SANTEK
WasteServices

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

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

November 20, 2013

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

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

Dear Mr. Miller:

Please find enclosed a copy of the groundwater monitoring report generated from the second semi-annual groundwater event of 2013 at the Matlock Bend Landfill – Phase I. This package includes data pertaining to site information, geologic summary, groundwater sampling, analytical laboratory reports, statistical analysis, and groundwater elevations and flow.

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

Sincerely,

Will Martin
Environmental Compliance Coordinator

Ron E. Vail, P.E.
V.P. of Engineering
TN. Registration No. 109716

Enclosures

cc: Steve Field, Loudon County Solid Waste Department Chairman
Robert D. Burnette, P.E., Executive V.P. of Engineering, Santek
Matt Dillard, Executive V.P. of Operations, Santek
Levi Higdon, Landfill Manager, Santek

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**Phase I**



**Phase II/IV Upgrade**

# MATLOCK BEND LANDFILL

# PHASE I

# MATLOCK BEND LANDFILL – PHASE I
# GROUNDWATER MONITORING REPORT
# 2nd SEMI-ANNUAL EVENT - 2013

**SANTEK PROJECT NO. 200-1310.3**


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

**NOVEMBER 2013**

## 1.0 INTRODUCTION

In accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rule 1200-1-7-.04(7), Santek Waste Services, Inc. (Santek) is submitting the groundwater monitoring report for the second semi-annual event for 2013 at the Matlock Bend Landfill - Phase I. The sampling and analytical were performed in accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rules as well as the site's approved groundwater monitoring plan dated December 1996. The groundwater monitoring plan is incorporated in the landfill's Operations Plan. The site's groundwater monitoring network consists of MW-01, MW-1A, MW-02 and MW-03. Sampling and statistical analyses were performed by Santek. Santek contracted with Analytical Environmental Services, Inc. (AES) to perform all analytical testing.

## 1.1 SITE INFORMATION

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

## 2.0 SAMPLING AND ANALYTICAL

The groundwater sampling event was performed on September 24 & 25, 2013. Samples were analyzed for Appendix I constituents, as well as the required additional 14 parameters. All samples were submitted to AES for analysis. A duplicate was obtained from MW-1A. Field sampling logs are provided in Appendix A. Analytical results are provided in Appendix B.

## 3.0 STATISTICAL ANALYSIS

### 3.1 Statistical Analysis Method

Santek is submitting a control chart approach to satisfy the statistical analysis requirement. Well #03 is the upgradient (background) well. Wells #01, #1A and #02 are the downgradient (compliance) wells. The analytical results for this sampling event are used to compare the compliance wells to the background well concentrations for each constituent elevated above detection limit. Parameters not detected above the reporting limits are not included in the control chart comparison. Parameters detected above the reporting limits are compared to the average background concentration. The mean (average) for each well is determined by using the actual analytical value if it exceeds the detection limit, or by using the method detection limit (MDL) if the result was a nondetect. If the average background concentration is greater than the results for the compliance well, then no significant increase is indicated. If the average background concentration is less than the results of the compliance well, then the Appendix I limits from pages .01-17, 18 of the regulations are used for additional comparison to indicate potentially elevated concentrations. Control charts are provided in Appendix C.

## 3.2 Statistical Analysis Summary

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

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

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

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

## 4.0 FLOW DIRECTION AND RATES

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

The overall groundwater flow of Phase I is towards the southwest and will eventually flow to the Tennessee River. The groundwater flow rate ranges from $1.06 \times 10^{-3}$ ft/day at MW-02 to $2.86 \times 10^{-3}$ ft/day at MW-01. Groundwater flow rate and direction have been determined for each well and are included in Appendix D. A groundwater potentiometric contour map is included in Appendix E.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

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

**Indicates Appendix I limit is not available.*

APPENDIX A

DATE: 9/24/13

| FIELD SAMPLING LOG | WELL NO: MW-01 |
|---|---|
| Location: Loudon County | Site: Matlock Bend |
| Client/Operator: Santek Waste Services, Inc. | Project No: |
| Purge Start: (Date) 9/24/13 (Time) 1:45 | Purge End: (Date) 9/24/13 (Time) 2:20 |
| Purged by: Robert | |
| Depth Measurement Ref. Point* 830.87 ft | Well Csg. ID: 2" |

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 45.00 (-)Orig. DTW: 8.59 (=) Wtr. Col. Thick: 36.41 .

(x) **2"=0.16** 4"=0.65 6"=1.47 Gals./ft. (=) 5.8 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 17.4 Total Purge Gals.

GW elev. Ref. 830.87 ft.(-) DTW 8.59 ft. = 822.28 ft.

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

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Cloudy ( 70's °F)

| Actual Time | Elapsed Time | Vol. Purged (Gals) | Depth to Wtr (ft) | Depth of Pump Intake (ft) | Temp (°C) | pH | Cond. (umhos) mS/cm | Turbidity (NTU) | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1:48 | | - | | | 21.20 | 6.76 | 0.454 | 0.0 | | Clear |
| 1:57 | | 6.0 | | | 18.54 | 6.81 | 0.472 | 230 | | Cloudy |
| 2:07 | | 12.0 | | | 17.64 | 6.89 | 0.498 | 255 | | Cloudy |
| 2:12 | | 15.5 | | | 17.46 | 6.87 | 0.500 | 222 | | Cloudy |
| 2:20 | | 18.0 | | | 17.41 | 6.98 | 0.484 | 169 | | Cloudy |

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

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

v=[K_____ft/min. (x) GW elev._____ft. (-) GW elev. _____ft] -_____ .18 Clay/Silt
distance_____ft . 20 Silt w/sand
v=_____ft./min. = _____ft day .25 sand
.3 sand and gravel

Comments: Metals Sample Turbidity = 12.9 NTU's. VOC's taken on 9/24/13 @ 2:21 p.m. Metals taken on 9/25/13 @ 2:17 p.m. Allowed well to settle overnight.

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

DATE: 9/24/13

| FIELD SAMPLING LOG | WELL NO: MW-1A |
|---|---|
| Location: Loudon County | Site: Matlock Bend |
| Client/Operator: Santek Waste Services, Inc. | Project No: |
| Purge Start: (Date) 9/24/13 (Time) 2:49 | Purge End: (Date) 9/24/13 (Time) 3:19 |
| Purged by: Robert | |
| Depth Measurement Ref. Point* 805.13 ft | Well Csg. ID: 2" |

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 38.00 (-)Orig. DTW: 13.92 (=) Wtr. Col. Thick: 24.08 .

(x) **2"=0.16** 4"=0.65 6"=1.47 Gals./ft. (=) 3.9 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 11.7 Total Purge Gals.

GW elev. Ref. 805.13 ft.(-) DTW 13.92 ft. = 791.21 ft.

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

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Cloudy ( 70's °F)

| Actual Time | Elapsed Time | Vol. Purged (Gals) | Depth to Wtr (ft) | Depth of Pump Intake (ft) | Temp (°C) | pH | Cond. (umhos) mS/cm | Turbidity (NTU) | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 2:51 | | - | | | 19.58 | 7.71 | 0.447 | 24.7 | | Clear |
| 2:58 | | 4 | | | 18.50 | 6.91 | 0.680 | 426 | | Murky |
| 3:06 | | 8 | | | 18.31 | 6.99 | 0.736 | 448 | | Murky |
| 3:12 | | 10 | | | 18.11 | 7.08 | 0.734 | 386 | | Cloudy |
| 3:19 | | 12 | | | 18.04 | 7.07 | 0.751 | 301 | | Cloudy |

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

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

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

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

Comments: Metals Sample Turbidity = 3.2 NTU's. VOC's taken on 9/24/13 @ 3:19 p.m. Metals taken on 9/25/13 @ 2:35 p.m. Allowed well to settle overnight. Duplicate taken here.

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

DATE: 9/25/13

| FIELD SAMPLING LOG | WELL NO: MW-02 |
|---|---|
| Location: Loudon County | Site: Matlock Bend |
| Client/Operator: Santek Waste Services, Inc. | Project No: |
| Purge Start: (Date) 9/25/13 (Time) 12:35 | Purge End: (Date) 9/25/13 (Time) 12:51 |
| Purged by: Robert | |
| Depth Measurement Ref. Point* 825.20 ft | Well Csg. ID: 2" |

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 43.10 (-)Orig. DTW: 15.60 (=) Wtr. Col. Thick: 27.50 .
15.65 (water level on 9/24/13)

(x) **2"=0.16** 4"=0.65 6"=1.47 Gals./ft. (=) 4.4 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 13.2 Total Purge Gals.

GW elev. Ref. 825.20 ft.(-) DTW 15.65 ft. = 809.55 ft.

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

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Cloudy ( 70's °F)

| Actual Time | Elapsed Time | Vol. Purged (Gals) | Depth to Wtr (ft) | Depth of Pump Intake (ft) | Temp (°C) | pH | Cond. (umhos) mS/cm | Turbidity (NTU) | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:37 | | - | | | 18.33 | 7.52 | 0.049 | 14.9 | | Clear |
| 12:43 | | 4.5 | | | 17.79 | 5.21 | 0.041 | 87.9 | | Clear |
| 12:51 | | 8.0 | | | 16.92 | 4.95 | 0.057 | 537 | | Murky, *purged dry |
| | | | | | | | | | | |

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

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

*Purged dry at 8.0 gallons.

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

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

Comments: Metals Sample Turbidity = 12.3 NTU's. VOC's taken on 9/25/13 @ 12:55 p.m. Metals taken on 9/25/13 @ 2:45 p.m. Water level taken on 9/24/13. *Well purged dry.

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

DATE: 9/25/13

| FIELD SAMPLING LOG | WELL NO: MW-03 |
|---|---|
| Location: Loudon County | Site: Matlock Bend |
| Client/Operator: Santek Waste Services, Inc. | Project No: |
| Purge Start: (Date) 9/25/13 (Time) 1:34 | Purge End: (Date) 9/25/13 (Time) 1:47 |
| Purged by: Robert | |
| Depth Measurement Ref. Point* 867.86 ft | Well Csg. ID: 2" |

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 41.60 (-)Orig. DTW: 17.93 (=) Wtr. Col. Thick: 23.67 .
17.90 (water level on 9/24/13)

(x) **2"=0.16** 4"=0.65 6"=1.47 Gals./ft. (=) 3.8 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 11.4 Total Purge Gals.

GW elev. Ref. 867.86 ft.(-) DTW 17.90 ft. = 849.96 ft.

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

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Cloudy ( 70's °F)

| Actual Time | Elapsed Time | Vol. Purged (Gals) | Depth to Wtr (ft) | Depth of Pump Intake (ft) | Temp (°C) | pH | Cond. (umhos) mS/cm | Turbidity (NTU) | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1:34 | | - | | | 18.30 | 5.33 | 0.068 | 9.1 | | Clear |
| 1:40 | | 4.0 | | | 17.34 | 5.35 | 0.070 | 248 | | Cloudy |
| 1:47 | | 5.5 | | | 17.11 | 5.24 | 0.079 | 154 | | Cloudy, *purged dry |
| | | | | | | | | | | |

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

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

*Purged dry at 5.5 gallons.

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

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

Comments: Metals Sample Turbidity = 8.7 NTU's. VOC's taken on 9/25/13 @ 1:50 p.m. Metals taken on 9/25/13 @ 3:05 p.m. Water level taken on 9/24/13. *Well purged dry.

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

# APPENDIX B

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

October 15, 2013

Will Martin
Santek Environmental Inc.
650 25th Street NW. Suite 100
Cleveland TN 37311

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

RE: Loudon Co. (Matlock Bend LF)

Dear Will Martin: Order No: 1309J90

Analytical Environmental Services, Inc. received 6 samples on 9/26/2013 10:20:00 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' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

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.

