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

Email: mail@santekenviro.com
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January 17, 2018

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 2017 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,

Robert Hudson
Environmental Compliance Coordinator

Enclosure

cc: Steve Field, Loudon County Solid Waste Department Chairman
Matt Dillard, Executive V.P. of Operations, 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 - 2017

SANTEK PROJECT NO. 200-1710.4

SANTEK
WasteServices

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

JANUARY 2018

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1.0 INTRODUCTION

In accordance with the Tennessee Department of Environment and Conservation's (TDEC) Solid Waste Processing and Disposal Rule 0400-11-01-.04(7), Santek Waste Services, Inc. (Santek) is submitting the groundwater monitoring report for the second semi-annual event for 2017 at the Matlock Bend Landfill. The sampling and analytical were performed in accordance with the TDEC 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 35.3 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 16 & 17, 2017. 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. A duplicate was obtained from MW-1A. Field sampling logs are provided in Appendix A. Analytical results are provided in Appendix B. Reporting limits were lowered from previous limits in accordance with Rule 0400-11-01-.04(7)(a)4.(vi)(V). Please find the AES 6020 Method Detection / Reporting Limits in Appendix F.

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. Santek is currently in the process of reconstituting the control charts in accordance with the TDEC 1st Semi-Annual Groundwater Monitoring Report 2017 Report Review dated August 23, 2017. The report review states "Because elevated detection limits (some set at the MCL) were used to develop what are essentially artificially elevated background conditions, the control chart and background concentrations shall be reconstituted in accordance with Rule 0400-11-01-.04(7)(a)5.(ii)(II) with detection limit inputs in

accordance with the above stated rule." Therefore, the second semi-annual 2017 groundwater monitoring results will serve as the first sample in the required four independent samples that will constitute the revised background concentrations. The remaining three independent samples will be collected at approximately equally dispersed intervals with the final sample being collected during the first semi-annual 2018 groundwater monitoring. After the four samples have been collected, the revised background concentrations will be calculated and used for future statistical analysis.

For the second semi-annual groundwater monitoring report of 2017, parameters detected above the reporting limits are compared to the Tennessee (TN) Regulatory Limits of the TDEC Solid Waste Regulations since there are no background concentrations for comparison. If a parameter has no published TN Regulatory Limit, the EPA Region 4 Screening Level is used.

3.2 Statistical Analysis Summary

MW-01

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

MW-1A

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

MW-02

The control chart for MW-02 indicates barium, beryllium, cadmium, and nickel are above the report limit. 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 zinc* is above the report limit. However, the result of this constituent does not exceed the EPA Region 4 Screening Level, which establishes the groundwater protection standard at this well.

MW-03

The control chart for MW-03 indicates barium, lead, and nickel are above the report limit. 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* and zinc* are above the report limit. However, the results of these constituents do not exceed the EPA Regions 4 Screening Level, which established the groundwater protection standards at this well.

The control chart for MW-03 indicates cobalt* is above the report limit and the EPA Region 4 Screening Level. However, it is felt the result of this constituent is not indicative of a release from the landfill, but

**Indicates TN Regulatory Limit Unavailable, EPA Region 4 Screening Level Used*

rather attributable to local soil constituents. Soil samples collected from the soil borrow area at the landfill on 11/29/2016 indicate cobalt is present in the soil. The average of the three soil samples collected was 4.67 parts per million (ppm). The groundwater sample at MW-03 shows cobalt at 0.00974 ppm. Please find the results from the 11/29/2016 soil sampling in Appendix G.

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

MW-05
There were no organic or inorganic constituents detected above the report limit during this event.

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 1.06×10^{-3} ft/day at MW-02 to 3.07×10^{-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 2.11×10^{-3} ft/day at MW-03 to 8.49×10^{-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 20, 2017

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 16th – 17th, we completed the semi-annual groundwater monitoring at the referenced site. The sampling activities were performed in accordance with the site's operating permit and EPA Region IV SESD SOP's.

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

We employed a submersible pump for the purging of wells MW-01, 1A, and 02, and a disposable poly bailer for purging MW-03. 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).

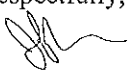
During the purging process, pH, conductivity, temperature and turbidity readings were collected and recorded in the logbook. Turbidity readings were again recorded at the time of metals sample collection if the well was allowed to settle. Field readings were recorded from the initial water pulled (0 gallons), well-volume 1, well-volume 2, well-volume 2.5 and well-volume 3. Stability was based on volume, rather than time (though the time between measurements fell within range of accepted guidance). The stability criteria used based on accepted guidance was at least 3 sets of readings within the following ranges: pH (± 0.1 SU), SC (± 10%), Temperature (± 1°C), and Turbidity (<10 NTU). If the measurements weren't stable as defined by the above criteria at the completion of purging 3 well-volumes, purging continued and readings recorded generally every 0.5-well volume up to 5 well-volumes. These readings were recorded from YSI Pro Plus which was calibrated each morning. Turbidity readings were collected using a Hach 2100Q, which is

cal-checked before use. The Hach 2100Q contains a factory calibration which is checked in-house using formazine standards.

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

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

Respectfully,



Jeff Johnson

Attachments: Groundwater Field Data

FIELD SAMPLING LOG	WELL NO: MW-01
Location: Loudon County Landfill	Site: Matlock Bend Phase I
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 11-16-17 (Time) 1052	Purge End: (Date) 11-16-17 (Time) 1115
Purged by: RLerr	
Depth Measurement Ref. Point* 830.87 ft	Well Casing. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI

Measure Well TD: 45.00 (-)Orig. DTW: 6.42 (=) Wtr. Col. Thick: 36.58

2"=0.163 Gals./ft. (=) 5.96 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 17.89 Total Purge Gals.

GW elev. Ref. 830.87 ft.(-) DTW: 8.42 ft. = 822.45 ft.

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

Average Purge Rate: 1.06 (gallons per minute)
Weather: sunny (50 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1052	0.00	7.00	415	14.4	423		cloudy no odor
1100	6.00	6.43	418	14.0	490		cloudy,
1103	9.00	6.31	413	14.7	559		cloudy,
1106	12.00	6.30	415	14.7	662		cloudy,
1109	15.00	6.29	417	14.7	482		cloudy,
1112	18.00	6.27	418	14.6	798		cloudy,
1115	21.00	6.27	418	14.6	764		cloudy,

Turbidity at metals sample collection: 4 NTU's

Comments: cloudy, no odor Metals collected at 0758, 11-17-17

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

FIELD SAMPLING LOG	WELL NO: MW-1A
Location: Loudon County Landfill	Site: Matlock Bend Phase I
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 11-16-17 (Time) 0943	Purge End: (Date) 11-16-17 (Time) 1002
Purged by: RKerr	
Depth Measurement Ref. Point* 805.13 ft	Well Casing. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI

Measure Well TD: 38.00 (-)Orig. DTW: 15.28 (=) Wtr. Col. Thick: 22.72

2"=0.163 Gals./ft. (=) 3.70 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 11.11 Total Purge Gals.

GW elev. Ref. 805.13 ft.(-) DTW: 15.28 ft. = 789.85 ft.

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

Average Purge Rate: 1.25 (gallons per minute)
Weather: Sunny (45 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
0943	0.0	5.84	660	15.6	122		cloudy no odor
0946	3.75	6.07	650	16.2	41		clear
0948	5.75	6.14	669	15.8	34		clear
0950	7.50	6.21	694	15.7	136		cloudy
0952	9.25	6.25	719	15.6	38		clear
0954	11.25	6.37	849	15.4	333		cloudy
0956	13.00	6.45	886	15.3	379		cloudy
0958	15.00	6.56	740	15.4	400		cloudy
1000	16.75	6.52	734	15.5	57		clear
1002	18.75	6.51	732	15.5	8		clear

Turbidity at metals sample collection: ____ NTU's

Comments:

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

clear, no odor
Duplicate collected here 11/16/17 @ 1600

FIELD SAMPLING LOG	WELL NO: MW-02
Location: Loudon County Landfill	Site: Matlock Bend Phase I
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 11-16-17 (Time) 1140	Purge End: (Date) 11-16-17 (Time) 1147
Purged by: RLeary	
Depth Measurement Ref. Point* 825.20 ft	Well Casing. ID: 4"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI .

Measure Well TD: 43.10 (-)Orig. DTW: 11.10 (=) Wtr. Col. Thick: 32.00.

2"=0.653 Gals./ft. (=) 5.22 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 15.65 Total Purge Gals.

GW elev. Ref. 825.20 ft.(-) DTW: 11.10 ft. = 814.10 ft.

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

Average Purge Rate: 1.20 (gallons per minute)
Weather: sunny (55 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1140	0.0	4.57	49	15.0	76		cloudy, no odor
1145	5.25	4.44	51	15.9	96		cloudy, ↓
1147	~~8.00~~	4.28	55	14.9	7		clear, ↓
	~~10.50~~						
	~~13.25~~						
	~~15.75~~						

Turbidity at metals sample collection: ____ NTU's

Comments: Purged dry @ 1.5 WV, clear, no odor

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

FIELD SAMPLING LOG	WELL NO: MW-03
Location: Loudon County Landfill	Site: Matlock Bend Phases I / II / IV
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 11-16-17 (Time)	Purge End: (Date) 16-16-17 (Time) 1200
Purged by: T Mutter	
Depth Measurement Ref. Point* 867.86 ft	Well Casing, ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI .

Measure Well TD: 41.60 (-)Orig. DTW: 13.52 (=) Wtr. Col. Thick: ~~28.08~~ 28.08

2"=0.163 Gals./ft. (=) 4.58 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 13.73 Total Purge Gals.

GW elev. Ref. 867.86 ft.(-) DTW: 13.52 ft. = 854.34 ft.

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

Average Purge Rate: — (gallons per minute)
Weather: Sunny (60 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1151	0	6.30	221	17.2	16		clear, no odor
1200	4.75	5.82	250	15.0	9		↓
	~~7.00~~						
	~~9.25~~						
	~~11.50~~						
	~~13.75~~						

Turbidity at metals sample collection: 9 NTU's

Comments: purged dry at 1 liter
clear, no odor

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

FIELD SAMPLING LOG	WELL NO: Equipment Blank
Location: Loudon County Landfill	Site: Matlock Bend
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 11-16-17 (Time) 1240	Purge End: (Date) (Time)
Purged by: RKerr	
Depth Measurement Ref. Point* N/A ft	Well Csg. ID: N/A

Equipment Used to Measure (Make, Model, etc)

DTW N/A pH YSI Cond. YSI T° YSI .

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

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

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

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

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

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments

Turbidity at metals sample collection: _____ NTU's

Comments: Lab provided DI Water

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

EMServices

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

November 20, 2017

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 16th and 17th, 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 well MW-05 and a disposable poly bailer for the purging of wells MW-03 and 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.

During the purging process, pH, conductivity, temperature and turbidity readings were collected and recorded in the logbook. Turbidity readings were again recorded at the time of metals sample collection if the well was allowed to settle. Field readings were recorded from the initial water pulled (0 gallons), well-volume 1, well-volume 2, well-volume 2.5 and well-volume 3. Stability was based on volume, rather than time (though the time between measurements fell within range of accepted guidance). The stability criteria used based on accepted guidance was at least 3 sets of readings within the following ranges: pH (± 0.1 SU), SC (± 10%), Temperature (± 1°C), and Turbidity (<10 NTU). If the measurements weren't stable as defined by the above criteria at the completion of purging 3 well-volumes, purging continued and readings recorded generally every 0.5 well-volume up to 5 well-volumes. These readings were recorded from YSI Pro Plus which was calibrated each morning. Turbidity readings were collected using a Hach 2100Q, which is cal-checked prior to use. The Hach 2100Q contains a factory calibration which is checked in-house using formazine standards.

The samples were collected in containers provided by the laboratory. These containers were of types, sizes and preserved in a manner consistent with SW-846 and other guidance. Upon filling, the containers were placed on ice. The samples were 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

FIELD SAMPLING LOG	WELL NO: MW-03
Location: Loudon County Landfill	Site: Matlock Bend Phases I / II / IV
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 11-16-17 (Time)	Purge End: (Date) 11-16-17 (Time) 1200
Purged by: J Muller	
Depth Measurement Ref. Point* 867.86 ft	Well Casing. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI

Measure Well TD: 41.60 (-)Orig. DTW: 13.52 (=) Wtr. Col. Thick: ~~28.08~~ 28.08

2"=0.163 Gals./ft. (=) 4.58 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 13.73 Total Purge Gals.

GW elev. Ref. 867.86 ft.(-) DTW: 13.52 ft. = 854.34 ft.

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

Average Purge Rate: — (gallons per minute)
Weather: Sunny (60 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1151	0	6.30	221	17.2	16		clear, no odor
1200	4.75	5.82	250	15.0	9		↓
	~~7.00~~						
	~~9.25~~						
	~~11.50~~						
	~~13.75~~						

Turbidity at metals sample collection: 9 NTU's

Comments: purged dry at 1 liter
clear, no odor

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

FIELD SAMPLING LOG	WELL NO: MW-4R
Location: Loudon County Landfill	Site: Matlock Bend Phases II/IV
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 11-16-17 (Time) 1110	Purge End: (Date) 11-16-17 (Time) 1115
Purged by: J Muller	
Depth Measurement Ref. Point* 992.32 ft	Well Casing, ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI .

Measure Well TD: 106.50 (-)Orig. DTW: 101.95 (=) Wtr. Col. Thick: 4.55

2"=0.163 Gals./ft. (=) 0.74 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 2.23 Total Purge Gals.

GW elev. Ref. 992.32 ft.(-) DTW: 101.95 ft. = 890.37 ft.

