into bottles
Parameters	TN Appendix I VOCs / Metals

Comments

DI Water provided by AES

Field Tech: B. Arbo, M. Young

EM Services

Environmental Monitoring Services, LLC

Client	Santek Environmental
Site	Loudon County (Matlock Bend) Landfills
Date	11/13/2018

Well ID	TOC Elevation ¹	DTW ²	Water Level FMSL
MW-01	830.87	4.00	826.87
MW-1A	805.13	7.49	797.64
MW-02	825.20	11.91	813.29

Well	TOC Elevation ¹	DTW ²	Water Level FMSL
MW-03	867.86	13.27	854.59
MW-4R	992.32	102.98	889.34
MW-05	936.84	100.23	836.61

1 Elevation of Reference Point on Wellhead, Generally Top of Casing

2 Measured in feet from Top of Casing

APPENDIX B



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

December 20, 2018

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

RE: Loudon Co Landfill (Matlock Bend) Landfill

Dear Robert Hudson:

Order No: 1811C88

Analytical Environmental Services, Inc. received 8 samples on November 14, 2018 12:50 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:

-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/18-06/30/19.

State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/18-06/30/19 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.

-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 11/01/19.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Chris Pafford
Project Manager

Revision 12/20/2018



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

3080 Presidential Drive Atlanta, GA 30340-3704

AES

Phone: (770) 457-8177 / Toll-Free: (800) 972-4889 / Fax: (770) 457-8188

Work Order: 1811C88

CHAIN OF CUSTODY

Date: 11/14/18

Page 1 of 1

COMPANY: <i>Santek Environmental Inc.</i>		ADDRESS: 650 25th St NW Ste 100 Cleveland, TN 37311		ANALYSIS REQUESTED										Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.	Number of Containers		
PHONE: 423/303-7101	EMAIL:			APL	APL (800)	APL (Soil)	APL (Methanol)	Diss Mn	OD, NH ₃	TDS	F, Cl, Na, S, Si	CN	TDS				
SAMPLED BY: T.S. ARBO/m. Young		SIGNATURE: <i>Brennally AAR</i>		SAMPLED:		DATE	TIME	GRAB	COMPOSITE	MATRIX (see codes)	PRESERVATION (see codes)						REMARKS
#	SAMPLE ID		H	I	N	F	S+I	I	NaOH	Si							
1	MW-01		11/13/18	1105	X	GW	2	2	1	1	1	1	1	2	11		
2	L		11/14/18	0912	X	GW			1						1		
3	MW-1A		11/13/18	1242	X	GW	2	2	1	1	1	1	1	2	11		
4	L		11/14/18	0858	X	GW			1						1		
5	MW-02		11/13/18	1212	X	GW	2	2	1	1	1	1	1	2	12		
6	MW-03		11/13/18	1332	X	GW	2	2	1	1	1	1	1	2			
7	Equipment Blank		11/13/18	1535	X	W	2	2	1	1	1	1	1	2			
8																	
9																	
10																	
11																	
12																	
13																	
14																	
RELINQUISHED BY:		DATE/TIME:	RECEIVED BY:		DATE/TIME:	PROJECT INFORMATION										RECEIPT	
<i>Brennally AAR</i>		11/14/18 12:50	<i>J. McKey</i>		11/14/18 12:50	PROJECT NAME: <i>London Co Landfill (Matlock Bend) Landfill</i>										Total # of Containers	60
2.			3.			PROJECT #: _____										Turnaround Time (TAT) Request	
3.			3.			SITE ADDRESS: 27112 HWY 72N <i>London, TN 37774</i>										<input checked="" type="checkbox"/> Standard 5 Business Days	
SEND REPORT TO: <i>Robert Hudson</i>															<input type="checkbox"/> 2 Business Day Rush		
															<input type="checkbox"/> Next Business Day Rush		
															<input type="checkbox"/> Same-Day Rush (auth req.)		
															<input type="checkbox"/> Other _____		
SPECIAL INSTRUCTIONS/COMMENTS:															INVOICE TO: (IF DIFFERENT FROM ABOVE)		
															QUOTE #: _____ PO#: _____		
															STATE PROGRAM (if any): _____		
															E-mail? <input checked="" type="checkbox"/> Fax? <input type="checkbox"/>		
															DATA PACKAGE: I <input type="checkbox"/> II <input checked="" type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/>		
Submission of samples to the laboratory constitutes acceptance of AES's Terms & Conditions. Samples received after 3PM or on Saturday are considered as received the following business day. If no TAT is marked on COC, AES will proceed with standard TAT. Samples are disposed of 30 days after completion of report unless other arrangements are made.																	

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

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
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Client: Santek Waste Services, LLC
Project: Loudon Co Landfill (Matlock Bend) Landfill
Lab ID: 1811C88

Case Narrative

Micro Extractable VOCs Analysis by Method 8011:

Matrix spike duplicate analyses were not performed with Batch 270283 due to insufficient sample volume.



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

December 20, 2018

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

RE: Loudon County (Matlock Bend) Landfill

Dear Robert Hudson:

Order No: 1811C87

Analytical Environmental Services, Inc. received 6 samples on November 14, 2018 12:50 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:

-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/18-06/30/19.

State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/18-06/30/19 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.

-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 11/01/19.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Chris Pafford

Project Manager

Revision 12/20/2018



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

3080 Presidential Drive Atlanta, GA 30340-3704

AES Phone: (770) 457-8177 / Toll-Free: (800) 972-4889 / Fax: (770) 457-8188

Work Order: 1811C87

CHAIN OF CUSTODY

Date: 11/14/18

Page 1 of 1

COMPANY: Santek Environmental Inc		ADDRESS: 650 25th St NW Ste 100 Cleveland, TN 37311		ANALYSIS REQUESTED								Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.	Number of Containers				
PHONE: 423/303-7101	EMAIL:			TN APP/ Volatiles	TN APP VOC (solid)	TN APP Metals/ ICP	TN APP Fluoride	TN APP Dissolved metals									
SAMPLED BY: B. A. B. / M. Young	SIGNATURE: <i>B. A. B. / M. Young</i>	SAMPLED:		GRAB	COMPOSITE	MATRIX (see codes)	PRESERVATION (see codes)								REMARKS		
#	SAMPLE ID	DATE	TIME				H	I	N	I	N						
1	MW-03	11/13/18	1332	X		GW	2	2	1	1					Shared w/Phase 1	6	
2	MW-42	11/13/18	1525	X		GW	2	2	1	1	3					6	
3	6	11/14/18	0935	X		GW			1							1	
4	MW-05	11/13/18	1507	X		GW	2	2	1	1						6	
5	Equipment Blank	11/13/18	1535	X		W	2	2	1	1					Shared w/phase 1	6	
6	Trip Blank	11/13/18	0800	X		W	2	2	1	1					Shared w/ phase 1	6	
7	MW-4R	11/14/18	0941	X		GW				1						1	
8																	
9															Pending Total Met 15 results		
10																	
11																	
12																	
13																	
14																	
RELINQUISHED BY:		DATE/TIME:	RECEIVED BY:		DATE/TIME:	PROJECT INFORMATION								RECEIPT			
<i>B. A. B. / M. Young</i>		11/14/18 12:50	<i>J. M. S.</i>		11/14/18 12:50	PROJECT NAME: London County (Matlock Bend) Landfill								Total # of Containers	30		
2.		2.	3.		3.	PROJECT #: SITE ADDRESS: 21712 Hwy 72N, London, TN 37774								Turnaround Time (TAT) Request			
3.		3.				SEND REPORT TO: Robert Anderson								<input checked="" type="checkbox"/> Standard 5 Business Days			
						INVOICE TO: (IF DIFFERENT FROM ABOVE)								<input type="checkbox"/> 2 Business Day Rush			
														<input type="checkbox"/> Next Business Day Rush			
														<input type="checkbox"/> Same-Day Rush (auth req.)			
														<input type="checkbox"/> Other _____			
						QUOTE #: PO#:								STATE PROGRAM (if any): TN			
														E-mail? <input checked="" type="checkbox"/> Fax? <input type="checkbox"/>			
														DATA PACKAGE: I <input type="checkbox"/> II <input checked="" type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/>			
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Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water WW = Waste Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify)

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
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Client: Santek Waste Services, LLC
Project: Loudon County (Matlock Bend) Landfill
Lab ID: 1811C87

Case Narrative

Micro Extractable VOCs Analysis by Method 8011:

Matrix spike duplicate analyses were not performed with Batch 270283 due to insufficient sample volume.

Analytical Environmental Services, Inc

Date: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: MW-01
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/13/2018 11:05:00 AM
Lab ID: 1811C88-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	11.2	1.00		mg/L	R385058	1	11/19/2018 17:47	SK
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	303	1		mg/L	270438	1	11/16/2018 15:00	RH
Nitrogen, Ammonia (as N) E350.1								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	270253	1	11/15/2018 09:31	JM
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.202		ug/L	270283	1	11/16/2018 12:37	HB
1,2-Dibromoethane	BRL	0.051		ug/L	270283	1	11/16/2018 12:37	HB
Surrogate: 4-Bromofluorobenzene	105	72.9-137		%REC	270283	1	11/16/2018 12:37	HB
Inorganic Anions by IC EPA 300.0								
Chloride	23.9	1.00		mg/L	R384738	1	11/14/2018 19:48	GO
Fluoride	BRL	1.00		mg/L	R384738	1	11/14/2018 19:48	GO
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R384738	1	11/14/2018 19:48	GO
Sulfate	4.23	1.00		mg/L	R384738	1	11/14/2018 19:48	GO
Dissolved Metals by ICP/MS SW6020B								
Manganese	BRL	10.0		ug/L	270411	1	11/19/2018 17:17	KT
Cyanide SW9014								
Cyanide, Total	BRL	0.200		mg/L	270595	1	11/21/2018 16:45	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	27.3	10.0		mg/L	R385003	1	11/20/2018 14:00	RH
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,1,1-Trichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,1,2-Trichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,1-Dichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,1-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,2,3-Trichloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,2-Dibromoethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,2-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,2-Dichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
1,2-Dichloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM

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: 20-Dec-18

Client:	Santek Waste Services, LLC	Client Sample ID:	MW-01
Project Name:	Loudon Co Landfill (Matlock Bend) Landfill	Collection Date:	11/13/2018 11:05:00 AM
Lab ID:	1811C88-001	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,4-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
2-Butanone	BRL	50		ug/L	270314	1	11/15/2018 15:36	OM
2-Hexanone	BRL	10		ug/L	270314	1	11/15/2018 15:36	OM
4-Methyl-2-pentanone	BRL	10		ug/L	270314	1	11/15/2018 15:36	OM
Acetone	BRL	50		ug/L	270314	1	11/15/2018 15:36	OM
Acrylonitrile	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Benzene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Bromochloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Bromodichloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Bromoform	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Bromomethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Carbon disulfide	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Carbon tetrachloride	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Chlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Chloroethane	BRL	10		ug/L	270314	1	11/15/2018 15:36	OM
Chloroform	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Chloromethane	BRL	10		ug/L	270314	1	11/15/2018 15:36	OM
cis-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
cis-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Dibromochloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Dibromomethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Ethylbenzene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Iodomethane	BRL	10		ug/L	270314	1	11/15/2018 15:36	OM
m,p-Xylene	BRL	10		ug/L	270314	1	11/15/2018 15:36	OM
Methylene chloride	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
o-Xylene	BRL	10		ug/L	270314	1	11/15/2018 15:36	OM
Styrene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Tetrachloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Toluene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
trans-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
trans-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	270314	1	11/15/2018 15:36	OM
Trichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Trichlorofluoromethane	BRL	5.0		ug/L	270314	1	11/15/2018 15:36	OM
Vinyl acetate	BRL	10		ug/L	270314	1	11/15/2018 15:36	OM
Vinyl chloride	BRL	2.0		ug/L	270314	1	11/15/2018 15:36	OM
Surr: 4-Bromofluorobenzene	97.4	68-127	%REC		270314	1	11/15/2018 15:36	OM
Surr: Dibromofluoromethane	97	84.4-122	%REC		270314	1	11/15/2018 15:36	OM
Surr: Toluene-d8	98.3	80.1-116	%REC		270314	1	11/15/2018 15:36	OM

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: MW-01
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/14/2018 9:12:00 AM
Lab ID: 1811C88-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020B								
(SW3005A)								
Calcium	47.8	0.100		mg/L	270256	1	11/15/2018 20:36	JW
Iron	0.126	0.100		mg/L	270256	1	11/15/2018 20:36	JW
Magnesium	28.3	0.100		mg/L	270256	1	11/15/2018 20:36	JW
Potassium	3.28	0.100		mg/L	270256	1	11/15/2018 20:36	JW
Sodium	12.1	0.500		mg/L	270256	1	11/16/2018 14:42	JW
Mercury, Total SW7470A								
(SW7470A)								
Mercury	BRL	0.00050		mg/L	270402	1	11/19/2018 14:09	CD
APPENDIX I METALS SW6020B								
(SW3005A)								
Antimony	BRL	0.00150		mg/L	270256	1	11/15/2018 20:36	KT
Arsenic	BRL	0.00250		mg/L	270256	1	11/15/2018 20:36	KT
Barium	0.0504	0.0100		mg/L	270256	1	11/15/2018 20:36	KT
Beryllium	BRL	0.00100		mg/L	270256	1	11/15/2018 20:36	KT
Cadmium	BRL	0.000700		mg/L	270256	1	11/15/2018 20:36	KT
Chromium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:36	KT
Cobalt	BRL	0.00500		mg/L	270256	1	11/15/2018 20:36	KT
Copper	BRL	0.00200		mg/L	271795	1	12/19/2018 15:50	JW
Lead	BRL	0.00100		mg/L	270256	1	11/15/2018 20:36	KT
Nickel	BRL	0.00500		mg/L	270256	1	11/15/2018 20:36	KT
Selenium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:36	KT
Silver	BRL	0.00100		mg/L	270256	1	11/15/2018 20:36	KT
Thallium	BRL	0.000500		mg/L	270256	1	11/15/2018 20:36	KT
Vanadium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:36	KT
Zinc	BRL	0.0100		mg/L	270256	1	11/15/2018 20:36	KT

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: MW-1A
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/13/2018 12:42:00 PM
Lab ID: 1811C88-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	15.1	1.00		mg/L	R385058	1	11/19/2018 18:58	SK
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	532	1		mg/L	270438	1	11/16/2018 15:00	RH
Nitrogen, Ammonia (as N) E350.1				(E350.1)				
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	270253	1	11/15/2018 09:33	JM
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.201		ug/L	270283	1	11/16/2018 13:05	HB
1,2-Dibromoethane	BRL	0.050		ug/L	270283	1	11/16/2018 13:05	HB
Surr: 4-Bromofluorobenzene	109	72.9-137		%REC	270283	1	11/16/2018 13:05	HB
Inorganic Anions by IC EPA 300.0								
Chloride	90.2	10.0		mg/L	R384738	10	11/14/2018 23:50	GO
Fluoride	BRL	1.00		mg/L	R384738	1	11/14/2018 20:03	GO
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R384738	1	11/14/2018 20:03	GO
Sulfate	30.5	1.00		mg/L	R384738	1	11/14/2018 20:03	GO
Dissolved Metals by ICP/MS SW6020B								
Manganese	BRL	10.0		ug/L	270411	1	11/19/2018 17:20	KT
Cyanide SW9014								
Cyanide, Total	BRL	0.200		mg/L	270595	1	11/21/2018 16:45	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R385003	1	11/20/2018 14:00	RH
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,1,1-Trichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,1,2-Trichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,1-Dichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,1-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,2,3-Trichloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,2-Dibromoethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,2-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,2-Dichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
1,2-Dichloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM

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

Client: Santek Waste Services, LLC	Client Sample ID: MW-1A
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/13/2018 12:42:00 PM
Lab ID: 1811C88-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,4-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
2-Butanone	BRL	50		ug/L	270314	1	11/15/2018 16:27	OM
2-Hexanone	BRL	10		ug/L	270314	1	11/15/2018 16:27	OM
4-Methyl-2-pentanone	BRL	10		ug/L	270314	1	11/15/2018 16:27	OM
Acetone	BRL	50		ug/L	270314	1	11/15/2018 16:27	OM
Acrylonitrile	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Benzene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Bromochloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Bromodichloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Bromoform	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Bromomethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Carbon disulfide	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Carbon tetrachloride	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Chlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Chloroethane	BRL	10		ug/L	270314	1	11/15/2018 16:27	OM
Chloroform	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Chloromethane	BRL	10		ug/L	270314	1	11/15/2018 16:27	OM
cis-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
cis-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Dibromochloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Dibromomethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Ethylbenzene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Iodomethane	BRL	10		ug/L	270314	1	11/15/2018 16:27	OM
m,p-Xylene	BRL	10		ug/L	270314	1	11/15/2018 16:27	OM
Methylene chloride	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
o-Xylene	BRL	10		ug/L	270314	1	11/15/2018 16:27	OM
Styrene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Tetrachloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Toluene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
trans-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
trans-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	270314	1	11/15/2018 16:27	OM
Trichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Trichlorofluoromethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:27	OM
Vinyl acetate	BRL	10		ug/L	270314	1	11/15/2018 16:27	OM
Vinyl chloride	BRL	2.0		ug/L	270314	1	11/15/2018 16:27	OM
Surr: 4-Bromofluorobenzene	94.9	68-127	%REC		270314	1	11/15/2018 16:27	OM
Surr: Dibromofluoromethane	97.4	84.4-122	%REC		270314	1	11/15/2018 16:27	OM
Surr: Toluene-d8	98.2	80.1-116	%REC		270314	1	11/15/2018 16:27	OM

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: MW-1A
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/14/2018 8:58:00 AM
Lab ID: 1811C88-004	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020B								
Calcium	76.8	0.200		mg/L	270256	2	11/16/2018 19:47	JW
Iron	BRL	0.100		mg/L	270256	1	11/15/2018 20:39	JW
Magnesium	28.9	0.100		mg/L	270256	1	11/15/2018 20:39	JW
Potassium	14.4	0.100		mg/L	270256	1	11/15/2018 20:39	JW
Sodium	39.6	0.500		mg/L	270256	1	11/16/2018 14:45	JW
Mercury, Total SW7470A								
Mercury	BRL	0.00050		mg/L	270402	1	11/19/2018 14:59	CD
APPENDIX I METALS SW6020B								
(SW3005A)								
Antimony	BRL	0.00150		mg/L	270256	1	11/15/2018 20:39	KT
Arsenic	BRL	0.00250		mg/L	270256	1	11/15/2018 20:39	KT
Barium	0.0995	0.0100		mg/L	270256	1	11/15/2018 20:39	KT
Beryllium	BRL	0.00100		mg/L	270256	1	11/15/2018 20:39	KT
Cadmium	BRL	0.000700		mg/L	270256	1	11/15/2018 20:39	KT
Chromium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:39	KT
Cobalt	BRL	0.00500		mg/L	270256	1	11/15/2018 20:39	KT
Copper	BRL	0.00200		mg/L	271795	1	12/19/2018 16:16	JW
Lead	BRL	0.00100		mg/L	270256	1	11/15/2018 20:39	KT
Nickel	BRL	0.00500		mg/L	270256	1	11/15/2018 20:39	KT
Selenium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:39	KT
Silver	BRL	0.00100		mg/L	270256	1	11/15/2018 20:39	KT
Thallium	BRL	0.000500		mg/L	270256	1	11/15/2018 20:39	KT
Vanadium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:39	KT
Zinc	0.0140	0.0100		mg/L	270256	1	11/15/2018 20:39	KT