CRKanhai

Chantelle Kanhai
Project Manager

# ALYTICAL ENVIRONMENTAL SERVICES, INC

3785 Presidential Parkway, Atlanta GA 30340-3704

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

## CHAIN OF CUSTODY

Work Order: 130 J90

Date: 9/25/13 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

ANALYSIS REQUESTED

| # | SAMPLE ID | SAMPLED DATE | SAMPLED TIME | Grab | Composite | Matrix (See codes) | Inorganic Anions | TDS | Total Metals | Total Mercury | App. I Metals | Dissolved Metals | App. I VOCs | Micro-Ext. Vol | Nitrogen, Ammonia | TOC | COD | Cyanide | REMARKS | No # of Containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRESERVATION (See codes) | | | | | | | | | | | | | | | | | | | |
| 1 | MW-05 | 9/24/13 | 11:59 | X | | GW | X | | | | | | X | X | | | | | | 5 |
| 2 | ↳ | 9/25/13 | 10:40 | X | | GW | | | RW | X | X | | | | | | | | | 1 |
| 3 | MW-4R | 9/24/13 | 12:58 | X | | GW | X | | | | | | X | X | | | | | | 5 |
| 4 | ↳ | 9/25/13 | 11:10 | X | | GW | | | | X | X | | | | | | | | | 1 |
| 5 | Duplicate | 9/24/13 | | X | | GW | X | X | RW | | | X | X | X | X | X | X | X | | 8 |
| 6 | ↳ | 9/25/13 | | X | | GW | | | X | X | X | | | | | | | | | 1 |
| 7 | MW-01 | 9/24/13 | 2:21 | X | | GW | X | X | RW | | | X | X | X | X | X | X | X | | 8 |
| 8 | ↳ | 9/25/13 | 2:17 | X | | GW | | | X | X | X | | | | | | | | | 1 |
| 9 | MW-10 | 9/24/13 | 3:19 | X | | GW | X | X | | | | X | X | X | X | X | X | X | | 8 |
| 10 | | 9/25/13 | 2:35 | X | | GW | | | X | X | X | | | | | | | | | 1 |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |

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

| RELINQUISHED BY | DATE/TIME | RECEIVED BY | DATE/TIME |
|---|---|---|---|
| 1: Robert Hudson | 9/25/13 5:30pm | 1: | 9/26/13 10:20 |
| 2: | | 2: | |
| 3: | | 3: | |

PROJECT INFORMATION

PROJECT NAME: Loudon Co. (Mathock Bend LF) 2nd Semi-

PROJECT #: Annual GW Event 2013

SITE ADDRESS:

SEND REPORT TO: Will Martin

INVOICE TO: (IF DIFFERENT FROM ABOVE)

QUOTE #: PO#:

RECEIPT

Total # of Containers

Turnaround Time Request

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

STATE PROGRAM (if any):

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

DATA PACKAGE: I II III IV

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

SHIPMENT METHOD

OUT / / VIA:

IN / / VIA:

CLIENT FedEx UPS MAIL COURIER

GREYHOUND OTHER

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

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

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

White Copy - Original; Yellow Copy - Client

## Analytical Environmental Services, Inc

**Date:** 15-Oct-13

**Client:** Santek Environmental Inc.
**Project:** Loudon Co. (Matlock Bend LF)
**Lab ID:** 1309J90

# Case Narrative

Sample Receipt Nonconformance:

The sample ID for 1309J90-006 was not labeled on the sample container. The information was taken from the Chain of Custody for log in.

Ion Chromatogrpahy Analysis by Method 300:

Sample 1309J90-001 was extracted and analyzed outside holding time of 48 hours for Nitrate. No collection time was indicated at time of analysis. Sample was analyzed when received.

**Analytical Environmental Services, Inc.**

Sample/Cooler Receipt Checklist

Client Sandek Work Order Number 1309J90

Checklist completed by PR 9/26/13
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? (4°C±2)* Yes ✓ No __

Cooler #1 3.6 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 PR

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.

\\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

## Analytical Environmental Services, Inc

**Date:** 15-Oct-13

**Client:** Santek Environmental Inc.
**Project:** Loudon Co. (Matlock Bend LF)
**Lab Order:** 1309J90

# Dates Report

| Lab Sample ID | Client Sample ID | Collection Date | Matrix | Test Name | TCLP Date | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1309J90-001A | DUPLICATE | 9/24/2013 12:00:00AM | Groundwater | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/29/2013 |
| 1309J90-001B | DUPLICATE | 9/24/2013 12:00:00AM | Groundwater | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309J90-001C | DUPLICATE | 9/24/2013 12:00:00AM | Groundwater | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |
| 1309J90-001D | DUPLICATE | 9/24/2013 12:00:00AM | Groundwater | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309J90-001D | DUPLICATE | 9/24/2013 12:00:00AM | Groundwater | Chemical Oxygen Demand (COD) | | | 09/30/2013 |
| 1309J90-001D | DUPLICATE | 9/24/2013 12:00:00AM | Groundwater | Total Organic Carbon (TOC) | | | 09/30/2013 |
| 1309J90-001E | DUPLICATE | 9/24/2013 12:00:00AM | Groundwater | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309J90-001F | DUPLICATE | 9/24/2013 12:00:00AM | Groundwater | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309J90-001F | DUPLICATE | 9/24/2013 12:00:00AM | Groundwater | Inorganic Anions by IC | | | 09/26/2013 |
| 1309J90-002A | DUPLICATE | 9/25/2013 12:00:00AM | Groundwater | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309J90-002A | DUPLICATE | 9/25/2013 12:00:00AM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309J90-002A | DUPLICATE | 9/25/2013 12:00:00AM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/07/2013 |
| 1309J90-002A | DUPLICATE | 9/25/2013 12:00:00AM | Groundwater | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |
| 1309J90-003A | MW-01 | 9/24/2013 2:21:00PM | Groundwater | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/29/2013 |
| 1309J90-003B | MW-01 | 9/24/2013 2:21:00PM | Groundwater | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309J90-003C | MW-01 | 9/24/2013 2:21:00PM | Groundwater | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |
| 1309J90-003D | MW-01 | 9/24/2013 2:21:00PM | Groundwater | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309J90-003D | MW-01 | 9/24/2013 2:21:00PM | Groundwater | Chemical Oxygen Demand (COD) | | | 09/30/2013 |
| 1309J90-003D | MW-01 | 9/24/2013 2:21:00PM | Groundwater | Total Organic Carbon (TOC) | | | 09/30/2013 |
| 1309J90-003E | MW-01 | 9/24/2013 2:21:00PM | Groundwater | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309J90-003F | MW-01 | 9/24/2013 2:21:00PM | Groundwater | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309J90-003F | MW-01 | 9/24/2013 2:21:00PM | Groundwater | Inorganic Anions by IC | | | 09/26/2013 |
| 1309J90-004A | MW-01 | 9/25/2013 2:17:00PM | Groundwater | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309J90-004A | MW-01 | 9/25/2013 2:17:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309J90-004A | MW-01 | 9/25/2013 2:17:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/07/2013 |
| 1309J90-004A | MW-01 | 9/25/2013 2:17:00PM | Groundwater | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |
| 1309J90-005A | MW-1A | 9/24/2013 3:19:00PM | Groundwater | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/29/2013 |
| 1309J90-005B | MW-1A | 9/24/2013 3:19:00PM | Groundwater | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309J90-005C | MW-1A | 9/24/2013 3:19:00PM | Groundwater | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |

## Analytical Environmental Services, Inc

**Date:** 15-Oct-13

**Client:** Santek Environmental Inc.
**Project:** Loudon Co. (Matlock Bend LF)
**Lab Order:** 1309J90

# Dates Report

| Lab Sample ID | Client Sample ID | Collection Date | Matrix | Test Name | TCLP Date | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1309J90-005D | MW-1A | 9/24/2013 3:19:00PM | Groundwater | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309J90-005D | MW-1A | 9/24/2013 3:19:00PM | Groundwater | Chemical Oxygen Demand (COD) | | | 09/30/2013 |
| 1309J90-005D | MW-1A | 9/24/2013 3:19:00PM | Groundwater | Total Organic Carbon (TOC) | | | 09/30/2013 |
| 1309J90-005E | MW-1A | 9/24/2013 3:19:00PM | Groundwater | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309J90-005F | MW-1A | 9/24/2013 3:19:00PM | Groundwater | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309J90-005F | MW-1A | 9/24/2013 3:19:00PM | Groundwater | Inorganic Anions by IC | | | 09/26/2013 |
| 1309J90-006A | MW-1A | 9/25/2013 2:35:00PM | Groundwater | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309J90-006A | MW-1A | 9/25/2013 2:35:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309J90-006A | MW-1A | 9/25/2013 2:35:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/07/2013 |
| 1309J90-006A | MW-1A | 9/25/2013 2:35:00PM | Groundwater | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

October 15, 2013

Will Martin
Santek Environmental Inc.
650 25th Street NW, Suite 100
Cleveland TN 37311

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

RE: Loudon Co. (Matlock Bend LF)

Dear Will Martin: Order No: 1309K39

Analytical Environmental Services, Inc. received 6 samples on 9/26/2013 10:20:00 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' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

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.

CKanhai

Chantelle Kanhai
Project Manager

# LYTICAL ENVIRONMENTAL SERVICES, INC

3785 Presidential Parkway, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

## CHAIN OF CUSTODY

Work Order: 13E0K39

Date: 9/25/13 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) | Inorganic Anions by IC | TDS | Total Metals by ICPMS | Total Mercury | Appendix F metals by ICPMS | Dissolved Metals | App. I VOC's | Misc-Ext. VOCs | Nitrogen, Ammonia | TOC | COD | Cyanide | REMARKS | No # of Containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ANALYSIS REQUESTED / PRESERVATION (See codes) | | | | | | | | | | | | | | | | | | | |
| 1 | Trip Blank | 9/25/13 | 4:40 | X | | W | X | X | X | X | X | X | X | X | X | X | X | X | | 9 |
| 2 | Equip. Blank | 9/25/13 | 4:45 | X | | W | X | X | X | X | X | X | X | X | X | X | X | X | | 9 |
| 3 | MW-03 | 9/25/13 | 1:50 | X | | GW | X | X | | | | X | X | X | X | X | X | X | | 8 |
| 4 | ↳ | 9/25/13 | 3:05 | X | | GW | | | X | X | X | | | | | | | | | 1 |
| 5 | MW-02 | 9/25/13 | 12:55 | X | | GW | X | X | | | | X | X | X | X | X | X | X | | 8 |
| 6 | ↳ | 9/25/13 | 2:45 | X | | GW | | | X | X | X | | | | | | | | | 1 |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |

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

| RELINQUISHED BY | DATE/TIME | RECEIVED BY | DATE/TIME |
|---|---|---|---|
| 1: Robert Hudson | 9/25/13 5:30pm | 1: | 9/26/13 (0?) |
| 2: | | 2: | |
| 3: | | 3: | |

PROJECT INFORMATION

PROJECT NAME: Loudon Co. (Mart Lock Bend LF) 2nd
PROJECT #: Semi-Annual GW Event 2013
SITE ADDRESS:
SEND REPORT TO: Will Martin
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT

Total # of Containers

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

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

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

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

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

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

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

White Copy - Original; Yellow Copy - Client

**Analytical Environmental Services, Inc.**

Sample/Cooler Receipt Checklist

Client Santek Work Order Number 1309K39

Checklist completed by PLS 9/26/13
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? (4°C±2)* Yes ✓ No __

Cooler #1 3.6 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 __ PT

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.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

**Client:** Santek Environmental Inc.
**Project:** Loudon Co. (Matlock Bend LF)
**Lab Order:** 1309K39

## Dates Report

| Lab Sample ID | Client Sample ID | Collection Date | Matrix | Test Name | TCLP Date | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1309K39-001A | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/28/2013 |
| 1309K39-001B | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309K39-001C | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309K39-001C | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309K39-001C | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |
| 1309K39-001D | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |
| 1309K39-001E | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309K39-001E | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Chemical Oxygen Demand (COD) | | | 09/30/2013 |
| 1309K39-001E | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Total Organic Carbon (TOC) | | | 10/01/2013 |
| 1309K39-001F | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309K39-001G | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309K39-001G | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Inorganic Anions by IC | | | 09/26/2013 |
| 1309K39-002A | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/28/2013 |
| 1309K39-002B | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309K39-002C | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309K39-002C | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309K39-002C | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |
| 1309K39-002D | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |
| 1309K39-002E | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309K39-002E | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Chemical Oxygen Demand (COD) | | | 09/30/2013 |
| 1309K39-002E | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Total Organic Carbon (TOC) | | | 10/01/2013 |
| 1309K39-002F | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309K39-002G | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309K39-002G | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Inorganic Anions by IC | | | 09/26/2013 |
| 1309K39-003A | MW-03 | 9/25/2013 1:50:00PM | Groundwater | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/28/2013 |
| 1309K39-003B | MW-03 | 9/25/2013 1:50:00PM | Groundwater | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309K39-003C | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |
| 1309K39-003D | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309K39-003D | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Chemical Oxygen Demand (COD) | | | 09/30/2013 |