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

Average Purge Rate: — (gallons per minute)
Weather: Sunny (60 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1110	0	7.09	317	15.4	22		cloudy, no odor
1115	0.75	6.93	260	15.4	558		beige, no odor
	1.25						
	1.50						
	2.00						
	2.25						

Turbidity at metals sample collection: 8 NTU's 11-17-17, @ 0807

Comments: beige, no odor
purged dry at 1 wv

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

FIELD SAMPLING LOG	WELL NO: MW-05
Location: Loudon County Landfill	Site: Matlock Bend Phases II/IV
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 11-16-17 (Time) 1009	Purge End: (Date) 11-16-17 (Time) 1045
Purged by: J Muller	
Depth Measurement Ref. Point* 936.84 ft	Well Casing. ID: 2"

Equipment Used to Measure (Make, Model, etc)

DTW Slope pH YSI Cond. YSI T° YSI .

Measure Well TD: 172.71 (-)Orig. DTW: 104.01 (=) Wtr. Col. Thick: 68.70

(x) 2"=0.163 Gals./ft. (=) 11.20 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 33.59 Total Purge Gals.

GW elev. Ref. 936.84 ft.(-) DTW: 104.01 ft. = 832.83 ft.

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

Average Purge Rate: 0.94 (gallons per minute)
Weather: Sunny (55 °F)

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments
1009	0	6.21	225	14.5	13	~~clear no odor~~	clear, no odor
1021	11.25	7.77	225	17.3	18		clear, no odor
1027	17.00	7.81	225	17.3	8		clear, no odor
1033	22.50	7.83	225	17.3	5		clear, no odor
1039	28.00	7.84	225	17.3	3		clear, no odor
1045	33.75	7.84	225	17.3	2		clear, no odor

Turbidity at metals sample collection: 2 NTU's

Comments: clear, no odor

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

FIELD SAMPLING LOG	WELL NO: Equipment Blank
Location: Loudon County Landfill	Site: Matlock Bend
Client/Operator: Santek Waste Services, Inc.	Project No:
Purge Start: (Date) 11-16-17 (Time) 1240	Purge End: (Date) (Time)
Purged by: RKerr	
Depth Measurement Ref. Point* N/A ft	Well Csg. ID: N/A

Equipment Used to Measure (Make, Model, etc)

DTW N/A pH YSI Cond. YSI T° YSI .

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

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

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

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

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

Actual Time	Vol. Purged (Gallons)	pH	SC (uS/cm)	Temp (°C)	Turbidity (NTU)		Comments

Turbidity at metals sample collection: _____ NTU's

Comments: Lab provided DI Water

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

APPENDIX B

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

AES

November 27, 2017

Robert Hudson
Santek Environmental Inc.

650 25th Street NW, Suite 100
Cleveland TN 37311

RE: Loudon Co. (Matlock Bend) Landfill Phase I

Dear Robert Hudson: Order No: 1711I24

Analytical Environmental Services, Inc. received 9 samples on 11/17/2017 12:30:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-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

[illegible] • Atlanta [illegible] • Tel [illegible] • Fax 770.457.8188 • Toll Free 800.972.4889
[illegible]

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

CHAIN OF CUSTODY

Work Order: 1711J24

Date: 11-17-17 Page 1 of 1

COMPANY: SanteK Environmental Inc.

ADDRESS: 650 25th St NW, Ste 100 Cleveland, TN 37311

PHONE: 423/303-7101

EMAIL:

SAMPLED BY: RKerr, JMuller

SIGNATURE: [signature]

Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.

#	SAMPLE ID	DATE	TIME	GRAB	COMPOSITE	MATRIX (see codes)	TN App I VOC (8260)	TN App I VOC (8011)	TN App I Metals (+Ca, Fe, K, Mg, Na)	Diss. Mn	COD, NH3	TDS	F, Cl, NO3, SO4	CN	TOC, Hg RL					REMARKS	No. of containers
	PRESERVATION (see codes)						H+I	I	N	I	S+I	I	I	NaOH	S+I						
1	MW-01	11-16-17	1115	X		GW	2	2		1	1	1	1	1	1						10
2	↳	11-17-17	0758	X		GW			1												1
3	MW-1A	11-16-17	1002	X		GW	2	2	1	1	1	1	1	1	1						11
4	MW-02	11-16-17	1147	X		GW	2	2	1	1	1	1	1	1	1						11
5	MW-03	11-16-17	1200	X		GW	2	2	1	1	1	1	1	1	1					shared w/ phase II/IV	11
6	Duplicate	11-16-17	1600	X		GW	2	2	1	1	1	1	1	1	1						11
7	Equipment Blank	11-16-17	1240	X		W	2	2	1	1	1	1	1	1	1					shared w/ phase II/IV	11
8	Trip Blank	11-16-17	0900	X		W	2	2	1	1	1	1	1	1	1					shared w/ phase II/IV	11
9																					
10																					
11																					
12																					
13																					
14																					

RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. [signature]	11/17/17 1230	[signature]	11/17/17 1230
2.		2.	
3.		3.	

PROJECT INFORMATION

PROJECT NAME: Loudon Co. (Matlock Bend) Landfill Phase I

PROJECT #:

SITE ADDRESS: 21712 Hwy 72N Loudon, TN 37774

SEND REPORT TO: Robert Hudson

INVOICE TO: (IF DIFFERENT FROM ABOVE)

QUOTE #: PO#:

RECEIPT

Total # of Containers: 77

Turnaround Time (TAT) Request

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

STATE PROGRAM (if any): TN

E-mail? ☒ Fax? ☐

DATA PACKAGE: I ○ II ☒ III ○ IV ○

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD

OUT: / / VIA:

IN: / / VIA:

(Client) FedEx UPS US mail courier Greyhound other:

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

Client: Santek Environmental Inc.
Project: Loudon Co. (Matlock Bend) Landfill Phase I
Lab ID: 1711124

Case Narrative

Sample Receiving Nonconformance:

Trip Blank 2 was provided but not listed on the Chain of Custody. Trip blank 2 was not analyzed due to 1 cooler received.

Analytical Environmental Services, Inc

Date: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-01
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/16/2017 11:15:00 AM
Lab ID:	1711I24-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R357222	1	11/20/2017 15:03	CK
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	307	1		mg/L	251974	1	11/22/2017 10:45	BD
Nitrogen, Ammonia (as N) E350.1				**(E350.1)**				
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	251942	1	11/22/2017 12:44	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.194		ug/L	251757	1	11/21/2017 00:33	UH
1,2-Dibromoethane	BRL	0.048		ug/L	251757	1	11/21/2017 00:33	UH
Surr: 4-Bromofluorobenzene	98.2	70.4-134		%REC	251757	1	11/21/2017 00:33	UH
Inorganic Anions by IC								
Chloride	28.7	1.00		mg/L	R357284	1	11/17/2017 19:32	VL
Fluoride	BRL	1.00		mg/L	R357284	1	11/17/2017 19:32	VL
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R357284	1	11/17/2017 19:32	VL
Sulfate	4.67	1.00		mg/L	R357284	1	11/17/2017 19:32	VL
Dissolved Metals by ICP/MS SW6020B				**(SW3005A)**				
Manganese	BRL	10.0		ug/L	251897	1	11/24/2017 14:17	TA
Cyanide SW9014				**(SW9010C)**				
Cyanide, Total	BRL	0.200		mg/L	251893	1	11/21/2017 12:00	AK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R357382	1	11/22/2017 09:45	BD
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 17:25	NP
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 17:25	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 17:25	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 17:25	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	Client Sample ID:	MW-01
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	Collection Date:	11/16/2017 11:15:00 AM
Lab ID:	1711I24-001	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 17:25	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 17:25	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 17:25	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 17:25	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 17:25	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 17:25	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 17:25	NP
Surr: 4-Bromofluorobenzene	83.7	68-127		%REC	251768	1	11/20/2017 17:25	NP
Surr: Dibromofluoromethane	104	84.4-122		%REC	251768	1	11/20/2017 17:25	NP
Surr: Toluene-d8	94.2	80.1-116		%REC	251768	1	11/20/2017 17:25	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-01
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/17/2017 7:58:00 AM
Lab ID:	1711I24-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	45500	100		ug/L	251818	1	11/21/2017 13:51	TA
Iron	147	100		ug/L	251818	1	11/21/2017 13:51	TA
Magnesium	24900	100		ug/L	251818	1	11/21/2017 13:51	TA
Potassium	3140	100		ug/L	251818	1	11/21/2017 13:51	TA
Sodium	10700	500		ug/L	251818	1	11/21/2017 13:51	TA
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00050		mg/L	251953	1	11/24/2017 18:22	AS
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	1.50		ug/L	251818	1	11/21/2017 13:51	TA
Arsenic	BRL	2.50		ug/L	251818	1	11/21/2017 13:51	TA
Barium	33.0	10.0		ug/L	251818	1	11/21/2017 13:51	TA
Beryllium	BRL	1.00		ug/L	251818	1	11/21/2017 13:51	TA
Cadmium	BRL	0.700		ug/L	251818	1	11/21/2017 13:51	TA
Chromium	BRL	5.00		ug/L	251818	1	11/21/2017 13:51	TA
Cobalt	BRL	5.00		ug/L	251818	1	11/21/2017 13:51	TA
Copper	BRL	2.00		ug/L	251818	1	11/21/2017 13:51	TA
Lead	BRL	1.00		ug/L	251818	1	11/21/2017 13:51	TA
Nickel	BRL	5.00		ug/L	251818	1	11/21/2017 13:51	TA
Selenium	BRL	5.00		ug/L	251818	1	11/21/2017 13:51	TA
Silver	BRL	1.00		ug/L	251818	1	11/21/2017 13:51	TA
Thallium	BRL	0.500		ug/L	251818	1	11/21/2017 13:51	TA
Vanadium	BRL	5.00		ug/L	251818	1	11/21/2017 13:51	TA
Zinc	BRL	10.0		ug/L	251818	1	11/21/2017 13:51	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

Analytical Environmental Services, Inc

Date: 27-Nov-17

Client:	Santek Environmental Inc.	Client Sample ID:	MW-1A
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	Collection Date:	11/16/2017 10:02:00 AM
Lab ID:	1711I24-003	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R357222	1	11/20/2017 15:20	CK
Total Metals by ICP/MS SW6020B				(SW3005A)				
Calcium	86000	500		ug/L	251818	5	11/24/2017 14:44	TA
Iron	137	100		ug/L	251818	1	11/24/2017 14:46	TA
Magnesium	31600	100		ug/L	251818	1	11/21/2017 14:35	TA
Potassium	11700	100		ug/L	251818	1	11/21/2017 14:35	TA
Sodium	29300	500		ug/L	251818	1	11/21/2017 14:35	TA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	449	1		mg/L	251974	1	11/22/2017 10:45	BD
Nitrogen, Ammonia (as N) E350.1				(E350.1)				
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	251942	1	11/22/2017 12:46	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.200		ug/L	251757	1	11/21/2017 01:31	UH
1,2-Dibromoethane	BRL	0.050		ug/L	251757	1	11/21/2017 01:31	UH
Surr: 4-Bromofluorobenzene	104	70.4-134		%REC	251757	1	11/21/2017 01:31	UH
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00050		mg/L	251953	1	11/24/2017 16:44	AS
Inorganic Anions by IC								
Chloride	77.8	10.0		mg/L	R357284	10	11/17/2017 19:17	VL
Fluoride	BRL	1.00		mg/L	R357284	1	11/17/2017 19:02	VL
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R357284	1	11/17/2017 19:02	VL
Sulfate	26.9	1.00		mg/L	R357284	1	11/17/2017 19:02	VL
Dissolved Metals by ICP/MS SW6020B				(SW3005A)				
Manganese	BRL	10.0		ug/L	251897	1	11/24/2017 14:21	TA
Cyanide SW9014				(SW9010C)				
Cyanide, Total	BRL	0.200		mg/L	251893	1	11/21/2017 12:00	AK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R357382	1	11/22/2017 09:45	BD
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 17:49	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-1A
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/16/2017 10:02:00 AM
Lab ID:	1711I24-003	**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	10		ug/L	251768	1	11/20/2017 17:49	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 17:49	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 17:49	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 17:49	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 17:49	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 17:49	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 17:49	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 17:49	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 17:49	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 17:49	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 17:49	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 17:49	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 17:49	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 17:49	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 17:49	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 17:49	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 17:49	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 17:49	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-1A
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase I	**Collection Date:**	11/16/2017 10:02:00 AM
Lab ID:	1711I24-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 17:49	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 17:49	NP
Surr: 4-Bromofluorobenzene	85	68-127		%REC	251768	1	11/20/2017 17:49	NP
Surr: Dibromofluoromethane	108	84.4-122		%REC	251768	1	11/20/2017 17:49	NP
Surr: Toluene-d8	94.7	80.1-116		%REC	251768	1	11/20/2017 17:49	NP
APPENDIX I METALS SW6020B				(SW3005A)				
Antimony	BRL	1.50		ug/L	251818	1	11/21/2017 14:35	TA
Arsenic	BRL	2.50		ug/L	251818	1	11/21/2017 14:35	TA
Barium	87.1	10.0		ug/L	251818	1	11/21/2017 14:35	TA
Beryllium	BRL	1.00		ug/L	251818	1	11/21/2017 14:35	TA
Cadmium	BRL	0.700		ug/L	251818	1	11/21/2017 14:35	TA
Chromium	BRL	5.00		ug/L	251818	1	11/21/2017 14:35	TA
Cobalt	BRL	5.00		ug/L	251818	1	11/21/2017 14:35	TA
Copper	BRL	2.00		ug/L	251818	1	11/21/2017 14:35	TA
Lead	BRL	1.00		ug/L	251818	1	11/21/2017 14:35	TA
Nickel	BRL	5.00		ug/L	251818	1	11/21/2017 14:35	TA
Selenium	BRL	5.00		ug/L	251818	1	11/21/2017 14:35	TA
Silver	BRL	1.00		ug/L	251818	1	11/21/2017 14:35	TA
Thallium	BRL	0.500		ug/L	251818	1	11/21/2017 14:35	TA
Vanadium	BRL	5.00		ug/L	251818	1	11/21/2017 14:35	TA
Zinc	BRL	10.0		ug/L	251818	1	11/21/2017 14:35	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