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

Client:	Santek Waste Services, LLC	Client Sample ID:	MW-02					
Project Name:	Loudon Co Landfill (Matlock Bend) Landfill	Collection Date:	11/13/2018 12:12:00 PM					
Lab ID:	1811C88-005	Matrix:	Groundwater					
Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	2.87	1.00		mg/L	R385058	1	11/19/2018 19:15	SK
Total Metals by ICP/MS SW6020B								
Calcium	3.60	0.100		mg/L	270256	1	11/15/2018 20:42	JW
Iron	0.327	0.100		mg/L	270256	1	11/15/2018 20:42	JW
Magnesium	2.67	0.100		mg/L	270256	1	11/15/2018 20:42	JW
Potassium	2.94	0.100		mg/L	270256	1	11/15/2018 20:42	JW
Sodium	3.23	0.500		mg/L	270256	1	11/16/2018 14:48	JW
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	72	1		mg/L	270438	1	11/16/2018 15:00	RH
Nitrogen, Ammonia (as N) E350.1								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	270253	1	11/15/2018 09:35	JM
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.198		ug/L	270283	1	11/16/2018 13:34	HB
1,2-Dibromoethane	BRL	0.049		ug/L	270283	1	11/16/2018 13:34	HB
Surr: 4-Bromofluorobenzene	113	72.9-137		%REC	270283	1	11/16/2018 13:34	HB
Mercury, Total SW7470A								
Mercury	BRL	0.00050		mg/L	270402	1	11/19/2018 15:02	CD
Inorganic Anions by IC EPA 300.0								
Chloride	2.78	1.00		mg/L	R384738	1	11/14/2018 20:19	GO
Fluoride	BRL	1.00		mg/L	R384738	1	11/14/2018 20:19	GO
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R384738	1	11/14/2018 20:19	GO
Sulfate	BRL	1.00		mg/L	R384738	1	11/14/2018 20:19	GO
Dissolved Metals by ICP/MS SW6020B								
Manganese	134	10.0		ug/L	270411	1	11/19/2018 17:33	KT
Cyanide SW9014								
Cyanide, Total	BRL	0.200		mg/L	270595	1	11/21/2018 16:45	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R385003	1	11/20/2018 14:00	RH
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,1,1-Trichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM

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: 20-Dec-18

Client:	Santek Waste Services, LLC	Client Sample ID:	MW-02
Project Name:	Loudon Co Landfill (Matlock Bend) Landfill	Collection Date:	11/13/2018 12:12:00 PM
Lab ID:	1811C88-005	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B								
							(SW5030B)	
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,1,2-Trichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,1-Dichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,1-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,2,3-Trichloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,2-Dibromoethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,2-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,2-Dichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,2-Dichloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
1,4-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
2-Butanone	BRL	50		ug/L	270314	1	11/15/2018 16:52	OM
2-Hexanone	BRL	10		ug/L	270314	1	11/15/2018 16:52	OM
4-Methyl-2-pentanone	BRL	10		ug/L	270314	1	11/15/2018 16:52	OM
Acetone	BRL	50		ug/L	270314	1	11/15/2018 16:52	OM
Acrylonitrile	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Benzene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Bromochloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Bromodichloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Bromoform	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Bromomethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Carbon disulfide	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Carbon tetrachloride	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Chlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Chloroethane	BRL	10		ug/L	270314	1	11/15/2018 16:52	OM
Chloroform	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Chloromethane	BRL	10		ug/L	270314	1	11/15/2018 16:52	OM
cis-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
cis-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Dibromochloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Dibromomethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Ethylbenzene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Iodomethane	BRL	10		ug/L	270314	1	11/15/2018 16:52	OM
m,p-Xylene	BRL	10		ug/L	270314	1	11/15/2018 16:52	OM
Methylene chloride	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
o-Xylene	BRL	10		ug/L	270314	1	11/15/2018 16:52	OM
Styrene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Tetrachloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Toluene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
trans-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
trans-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM

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: 20-Dec-18

Client:	Santek Waste Services, LLC	Client Sample ID:	MW-02
Project Name:	Loudon Co Landfill (Matlock Bend) Landfill	Collection Date:	11/13/2018 12:12:00 PM
Lab ID:	1811C88-005	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B								
(SW5030B)								
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	270314	1	11/15/2018 16:52	OM
Trichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Trichlorofluoromethane	BRL	5.0		ug/L	270314	1	11/15/2018 16:52	OM
Vinyl acetate	BRL	10		ug/L	270314	1	11/15/2018 16:52	OM
Vinyl chloride	BRL	2.0		ug/L	270314	1	11/15/2018 16:52	OM
Surr: 4-Bromofluorobenzene	95.5	68-127	%REC		270314	1	11/15/2018 16:52	OM
Surr: Dibromofluoromethane	97.3	84.4-122	%REC		270314	1	11/15/2018 16:52	OM
Surr: Toluene-d8	97.2	80.1-116	%REC		270314	1	11/15/2018 16:52	OM
APPENDIX I METALS SW6020B								
(SW3005A)								
Antimony	BRL	0.00150		mg/L	270256	1	11/15/2018 20:42	KT
Arsenic	BRL	0.00250		mg/L	270256	1	11/15/2018 20:42	KT
Barium	0.0864	0.0100		mg/L	270256	1	11/15/2018 20:42	KT
Beryllium	0.00231	0.00100		mg/L	270256	1	11/15/2018 20:42	KT
Cadmium	0.00228	0.000700		mg/L	270256	1	11/15/2018 20:42	KT
Chromium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:42	KT
Cobalt	BRL	0.00500		mg/L	270256	1	11/15/2018 20:42	KT
Copper	0.00252	0.00200		mg/L	271795	1	12/19/2018 16:19	JW
Lead	BRL	0.00100		mg/L	270256	1	11/15/2018 20:42	KT
Nickel	0.0370	0.00500		mg/L	270256	1	11/15/2018 20:42	KT
Selenium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:42	KT
Silver	BRL	0.00100		mg/L	270256	1	11/15/2018 20:42	KT
Thallium	BRL	0.000500		mg/L	270256	1	11/15/2018 20:42	KT
Vanadium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:42	KT
Zinc	0.404	0.0100		mg/L	270256	1	11/15/2018 20:42	KT

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

I Estimated value detected below Reporting Limit

Client: Santek Waste Services, LLC	Client Sample ID: MW-03
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/13/2018 1:32:00 PM
Lab ID: 1811C88-006	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	8.35	1.00		mg/L	R385058	1	11/19/2018 19:33	SK
Total Metals by ICP/MS SW6020B								
Calcium	19.6	0.100		mg/L	270256	1	11/15/2018 20:45	JW
Iron	0.160	0.100		mg/L	270256	1	11/15/2018 20:45	JW
Magnesium	5.82	0.100		mg/L	270256	1	11/15/2018 20:45	JW
Potassium	6.52	0.100		mg/L	270256	1	11/15/2018 20:45	JW
Sodium	46.0	0.500		mg/L	270256	1	11/16/2018 14:52	JW
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	219	1		mg/L	270438	1	11/16/2018 15:00	RH
Nitrogen, Ammonia (as N) E350.1								
Nitrogen, Ammonia (As N)	2.22	0.200		mg/L	270253	1	11/15/2018 09:36	JM
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.041		ug/L	270283	1	11/16/2018 14:03	HB
1,2-Dibromoethane	BRL	0.020		ug/L	270283	1	11/16/2018 14:03	HB
Surr: 4-Bromofluorobenzene	115	72.9-137		%REC	270283	1	11/16/2018 14:03	HB
Mercury, Total SW7470A								
Mercury	BRL	0.00050		mg/L	270402	1	11/19/2018 15:05	CD
Inorganic Anions by IC EPA 300.0								
Chloride	73.1	10.0		mg/L	R384738	10	11/15/2018 01:21	GO
Fluoride	BRL	1.00		mg/L	R384738	1	11/14/2018 20:34	GO
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R384738	1	11/14/2018 20:34	GO
Sulfate	31.2	1.00		mg/L	R384738	1	11/14/2018 20:34	GO
Dissolved Metals by ICP/MS SW6020B								
Manganese	4210	10.0		ug/L	270411	1	11/19/2018 17:36	KT
Cyanide SW9014								
Cyanide, Total	BRL	0.200		mg/L	270595	1	11/21/2018 16:45	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	18.4	10.0		mg/L	R385003	1	11/20/2018 14:00	RH
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,1,1-Trichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: MW-03
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/13/2018 1:32:00 PM
Lab ID: 1811C88-006	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,1,2-Trichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,1-Dichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,1-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,2,3-Trichloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,2-Dibromoethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,2-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,2-Dichloroethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,2-Dichloropropane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
1,4-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
2-Butanone	BRL	50		ug/L	270314	1	11/15/2018 17:17	OM
2-Hexanone	BRL	10		ug/L	270314	1	11/15/2018 17:17	OM
4-Methyl-2-pentanone	BRL	10		ug/L	270314	1	11/15/2018 17:17	OM
Acetone	BRL	50		ug/L	270314	1	11/15/2018 17:17	OM
Acrylonitrile	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Benzene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Bromochloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Bromodichloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Bromoform	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Bromomethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Carbon disulfide	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Carbon tetrachloride	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Chlorobenzene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Chloroethane	BRL	10		ug/L	270314	1	11/15/2018 17:17	OM
Chloroform	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Chloromethane	BRL	10		ug/L	270314	1	11/15/2018 17:17	OM
cis-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
cis-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Dibromochloromethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Dibromomethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Ethylbenzene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Iodomethane	BRL	10		ug/L	270314	1	11/15/2018 17:17	OM
m,p-Xylene	BRL	10		ug/L	270314	1	11/15/2018 17:17	OM
Methylene chloride	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
o-Xylene	BRL	10		ug/L	270314	1	11/15/2018 17:17	OM
Styrene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Tetrachloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Toluene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
trans-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
trans-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM

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: 20-Dec-18

Client:	Santek Waste Services, LLC	Client Sample ID:	MW-03
Project Name:	Loudon Co Landfill (Matlock Bend) Landfill	Collection Date:	11/13/2018 1:32:00 PM
Lab ID:	1811C88-006	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	270314	1	11/15/2018 17:17	OM
Trichloroethene	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Trichlorofluoromethane	BRL	5.0		ug/L	270314	1	11/15/2018 17:17	OM
Vinyl acetate	BRL	10		ug/L	270314	1	11/15/2018 17:17	OM
Vinyl chloride	BRL	2.0		ug/L	270314	1	11/15/2018 17:17	OM
Surr: 4-Bromofluorobenzene	94.9	68-127		%REC	270314	1	11/15/2018 17:17	OM
Surr: Dibromofluoromethane	98.1	84.4-122		%REC	270314	1	11/15/2018 17:17	OM
Surr: Toluene-d8	98.6	80.1-116		%REC	270314	1	11/15/2018 17:17	OM
APPENDIX I METALS SW6020B (SW3005A)								
Antimony	BRL	0.00150		mg/L	270256	1	11/15/2018 20:45	KT
Arsenic	BRL	0.00250		mg/L	270256	1	11/15/2018 20:45	KT
Barium	0.142	0.0100		mg/L	270256	1	11/15/2018 20:45	KT
Beryllium	BRL	0.00100		mg/L	270256	1	11/15/2018 20:45	KT
Cadmium	BRL	0.000700		mg/L	270256	1	11/15/2018 20:45	KT
Chromium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:45	KT
Cobalt	0.0189	0.00500		mg/L	270256	1	11/15/2018 20:45	KT
Copper	BRL	0.00209	0.00200	mg/L	271795	1	12/19/2018 16:22	JW
Lead	BRL	0.00100		mg/L	270256	1	11/15/2018 20:45	KT
Nickel	BRL	0.0113	0.00500	mg/L	270256	1	11/15/2018 20:45	KT
Selenium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:45	KT
Silver	BRL	0.00100		mg/L	270256	1	11/15/2018 20:45	KT
Thallium	BRL	0.000500		mg/L	270256	1	11/15/2018 20:45	KT
Vanadium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:45	KT
Zinc	BRL	0.0132	0.0100	mg/L	270256	1	11/15/2018 20:45	KT

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N NC 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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: MW-4R
Project Name: Loudon County (Matlock Bend) Landfill	Collection Date: 11/13/2018 3:25:00 PM
Lab ID: 1811C87-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.040		ug/L	270283	1	11/16/2018 11:40	HB
1,2-Dibromoethane	BRL	0.020		ug/L	270283	1	11/16/2018 11:40	HB
Surr: 4-Bromofluorobenzene	111	72.9-137	%REC		270283	1	11/16/2018 11:40	HB
Inorganic Anions by IC E300.0								
Fluoride	BRL	1.00		mg/L	R385052	1	11/16/2018 20:27	GO
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,1,1-Trichloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,1,2-Trichloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,1-Dichloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,1-Dichloroethene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,2,3-Trichloropropane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,2-Dibromoethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,2-Dichlorobenzene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,2-Dichloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,2-Dichloropropane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
1,4-Dichlorobenzene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
2-Butanone	BRL	50		ug/L	270165	1	11/15/2018 15:11	OM
2-Hexanone	BRL	10		ug/L	270165	1	11/15/2018 15:11	OM
4-Methyl-2-pentanone	BRL	10		ug/L	270165	1	11/15/2018 15:11	OM
Acetone	BRL	50		ug/L	270165	1	11/15/2018 15:11	OM
Acrylonitrile	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Benzene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Bromochloromethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Bromodichloromethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Bromoform	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Bromomethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Carbon disulfide	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Carbon tetrachloride	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Chlorobenzene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Chloroethane	BRL	10		ug/L	270165	1	11/15/2018 15:11	OM
Chloroform	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Chloromethane	BRL	10		ug/L	270165	1	11/15/2018 15:11	OM
cis-1,2-Dichloroethene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
cis-1,3-Dichloropropene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Dibromochloromethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Dibromomethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: MW-4R
Project Name: Loudon County (Matlock Bend) Landfill	Collection Date: 11/13/2018 3:25:00 PM
Lab ID: 1811C87-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
Ethylbenzene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Iodomethane	BRL	10		ug/L	270165	1	11/15/2018 15:11	OM
m,p-Xylene	BRL	10		ug/L	270165	1	11/15/2018 15:11	OM
Methylene chloride	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
o-Xylene	BRL	10		ug/L	270165	1	11/15/2018 15:11	OM
Styrene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Tetrachloroethene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Toluene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
trans-1,2-Dichloroethene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
trans-1,3-Dichloropropene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	270165	1	11/15/2018 15:11	OM
Trichloroethene	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Trichlorofluoromethane	BRL	5.0		ug/L	270165	1	11/15/2018 15:11	OM
Vinyl acetate	BRL	10		ug/L	270165	1	11/15/2018 15:11	OM
Vinyl chloride	BRL	2.0		ug/L	270165	1	11/15/2018 15:11	OM
Surr: 4-Bromofluorobenzene	96.2	68-127	%REC		270165	1	11/15/2018 15:11	OM
Surr: Dibromofluoromethane	97.2	84.4-122	%REC		270165	1	11/15/2018 15:11	OM
Surr: Toluene-d8	98.4	80.1-116	%REC		270165	1	11/15/2018 15:11	OM

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: 20-Dec-18

Client: Santeck Waste Services, LLC	Client Sample ID: MW-4R
Project Name: Loudon County (Matlock Bend) Landfill	Collection Date: 11/14/2018 9:35:00 AM
Lab ID: 1811C87-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A								
(SW7470A)								
Mercury	BRL	0.00050		mg/L	270402	1	11/19/2018 14:45	CD
APPENDIX I METALS SW6020B								
(SW3005A)								
Antimony	BRL	0.00150		mg/L	270256	1	11/15/2018 20:20	KT
Arsenic	BRL	0.00250		mg/L	270256	1	11/15/2018 20:20	KT
Barium	0.0164	0.0100		mg/L	270256	1	11/15/2018 20:20	KT
Beryllium	BRL	0.00100		mg/L	270256	1	11/15/2018 20:20	KT
Cadmium	BRL	0.000700		mg/L	270256	1	11/15/2018 20:20	KT
Chromium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:20	KT
Cobalt	0.00686	0.00500		mg/L	270256	1	11/15/2018 20:20	KT
Copper	BRL	0.00200		mg/L	271795	1	12/19/2018 15:44	JW
Lead	0.00110	0.00100		mg/L	270256	1	11/15/2018 20:20	KT
Nickel	0.0137	0.00500		mg/L	270256	1	11/15/2018 20:20	KT
Selenium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:20	KT
Silver	BRL	0.00100		mg/L	270256	1	11/15/2018 20:20	KT
Thallium	BRL	0.000500		mg/L	270256	1	11/15/2018 20:20	KT
Vanadium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:20	KT
Zinc	0.0332	0.0100		mg/L	270256	1	11/15/2018 20:20	KT

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: 20-Dec-18

Client:	Santek Waste Services, LLC	Client Sample ID:	MW-05
Project Name:	Loudon County (Matlock Bend) Landfill	Collection Date:	11/13/2018 3:07:00 PM
Lab ID:	1811C87-004	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.040		ug/L	270283	1	11/16/2018 12:08	HB
1,2-Dibromoethane	BRL	0.020		ug/L	270283	1	11/16/2018 12:08	HB
Surr: 4-Bromofluorobenzene	114	72.9-137	%REC		270283	1	11/16/2018 12:08	HB
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00050		mg/L	270402	1	11/19/2018 14:49	CD
Inorganic Anions by IC E300.0								
Fluoride	BRL	1.00		mg/L	R385052	1	11/16/2018 20:42	GO
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,1,1-Trichloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,1,2-Trichloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,1-Dichloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,1-Dichloroethene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,2,3-Trichloropropane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,2-Dibromoethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,2-Dichlorobenzene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,2-Dichloroethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,2-Dichloropropane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
1,4-Dichlorobenzene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
2-Butanone	BRL	50		ug/L	270165	1	11/15/2018 14:46	OM
2-Hexanone	BRL	10		ug/L	270165	1	11/15/2018 14:46	OM
4-Methyl-2-pentanone	BRL	10		ug/L	270165	1	11/15/2018 14:46	OM
Acetone	BRL	50		ug/L	270165	1	11/15/2018 14:46	OM
Acrylonitrile	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Benzene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Bromochloromethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Bromodichloromethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Bromoform	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Bromomethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Carbon disulfide	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Carbon tetrachloride	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Chlorobenzene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Chloroethane	BRL	10		ug/L	270165	1	11/15/2018 14:46	OM
Chloroform	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Chloromethane	BRL	10		ug/L	270165	1	11/15/2018 14:46	OM
cis-1,2-Dichloroethene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: MW-05
Project Name: Loudon County (Matlock Bend) Landfill	Collection Date: 11/13/2018 3:07:00 PM
Lab ID: 1811C87-004	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
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APPENDIX I VOLATILE ORGANICS SW8260B		(SW5030B)						
cis-1,3-Dichloropropene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Dibromochloromethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Dibromomethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Ethylbenzene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Iodomethane	BRL	10		ug/L	270165	1	11/15/2018 14:46	OM
m,p-Xylene	BRL	10		ug/L	270165	1	11/15/2018 14:46	OM
Methylene chloride	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
o-Xylene	BRL	10		ug/L	270165	1	11/15/2018 14:46	OM
Styrene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Tetrachloroethene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Toluene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
trans-1,2-Dichloroethene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
trans-1,3-Dichloropropene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	270165	1	11/15/2018 14:46	OM
Trichloroethene	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Trichlorofluoromethane	BRL	5.0		ug/L	270165	1	11/15/2018 14:46	OM
Vinyl acetate	BRL	10		ug/L	270165	1	11/15/2018 14:46	OM
Vinyl chloride	BRL	2.0		ug/L	270165	1	11/15/2018 14:46	OM
Surr: 4-Bromofluorobenzene	96.6	68-127	%REC		270165	1	11/15/2018 14:46	OM
Surr: Dibromofluoromethane	97.9	84.4-122	%REC		270165	1	11/15/2018 14:46	OM
Surr: Toluene-d8	99.1	80.1-116	%REC		270165	1	11/15/2018 14:46	OM

APPENDIX I METALS SW6020B		(SW3005A)						
Antimony	BRL	0.00150		mg/L	270256	1	11/15/2018 20:23	KT
Arsenic	BRL	0.00250		mg/L	270256	1	11/15/2018 20:23	KT
Barium	0.0106	0.0100		mg/L	270256	1	11/15/2018 20:23	KT
Beryllium	BRL	0.00100		mg/L	270256	1	11/15/2018 20:23	KT
Cadmium	BRL	0.000700		mg/L	270256	1	11/15/2018 20:23	KT
Chromium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:23	KT
Cobalt	BRL	0.00500		mg/L	270256	1	11/15/2018 20:23	KT
Copper	BRL	0.00200		mg/L	271795	1	12/19/2018 15:47	JW
Lead	BRL	0.00100		mg/L	270256	1	11/15/2018 20:23	KT
Nickel	BRL	0.00500		mg/L	270256	1	11/15/2018 20:23	KT
Selenium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:23	KT
Silver	BRL	0.00100		mg/L	270256	1	11/15/2018 20:23	KT
Thallium	BRL	0.000500		mg/L	270256	1	11/15/2018 20:23	KT
Vanadium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:23	KT
Zinc	0.0118	0.0100		mg/L	270256	1	11/15/2018 20:23	KT