## Analytical Environmental Services, Inc

**Date:** 15-Oct-13

**Client:** Santek Environmental Inc.
**Project:** Loudon Co. (Matlock Bend LF)
**Lab Order:** 1309K39

# Dates Report

| Lab Sample ID | Client Sample ID | Collection Date | Matrix | Test Name | TCLP Date | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1309K39-003D | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Total Organic Carbon (TOC) | | | 10/01/2013 |
| 1309K39-003E | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309K39-003F | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309K39-003F | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Inorganic Anions by IC | | | 09/26/2013 |
| 1309K39-004A | MW-03 | 9/25/2013 3:05:00PM | Groundwater | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309K39-004A | MW-03 | 9/25/2013 3:05:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309K39-004A | MW-03 | 9/25/2013 3:05:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/07/2013 |
| 1309K39-004A | MW-03 | 9/25/2013 3:05:00PM | Groundwater | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |
| 1309K39-005A | MW-02 | 9/25/2013 12:55:00PM | Groundwater | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/28/2013 |
| 1309K39-005B | MW-02 | 9/25/2013 12:55:00PM | Groundwater | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309K39-005C | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |
| 1309K39-005D | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309K39-005D | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Chemical Oxygen Demand (COD) | | | 09/30/2013 |
| 1309K39-005D | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Total Organic Carbon (TOC) | | | 10/01/2013 |
| 1309K39-005E | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309K39-005F | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309K39-005F | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Inorganic Anions by IC | | | 09/26/2013 |
| 1309K39-006A | MW-02 | 9/25/2013 2:45:00PM | Groundwater | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309K39-006A | MW-02 | 9/25/2013 2:45:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309K39-006A | MW-02 | 9/25/2013 2:45:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/07/2013 |
| 1309K39-006A | MW-02 | 9/25/2013 2:45:00PM | Groundwater | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-01 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/24/2013 2:21:00 PM |
| **Lab ID:** | 1309J90-003 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **T. Organic Carbon(TOC)(E415.1/SM5310B)** | | | | | | | | |
| Organic Carbon, Total | BRL | 1.0 | | mg/L | R252978 | 1 | 09/30/2013 19:38 | GR |
| **Residue, Diss.(TDS)(E160.1/SM2540C)** | | | | | | | | |
| Residue, Dissolved (TDS) | 298 | 1 | | mg/L | 181825 | 1 | 10/01/2013 15:00 | LW |
| **Nitrogen, Ammonia (as N) E350.1** | | | | **(E350.1)** | | | | |
| Nitrogen, Ammonia (As N) | BRL | 0.200 | | mg/L | 181792 | 1 | 10/02/2013 16:20 | LV |
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.207 | | ug/L | 181679 | 1 | 09/28/2013 01:16 | SH |
| 1,2-Dibromoethane | BRL | 0.052 | | ug/L | 181679 | 1 | 09/28/2013 01:16 | SH |
| Surr: 4-Bromofluorobenzene | 93.7 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 01:16 | SH |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Chloride | 11.0 | 5.00 | | mg/L | R253080 | 5 | 09/26/2013 13:37 | GR |
| Fluoride | BRL | 4.00 | | mg/L | R253080 | 1 | 09/26/2013 13:22 | GR |
| Nitrogen, Nitrate (As N) | BRL | 10.0 | | mg/L | R253080 | 1 | 09/26/2013 13:22 | GR |
| Sulfate | 2.23 | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 13:22 | GR |
| **Dissolved Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Manganese | BRL | 10.0 | | ug/L | 181644 | 1 | 10/03/2013 19:30 | TA |
| **Cyanide SW9014** | | | | **(SW9010C)** | | | | |
| Cyanide, Total | BRL | 0.200 | | mg/L | 181810 | 1 | 10/01/2013 14:00 | EH |
| **Chemical Oxygen Demand (COD) E410.4** | | | | | | | | |
| Chemical Oxygen Demand | 14.8 | 10.0 | | mg/L | R252984 | 1 | 09/30/2013 15:00 | MG |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 1,1,2,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-01 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/24/2013 2:21:00 PM |
| **Lab ID:** | 1309J90-003 | **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 | 181736 | 1 | 09/29/2013 00:35 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Methylene chloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Vinyl chloride | BRL | 2.0 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/29/2013 00:35 | GK |
| Surr: 4-Bromofluorobenzene | 97.9 | 64.6-123 | | %REC | 181736 | 1 | 09/29/2013 00:35 | GK |
| Surr: Dibromofluoromethane | 98.3 | 76.6-133 | | %REC | 181736 | 1 | 09/29/2013 00:35 | GK |
| Surr: Toluene-d8 | 101 | 77.8-120 | | %REC | 181736 | 1 | 09/29/2013 00:35 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-01 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 2:17:00 PM |
| **Lab ID:** | 1309J90-004 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Total Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Calcium | 49300 | 100 | | ug/L | 181689 | 1 | 10/07/2013 18:41 | TA |
| Iron | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Magnesium | 31300 | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Potassium | 2160 | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Sodium | 5760 | 500 | | ug/L | 181689 | 1 | 10/07/2013 18:41 | TA |
| **Mercury, Total SW7470A** | | | | **(SW7470A)** | | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 13:49 | CG |
| **APPENDIX I METALS SW6020A** | | | | **(SW3005A)** | | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | TA |
| Zinc | BRL | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:17 | 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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-1A |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/24/2013 3:19:00 PM |
| **Lab ID:** | 1309J90-005 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **T. Organic Carbon(TOC)(E415.1/SM5310B)** | | | | | | | | |
| Organic Carbon, Total | BRL | 1.0 | | mg/L | R252978 | 1 | 09/30/2013 20:48 | GR |
| **Residue, Diss.(TDS)(E160.1/SM2540C)** | | | | | | | | |
| Residue, Dissolved (TDS) | 481 | 1 | | mg/L | 181825 | 1 | 10/01/2013 15:00 | LW |
| **Nitrogen, Ammonia (as N) E350.1** | | | | **(E350.1)** | | | | |
| Nitrogen, Ammonia (As N) | BRL | 0.200 | | mg/L | 181792 | 1 | 10/02/2013 16:20 | LV |
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.205 | | ug/L | 181679 | 1 | 09/28/2013 01:44 | SH |
| 1,2-Dibromoethane | BRL | 0.051 | | ug/L | 181679 | 1 | 09/28/2013 01:44 | SH |
| Surr: 4-Bromofluorobenzene | 95.3 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 01:44 | SH |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Chloride | 62.4 | 10.0 | | mg/L | R253080 | 10 | 09/26/2013 14:07 | GR |
| Fluoride | BRL | 4.00 | | mg/L | R253080 | 1 | 09/26/2013 13:52 | GR |
| Nitrogen, Nitrate (As N) | BRL | 10.0 | | mg/L | R253080 | 1 | 09/26/2013 13:52 | GR |
| Sulfate | 20.5 | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 13:52 | GR |
| **Dissolved Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Manganese | BRL | 10.0 | | ug/L | 181644 | 1 | 10/03/2013 19:42 | TA |
| **Cyanide SW9014** | | | | **(SW9010C)** | | | | |
| Cyanide, Total | BRL | 0.200 | | mg/L | 181810 | 1 | 10/01/2013 14:00 | EH |
| **Chemical Oxygen Demand (COD) E410.4** | | | | | | | | |
| Chemical Oxygen Demand | 36.9 | 10.0 | | mg/L | R252984 | 1 | 09/30/2013 15:00 | MG |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 1,1,2,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-1A |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/24/2013 3:19:00 PM |
| **Lab ID:** | 1309J90-005 | **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 | 181736 | 1 | 09/29/2013 01:04 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Methylene chloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Vinyl chloride | BRL | 2.0 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/29/2013 01:04 | GK |
| Surr: 4-Bromofluorobenzene | 98.3 | 64.6-123 | | %REC | 181736 | 1 | 09/29/2013 01:04 | GK |
| Surr: Dibromofluoromethane | 97.8 | 76.6-133 | | %REC | 181736 | 1 | 09/29/2013 01:04 | GK |
| Surr: Toluene-d8 | 101 | 77.8-120 | | %REC | 181736 | 1 | 09/29/2013 01:04 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-1A |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 2:35:00 PM |
| **Lab ID:** | 1309J90-006 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Total Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Calcium | 63000 | 100 | | ug/L | 181689 | 1 | 10/07/2013 18:45 | TA |
| Iron | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Magnesium | 24900 | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Potassium | 8090 | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Sodium | 22500 | 500 | | ug/L | 181689 | 1 | 10/07/2013 18:45 | TA |
| **Mercury, Total SW7470A** | | | | **(SW7470A)** | | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 13:50 | CG |
| **APPENDIX I METALS SW6020A** | | | | **(SW3005A)** | | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | TA |
| Zinc | BRL | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:21 | 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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | DUPLICATE |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/24/2013 |
| **Lab ID:** | 1309J90-001 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **T. Organic Carbon(TOC)(E415.1/SM5310B)** | | | | | | | | |
| Organic Carbon, Total | BRL | 1.0 | | mg/L | R252978 | 1 | 09/30/2013 19:22 | GR |
| **Residue, Diss.(TDS)(E160.1/SM2540C)** | | | | | | | | |
| Residue, Dissolved (TDS) | 473 | 1 | | mg/L | 181825 | 1 | 10/01/2013 15:00 | LW |
| **Nitrogen, Ammonia (as N) E350.1** | | | | **(E350.1)** | | | | |
| Nitrogen, Ammonia (As N) | BRL | 0.200 | | mg/L | 181792 | 1 | 10/02/2013 16:19 | LV |
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.204 | | ug/L | 181679 | 1 | 09/28/2013 00:19 | SH |
| 1,2-Dibromoethane | BRL | 0.051 | | ug/L | 181679 | 1 | 09/28/2013 00:19 | SH |
| Surr: 4-Bromofluorobenzene | 94.1 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 00:19 | SH |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Chloride | 59.3 | 10.0 | | mg/L | R253080 | 10 | 09/26/2013 13:06 | GR |
| Fluoride | BRL | 4.00 | | mg/L | R253080 | 1 | 09/26/2013 12:36 | GR |
| Nitrogen, Nitrate (As N) | BRL | 10.0 | H | mg/L | R253080 | 1 | 09/26/2013 12:36 | GR |
| Sulfate | 21.8 | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 12:36 | GR |
| **Dissolved Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Manganese | BRL | 10.0 | | ug/L | 181644 | 1 | 10/03/2013 19:26 | TA |
| **Cyanide SW9014** | | | | **(SW9010C)** | | | | |
| Cyanide, Total | BRL | 0.200 | | mg/L | 181810 | 1 | 10/01/2013 14:00 | EH |
| **Chemical Oxygen Demand (COD) E410.4** | | | | | | | | |
| Chemical Oxygen Demand | 25.8 | 10.0 | | mg/L | R252984 | 1 | 09/30/2013 15:00 | MG |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 1,1,2,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | DUPLICATE |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/24/2013 |
| **Lab ID:** | 1309J90-001 | **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 | 181736 | 1 | 09/29/2013 00:06 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Methylene chloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Vinyl chloride | BRL | 2.0 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/29/2013 00:06 | GK |
| Surr: 4-Bromofluorobenzene | 99.3 | 64.6-123 | | %REC | 181736 | 1 | 09/29/2013 00:06 | GK |
| Surr: Dibromofluoromethane | 97.9 | 76.6-133 | | %REC | 181736 | 1 | 09/29/2013 00:06 | GK |
| Surr: Toluene-d8 | 101 | 77.8-120 | | %REC | 181736 | 1 | 09/29/2013 00:06 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | DUPLICATE |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 |
| **Lab ID:** | 1309J90-002 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Total Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Calcium | 61500 | 100 | | ug/L | 181689 | 1 | 10/07/2013 18:37 | TA |
| Iron | 317 | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Magnesium | 26800 | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Potassium | 8800 | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Sodium | 22100 | 500 | | ug/L | 181689 | 1 | 10/07/2013 18:37 | TA |
| **Mercury, Total SW7470A** | | | | **(SW7470A)** | | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 13:47 | CG |
| **APPENDIX I METALS SW6020A** | | | | **(SW3005A)** | | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | TA |
| Zinc | 0.0215 | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:05 | 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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-02 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 12:55:00 PM |
| **Lab ID:** | 1309K39-005 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **T. Organic Carbon(TOC)(E415.1/SM5310B)** | | | | | | | | |
| Organic Carbon, Total | 3.8 | 1.0 | | mg/L | R253011 | 1 | 10/01/2013 12:45 | GR |
| **Residue, Diss.(TDS)(E160.1/SM2540C)** | | | | | | | | |
| Residue, Dissolved (TDS) | 99 | 1 | | mg/L | 181935 | 1 | 10/01/2013 17:00 | LW |
| **Nitrogen, Ammonia (as N) E350.1** | | | | **(E350.1)** | | | | |
| Nitrogen, Ammonia (As N) | BRL | 0.200 | | mg/L | 181792 | 1 | 10/02/2013 16:28 | LV |
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.206 | | ug/L | 181679 | 1 | 09/28/2013 05:04 | SH |
| 1,2-Dibromoethane | BRL | 0.052 | | ug/L | 181679 | 1 | 09/28/2013 05:04 | SH |
| Surr: 4-Bromofluorobenzene | 91.2 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 05:04 | SH |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Chloride | 2.41 | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 16:11 | GR |
| Fluoride | BRL | 4.00 | | mg/L | R253080 | 1 | 09/26/2013 16:11 | GR |
| Nitrogen, Nitrate (As N) | BRL | 10.0 | | mg/L | R253080 | 1 | 09/26/2013 16:11 | GR |
| Sulfate | BRL | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 16:11 | GR |
| **Dissolved Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Manganese | 90.3 | 10.0 | | ug/L | 181644 | 1 | 10/03/2013 19:58 | TA |
| **Cyanide SW9014** | | | | **(SW9010C)** | | | | |
| Cyanide, Total | BRL | 0.200 | | mg/L | 181810 | 1 | 10/01/2013 14:00 | EH |
| **Chemical Oxygen Demand (COD) E410.4** | | | | | | | | |
| Chemical Oxygen Demand | 43.5 | 10.0 | | mg/L | R252984 | 1 | 09/30/2013 15:00 | MG |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 1,1,2,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-02 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 12:55:00 PM |
| **Lab ID:** | 1309K39-005 | **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 | 181736 | 1 | 09/28/2013 22:38 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Methylene chloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Vinyl chloride | BRL | 2.0 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/28/2013 22:38 | GK |
| Surr: 4-Bromofluorobenzene | 99.4 | 64.6-123 | | %REC | 181736 | 1 | 09/28/2013 22:38 | GK |
| Surr: Dibromofluoromethane | 97.2 | 76.6-133 | | %REC | 181736 | 1 | 09/28/2013 22:38 | GK |
| Surr: Toluene-d8 | 101 | 77.8-120 | | %REC | 181736 | 1 | 09/28/2013 22:38 | GK |