Analytical Environmental Services, Inc

Date: 27-Nov-17

Client:	Santek Environmental Inc.	Client Sample ID:	MW-02
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	Collection Date:	11/16/2017 11:47:00 AM
Lab ID:	1711I24-004	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R357222	1	11/20/2017 15:37	CK
Total Metals by ICP/MS SW6020B				(SW3005A)				
Calcium	2370	100		ug/L	251818	1	11/21/2017 14:43	TA
Iron	BRL	100		ug/L	251818	1	11/21/2017 14:43	TA
Magnesium	1770	100		ug/L	251818	1	11/21/2017 14:43	TA
Potassium	2330	100		ug/L	251818	1	11/24/2017 14:48	TA
Sodium	2550	500		ug/L	251818	1	11/21/2017 14:43	TA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	72	1		mg/L	251974	1	11/22/2017 10:45	BD
Nitrogen, Ammonia (as N) E350.1				(E350.1)				
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	251942	1	11/22/2017 12:51	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.198		ug/L	251757	1	11/21/2017 02:00	UH
1,2-Dibromoethane	BRL	0.050		ug/L	251757	1	11/21/2017 02:00	UH
Surr: 4-Bromofluorobenzene	104	70.4-134		%REC	251757	1	11/21/2017 02:00	UH
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00050		mg/L	251953	1	11/24/2017 16:55	AS
Inorganic Anions by IC								
Chloride	2.89	1.00		mg/L	R357284	1	11/17/2017 20:01	VL
Fluoride	BRL	1.00		mg/L	R357284	1	11/17/2017 20:01	VL
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R357284	1	11/17/2017 20:01	VL
Sulfate	8.10	1.00		mg/L	R357284	1	11/17/2017 20:01	VL
Dissolved Metals by ICP/MS SW6020B				(SW3005A)				
Manganese	144	10.0		ug/L	251897	1	11/24/2017 14:23	TA
Cyanide SW9014				(SW9010C)				
Cyanide, Total	BRL	0.200		mg/L	251893	1	11/21/2017 12:00	AK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R357382	1	11/22/2017 09:45	BD
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 18:13	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-02
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase I	**Collection Date:**	11/16/2017 11:47:00 AM
Lab ID:	1711I24-004	**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	10		ug/L	251768	1	11/20/2017 18:13	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 18:13	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 18:13	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 18:13	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 18:13	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 18:13	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 18:13	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 18:13	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 18:13	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 18:13	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 18:13	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 18:13	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 18:13	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 18:13	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 18:13	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 18:13	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 18:13	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 18:13	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-02
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/16/2017 11:47:00 AM
Lab ID:	1711I24-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 18:13	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 18:13	NP
Surr: 4-Bromofluorobenzene	86.5	68-127		%REC	251768	1	11/20/2017 18:13	NP
Surr: Dibromofluoromethane	109	84.4-122		%REC	251768	1	11/20/2017 18:13	NP
Surr: Toluene-d8	97.3	80.1-116		%REC	251768	1	11/20/2017 18:13	NP
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	1.50		ug/L	251818	1	11/21/2017 14:43	TA
Arsenic	BRL	2.50		ug/L	251818	1	11/21/2017 14:43	TA
Barium	68.8	10.0		ug/L	251818	1	11/21/2017 14:43	TA
Beryllium	1.87	1.00		ug/L	251818	1	11/21/2017 14:43	TA
Cadmium	2.27	0.700		ug/L	251818	1	11/21/2017 14:43	TA
Chromium	BRL	5.00		ug/L	251818	1	11/21/2017 14:43	TA
Cobalt	BRL	5.00		ug/L	251818	1	11/21/2017 14:43	TA
Copper	BRL	2.00		ug/L	251818	1	11/21/2017 14:43	TA
Lead	BRL	1.00		ug/L	251818	1	11/21/2017 14:43	TA
Nickel	33.7	5.00		ug/L	251818	1	11/21/2017 14:43	TA
Selenium	BRL	5.00		ug/L	251818	1	11/21/2017 14:43	TA
Silver	BRL	1.00		ug/L	251818	1	11/21/2017 14:43	TA
Thallium	BRL	0.500		ug/L	251818	1	11/21/2017 14:43	TA
Vanadium	BRL	5.00		ug/L	251818	1	11/21/2017 14:43	TA
Zinc	350	10.0		ug/L	251818	1	11/24/2017 14:48	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

Analytical Environmental Services, Inc

Date: 27-Nov-17

Client:	Santek Environmental Inc.	Client Sample ID:	MW-03
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	Collection Date:	11/16/2017 12:00:00 PM
Lab ID:	1711I24-005	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	3.70	1.00		mg/L	R357222	1	11/20/2017 15:53	CK
Total Metals by ICP/MS SW6020B				(SW3005A)				
Calcium	8450	100		ug/L	251818	1	11/21/2017 14:45	TA
Iron	467	100		ug/L	251818	1	11/24/2017 14:50	TA
Magnesium	2460	100		ug/L	251818	1	11/21/2017 14:45	TA
Potassium	4450	100		ug/L	251818	1	11/24/2017 14:50	TA
Sodium	24600	500		ug/L	251818	1	11/21/2017 14:45	TA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	148	1		mg/L	251974	1	11/22/2017 10:45	BD
Nitrogen, Ammonia (as N) E350.1				(E350.1)				
Nitrogen, Ammonia (As N)	3.84	0.200		mg/L	251942	1	11/22/2017 12:53	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.199		ug/L	251757	1	11/21/2017 02:29	UH
1,2-Dibromoethane	BRL	0.050		ug/L	251757	1	11/21/2017 02:29	UH
Surr: 4-Bromofluorobenzene	112	70.4-134		%REC	251757	1	11/21/2017 02:29	UH
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00050		mg/L	251953	1	11/24/2017 18:25	AS
Inorganic Anions by IC								
Chloride	37.6	1.00		mg/L	R357284	1	11/17/2017 20:31	VL
Fluoride	BRL	1.00		mg/L	R357284	1	11/17/2017 20:31	VL
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R357284	1	11/17/2017 20:31	VL
Sulfate	20.7	1.00		mg/L	R357284	1	11/17/2017 20:31	VL
Dissolved Metals by ICP/MS SW6020B				(SW3005A)				
Manganese	2310	10.0		ug/L	251897	1	11/24/2017 14:25	TA
Cyanide SW9014				(SW9010C)				
Cyanide, Total	BRL	0.200		mg/L	251893	1	11/21/2017 12:00	AK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	24.0	10.0		mg/L	R357382	1	11/22/2017 09:45	BD
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 18:37	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase I	**Collection Date:**	11/16/2017 12:00:00 PM
Lab ID:	1711I24-005	**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	10		ug/L	251768	1	11/20/2017 18:37	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 18:37	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 18:37	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 18:37	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 18:37	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 18:37	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 18:37	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 18:37	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 18:37	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 18:37	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 18:37	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 18:37	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 18:37	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 18:37	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 18:37	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 18:37	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 18:37	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 18:37	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/16/2017 12:00:00 PM
Lab ID:	1711I24-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 18:37	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 18:37	NP
Surr: 4-Bromofluorobenzene	84.4	68-127		%REC	251768	1	11/20/2017 18:37	NP
Surr: Dibromofluoromethane	108	84.4-122		%REC	251768	1	11/20/2017 18:37	NP
Surr: Toluene-d8	93.7	80.1-116		%REC	251768	1	11/20/2017 18:37	NP
APPENDIX I METALS SW6020B				(SW3005A)				
Antimony	BRL	1.50		ug/L	251818	1	11/21/2017 14:45	TA
Arsenic	BRL	2.50		ug/L	251818	1	11/21/2017 14:45	TA
Barium	62.7	10.0		ug/L	251818	1	11/21/2017 14:45	TA
Beryllium	BRL	1.00		ug/L	251818	1	11/21/2017 14:45	TA
Cadmium	BRL	0.700		ug/L	251818	1	11/21/2017 14:45	TA
Chromium	BRL	5.00		ug/L	251818	1	11/21/2017 14:45	TA
Cobalt	9.74	5.00		ug/L	251818	1	11/24/2017 14:50	TA
Copper	5.20	2.00		ug/L	251818	1	11/21/2017 14:45	TA
Lead	1.39	1.00		ug/L	251818	1	11/21/2017 14:45	TA
Nickel	7.50	5.00		ug/L	251818	1	11/21/2017 14:45	TA
Selenium	BRL	5.00		ug/L	251818	1	11/21/2017 14:45	TA
Silver	BRL	1.00		ug/L	251818	1	11/21/2017 14:45	TA
Thallium	BRL	0.500		ug/L	251818	1	11/21/2017 14:45	TA
Vanadium	BRL	5.00		ug/L	251818	1	11/21/2017 14:45	TA
Zinc	11.9	10.0		ug/L	251818	1	11/24/2017 14:50	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

Analytical Environmental Services, Inc

Date: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	DUPLICATE
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/16/2017 4:00:00 PM
Lab ID:	1711I24-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) by SM5310B								
Organic Carbon, Total	BRL	1.00		mg/L	R357222	1	11/20/2017 16:10	CK
Total Metals by ICP/MS SW6020B				(SW3005A)				
Calcium	92400	500		ug/L	251818	5	11/24/2017 14:52	TA
Iron	105	100		ug/L	251818	1	11/24/2017 14:54	TA
Magnesium	31500	100		ug/L	251818	1	11/21/2017 14:47	TA
Potassium	11500	100		ug/L	251818	1	11/24/2017 14:54	TA
Sodium	28600	500		ug/L	251818	1	11/21/2017 14:47	TA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	493	1		mg/L	251974	1	11/22/2017 10:45	BD
Nitrogen, Ammonia (as N) E350.1				(E350.1)				
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	251942	1	11/22/2017 12:55	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.199		ug/L	251757	1	11/21/2017 03:26	UH
1,2-Dibromoethane	BRL	0.050		ug/L	251757	1	11/21/2017 03:26	UH
Surr: 4-Bromofluorobenzene	108	70.4-134		%REC	251757	1	11/21/2017 03:26	UH
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00050		mg/L	251953	1	11/24/2017 18:29	AS
Inorganic Anions by IC								
Chloride	77.4	10.0		mg/L	R357284	10	11/17/2017 22:58	VL
Fluoride	BRL	1.00		mg/L	R357284	1	11/17/2017 22:43	VL
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R357284	1	11/17/2017 22:43	VL
Sulfate	28.0	1.00		mg/L	R357284	1	11/17/2017 22:43	VL
Dissolved Metals by ICP/MS SW6020B				(SW3005A)				
Manganese	BRL	10.0		ug/L	251897	1	11/24/2017 14:28	TA
Cyanide SW9014				(SW9010C)				
Cyanide, Total	BRL	0.200		mg/L	251893	1	11/21/2017 12:00	AK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R357382	1	11/22/2017 09:45	BD
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 19:02	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	DUPLICATE
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/16/2017 4:00:00 PM
Lab ID:	1711I24-006	**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	10		ug/L	251768	1	11/20/2017 19:02	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 19:02	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 19:02	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 19:02	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 19:02	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 19:02	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 19:02	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 19:02	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 19:02	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 19:02	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 19:02	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 19:02	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 19:02	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 19:02	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 19:02	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 19:02	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 19:02	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 19:02	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	DUPLICATE
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase I	**Collection Date:**	11/16/2017 4:00:00 PM
Lab ID:	1711124-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 19:02	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 19:02	NP
Surr: 4-Bromofluorobenzene	85.6	68-127		%REC	251768	1	11/20/2017 19:02	NP
Surr: Dibromofluoromethane	105	84.4-122		%REC	251768	1	11/20/2017 19:02	NP
Surr: Toluene-d8	91.7	80.1-116		%REC	251768	1	11/20/2017 19:02	NP
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	1.50		ug/L	251818	1	11/21/2017 14:47	TA
Arsenic	BRL	2.50		ug/L	251818	1	11/21/2017 14:47	TA
Barium	85.9	10.0		ug/L	251818	1	11/21/2017 14:47	TA
Beryllium	BRL	1.00		ug/L	251818	1	11/21/2017 14:47	TA
Cadmium	BRL	0.700		ug/L	251818	1	11/21/2017 14:47	TA
Chromium	BRL	5.00		ug/L	251818	1	11/21/2017 14:47	TA
Cobalt	BRL	5.00		ug/L	251818	1	11/21/2017 14:47	TA
Copper	BRL	2.00		ug/L	251818	1	11/21/2017 14:47	TA
Lead	BRL	1.00		ug/L	251818	1	11/21/2017 14:47	TA
Nickel	BRL	5.00		ug/L	251818	1	11/21/2017 14:47	TA
Selenium	BRL	5.00		ug/L	251818	1	11/21/2017 14:47	TA
Silver	BRL	1.00		ug/L	251818	1	11/21/2017 14:47	TA
Thallium	BRL	0.500		ug/L	251818	1	11/21/2017 14:47	TA
Vanadium	BRL	5.00		ug/L	251818	1	11/21/2017 14:47	TA
Zinc	BRL	10.0		ug/L	251818	1	11/21/2017 14:47	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