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID:	Equipment Blank
Project Name: Loudon County (Matlock Bend) Landfill	Collection Date:	11/13/2018 3:35:00 PM
Lab ID: 1811C87-005	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.040		ug/L	270283	1	11/16/2018 14:31	HB
1,2-Dibromoethane	BRL	0.020		ug/L	270283	1	11/16/2018 14:31	HB
Surr: 4-Bromofluorobenzene	116	72.9-137	%REC		270283	1	11/16/2018 14:31	HB
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00050		mg/L	270402	1	11/19/2018 15:08	CD
Inorganic Anions by IC E300.0								
Fluoride	BRL	1.00		mg/L	R385052	1	11/15/2018 00:00	GO
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,1,1-Trichloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,1,2-Trichloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,1-Dichloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,1-Dichloroethene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,2,3-Trichloropropane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,2-Dibromoethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,2-Dichlorobenzene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,2-Dichloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,2-Dichloropropane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
1,4-Dichlorobenzene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
2-Butanone	BRL	50		ug/L	270165	1	11/16/2018 18:49	BK
2-Hexanone	BRL	10		ug/L	270165	1	11/16/2018 18:49	BK
4-Methyl-2-pentanone	BRL	10		ug/L	270165	1	11/16/2018 18:49	BK
Acetone	BRL	50		ug/L	270165	1	11/16/2018 18:49	BK
Acrylonitrile	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Benzene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Bromochloromethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Bromodichloromethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Bromoform	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Bromomethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Carbon disulfide	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Carbon tetrachloride	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Chlorobenzene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Chloroethane	BRL	10		ug/L	270165	1	11/16/2018 18:49	BK
Chloroform	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Chloromethane	BRL	10		ug/L	270165	1	11/16/2018 18:49	BK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK

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: 20-Dec-18

Client:	Santek Waste Services, LLC	Client Sample ID:	Equipment Blank
Project Name:	Loudon County (Matlock Bend) Landfill	Collection Date:	11/13/2018 3:35:00 PM
Lab ID:	1811C87-005	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B								
cis-1,3-Dichloropropene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Dibromochloromethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Dibromomethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Ethylbenzene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Iodomethane	BRL	10		ug/L	270165	1	11/16/2018 18:49	BK
m,p-Xylene	BRL	10		ug/L	270165	1	11/16/2018 18:49	BK
Methylene chloride		6.1	5.0	ug/L	270165	1	11/16/2018 18:49	BK
o-Xylene	BRL	10		ug/L	270165	1	11/16/2018 18:49	BK
Styrene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Tetrachloroethene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Toluene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	270165	1	11/16/2018 18:49	BK
Trichloroethene	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Trichlorofluoromethane	BRL	5.0		ug/L	270165	1	11/16/2018 18:49	BK
Vinyl acetate	BRL	10		ug/L	270165	1	11/16/2018 18:49	BK
Vinyl chloride	BRL	2.0		ug/L	270165	1	11/16/2018 18:49	BK
Surr: 4-Bromofluorobenzene		94.3	68-127	%REC	270165	1	11/16/2018 18:49	BK
Surr: Dibromofluoromethane		95.8	84.4-122	%REC	270165	1	11/16/2018 18:49	BK
Surr: Toluene-d8		98.3	80.1-116	%REC	270165	1	11/16/2018 18:49	BK
APPENDIX I METALS SW6020B								
							(SW3005A)	
Antimony	BRL	0.00150		mg/L	270256	1	11/15/2018 20:48	KT
Arsenic	BRL	0.00250		mg/L	270256	1	11/15/2018 20:48	KT
Barium	BRL	0.0100		mg/L	270256	1	11/15/2018 20:48	KT
Beryllium	BRL	0.00100		mg/L	270256	1	11/15/2018 20:48	KT
Cadmium	BRL	0.000700		mg/L	270256	1	11/15/2018 20:48	KT
Chromium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:48	KT
Cobalt	BRL	0.00500		mg/L	270256	1	11/15/2018 20:48	KT
Copper	BRL	0.00200		mg/L	271795	1	12/19/2018 16:25	JW
Lead	BRL	0.00100		mg/L	270256	1	11/15/2018 20:48	KT
Nickel	BRL	0.00500		mg/L	270256	1	11/15/2018 20:48	KT
Selenium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:48	KT
Silver	BRL	0.00100		mg/L	270256	1	11/15/2018 20:48	KT
Thallium	BRL	0.000500		mg/L	270256	1	11/15/2018 20:48	KT
Vanadium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:48	KT
Zinc	BRL	0.0100		mg/L	270256	1	11/15/2018 20:48	KT

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: Trip Blank
Project Name: Loudon County (Matlock Bend) Landfill	Collection Date: 11/13/2018
Lab ID: 1811C87-006	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.040		ug/L	270283	1	11/16/2018 15:00	HB
1,2-Dibromoethane	BRL	0.020		ug/L	270283	1	11/16/2018 15:00	HB
Surr: 4-Bromofluorobenzene	115	72.9-137	%REC		270283	1	11/16/2018 15:00	HB
Mercury, Total SW7470A								
Mercury	BRL	0.00050		mg/L	270402	1	11/19/2018 15:12	CD
Inorganic Anions by IC E300.0								
Fluoride	BRL	1.00		mg/L	R385052	1	11/15/2018 00:00	GO
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,1,1-Trichloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,1,2-Trichloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,1-Dichloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,1-Dichloroethene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,2,3-Trichloropropane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,2-Dibromoethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,2-Dichlorobenzene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,2-Dichloroethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,2-Dichloropropane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
1,4-Dichlorobenzene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
2-Butanone	BRL	50		ug/L	270165	1	11/16/2018 19:14	BK
2-Hexanone	BRL	10		ug/L	270165	1	11/16/2018 19:14	BK
4-Methyl-2-pentanone	BRL	10		ug/L	270165	1	11/16/2018 19:14	BK
Acetone	BRL	50		ug/L	270165	1	11/16/2018 19:14	BK
Acrylonitrile	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Benzene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Bromochloromethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Bromodichloromethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Bromoform	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Bromomethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Carbon disulfide	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Carbon tetrachloride	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Chlorobenzene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Chloroethane	BRL	10		ug/L	270165	1	11/16/2018 19:14	BK
Chloroform	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Chloromethane	BRL	10		ug/L	270165	1	11/16/2018 19:14	BK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK

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: 20-Dec-18

Client:	Santek Waste Services, LLC	Client Sample ID:	Trip Blank
Project Name:	Loudon County (Matlock Bend) Landfill	Collection Date:	11/13/2018
Lab ID:	1811C87-006	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
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APPENDIX I VOLATILE ORGANICS SW8260B		(SW5030B)						
cis-1,3-Dichloropropene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Dibromochloromethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Dibromomethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Ethylbenzene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Iodomethane	BRL	10		ug/L	270165	1	11/16/2018 19:14	BK
m,p-Xylene	BRL	10		ug/L	270165	1	11/16/2018 19:14	BK
Methylene chloride		5.9	5.0	ug/L	270165	1	11/16/2018 19:14	BK
o-Xylene	BRL	10		ug/L	270165	1	11/16/2018 19:14	BK
Styrene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Tetrachloroethene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Toluene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	270165	1	11/16/2018 19:14	BK
Trichloroethene	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Trichlorofluoromethane	BRL	5.0		ug/L	270165	1	11/16/2018 19:14	BK
Vinyl acetate	BRL	10		ug/L	270165	1	11/16/2018 19:14	BK
Vinyl chloride	BRL	2.0		ug/L	270165	1	11/16/2018 19:14	BK
Surr: 4-Bromofluorobenzene		97.6	68-127	%REC	270165	1	11/16/2018 19:14	BK
Surr: Dibromofluoromethane		100	84.4-122	%REC	270165	1	11/16/2018 19:14	BK
Surr: Toluene-d8		96.8	80.1-116	%REC	270165	1	11/16/2018 19:14	BK

APPENDIX I METALS SW6020B		(SW3005A)						
Antimony	BRL	0.00150		mg/L	270256	1	11/15/2018 20:51	KT
Arsenic	BRL	0.00250		mg/L	270256	1	11/15/2018 20:51	KT
Barium	BRL	0.0100		mg/L	270256	1	11/15/2018 20:51	KT
Beryllium	BRL	0.00100		mg/L	270256	1	11/15/2018 20:51	KT
Cadmium	BRL	0.000700		mg/L	270256	1	11/15/2018 20:51	KT
Chromium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:51	KT
Cobalt	BRL	0.00500		mg/L	270256	1	11/15/2018 20:51	KT
Copper	BRL	0.00200		mg/L	271795	1	12/19/2018 16:28	JW
Lead	BRL	0.00100		mg/L	270256	1	11/15/2018 20:51	KT
Nickel	BRL	0.00500		mg/L	270256	1	11/15/2018 20:51	KT
Selenium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:51	KT
Silver	BRL	0.00100		mg/L	270256	1	11/15/2018 20:51	KT
Thallium	BRL	0.000500		mg/L	270256	1	11/15/2018 20:51	KT
Vanadium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:51	KT
Zinc	BRL	0.0100		mg/L	270256	1	11/15/2018 20:51	KT

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID:	Equipment Blank
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date:	11/13/2018 3:35:00 PM
Lab ID: 1811C88-007	Matrix:	Aqueous

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	R385058	1	11/19/2018 20:07	SK
Total Metals by ICP/MS SW6020B								
Calcium	BRL	0.100		mg/L	270256	1	11/15/2018 20:48	JW
Iron	BRL	0.100		mg/L	270256	1	11/15/2018 20:48	JW
Magnesium	BRL	0.100		mg/L	270256	1	11/15/2018 20:48	JW
Potassium	BRL	0.100		mg/L	270256	1	11/15/2018 20:48	JW
Sodium	BRL	0.500		mg/L	270256	1	11/15/2018 20:48	JW
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	9	1		mg/L	270438	1	11/16/2018 15:00	RH
Nitrogen, Ammonia (as N) E350.1								
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	270253	1	11/15/2018 09:08	JM
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.202		ug/L	270283	1	11/16/2018 14:31	HB
1,2-Dibromoethane	BRL	0.051		ug/L	270283	1	11/16/2018 14:31	HB
Surr: 4-Bromofluorobenzene	116	72.9-137	%REC	270283	1	11/16/2018 14:31	HB	
Mercury, Total SW7470A								
Mercury	BRL	0.00050		mg/L	270402	1	11/19/2018 15:08	CD
Inorganic Anions by IC EPA 300.0								
Chloride	BRL	1.00		mg/L	R384738	1	11/14/2018 20:49	GO
Fluoride	BRL	1.00		mg/L	R384738	1	11/14/2018 20:49	GO
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R384738	1	11/14/2018 20:49	GO
Sulfate	BRL	1.00		mg/L	R384738	1	11/14/2018 20:49	GO
Dissolved Metals by ICP/MS SW6020B								
Manganese	BRL	10.0		ug/L	270411	1	11/19/2018 17:39	KT
Cyanide SW9014								
Cyanide, Total	BRL	0.200		mg/L	270595	1	11/21/2018 16:45	AT
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R385003	1	11/20/2018 14:00	RH
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,1,1-Trichloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK

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

Client: Santeck Waste Services, LLC	Client Sample ID: Equipment Blank
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/13/2018 3:35:00 PM
Lab ID: 1811C88-007	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,1,2-Trichloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,1-Dichloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,1-Dichloroethene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,2,3-Trichloropropane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,2-Dibromoethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,2-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,2-Dichloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,2-Dichloropropane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
1,4-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
2-Butanone	BRL	50		ug/L	270314	1	11/16/2018 18:49	BK
2-Hexanone	BRL	10		ug/L	270314	1	11/16/2018 18:49	BK
4-Methyl-2-pentanone	BRL	10		ug/L	270314	1	11/16/2018 18:49	BK
Acetone	BRL	50		ug/L	270314	1	11/16/2018 18:49	BK
Acrylonitrile	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Benzene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Bromochloromethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Bromodichloromethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Bromoform	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Bromomethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Carbon disulfide	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Carbon tetrachloride	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Chlorobenzene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Chloroethane	BRL	10		ug/L	270314	1	11/16/2018 18:49	BK
Chloroform	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Chloromethane	BRL	10		ug/L	270314	1	11/16/2018 18:49	BK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Dibromochloromethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Dibromomethane	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Ethylbenzene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Iodomethane	BRL	10		ug/L	270314	1	11/16/2018 18:49	BK
m,p-Xylene	BRL	10		ug/L	270314	1	11/16/2018 18:49	BK
Methylene chloride	6.1	5.0		ug/L	270314	1	11/16/2018 18:49	BK
o-Xylene	BRL	10		ug/L	270314	1	11/16/2018 18:49	BK
Styrene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Tetrachloroethene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
Toluene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/16/2018 18:49	BK

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID:	Equipment Blank
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date:	11/13/2018 3:35:00 PM
Lab ID: 1811C88-007	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
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APPENDIX I VOLATILE ORGANICS SW8260B**(SW5030B)**

trans-1,4-Dichloro-2-butene	BRL	10	ug/L	270314	1	11/16/2018 18:49	BK
Trichloroethene	BRL	5.0	ug/L	270314	1	11/16/2018 18:49	BK
Trichlorofluoromethane	BRL	5.0	ug/L	270314	1	11/16/2018 18:49	BK
Vinyl acetate	BRL	10	ug/L	270314	1	11/16/2018 18:49	BK
Vinyl chloride	BRL	2.0	ug/L	270314	1	11/16/2018 18:49	BK
Surr: 4-Bromofluorobenzene	94.3	68-127	%REC	270314	1	11/16/2018 18:49	BK
Surr: Dibromofluoromethane	95.8	84.4-122	%REC	270314	1	11/16/2018 18:49	BK
Surr: Toluene-d8	98.3	80.1-116	%REC	270314	1	11/16/2018 18:49	BK

APPENDIX I METALS SW6020B**(SW3005A)**

Antimony	BRL	0.00150	mg/L	270256	1	11/15/2018 20:48	KT
Arsenic	BRL	0.00250	mg/L	270256	1	11/15/2018 20:48	KT
Barium	BRL	0.0100	mg/L	270256	1	11/15/2018 20:48	KT
Beryllium	BRL	0.00100	mg/L	270256	1	11/15/2018 20:48	KT
Cadmium	BRL	0.000700	mg/L	270256	1	11/15/2018 20:48	KT
Chromium	BRL	0.00500	mg/L	270256	1	11/15/2018 20:48	KT
Cobalt	BRL	0.00500	mg/L	270256	1	11/15/2018 20:48	KT
Copper	BRL	0.00200	mg/L	271795	1	12/19/2018 16:25	JW
Lead	BRL	0.00100	mg/L	270256	1	11/15/2018 20:48	KT
Nickel	BRL	0.00500	mg/L	270256	1	11/15/2018 20:48	KT
Selenium	BRL	0.00500	mg/L	270256	1	11/15/2018 20:48	KT
Silver	BRL	0.00100	mg/L	270256	1	11/15/2018 20:48	KT
Thallium	BRL	0.000500	mg/L	270256	1	11/15/2018 20:48	KT
Vanadium	BRL	0.00500	mg/L	270256	1	11/15/2018 20:48	KT
Zinc	BRL	0.0100	mg/L	270256	1	11/15/2018 20:48	KT

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: 20-Dec-18

Client: Santeck Waste Services, LLC	Client Sample ID: Trip Blank
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/13/2018
Lab ID: 1811C88-008	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020B								
Calcium	BRL	0.100		mg/L	270256	1	11/15/2018 20:51	JW
Iron	BRL	0.100		mg/L	270256	1	11/15/2018 20:51	JW
Magnesium	BRL	0.100		mg/L	270256	1	11/15/2018 20:51	JW
Potassium	BRL	0.100		mg/L	270256	1	11/15/2018 20:51	JW
Sodium	BRL	0.500		mg/L	270256	1	11/15/2018 20:51	JW
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.040		ug/L	270283	1	11/16/2018 15:00	HB
1,2-Dibromoethane	BRL	0.020		ug/L	270283	1	11/16/2018 15:00	HB
Surr: 4-Bromofluorobenzene	115	72.9-137	%REC		270283	1	11/16/2018 15:00	HB
Mercury, Total SW7470A								
Mercury	BRL	0.00050		mg/L	270402	1	11/19/2018 15:12	CD
Inorganic Anions by IC EPA 300.0								
Chloride	BRL	1.00		mg/L	R384738	1	11/14/2018 21:04	GO
Fluoride	BRL	1.00		mg/L	R384738	1	11/14/2018 21:04	GO
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R384738	1	11/14/2018 21:04	GO
Sulfate	BRL	1.00		mg/L	R384738	1	11/14/2018 21:04	GO
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,1,1-Trichloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,1,2-Trichloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,1-Dichloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,1-Dichloroethene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,2,3-Trichloropropane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,2-Dibromoethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,2-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,2-Dichloroethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,2-Dichloropropane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
1,4-Dichlorobenzene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
2-Butanone	BRL	50		ug/L	270314	1	11/16/2018 19:14	BK
2-Hexanone	BRL	10		ug/L	270314	1	11/16/2018 19:14	BK
4-Methyl-2-pentanone	BRL	10		ug/L	270314	1	11/16/2018 19:14	BK
Acetone	BRL	50		ug/L	270314	1	11/16/2018 19:14	BK
Acrylonitrile	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Benzene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Bromochloromethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK

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: 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: Trip Blank
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/13/2018
Lab ID: 1811C88-008	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B								
Bromodichloromethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Bromoform	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Bromomethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Carbon disulfide	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Carbon tetrachloride	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Chlorobenzene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Chloroethane	BRL	10		ug/L	270314	1	11/16/2018 19:14	BK
Chloroform	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Chloromethane	BRL	10		ug/L	270314	1	11/16/2018 19:14	BK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Dibromochloromethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Dibromomethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Ethylbenzene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Iodomethane	BRL	10		ug/L	270314	1	11/16/2018 19:14	BK
m,p-Xylene	BRL	10		ug/L	270314	1	11/16/2018 19:14	BK
Methylene chloride	5.9	5.0		ug/L	270314	1	11/16/2018 19:14	BK
o-Xylene	BRL	10		ug/L	270314	1	11/16/2018 19:14	BK
Styrene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Tetrachloroethene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Toluene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	270314	1	11/16/2018 19:14	BK
Trichloroethene	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Trichlorofluoromethane	BRL	5.0		ug/L	270314	1	11/16/2018 19:14	BK
Vinyl acetate	BRL	10		ug/L	270314	1	11/16/2018 19:14	BK
Vinyl chloride	BRL	2.0		ug/L	270314	1	11/16/2018 19:14	BK
Surr: 4-Bromofluorobenzene	97.6	68-127	%REC		270314	1	11/16/2018 19:14	BK
Surr: Dibromofluoromethane	100	84.4-122	%REC		270314	1	11/16/2018 19:14	BK
Surr: Toluene-d8	96.8	80.1-116	%REC		270314	1	11/16/2018 19:14	BK
APPENDIX I METALS SW6020B								
					(SW3005A)			
Antimony	BRL	0.00150		mg/L	270256	1	11/15/2018 20:51	KT
Arsenic	BRL	0.00250		mg/L	270256	1	11/15/2018 20:51	KT
Barium	BRL	0.0100		mg/L	270256	1	11/15/2018 20:51	KT
Beryllium	BRL	0.00100		mg/L	270256	1	11/15/2018 20:51	KT
Cadmium	BRL	0.000700		mg/L	270256	1	11/15/2018 20:51	KT
Chromium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:51	KT
Cobalt	BRL	0.00500		mg/L	270256	1	11/15/2018 20:51	KT
Copper	BRL	0.00200		mg/L	271795	1	12/19/2018 16:28	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:** 20-Dec-18

Client: Santek Waste Services, LLC	Client Sample ID: Trip Blank
Project Name: Loudon Co Landfill (Matlock Bend) Landfill	Collection Date: 11/13/2018
Lab ID: 1811C88-008	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I METALS SW6020B		(SW3005A)						
Lead	BRL	0.00100		mg/L	270256	1	11/15/2018 20:51	KT
Nickel	BRL	0.00500		mg/L	270256	1	11/15/2018 20:51	KT
Selenium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:51	KT
Silver	BRL	0.00100		mg/L	270256	1	11/15/2018 20:51	KT
Thallium	BRL	0.000500		mg/L	270256	1	11/15/2018 20:51	KT
Vanadium	BRL	0.00500		mg/L	270256	1	11/15/2018 20:51	KT
Zinc	BRL	0.0100		mg/L	270256	1	11/15/2018 20:51	KT

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



Clear

Save as

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: SANTEK WASTE SERVICES

AES Work Order Number: 1811C88

2. Carrier: FedEx UPS USPS Client Courier Other _____

	Yes	No	N/A	Details	Comments
3. Shipping container/cooler received in good condition?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	damaged <input type="checkbox"/> leaking <input type="checkbox"/> other <input type="checkbox"/>	
4. Custody seals present on shipping container?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
5. Custody seals intact on shipping container?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
6. Temperature blanks present?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
7. Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Cooling initiated for recently collected samples / ice present <input type="checkbox"/>	
8. Chain of Custody (COC) present?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
9. Chain of Custody signed, dated, and timed when relinquished and received?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
10. Sampler name and/or signature on COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
11. Were all samples received within holding time?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
12. TAT marked on the COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. <input type="checkbox"/>	

13. Cooler 1 Temperature 1.3 °C Cooler 2 Temperature 2.3 °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials).

EW 11/14/18

	Yes	No	N/A	Details	Comments
16. Were sample containers intact upon receipt?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
17. Custody seals present on sample containers?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
18. Custody seals intact on sample containers?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
19. Do sample container labels match the COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	incomplete info <input type="checkbox"/> illegible <input type="checkbox"/> no label <input type="checkbox"/> other <input type="checkbox"/>	
20. Are analyses requested indicated on the COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
21. Were all of the samples listed on the COC received?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	samples received but not listed on COC <input type="checkbox"/> samples listed on COC not received <input type="checkbox"/>	
22. Was the sample collection date/time noted?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
23. Did we receive sufficient sample volume for indicated analyses?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
24. Were samples received in appropriate containers?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
25. Were VOA samples received without headspace (< 1/4" bubble)?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
26. Were trip blanks submitted?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	listed on COC <input type="checkbox"/> not listed on COC <input checked="" type="checkbox"/>	

27. Comments: _____

This section only applies to samples where pH can be checked at Sample Receipt.