**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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-02 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 2:45:00 PM |
| **Lab ID:** | 1309K39-006 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Total Metals by ICP/MS SW6020A** | | | | (SW3005A) | | | | |
| Calcium | 1570 | 100 | | ug/L | 181689 | 1 | 10/07/2013 18:53 | TA |
| Iron | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Magnesium | 1280 | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Potassium | 2470 | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Sodium | 1930 | 500 | | ug/L | 181689 | 1 | 10/07/2013 18:53 | TA |
| **Mercury, Total SW7470A** | | | | (SW7470A) | | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 14:08 | CG |
| **APPENDIX I METALS SW6020A** | | | | (SW3005A) | | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | TA |
| Zinc | 0.271 | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:45 | 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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-03 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 1:50:00 PM |
| **Lab ID:** | 1309K39-003 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **T. Organic Carbon(TOC)(E415.1/SM5310B)** | | | | | | | | |
| Organic Carbon, Total | BRL | 1.0 | | mg/L | R253011 | 1 | 10/01/2013 12:31 | GR |
| **Residue, Diss.(TDS)(E160.1/SM2540C)** | | | | | | | | |
| Residue, Dissolved (TDS) | 41 | 1 | | mg/L | 181935 | 1 | 10/01/2013 17:00 | LW |
| **Nitrogen, Ammonia (as N) E350.1** | | | | **(E350.1)** | | | | |
| Nitrogen, Ammonia (As N) | BRL | 0.200 | | mg/L | 181792 | 1 | 10/02/2013 16:25 | LV |
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.205 | | ug/L | 181679 | 1 | 09/28/2013 04:35 | SH |
| 1,2-Dibromoethane | BRL | 0.051 | | ug/L | 181679 | 1 | 09/28/2013 04:35 | SH |
| Surr: 4-Bromofluorobenzene | 94.6 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 04:35 | SH |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Chloride | 14.6 | 5.00 | | mg/L | R253080 | 5 | 09/26/2013 16:56 | GR |
| Fluoride | BRL | 4.00 | | mg/L | R253080 | 1 | 09/26/2013 15:56 | GR |
| Nitrogen, Nitrate (As N) | BRL | 10.0 | | mg/L | R253080 | 1 | 09/26/2013 15:56 | GR |
| Sulfate | 1.49 | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 15:56 | GR |
| **Dissolved Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Manganese | 135 | 10.0 | | ug/L | 181644 | 1 | 10/03/2013 19:54 | TA |
| **Cyanide SW9014** | | | | **(SW9010C)** | | | | |
| Cyanide, Total | BRL | 0.200 | | mg/L | 181810 | 1 | 10/01/2013 14:00 | EH |
| **Chemical Oxygen Demand (COD) E410.4** | | | | | | | | |
| Chemical Oxygen Demand | 21.4 | 10.0 | | mg/L | R252984 | 1 | 09/30/2013 15:00 | MG |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,1,2,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-03 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 1:50:00 PM |
| **Lab ID:** | 1309K39-003 | **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 | 181736 | 1 | 09/28/2013 22:09 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Methylene chloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Vinyl chloride | BRL | 2.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Surr: 4-Bromofluorobenzene | 97.1 | 64.6-123 | | %REC | 181736 | 1 | 09/28/2013 22:09 | GK |
| Surr: Dibromofluoromethane | 97.8 | 76.6-133 | | %REC | 181736 | 1 | 09/28/2013 22:09 | GK |
| Surr: Toluene-d8 | 101 | 77.8-120 | | %REC | 181736 | 1 | 09/28/2013 22:09 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-03 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 3:05:00 PM |
| **Lab ID:** | 1309K39-004 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Total Metals by ICP/MS SW6020A** | | | | (SW3005A) | | | | |
| Calcium | 1320 | 100 | | ug/L | 181689 | 1 | 10/07/2013 18:49 | TA |
| Iron | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Magnesium | 771 | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Potassium | 752 | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Sodium | 9340 | 500 | | ug/L | 181689 | 1 | 10/07/2013 18:49 | TA |
| **Mercury, Total SW7470A** | | | | (SW7470A) | | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 14:06 | CG |
| **APPENDIX I METALS SW6020A** | | | | (SW3005A) | | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Zinc | BRL | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | 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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | TRIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:40:00 PM |
| **Lab ID:** | 1309K39-001 | **Matrix:** | Aqueous |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Total Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Calcium | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Iron | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Magnesium | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Potassium | BRL | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Sodium | BRL | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| **T. Organic Carbon(TOC)(E415.1/SM5310B)** | | | | | | | | |
| Organic Carbon, Total | BRL | 1.0 | | mg/L | R253011 | 1 | 10/01/2013 12:03 | GR |
| **Residue, Diss.(TDS)(E160.1/SM2540C)** | | | | | | | | |
| Residue, Dissolved (TDS) | 11 | 1 | | mg/L | 181935 | 1 | 10/01/2013 17:00 | LW |
| **Nitrogen, Ammonia (as N) E350.1** | | | | **(E350.1)** | | | | |
| Nitrogen, Ammonia (As N) | BRL | 0.200 | | mg/L | 181792 | 1 | 10/02/2013 16:23 | LV |
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.209 | | ug/L | 181679 | 1 | 09/28/2013 03:10 | SH |
| 1,2-Dibromoethane | BRL | 0.052 | | ug/L | 181679 | 1 | 09/28/2013 03:10 | SH |
| Surr: 4-Bromofluorobenzene | 94.6 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 03:10 | SH |
| **Mercury, Total SW7470A** | | | | **(SW7470A)** | | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 14:02 | CG |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Chloride | BRL | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 16:26 | GR |
| Fluoride | BRL | 4.00 | | mg/L | R253080 | 1 | 09/26/2013 16:26 | GR |
| Nitrogen, Nitrate (As N) | BRL | 10.0 | | mg/L | R253080 | 1 | 09/26/2013 16:26 | GR |
| Sulfate | BRL | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 16:26 | GR |
| **Dissolved Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Manganese | BRL | 10.0 | | ug/L | 181644 | 1 | 10/03/2013 19:46 | TA |
| **Cyanide SW9014** | | | | **(SW9010C)** | | | | |
| Cyanide, Total | BRL | 0.200 | | mg/L | 181810 | 1 | 10/01/2013 14:00 | EH |
| **Chemical Oxygen Demand (COD) E410.4** | | | | | | | | |
| Chemical Oxygen Demand | 10.4 | 10.0 | | mg/L | R252984 | 1 | 09/30/2013 15:00 | MG |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | TRIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:40:00 PM |
| **Lab ID:** | 1309K39-001 | **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 | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 2-Hexanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Methylene chloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | TRIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:40:00 PM |
| **Lab ID:** | 1309K39-001 | **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 | 181736 | 1 | 09/28/2013 21:10 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Surr: 4-Bromofluorobenzene | 97.8 | 64.6-123 | | %REC | 181736 | 1 | 09/28/2013 21:10 | GK |
| Surr: Dibromofluoromethane | 98.3 | 76.6-133 | | %REC | 181736 | 1 | 09/28/2013 21:10 | GK |
| Surr: Toluene-d8 | 102 | 77.8-120 | | %REC | 181736 | 1 | 09/28/2013 21:10 | GK |
| **APPENDIX I METALS SW6020A** | | | | **(SW3005A)** | | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Zinc | BRL | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | 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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | EQUIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:45:00 PM |
| **Lab ID:** | 1309K39-002 | **Matrix:** | Aqueous |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Total Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Calcium | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Iron | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Magnesium | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Potassium | BRL | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Sodium | BRL | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| **T. Organic Carbon(TOC)(E415.1/SM5310B)** | | | | | | | | |
| Organic Carbon, Total | BRL | 1.0 | | mg/L | R253011 | 1 | 10/01/2013 12:17 | GR |
| **Residue, Diss.(TDS)(E160.1/SM2540C)** | | | | | | | | |
| Residue, Dissolved (TDS) | 10 | 1 | | mg/L | 181935 | 1 | 10/01/2013 17:00 | LW |
| **Nitrogen, Ammonia (as N) E350.1** | | | | **(E350.1)** | | | | |
| Nitrogen, Ammonia (As N) | BRL | 0.200 | | mg/L | 181792 | 1 | 10/02/2013 16:24 | LV |
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.206 | | ug/L | 181679 | 1 | 09/28/2013 04:07 | SH |
| 1,2-Dibromoethane | BRL | 0.051 | | ug/L | 181679 | 1 | 09/28/2013 04:07 | SH |
| Surr: 4-Bromofluorobenzene | 95.4 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 04:07 | SH |
| **Mercury, Total SW7470A** | | | | **(SW7470A)** | | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 14:04 | CG |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Chloride | BRL | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 16:41 | GR |
| Fluoride | BRL | 4.00 | | mg/L | R253080 | 1 | 09/26/2013 16:41 | GR |
| Nitrogen, Nitrate (As N) | BRL | 10.0 | | mg/L | R253080 | 1 | 09/26/2013 16:41 | GR |
| Sulfate | BRL | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 16:41 | GR |
| **Dissolved Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Manganese | BRL | 10.0 | | ug/L | 181644 | 1 | 10/03/2013 19:50 | TA |
| **Cyanide SW9014** | | | | **(SW9010C)** | | | | |
| Cyanide, Total | BRL | 0.200 | | mg/L | 181810 | 1 | 10/01/2013 14:00 | EH |
| **Chemical Oxygen Demand (COD) E410.4** | | | | | | | | |
| Chemical Oxygen Demand | BRL | 10.0 | | mg/L | R252984 | 1 | 09/30/2013 15:00 | MG |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | EQUIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:45:00 PM |
| **Lab ID:** | 1309K39-002 | **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 | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 2-Hexanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Methylene chloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |

**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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | EQUIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:45:00 PM |
| **Lab ID:** | 1309K39-002 | **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 | 181736 | 1 | 09/28/2013 21:40 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Surr: 4-Bromofluorobenzene | 98.2 | 64.6-123 | | %REC | 181736 | 1 | 09/28/2013 21:40 | GK |
| Surr: Dibromofluoromethane | 96.5 | 76.6-133 | | %REC | 181736 | 1 | 09/28/2013 21:40 | GK |
| Surr: Toluene-d8 | 101 | 77.8-120 | | %REC | 181736 | 1 | 09/28/2013 21:40 | GK |
| **APPENDIX I METALS SW6020A** | | | | **(SW3005A)** | | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Zinc | BRL | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | 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 |