Analytical Environmental Services, Inc

Date: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/16/2017 12:40:00 PM
Lab ID:	1711I24-007	**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	R357222	1	11/20/2017 16:26	CK
Total Metals by ICP/MS SW6020B					(SW3005A)			
Calcium	BRL	100		ug/L	251818	1	11/21/2017 14:49	TA
Iron	BRL	100		ug/L	251818	1	11/21/2017 14:49	TA
Magnesium	BRL	100		ug/L	251818	1	11/21/2017 14:49	TA
Potassium	BRL	100		ug/L	251818	1	11/21/2017 14:49	TA
Sodium	BRL	500		ug/L	251818	1	11/21/2017 14:49	TA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	7	1		mg/L	251974	1	11/22/2017 10:45	BD
Nitrogen, Ammonia (as N) E350.1					(E350.1)			
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	251942	1	11/22/2017 13:02	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011					(SW8011)			
1,2-Dibromo-3-chloropropane	BRL	0.199		ug/L	251757	1	11/21/2017 03:55	UH
1,2-Dibromoethane	BRL	0.050		ug/L	251757	1	11/21/2017 03:55	UH
Surr: 4-Bromofluorobenzene	112	70.4-134		%REC	251757	1	11/21/2017 03:55	UH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00050		mg/L	251953	1	11/24/2017 18:32	AS
Inorganic Anions by IC								
Chloride	BRL	1.00		mg/L	R357284	1	11/17/2017 22:29	VL
Fluoride	BRL	1.00		mg/L	R357284	1	11/17/2017 22:29	VL
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R357284	1	11/17/2017 22:29	VL
Sulfate	BRL	1.00		mg/L	R357284	1	11/17/2017 22:29	VL
Dissolved Metals by ICP/MS SW6020B					(SW3005A)			
Manganese	BRL	10.0		ug/L	251897	1	11/24/2017 14:01	TA
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.200		mg/L	251893	1	11/21/2017 12:00	AK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R357382	1	11/22/2017 09:45	BD
APPENDIX I VOLATILE ORGANICS SW8260B					(SW5030B)			
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 11:48	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/16/2017 12:40:00 PM
Lab ID:	1711I24-007	**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	10		ug/L	251768	1	11/20/2017 11:48	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 11:48	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 11:48	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 11:48	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 11:48	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 11:48	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 11:48	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 11:48	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 11:48	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/16/2017 12:40:00 PM
Lab ID:	1711I24-007	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 11:48	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 11:48	NP
Surr: 4-Bromofluorobenzene	85.8	68-127		%REC	251768	1	11/20/2017 11:48	NP
Surr: Dibromofluoromethane	108	84.4-122		%REC	251768	1	11/20/2017 11:48	NP
Surr: Toluene-d8	97	80.1-116		%REC	251768	1	11/20/2017 11:48	NP
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	1.50		ug/L	251818	1	11/21/2017 14:49	TA
Arsenic	BRL	2.50		ug/L	251818	1	11/21/2017 14:49	TA
Barium	BRL	10.0		ug/L	251818	1	11/21/2017 14:49	TA
Beryllium	BRL	1.00		ug/L	251818	1	11/21/2017 14:49	TA
Cadmium	BRL	0.700		ug/L	251818	1	11/21/2017 14:49	TA
Chromium	BRL	5.00		ug/L	251818	1	11/21/2017 14:49	TA
Cobalt	BRL	5.00		ug/L	251818	1	11/21/2017 14:49	TA
Copper	BRL	2.00		ug/L	251818	1	11/21/2017 14:49	TA
Lead	BRL	1.00		ug/L	251818	1	11/21/2017 14:49	TA
Nickel	BRL	5.00		ug/L	251818	1	11/21/2017 14:49	TA
Selenium	BRL	5.00		ug/L	251818	1	11/21/2017 14:49	TA
Silver	BRL	1.00		ug/L	251818	1	11/21/2017 14:49	TA
Thallium	BRL	0.500		ug/L	251818	1	11/21/2017 14:49	TA
Vanadium	BRL	5.00		ug/L	251818	1	11/21/2017 14:49	TA
Zinc	BRL	10.0		ug/L	251818	1	11/21/2017 14:49	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

Analytical Environmental Services, Inc

Date: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase I	**Collection Date:**	11/16/2017 9:00:00 AM
Lab ID:	1711I24-008	**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	R357222	1	11/20/2017 16:42	CK
Total Metals by ICP/MS SW6020B				**(SW3005A)**				
Calcium	BRL	100		ug/L	251818	1	11/21/2017 14:51	TA
Iron	BRL	100		ug/L	251818	1	11/21/2017 14:51	TA
Magnesium	BRL	100		ug/L	251818	1	11/21/2017 14:51	TA
Potassium	BRL	100		ug/L	251818	1	11/21/2017 14:51	TA
Sodium	BRL	500		ug/L	251818	1	11/21/2017 14:51	TA
Residue, Dissolved (TDS) by SM2540C								
Residue, Dissolved (TDS)	80	1		mg/L	251974	1	11/22/2017 10:45	BD
Nitrogen, Ammonia (as N) E350.1				**(E350.1)**				
Nitrogen, Ammonia (As N)	BRL	0.200		mg/L	251942	1	11/22/2017 13:04	FS
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				**(SW8011)**				
1,2-Dibromo-3-chloropropane	BRL	0.198		ug/L	251757	1	11/21/2017 04:24	UH
1,2-Dibromoethane	BRL	0.049		ug/L	251757	1	11/21/2017 04:24	UH
Surr: 4-Bromofluorobenzene	112	70.4-134		%REC	251757	1	11/21/2017 04:24	UH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00050		mg/L	251953	1	11/24/2017 18:35	AS
Inorganic Anions by IC								
Chloride	BRL	1.00		mg/L	R357284	1	11/17/2017 18:33	VL
Fluoride	BRL	1.00		mg/L	R357284	1	11/17/2017 18:33	VL
Nitrogen, Nitrate (As N)	BRL	10.0		mg/L	R357284	1	11/17/2017 18:33	VL
Sulfate	BRL	1.00		mg/L	R357284	1	11/17/2017 18:33	VL
Dissolved Metals by ICP/MS SW6020B				**(SW3005A)**				
Manganese	BRL	10.0		ug/L	251897	1	11/24/2017 14:30	TA
Cyanide SW9014				**(SW9010C)**				
Cyanide, Total	BRL	0.200		mg/L	251893	1	11/21/2017 12:00	AK
Chemical Oxygen Demand (COD) E410.4								
Chemical Oxygen Demand	BRL	10.0		mg/L	R357382	1	11/22/2017 09:45	BD
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 12:12	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase I	**Collection Date:**	11/16/2017 9:00:00 AM
Lab ID:	1711I24-008	**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	10		ug/L	251768	1	11/20/2017 12:12	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 12:12	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 12:12	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 12:12	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 12:12	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 12:12	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 12:12	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 12:12	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 12:12	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP

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: 27-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase 1	**Collection Date:**	11/16/2017 9:00:00 AM
Lab ID:	1711I24-008	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 12:12	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 12:12	NP
Surr: 4-Bromofluorobenzene	81.3	68-127		%REC	251768	1	11/20/2017 12:12	NP
Surr: Dibromofluoromethane	105	84.4-122		%REC	251768	1	11/20/2017 12:12	NP
Surr: Toluene-d8	94.5	80.1-116		%REC	251768	1	11/20/2017 12:12	NP
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	1.50		ug/L	251818	1	11/21/2017 14:51	TA
Arsenic	BRL	2.50		ug/L	251818	1	11/21/2017 14:51	TA
Barium	BRL	10.0		ug/L	251818	1	11/21/2017 14:51	TA
Beryllium	BRL	1.00		ug/L	251818	1	11/21/2017 14:51	TA
Cadmium	BRL	0.700		ug/L	251818	1	11/21/2017 14:51	TA
Chromium	BRL	5.00		ug/L	251818	1	11/21/2017 14:51	TA
Cobalt	BRL	5.00		ug/L	251818	1	11/21/2017 14:51	TA
Copper	BRL	2.00		ug/L	251818	1	11/21/2017 14:51	TA
Lead	BRL	1.00		ug/L	251818	1	11/21/2017 14:51	TA
Nickel	BRL	5.00		ug/L	251818	1	11/21/2017 14:51	TA
Selenium	BRL	5.00		ug/L	251818	1	11/21/2017 14:51	TA
Silver	BRL	1.00		ug/L	251818	1	11/21/2017 14:51	TA
Thallium	BRL	0.500		ug/L	251818	1	11/21/2017 14:51	TA
Vanadium	BRL	5.00		ug/L	251818	1	11/21/2017 14:51	TA
Zinc	BRL	10.0		ug/L	251818	1	11/21/2017 14:51	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

Clear Save as

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Santek Environmental Inc.** AES Work Order Number: 1711I24

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ■ Courier ☐ Other _____

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

13. Cooler 1 Temperature 3.5 °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). MJ 11/17/17

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

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). AJJ 11/17/17

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	●	○	○		
29.	Containers meet preservation guidelines?	●	○	○		
30.	Was pH adjusted at Sample Receipt?	○	○	●		

* 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). AJJ 11/17/17

Locked

Client: Santek Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase 1
Lab Order: 1711I24

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1711I24-001A	MW-01	11/16/2017 11:15:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41 AM	11/21/2017
1711I24-001B	MW-01	11/16/2017 11:15:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00 AM	11/20/2017
1711I24-001C	MW-01	11/16/2017 11:15:00AM	Groundwater	Dissolved Metals by ICP/MS		11/22/2017 4:39:00 PM	11/24/2017
1711I24-001D	MW-01	11/16/2017 11:15:00AM	Groundwater	Nitrogen, Ammonia (as N)		11/22/2017 11:45:00 AM	11/22/2017
1711I24-001D	MW-01	11/16/2017 11:15:00AM	Groundwater	Chemical Oxygen Demand (COD)			11/22/2017
1711I24-001E	MW-01	11/16/2017 11:15:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		11/22/2017 10:45:00 AM	11/22/2017
1711I24-001F	MW-01	11/16/2017 11:15:00AM	Groundwater	Inorganic Anions by IC			11/17/2017
1711I24-001G	MW-01	11/16/2017 11:15:00AM	Groundwater	Cyanide		11/21/2017 11:15:00 AM	11/21/2017
1711I24-001H	MW-01	11/16/2017 11:15:00AM	Groundwater	Total Organic Carbon by SM5310B			11/20/2017
1711I24-002A	MW-01	11/17/2017 7:58:00AM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-002A	MW-01	11/17/2017 7:58:00AM	Groundwater	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-002A	MW-01	11/17/2017 7:58:00AM	Groundwater	TOTAL MERCURY		11/24/2017 12:40:00 PM	11/24/2017
1711I24-003A	MW-1A	11/16/2017 10:02:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41 AM	11/21/2017
1711I24-003B	MW-1A	11/16/2017 10:02:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00 AM	11/20/2017
1711I24-003C	MW-1A	11/16/2017 10:02:00AM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-003C	MW-1A	11/16/2017 10:02:00AM	Groundwater	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-003C	MW-1A	11/16/2017 10:02:00AM	Groundwater	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/24/2017
1711I24-003C	MW-1A	11/16/2017 10:02:00AM	Groundwater	TOTAL MERCURY		11/24/2017 12:40:00 PM	11/24/2017
1711I24-003D	MW-1A	11/16/2017 10:02:00AM	Groundwater	Dissolved Metals by ICP/MS		11/22/2017 4:39:00 PM	11/24/2017
1711I24-003E	MW-1A	11/16/2017 10:02:00AM	Groundwater	Nitrogen, Ammonia (as N)		11/22/2017 11:45:00 AM	11/22/2017
1711I24-003E	MW-1A	11/16/2017 10:02:00AM	Groundwater	Chemical Oxygen Demand (COD)			11/22/2017
1711I24-003F	MW-1A	11/16/2017 10:02:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		11/22/2017 10:45:00 AM	11/22/2017
1711I24-003G	MW-1A	11/16/2017 10:02:00AM	Groundwater	Inorganic Anions by IC			11/17/2017
1711I24-003H	MW-1A	11/16/2017 10:02:00AM	Groundwater	Cyanide		11/21/2017 11:15:00 AM	11/21/2017
1711I24-003I	MW-1A	11/16/2017 10:02:00AM	Groundwater	Total Organic Carbon by SM5310B			11/20/2017
1711I24-004A	MW-02	11/16/2017 11:47:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41 AM	11/21/2017
1711I24-004B	MW-02	11/16/2017 11:47:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00 AM	11/20/2017
1711I24-004C	MW-02	11/16/2017 11:47:00AM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-004C	MW-02	11/16/2017 11:47:00AM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00 PM	11/24/2017

Client: Santek Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase 1
Lab Order: 1711I24

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1711I24-004C	MW-02	11/16/2017 11:47:00AM	Groundwater	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-004C	MW-02	11/16/2017 11:47:00AM	Groundwater	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/24/2017
1711I24-004C	MW-02	11/16/2017 11:47:00AM	Groundwater	TOTAL MERCURY		11/24/2017 12:40:00 PM	11/24/2017
1711I24-004D	MW-02	11/16/2017 11:47:00AM	Groundwater	Dissolved Metals by ICP/MS		11/22/2017 4:39:00 PM	11/24/2017
1711I24-004E	MW-02	11/16/2017 11:47:00AM	Groundwater	Nitrogen, Ammonia (as N)		11/22/2017 11:45:00 AM	11/22/2017
1711I24-004E	MW-02	11/16/2017 11:47:00AM	Groundwater	Chemical Oxygen Demand (COD)			11/22/2017
1711I24-004F	MW-02	11/16/2017 11:47:00AM	Groundwater	Residue, Dissolved (TDS) by SM2540C		11/22/2017 10:45:00 AM	11/22/2017
1711I24-004G	MW-02	11/16/2017 11:47:00AM	Groundwater	Inorganic Anions by IC			11/17/2017
1711I24-004H	MW-02	11/16/2017 11:47:00AM	Groundwater	Cyanide		11/21/2017 11:15:00 AM	11/21/2017
1711I24-004I	MW-02	11/16/2017 11:47:00AM	Groundwater	Total Organic Carbon by SM5310B			11/20/2017
1711I24-005A	MW-03	11/16/2017 12:00:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41 AM	11/21/2017
1711I24-005B	MW-03	11/16/2017 12:00:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00 AM	11/20/2017
1711I24-005C	MW-03	11/16/2017 12:00:00PM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-005C	MW-03	11/16/2017 12:00:00PM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00 PM	11/24/2017
1711I24-005C	MW-03	11/16/2017 12:00:00PM	Groundwater	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-005C	MW-03	11/16/2017 12:00:00PM	Groundwater	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/24/2017
1711I24-005C	MW-03	11/16/2017 12:00:00PM	Groundwater	TOTAL MERCURY		11/24/2017 12:40:00 PM	11/24/2017
1711I24-005D	MW-03	11/16/2017 12:00:00PM	Groundwater	Dissolved Metals by ICP/MS		11/22/2017 4:39:00 PM	11/24/2017
1711I24-005E	MW-03	11/16/2017 12:00:00PM	Groundwater	Nitrogen, Ammonia (as N)		11/22/2017 11:45:00 AM	11/22/2017
1711I24-005E	MW-03	11/16/2017 12:00:00PM	Groundwater	Chemical Oxygen Demand (COD)			11/22/2017
1711I24-005F	MW-03	11/16/2017 12:00:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		11/22/2017 10:45:00 AM	11/22/2017
1711I24-005G	MW-03	11/16/2017 12:00:00PM	Groundwater	Inorganic Anions by IC			11/17/2017
1711I24-005H	MW-03	11/16/2017 12:00:00PM	Groundwater	Cyanide		11/21/2017 11:15:00 AM	11/21/2017
1711I24-005I	MW-03	11/16/2017 12:00:00PM	Groundwater	Total Organic Carbon by SM5310B			11/20/2017
1711I24-006A	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41 AM	11/21/2017
1711I24-006B	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00 AM	11/20/2017
1711I24-006C	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-006C	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-006C	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/24/2017