I certify that I have completed sections 16-27 (dated initials).

EW 11/14/18

	Yes	No	N/A	Details	Comments
28. Have containers needing chemical preservation been checked? *	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
29. Containers meet preservation guidelines?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
30. Was pH adjusted at Sample Receipt?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.

I certify that I have completed sections 28-30 (dated initials).

EW 11/14/18

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270253**

Sample ID: MB-270253	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384718				
SampleType: MBLK	TestCode: Nitrogen, Ammonia (as N)	E350.1	BatchID: 270253			Analysis Date: 11/15/2018	Seq No: 8590351				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	BRL	0.200									
Sample ID: LCS-270253	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384718				
SampleType: LCS	TestCode: Nitrogen, Ammonia (as N)	E350.1	BatchID: 270253			Analysis Date: 11/15/2018	Seq No: 8590352				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	5.200	0.200	5.000		104	90	110				
Sample ID: 1811C88-007EMS	Client ID: Equipment Blank				Units: mg/L	Prep Date: 11/15/2018	Run No: 384718				
SampleType: MS	TestCode: Nitrogen, Ammonia (as N)	E350.1	BatchID: 270253			Analysis Date: 11/15/2018	Seq No: 8590379				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	5.060	0.200	5.000		101	90	110				
Sample ID: 1811D03-002AMS	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384718				
SampleType: MS	TestCode: Nitrogen, Ammonia (as N)	E350.1	BatchID: 270253			Analysis Date: 11/15/2018	Seq No: 8590355				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	12.90	0.200	5.000	8.360	90.8	90	110				
Sample ID: 1811D03-002AMSD	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384718				
SampleType: MSD	TestCode: Nitrogen, Ammonia (as N)	E350.1	BatchID: 270253			Analysis Date: 11/15/2018	Seq No: 8590356				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	12.90	0.200	5.000	8.360	90.8	90	110	12.90	0	30	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270256**

Sample ID: MB-270256	Client ID:	Units: mg/L			Prep Date:	11/15/2018	Run No:				
SampleType: MBLK	TestCode: Total Metals by ICP/MS SW6020B	BatchID: 270256			Analysis Date:	11/15/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	BRL	0.00500									
Calcium	BRL	0.100									
Copper	BRL	0.00200									
Iron	BRL	0.100									
Lead	BRL	0.00100									
Magnesium	BRL	0.100									
Potassium	BRL	0.100									
Sodium	BRL	0.500									
Zinc	BRL	0.0100									
Sample ID: MB-270256	Client ID:	Units: mg/L			Prep Date:	11/15/2018	Run No:				
SampleType: MBLK	TestCode: APPENDIX I METALS SW6020B	BatchID: 270256			Analysis Date:	11/15/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	BRL	0.00600									
Arsenic	BRL	0.0100									
Barium	BRL	0.0200									
Beryllium	BRL	0.00400									
Cadmium	BRL	0.00500									
Chromium	BRL	0.0200									
Cobalt	BRL	0.0500									
Copper	BRL	0.0200									
Lead	BRL	0.0100									
Nickel	BRL	0.0400									
Selenium	BRL	0.0500									
Silver	BRL	0.00500									
Thallium	BRL	0.00200									
Vanadium	BRL	0.0500									

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270256**

Sample ID: MB-270256	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384870				
SampleType: MBLK	TestCode: APPENDIX I METALS	SW6020B			BatchID: 270256	Analysis Date: 11/15/2018	Seq No: 8594003				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Zinc	BRL	0.0200									

Sample ID: LCS-270256	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384869				
SampleType: LCS	TestCode: Total Metals by ICP/MS	SW6020B			BatchID: 270256	Analysis Date: 11/15/2018	Seq No: 8593686				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	0.1066	0.00500	0.1000		107	80	120
Calcium	0.9892	0.100	1.000		98.9	80	120
Copper	0.1064	0.00200	0.1000		106	80	120
Iron	1.029	0.100	1.000		103	80	120
Lead	0.1035	0.00100	0.1000		103	80	120
Magnesium	1.020	0.100	1.000		102	80	120
Potassium	1.062	0.100	1.000		106	80	120
Sodium	1.195	0.500	1.000	0.2318	96.3	80	120
Zinc	0.1049	0.0100	0.1000		105	80	120

Sample ID: LCS-270256	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384870				
SampleType: LCS	TestCode: APPENDIX I METALS	SW6020B			BatchID: 270256	Analysis Date: 11/15/2018	Seq No: 8594004				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.1026	0.00600	0.1000		103	80	120
Arsenic	0.1066	0.0100	0.1000		107	80	120
Barium	0.1052	0.0200	0.1000		105	80	120
Beryllium	0.09850	0.00400	0.1000		98.5	80	120
Cadmium	0.1016	0.00500	0.1000		102	80	120
Chromium	0.1026	0.0200	0.1000		103	80	120
Cobalt	0.1056	0.0500	0.1000		106	80	120
Copper	0.1064	0.0200	0.1000		106	80	120

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270256**

Sample ID: LCS-270256	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384870				
SampleType: LCS	TestCode: APPENDIX I METALS	SW6020B			BatchID: 270256	Analysis Date: 11/15/2018	Seq No: 8594004				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	0.1035	0.0100	0.1000		103	80	120				
Nickel	0.09883	0.0400	0.1000		98.8	80	120				
Selenium	0.09534	0.0500	0.1000		95.3	80	120				
Silver	0.009985	0.00500	0.0100		99.8	80	120				
Thallium	0.09939	0.00200	0.1000		99.4	80	120				
Vanadium	0.1026	0.0500	0.1000		103	80	120				
Zinc	0.1049	0.0200	0.1000		105	80	120				
Sample ID: 1811C03-002EMS	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384869				
SampleType: MS	TestCode: Total Metals by ICP/MS	SW6020B			BatchID: 270256	Analysis Date: 11/15/2018	Seq No: 8593690				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	0.09851	0.00500	0.1000		98.5	75	125				
Calcium	133.9	0.100	1.000	141.6	-770	75	125				S
Copper	0.8284	0.00200	0.1000	0.7432	85.3	75	125				
Iron	1.024	0.100	1.000	0.08306	94.1	75	125				
Lead	0.09990	0.00100	0.1000	0.002481	97.4	75	125				
Magnesium	8.399	0.100	1.000	8.075	32.4	75	125				S
Potassium	3.575	0.100	1.000	2.890	68.5	75	125				S
Sodium	31.80	0.500	1.000	29.21	260	75	125				S
Zinc	2.098	0.0100	0.1000	2.055	43.7	75	125				S
Sample ID: 1811C03-002EMS	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384870				
SampleType: MS	TestCode: APPENDIX I METALS	SW6020B			BatchID: 270256	Analysis Date: 11/15/2018	Seq No: 8594006				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1019	0.00600	0.1000		102	75	125				
Arsenic	0.09851	0.0100	0.1000		98.5	75	125				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270256**

Sample ID: 1811C03-002EMS	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384870				
SampleType: MS	TestCode: APPENDIX I METALS	SW6020B	BatchID: 270256			Analysis Date: 11/15/2018	Seq No: 8594006				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Barium	0.1171	0.0200	0.1000	0.01119	106	75	125				
Beryllium	0.09639	0.00400	0.1000	0.003933	92.5	75	125				
Cadmium	0.1025	0.00500	0.1000	0.008549	93.9	75	125				
Chromium	0.1019	0.0200	0.1000		102	75	125				
Cobalt	0.1643	0.0500	0.1000	0.06808	96.2	75	125				
Copper	0.8284	0.0200	0.1000	0.7432	85.3	75	125				
Lead	0.09990	0.0100	0.1000	0.002481	97.4	75	125				
Nickel	0.1081	0.0400	0.1000	0.01138	96.7	75	125				
Selenium	0.09543	0.0500	0.1000	0.001735	93.7	75	125				
Silver	0.009688	0.00500	0.0100		96.9	75	125				
Thallium	0.09790	0.00200	0.1000	0.0008942	97.0	75	125				
Vanadium	0.08796	0.0500	0.1000		88.0	75	125				
Zinc	2.098	0.0200	0.1000	2.055	43.7	75	125				S

Sample ID: 1811C03-002EMSD	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384869				
SampleType: MSD	TestCode: Total Metals by ICP/MS	SW6020B	BatchID: 270256			Analysis Date: 11/15/2018	Seq No: 8593691				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	0.1008	0.00500	0.1000		101	75	125	0.09851	2.30	20	
Calcium	133.4	0.100	1.000	141.6	-828	75	125	133.9	0.434	20	S
Copper	0.8389	0.00200	0.1000	0.7432	95.8	75	125	0.8284	1.26	20	
Iron	1.075	0.100	1.000	0.08306	99.2	75	125	1.024	4.85	20	
Lead	0.1011	0.00100	0.1000	0.002481	98.6	75	125	0.09990	1.22	20	
Magnesium	8.409	0.100	1.000	8.075	33.4	75	125	8.399	0.120	20	S
Potassium	3.551	0.100	1.000	2.890	66.1	75	125	3.575	0.669	20	S
Sodium	31.87	0.500	1.000	29.21	267	75	125	31.80	0.224	20	S
Zinc	2.145	0.0100	0.1000	2.055	90.1	75	125	2.098	2.19	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270256**

Sample ID: 1811C03-002EMSD	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384870				
SampleType: MSD	TestCode: APPENDIX I METALS	SW6020B			BatchID: 270256	Analysis Date: 11/15/2018	Seq No: 8594007				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1026	0.00600	0.1000		103	75	125	0.1019	0.666	20	
Arsenic	0.1008	0.0100	0.1000		101	75	125	0.09851	2.30	20	
Barium	0.1144	0.0200	0.1000	0.01119	103	75	125	0.1171	2.30	20	
Beryllium	0.09496	0.00400	0.1000	0.003933	91.0	75	125	0.09639	1.49	20	
Cadmium	0.1025	0.00500	0.1000	0.008549	94.0	75	125	0.1025	0.062	20	
Chromium	0.1011	0.0200	0.1000		101	75	125	0.1019	0.755	20	
Cobalt	0.1660	0.0500	0.1000	0.06808	97.9	75	125	0.1643	1.03	20	
Copper	0.8389	0.0200	0.1000	0.7432	95.8	75	125	0.8284	1.26	20	
Lead	0.1011	0.0100	0.1000	0.002481	98.6	75	125	0.09990	1.22	20	
Nickel	0.1080	0.0400	0.1000	0.01138	96.7	75	125	0.1081	0.064	20	
Selenium	0.09505	0.0500	0.1000	0.001735	93.3	75	125	0.09543	0.407	20	
Silver	0.009662	0.00500	0.0100		96.6	75	125	0.009688	0.268	20	
Thallium	0.09802	0.00200	0.1000	0.0008942	97.1	75	125	0.09790	0.119	20	
Vanadium	0.08704	0.0500	0.1000		87.0	75	125	0.08796	1.05	20	
Zinc	2.145	0.0200	0.1000	2.055	90.1	75	125	2.098	2.19	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270283**

Sample ID: MB-270283	Client ID:					Units: ug/L	Prep Date: 11/15/2018	Run No: 384866
SampleType: MBLK	TestCode: MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					BatchID: 270283	Analysis Date: 11/15/2018	Seq No: 8593574
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val
1,2-Dibromo-3-chloropropane	BRL	0.040						
1,2-Dibromoethane	BRL	0.020						
Surr: 4-Bromofluorobenzene	5.469	0	5.000		109	72.9	137	
Sample ID: LCS-270283	Client ID:					Units: ug/L	Prep Date: 11/15/2018	Run No: 384866
SampleType: LCS	TestCode: MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					BatchID: 270283	Analysis Date: 11/15/2018	Seq No: 8593575
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val
1,2-Dibromo-3-chloropropane	0.1050	0.040	0.1000		105	60	140	
1,2-Dibromoethane	0.1130	0.020	0.1000		113	60	140	
Surr: 4-Bromofluorobenzene	4.644	0	5.000		92.9	72.9	137	
Sample ID: LCSD-270283	Client ID:					Units: ug/L	Prep Date: 11/15/2018	Run No: 384866
SampleType: LCSD	TestCode: MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					BatchID: 270283	Analysis Date: 11/15/2018	Seq No: 8593576
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val
1,2-Dibromo-3-chloropropane	0.1050	0.040	0.1000		105	60	140	0.1050
1,2-Dibromoethane	0.1150	0.020	0.1000		115	60	140	0.1130
Surr: 4-Bromofluorobenzene	5.533	0	5.000		111	72.9	137	4.644
Sample ID: 1811A95-007AMS	Client ID:					Units: ug/L	Prep Date: 11/15/2018	Run No: 384866
SampleType: MS	TestCode: MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					BatchID: 270283	Analysis Date: 11/15/2018	Seq No: 8593579
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val
1,2-Dibromo-3-chloropropane	0.1077	0.040	0.1007		107	60.8	136	
1,2-Dibromoethane	0.1108	0.020	0.1007		110	70	131	
Surr: 4-Bromofluorobenzene	5.314	0	5.034		106	72.9	137	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270314**

Sample ID: MB-270314	Client ID:	Units: ug/L			Prep Date:	11/15/2018	Run No:				
Sample Type: MBLK	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B	BatchID: 270314			Analysis Date:	11/15/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	BRL	5.0									
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,3-Trichloropropane	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	50									
Acrylonitrile	BRL	5.0									
Benzene	BRL	5.0									
Bromochloromethane	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270314**

Sample ID: MB-270314	Client ID:	Units: ug/L			Prep Date:	11/15/2018	Run No:				
Sample Type: MBLK	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B	BatchID: 270314			Analysis Date:	11/15/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloroform	BRL	5.0									
Chloromethane	BRL	10									
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dibromomethane	BRL	5.0									
Ethylbenzene	BRL	5.0									
Iodomethane	BRL	10									
m,p-Xylene	BRL	10									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	10									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
trans-1,4-Dichloro-2-butene	BRL	10									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl acetate	BRL	10									
Vinyl chloride	BRL	2.0									
Xylenes, Total	BRL	10									
Surr: 4-Bromofluorobenzene	58.08	0	50.00		116	68	127				
Surr: Dibromofluoromethane	51.47	0	50.00		103	84.4	122				
Surr: Toluene-d8	50.50	0	50.00		101	80.1	116				

Qualifiers: > Greater than Result value

< Less than Result value

B Analyte detected in the associated method blank

BRL Below reporting limit

E Estimated (value above quantitation range)

H Holding times for preparation or analysis exceeded

J Estimated value detected below Reporting Limit

N Analyte not NELAC certified

R RPD outside limits due to matrix

Rpt Lim Reporting Limit

S Spike Recovery outside limits due to matrix

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270314**

Sample ID: LCS-270314	Client ID:					Units: ug/L	Prep Date:	11/15/2018	Run No: 384765
SampleType: LCS	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B					BatchID: 270314	Analysis Date:	11/15/2018	Seq No: 8592065
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD
1,1-Dichloroethene	18.13	5.0	20.00		90.6	69	136		
Benzene	17.48	5.0	20.00		87.4	73.7	126		
Chlorobenzene	16.98	5.0	20.00		84.9	73.5	124		
Toluene	17.61	5.0	20.00		88.0	76.8	125		
Trichloroethene	17.70	5.0	20.00		88.5	70.9	124		
Surf: 4-Bromofluorobenzene	48.51	0	50.00		97.0	68	127		
Surf: Dibromofluoromethane	49.66	0	50.00		99.3	84.4	122		
Surf: Toluene-d8	49.93	0	50.00		99.9	80.1	116		
Sample ID: 1811A80-002AMS	Client ID:					Units: ug/L	Prep Date:	11/15/2018	Run No: 384986
SampleType: MS	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B					BatchID: 270314	Analysis Date:	11/19/2018	Seq No: 8597094
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD
1,1-Dichloroethene	616.2	50	500.0		123	65.7	143		
Benzene	551.5	50	500.0		110	66.1	137		
Chlorobenzene	543.3	50	500.0		109	70.9	132		
Toluene	536.4	50	500.0		107	63.8	141		
Trichloroethene	1656	50	500.0	1043	122	70.6	128		
Surf: 4-Bromofluorobenzene	494.6	0	500.0		98.9	68	127		
Surf: Dibromofluoromethane	510.9	0	500.0		102	84.4	122		
Surf: Toluene-d8	489.1	0	500.0		97.8	80.1	116		
Sample ID: 1811A80-002ADUP	Client ID:					Units: ug/L	Prep Date:	11/15/2018	Run No: 384986
SampleType: DUP	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B					BatchID: 270314	Analysis Date:	11/19/2018	Seq No: 8597093
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD
1,1,1,2-Tetrachloroethane	BRL	50						0	0
1,1,1-Trichloroethane	BRL	50						0	0

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270314**

Sample ID: 1811A80-002ADUP	Client ID:	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B			Units: ug/L	Prep Date: 11/15/2018	Run No: 384986				
SampleType: DUP					BatchID: 270314	Analysis Date: 11/19/2018	Seq No: 8597093				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,2,2-Tetrachloroethane	BRL	50						0	0	20	
1,1,2-Trichloroethane	BRL	50						0	0	20	
1,1-Dichloroethane	BRL	50						0	0	20	
1,1-Dichloroethene	BRL	50						0	0	20	
1,2,3-Trichloropropane	BRL	50						0	0	20	
1,2-Dibromo-3-chloropropane	BRL	50						0	0	20	
1,2-Dibromoethane	BRL	50						0	0	20	
1,2-Dichlorobenzene	BRL	50						0	0	20	
1,2-Dichloroethane	BRL	50						0	0	20	
1,2-Dichloropropane	BRL	50						0	0	20	
1,4-Dichlorobenzene	BRL	50						0	0	20	
2-Butanone	BRL	500						0	0	20	
2-Hexanone	BRL	100						0	0	20	
4-Methyl-2-pentanone	BRL	100						0	0	20	
Acetone	BRL	500						0	0	20	
Acrylonitrile	BRL	50						0	0	20	
Benzene	BRL	50						0	0	20	
Bromochloromethane	BRL	50						0	0	20	
Bromodichloromethane	BRL	50						0	0	20	
Bromoform	BRL	50						0	0	20	
Bromomethane	BRL	50						0	0	20	
Carbon disulfide	BRL	50						0	0	20	
Carbon tetrachloride	BRL	50						0	0	20	
Chlorobenzene	BRL	50						0	0	20	
Chloroethane	BRL	100						0	0	20	
Chloroform	BRL	50						0	0	20	
Chloromethane	BRL	100						0	0	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270314**