# APPENDIX C

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

| INORGANIC | APPENDIX I LIMITS | 3-23-94 | 5-2-94 | **7-13-94 | 10-18-94 | 12-1-94 | 3-2-95 | 10-30-95 | 4-12-96 | 11-2-96 | 3-21-97 | 9-20-97 | 05-19-98 | 10-29-98 | 3-16-99 | 9-16-99 | 03-23-00 | 09-06-00 | 4-25-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-28-06 | 8-10-06 | 10-04-06 | 3-22-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-2-09 | 10-2-09 | 4-7-10 | 10-6-10 | 1-5-11 | 10-5-11 | 3-15-12 | 10-3-12 | 3-28-13 | 9-25-13 | MW-01 AVG | MW-03 AVG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6 | 1 | 1 | 1 | 1 | 5.4 | 1 | 1 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5.08 | 5.00 |
| Arsenic | 50 | 2 | 2 | 9.4 | 6.9 | 7.9 | 4 | 2 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 5 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 36.35 | 37.43 |
| Barium | 2000 | 23 | 16 | 280 | 110 | 68 | 33 | 80 | 41 | 50 | 80 | 30 | 30 | 50 | 55 | 139 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 1342.84 | 1342.48 |
| Beryllium | 4 | 3 | 3 | 18 | 6.5 | 3 | 3 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4.49 | 3.82 |
| Cadmium | 5 | 5 | 5 | 19 | 2.5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.26 | 5.02 |
| Chromium | 100 | 8.5 | 10 | 90 | 43 | 21 | 10 | 11 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 26 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 72.13 | 70.93 |
| Cobalt | NA | 10 | 10 | 78 | 30 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 19.2 | 10 | 10 | 13.5 | 10.2 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 12.38 | 14.54 |
| Copper | NA | 8.1 | 10 | 140 | 59 | 24 | 10 | 17 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12 | 39 | 4 | 4 | 4 | 4 | 0.2 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | - | 50 | 50 | 50 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15.53 | 22.18 |
| Fluoride*** | 4 | 0.05 | 0.43 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 4 | 4 | 4 | 4 | 4 | 4 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 1.64 | 1.55 |
| Lead | †15 | 1 | 1 | 44 | 59 | 32 | 8 | 21 | 12 | 20 | 10 | 10 | 10 | 30 | 10 | 27 | 94 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30.31 | 43.30 |
| Mercury | 2 | 0.3 | - | 2.4 | 0.89 | 0.44 | 0.2 | 0.5 | 0.2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 77.75 | 76.82 |
| Nickel | 100 | 8.1 | 10 | 190 | 73 | 35 | 20 | 22 | 10 | 20 | 20 | 10 | 10 | 40 | 12.7 | 40 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.93 | 2.10 |
| Selenium | 10 | 2 | 2 | 2.5 | 2 | 2 | 2 | 2 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10.56 | 10.55 |
| Silver | 50 | 8 | 8 | ND | 8 | 8 | 8 | 8 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 20.61 | 14.07 |
| Thallium | 2 | 1 | 1 | 2.6 | 1 | 1 | 1 | 1 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 2.36 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 10.56 | 10.55 |
| Vanadium | NA | 8.4 | 10 | 200 | 74 | 40 | 13 | 31 | 10 | 30 | 10 | 10 | 10 | 30 | 10 | 10 | 75 | 27.8 | 10 | 10 | 20.5 | 23.2 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 35.79 | 35.14 |
| Zinc | ‡5000 | 110 | 42 | 1700 | 620 | 270 | 78 | 818 | 89 | 180 | 190 | 40 | 110 | 230 | 47.4 | 287 | 611 | 179 | 35.1 | 34.4 | 133 | 205 | 69.8 | 47.1 | 20 | 56.2 | 78.6 | 218.0 | 20.0 | 267.00 | 33.90 | 30.90 | 42.50 | 28.50 | 20 | 20 | 20.9 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 162.33 | 71.72 |

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

| ORGANIC | 3-23-94 | 5-02-94 | **7-13-94 | 10-18-94 | 12-1-94 | 3-02-95 | 10-30-95 | 4-12-96 | 11-2-96 | 3-21-97 | 9-20-97 | 05-19-98 | 10-29-98 | 3-16-99 | 9-16-99 | 03-23-00 | 9-6-00 | 4-25-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-28-06 | 8-10-06 | 10-04-06 | 3-22-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-1-09 | 10-1-09 | 4-6-10 | 10-5-10 | 1-4-11 | 10-4-11 | 3-14-12 | 10-2-12 | 3-27-13 | 9-24-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Acrylonitrile | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromochloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromodichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromoform; Tribromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Carbon disulfide | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Carbon tetrachloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chloroethane; Ethyl chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chloroform; Trichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Dibromochloromethane; Chlorodibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromo-3-chloropropane; DBCP | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromoethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| o-Dichlorobenzene; 1,2-Dichlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| p-Dichlorobenzene; 1,4-Dichlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,4-Dichloro-2-butene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloroethane; Ethylene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloropropane; Propylene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| cis-1,3-Dichloropropene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,3-Dichloropropene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 2-Hexanone; Methyl butyl ketone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl bromide; Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl chloride; Chloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene bromide; Dibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene chloride; Dichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl ethyl ketone; MEK; 2-Butanone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl iodide; Iodomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 4-Methyl-2-Pentanone; Methyl isobutyl ketone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Styrene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,1,2-Tetrachloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Tetrachloroethylene; Tetrachloroethene; Perchloroethylene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Toluene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,1-Trichloroethane; Methylchloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichloroethylene; Trichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichlorofluoromethane; CFC-11 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2,3-Trichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Vinyl acetate | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Vinyl chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Xylenes | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #1A

| INORGANIC | APPENDIX I LIMITS | 1-17-07 | 3-22-07 | 5-15-07 | 6-14-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-2-09 | 10-2-09 | 4-7-10 | 10-6-10 | 1-5-11 | 10-5-11 | 3-15-12 | 10-3-12 | 3-28-13 | 9-25-13 | MW-1A AVG | MW-03 AVG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6.00 | 5.00 |
| Arsenic | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50.00 | 37.43 |
| Barium | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000.00 | 1342.46 |
| Beryllium | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4.00 | 3.82 |
| Cadmium | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.00 | 5.02 |
| Chromium | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100.00 | 70.93 |
| Cobalt | NA | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.00 | 14.54 |
| Copper | NA | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.00 | 22.18 |
| Fluoride*** | 4 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.00 | 2.60 |
| Lead | †15 | 50.0 | 50.0 | 50.0 | 50.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 23.24 | 43.30 |
| Mercury | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.00 | 1.55 |
| Nickel | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100.00 | 75.82 |
| Selenium | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10.00 | 10.55 |
| Silver | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50.00 | 35.14 |
| Thallium | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.00 | 2.10 |
| Vanadium | NA | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.00 | 14.07 |
| Zinc | ‡5000 | 39.0 | 20.0 | 22.9 | 20.0 | 23.2 | 20.0 | 31.4 | 20.0 | 20.0 | 35.2 | 20.0 | 20.0 | 20.0 | 30.5 | 20.0 | 20.0 | 20.0 | 23.66 | 71.72 |

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

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

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #02

| INORGANIC | APPENDIX I LIMITS | 3-23-94 | 5-2-94 | **7-13-94 | 10-18-94 | 12-1-94 | 3-2-95 | 10-30-95 | 4-12-96 | 11-2-96 | 3-21-97 | 9-20-97 | 05-19-98 | 10-29-98 | 3-16-99 | 9-16-99 | 03-23-00 | 9-6-00 | 4-25-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-28-06 | 8-10-06 | 10-04-06 | 3-22-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-2-09 | 10-2-09 | 4-7-10 | 10-6-10 | 1-5-11 | 10-5-11 | 3-15-12 | 10-3-12 | 3-28-13 | 9-25-13 | MW-02 AVG | MW-03 AVG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6 | 1 | 1 | 1 | 1 | 9 | 1 | 1 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5.16 | 5.00 |
| Arsenic | 50 | 2 | 2 | 4.4 | 7.6 | 4.6 | 23 | 2 | 20 | 20 | 20 | 20 | 60 | 20 | 20 | 20 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 38.54 | 37.43 |
| Barium | 2000 | 94 | 67 | 420 | 350 | 290 | 99 | 79 | 36 | 50 | 20 | 50 | 130 | 50 | 36.7 | 34 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 1359.27 | 1342.46 |
| Beryllium | 4 | 3 | 3 | 39 | 29 | 25 | 5 | 6 | 3 | 4 | 4 | 4 | 14 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5.22 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 6.10 | 3.82 |
| Cadmium | 5 | 3.1 | 1.2 | 33 | 22 | 15 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6.14 | 5.02 |
| Chromium | 100 | 36 | 26 | 130 | 110 | 110 | 25 | 12 | 10 | 10 | 10 | 10 | 40 | 10 | 10 | 10 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 78.61 | 70.93 |
| Cobalt | NA | 10 | 10 | 69 | 54 | 46 | 10 | 10 | 10 | 10 | 10 | 10 | 30 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 13.61 | 14.54 |
| Copper | NA | 140 | 10 | 200 | 150 | 120 | 30 | 17 | 10 | 10 | 10 | 10 | 60 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 16.7 | 18.8 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 25.06 | 22.18 |
| Fluoride*** | 4 | 0.05 | 0.26 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 4 | 4 | 4 | 4 | 4 | 0.2 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | - | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 2.57 | 2.60 |
| Lead | 15 | 22 | 6.4 | 420 | 290 | 200 | 45 | 32 | 10 | 20 | 10 | 20 | 90 | 20 | 10 | 10 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 50.01 | 43.30 |
| Mercury | 2 | 0.2 | * | 1.6 | 2.6 | 0.2 | 0.2 | 0.2 | 0.2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1.63 | 1.55 |
| Nickel | 100 | 130 | 20 | 340 | 290 | 280 | 80 | 46 | 20 | 30 | 10 | 30 | 120 | 30 | 20.6 | 18 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 99.20 | 75.82 |
| Selenium | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10.55 | 10.55 |
| Silver | 50 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 10.55 | 10.55 |
| Thallium | 2 | 1 | 1 | 2.7 | 2.6 | 3.2 | 1 | 2 | 2 | 2 | 2 | 3 | 14 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.28 | 2.10 |
| Vanadium | NA | 14 | 14 | 250 | 200 | 180 | 48 | 24 | 10 | 20 | 10 | 10 | 70 | 10 | 10 | 10 | 10 | 10 | 10 | 11.5 | 24.2 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 26.95 | 14.07 |
| Zinc | ‡5000 | 540 | 140 | 8200 | 12000 | 9900 | 1760 | 1130 | 351 | 650 | 120 | 570 | 2490 | 240 | 322 | 285 | 458 | 167 | 149 | 181 | 570 | 889 | 224 | 256 | 140 | 284 | 206 | 589 | 221 | 267 | 254 | 280 | 299 | 236 | 223 | 262 | 262 | 251 | 68.2 | 243.0 | 256.0 | 208.0 | 243.0 | 287.0 | 271.0 | 1066.67 | 71.72 |

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

| ORGANIC | 3-23-94 | 5-02-94 | **7-13-94 | 10-18-94 | 12-1-94 | 3-02-95 | 10-30-95 | 4-12-96 | 11-2-96 | 3-21-97 | 9-20-97 | 05-19-98 | 10-29-98 | 3-16-99 | 9-16-99 | 03-23-00 | 9-6-00 | 4-25-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-28-06 | 8-10-06 | 10-04-06 | 3-22-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-2-09 | 10-1-09 | 4-7-10 | 10-5-10 | 1-4-11 | 10-4-11 | 3-15-12 | 10-3-12 | 3-28-13 | 9-25-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Acrylonitrile | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromochloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromodichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromoform; Tribomomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Carbon disulfide | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Carbon tetrachloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chloroethane; Ethyl chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chloroform; Trichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Dibromochloromethane; Chlorodibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromo-3-chloropropane; DBCP | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromoethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| o-Dichlorobenzene; 1,2-Dichlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| p-Dichlorobenzene; 1,4-Dichlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,4-Dichloro-2-butene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloroethane; Ethylene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloropropane; Propylene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| cis-1,3-Dichloropropene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,3-Dichloropropene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 2-Hexanone; Methyl butyl ketone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl bromide; Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl chloride; Chloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene bromide; Dibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene chloride; Dichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl ethyl ketone; MEK; 2-Butanone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl Iodide; Iodomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 4-Methyl-2-Pentanone; Methyl Isobutyl ketone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Styrene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,1,2-Tetrachloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Tetrachloroethylene; Tetrachloroethene; Perchloroethylene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Toluene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,1-Trichloroethane; Methylchloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichloroethylene; Trichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichlorofluoromethane; CFC-11 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2,3-Trichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Vinyl acetate | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Vinyl chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Xylenes | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