Client: Santek Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase 1
Lab Order: 1711I24

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1711I24-006C	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	TOTAL MERCURY		11/24/2017 12:40:00 PM	11/24/2017
1711I24-006D	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	Dissolved Metals by ICP/MS		11/22/2017 4:39:00 PM	11/24/2017
1711I24-006E	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	Nitrogen, Ammonia (as N)		11/22/2017 11:45:00 AM	11/22/2017
1711I24-006E	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	Chemical Oxygen Demand (COD)			11/22/2017
1711I24-006F	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	Residue, Dissolved (TDS) by SM2540C		11/22/2017 10:45:00 AM	11/22/2017
1711I24-006G	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	Inorganic Anions by IC			11/17/2017
1711I24-006H	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	Cyanide		11/21/2017 11:15:00 AM	11/21/2017
1711I24-006I	DUPLICATE	11/16/2017 4:00:00PM	Groundwater	Total Organic Carbon by SM5310B			11/20/2017
1711I24-007A	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41 AM	11/21/2017
1711I24-007B	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00 AM	11/20/2017
1711I24-007C	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	APPENDIX I METALS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-007C	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-007C	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	TOTAL MERCURY		11/24/2017 12:40:00 PM	11/24/2017
1711I24-007D	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	Dissolved Metals by ICP/MS		11/22/2017 4:39:00 PM	11/24/2017
1711I24-007E	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	Nitrogen, Ammonia (as N)		11/22/2017 11:45:00 AM	11/22/2017
1711I24-007E	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	Chemical Oxygen Demand (COD)			11/22/2017
1711I24-007F	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	Residue, Dissolved (TDS) by SM2540C		11/22/2017 10:45:00 AM	11/22/2017
1711I24-007G	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	Inorganic Anions by IC			11/17/2017
1711I24-007H	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	Cyanide		11/21/2017 11:15:00 AM	11/21/2017
1711I24-007I	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	Total Organic Carbon by SM5310B			11/20/2017
1711I24-008A	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41 AM	11/21/2017
1711I24-008B	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00 AM	11/20/2017
1711I24-008C	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	APPENDIX I METALS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-008C	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	Total Metals by ICP/MS		11/20/2017 6:00:00 PM	11/21/2017
1711I24-008C	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	TOTAL MERCURY		11/24/2017 12:40:00 PM	11/24/2017
1711I24-008D	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	Dissolved Metals by ICP/MS		11/22/2017 4:39:00 PM	11/24/2017
1711I24-008E	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	Nitrogen, Ammonia (as N)		11/22/2017 11:45:00 AM	11/22/2017
1711I24-008E	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	Chemical Oxygen Demand (COD)			11/22/2017
1711I24-008F	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	Residue, Dissolved (TDS) by SM2540C		11/22/2017 10:45:00 AM	11/22/2017

Client: Santek Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase 1
Lab Order: 1711I24

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1711I24-008G	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	Inorganic Anions by IC			11/17/2017
1711I24-008H	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	Cyanide		11/21/2017 11:15:00 AM	11/21/2017
1711I24-008I	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	Total Organic Carbon by SM5310B			11/20/2017
1711I24-009A	TRIP BLANK 2	11/17/2017 12:00:00AM	Aqueous	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00 AM	11/20/2017

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

November 29, 2017

Robert Hudson
Santek Environmental Inc.

650 25th Street NW, Suite 100
Cleveland TN 37311

RE: Loudon Co. (Matlock Bend) Landfill Phase II/IV

Dear Robert Hudson: Order No: 1711I25

Analytical Environmental Services, Inc. received 7 samples on 11/17/2017 12:30:00 PM
for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES's accreditations are as follows:
-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
AES Phone: (770) 457-8177 / Toll-Free: (800) 972-4889 / Fax: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1711325

Date: 11-17-17 Page 1 of 1

COMPANY:	ADDRESS:
Santek Environmental Inc.	650 25th St NW, Ste 100 Cleveland, TN 37311
PHONE: 423/303-7101	EMAIL:
SAMPLED BY: RKerr, JMuller	SIGNATURE:

#	SAMPLE ID	SAMPLED: DATE	SAMPLED: TIME	GRAB	COMPOSITE	MATRIX (see codes)	PRESERVATION (see codes) H+I	I	N	I	ANALYSIS REQUESTED: TN App I VOC (8260)	TN App I VOC (624)	TN App I Metals (Met.)	Fluoride	REMARKS	Number of Containers
1	MW-03	11-16-17	1200	X		GW	2	2	1	1					shared w/phase I	6
2	MW-4R	11-16-17	1115	X		GW	2	2		1						3
3	↳	11-17-17	0807	X		GW			1							1
4	MW-05	11-16-17	1045	X		GW	2	2	1	1						6
5	Equipment Blank	11-16-17	1240	X		W	2	2	1	1					shared w/ phase I	6
6	Trip Blank	11-16-17	0900	X		W	2	2	1	1					shared w/phase I	6
7																
8																
9																
10																
11																
12																
13																
14																

Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.

RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1.	11/17/17 1230	1.	11/17/17 1230
2.		2.	
3.		3.	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT: / / VIA:
IN: / / VIA:
(Client) FedEx UPS US mail courier Greyhound
other: _____

PROJECT INFORMATION
PROJECT NAME: Loudon Co. (Matlock Bend) Landfill phase II/IV
PROJECT #:
SITE ADDRESS: 21712 Hwy 72N Loudon, TN 37774
SEND REPORT TO: Robert Hudson
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: _____ PO#: _____

RECEIPT
Total # of Containers: 30

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

STATE PROGRAM (if any): TN
E-mail? [X] Fax? [ ]
DATA PACKAGE: I ○ II [X] III ○ IV ○

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 arangements 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

Client:	Santek Environmental Inc.
Project:	Loudon Co. (Matlock Bend) Landfill Phase II/IV
Lab ID:	1711125

Case Narrative

Sample Receiving Non-conformance:

A second trip blank was received along with the one listed on the Chain of Custody. The second trip blank received was not analyzed as all samples were received in one cooler for which the trip blank listed on the Chain of Custody was analyzed at no cost to the client.

Micro-extractable VOC Analysis by Method 8011:

Matrix spike duplicate analyses were not performed with Batch 251757 due to insufficient sample volume.

Analytical Environmental Services, Inc

Date: 29-Nov-17

Client:	Santek Environmental Inc.	Client Sample ID:	MW-03
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	Collection Date:	11/16/2017 12:00:00 PM
Lab ID:	1711I25-001	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.199		ug/L	251757	1	11/21/2017 00:33	UH
1,2-Dibromoethane	BRL	0.050		ug/L	251757	1	11/21/2017 00:33	UH
Surr: 4-Bromofluorobenzene	112	70.4-134		%REC	251757	1	11/21/2017 00:33	UH
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00050		mg/L	251953	1	11/24/2017 18:25	AS
Inorganic Anions by IC E300.0								
Fluoride	BRL	1.00		mg/L	R357624	1	11/17/2017 19:32	VL
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 17:25	NP
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 17:25	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 17:25	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 17:25	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 17:25	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP

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: 29-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-03
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	**Collection Date:**	11/16/2017 12:00:00 PM
Lab ID:	1711I25-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 17:25	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 17:25	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 17:25	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 17:25	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 17:25	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 17:25	NP
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 17:25	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 17:25	NP
Surr: 4-Bromofluorobenzene	83.7	68-127		%REC	251768	1	11/20/2017 17:25	NP
Surr: Dibromofluoromethane	104	84.4-122		%REC	251768	1	11/20/2017 17:25	NP
Surr: Toluene-d8	94.2	80.1-116		%REC	251768	1	11/20/2017 17:25	NP
APPENDIX I METALS SW6020B				(SW3005A)				
Antimony	BRL	0.00150		mg/L	251818	1	11/21/2017 14:45	TA
Arsenic	BRL	0.00250		mg/L	251818	1	11/21/2017 14:45	TA
Barium	0.0627	0.0100		mg/L	251818	1	11/21/2017 14:45	TA
Beryllium	BRL	0.00100		mg/L	251818	1	11/21/2017 14:45	TA
Cadmium	BRL	0.000700		mg/L	251818	1	11/21/2017 14:45	TA
Chromium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:45	TA
Cobalt	0.00974	0.00500		mg/L	251818	1	11/24/2017 14:50	TA
Copper	0.00520	0.00200		mg/L	251818	1	11/21/2017 14:45	TA
Lead	0.00139	0.00100		mg/L	251818	1	11/21/2017 14:45	TA
Nickel	0.00750	0.00500		mg/L	251818	1	11/21/2017 14:45	TA
Selenium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:45	TA
Silver	BRL	0.00100		mg/L	251818	1	11/21/2017 14:45	TA
Thallium	BRL	0.000500		mg/L	251818	1	11/21/2017 14:45	TA
Vanadium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:45	TA
Zinc	0.0119	0.0100		mg/L	251818	1	11/24/2017 14:50	TA

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: 29-Nov-17

Client:	Santek Environmental Inc.	Client Sample ID:	MW-4R
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	Collection Date:	11/16/2017 11:15:00 AM
Lab ID:	1711I25-002	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.201		ug/L	251757	1	11/21/2017 11:12	UH
1,2-Dibromoethane	BRL	0.050		ug/L	251757	1	11/21/2017 11:12	UH
Surr: 4-Bromofluorobenzene	113	70.4-134		%REC	251757	1	11/21/2017 11:12	UH
Inorganic Anions by IC E300.0								
Fluoride	BRL	1.00		mg/L	R357665	1	11/27/2017 11:54	VL
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 19:26	NP
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 19:26	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 19:26	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 19:26	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 19:26	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 19:26	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 19:26	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 19:26	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 19:26	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 19:26	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 19:26	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP

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: 29-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-4R
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	**Collection Date:**	11/16/2017 11:15:00 AM
Lab ID:	1711125-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 19:26	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 19:26	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 19:26	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 19:26	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 19:26	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 19:26	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 19:26	NP
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 19:26	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 19:26	NP
Surr: 4-Bromofluorobenzene	84.2	68-127		%REC	251768	1	11/20/2017 19:26	NP
Surr: Dibromofluoromethane	106	84.4-122		%REC	251768	1	11/20/2017 19:26	NP
Surr: Toluene-d8	95.3	80.1-116		%REC	251768	1	11/20/2017 19:26	NP

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: 29-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-4R
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	**Collection Date:**	11/17/2017 8:07:00 AM
Lab ID:	1711I25-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00050		mg/L	252016	1	11/27/2017 16:12	AS
APPENDIX I METALS SW6020B					(SW3005A)			
Antimony	BRL	0.00150		mg/L	251818	1	11/21/2017 14:53	TA
Arsenic	BRL	0.00250		mg/L	251818	1	11/21/2017 14:53	TA
Barium	0.0113	0.0100		mg/L	251818	1	11/21/2017 14:53	TA
Beryllium	BRL	0.00100		mg/L	251818	1	11/21/2017 14:53	TA
Cadmium	BRL	0.000700		mg/L	251818	1	11/21/2017 14:53	TA
Chromium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:53	TA
Cobalt	BRL	0.00500		mg/L	251818	1	11/21/2017 14:53	TA
Copper	BRL	0.00200		mg/L	251818	1	11/21/2017 14:53	TA
Lead	BRL	0.00100		mg/L	251818	1	11/21/2017 14:53	TA
Nickel	0.00769	0.00500		mg/L	251818	1	11/21/2017 14:53	TA
Selenium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:53	TA
Silver	BRL	0.00100		mg/L	251818	1	11/21/2017 14:53	TA
Thallium	BRL	0.000500		mg/L	251818	1	11/21/2017 14:53	TA
Vanadium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:53	TA
Zinc	0.0212	0.0100		mg/L	251818	1	11/24/2017 14:56	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

Analytical Environmental Services, Inc

Date: 29-Nov-17

Client:	Santek Environmental Inc.	Client Sample ID:	MW-05
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	Collection Date:	11/16/2017 10:45:00 AM
Lab ID:	1711I25-004	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.199		ug/L	251757	1	11/21/2017 11:40	UH
1,2-Dibromoethane	BRL	0.050		ug/L	251757	1	11/21/2017 11:40	UH
Surr: 4-Bromofluorobenzene	115	70.4-134		%REC	251757	1	11/21/2017 11:40	UH
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00050		mg/L	252016	1	11/27/2017 16:22	AS
Inorganic Anions by IC E300.0								
Fluoride	BRL	1.00		mg/L	R357665	1	11/27/2017 12:09	VL
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 19:50	NP
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 19:50	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 19:50	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 19:50	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 19:50	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 19:50	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 19:50	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 19:50	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 19:50	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 19:50	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP

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: 29-Nov-17

Client:	Santek Environmental Inc.	**Client Sample ID:**	MW-05
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	**Collection Date:**	11/16/2017 10:45:00 AM
Lab ID:	1711I25-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 19:50	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 19:50	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 19:50	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 19:50	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 19:50	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 19:50	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 19:50	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 19:50	NP
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 19:50	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 19:50	NP
Surr: 4-Bromofluorobenzene	85.1	68-127		%REC	251768	1	11/20/2017 19:50	NP
Surr: Dibromofluoromethane	108	84.4-122		%REC	251768	1	11/20/2017 19:50	NP
Surr: Toluene-d8	96	80.1-116		%REC	251768	1	11/20/2017 19:50	NP
APPENDIX I METALS SW6020B				**(SW3005A)**				
Antimony	BRL	0.00150		mg/L	251818	1	11/21/2017 14:55	TA
Arsenic	BRL	0.00250		mg/L	251818	1	11/21/2017 14:55	TA
Barium	BRL	0.0100		mg/L	251818	1	11/21/2017 14:55	TA
Beryllium	BRL	0.00100		mg/L	251818	1	11/21/2017 14:55	TA
Cadmium	BRL	0.000700		mg/L	251818	1	11/21/2017 14:55	TA
Chromium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:55	TA
Cobalt	BRL	0.00500		mg/L	251818	1	11/21/2017 14:55	TA
Copper	BRL	0.00200		mg/L	251818	1	11/21/2017 14:55	TA
Lead	BRL	0.00100		mg/L	251818	1	11/21/2017 14:55	TA
Nickel	BRL	0.00500		mg/L	251818	1	11/21/2017 14:55	TA
Selenium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:55	TA
Silver	BRL	0.00100		mg/L	251818	1	11/21/2017 14:55	TA
Thallium	BRL	0.000500		mg/L	251818	1	11/21/2017 14:55	TA
Vanadium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:55	TA
Zinc	BRL	0.0100		mg/L	251818	1	11/21/2017 14:55	TA

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: 29-Nov-17

Client:	Santek Environmental Inc.	Client Sample ID:	EQUIPMENT BLANK
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	Collection Date:	11/16/2017 12:40:00 PM
Lab ID:	1711I25-005	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.199		ug/L	251757	1	11/21/2017 03:55	UH
1,2-Dibromoethane	BRL	0.050		ug/L	251757	1	11/21/2017 03:55	UH
Surr: 4-Bromofluorobenzene	112	70.4-134		%REC	251757	1	11/21/2017 03:55	UH
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00050		mg/L	251953	1	11/24/2017 18:32	AS
Inorganic Anions by IC E300.0								
Fluoride	BRL	1.00		mg/L	R357624	1	11/17/2017 20:31	VL
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 11:48	NP
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 11:48	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 11:48	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 11:48	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 11:48	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP

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 Environmental Inc.	**Client Sample ID:**	EQUIPMENT BLANK
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	**Collection Date:**	11/16/2017 12:40:00 PM
Lab ID:	1711I25-005	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B					**(SW5030B)**			
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 11:48	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 11:48	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 11:48	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 11:48	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 11:48	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 11:48	NP
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 11:48	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 11:48	NP
Surr: 4-Bromofluorobenzene	85.8	68-127		%REC	251768	1	11/20/2017 11:48	NP
Surr: Dibromofluoromethane	108	84.4-122		%REC	251768	1	11/20/2017 11:48	NP
Surr: Toluene-d8	97	80.1-116		%REC	251768	1	11/20/2017 11:48	NP
APPENDIX I METALS SW6020B					**(SW3005A)**			
Antimony	BRL	0.00150		mg/L	251818	1	11/21/2017 14:49	TA
Arsenic	BRL	0.00250		mg/L	251818	1	11/21/2017 14:49	TA
Barium	BRL	0.0100		mg/L	251818	1	11/21/2017 14:49	TA
Beryllium	BRL	0.00100		mg/L	251818	1	11/21/2017 14:49	TA
Cadmium	BRL	0.000700		mg/L	251818	1	11/21/2017 14:49	TA
Chromium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:49	TA
Cobalt	BRL	0.00500		mg/L	251818	1	11/21/2017 14:49	TA
Copper	BRL	0.00200		mg/L	251818	1	11/21/2017 14:49	TA
Lead	BRL	0.00100		mg/L	251818	1	11/21/2017 14:49	TA
Nickel	BRL	0.00500		mg/L	251818	1	11/21/2017 14:49	TA
Selenium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:49	TA
Silver	BRL	0.00100		mg/L	251818	1	11/21/2017 14:49	TA
Thallium	BRL	0.000500		mg/L	251818	1	11/21/2017 14:49	TA
Vanadium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:49	TA
Zinc	BRL	0.0100		mg/L	251818	1	11/21/2017 14:49	TA

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: 29-Nov-17

Client:	Santek Environmental Inc.	Client Sample ID:	TRIP BLANK
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	Collection Date:	11/16/2017 9:00:00 AM
Lab ID:	1711I25-006	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011				(SW8011)				
1,2-Dibromo-3-chloropropane	BRL	0.198		ug/L	251757	1	11/21/2017 04:24	UH
1,2-Dibromoethane	BRL	0.049		ug/L	251757	1	11/21/2017 04:24	UH
Surr: 4-Bromofluorobenzene	112	70.4-134		%REC	251757	1	11/21/2017 04:24	UH
Mercury, Total SW7470A				(SW7470A)				
Mercury	BRL	0.00050		mg/L	251953	1	11/24/2017 18:35	AS
Inorganic Anions by IC E300.0								
Fluoride	BRL	1.00		mg/L	R357624	1	11/17/2017 22:58	VL
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
1,1,1,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
1,1,1-Trichloroethane	BRL	200		ug/L	251768	1	11/20/2017 12:12	NP
1,1,2,2-Tetrachloroethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
1,1-Dichloroethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
1,1-Dichloroethene	BRL	7.0		ug/L	251768	1	11/20/2017 12:12	NP
1,2,3-Trichloropropane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
1,2-Dichlorobenzene	BRL	600		ug/L	251768	1	11/20/2017 12:12	NP
1,2-Dichloroethane	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
1,2-Dichloropropane	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
1,4-Dichlorobenzene	BRL	75		ug/L	251768	1	11/20/2017 12:12	NP
2-Butanone	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
2-Hexanone	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
4-Methyl-2-pentanone	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Acetone	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Acrylonitrile	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Benzene	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
Bromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Bromodichloromethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Bromoform	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Bromomethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Carbon disulfide	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Carbon tetrachloride	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
Chlorobenzene	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Chloroethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Chloroform	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Chloromethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
cis-1,2-Dichloroethene	BRL	70		ug/L	251768	1	11/20/2017 12:12	NP
cis-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Dibromochloromethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP

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: 29-Nov-17

Client:	Santek Environmental Inc.	Client Sample ID:	TRIP BLANK
Project Name:	Loudon Co. (Matlock Bend) Landfill Phase II/IV	Collection Date:	11/16/2017 9:00:00 AM
Lab ID:	1711I25-006	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
APPENDIX I VOLATILE ORGANICS SW8260B				(SW5030B)				
Dibromomethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Ethylbenzene	BRL	700		ug/L	251768	1	11/20/2017 12:12	NP
Iodomethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Methylene chloride	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
Styrene	BRL	100		ug/L	251768	1	11/20/2017 12:12	NP
Tetrachloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
Toluene	BRL	1000		ug/L	251768	1	11/20/2017 12:12	NP
trans-1,2-Dichloroethene	BRL	100		ug/L	251768	1	11/20/2017 12:12	NP
trans-1,3-Dichloropropene	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
trans-1,4-Dichloro-2-butene	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Trichloroethene	BRL	5.0		ug/L	251768	1	11/20/2017 12:12	NP
Trichlorofluoromethane	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Vinyl acetate	BRL	10		ug/L	251768	1	11/20/2017 12:12	NP
Vinyl chloride	BRL	2.0		ug/L	251768	1	11/20/2017 12:12	NP
Xylenes, Total	BRL	10000		ug/L	251768	1	11/20/2017 12:12	NP
Surr: 4-Bromofluorobenzene	81.3	68-127		%REC	251768	1	11/20/2017 12:12	NP
Surr: Dibromofluoromethane	105	84.4-122		%REC	251768	1	11/20/2017 12:12	NP
Surr: Toluene-d8	94.5	80.1-116		%REC	251768	1	11/20/2017 12:12	NP
APPENDIX I METALS SW6020B				(SW3005A)				
Antimony	BRL	0.00150		mg/L	251818	1	11/21/2017 14:51	TA
Arsenic	BRL	0.00250		mg/L	251818	1	11/21/2017 14:51	TA
Barium	BRL	0.500		mg/L	251818	1	11/21/2017 14:51	TA
Beryllium	BRL	0.00100		mg/L	251818	1	11/21/2017 14:51	TA
Cadmium	BRL	0.00125		mg/L	251818	1	11/21/2017 14:51	TA
Chromium	BRL	0.0250		mg/L	251818	1	11/21/2017 14:51	TA
Cobalt	BRL	0.00150		mg/L	251818	1	11/21/2017 14:51	TA
Copper	BRL	0.00500		mg/L	251818	1	11/21/2017 14:51	TA
Lead	BRL	0.00375		mg/L	251818	1	11/21/2017 14:51	TA
Nickel	BRL	0.0250		mg/L	251818	1	11/21/2017 14:51	TA
Selenium	BRL	0.0100		mg/L	251818	1	11/21/2017 14:51	TA
Silver	BRL	0.00250		mg/L	251818	1	11/21/2017 14:51	TA
Thallium	BRL	0.000500		mg/L	251818	1	11/21/2017 14:51	TA
Vanadium	BRL	0.00500		mg/L	251818	1	11/21/2017 14:51	TA
Zinc	BRL	0.0100		mg/L	251818	1	11/21/2017 14:51	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

SUMMARY OF ANALYTES DETECTED

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution Factor
Client Sample ID: MW-03				**Lab ID:**	1711I25-001		
Collection Date: 11/16/2017 12:00:00 PM				**Matrix:**	Groundwater		
APPENDIX I METALS SW6020B				(SW3005A)			
Barium	0.0627		0.000185	0.0100	mg/L	251818	1
Cobalt	0.00974		0.000188	0.00500	mg/L	251818	1
Copper	0.00520		0.000126	0.00200	mg/L	251818	1
Lead	0.00139		0.000215	0.00100	mg/L	251818	1
Nickel	0.00750		0.000210	0.00500	mg/L	251818	1
Zinc	0.0119		0.000580	0.0100	mg/L	251818	1
Client Sample ID: MW-4R				**Lab ID:**	1711I25-003		
Collection Date: 11/17/2017 8:07:00 AM				**Matrix:**	Groundwater		
APPENDIX I METALS SW6020B				(SW3005A)			
Barium	0.0113		0.000185	0.0100	mg/L	251818	1
Nickel	0.00769		0.000210	0.00500	mg/L	251818	1
Zinc	0.0212		0.000580	0.0100	mg/L	251818	1

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

Clear Save as

ANALYTICAL ENVIRONMENTAL SERVICES, INC. AES

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **Santek Environmental Inc.** AES Work Order Number: 1711I25

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ■ Courier ☐ Other _____

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

13. Cooler 1 Temperature 2.1 °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). MJ 11/17/17

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

27. Comments: _____

I certify that I have completed sections 16-27 (dated initials). AJJ 11/17/17

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

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	◉	○	○		
29.	Containers meet preservation guidelines?	◉	○	○		
30.	Was pH adjusted at Sample Receipt?	○	○	◉		

* 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). AJJ 11/17/17

Checklist 6.9.17 Rev 2

Locked

Analytical Environmental Services, Inc

Date: 29-Nov-17

Client: Santek Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Lab Order: 1711I25

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1711I25-001A	MW-03	11/16/2017 12:00:00PM	Groundwater	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41AM	11/21/2017
1711I25-001B	MW-03	11/16/2017 12:00:00PM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00AM	11/20/2017
1711I25-001C	MW-03	11/16/2017 12:00:00PM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00PM	11/21/2017
1711I25-001C	MW-03	11/16/2017 12:00:00PM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00PM	11/24/2017
1711I25-001C	MW-03	11/16/2017 12:00:00PM	Groundwater	TOTAL MERCURY		11/24/2017 12:40:00PM	11/24/2017
1711I25-001D	MW-03	11/16/2017 12:00:00PM	Groundwater	Inorganic Anions by IC			11/17/2017
1711I25-002A	MW-4R	11/16/2017 11:15:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41AM	11/21/2017
1711I25-002B	MW-4R	11/16/2017 11:15:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00AM	11/20/2017
1711I25-002C	MW-4R	11/16/2017 11:15:00AM	Groundwater	Inorganic Anions by IC			11/27/2017
1711I25-003A	MW-4R	11/17/2017 8:07:00AM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00PM	11/21/2017
1711I25-003A	MW-4R	11/17/2017 8:07:00AM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00PM	11/24/2017
1711I25-003A	MW-4R	11/17/2017 8:07:00AM	Groundwater	TOTAL MERCURY		11/27/2017 12:20:00PM	11/27/2017
1711I25-004A	MW-05	11/16/2017 10:45:00AM	Groundwater	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41AM	11/21/2017
1711I25-004B	MW-05	11/16/2017 10:45:00AM	Groundwater	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00AM	11/20/2017
1711I25-004C	MW-05	11/16/2017 10:45:00AM	Groundwater	APPENDIX I METALS		11/20/2017 6:00:00PM	11/21/2017
1711I25-004C	MW-05	11/16/2017 10:45:00AM	Groundwater	TOTAL MERCURY		11/27/2017 12:20:00PM	11/27/2017
1711I25-004D	MW-05	11/16/2017 10:45:00AM	Groundwater	Inorganic Anions by IC			11/27/2017
1711I25-005A	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41AM	11/21/2017
1711I25-005B	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00AM	11/20/2017
1711I25-005C	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	APPENDIX I METALS		11/20/2017 6:00:00PM	11/21/2017
1711I25-005C	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	TOTAL MERCURY		11/24/2017 12:40:00PM	11/24/2017
1711I25-005D	EQUIPMENT BLANK	11/16/2017 12:40:00PM	Aqueous	Inorganic Anions by IC			11/17/2017
1711I25-006A	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	MICRO-EXTRACTABLE VOCs		11/20/2017 11:22:41AM	11/21/2017
1711I25-006B	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00AM	11/20/2017
1711I25-006C	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	APPENDIX I METALS		11/20/2017 6:00:00PM	11/21/2017
1711I25-006C	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	TOTAL MERCURY		11/24/2017 12:40:00PM	11/24/2017
1711I25-006D	TRIP BLANK	11/16/2017 9:00:00AM	Aqueous	Inorganic Anions by IC			11/17/2017
1711I25-007A	TRIP BLANK 2	11/17/2017 12:00:00AM	Aqueous	APPENDIX I VOLATILE ORGANICS		11/20/2017 8:58:00AM	11/20/2017