Sample ID: 1811A80-002ADUP	Client ID:	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B			Units: ug/L	Prep Date: 11/15/2018	Run No: 384986				
SampleType: DUP					BatchID: 270314	Analysis Date: 11/19/2018	Seq No: 8597093				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	1262	50						1249	1.05	20	
cis-1,3-Dichloropropene	BRL	50						0	0	20	
Dibromochloromethane	BRL	50						0	0	20	
Dibromomethane	BRL	50						0	0	20	
Ethylbenzene	BRL	50						0	0	20	
Iodomethane	BRL	100						0	0	20	
m,p-Xylene	BRL	100						0	0	20	
Methylene chloride	BRL	50						0	0	20	
o-Xylene	BRL	100						0	0	20	
Styrene	BRL	50						0	0	20	
Tetrachloroethene	BRL	50						11.90	0	20	
Toluene	BRL	50						0	0	20	
trans-1,2-Dichloroethene	BRL	50						0	0	20	
trans-1,3-Dichloropropene	BRL	50						0	0	20	
trans-1,4-Dichloro-2-butene	BRL	100						0	0	20	
Trichloroethene	1076	50						1043	3.11	20	
Trichlorofluoromethane	BRL	50						0	0	20	
Vinyl acetate	BRL	100						0	0	20	
Vinyl chloride	BRL	20						0	0	20	
Xylenes, Total	BRL	100						0	0	20	
Surr: 4-Bromofluorobenzene	503.3	0						493.0	0	0	
Surr: Dibromofluoromethane	505.0	0						508.7	0	0	
Surr: Toluene-d8	486.0	0						487.4	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270402**

Sample ID: MB-270402	Client ID:				Units: mg/L	Prep Date: 11/19/2018	Run No: 384974				
SampleType: MBLK	TestCode: Mercury, Total	SW7470A			BatchID: 270402	Analysis Date: 11/19/2018	Seq No: 8596759				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	BRL	0.00020									
Sample ID: LCS-270402	Client ID:				Units: mg/L	Prep Date: 11/19/2018	Run No: 384974				
SampleType: LCS	TestCode: Mercury, Total	SW7470A			BatchID: 270402	Analysis Date: 11/19/2018	Seq No: 8596760				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004651	0.00020	0.0050		93.0	80	120				
Sample ID: 1811C88-002AMS	Client ID: MW-01				Units: mg/L	Prep Date: 11/19/2018	Run No: 384974				
SampleType: MS	TestCode: Mercury, Total	SW7470A			BatchID: 270402	Analysis Date: 11/19/2018	Seq No: 8596762				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004856	0.00020	0.0050		97.1	75	125				
Sample ID: 1811C88-002AMSD	Client ID: MW-01				Units: mg/L	Prep Date: 11/19/2018	Run No: 384974				
SampleType: MSD	TestCode: Mercury, Total	SW7470A			BatchID: 270402	Analysis Date: 11/19/2018	Seq No: 8596763				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.005089	0.00020	0.0050		102	75	125	0.004856	4.68	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Analytical Environmental Services, Inc

Date: 20-Dec-18

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT
BatchID: 270411

Sample ID: MB-270411	Client ID:	Units: ug/L			Prep Date:	11/19/2018	Run No:				
SampleType: MBLK	TestCode: Dissolved Metals by ICP/MS SW6020B	BatchID: 270411			Analysis Date:	11/19/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	BRL	5.00									
Copper	BRL	2.00									
Lead	BRL	1.00									
Manganese	BRL	5.00									
Zinc	BRL	10.0									
Sample ID: LCS-270411	Client ID:	Units: ug/L			Prep Date:	11/19/2018	Run No:				
SampleType: LCS	TestCode: Dissolved Metals by ICP/MS SW6020B	BatchID: 270411			Analysis Date:	11/19/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	95.01	5.00	100.0		95.0	80	120				
Copper	95.31	2.00	100.0		95.3	80	120				
Lead	93.17	1.00	100.0		93.2	80	120				
Manganese	97.67	5.00	100.0		97.7	80	120				
Zinc	95.20	10.0	100.0	3.368	91.8	80	120				
Sample ID: 1811C03-002DMS	Client ID:	Units: ug/L			Prep Date:	11/19/2018	Run No:				
SampleType: MS	TestCode: Dissolved Metals by ICP/MS SW6020B	BatchID: 270411			Analysis Date:	11/19/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	100.0	5.00	100.0		100	75	125				
Copper	865.8	2.00	100.0	765.4	100	75	125				
Lead	94.85	1.00	100.0	2.287	92.6	75	125				
Manganese	3379	5.00	100.0	3212	167	75	125				S
Zinc	2171	10.0	100.0	2066	105	75	125				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270411**

Sample ID: 1811C03-002DMSD	Client ID:				Units: ug/L	Prep Date: 11/19/2018	Run No: 384971				
Sample Type: MSD	TestCode: Dissolved Metals by ICP/MS SW6020B				BatchID: 270411	Analysis Date: 11/19/2018	Seq No: 8597928				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	99.07	5.00	100.0		99.1	75	125	100.0	0.947	20	
Copper	852.2	2.00	100.0	765.4	86.8	75	125	865.8	1.59	20	
Lead	96.06	1.00	100.0	2.287	93.8	75	125	94.85	1.28	20	
Manganese	3300	5.00	100.0	3212	87.7	75	125	3379	2.37	20	
Zinc	2154	10.0	100.0	2066	88.0	75	125	2171	0.794	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270438**

Sample ID: MB-270438	Client ID:				Units: mg/L	Prep Date: 11/16/2018	Run No: 384952				
SampleType: MBLK	TestCode: Residue, Dissolved (TDS) by SM2540C				BatchID: 270438	Analysis Date: 11/16/2018	Seq No: 8596097				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Residue, Dissolved (TDS)	BRL	10									
Sample ID: 1811C96-001CDUP	Client ID:				Units: mg/L	Prep Date: 11/16/2018	Run No: 384952				
SampleType: DUP	TestCode: Residue, Dissolved (TDS) by SM2540C				BatchID: 270438	Analysis Date: 11/16/2018	Seq No: 8596097				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Residue, Dissolved (TDS)	1073	10						1083	0.928	5	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 270595**

Sample ID: MB-270595	Client ID:				Units: mg/L	Prep Date: 11/21/2018	Run No: 385216				
SampleType: MBLK	TestCode: Cyanide SW9014				BatchID: 270595	Analysis Date: 11/21/2018	Seq No: 8602791				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	BRL	0.010									
Sample ID: LCS-270595	Client ID:				Units: mg/L	Prep Date: 11/21/2018	Run No: 385216				
SampleType: LCS	TestCode: Cyanide SW9014				BatchID: 270595	Analysis Date: 11/21/2018	Seq No: 8602792				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.2500	0.010	0.2500		100	85	115				
Sample ID: 1811C88-007HMS	Client ID: Equipment Blank				Units: mg/L	Prep Date: 11/21/2018	Run No: 385216				
SampleType: MS	TestCode: Cyanide SW9014				BatchID: 270595	Analysis Date: 11/21/2018	Seq No: 8602799				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.2480	0.010	0.2500		99.2	70	130				
Sample ID: 1811C88-007HMSD	Client ID: Equipment Blank				Units: mg/L	Prep Date: 11/21/2018	Run No: 385216				
SampleType: MSD	TestCode: Cyanide SW9014				BatchID: 270595	Analysis Date: 11/21/2018	Seq No: 8602800				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cyanide, Total	0.2590	0.010	0.2500		104	70	130	0.2480	4.34	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 271795**

Sample ID: MB-271795	Client ID:				Units: mg/L	Prep Date: 12/18/2018	Run No: 387206				
SampleType: MBLK	TestCode: APPENDIX I METALS	SW6020B			BatchID: 271795	Analysis Date: 12/19/2018	Seq No: 8656449				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	BRL	0.00600									
Arsenic	BRL	0.0100									
Barium	BRL	0.0200									
Beryllium	BRL	0.00400									
Cadmium	BRL	0.00500									
Chromium	BRL	0.0200									
Cobalt	BRL	0.0500									
Copper	BRL	0.0200									
Lead	BRL	0.0100									
Nickel	BRL	0.0400									
Selenium	BRL	0.0500									
Silver	BRL	0.00500									
Thallium	BRL	0.00200									
Vanadium	BRL	0.0500									
Zinc	BRL	0.0200									

Sample ID: LCS-271795	Client ID:				Units: mg/L	Prep Date: 12/18/2018	Run No: 387206				
SampleType: LCS	TestCode: APPENDIX I METALS	SW6020B			BatchID: 271795	Analysis Date: 12/19/2018	Seq No: 8656450				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09428	0.00600	0.1000	0.001163	93.1	80	120				
Arsenic	0.09514	0.0100	0.1000		95.1	80	120				
Barium	0.09088	0.0200	0.1000		90.9	80	120				
Beryllium	0.09968	0.00400	0.1000		99.7	80	120				
Cadmium	0.09460	0.00500	0.1000		94.6	80	120				
Chromium	0.09599	0.0200	0.1000		96.0	80	120				
Cobalt	0.09619	0.0500	0.1000		96.2	80	120				
Copper	0.09110	0.0200	0.1000		91.1	80	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 271795**

Sample ID: LCS-271795	Client ID: APPENDIX I METALS	TestCode: SW6020B	Units: mg/L	Prep Date: 12/18/2018	Run No: 387206						
Sample Type: LCS			BatchID: 271795	Analysis Date: 12/19/2018	Seq No: 8656450						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	0.09671	0.0100	0.1000		96.7	80	120				
Nickel	0.09623	0.0400	0.1000		96.2	80	120				
Selenium	0.08989	0.0500	0.1000		89.9	80	120				
Silver	0.009786	0.00500	0.0100		97.9	80	120				
Thallium	0.1039	0.00200	0.1000		104	80	120				
Vanadium	0.09577	0.0500	0.1000		95.8	80	120				
Zinc	0.09343	0.0200	0.1000		93.4	80	120				

Sample ID: 1812H14-019BMS	Client ID: APPENDIX I METALS	TestCode: SW6020B	Units: mg/L	Prep Date: 12/18/2018	Run No: 387206						
Sample Type: MS			BatchID: 271795	Analysis Date: 12/19/2018	Seq No: 8656452						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09252	0.00600	0.1000	0.001443	91.1	75	125				
Arsenic	0.09108	0.0100	0.1000		91.1	75	125				
Barium	0.08985	0.0200	0.1000		89.9	75	125				
Beryllium	0.09546	0.00400	0.1000		95.5	75	125				
Cadmium	0.09220	0.00500	0.1000		92.2	75	125				
Chromium	0.09233	0.0200	0.1000		92.3	75	125				
Cobalt	0.09502	0.0500	0.1000		95.0	75	125				
Copper	0.08952	0.0200	0.1000		89.5	75	125				
Lead	0.09810	0.0100	0.1000		98.1	75	125				
Nickel	0.09591	0.0400	0.1000		95.9	75	125				
Selenium	0.08766	0.0500	0.1000		87.7	75	125				
Silver	0.009577	0.00500	0.0100		95.8	75	125				
Thallium	0.1031	0.00200	0.1000	0.0008607	102	75	125				
Vanadium	0.09250	0.0500	0.1000		92.5	75	125				
Zinc	0.09202	0.0200	0.1000	0.002313	89.7	75	125				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: 271795**

Sample ID: 1812H14-019BMSD	Client ID:				Units: mg/L	Prep Date: 12/18/2018	Run No: 387206				
Sample Type: MSD	TestCode: APPENDIX I METALS	SW6020B			BatchID: 271795	Analysis Date: 12/19/2018	Seq No: 8656453				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09264	0.00600	0.1000	0.001443	91.2	75	125	0.09252	0.135	20	
Arsenic	0.09183	0.0100	0.1000		91.8	75	125	0.09108	0.812	20	
Barium	0.09049	0.0200	0.1000		90.5	75	125	0.08985	0.708	20	
Beryllium	0.09406	0.00400	0.1000		94.1	75	125	0.09546	1.48	20	
Cadmium	0.09427	0.00500	0.1000		94.3	75	125	0.09220	2.23	20	
Chromium	0.09282	0.0200	0.1000		92.8	75	125	0.09233	0.533	20	
Cobalt	0.09516	0.0500	0.1000		95.2	75	125	0.09502	0.145	20	
Copper	0.08809	0.0200	0.1000		88.1	75	125	0.08952	1.60	20	
Lead	0.09780	0.0100	0.1000		97.8	75	125	0.09810	0.302	20	
Nickel	0.09477	0.0400	0.1000		94.8	75	125	0.09591	1.19	20	
Selenium	0.08733	0.0500	0.1000		87.3	75	125	0.08766	0.380	20	
Silver	0.009761	0.00500	0.0100		97.6	75	125	0.009577	1.90	20	
Thallium	0.1063	0.00200	0.1000	0.0008607	105	75	125	0.1031	3.02	20	
Vanadium	0.09201	0.0500	0.1000		92.0	75	125	0.09250	0.534	20	
Zinc	0.09215	0.0200	0.1000	0.002313	89.8	75	125	0.09202	0.137	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: R384738**

Sample ID: MB-R384738	Client ID:				Units: mg/L	Prep Date:	Run No: 384738				
Sample Type: MBLK	TestCode: Inorganic Anions by IC EPA 300.0				BatchID: R384738	Analysis Date: 11/14/2018	Seq No: 8599310				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	BRL	1.00									
Fluoride	BRL	0.200									
Nitrogen, Nitrate (As N)	BRL	0.250									
Nitrogen, Nitrite (As N)	BRL	0.250									
Phosphorus, Dissolved Orthophosphate	BRL	0.250									
Sulfate	BRL	1.00									
Sample ID: LCS-R384738	Client ID:				Units: mg/L	Prep Date:	Run No: 384738				
Sample Type: LCS	TestCode: Inorganic Anions by IC EPA 300.0				BatchID: R384738	Analysis Date: 11/14/2018	Seq No: 8599309				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	10.57	1.00	10.00		106	90	110				
Fluoride	4.504	0.200	5.000		90.1	90	110				
Nitrogen, Nitrate (As N)	4.910	0.250	5.000		98.2	90	110				
Nitrogen, Nitrite (As N)	5.145	0.250	5.000		103	90	110				
Phosphorus, Dissolved Orthophosphate	5.474	0.250	5.000		109	90	110				
Sulfate	24.57	1.00	25.00		98.3	90	110				
Sample ID: 1811C88-001FMS	Client ID: MW-01				Units: mg/L	Prep Date:	Run No: 384738				
Sample Type: MS	TestCode: Inorganic Anions by IC EPA 300.0				BatchID: R384738	Analysis Date: 11/15/2018	Seq No: 8599360				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	32.64	1.00	10.00	23.88	87.6	90	110				S
Fluoride	3.405	0.200	5.000		68.1	90	110				S
Nitrogen, Nitrate (As N)	7.047	0.250	5.000	1.715	107	90	110				
Nitrogen, Nitrite (As N)	5.016	0.250	5.000		100	90	110				
Phosphorus, Dissolved Orthophosphate	4.948	0.250	5.000	0.7000	85.0	90	110				S
Sulfate	28.94	1.00	25.00	4.226	98.9	90	110				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID:** R384738

Sample ID: 1811C88-007GMS	Client ID: Equipment Blank	Units: mg/L	Prep Date:	Run No: 384738							
SampleType: MS	TestCode: Inorganic Anions by IC	BatchID: R384738	Analysis Date: 11/15/2018	Seq No: 8599362							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	10.50	1.00	10.00	0.5309	99.7	90	110				
Fluoride	4.636	0.200	5.000		92.7	90	110				
Nitrogen, Nitrate (As N)	5.127	0.250	5.000		103	90	110				
Nitrogen, Nitrite (As N)	5.080	0.250	5.000		102	90	110				
Phosphorus, Dissolved Orthophosphate	5.544	0.250	5.000	0.3525	104	90	110				
Sulfate	24.45	1.00	25.00		97.8	90	110				

Sample ID: 1811C88-001FMSD	Client ID: MW-01	Units: mg/L	Prep Date:	Run No: 384738							
SampleType: MSD	TestCode: Inorganic Anions by IC	BatchID: R384738	Analysis Date: 11/15/2018	Seq No: 8599361							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	32.74	1.00	10.00	23.88	88.6	90	110	32.64	0.311	20	S
Fluoride	3.794	0.200	5.000		75.9	90	110	3.405	10.8	20	S
Nitrogen, Nitrate (As N)	7.068	0.250	5.000	1.715	107	90	110	7.047	0.301	20	
Nitrogen, Nitrite (As N)	5.041	0.250	5.000		101	90	110	5.016	0.488	20	
Phosphorus, Dissolved Orthophosphate	5.299	0.250	5.000	0.7000	92.0	90	110	4.948	6.86	20	
Sulfate	29.07	1.00	25.00	4.226	99.4	90	110	28.94	0.420	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: R385003**

Sample ID: MB-R385003	Client ID:	Units: mg/L			Prep Date:	Run No: 385003					
SampleType: MBLK	TestCode: Chemical Oxygen Demand (COD) E410.4	BatchID: R385003			Analysis Date: 11/20/2018	Seq No: 8598748					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	BRL	10.0									
Sample ID: LCS-R385003	Client ID:	Units: mg/L			Prep Date:	Run No: 385003					
SampleType: LCS	TestCode: Chemical Oxygen Demand (COD) E410.4	BatchID: R385003			Analysis Date: 11/20/2018	Seq No: 8598749					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	515.7	10.0	500.0		103	90	110				
Sample ID: 1811C25-001DMS	Client ID:	Units: mg/L			Prep Date:	Run No: 385003					
SampleType: MS	TestCode: Chemical Oxygen Demand (COD) E410.4	BatchID: R385003			Analysis Date: 11/20/2018	Seq No: 8598775					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	378.2	12.5	375.0		101	90	110				
Sample ID: 1811D63-001AMS2	Client ID:	Units: mg/L			Prep Date:	Run No: 385003					
SampleType: MS	TestCode: Chemical Oxygen Demand (COD) E410.4	BatchID: R385003			Analysis Date: 11/20/2018	Seq No: 8598782					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	378.2	12.5	375.0		101	90	110				
Sample ID: 1811C25-001DMSD	Client ID:	Units: mg/L			Prep Date:	Run No: 385003					
SampleType: MSD	TestCode: Chemical Oxygen Demand (COD) E410.4	BatchID: R385003			Analysis Date: 11/20/2018	Seq No: 8598778					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	378.2	12.5	375.0		101	90	110	378.2	0	30	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon Co Landfill (Matlock Bend) Landfill
Workorder: 1811C88

ANALYTICAL QC SUMMARY REPORT**BatchID: R385058**

Sample ID: MB-R385058	Client ID:	Units: mg/L			Prep Date:	Run No: 385058					
SampleType: MBLK	TestCode: Total Organic Carbon (TOC) by SM5310B	BatchID: R385058			Analysis Date: 11/19/2018	Seq No: 8599266					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	BRL	1.00									
Sample ID: LCS-R385058	Client ID:	Units: mg/L			Prep Date:	Run No: 385058					
SampleType: LCS	TestCode: Total Organic Carbon (TOC) by SM5310B	BatchID: R385058			Analysis Date: 11/19/2018	Seq No: 8599264					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	26.44	1.00	25.00		106	90	110				
Sample ID: 1811C88-001HMS	Client ID: MW-01	Units: mg/L			Prep Date:	Run No: 385058					
SampleType: MS	TestCode: Total Organic Carbon (TOC) by SM5310B	BatchID: R385058			Analysis Date: 11/19/2018	Seq No: 8599270					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	134.6	5.00	125.0	11.19	98.7	80	120				
Sample ID: 1811C88-001HMSD	Client ID: MW-01	Units: mg/L			Prep Date:	Run No: 385058					
SampleType: MSD	TestCode: Total Organic Carbon (TOC) by SM5310B	BatchID: R385058			Analysis Date: 11/19/2018	Seq No: 8599271					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	134.5	5.00	125.0	11.19	98.6	80	120	134.6	0.074	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

SAMPLE/COOLER RECEIPT CHECKLIST1. Client Name: **SANTEK WASTE SERVICES**2. Carrier: FedEx UPS USPS Client Courier Other _____AES Work Order Number: **1811C87**

	Yes	No	N/A	Details	Comments
3. Shipping container/cooler received in good condition?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	damaged <input type="checkbox"/> leaking <input type="checkbox"/> other <input type="checkbox"/>	
4. Custody seals present on shipping container?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
5. Custody seals intact on shipping container?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
6. Temperature blanks present?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
7. Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Cooling initiated for recently collected samples / ice present <input type="checkbox"/>	
8. Chain of Custody (COC) present?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
9. Chain of Custody signed, dated, and timed when relinquished and received?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
10. Sampler name and/or signature on COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
11. Were all samples received within holding time?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
12. TAT marked on the COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. <input type="checkbox"/>	

13. Cooler 1 Temperature 0.4 °C Cooler 2 Temperature 1.3 °C Cooler 3 Temperature 2.3 °C Cooler 4 Temperature _____ °C
 14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials).