## LOUDON COUNTY
### (UPGRADIENT) BACKGROUND WELL
### MONITORING WELL #03

| INORGANIC | APPENDIX I LIMITS | 3-23-94 | 5-2-94 | **7-13-94 | 10-18-94 | 12-1-94 | 3-2-95 | 10-30-95 | 4-12-96 | 11-2-96 | 3-21-97 | 9-20-97 | 05-19-98 | 10-29-98 | 3-16-99 | 9-16-99 | 03-23-00 | 9-6-00 | 2-10-01 | 4-25-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-27-06 | 10-04-06 | 3-22-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-1-09 | 10-2-09 | 4-7-10 | 10-6-10 | 1-5-11 | 10-5-11 | 3-15-12 | 10-3-12 | 3-28-13 | 9-25-13 | MW-03 AVG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5.00 |
| Arsenic | 50 | 3.2 | 2 | 8.8 | 7.8 | 3.2 | 10 | 2 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 37.43 |
| Barium | 2000 | 140 | 10 | 300 | 100 | 50 | 40 | 57 | 63 | 40 | 50 | 30 | 60 | 50 | 39.1 | 39 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 1342.46 |
| Beryllium | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3.82 |
| Cadmium | 5 | 4.4 | 5 | 6.6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.02 |
| Chromium | 100 | 27 | 10 | 42 | 32 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 70.93 |
| Cobalt | NA | 24 | 10 | 69 | 39 | 10 | 10 | 10 | 13 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 14.54 |
| Copper | NA | 43 | 10 | 150 | 160 | 26 | 10 | 10 | 25 | 10 | 10 | 10 | 10 | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 59.5 | 10.0 | 26.0 | 10.0 | 48.4 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 22.18 |
| Fluoride*** | 4 | 0.05 | 0.22 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 0.2 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 2.60 |
| Lead | 115 | 45 | 8.7 | 350 | 97 | 32 | 25 | 17 | 34 | 20 | 10 | 10 | 10 | 40 | 10 | 10 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 135 | 50 | 95.4 | 50.0 | 111.0 | 50.0 | 50.0 | 50.0 | 15.0 | 15.0 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 43.30 |
| Mercury | 2 | 0.2 | * | 0.88 | 0.2 | 0.2 | 0.4 | 0.2 | 0.2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1.55 |
| Nickel | 100 | 33 | 10 | 100 | 57 | 23 | 20 | 12 | 20 | 10 | 10 | 10 | 20 | 50 | 50 | 11 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 75.82 |
| Selenium | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10.55 |
| Silver | 50 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 35.14 |
| Thallium | 2 | 1 | 1 | 2.4 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.10 |
| Vanadium | NA | 25 | 10 | 79 | 40 | 15 | 10 | 10 | 16 | 10 | 10 | 10 | 20 | 20 | 10 | 10 | 10 | 13.3 | 10 | 10 | 10 | 14.6 | 10 | 15.6 | 10.0 | 16.3 | 10.0 | 24.1 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 14.07 |
| Zinc | ±5000 | 170 | 33 | 420 | 240 | 95 | 50 | 164 | 114 | 70 | 50 | 50 | 190 | 150 | 24.4 | 54 | 36 | 99.1 | 20 | 27.1 | 47.6 | 98.6 | 131 | 45.8 | 98.0 | 26.6 | 71.3 | 33.6 | 155.0 | 28.6 | 25.9 | 47.0 | 42.9 | 20.0 | 20.1 | 20.0 | 20.0 | 25.8 | 20.0 | 21.2 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 71.72 |

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

| ORGANIC | 3-23-94 | 5-02-94 | **7-13-94 | 10-18-94 | 12-1-94 | 3-02-95 | 10-30-95 | 4-12-96 | 11-2-96 | 3-21-97 | 9-20-97 | 05-19-98 | 10-29-98 | 3-16-99 | 9-16-99 | 03-23-00 | 9-6-00 | 2-10-01 | 4-25-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-27-06 | 10-04-06 | 3-22-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-1-09 | 10-1-09 | 4-6-10 | 10-5-10 | 1-4-11 | 10-4-11 | 3-14-12 | 10-3-12 | 3-28-13 | 9-25-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Acrylonitrile | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromochloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromodichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromoform; Tribromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Carbon disulfide | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Carbon tetrachloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chloroethane; Ethyl chloride | ND | ND | ND | ND | ND | 10 | 10 | 2 | 5 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chloroform; Trichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Dibromochloromethane; Chlorodibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromo-3-chloropropane; DBCP | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromoethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| o-Dichlorobenzene; 1,2-Dichlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| p-Dichlorobenzene; 1,4-Dichlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,4-Dichloro-2-butene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride | ND | ND | ND | ND | ND | 10 | 10 | 2 | 5 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloroethane; Ethylene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene | ND | ND | ND | ND | ND | 10 | 10 | 2 | 5 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloropropane; Propylene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| cis-1,3-Dichloropropene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,3-Dichloropropene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 2-Hexanone; Methyl butyl ketone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl bromide; Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl chloride; Chloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene bromide; Dibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene chloride; Dichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl ethyl ketone; MEK; 2-Butanone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl iodide; Iodomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 4-Methyl-2-Pentanone; Methyl isobutyl ketone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Styrene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,1,2-Tetrachloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Tetrachloroethylene; Tetrachloroethene; Perchloroethylene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Toluene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,1-Trichloroethane; Methylchloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichloroethylene; Trichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichlorofluoromethane; CFC-11 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2,3-Trichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Vinyl acetate | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Vinyl chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Xylenes | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

# APPENDIX D

# GROUNDWATER DATA
## Matlock Bend Landfill (Phase I)
## September 24, 2013

| 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 | 8.59 | 822.28 | 820 | 30 | 4.70E-06 | 0.18 | 7.60E-02 | 1.98E-06 | 2.86E-03 | SW |
| MW-1A* | 805.13 | 13.92 | 791.21 | 795 | 50 | 3.93E-06 | 0.18 | 7.58E-02 | 1.65E-06 | 2.38E-03 | SW |
| MW-02 | 825.20 | 15.65 | 809.55 | 810 | 20 | 5.90E-06 | 0.18 | 2.25E-02 | 7.37E-07 | 1.06E-03 | SW |
| MW-03 | 867.86 | 17.90 | 849.96 | 845 | 230 | 1.20E-05 | 0.18 | 2.16E-02 | 1.44E-06 | 2.07E-03 | SW |

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

APPENDIX E


## LEGEND:

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

NOTES:

1. POTENTIOMETRIC CONTOURS DEVELOPED FROM WATER ELEVATIONS TAKEN SEPTEMBER 24, 2013.
2. TOPOGRAPHIC CONTOURS SHOWN WERE PROVIDED BY SOUTHERN RESOURCES MAPPING CORP., NORTHPORT ALABAMA, PHOTO DATED SEPTEMBER 20, 2013.

| GW.WELL NO. | WATER ELEV. |
|---|---|
| MW-1 | 822.28 |
| MW-1A | 791.21 |
| MW-2 | 809.55 |
| MW-3 | 849.96 |

RON VAIL
REGISTERED ENGINEER
11/20/13
STATE OF TENNESSEE

0' 150' 300' 450'

| DATE | DRWN | CHKD | REVISION |
|---|---|---|---|

2013 SEMI-ANNUAL (FALL) GROUNDWATER POTENTIOMETRIC CONTOUR MAP

MATLOCK BEND LANDFILL-PHASE I
LOUDON COUNTY, TENNESSEE

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

SCALE: 1"=300'
DATE: 11/8/13
DRAWN BY: RH
CHECKED BY: WM
APPROVED BY: RV
FILE: 1310-F1
JOB NO: 200-1310

F-1
sheet number

G:\WORK\LOUDON\For Maps\1310-F1.dwg, 11/20/2013 10:41:11 AM, \\WG09\BELL PCWP Deskjet 9000 Printer (Copy 2)

SANTEK
WasteServices

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

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

November 20, 2013

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

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

Dear Mr. Miller:

Please find enclosed a copy of the groundwater monitoring report generated from the second semi-annual groundwater event of 2013 at the Matlock Bend Landfill – Phase II/IV. This package includes data pertaining to site information, geologic summary, groundwater sampling, analytical laboratory reports, statistical analysis, and groundwater elevations and flow.

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

Sincerely,

Will Martin
Environmental Compliance Coordinator

Ron E. Vail, P.E.
V.P. of Engineering
TN. Registration No. 109716

Enclosures

cc: Steve Field, Loudon County Solid Waste Department Chairman
Robert D. Burnette, P.E., Executive V.P. of Engineering, Santek
Matt Dillard, Executive V.P. of Operations, Santek
Levi Higdon, Landfill Manager, Santek

# MATLOCK BEND LANDFILL

# PHASE II/IV

# MATLOCK BEND LANDFILL – PHASE II/IV UPGRADE
# GROUNDWATER MONITORING REPORT
# 2nd SEMI-ANNUAL EVENT - 2013

**SANTEK PROJECT NO. 200-1310.4**


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

**NOVEMBER 2013**

## 1.0 INTRODUCTION

In accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rule 1200-1-7-.04(7), Santek Waste Services, Inc. (Santek) is submitting the groundwater monitoring report for the second semi-annual event for 2013 at the Matlock Bend Landfill - Phase II/IV Upgrade. The sampling and analytical were performed in accordance with the Tennessee Department of Environment and Conservation's Solid Waste Processing and Disposal Rules as well as the site's approved groundwater monitoring plan dated December 1996. The groundwater monitoring plan is incorporated in the landfill's Operations Plan. The site's groundwater monitoring network consists of MW-03, MW-4R and MW-05. According to the letter from TDEC dated December 11, 2008, Santek replaced MW-04 with MW-4R in the groundwater detection monitoring network. MW-04 is no longer being monitored. Historic results for MW-04 were taken between 11/2/96 through 3/27/08 and are included in the MW-4R control chart. Santek performed sampling and statistical analyses. Santek contracted with Analytical Environmental Services, Inc. (AES) to perform all analytical testing.

### 1.1 SITE INFORMATION

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

## 2.0 SAMPLING AND ANALYTICAL

The groundwater sampling event was performed on September 24 & 25, 2013. Samples were analyzed for Appendix I constituents. All samples were submitted to AES for analysis. Field sampling logs are provided in Appendix A. Analytical results are provided in Appendix B.

## 3.0 STATISTICAL ANALYSIS

### 3.1 Statistical Analysis Method

Santek is submitting a control chart approach to satisfy the statistical analysis requirement. Well #4R is the upgradient (background) well. Wells #03 and #05 are the downgradient (compliance) wells. The analytical results for this sampling event are used to compare the compliance wells to the background well concentrations for each constituent elevated above detection limit. Parameters not detected above the reporting limits are not included in the control chart comparison. Parameters detected above the reporting limits are compared to the average background concentration. The mean (average) for each well is determined by using the actual analytical value if it exceeds the detection limit, or by using the method detection limit (MDL) if the result was a nondetect. If the average background concentration is greater than the results for the compliance wells, then no significant increase is indicated. If the average background concentration is less than the results for the compliance well, then the Appendix I limits from pages .01-17,18 of the regulations are used for

additional comparison to indicate potentially elevated concentrations. Control charts are provided in Appendix C.

### 3.2 Statistical Analysis Summary

**MW-03**
There were no inorganic or organic constituents detected above the report limits during this event.

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

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

## 4.0 FLOW DIRECTION AND RATES

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

Groundwater flow direction of Phase II/IV locally flows towards the northwest and will ultimately flow to the Tennessee River. The groundwater flow rate ranges from $2.56 \times 10^{-4}$ ft/day at MW-03 to $5.78 \times 10^{-3}$ ft/day at MW-4R. Groundwater flow rate and direction have been determined for each well and are included in Appendix D. A groundwater potentiometric contour map is included in Appendix E.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

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

**Indicates Appendix I limit is not available.*

# APPENDIX A

DATE: 9/25/13

| FIELD SAMPLING LOG | WELL NO: MW-03 |
|---|---|
| Location: Loudon County | Site: Matlock Bend |
| Client/Operator: Santek Waste Services, Inc. | Project No: |
| Purge Start: (Date) 9/25/13 (Time) 1:34 | Purge End: (Date) 9/25/13 (Time) 1:47 |
| Purged by: Robert | |
| Depth Measurement Ref. Point* 867.86 ft | Well Csg. ID: 2" |

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 41.60 (-)Orig. DTW: 17.93 (=) Wtr. Col. Thick: 23.67 .
17.90 (water level on 9/24/13)

(x) 2"=0.16 4"=0.65 6"=1.47 Gals./ft. (=) 3.8 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 11.4 Total Purge Gals.

GW elev. Ref. 867.86 ft.(-) DTW 17.90 ft. = 849.96 ft.

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

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Cloudy ( 70's °F)

| Actual Time | Elapsed Time | Vol. Purged (Gals) | Depth to Wtr (ft) | Depth of Pump Intake (ft) | Temp (°C) | pH | Cond. (umhos) mS/cm | Turbidity (NTU) | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1:34 | | - | | | 18.30 | 5.33 | 0.068 | 9.1 | | Clear |
| 1:40 | | 4.0 | | | 17.34 | 5.35 | 0.070 | 248 | | Cloudy |
| 1:47 | | 5.5 | | | 17.11 | 5.24 | 0.079 | 154 | | Cloudy, *purged dry |
| | | | | | | | | | | |

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

*Purged dry at 5.5 gallons.

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

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

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

Comments: Metals Sample Turbidity = 8.7 NTU's. VOC's taken on 9/25/13 @ 1:50 p.m. Metals taken on 9/25/13 @ 3:05 p.m. Water level taken on 9/24/13. *Well purged dry.

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

DATE: 9/24/13

| FIELD SAMPLING LOG | WELL NO: MW-4R |
|---|---|
| Location: Loudon County | Site: Matlock Bend |
| Client/Operator: Santek Waste Services, Inc. | Project No: |
| Purge Start: (Date) 9/24/13 (Time) 12:37 | Purge End: (Date) 9/24/13 (Time) 12:57 |
| Purged by: Robert | |
| Depth Measurement Ref. Point* 992.32 ft | Well Csg. ID: 2" |

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 106.50 (-)Orig. DTW: 95.99 (=) Wtr. Col. Thick: 10.51 .