Client: Santek Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: 251757

Sample ID: **MB-251757** Client ID: Units: **ug/L** Prep Date: **11/20/2017** Run No: **357344**
SampleType: **MBLK** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** BatchID: **251757** Analysis Date: **11/20/2017** Seq No: **7875045**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromo-3-chloropropane	BRL	0.040									
1,2-Dibromoethane	BRL	0.020									
Surr: 4-Bromofluorobenzene	5.231	0	5.000		105	70.4	134				

Sample ID: **LCS-251757** Client ID: Units: **ug/L** Prep Date: **11/20/2017** Run No: **357344**
SampleType: **LCS** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** BatchID: **251757** Analysis Date: **11/20/2017** Seq No: **7875046**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromo-3-chloropropane	0.1100	0.040	0.1000		110	60	140				
1,2-Dibromoethane	0.1160	0.020	0.1000		116	60	140				
Surr: 4-Bromofluorobenzene	5.248	0	5.000		105	70.4	134				

Sample ID: **LCSD-251757** Client ID: Units: **ug/L** Prep Date: **11/20/2017** Run No: **357344**
SampleType: **LCSD** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** BatchID: **251757** Analysis Date: **11/20/2017** Seq No: **7875047**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromo-3-chloropropane	0.1080	0.040	0.1000		108	60	140	0.1100	1.83	18.7	
1,2-Dibromoethane	0.1070	0.020	0.1000		107	60	140	0.1160	8.07	18.2	
Surr: 4-Bromofluorobenzene	5.381	0	5.000		108	70.4	134	5.248	0	0	

Sample ID: **1711I24-001AMS** Client ID: Units: **ug/L** Prep Date: **11/20/2017** Run No: **357344**
SampleType: **MS** TestCode: **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** BatchID: **251757** Analysis Date: **11/21/2017** Seq No: **7875050**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2-Dibromo-3-chloropropane	0.1094	0.040	0.0994		110	53.6	135				
1,2-Dibromoethane	0.1143	0.020	0.0994		115	61.5	131				
Surr: 4-Bromofluorobenzene	5.200	0	4.972		105	70.4	134				

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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: 251768

Sample ID: **MB-251768** Client ID: Units: **ug/L** Prep Date: **11/20/2017** Run No: **357272**
SampleType: **MBLK** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260B** BatchID: **251768** Analysis Date: **11/20/2017** Seq No: **7873339**

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-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									
Chloroform	BRL	5.0									
Chloromethane	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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: 251768

Sample ID: MB-251768	Client ID:	Units: ug/L	Prep Date: 11/20/2017	Run No: 357272
SampleType: MBLK	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B	BatchID: 251768	Analysis Date: 11/20/2017	Seq No: 7873339

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									
cis-1,3-Dichloropropene	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dibromomethane	BRL	5.0									
Ethylbenzene	BRL	5.0									
Iodomethane	BRL	10									
Methylene chloride	BRL	5.0									
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	42.62	0	50.00		85.2	68	127				
Surr: Dibromofluoromethane	51.47	0	50.00		103	84.4	122				
Surr: Toluene-d8	47.56	0	50.00		95.1	80.1	116				

Sample ID: LCS-251768	Client ID:	Units: ug/L	Prep Date: 11/20/2017	Run No: 357272
SampleType: LCS	TestCode: APPENDIX I VOLATILE ORGANICS SW8260B	BatchID: 251768	Analysis Date: 11/20/2017	Seq No: 7873338

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	47.84	5.0	50.00		95.7	69	136				
Benzene	49.43	5.0	50.00		98.9	73.7	126				

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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: 251768

Sample ID: **LCS-251768** Client ID:
SampleType: **LCS** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260B**
Units: **ug/L** Prep Date: **11/20/2017** Run No: **357272**
BatchID: **251768** Analysis Date: **11/20/2017** Seq No: **7873338**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	49.06	5.0	50.00		98.1	73.5	124				
Toluene	52.02	5.0	50.00		104	76.8	125				
Trichloroethene	53.42	5.0	50.00		107	70.9	124				
Surr: 4-Bromofluorobenzene	42.34	0	50.00		84.7	68	127				
Surr: Dibromofluoromethane	50.69	0	50.00		101	84.4	122				
Surr: Toluene-d8	46.06	0	50.00		92.1	80.1	116				

Sample ID: **1711H28-001AMS** Client ID:
SampleType: **MS** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260B**
Units: **ug/L** Prep Date: **11/20/2017** Run No: **357272**
BatchID: **251768** Analysis Date: **11/20/2017** Seq No: **7873353**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	26700	2500	25000		107	65.7	143				
Benzene	25080	2500	25000		100	66.1	137				
Chlorobenzene	25460	2500	25000		102	70.9	132				
Toluene	27220	2500	25000		109	63.8	141				
Trichloroethene	26680	2500	25000		107	70.6	128				
Surr: 4-Bromofluorobenzene	21980	0	25000		87.9	68	127				
Surr: Dibromofluoromethane	26620	0	25000		106	84.4	122				
Surr: Toluene-d8	23070	0	25000		92.3	80.1	116				

Sample ID: **1711H28-001AMSD** Client ID:
SampleType: **MSD** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260B**
Units: **ug/L** Prep Date: **11/20/2017** Run No: **357272**
BatchID: **251768** Analysis Date: **11/20/2017** Seq No: **7873354**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	27430	2500	25000		110	65.7	143	26700	2.70	17.7	
Benzene	25340	2500	25000		101	66.1	137	25080	1.03	20	
Chlorobenzene	25170	2500	25000		101	70.9	132	25460	1.15	20	
Toluene	27070	2500	25000		108	63.8	141	27220	0.534	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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: 251768

Sample ID: **1711H28-001AMSD** Client ID:
SampleType: **MSD** TestCode: **APPENDIX I VOLATILE ORGANICS SW8260B**
Units: **ug/L** BatchID: **251768**
Prep Date: **11/20/2017** Analysis Date: **11/20/2017**
Run No: **357272** Seq No: **7873354**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Trichloroethene	26870	2500	25000		107	70.6	128	26680	0.710	20	
Surr: 4-Bromofluorobenzene	21190	0	25000		84.8	68	127	21980	0	0	
Surr: Dibromofluoromethane	26090	0	25000		104	84.4	122	26620	0	0	
Surr: Toluene-d8	22610	0	25000		90.4	80.1	116	23070	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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: 251818

Sample ID: **MB-251818** Client ID:
SampleType: **MBLK** TestCode: **APPENDIX I METALS** **SW6020B**
Units: **mg/L** Prep Date: **11/20/2017** Run No: **357499**
BatchID: **251818** Analysis Date: **11/21/2017** Seq No: **7879286**

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-251818** Client ID:
SampleType: **LCS** TestCode: **APPENDIX I METALS** **SW6020B**
Units: **mg/L** Prep Date: **11/20/2017** Run No: **357499**
BatchID: **251818** Analysis Date: **11/21/2017** Seq No: **7879287**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09802	0.00600	0.1000		98.0	80	120				
Arsenic	0.1032	0.0100	0.1000	0.0002697	103	80	120				
Barium	0.09989	0.0200	0.1000		99.9	80	120				
Beryllium	0.1033	0.00400	0.1000		103	80	120				
Cadmium	0.09896	0.00500	0.1000		99.0	80	120				
Chromium	0.1030	0.0200	0.1000		103	80	120				
Cobalt	0.1053	0.0500	0.1000		105	80	120				
Copper	0.1002	0.0200	0.1000	0.0003707	99.8	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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: 251818

Sample ID: LCS-251818	Client ID:			Units: mg/L	Prep Date: 11/20/2017	Run No: 357499
SampleType: LCS	TestCode: APPENDIX I METALS	SW6020B		BatchID: 251818	Analysis Date: 11/21/2017	Seq No: 7879287

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Lead	0.09314	0.0100	0.1000		93.1	80	120				
Nickel	0.09900	0.0400	0.1000	0.0002365	98.8	80	120				
Selenium	0.1027	0.0500	0.1000		103	80	120				
Silver	0.009431	0.00500	0.0100		94.3	80	120				
Thallium	0.09318	0.00200	0.1000		93.2	80	120				
Vanadium	0.1064	0.0500	0.1000		106	80	120				
Zinc	0.1025	0.0200	0.1000	0.0006084	102	80	120				

Sample ID: 1711I24-002AMS	Client ID:			Units: mg/L	Prep Date: 11/20/2017	Run No: 357499
SampleType: MS	TestCode: APPENDIX I METALS	SW6020B		BatchID: 251818	Analysis Date: 11/21/2017	Seq No: 7879291

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09850	0.00600	0.1000		98.5	75	125				
Arsenic	0.09757	0.0100	0.1000	0.0003232	97.2	75	125				
Barium	0.1383	0.0200	0.1000	0.03299	105	75	125				
Beryllium	0.09976	0.00400	0.1000		99.8	75	125				
Cadmium	0.09834	0.00500	0.1000		98.3	75	125				
Chromium	0.09737	0.0200	0.1000	0.001097	96.3	75	125				
Cobalt	0.09674	0.0500	0.1000		96.7	75	125				
Copper	0.09455	0.0200	0.1000	0.0006665	93.9	75	125				
Lead	0.09122	0.0100	0.1000		91.2	75	125				
Nickel	0.09284	0.0400	0.1000	0.001120	91.7	75	125				
Selenium	0.09668	0.0500	0.1000		96.7	75	125				
Silver	0.009567	0.00500	0.0100		95.7	75	125				
Thallium	0.09181	0.00200	0.1000		91.8	75	125				
Vanadium	0.1030	0.0500	0.1000		103	75	125				
Zinc	0.1015	0.0200	0.1000	0.006380	95.1	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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: 251818

Sample ID: **1711I24-002AMSD** Client ID:
SampleType: **MSD** TestCode: **APPENDIX I METALS** **SW6020B**
Units: **mg/L** Prep Date: **11/20/2017** Run No: **357499**
BatchID: **251818** Analysis Date: **11/21/2017** Seq No: **7879292**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Antimony	0.09807	0.00600	0.1000		98.1	75	125	0.09850	0.436	20	
Arsenic	0.09823	0.0100	0.1000	0.0003232	97.9	75	125	0.09757	0.678	20	
Barium	0.1342	0.0200	0.1000	0.03299	101	75	125	0.1383	2.99	20	
Beryllium	0.1037	0.00400	0.1000		104	75	125	0.09976	3.91	20	
Cadmium	0.09858	0.00500	0.1000		98.6	75	125	0.09834	0.250	20	
Chromium	0.09264	0.0200	0.1000	0.001097	91.5	75	125	0.09737	4.99	20	
Cobalt	0.09730	0.0500	0.1000		97.3	75	125	0.09674	0.571	20	
Copper	0.09427	0.0200	0.1000	0.0006665	93.6	75	125	0.09455	0.299	20	
Lead	0.09175	0.0100	0.1000		91.8	75	125	0.09122	0.579	20	
Nickel	0.09230	0.0400	0.1000	0.001120	91.2	75	125	0.09284	0.583	20	
Selenium	0.09796	0.0500	0.1000		98.0	75	125	0.09668	1.31	20	
Silver	0.009525	0.00500	0.0100		95.2	75	125	0.009567	0.438	20	
Thallium	0.09245	0.00200	0.1000		92.4	75	125	0.09181	0.688	20	
Vanadium	0.1028	0.0500	0.1000		103	75	125	0.1030	0.182	20	
Zinc	0.1024	0.0200	0.1000	0.006380	96.0	75	125	0.1015	0.893	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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: 251953

Sample ID: MB-251953	Client ID:				Units: mg/L	Prep Date: 11/24/2017	Run No: 357603
SampleType: MBLK	TestCode: Mercury, Total SW7470A				BatchID: 251953	Analysis Date: 11/24/2017	Seq No: 7881901

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-251953	Client ID:				Units: mg/L	Prep Date: 11/24/2017	Run No: 357603
SampleType: LCS	TestCode: Mercury, Total SW7470A				BatchID: 251953	Analysis Date: 11/24/2017	Seq No: 7881902

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.005006	0.00020	0.0050		100	80	120				

Sample ID: 1711I24-003CMS	Client ID:				Units: mg/L	Prep Date: 11/24/2017	Run No: 357603
SampleType: MS	TestCode: Mercury, Total SW7470A				BatchID: 251953	Analysis Date: 11/24/2017	Seq No: 7881906

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.005197	0.00020	0.0050		104	70	130				

Sample ID: 1711I24-003CMSD	Client ID:				Units: mg/L	Prep Date: 11/24/2017	Run No: 357603
SampleType: MSD	TestCode: Mercury, Total SW7470A				BatchID: 251953	Analysis Date: 11/24/2017	Seq No: 7881908

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.005127	0.00020	0.0050		103	70	130	0.005197	1.36	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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: 252016