EW 11/14/18

	Yes	No	N/A	Details	Comments
16. Were sample containers intact upon receipt?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
17. Custody seals present on sample containers?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		
18. Custody seals intact on sample containers?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		
19. Do sample container labels match the COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	incomplete info <input type="checkbox"/> illegible <input type="checkbox"/> no label <input type="checkbox"/> other <input type="checkbox"/>	
20. Are analyses requested indicated on the COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
21. Were all of the samples listed on the COC received?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	samples received but not listed on COC <input type="checkbox"/> samples listed on COC not received <input type="checkbox"/>	
22. Was the sample collection date/time noted?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
23. Did we receive sufficient sample volume for indicated analyses?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
24. Were samples received in appropriate containers?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
25. Were VOA samples received without headspace (< 1/4" bubble)?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
26. Were trip blanks submitted?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	listed on COC <input checked="" type="checkbox"/> not listed on COC <input type="checkbox"/>	

27. Comments: _____

This section only applies to samples where pH can be checked at Sample Receipt.

I certify that I have completed sections 16-27 (dated initials).

EW 11/14/18

	Yes	No	N/A	Details	Comments
28. Have containers needing chemical preservation been checked? *	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
29. Containers meet preservation guidelines?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
30. Was pH adjusted at Sample Receipt?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.

I certify that I have completed sections 28-30 (dated initials).

EW 11/14/18

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 270165**

Sample ID: MB-270165	Client ID:	Units: ug/L			Prep Date:	11/13/2018	Run No: 384558				
SampleType: MBLK	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B	BatchID: 270165			Analysis Date:	11/13/2018	Seq No: 8586211				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	BRL	5.0									
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,3-Trichloropropane	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	50									
Acrylonitrile	BRL	5.0									
Benzene	BRL	5.0									
Bromochloromethane	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									

Qualifiers: > Greater than Result value

< Less than Result value

B Analyte detected in the associated method blank

BRL Below reporting limit

E Estimated (value above quantitation range)

H Holding times for preparation or analysis exceeded

J Estimated value detected below Reporting Limit

N Analyte not NELAC certified

R RPD outside limits due to matrix

Rpt Lim Reporting Limit

S Spike Recovery outside limits due to matrix

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 270165**

Sample ID: MB-270165	Client ID:	Units: ug/L			Prep Date:	11/13/2018	Run No: 384558				
SampleType: MBLK	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B	BatchID: 270165			Analysis Date:	11/13/2018	Seq No: 8586211				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloroform	BRL	5.0									
Chloromethane	BRL	10									
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dibromomethane	BRL	5.0									
Ethylbenzene	BRL	5.0									
Iodomethane	BRL	10									
m,p-Xylene	BRL	10									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	10									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
trans-1,4-Dichloro-2-butene	BRL	10									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl acetate	BRL	10									
Vinyl chloride	BRL	2.0									
Xylenes, Total	BRL	10									
Surr: 4-Bromofluorobenzene	50.25	0	50.00		100	68	127				
Surr: Dibromofluoromethane	48.98	0	50.00		98.0	84.4	122				
Surr: Toluene-d8	47.12	0	50.00		94.2	80.1	116				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank	
	BRL	Below reporting limit		E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit		N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit		S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 270165**

Sample ID: LCS-270165	Client ID:	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B			Units: ug/L	Prep Date: 11/13/2018	Run No: 384558				
SampleType: LCS					BatchID: 270165	Analysis Date: 11/13/2018	Seq No: 8586209				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	19.19	5.0	20.00		96.0	69	136				
Benzene	19.75	5.0	20.00		98.8	73.7	126				
Chlorobenzene	19.89	5.0	20.00		99.4	73.5	124				
Toluene	19.94	5.0	20.00	0.4100	97.6	76.8	125				
Trichloroethene	18.67	5.0	20.00		93.4	70.9	124				
Surr: 4-Bromofluorobenzene	49.25	0	50.00		98.5	68	127				
Surr: Dibromofluoromethane	50.89	0	50.00		102	84.4	122				
Surr: Toluene-d8	50.22	0	50.00		100	80.1	116				
Sample ID: 1811572-043AMS	Client ID:	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B			Units: ug/L	Prep Date: 11/13/2018	Run No: 384594				
SampleType: MS					BatchID: 270165	Analysis Date: 11/14/2018	Seq No: 8587634				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	274.9	50	200.0		137	65.7	143				
Benzene	225.0	50	200.0		112	66.1	137				
Chlorobenzene	230.7	50	200.0		115	70.9	132				
Toluene	249.8	50	200.0		125	63.8	141				
Trichloroethene	231.7	50	200.0		116	70.6	128				
Surr: 4-Bromofluorobenzene	439.5	0	500.0		87.9	68	127				
Surr: Dibromofluoromethane	500.4	0	500.0		100	84.4	122				
Surr: Toluene-d8	534.2	0	500.0		107	80.1	116				
Sample ID: 1811572-047ADUP	Client ID:	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B			Units: ug/L	Prep Date: 11/13/2018	Run No: 384594				
SampleType: DUP					BatchID: 270165	Analysis Date: 11/14/2018	Seq No: 8588048				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	BRL	5.0						0	0	20	
1,1,1-Trichloroethane	BRL	5.0						0	0	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 270165**

Sample ID: 1811572-047ADUP	Client ID:	Units: ug/L			Prep Date:	11/13/2018	Run No:				
Sample Type: DUP	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B	BatchID: 270165			Analysis Date:	11/14/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,2,2-Tetrachloroethane	BRL	5.0						0	0	20	
1,1,2-Trichloroethane	BRL	5.0						0	0	20	
1,1-Dichloroethane	BRL	5.0						0	0	20	
1,1-Dichloroethene	BRL	5.0						0	0	20	
1,2,3-Trichloropropane	BRL	5.0						0	0	20	
1,2-Dibromo-3-chloropropane	BRL	5.0						0	0	20	
1,2-Dibromoethane	BRL	5.0						0	0	20	
1,2-Dichlorobenzene	BRL	5.0						0	0	20	
1,2-Dichloroethane	BRL	5.0						0	0	20	
1,2-Dichloropropane	BRL	5.0						0	0	20	
1,4-Dichlorobenzene	BRL	5.0						0	0	20	
2-Butanone	BRL	50						0	0	20	
2-Hexanone	BRL	10						0	0	20	
4-Methyl-2-pentanone	BRL	10						0	0	20	
Acetone	BRL	50						0	0	20	
Acrylonitrile	BRL	5.0						0	0	20	
Benzene	BRL	5.0						0	0	20	
Bromochloromethane	BRL	5.0						0	0	20	
Bromodichloromethane	BRL	5.0						0	0	20	
Bromoform	BRL	5.0						0	0	20	
Bromomethane	BRL	5.0						0	0	20	
Carbon disulfide	BRL	5.0						0	0	20	
Carbon tetrachloride	BRL	5.0						0	0	20	
Chlorobenzene	BRL	5.0						0	0	20	
Chlorethane	BRL	10						0	0	20	
Chloroform	BRL	5.0						0	0	20	
Chloromethane	BRL	10						0	0	20	

Qualifiers: > Greater than Result value

< Less than Result value

B Analyte detected in the associated method blank

BRL Below reporting limit

E Estimated (value above quantitation range)

H Holding times for preparation or analysis exceeded

J Estimated value detected below Reporting Limit

N Analyte not NELAC certified

R RPD outside limits due to matrix

Rpt Lim Reporting Limit

S Spike Recovery outside limits due to matrix

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 270165**

Sample ID: 1811572-047ADUP	Client ID:	Units: ug/L			Prep Date:	11/13/2018	Run No:				
Sample Type: DUP	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B	BatchID: 270165			Analysis Date:	11/14/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	5.0						0	0	20	
cis-1,3-Dichloropropene	BRL	5.0						0	0	20	
Dibromochloromethane	BRL	5.0						0	0	20	
Dibromomethane	BRL	5.0						0	0	20	
Ethylbenzene	BRL	5.0						0	0	20	
Iodomethane	BRL	10.						0	0	20	
m,p-Xylene	BRL	10						0	0	20	
Methylene chloride	BRL	5.0						0	0	20	
o-Xylene	BRL	10						0	0	20	
Styrene	BRL	5.0						0	0	20	
Tetrachloroethene	BRL	5.0						0	0	20	
Toluene	BRL	5.0						0.4200	0	20	
trans-1,2-Dichloroethene	BRL	5.0						0	0	20	
trans-1,3-Dichloropropene	BRL	5.0						0	0	20	
trans-1,4-Dichloro-2-butene	BRL	10						0	0	20	
Trichloroethene	BRL	5.0						0	0	20	
Trichlorofluoromethane	BRL	5.0						0.5200	0	20	
Vinyl acetate	BRL	10						0	0	20	
Vinyl chloride	BRL	2.0						0	0	20	
Xylenes, Total	BRL	10						0	0	20	
Surr: 4-Bromofluorobenzene	46.99	0						46.00	0	0	
Surr: Dibromofluoromethane	52.25	0						50.88	0	0	
Surr: Toluene-d8	52.23	0						48.48	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 270256**

Sample ID: MB-270256	Client ID:	Units: mg/L			Prep Date:	11/15/2018	Run No:				
SampleType: MBLK	TestCode: APPENDIX I METALS	SW6020B	BatchID:	270256	Analysis Date:	11/15/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	BRL	0.00600									
Arsenic	BRL	0.0100									
Barium	BRL	0.0200									
Beryllium	BRL	0.00400									
Cadmium	BRL	0.00500									
Chromium	BRL	0.0200									
Cobalt	BRL	0.0500									
Copper	BRL	0.0200									
Lead	BRL	0.0100									
Nickel	BRL	0.0400									
Selenium	BRL	0.0500									
Silver	BRL	0.00500									
Thallium	BRL	0.00200									
Vanadium	BRL	0.0500									
Zinc	BRL	0.0200									

Sample ID: LCS-270256	Client ID:	Units: mg/L			Prep Date:	11/15/2018	Run No:				
SampleType: LCS	TestCode: APPENDIX I METALS	SW6020B	BatchID:	270256	Analysis Date:	11/15/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1026	0.00600	0.1000		103	80	120				
Arsenic	0.1066	0.0100	0.1000		107	80	120				
Barium	0.1052	0.0200	0.1000		105	80	120				
Beryllium	0.09850	0.00400	0.1000		98.5	80	120				
Cadmium	0.1016	0.00500	0.1000		102	80	120				
Chromium	0.1026	0.0200	0.1000		103	80	120				
Cobalt	0.1056	0.0500	0.1000		106	80	120				
Copper	0.1064	0.0200	0.1000		106	80	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 270256**

Sample ID: LCS-270256	Client ID:	Units: mg/L	Prep Date: 11/15/2018	Run No: 384870
SampleType: LCS	TestCode: APPENDIX I METALS	BatchID: 270256	Analysis Date: 11/15/2018	Seq No: 8594004
Analyte Result RPT Limit SPK value SPK Ref Val %REC Low Limit High Limit RPD Ref Val %RPD RPD Limit Qual				

Lead	0.1035	0.0100	0.1000		103	80	120				
Nickel	0.09883	0.0400	0.1000		98.8	80	120				
Selenium	0.09534	0.0500	0.1000		95.3	80	120				
Silver	0.009985	0.00500	0.0100		99.8	80	120				
Thallium	0.09939	0.00200	0.1000		99.4	80	120				
Vanadium	0.1026	0.0500	0.1000		103	80	120				
Zinc	0.1049	0.0200	0.1000		105	80	120				

Sample ID: 1811C03-002EMS	Client ID:	Units: mg/L	Prep Date: 11/15/2018	Run No: 384870							
SampleType: MS	TestCode: APPENDIX I METALS	BatchID: 270256	Analysis Date: 11/15/2018	Seq No: 8594006							
Analyte Result RPT Limit SPK value SPK Ref Val %REC Low Limit High Limit RPD Ref Val %RPD RPD Limit Qual											
Antimony 0.1019 0.00600 0.1000					102	75	125				
Arsenic 0.09851 0.0100 0.1000					98.5	75	125				
Barium 0.11171 0.0200 0.1000 0.01119 106					75	75	125				
Beryllium 0.09639 0.00400 0.1000 0.003933 92.5					75	75	125				
Cadmium 0.1025 0.00500 0.1000 0.008549 93.9					75	75	125				
Chromium 0.1019 0.0200 0.1000					102	75	125				
Cobalt 0.1643 0.0500 0.1000 0.06808 96.2					75	75	125				
Copper 0.8284 0.0200 0.1000 0.7432 85.3					75	75	125				
Lead 0.09990 0.0100 0.1000 0.002481 97.4					75	75	125				
Nickel 0.1081 0.0400 0.1000 0.01138 96.7					75	75	125				
Selenium 0.09543 0.0500 0.1000 0.001735 93.7					75	75	125				
Silver 0.009688 0.00500 0.0100					96.9	75	125				
Thallium 0.09790 0.00200 0.1000 0.0008942 97.0					75	75	125				
Vanadium 0.08796 0.0500 0.1000					88.0	75	125				
Zinc 2.098 0.0200 0.1000 2.055 43.7					75	75	125				S

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 270256**

Sample ID: 1811C03-002EMSD	Client ID:				Units: mg/L	Prep Date: 11/15/2018	Run No: 384870				
Sample Type: MSD	TestCode: APPENDIX I METALS	SW6020B			BatchID: 270256	Analysis Date: 11/15/2018	Seq No: 8594007				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.1026	0.00600	0.1000		103	75	125	0.1019	0.666	20	
Arsenic	0.1008	0.0100	0.1000		101	75	125	0.09851	2.30	20	
Barium	0.1144	0.0200	0.1000	0.01119	103	75	125	0.1171	2.30	20	
Beryllium	0.09496	0.00400	0.1000	0.003933	91.0	75	125	0.09639	1.49	20	
Cadmium	0.1025	0.00500	0.1000	0.008549	94.0	75	125	0.1025	0.062	20	
Chromium	0.1011	0.0200	0.1000		101	75	125	0.1019	0.755	20	
Cobalt	0.1660	0.0500	0.1000	0.06808	97.9	75	125	0.1643	1.03	20	
Copper	0.8389	0.0200	0.1000	0.7432	95.8	75	125	0.8284	1.26	20	
Lead	0.1011	0.0100	0.1000	0.002481	98.6	75	125	0.09990	1.22	20	
Nickel	0.1080	0.0400	0.1000	0.01138	96.7	75	125	0.1081	0.064	20	
Selenium	0.09505	0.0500	0.1000	0.001735	93.3	75	125	0.09543	0.407	20	
Silver	0.009662	0.00500	0.0100		96.6	75	125	0.009688	0.268	20	
Thallium	0.09802	0.00200	0.1000	0.0008942	97.1	75	125	0.09790	0.119	20	
Vanadium	0.08704	0.0500	0.1000		87.0	75	125	0.08796	1.05	20	
Zinc	2.145	0.0200	0.1000	2.055	90.1	75	125	2.098	2.19	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 270283**

Sample ID: MB-270283	Client ID:				Units: ug/L	Prep Date:	11/15/2018	Run No: 384866
SampleType: MBLK	TestCode: MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				BatchID: 270283	Analysis Date:	11/15/2018	Seq No: 8593574
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val
1,2-Dibromo-3-chloropropane	BRL	0.040						
1,2-Dibromoethane	BRL	0.020						
Sur: 4-Bromofluorobenzene	5.469	0	5.000		109	72.9	137	
Sample ID: LCS-270283	Client ID:				Units: ug/L	Prep Date:	11/15/2018	Run No: 384866
SampleType: LCS	TestCode: MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				BatchID: 270283	Analysis Date:	11/15/2018	Seq No: 8593575
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val
1,2-Dibromo-3-chloropropane	0.1050	0.040	0.1000		105	60	140	
1,2-Dibromoethane	0.1130	0.020	0.1000		113	60	140	
Sur: 4-Bromofluorobenzene	4.644	0	5.000		92.9	72.9	137	
Sample ID: LCSD-270283	Client ID:				Units: ug/L	Prep Date:	11/15/2018	Run No: 384866
SampleType: LCSD	TestCode: MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				BatchID: 270283	Analysis Date:	11/15/2018	Seq No: 8593576
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val
1,2-Dibromo-3-chloropropane	0.1050	0.040	0.1000		105	60	140	0.1050
1,2-Dibromoethane	0.1150	0.020	0.1000		115	60	140	0.1130
Sur: 4-Bromofluorobenzene	5.533	0	5.000		111	72.9	137	4.644
Sample ID: 1811A95-007AMS	Client ID:				Units: ug/L	Prep Date:	11/15/2018	Run No: 384866
SampleType: MS	TestCode: MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				BatchID: 270283	Analysis Date:	11/15/2018	Seq No: 8593579
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val
1,2-Dibromo-3-chloropropane	0.1077	0.040	0.1007		107	60.8	136	
1,2-Dibromoethane	0.1108	0.020	0.1007		110	70	131	
Sur: 4-Bromofluorobenzene	5.314	0	5.034		106	72.9	137	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 270402**

Sample ID: MB-270402	Client ID:	Units: mg/L	Prep Date: 11/19/2018	Run No: 384974							
SampleType: MBLK	TestCode: Mercury, Total SW7470A	BatchID: 270402	Analysis Date: 11/19/2018	Seq No: 8596759							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	BRL	0.00020									
Sample ID: LCS-270402	Client ID:	Units: mg/L	Prep Date: 11/19/2018	Run No: 384974							
SampleType: LCS	TestCode: Mercury, Total SW7470A	BatchID: 270402	Analysis Date: 11/19/2018	Seq No: 8596760							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004651	0.00020	0.0050		93.0	80	120				
Sample ID: 1811C88-002AMS	Client ID:	Units: mg/L	Prep Date: 11/19/2018	Run No: 384974							
SampleType: MS	TestCode: Mercury, Total SW7470A	BatchID: 270402	Analysis Date: 11/19/2018	Seq No: 8596762							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004856	0.00020	0.0050		97.1	75	125				
Sample ID: 1811C88-002AMSD	Client ID:	Units: mg/L	Prep Date: 11/19/2018	Run No: 384974							
SampleType: MSD	TestCode: Mercury, Total SW7470A	BatchID: 270402	Analysis Date: 11/19/2018	Seq No: 8596763							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.005089	0.00020	0.0050		102	75	125	0.004856	4.68	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 271795**

Sample ID: MB-271795	Client ID:	Units: mg/L			Prep Date:	12/18/2018	Run No:				
SampleType: MBLK	TestCode: APPENDIX I METALS	SW6020B	BatchID:	271795	Analysis Date:	12/19/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	BRL	0.00600									
Arsenic	BRL	0.0100									
Barium	BRL	0.0200									
Beryllium	BRL	0.00400									
Cadmium	BRL	0.00500									
Chromium	BRL	0.0200									
Cobalt	BRL	0.0500									
Copper	BRL	0.0200									
Lead	BRL	0.0100									
Nickel	BRL	0.0400									
Selenium	BRL	0.0500									
Silver	BRL	0.00500									
Thallium	BRL	0.00200									
Vanadium	BRL	0.0500									
Zinc	BRL	0.0200									

Sample ID: LCS-271795	Client ID:	Units: mg/L			Prep Date:	12/18/2018	Run No:				
SampleType: LCS	TestCode: APPENDIX I METALS	SW6020B	BatchID:	271795	Analysis Date:	12/19/2018	Seq No:				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09428	0.00600	0.1000	0.001163	93.1	80	120				
Arsenic	0.09514	0.0100	0.1000		95.1	80	120				
Barium	0.09088	0.0200	0.1000		90.9	80	120				
Beryllium	0.09968	0.00400	0.1000		99.7	80	120				
Cadmium	0.09460	0.00500	0.1000		94.6	80	120				
Chromium	0.09599	0.0200	0.1000		96.0	80	120				
Cobalt	0.09619	0.0500	0.1000		96.2	80	120				
Copper	0.09110	0.0200	0.1000		91.1	80	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 271795**

Sample ID: LCS-271795	Client ID: APPENDIX I METALS	TestCode: SW6020B	Units: mg/L	Prep Date: 12/18/2018	Run No: 387206						
Sample Type: LCS			BatchID: 271795	Analysis Date: 12/19/2018	Seq No: 8656450						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	0.09671	0.0100	0.1000		96.7	80	120				
Nickel	0.09623	0.0400	0.1000		96.2	80	120				
Selenium	0.08989	0.0500	0.1000		89.9	80	120				
Silver	0.009786	0.00500	0.0100		97.9	80	120				
Thallium	0.1039	0.00200	0.1000		104	80	120				
Vanadium	0.09577	0.0500	0.1000		95.8	80	120				
Zinc	0.09343	0.0200	0.1000		93.4	80	120				