(x) **2"=0.16** 4"=0.65 6"=1.47 Gals./ft. (=) 1.7 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 5.1 Total Purge Gals.

GW elev. Ref. 992.32 ft.(-) DTW 95.99 ft. = 896.33 ft.

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

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Cloudy ( 70's °F)

| Actual Time | Elapsed Time | Vol. Purged (Gals) | Depth to Wtr (ft) | Depth of Pump Intake (ft) | Temp (°C) | pH | Cond. (umhos) mS/cm | Turbidity (NTU) | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:41 | | - | | | 19.90 | 8.09 | 0.103 | 42.2 | | Clear |
| 12:46 | | 2.0 | | | 18.95 | 6.87 | 0.152 | 683 | | Muddy |
| 12:52 | | 3.5 | | | 18.76 | 6.28 | 0.124 | 683 | | Muddy |
| 12:57 | | 4.7 | | | 18.56 | 6.65 | 0.188 | >1000 | | Muddy, *purged dry |

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

Purged dry at 4.7 gallons

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

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

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

Comments: Metals Sample Turbidity = 37.9 NTU's. VOC's taken on 9/24/13 @ 12:58 p.m. Metals taken on 9/25/13 @ 11:10 a.m. Allowed well to settle overnight.

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

DATE: 9/24/13

| FIELD SAMPLING LOG | WELL NO: MW-05 |
|---|---|
| Location: Loudon County | Site: Matlock Bend |
| Client/Operator: Santek Waste Services, Inc. | Project No: |
| Purge Start: (Date) 9/24/13 (Time) 10:44 | Purge End: (Date) 9/24/13 (Time) 11:57 |
| Purged by: Robert | |
| Depth Measurement Ref. Point* 936.84 ft | Well Csg. ID: 2" |

Equipment Used to Measure (Make, Model, etc)

DTW Solinst pH Horiba Cond. Horiba T° Horiba .

Measure Well TD: 172.71 (-)Orig. DTW: 86.05 (=) Wtr. Col. Thick: 86.66 .

(x) **2"=0.16** 4"=0.65 6"=1.47 Gals./ft. (=) 13.9 Gals./Csg. Vol. (x) 3 Csg. Vol. (=) 41.7 Total Purge Gals.

GW elev. Ref. 936.84 ft.(-) DTW 86.05 ft. = 850.79 ft.

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

Decon. Method: Distilled Rinse
Purge Wtr. Containerized ? (N) Avg Purge Rate: _____gpm
Weather: Partly Cloudy ( 70's °F)

| Actual Time | Elapsed Time | Vol. Purged (Gals) | Depth to Wtr (ft) | Depth of Pump Intake (ft) | Temp (°C) | pH | Cond. (umhos) mS/cm | Turbidity (NTU) | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:46 | | - | | | 17.96 | 6.06 | 0.380 | 8.0 | | Clear |
| 11:08 | | 14 | | | 18.89 | 7.61 | 0.271 | 26.0 | | Clear |
| 11:32 | | 28 | | | 19.01 | 8.18 | 0.263 | >1000 | | Muddy |
| 11:45 | | 35 | | | 18.82 | 8.20 | 0.260 | 715 | | Muddy |
| 11:57 | | 42 | | | 19.08 | 8.22 | 0.266 | 532 | | Murky |

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

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

v=[K_____ft/min. (x) GW elev._____ft. (-) GW elev. _____ft] -_____ .18 Clay/Silt
distance_____ft . 20 Silt w/sand
v=_____ft./min. = _____ft day .25 sand
.3 sand and gravel

Comments: Metals Sample Turbidity = 24.7 NTU's. VOC's taken on 9/24/13 @ 11:59 a.m. Metals taken on 9/25/13 @ 10:40 a.m. Allowed well to settle overnight.

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

# APPENDIX B

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

October 15, 2013

Will Martin
Santek Environmental Inc.
650 25th Street NW, Suite 100
Cleveland TN 37311

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

RE: Loudon Co. (Matlock Bend LF)

Dear Will Martin: Order No: 1309K02

Analytical Environmental Services, Inc. received 4 samples on 9/26/2013 10:20:00 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' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

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.

CKKanhai

Chantelle Kanhai
Project Manager

3785 Presidential Parkway, Atlanta GA 30340-3704
TEL. (770 7-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

Date: 9/25/13 Page 1 of 1

COMPANY: Pace 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) | Diss. Arsenic | TDS | Total Metals | Total Mercury | Appl. T. Metals | Dissolved Metals | Appl. T. Tracks | Micro-Ext. list | Nitrogen, Ammonia | TOC | COD | Cyanide | PRESERVATION (See codes) | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-25 | 9/24/13 | 11:59 | X | | GW | X | | | | | | X | X | | | | | | |
| 2 | | 9/25/13 | 10:40 | X | | GW | | | X | X | | | | | | | | | | |
| 3 | MW-4R | 9/24/13 | 12:58 | X | | GW | X | | | | | | X | X | | | | | | |
| 4 | | 9/25/13 | 11:10 | X | | GW | | | | X | X | | | | | | | | | |
| 5 | Duplicate | 9/24/13 | | X | | GW | X | X | X | | | | X | X | X | X | X | X | X | |
| 6 | | 9/25/13 | | X | | GW | | | X | X | X | | | | | | | | | |
| 7 | MW-21 | 9/24/13 | 2:21 | X | | GW | X | X | X | | | | X | X | X | X | X | X | X | |
| 8 | | 9/25/13 | 2:17 | X | | GW | | | X | X | X | | | | | | | | | |
| 9 | MW-7A | 9/24/13 | 3:19 | X | | GW | X | X | | | | | X | X | X | X | X | X | X | |
| 10 | | 9/25/13 | 2:35 | X | | GW | | | X | X | X | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |

RELINQUISHED BY: R. Hudson DATE/TIME: 9/25/13 5:30pm
RECEIVED BY: 1: DATE/TIME: 9/26/13 10:20
2:
3:

SPECIAL INSTRUCTIONS/COMMENTS: Site Chemistry Kind

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

ANALYSIS REQUESTED

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

PROJECT INFORMATION
PROJECT NAME: London Co. (Mt Hack Road LF) 2nd Semi-
PROJECT #: Annual GW Event 2013
SITE ADDRESS:
SEND REPORT TO: Will Martin
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT
Total # of Containers

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

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

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

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

White Copy - Original; Yellow Copy - Client

**Analytical Environmental Services, Inc.**

Sample/Cooler Receipt Checklist

Client Sauter Work Order Number 1309K02

Checklist completed by _____ 9/26/13
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? (4°C±2)* Yes ✓ No __

Cooler #1 3.6 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 PT

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.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

October 15, 2013

Will Martin
Santek Environmental Inc.
650 25th Street NW, Suite 100
Cleveland TN 37311

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

RE: Loudon Co. (Matlock Bend LF)

Dear Will Martin: Order No: 1309K39

Analytical Environmental Services, Inc. received 6 samples on 9/26/2013 10:20:00 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' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

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.

Chantelle Kanhai
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3785 P ntial Parkway, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: [illegible]

Date: 9/25/13 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) | Inorganic Analysis by ICP | TDS | Total Metals by ICP | Total Mercury | Appendix II Metals by ICP | Dissolved Metals by ICP | App. I VOCs | Misc. Ext. Vials | Nitrogen, Ammonia | TOC | COD | Cyanide | REMARKS | No # of Containers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | PRESERVATION (See codes) | | | | | | | | | | | | | |
| 1 | Trip Blank | 9/25/13 | 4:40 | X | | W | X | X | X | X | X | X | X | X | X | X | X | X | | 9 |
| 2 | Equip. Blank | 9/25/13 | 4:45 | X | | W | X | X | X | X | X | X | X | X | X | X | X | X | | 9 |
| 3 | MW-03 | 9/25/13 | 1:50 | X | | GW | X | X | | | | X | X | X | X | X | X | X | | 8 |
| 4 | ↳ | 9/25/13 | 3:05 | X | | GW | | | X | X | X | | | | | | | | | 1 |
| 5 | MW-02 | 9/25/13 | 12:55 | X | | GW | X | X | | | | X | X | X | X | X | X | X | | 8 |
| 6 | ↳ | 9/25/13 | 2:45 | X | | GW | | | X | X | X | | | | | | | | | 1 |
| 7 | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |

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

| RELINQUISHED BY | DATE/TIME | RECEIVED BY | DATE/TIME |
|---|---|---|---|
| 1: Robert Hudson | 9/25/13 5:30pm | 1: [signature] | 9/26/13 (08:) |
| 2: | | 2: | |
| 3: | | 3: | |

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

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

PROJECT INFORMATION
PROJECT NAME: Loudon Co. (MatLock Bend LF) 2nd
PROJECT #: Semi-Annual GW Event 2013
SITE ADDRESS:
SEND REPORT TO: Will Martin
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT
Total # of Containers

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

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

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

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

White Copy - Original; Yellow Copy - Client

**Client:** Santek Environmental Inc.
**Project:** Loudon Co. (Matlock Bend LF)
**Lab Order:** 1309K39

# Dates Report

| Lab Sample ID | Client Sample ID | Collection Date | Matrix | Test Name | TCLP Date | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1309K39-001A | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/28/2013 |
| 1309K39-001B | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309K39-001C | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309K39-001C | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309K39-001C | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |
| 1309K39-001D | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |
| 1309K39-001E | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309K39-001E | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Chemical Oxygen Demand (COD) | | | 09/30/2013 |
| 1309K39-001E | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Total Organic Carbon (TOC) | | | 10/01/2013 |
| 1309K39-001F | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309K39-001G | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309K39-001G | TRIP BLANK | 9/25/2013 4:40:00PM | Aqueous | Inorganic Anions by IC | | | 09/26/2013 |
| 1309K39-002A | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/28/2013 |
| 1309K39-002B | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309K39-002C | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309K39-002C | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309K39-002C | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |
| 1309K39-002D | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |
| 1309K39-002E | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309K39-002E | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Chemical Oxygen Demand (COD) | | | 09/30/2013 |
| 1309K39-002E | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Total Organic Carbon (TOC) | | | 10/01/2013 |
| 1309K39-002F | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309K39-002G | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309K39-002G | EQUIP BLANK | 9/25/2013 4:45:00PM | Aqueous | Inorganic Anions by IC | | | 09/26/2013 |
| 1309K39-003A | MW-03 | 9/25/2013 1:50:00PM | Groundwater | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/28/2013 |
| 1309K39-003B | MW-03 | 9/25/2013 1:50:00PM | Groundwater | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309K39-003C | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |
| 1309K39-003D | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309K39-003D | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Chemical Oxygen Demand (COD) | | | 09/30/2013 |

**Client:** Santek Environmental Inc.
**Project:** Loudon Co. (Matlock Bend LF)
**Lab Order:** 1309K39

# Dates Report

| Lab Sample ID | Client Sample ID | Collection Date | Matrix | Test Name | TCLP Date | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1309K39-003D | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Total Organic Carbon (TOC) | | | 10/01/2013 |
| 1309K39-003E | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309K39-003F | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309K39-003F | MW-03 | 9/25/2013 1:50:00PM | Groundwater | Inorganic Anions by IC | | | 09/26/2013 |
| 1309K39-004A | MW-03 | 9/25/2013 3:05:00PM | Groundwater | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309K39-004A | MW-03 | 9/25/2013 3:05:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309K39-004A | MW-03 | 9/25/2013 3:05:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/07/2013 |
| 1309K39-004A | MW-03 | 9/25/2013 3:05:00PM | Groundwater | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |
| 1309K39-005A | MW-02 | 9/25/2013 12:55:00PM | Groundwater | APPENDIX I VOLATILE ORGANICS | | 09/28/2013 | 09/28/2013 |
| 1309K39-005B | MW-02 | 9/25/2013 12:55:00PM | Groundwater | MICRO-EXTRACTABLE VOCs | | 09/27/2013 | 09/28/2013 |
| 1309K39-005C | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Dissolved Metals by ICP/MS | | 09/27/2013 | 10/03/2013 |
| 1309K39-005D | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Nitrogen, Ammonia (as N) | | 10/01/2013 | 10/02/2013 |
| 1309K39-005D | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Chemical Oxygen Demand (COD) | | | 09/30/2013 |
| 1309K39-005D | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Total Organic Carbon (TOC) | | | 10/01/2013 |
| 1309K39-005E | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Cyanide | | 10/01/2013 | 10/01/2013 |
| 1309K39-005F | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Residue, Dissolved (TDS) | | 10/01/2013 | 10/01/2013 |
| 1309K39-005F | MW-02 | 9/25/2013 12:55:00PM | Groundwater | Inorganic Anions by IC | | | 09/26/2013 |
| 1309K39-006A | MW-02 | 9/25/2013 2:45:00PM | Groundwater | APPENDIX I METALS | | 09/30/2013 | 10/03/2013 |
| 1309K39-006A | MW-02 | 9/25/2013 2:45:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/03/2013 |
| 1309K39-006A | MW-02 | 9/25/2013 2:45:00PM | Groundwater | Total Metals by ICP/MS | | 09/30/2013 | 10/07/2013 |
| 1309K39-006A | MW-02 | 9/25/2013 2:45:00PM | Groundwater | TOTAL MERCURY | | 10/01/2013 | 10/01/2013 |