Sample ID: **MB-252016**	Client ID:				Units: **mg/L**		Prep Date: **11/27/2017**		Run No: **357696**
SampleType: **MBLK**	TestCode: **Mercury, Total SW7470A**				BatchID: **252016**		Analysis Date: **11/27/2017**		Seq No: **7884383**
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-252016**	Client ID:				Units: **mg/L**		Prep Date: **11/27/2017**		Run No: **357696**
SampleType: **LCS**	TestCode: **Mercury, Total SW7470A**				BatchID: **252016**		Analysis Date: **11/27/2017**		Seq No: **7884384**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004899	0.00020	0.0050	0.0001456	95.1	80	120				

Sample ID: **1711I25-003AMS**	Client ID: **MW-4R**				Units: **mg/L**		Prep Date: **11/27/2017**		Run No: **357696**
SampleType: **MS**	TestCode: **Mercury, Total SW7470A**				BatchID: **252016**		Analysis Date: **11/27/2017**		Seq No: **7884388**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004991	0.00020	0.0050		99.8	70	130				

Sample ID: **1711I25-003AMSD**	Client ID: **MW-4R**				Units: **mg/L**		Prep Date: **11/27/2017**		Run No: **357696**
SampleType: **MSD**	TestCode: **Mercury, Total SW7470A**				BatchID: **252016**		Analysis Date: **11/27/2017**		Seq No: **7884389**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004828	0.00020	0.0050		96.6	70	130	0.004991	3.33	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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: R357624

Sample ID: MB-R357624	Client ID:			Units: mg/L	Prep Date:	Run No: 357624
SampleType: MBLK	TestCode: Inorganic Anions by IC E300.0			BatchID: R357624	Analysis Date: 11/17/2017	Seq No: 7882713

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	BRL	0.200									

Sample ID: LCS-R357624	Client ID:			Units: mg/L	Prep Date:	Run No: 357624
SampleType: LCS	TestCode: Inorganic Anions by IC E300.0			BatchID: R357624	Analysis Date: 11/17/2017	Seq No: 7882712

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.735	0.200	5.000		94.7	90	110				

Sample ID: 1711I25-005DMS	Client ID: EQUIPMENT BLANK			Units: mg/L	Prep Date:	Run No: 357624
SampleType: MS	TestCode: Inorganic Anions by IC E300.0			BatchID: R357624	Analysis Date: 11/17/2017	Seq No: 7882719

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	49.91	2.00	50.00		99.8	90	110				

Sample ID: 1711I25-005DMSD	Client ID: EQUIPMENT BLANK			Units: mg/L	Prep Date:	Run No: 357624
SampleType: MSD	TestCode: Inorganic Anions by IC E300.0			BatchID: R357624	Analysis Date: 11/17/2017	Seq No: 7882720

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	52.24	2.00	50.00		104	90	110	49.91	4.56	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 Environmental Inc.
Project Name: Loudon Co. (Matlock Bend) Landfill Phase II/IV
Workorder: 1711I25

ANALYTICAL QC SUMMARY REPORT

BatchID: R357665

Sample ID: MB-R357665	Client ID:				Units: mg/L	Prep Date:		Run No: 357665	
SampleType: MBLK	TestCode: Inorganic Anions by IC E300.0				BatchID: R357665	Analysis Date: 11/27/2017		Seq No: 7883504	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	BRL	0.200									

Sample ID: LCS-R357665	Client ID:				Units: mg/L	Prep Date:		Run No: 357665	
SampleType: LCS	TestCode: Inorganic Anions by IC E300.0				BatchID: R357665	Analysis Date: 11/27/2017		Seq No: 7883503	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.538	0.200	5.000		90.8	90	110				

Sample ID: 1711I25-002CMS	Client ID: MW-4R				Units: mg/L	Prep Date:		Run No: 357665	
SampleType: MS	TestCode: Inorganic Anions by IC E300.0				BatchID: R357665	Analysis Date: 11/27/2017		Seq No: 7883510	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.479	0.200	5.000		89.6	90	110				S

Sample ID: 1711I25-002CMSD	Client ID: MW-4R				Units: mg/L	Prep Date:		Run No: 357665	
SampleType: MSD	TestCode: Inorganic Anions by IC E300.0				BatchID: R357665	Analysis Date: 11/27/2017		Seq No: 7883511	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoride	4.296	0.200	5.000		85.9	90	110	4.479	4.19	20	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		

APPENDIX C

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #01

INORGANIC	TN REGULATORY LIMITS	11-17-17
Antimony	6	1.5
Arsenic	10	2.5
Barium	2000	33
Beryllium	4	1
Cadmium	5	0.7
Chromium	100	5
Cobalt	6**	5
Copper	800**	2
Fluoride***	4	1.0
Lead	15	1.0
Mercury	2	0.5
Nickel	100	5
Selenium	50	5
Silver	100	1.0
Thallium	2	0.5
Vanadium	86**	5
Zinc	6000**	10.0

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

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

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #1A

INORGANIC	TN REGULATORY LIMITS	11-16-17
Antimony	6	1.5
Arsenic	10	2.5
Barium	2000	87.1
Beryllium	4	1
Cadmium	5	0.7
Chromium	100	5
Cobalt	6**	5.0
Copper	800**	2.0
Fluoride***	4	1.0
Lead	15	1.0
Mercury	2	0.5
Nickel	100	5
Selenium	50	5
Silver	100	1.0
Thallium	2	0.5
Vanadium	86**	5.0
Zinc	6000**	10.0

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

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

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #02

INORGANIC	TN REGULATORY LIMITS	11-16-17
Antimony	6	1.5
Arsenic	10	2.5
Barium	2000	68.8
Beryllium	4	1.87
Cadmium	5	2.27
Chromium	100	5
Cobalt	6**	5
Copper	800**	2
Fluoride***	4	1.0
Lead	15	1.0
Mercury	2	0.5
Nickel	100	33.7
Selenium	50	5
Silver	100	1.0
Thallium	2	0.5
Vanadium	86**	5
Zinc	6000**	350

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

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

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #03

INORGANIC	TN REGULATORY LIMITS	11-16-17
Antimony	6	1.5
Arsenic	10	2.5
Barium	2000	62.7
Beryllium	4	1.0
Cadmium	5	0.7
Chromium	100	5
Cobalt	6**	9.74
Copper	800**	5.2
Fluoride***	4	1.0
Lead	15	1.39
Mercury	2	0.5
Nickel	100	7.5
Selenium	50	5
Silver	100	1.0
Thallium	2	0.5
Vanadium	86**	5
Zinc	6000**	11.9

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

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

LOUDON COUNTY
BACKGROUND WELL
MONITORING WELL #4R

INORGANIC	TN REGULATORY LIMITS	11-17-17
Antimony	6	1.5
Arsenic	10	2.5
Barium	2000	11.3
Beryllium	4	1.0
Cadmium	5	0.7
Chromium	100	5
Cobalt	6**	5.0
Copper	800**	2.0
Fluoride***	4	1.0
Lead	15	1.0
Mercury	2	0.5
Nickel	100	7.69
Selenium	50	5
Silver	100	1.0
Thallium	2	0.5
Vanadium	86**	5
Zinc	6000**	21.2

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

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

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #05

INORGANIC	TN REGULATORY LIMITS	11-16-17
Antimony	6	1.5
Arsenic	10	2.5
Barium	2000	10
Beryllium	4	1.0
Cadmium	5	0.7
Chromium	100	5
Cobalt	6**	5.0
Copper	800**	2.0
Fluoride***	4	1.0
Lead	15	1.0
Mercury	2	0.5
Nickel	100	5
Selenium	50	5
Silver	100	1.0
Thallium	2	0.5
Vanadium	86**	5
Zinc	6000**	10.0

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
**EPA REGION 4 SCREENING LEVEL

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

APPENDIX D

GROUNDWATER DATA

Matlock Bend Landfill

November 16, 2017

Well No.	Elev. Of TOC	Depth to GW (ft below TOC)	Water Elevation	Contour Elevation	Distance	Hydraulic Conductivity	Effective Porosity (n)	Hydraulic Gradient	Average Linear Velocity		Directions
									ft/min	ft/day	
MW-01	830.87	8.42	822.45	820	30	4.70E-06	0.18	8.17E-02	2.13E-06	3.07E-03	S
MW-1A*	805.13	15.28	789.85	795	60	3.93E-06	0.18	8.58E-02	1.87E-06	2.70E-03	S
MW-02	825.20	11.10	814.10	815	40	5.90E-06	0.18	2.25E-02	7.37E-07	1.06E-03	S
MW-03	867.86	13.52	854.34	855	30	1.20E-05	0.18	2.20E-02	1.47E-06	2.11E-03	SW
MW-4R**	992.32	101.95	890.37	885	115	1.90E-05	0.18	4.67E-02	4.93E-06	7.10E-03	NW
MW-05	936.84	104.01	832.83	835	45	2.20E-05	0.18	4.82E-02	5.89E-06	8.49E-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

LEGEND:

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

NOTES:

1. POTENTIOMETRIC CONTOURS DEVELOPED FROM WATER ELEVATIONS TAKEN NOVEMBER 16, 2017.
2. TOPOGRAPHIC CONTOURS SHOWN WERE PROVIDED BY SOUTHERN RESOURCES MAPPING CORP., NORTHPORT, ALABAMA, PHOTOS DATED AUGUST 25, 2015 AND SEPTEMBER 7, 2017.

G.W. WELL NO.	WATER ELEV.
MW-01	822.45
MW-1A	789.85
MW-02	814.10
MW-03	854.34
MW-4R	890.37
MW-05	832.83

0' 150 300 450

PHASE II/IV

PHASE I

MONITORING WELL
MW-4R
TOP OF WELL CASING EL. = 893.33
WELL TOTAL DEPTH: 164.50
WELL CASING INSIDE DIA.: 2"

MONITORING WELL
MW-5
TOP OF WELL CASING EL. = 835.84
WELL TOTAL DEPTH: 172.71
WELL CASING INSIDE DIA.: 2"

MONITORING WELL
MW-3
TOP OF WELL CASING EL. = 857.85
WELL TOTAL DEPTH: 41.60
WELL CASING INSIDE DIA.: 2"

MONITORING WELL
MW-1
TOP OF WELL CASING EL. = 830.67
WELL TOTAL DEPTH: 45.60
WELL CASING INSIDE DIA.: 2"

MONITORING WELL
MW-1A
TOP OF WELL CASING EL. = 829.13
WELL TOTAL DEPTH: 38.60
WELL CASING INSIDE DIA.: 2"

MONITORING WELL
MW-2
TOP OF WELL CASING EL. = 825.20
WELL TOTAL DEPTH: 43.10
WELL CASING INSIDE DIA.: 2"

PROPERTY LINE

PROPERTY LINE

DATE	DRAWN	CHKD	REVISION

PHASE I/II/IV 2ND SEMI- ANNUAL 2017
POTENTIOMETRIC CONTOUR MAP

MATLOCK BEND LANDFILL
LOUDON COUNTY, TENNESSEE

SANTEK ENVIRONMENTAL
659 25TH STREET NW
SUITE 100
CLEVELAND, TENNESSEE

SCALE: 1"=300	
DATE: 1/12/18	
DRAWN BY: RH	
CHECKED BY: RH	
APPROVED BY:	
FILE: 1710-F1	
JOB NO. 200-1710	

F-1

APPENDIX F

Analytical Environmental Services, Inc.

Date: 15-May-17

Test Code: 6020_W
Test Number: SW6020
Test Name: Total Metals by ICP/MS
Matrix: Aqueous Units: ug/L

METHOD DETECTION / REPORTING LIMITS

Updated: 08-Feb-17

Type	Analyte	MDL	PQL
A	Aluminum	4.31	50
A	Antimony	0.1968	5
A	Arsenic	0.1562	5
A	Barium	0.1851	10
A	Beryllium	0.1471	1
A	Cadmium	0.148	0.7
A	Calcium	14.45	100
A	Chromium	0.193	5
A	Cobalt	0.188	5
A	Copper	0.126	2
A	Iron	6.473	100
A	Lead	0.215	1
A	Magnesium	5.268	100
A	Manganese	0.3438	5
A	Molybdenum	0.2329	5
A	Nickel	0.2103	5
A	Potassium	13.15	100
A	Selenium	0.264	5
A	Silver	0.0185	1
A	Sodium	6.387	500
A	Thallium	0.1917	1
A	Tin	0.4787	5
A	Titanium	0.27	5
A	Vanadium	0.1697	5
A	Zinc	0.5805	10

APPENDIX G

AES

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

3080 Presidential Drive • Atlanta, Georgia 30340 • Tel: 770.457.8177 • Fax: 770.457.8188 • Toll Free: 800.972.4589
www.aesatlanta.com

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: 1612642

Date: 12/6/16 Page 1 of 1

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

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Metals by ICP/MS	REMARKS	No. of Containers
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									

ANALYSIS REQUESTED

PRESERVATION (See codes)

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

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Robert Hudson	12/6/16 9am	1:	12/7/16 1013
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Loudon (Matlock Bend) LF Borrow Pit

PROJECT #: Soil Samples

SITE ADDRESS:

SEND REPORT TO: Robert Hudson

INVOICE TO: (IF DIFFERENT FROM ABOVE)

QUOTE #: PO#:

RECEIPT

Total # of Containers: 3

Turnaround Time Request

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

STATE PROGRAM (If any):

E-mail? [ ] Fax? [ ]

DATA PACKAGE: I [ ] II [ ] III [ ] IV [ ]

SPECIAL INSTRUCTIONS/COMMENTS: See Chris Pafford

SHIPMENT METHOD

(OUT) / / VIA:

IN / / VIA:

CLIENT (FedEx) UPS MAIL COURIER

GREYHOUND OTHER

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: HCl = Hydrochloric acid + Ice I = Ice only N = Nitric acid SH = Sulfuric acid + Ice SMH = 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	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:**	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 Santek Work Order Number 16012642

Checklist completed by Jessica Mathison 12/7/16
Signature Date

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

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

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

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

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes __ No __ JM 12/8/16

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.

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