Sample ID: 1812H14-019BMS	Client ID: APPENDIX I METALS	TestCode: SW6020B	Units: mg/L	Prep Date: 12/18/2018	Run No: 387206						
Sample Type: MS			BatchID: 271795	Analysis Date: 12/19/2018	Seq No: 8656452						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09252	0.00600	0.1000	0.001443	91.1	75	125				
Arsenic	0.09108	0.0100	0.1000		91.1	75	125				
Barium	0.08985	0.0200	0.1000		89.9	75	125				
Beryllium	0.09546	0.00400	0.1000		95.5	75	125				
Cadmium	0.09220	0.00500	0.1000		92.2	75	125				
Chromium	0.09233	0.0200	0.1000		92.3	75	125				
Cobalt	0.09502	0.0500	0.1000		95.0	75	125				
Copper	0.08952	0.0200	0.1000		89.5	75	125				
Lead	0.09810	0.0100	0.1000		98.1	75	125				
Nickel	0.09591	0.0400	0.1000		95.9	75	125				
Selenium	0.08766	0.0500	0.1000		87.7	75	125				
Silver	0.009577	0.00500	0.0100		95.8	75	125				
Thallium	0.1031	0.00200	0.1000	0.0008607	102	75	125				
Vanadium	0.09250	0.0500	0.1000		92.5	75	125				
Zinc	0.09202	0.0200	0.1000	0.002313	89.7	75	125				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: 271795**

Sample ID: 1812H14-019BMSD	Client ID:				Units: mg/L	Prep Date: 12/18/2018	Run No: 387206				
SampleType: MSD	TestCode: APPENDIX I METALS	SW6020B			BatchID: 271795	Analysis Date: 12/19/2018	Seq No: 8656453				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09264	0.00600	0.1000	0.001443	91.2	75	125	0.09252	0.135	20	
Arsenic	0.09183	0.0100	0.1000		91.8	75	125	0.09108	0.812	20	
Barium	0.09049	0.0200	0.1000		90.5	75	125	0.08985	0.708	20	
Beryllium	0.09406	0.00400	0.1000		94.1	75	125	0.09546	1.48	20	
Cadmium	0.09427	0.00500	0.1000		94.3	75	125	0.09220	2.23	20	
Chromium	0.09282	0.0200	0.1000		92.8	75	125	0.09233	0.533	20	
Cobalt	0.09516	0.0500	0.1000		95.2	75	125	0.09502	0.145	20	
Copper	0.08809	0.0200	0.1000		88.1	75	125	0.08952	1.60	20	
Lead	0.09780	0.0100	0.1000		97.8	75	125	0.09810	0.302	20	
Nickel	0.09477	0.0400	0.1000		94.8	75	125	0.09591	1.19	20	
Selenium	0.08733	0.0500	0.1000		87.3	75	125	0.08766	0.380	20	
Silver	0.009761	0.00500	0.0100		97.6	75	125	0.009577	1.90	20	
Thallium	0.1063	0.00200	0.1000	0.0008607	105	75	125	0.1031	3.02	20	
Vanadium	0.09201	0.0500	0.1000		92.0	75	125	0.09250	0.534	20	
Zinc	0.09215	0.0200	0.1000	0.002313	89.8	75	125	0.09202	0.137	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Analytical Environmental Services, Inc

Date: 20-Dec-18

Client: Santek Waste Services, LLC
Project Name: Loudon County (Matlock Bend) Landfill
Workorder: 1811C87

ANALYTICAL QC SUMMARY REPORT**BatchID: R385052**

Sample ID: MB-R385052	Client ID:				Units: mg/L	Prep Date:	Run No: 385052				
SampleType: MBLK	TestCode: Inorganic Anions by IC E300.0				BatchID: R385052	Analysis Date: 11/16/2018	Seq No: 8598745				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	BRL	1.00									
Fluoride	BRL	0.200									
Sulfate	BRL	1.00									
Sample ID: LCS-R385052	Client ID:				Units: mg/L	Prep Date:	Run No: 385052				
SampleType: LCS	TestCode: Inorganic Anions by IC E300.0				BatchID: R385052	Analysis Date: 11/16/2018	Seq No: 8598744				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	10.98	1.00	10.00		110	90	110				
Fluoride	4.562	0.200	5.000		91.2	90	110				
Sulfate	24.90	1.00	25.00		99.6	90	110				
Sample ID: 1811C87-004DMS	Client ID: MW-05				Units: mg/L	Prep Date:	Run No: 385052				
SampleType: MS	TestCode: Inorganic Anions by IC E300.0				BatchID: R385052	Analysis Date: 11/16/2018	Seq No: 8598777				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	241.9	20.0	200.0		121	90	110				S
Fluoride	99.69	4.00	100.0		99.7	90	110				
Sulfate	505.0	20.0	500.0		101	90	110				
Sample ID: 1811C87-004DMSD	Client ID: MW-05				Units: mg/L	Prep Date:	Run No: 385052				
SampleType: MSD	TestCode: Inorganic Anions by IC E300.0				BatchID: R385052	Analysis Date: 11/16/2018	Seq No: 8598779				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	271.4	20.0	200.0		136	90	110	241.9	11.5	20	S
Fluoride	109.5	4.00	100.0		109	90	110	99.69	9.35	20	
Sulfate	509.3	20.0	500.0		102	90	110	505.0	0.836	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

APPENDIX C

**LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #01**

INORGANIC	TN REGULATORY LIMITS	11-17-17	3-26-18	5-7-18	5-23-18	11-14-18	MW-01 Avg.	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.50	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.50	2.50
Barium	2000	33	30.6	29.8	29.4	50.4	34.64	14.18
Beryllium	4	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5.00	7.09
Copper	800**	2	2	2	2	2	2.00	2.00
Fluoride*	4	1	1	1	1	1	1.00	1.00
Lead	15	1	1	1	1	1	1.00	1.02
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Nickel	100	5	5	5	5	5	5.00	9.80
Selenium	50	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Vanadium	86**	5	5	5	5	5	5.00	5.11
Zinc	6000**	10	10	10	10	10	10.00	23.30

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)

**EPA REGION 4 SCREENING LEVEL

ORGANIC	11-16-17	3-26-18	5-7-18	5-22-18	11-13-18
Acetone	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethyldene dichlor	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #1A

INORGANIC	TN REGULATORY LIMITS	11-16-17	3-7-18	5-3-18	5-23-18	11-14-18	MW-1A Avg.	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.50	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.50	2.50
Barium	2000	87.1	67.2	104	69.3	99.5	85.42	14.18
Beryllium	4	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5.00	7.09
Copper	800**	2	2	2.2	2	2	2.04	2.00
Fluoride*	4	1	1	1	1	1	1.00	1.00
Lead	15	1	1	1.39	1	1	1.08	1.02
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Nickel	100	5	5	5	5	5	5.00	9.80
Selenium	50	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Vanadium	86**	5	5	5	5	5	5.00	5.11
Zinc	6000**	10	14.3	14.9	12.5	14	13.14	23.30

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)

**EPA REGION 4 SCREENING LEVEL

ORGANIC	11-16-17	3-7-18	5-3-18	5-22-18	11-13-18
Acetone	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethyldene chloride; Ethyldene dichlor	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND
Methylene bromide; Dichromomethane	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND
1,2,3-Trichloropropene	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND

**LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #02**

INORGANIC	TN REGULATORY LIMITS	11-16-17	3-7-18	5-7-18	5-23-18	11-13-18	MW-02 Avg.	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.50	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.50	2.50
Barium	2000	68.8	38.5	54.3	52.3	86.4	60.06	14.18
Beryllium	4	1.87	1.38	2.45	1.78	2.31	1.96	1.00
Cadmium	5	2.27	1.34	1.92	1.62	2.28	1.89	0.70
Chromium	100	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5.00	7.09
Copper	800**	2	2	2	2	2.52	2.10	2.00
Fluoride*	4	1	1	1	1	1	1.00	1.00
Lead	15	1	1	1	1	1	1.00	1.02
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Nickel	100	33.7	21.8	28.4	26.9	37	29.56	9.80
Selenium	50	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Vanadium	86**	5	5	5	5	5	5.00	5.11
Zinc	6000**	350	219	296	278	404	309.40	23.30

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)

**EPA REGION 4 SCREENING LEVEL

ORGANIC	11-16-17	3-7-18	5-7-18	5-23-18	11-13-18
Acetone	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethyldene dichlor	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #03

INORGANIC	TN REGULATORY LIMITS	11-16-17	3-26-18	5-7-18	5-23-18	11-13-18	MW-03 Avg.	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.50	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.50	2.50
Barium	2000	62.7	53.7	79.8	102	142	88.04	14.18
Beryllium	4	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5.00	5.00
Cobalt	6**	9.74	5	10.3	13.3	18.9	11.45	7.09
Copper	800**	5.2	3.91	3.21	3.35	2.09	3.55	2.00
Fluoride*	4	1	1	1	1	1	1.00	1.00
Lead	15	1.39	1	1	2.14	1	1.31	1.02
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Nickel	100	7.5	7.51	8.75	10.5	11.3	9.11	9.80
Selenium	50	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Vanadium	86**	5	5	5	5	5	5.00	5.11
Zinc	6000**	11.9	28.2	10	15.5	13.2	15.76	23.30

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)

**EPA REGION 4 SCREENING LEVEL

ORGANIC	11-16-17	3-26-18	5-7-18	5-23-18	11-13-18
Acetone	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
Chlorobenzene	NO	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichlor	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND

LOUDON COUNTY
BACKGROUND WELL
MONITORING WELL #4R

INORGANIC	TN REGULATORY LIMITS	11-17-17	3-7-18	5-3-18	5-23-18	11-14-18	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.50
Barium	2000	11.3	21.3	10.1	11.8	16.4	14.18
Beryllium	4	1	1	1	1	1	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.70
Chromium	100	5	5	5	5	5	5.00
Cobalt	6**	5	13.6	5	5	6.86	7.09
Copper	800**	2	2	2	2	2	2.00
Fluoride*	4	1	1	1	1	1	1.00
Lead	15	1	1	1	1	1.1	1.02
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.50
Nickel	100	7.69	14.3	5	8.3	13.7	9.80
Selenium	50	5	5	5	5	5	5.00
Silver	100	1	1	1	1	1	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.50
Vanadium	86**	5	5	5.53	5	5	5.11
Zinc	6000**	21.2	32.9	12.6	16.6	33.2	23.30

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)

**EPA REGION 4 SCREENING LEVEL

ORGANIC	11-16-17	3-7-18	5-3-18	5-22-18	11-13-18
Acetone	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropene; Propylene dichloride	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #05

INORGANIC	TN REGULATORY LIMITS	11-16-17	3-7-18	5-3-18	5-22-18	11-13-18	MW-05 Avg.	MW-4R Avg.
Antimony	6	1.5	1.5	1.5	1.5	1.5	1.50	1.50
Arsenic	10	2.5	2.5	2.5	2.5	2.5	2.50	2.50
Barium	2000	10	10	11.9	10.2	10.6	10.54	14.18
Beryllium	4	1	1	1	1	1	1.00	1.00
Cadmium	5	0.7	0.7	0.7	0.7	0.7	0.70	0.70
Chromium	100	5	5	5	5	5	5.00	5.00
Cobalt	6**	5	5	5	5	5	5.00	7.09
Copper	800**	2	2	2	2	2	2.00	2.00
Fluoride*	4	1	1	1	1	1	1.00	1.00
Lead	15	1	1	1	1	1	1.00	1.02
Mercury	2	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Nickel	100	5	5	5	5	5	5.00	9.80
Selenium	50	5	5	5	5	5	5.00	5.00
Silver	100	1	1	1	1	1	1.00	1.00
Thallium	2	0.5	0.5	0.5	0.5	0.5	0.50	0.50
Vanadium	86**	5	5	5	5	5	5.00	5.11
Zinc	6000**	10.0	10.3	10.0	11.7	11.8	10.76	23.30

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)

**EPA REGION 4 SCREENING LEVEL

ORGANIC	11-16-17	3-7-18	5-3-18	5-22-18	11-13-18
Acetone	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
Bromoform; Tribromomethane	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND
Chloroform; Trichloromethane	ND	ND	ND	ND	ND
Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND
p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ND	ND	ND	ND	ND
1,1-Dichloroethane; Ethyldene chloride; Ethyldene dichlor	ND	ND	ND	ND	ND
1,2-Dichloroethane; Ethylene dichloride	ND	ND	ND	ND	ND
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND
Methyl bromide; Bromomethane	ND	ND	ND	ND	ND
Methyl chloride; Chloromethane	ND	ND	ND	ND	ND
Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND
Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND
Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND
Methyl iodide; Iodomethane	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND
Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND
Vinyl acetate	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND

APPENDIX D

GROUNDWATER DATA

Matlock Bend Landfill

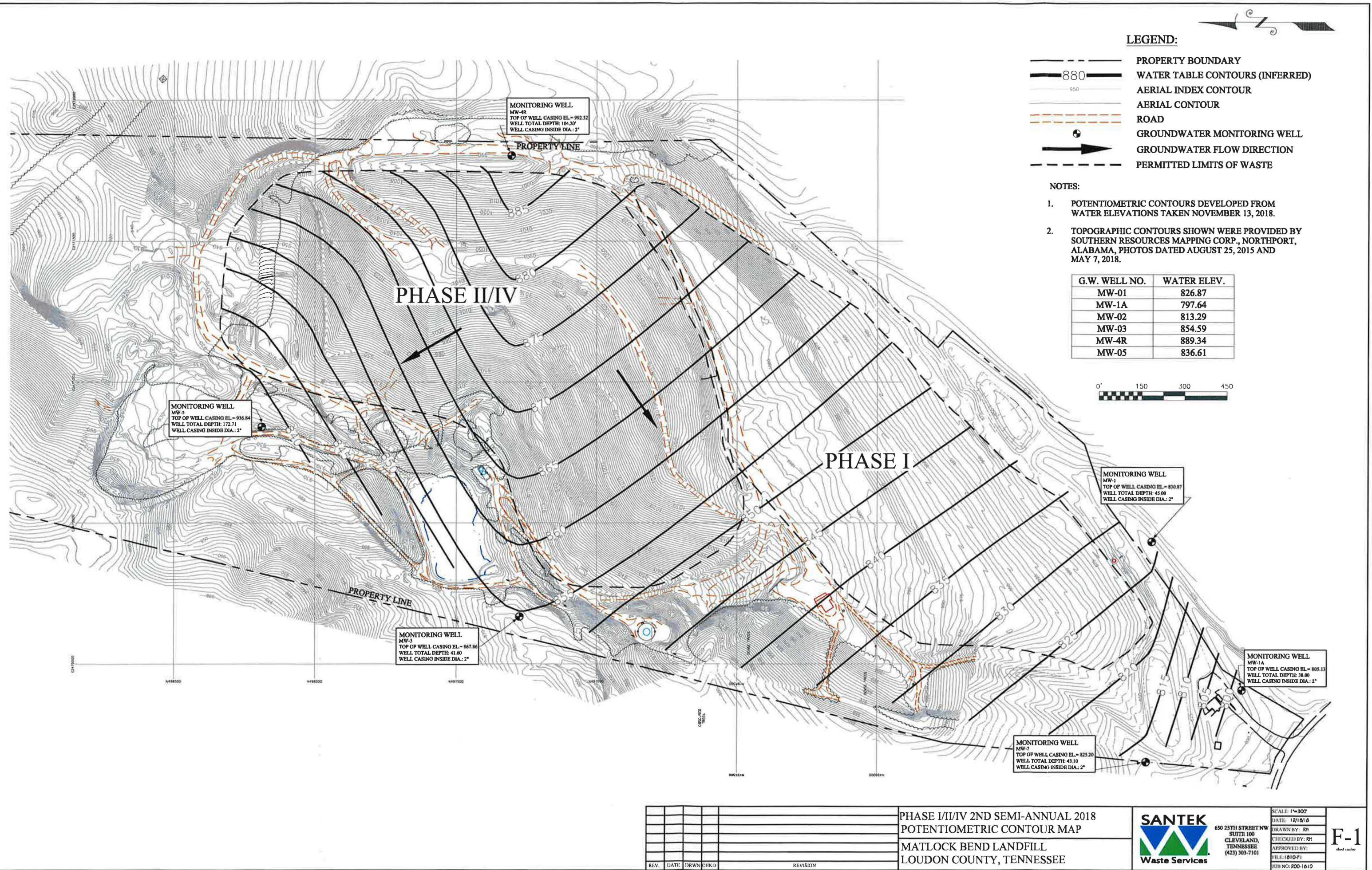
November 13, 2018

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	4.00	826.87	825	30	4.70E-06	0.18	6.23E-02	1.63E-06	2.34E-03	SW
MW-1A*	805.13	7.49	797.64	800	40	3.93E-06	0.18	5.90E-02	1.29E-06	1.85E-03	S
MW-02	825.20	11.91	813.29	815	70	5.90E-06	0.18	2.44E-02	8.01E-07	1.15E-03	SW
MW-03	867.86	13.27	854.59	855	20	1.20E-05	0.18	2.05E-02	1.37E-06	1.97E-03	SW
MW-4R**	992.32	102.98	889.34	885	100	1.90E-05	0.18	4.34E-02	4.58E-06	6.60E-03	NW
MW-05	936.84	100.23	836.61	840	80	2.20E-05	0.18	4.24E-02	5.18E-06	7.46E-03	NW

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

**-The hydraulic conductivity for MW-4R is from MW-04.

APPENDIX E



APPENDIX F

Cobalt Alternate Source Demonstration

Presented in Table 1 below are the cobalt results for MW-03 from sampling on 11/13/18, the leachate sampling on 5/23/18, and soil samples from the Borrow Area at the Landfill. The results indicate cobalt is naturally occurring in the soils approximately 247 times higher than the groundwater. Furthermore, cobalt is present in the leachate as well. However, the presence of cobalt in the leachate is attributable to the use of soils as daily and intermediate cover. Santek believes this report adequately identifies the source of cobalt being the site's natural soil. Therefore, no additional sampling and analysis is recommended for cobalt in MW-03.

Table 1 - Cobalt Alternate Source Demonstration

<u>Location</u>	<u>Cobalt (ppm)</u>
MW-03 (5/23/18)	0.0189
Leachate (5/23/18)	0.0975
Borrow Area A Sample	6.61
Borrow Area B Sample	1.98
Borrow Area C Sample	5.42
Borrow Area Average	4.67



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

June 11, 2018

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

RE: Loudon County (Matlock Bend) Landfill

Dear Robert Hudson:

Order No: 1805P10

Analytical Environmental Services, Inc. received 1 samples on 5/24/2018 9:00:00 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:

-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/17-06/30/18.
State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/17-06/30/18 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.
-NELAP/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/17-06/30/18.
-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 11/01/19.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Chris Pafford
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

3080 Presidential Drive Atlanta, GA 30340-3704

Phone: (770) 457-8177 / Toll-Free: (800) 972-4889 / Fax: (770) 457-8188

CHAIN OF CUSTODY

1805P10 Work Order: 1805P0470
5134
Date: 5/24/18 Page 1 of 1

COMPANY: Santek Environmental Inc.		ADDRESS: 650 25th St NW, Ste 100 Cleveland, TN 37311		ANALYSIS REQUESTED						Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.	Number of Containers						
				TN App VDCE (see notes)	TN App VDCE (see notes)	TN App VDCE (see notes)	Diss Mn	COO, NH3	TDS			E, Cl, NO ₃ , SO ₄ , CN	TOL				
PHONE: 403 / 303-7101	EMAIL:	SAMPLER BY: J Muller, DEHS		SIGNATURE: <i>[Signature]</i>		PRESERVATION (see codes)						REMARKS					
#	SAMPLE ID	SAMPLERED:		GRAB	COMPOSITE	MATRIX (see codes)	H	I	N	T	S	I	I	N	S	E	
		DATE	TIME				2	2	1	1	1	1	1	1	1	1	1
1	Leachate	5/23-18	1143	X		GW	2	2	1	1	1	1	1	1	1	1	12
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
RELINQUISHED BY:		DATE/TIME:		RECEIVED BY:		DATE/TIME:		PROJECT INFORMATION						RECEIPT			
<i>[Signature]</i> 0900		1. Montague 5/24/18 9:07AM		2. Abrams		3.		PROJECT NAME: Loudon County (Matlock Bend) Landfill						Total # of Containers 12			
1.		2.		3.		PROJECT #: _____						Turnaround Time (TAT) Request					
2.		3.		SITE ADDRESS: 21712 Hwy 72 N, Loudon, TN 37774						<input checked="" type="checkbox"/> Standard 5 Business Days <input type="checkbox"/> 2 Business Day Rush <input type="checkbox"/> Next Business Day Rush <input type="checkbox"/> Same-Day Rush (auth req.) <input type="checkbox"/> Other _____							
3.		SEND REPORT TO: Robert Hudson						STATE PROGRAM (if any): TN									
SPECIAL INSTRUCTIONS/COMMENTS:		SHIPMENT METHOD OUT: / / VIA: IN: / / VIA: client FedEx UPS US mail courier Greyhound other: _____						INVOICE TO: (IF DIFFERENT FROM ABOVE) QUOTE #: _____ PO#: _____						E-mail? <input checked="" type="checkbox"/> Fax? <input type="checkbox"/> DATA PACKAGE: I <input type="radio"/> II <input checked="" type="radio"/> III <input type="radio"/> IV <input type="radio"/>			
Submission of samples to the laboratory constitutes acceptance of AES's Terms & Conditions. Samples received after 3PM or on Saturday are considered as received the following business day. If no TAT is marked on COC, AES will proceed with standard TAT. Samples are disposed of 30 days after completion of report unless other arrangements are made.																	

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

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
Page 2 of 9

Client: Santek Environmental Inc.
Project: Loudon County (Matlock Bend) Landfill
Lab ID: 1805P10

Case Narrative**Sample Receiving Non-conformance:**

Samples 1805P10-001C, -001E and -001I as received did not meet specified pH range for the requested test methods of <2. The laboratory attempted to adjust pH at receipt using the maximum allowable amount of preservative however, the required pH was not obtained. The laboratory proceeded with the analyses per client history for leachate samples.

Micro-extractable VOC Analysis by Method 8011:

Matrix spike duplicate analyses were not performed with Batch 261446 due to insufficient sample volume.

Ion Scan Analysis by Method EPA 300:

Due to sample matrix, sample 1805P10-001G required dilution during analysis resulting in elevated reporting limits.

Mercury Analysis by Method 7470A:

Due to sample matrix, sample 1805P10-001C required dilution during preparation and/or analysis resulting in elevated reporting limits.

Client:	Santek Environmental Inc.	Client Sample ID:	LEACHATE					
Project Name:	Loudon County (Matlock Bend) Landfill	Collection Date:	5/23/2018 11:43:00 AM					
Lab ID:	1805P10-001	Matrix:	Groundwater					
Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	880	50.0		mg/L	R371389	50	05/25/2018 22:37	ME
Total Metals by ICP/MS SW6020B								
Calcium	114	5.00		mg/L	261481	50	06/07/2018 15:13	DP
Iron	5.91	0.100		mg/L	261481	1	06/06/2018 23:51	DP
Magnesium	79.8	5.00		mg/L	261481	50	06/07/2018 15:13	DP
Potassium	532	5.00		mg/L	261481	50	06/07/2018 15:13	DP
Sodium	1190	25.0		mg/L	261481	50	06/07/2018 15:13	DP
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	6790	10		mg/L	261539	1	05/29/2018 17:24	BD
Nitrogen, Ammonia (as N) E350.1								
Nitrogen, Ammonia (As N)	1480	100		mg/L	261469	500	05/29/2018 10:23	JM
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011								
1,2-Dibromo-3-chloropropane	BRL	0.039		ug/L	261446	1	05/26/2018 02:48	ZH
1,2-Dibromoethane	BRL	0.020		ug/L	261446	1	05/26/2018 02:48	ZH
Mercury, Total SW7470A								
Mercury	BRL	0.00500		mg/L	261569	1	06/01/2018 01:19	AS
Inorganic Anions by IC EPA 300.0								
Chloride	1310	50.0		mg/L	R371645	50	05/30/2018 13:28	MP
Fluoride	BRL	10.0		mg/L	R371351	10	05/24/2018 19:46	MP
Nitrogen, Nitrate (As N)	BRL	100		mg/L	R371351	10	05/24/2018 19:46	MP
Sulfate	37.1	10.0		mg/L	R371351	10	05/24/2018 19:46	MP
Dissolved Metals by ICP/MS SW6020B								
Manganese	0.787	0.0100		mg/L	261697	1	06/01/2018 19:08	TA
Cyanide SW9014								
Cyanide, Total	BRL	0.200		mg/L	261651	1	05/31/2018 14:00	AK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	3640	250		mg/L	R371737	25	05/31/2018 15:30	CG
APPENDIX I VOLATILE ORGANICS SW8260B								
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
1,1,1-Trichloroethane	BRL	200		ug/L	261543	1	05/31/2018 14:56	OM
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM

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: 11-Jun-18

Client: Santek Environmental Inc.	Client Sample ID: LEACHATE
Project Name: Loudon County (Matlock Bend) Landfill	Collection Date: 5/23/2018 11:43:00 AM
Lab ID: 1805P10-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,2-Trichloroethane	BRL	5.0		ug/L	261543	1	05/31/2018 14:56	OM
1,1-Dichloroethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
1,1-Dichloroethene	BRL	7.0		ug/L	261543	1	05/31/2018 14:56	OM
1,2,3-Trichloropropane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
1,2-Dichlorobenzene	BRL	600		ug/L	261543	1	05/31/2018 14:56	OM
1,2-Dichloroethane	BRL	5.0		ug/L	261543	1	05/31/2018 14:56	OM
1,2-Dichloropropane	BRL	5.0		ug/L	261543	1	05/31/2018 14:56	OM
1,4-Dichlorobenzene	BRL	75		ug/L	261543	1	05/31/2018 14:56	OM
2-Butanone	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
2-Hexanone	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
4-Methyl-2-pentanone	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Acetone	49	10		ug/L	261543	1	05/31/2018 14:56	OM
Acrylonitrile	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Benzene	BRL	5.0		ug/L	261543	1	05/31/2018 14:56	OM
Bromochloromethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Bromodichloromethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Bromoform	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Bromomethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Carbon disulfide	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Carbon tetrachloride	BRL	5.0		ug/L	261543	1	05/31/2018 14:56	OM
Chlorobenzene	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Chloroethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Chloroform	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Chloromethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
cis-1,2-Dichloroethene	BRL	70		ug/L	261543	1	05/31/2018 14:56	OM
cis-1,3-Dichloropropene	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Dibromochloromethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Dibromomethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Ethylbenzene	BRL	700		ug/L	261543	1	05/31/2018 14:56	OM
Iodomethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Methylene chloride	BRL	5.0		ug/L	261543	1	05/31/2018 14:56	OM
Styrene	BRL	100		ug/L	261543	1	05/31/2018 14:56	OM
Tetrachloroethene	BRL	5.0		ug/L	261543	1	05/31/2018 14:56	OM
Toluene	BRL	1000		ug/L	261543	1	05/31/2018 14:56	OM
trans-1,2-Dichloroethene	BRL	100		ug/L	261543	1	05/31/2018 14:56	OM
trans-1,3-Dichloropropene	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Trichloroethene	BRL	5.0		ug/L	261543	1	05/31/2018 14:56	OM
Trichlorofluoromethane	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Vinyl acetate	BRL	10		ug/L	261543	1	05/31/2018 14:56	OM
Vinyl chloride	BRL	2.0		ug/L	261543	1	05/31/2018 14:56	OM

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: 11-Jun-18

Client: Santek Environmental Inc.	Client Sample ID: LEACHATE
Project Name: Loudon County (Matlock Bend) Landfill	Collection Date: 5/23/2018 11:43:00 AM
Lab ID: 1805P10-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
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APPENDIX I VOLATILE ORGANICS SW8260B**(SW5030B)**

Xylenes, Total	BRL	10000	ug/L	261543	1	05/31/2018 14:56	OM
Surr: 4-Bromofluorobenzene	103	68-127	%REC	261543	1	05/31/2018 14:56	OM
Surr: Dibromofluoromethane	110	84.4-122	%REC	261543	1	05/31/2018 14:56	OM
Surr: Toluene-d8	104	80.1-116	%REC	261543	1	05/31/2018 14:56	OM

APPENDIX I METALS SW6020B**(SW3005A)**

Antimony	0.0107	0.00150	mg/L	261481	1	05/31/2018 19:30	DP
Arsenic	0.109	0.00250	mg/L	261481	1	06/06/2018 23:51	TA
Barium	0.556	0.0100	mg/L	261481	1	06/06/2018 23:51	TA
Beryllium	BRL	0.00100	mg/L	261481	10	06/06/2018 23:45	TA
Cadmium	0.00132	0.000700	mg/L	261481	1	06/06/2018 23:51	TA
Chromium	0.296	0.00500	mg/L	261481	1	05/31/2018 19:30	DP
Cobalt	0.0975	0.00500	mg/L	261481	1	05/31/2018 19:30	DP
Copper	0.0330	0.00200	mg/L	261481	1	06/06/2018 23:51	TA
Lead	0.0274	0.00100	mg/L	261481	1	05/31/2018 19:30	DP
Nickel	0.327	0.00500	mg/L	261481	1	05/31/2018 19:30	DP
Selenium	BRL	0.00500	mg/L	261481	1	06/06/2018 23:51	TA
Silver	BRL	0.00100	mg/L	261481	1	05/31/2018 19:30	DP
Thallium	BRL	0.000500	mg/L	261481	1	05/31/2018 19:30	DP
Vanadium	BRL	0.00500	mg/L	261481	1	05/31/2018 19:30	DP
Zinc	0.301	0.0100	mg/L	261481	1	06/06/2018 23:51	TA

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

SAMPLE/COOLER RECEIPT CHECKLIST1. Client Name: **Santek Environmental Inc.**AES Work Order Number: **1805P10**2. Carrier: FedEx UPS USPS Client Courier Other _____

	Yes	No	N/A	Details	Comments
3. Shipping container/cooler received in good condition?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	damaged <input type="checkbox"/> leaking <input type="checkbox"/> other <input type="checkbox"/>	
4. Custody seals present on shipping container?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
5. Custody seals intact on shipping container?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
6. Temperature blanks present?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
7. Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Cooling initiated for recently collected samples / ice present <input type="checkbox"/>	
8. Chain of Custody (COC) present?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
9. Chain of Custody signed, dated, and timed when relinquished and received?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
10. Sampler name and/or signature on COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
11. Were all samples received within holding time?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
12. TAT marked on the COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. <input type="checkbox"/>	

13. Cooler 1 Temperature 2.2 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials).

TD 5/24/18

	Yes	No	N/A	Details	Comments
16. Were sample containers intact upon receipt?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
17. Custody seals present on sample containers?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
18. Custody seals intact on sample containers?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
19. Do sample container labels match the COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	incomplete info <input type="checkbox"/> illegible <input type="checkbox"/> no label <input type="checkbox"/> other <input type="checkbox"/>	
20. Are analyses requested indicated on the COC?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
21. Were all of the samples listed on the COC received?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	samples received but not listed on COC <input type="checkbox"/> samples listed on COC not received <input type="checkbox"/>	
22. Was the sample collection date/time noted?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
23. Did we receive sufficient sample volume for indicated analyses?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
24. Were samples received in appropriate containers?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
25. Were VOA samples received without headspace (< 1/4" bubble)?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
26. Were trip blanks submitted?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	listed on COC <input type="checkbox"/> not listed on COC <input checked="" type="checkbox"/>	

27. Comments: _____

This section only applies to samples where pH can be checked at Sample Receipt.

I certify that I have completed sections 16-27 (dated initials).

MDP 5/24/18

	Yes	No	N/A	Details	Comments
28. Have containers needing chemical preservation been checked? *	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
29. Containers meet preservation guidelines?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		
30. Was pH adjusted at Sample Receipt?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.

I certify that I have completed sections 28-30 (dated initials).

MDP 5/24/18

Client:	Santek Environmental Inc.	
Project Name:	Loudon County (Matlock Bend) Landfill	
Lab Order:	1805P10	
		Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1805P10-001A	LEACHATE	5/23/2018 11:43:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS	5/29/2018 11:59:00 AM	05/31/2018	
1805P10-001B	LEACHATE	5/23/2018 11:43:00AM	Groundwater	MICRO-EXTRACTABLE VOCs	5/25/2018 4:19:46 PM	05/26/2018	
1805P10-001C	LEACHATE	5/23/2018 11:43:00AM	Groundwater	APPENDIX I METALS	5/30/2018 10:41:00 AM	05/31/2018	
1805P10-001C	LEACHATE	5/23/2018 11:43:00AM	Groundwater	APPENDIX I METALS	5/30/2018 10:41:00 AM	06/06/2018	
1805P10-001C	LEACHATE	5/23/2018 11:43:00AM	Groundwater	Total Metals by ICP/MS	5/30/2018 10:41:00 AM	06/06/2018	
1805P10-001C	LEACHATE	5/23/2018 11:43:00AM	Groundwater	Total Metals by ICP/MS	5/30/2018 10:41:00 AM	06/07/2018	
1805P10-001C	LEACHATE	5/23/2018 11:43:00AM	Groundwater	TOTAL MERCURY	5/31/2018 7:45:00 PM	06/01/2018	
1805P10-001D	LEACHATE	5/23/2018 11:43:00AM	Groundwater	Dissolved Metals by ICP/MS	6/1/2018 2:06:00 PM	06/01/2018	
1805P10-001E	LEACHATE	5/23/2018 11:43:00AM	Groundwater	Nitrogen, Ammonia (as N)	5/29/2018 9:02:59 AM	05/29/2018	
1805P10-001E	LEACHATE	5/23/2018 11:43:00AM	Groundwater	Chemical Oxygen Demand (COD)		05/31/2018	
1805P10-001F	LEACHATE	5/23/2018 11:43:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C	5/29/2018 5:24:00 PM	05/29/2018	
1805P10-001G	LEACHATE	5/23/2018 11:43:00AM	Groundwater	Inorganic Anions by IC		05/24/2018	
1805P10-001G	LEACHATE	5/23/2018 11:43:00AM	Groundwater	Inorganic Anions by IC		05/30/2018	
1805P10-001H	LEACHATE	5/23/2018 11:43:00AM	Groundwater	Cyanide	5/31/2018 11:50:00 AM	05/31/2018	
1805P10-001I	LEACHATE	5/23/2018 11:43:00AM	Groundwater	Total Organic Carbon by SM5310B		05/25/2018	

AES, Inc.
3080 Presidential Drive
Atlanta GA 30340

pH Adjustment Sheet

* Number of Pellets when adding NaOH



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

December 21, 2016

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

TEL: (423) 303-7101
FAX: (423) 479-1952

RE: Loudon (Matlock Bend) LF Borrow Pit

Dear Robert Hudson:

Order No: 1612642

Analytical Environmental Services, Inc. received 3 samples on 12/7/2016 10:30:00 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.

Chris Pafford
Project Manager



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:

Mo2642

Date: 12/16/16 Page 1 of 1

COMPANY: Santek Waste Services, Inc.		ADDRESS: 650 25th Street NW, Suite 100, Cleveland, TN 37311		ANALYSIS REQUESTED						Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.			
PHONE: (423) 303-7101		FAX: (423) 479-1952											
SAMPLED BY: R. Hudson		SIGNATURE: Robert Hudson											
#	SAMPLE ID	SAMPLER		Grab	Composite	Matrix (See codes)	PRESERVATION (See codes)				REMARKS	No # of Containers	
		DATE	TIME										
1	A-Sample	11/29/16	3:31	X	SO	X						1	
2	B-Sample	11/29/16	3:29	X	SO	X						1	
3	C-Sample	11/29/16	3:27	X	SO	X						1	
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
RELINQUISHED BY		DATE/TIME		RECEIVED BY		DATE/TIME		PROJECT INFORMATION				RECEIPT	
1: Robert Hudson		12/16/16 11am		2: Maja		12/16/16 10:30		PROJECT NAME: Lauder (Matlock Bend) LF Borrow Pit				Total # of Containers 3	
2:								PROJECT #: Soil Samples				Turnaround Time Request:	
3:								SITE ADDRESS:				<input checked="" type="checkbox"/> Standard 5 Business Days	
								SEND REPORT TO: Robert Hudson				<input type="checkbox"/> 2 Business Day Rush	
												<input type="checkbox"/> Next Business Day Rush	
												<input type="checkbox"/> Same Day Rush (auth req.)	
												Other _____	
SPECIAL INSTRUCTIONS/COMMENTS: See Chris Pafford		SHIPMENT METHOD OLP / / VIA: IN / / VIA: CLIENT FedEx UPS MAIL COURIER GREYHOUND OTHER _____		INVOICE TO: (IF DIFFERENT FROM ABOVE)		QUOTE #: _____		PO#: _____				STATE PROGRAM (if any): _____ E-mail? <input type="checkbox"/> Fax? <input type="checkbox"/>	
												DATA PACKAGE: I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/>	

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.

SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT UNLESS OTHER ARRANGEMENTS ARE MADE.

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

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+T = 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

Date: 21-Dec-16

Client:	Santek Environmental Inc.	Client Sample ID:	A-SAMPLE					
Project Name:	Loudon (Matlock Bend) LF Borrow Pit	Collection Date:	11/29/2016 3:31:00 AM					
Lab ID:	1612642-001	Matrix:	Soil					
Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TOTAL MERCURY SW7471B								(SW7471B)
Mercury	BRL	0.0919		mg/Kg-dry	234606	1	12/12/2016 11:46	JR
Metals by ICP/MS SW6020B								(SW3050B)
Antimony	241	232		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Arsenic	8490	6970		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Barium	32600	4650		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Beryllium	186	46.5		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Cadmium	BRL	46.5		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Chromium	21700	9300		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Cobalt	6610	2320		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Copper	4760	930		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Lead	14300	465		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Nickel	3260	2320		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Selenium	BRL	2320		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Silver	BRL	46.5		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Thallium	178	46.5		ug/Kg-dry	234549	10	12/15/2016 02:56	JS
Vanadium	599	269		ug/Kg-dry	R332264	10	12/15/2016 02:56	JS
Zinc	33100	4650		ug/Kg-dry	234549	10	12/18/2016 04:38	JS
PERCENT MOISTURE D2216								
Percent Moisture	7.01	0		wt%	R332013	1	12/13/2016 10:00	BD

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-Dec-16

Client:	Santek Environmental Inc.	Client Sample ID:	B-SAMPLE					
Project Name:	Loudon (Matlock Bend) LF Borrow Pit	Collection Date:	11/29/2016 3:29:00 AM					
Lab ID:	1612642-002	Matrix:	Soil					
Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TOTAL MERCURY SW7471B								(SW7471B)
Mercury	BRL	0.0997		mg/Kg-dry	234606	1	12/12/2016 11:48	JR
Metals by ICP/MS SW6020B								(SW3050B)
Antimony	375	199		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Arsenic	16200	5960		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Barium	18300	3970		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Beryllium	143	39.7		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Cadmium	BRL	39.7		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Chromium	19800	7950		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Cobalt	1980	199		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Copper	8930	795		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Lead	14400	397		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Nickel	4740	1990		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Selenium	BRL	1990		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Silver	BRL	39.7		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Thallium	183	39.7		ug/Kg-dry	234549	10	12/15/2016 03:02	JS
Vanadium	1140	266		ug/Kg-dry	R332264	10	12/15/2016 03:02	JS
Zinc	24900	3970		ug/Kg-dry	234549	10	12/18/2016 04:44	JS
PERCENT MOISTURE D2216								
Percent Moisture	6.08	0		wt%	R332013	1	12/13/2016 10:00	BD

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-Dec-16

Client: Santek Environmental Inc.	Client Sample ID: C-SAMPLE
Project Name: Loudon (Matlock Bend) LF Borrow Pit	Collection Date: 11/29/2016 3:27:00 AM
Lab ID: 1612642-003	Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TOTAL MERCURY SW7471B								
(SW7471B)								
Mercury	BRL	0.110		mg/Kg-dry	234606	1	12/12/2016 11:34	JR
Metals by ICP/MS SW6020B								
(SW3050B)								
Antimony	420	241		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Arsenic	24000	7230		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Barium	20200	4820		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Beryllium	251	48.2		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Cadmium	BRL	48.2		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Chromium	24800	9650		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Cobalt	5420	2410		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Copper	11500	965		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Lead	17500	482		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Nickel	4820	241		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Selenium	BRL	2410		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Silver	BRL	48.2		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Thallium	175	48.2		ug/Kg-dry	234549	10	12/15/2016 03:08	JS
Vanadium	1160	6.02		ug/Kg-dry	R332264	10	12/15/2016 03:08	JS
Zinc	44700	4820		ug/Kg-dry	234549	10	12/18/2016 04:51	JS
PERCENT MOISTURE D2216								
Percent Moisture	16.9	0		wt%	R332013	1	12/13/2016 10:00	BD

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.

Sample/Cooler Receipt Checklist

Client SantekWork Order Number 1612642Checklist completed by Jessica McInnon 12/17/10
Signature DateCarrier 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° \leq 6°C)* Yes No
*JM12642*Cooler #1 Ambient 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.