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-03 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 1:50:00 PM |
| **Lab ID:** | 1309K39-003 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **T. Organic Carbon(TOC)(E415.1/SM5310B)** | | | | | | | | |
| Organic Carbon, Total | BRL | 1.0 | | mg/L | R253011 | 1 | 10/01/2013 12:31 | GR |
| **Residue, Diss.(TDS)(E160.1/SM2540C)** | | | | | | | | |
| Residue, Dissolved (TDS) | 41 | 1 | | mg/L | 181935 | 1 | 10/01/2013 17:00 | LW |
| **Nitrogen, Ammonia (as N) E350.1** | | | | **(E350.1)** | | | | |
| Nitrogen, Ammonia (As N) | BRL | 0.200 | | mg/L | 181792 | 1 | 10/02/2013 16:25 | LV |
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.205 | | ug/L | 181679 | 1 | 09/28/2013 04:35 | SH |
| 1,2-Dibromoethane | BRL | 0.051 | | ug/L | 181679 | 1 | 09/28/2013 04:35 | SH |
| Surr: 4-Bromofluorobenzene | 94.6 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 04:35 | SH |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Chloride | 14.6 | 5.00 | | mg/L | R253080 | 5 | 09/26/2013 16:56 | GR |
| Fluoride | BRL | 4.00 | | mg/L | R253080 | 1 | 09/26/2013 15:56 | GR |
| Nitrogen, Nitrate (As N) | BRL | 10.0 | | mg/L | R253080 | 1 | 09/26/2013 15:56 | GR |
| Sulfate | 1.49 | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 15:56 | GR |
| **Dissolved Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Manganese | 135 | 10.0 | | ug/L | 181644 | 1 | 10/03/2013 19:54 | TA |
| **Cyanide SW9014** | | | | **(SW9010C)** | | | | |
| Cyanide, Total | BRL | 0.200 | | mg/L | 181810 | 1 | 10/01/2013 14:00 | EH |
| **Chemical Oxygen Demand (COD) E410.4** | | | | | | | | |
| Chemical Oxygen Demand | 21.4 | 10.0 | | mg/L | R252984 | 1 | 09/30/2013 15:00 | MG |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,1,2,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-03 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 1:50:00 PM |
| **Lab ID:** | 1309K39-003 | **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 | 181736 | 1 | 09/28/2013 22:09 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Methylene chloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Vinyl chloride | BRL | 2.0 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/28/2013 22:09 | GK |
| Surr: 4-Bromofluorobenzene | 97.1 | 64.6-123 | | %REC | 181736 | 1 | 09/28/2013 22:09 | GK |
| Surr: Dibromofluoromethane | 97.8 | 76.6-133 | | %REC | 181736 | 1 | 09/28/2013 22:09 | GK |
| Surr: Toluene-d8 | 101 | 77.8-120 | | %REC | 181736 | 1 | 09/28/2013 22:09 | GK |

**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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-03 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 3:05:00 PM |
| **Lab ID:** | 1309K39-004 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Total Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Calcium | 1320 | 100 | | ug/L | 181689 | 1 | 10/07/2013 18:49 | TA |
| Iron | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Magnesium | 771 | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Potassium | 752 | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Sodium | 9340 | 500 | | ug/L | 181689 | 1 | 10/07/2013 18:49 | TA |
| **Mercury, Total SW7470A** | | | | **(SW7470A)** | | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 14:06 | CG |
| **APPENDIX I METALS SW6020A** | | | | **(SW3005A)** | | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | TA |
| Zinc | BRL | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:41 | 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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-4R |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/24/2013 12:58:00 PM |
| **Lab ID:** | 1309K02-003 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.205 | | ug/L | 181679 | 1 | 09/28/2013 02:41 | SH |
| 1,2-Dibromoethane | BRL | 0.051 | | ug/L | 181679 | 1 | 09/28/2013 02:41 | SH |
| Surr: 4-Bromofluorobenzene | 88.8 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 02:41 | SH |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Fluoride | BRL | 4.00 | | mg/L | R253032 | 1 | 09/27/2013 11:04 | GR |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 1,1,2,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 2-Hexanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-4R |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/24/2013 12:58:00 PM |
| **Lab ID:** | 1309K02-003 | **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 | 181736 | 1 | 09/28/2013 23:37 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Vinyl chloride | BRL | 2.0 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/28/2013 23:37 | GK |
| Surr: 4-Bromofluorobenzene | 97.8 | 64.6-123 | | %REC | 181736 | 1 | 09/28/2013 23:37 | GK |
| Surr: Dibromofluoromethane | 98.1 | 76.6-133 | | %REC | 181736 | 1 | 09/28/2013 23:37 | GK |
| Surr: Toluene-d8 | 102 | 77.8-120 | | %REC | 181736 | 1 | 09/28/2013 23:37 | GK |

**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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-4R |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 11:10:00 AM |
| **Lab ID:** | 1309K02-004 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Mercury, Total SW7470A** | | | | | **(SW7470A)** | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 13:54 | CG |
| **APPENDIX I METALS SW6020A** | | | | | **(SW3005A)** | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | TA |
| Zinc | BRL | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:29 | 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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-05 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/24/2013 11:59:00 AM |
| **Lab ID:** | 1309K02-001 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.207 | | ug/L | 181679 | 1 | 09/28/2013 02:13 | SH |
| 1,2-Dibromoethane | BRL | 0.052 | | ug/L | 181679 | 1 | 09/28/2013 02:13 | SH |
| Surr: 4-Bromofluorobenzene | 91.3 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 02:13 | SH |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Fluoride | BRL | 4.00 | | mg/L | R253032 | 1 | 09/27/2013 10:49 | GR |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 1,1,2,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 2-Hexanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-05 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/24/2013 11:59:00 AM |
| **Lab ID:** | 1309K02-001 | **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 | 181736 | 1 | 09/28/2013 23:08 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Vinyl chloride | BRL | 2.0 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/28/2013 23:08 | GK |
| Surr: 4-Bromofluorobenzene | 99.1 | 64.6-123 | | %REC | 181736 | 1 | 09/28/2013 23:08 | GK |
| Surr: Dibromofluoromethane | 98.3 | 76.6-133 | | %REC | 181736 | 1 | 09/28/2013 23:08 | GK |
| Surr: Toluene-d8 | 101 | 77.8-120 | | %REC | 181736 | 1 | 09/28/2013 23:08 | GK |

**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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | MW-05 |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 10:40:00 AM |
| **Lab ID:** | 1309K02-002 | **Matrix:** | Groundwater |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Mercury, Total SW7470A** | | | | | **(SW7470A)** | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 13:52 | CG |
| **APPENDIX I METALS SW6020A** | | | | | **(SW3005A)** | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | TA |
| Zinc | BRL | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:25 | 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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | TRIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:40:00 PM |
| **Lab ID:** | 1309K39-001 | **Matrix:** | Aqueous |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Total Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Calcium | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Iron | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Magnesium | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Potassium | BRL | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Sodium | BRL | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| **T. Organic Carbon(TOC)(E415.1/SM5310B)** | | | | | | | | |
| Organic Carbon, Total | BRL | 1.0 | | mg/L | R253011 | 1 | 10/01/2013 12:03 | GR |
| **Residue, Diss.(TDS)(E160.1/SM2540C)** | | | | | | | | |
| Residue, Dissolved (TDS) | 11 | 1 | | mg/L | 181935 | 1 | 10/01/2013 17:00 | LW |
| **Nitrogen, Ammonia (as N) E350.1** | | | | **(E350.1)** | | | | |
| Nitrogen, Ammonia (As N) | BRL | 0.200 | | mg/L | 181792 | 1 | 10/02/2013 16:23 | LV |
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | **(SW8011)** | | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.209 | | ug/L | 181679 | 1 | 09/28/2013 03:10 | SH |
| 1,2-Dibromoethane | BRL | 0.052 | | ug/L | 181679 | 1 | 09/28/2013 03:10 | SH |
| Surr: 4-Bromofluorobenzene | 94.6 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 03:10 | SH |
| **Mercury, Total SW7470A** | | | | **(SW7470A)** | | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 14:02 | CG |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Chloride | BRL | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 16:26 | GR |
| Fluoride | BRL | 4.00 | | mg/L | R253080 | 1 | 09/26/2013 16:26 | GR |
| Nitrogen, Nitrate (As N) | BRL | 10.0 | | mg/L | R253080 | 1 | 09/26/2013 16:26 | GR |
| Sulfate | BRL | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 16:26 | GR |
| **Dissolved Metals by ICP/MS SW6020A** | | | | **(SW3005A)** | | | | |
| Manganese | BRL | 10.0 | | ug/L | 181644 | 1 | 10/03/2013 19:46 | TA |
| **Cyanide SW9014** | | | | **(SW9010C)** | | | | |
| Cyanide, Total | BRL | 0.200 | | mg/L | 181810 | 1 | 10/01/2013 14:00 | EH |
| **Chemical Oxygen Demand (COD) E410.4** | | | | | | | | |
| Chemical Oxygen Demand | 10.4 | 10.0 | | mg/L | R252984 | 1 | 09/30/2013 15:00 | MG |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | **(SW5030B)** | | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |

**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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | TRIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:40:00 PM |
| **Lab ID:** | 1309K39-001 | **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 | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 2-Hexanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Methylene chloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |

**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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | TRIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:40:00 PM |
| **Lab ID:** | 1309K39-001 | **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 | 181736 | 1 | 09/28/2013 21:10 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/28/2013 21:10 | GK |
| Surr: 4-Bromofluorobenzene | 97.8 | 64.6-123 | | %REC | 181736 | 1 | 09/28/2013 21:10 | GK |
| Surr: Dibromofluoromethane | 98.3 | 76.6-133 | | %REC | 181736 | 1 | 09/28/2013 21:10 | GK |
| Surr: Toluene-d8 | 102 | 77.8-120 | | %REC | 181736 | 1 | 09/28/2013 21:10 | GK |
| **APPENDIX I METALS SW6020A** | | | | **(SW3005A)** | | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | TA |
| Zinc | BRL | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:34 | 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:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | EQUIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:45:00 PM |
| **Lab ID:** | 1309K39-002 | **Matrix:** | Aqueous |

| Analyses | Result | Reporting Limit | Qual | Units | BatchID | Dilution Factor | Date Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|
| **Total Metals by ICP/MS SW6020A** | | | | | **(SW3005A)** | | | |
| Calcium | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Iron | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Magnesium | BRL | 100 | | ug/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Potassium | BRL | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Sodium | BRL | 500 | | ug/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| **T. Organic Carbon(TOC)(E415.1/SM5310B)** | | | | | | | | |
| Organic Carbon, Total | BRL | 1.0 | | mg/L | R253011 | 1 | 10/01/2013 12:17 | GR |
| **Residue, Diss.(TDS)(E160.1/SM2540C)** | | | | | | | | |
| Residue, Dissolved (TDS) | 10 | 1 | | mg/L | 181935 | 1 | 10/01/2013 17:00 | LW |
| **Nitrogen, Ammonia (as N) E350.1** | | | | | **(E350.1)** | | | |
| Nitrogen, Ammonia (As N) | BRL | 0.200 | | mg/L | 181792 | 1 | 10/02/2013 16:24 | LV |
| **MICRO-EXTRACTABLE VOLATILE ORGANICS SW8011** | | | | | **(SW8011)** | | | |
| 1,2-Dibromo-3-chloropropane | BRL | 0.206 | | ug/L | 181679 | 1 | 09/28/2013 04:07 | SH |
| 1,2-Dibromoethane | BRL | 0.051 | | ug/L | 181679 | 1 | 09/28/2013 04:07 | SH |
| Surr: 4-Bromofluorobenzene | 95.4 | 60-120 | | %REC | 181679 | 1 | 09/28/2013 04:07 | SH |
| **Mercury, Total SW7470A** | | | | | **(SW7470A)** | | | |
| Mercury | BRL | 0.00200 | | mg/L | 181777 | 1 | 10/01/2013 14:04 | CG |
| **Inorganic Anions by IC E300.0** | | | | | | | | |
| Chloride | BRL | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 16:41 | GR |
| Fluoride | BRL | 4.00 | | mg/L | R253080 | 1 | 09/26/2013 16:41 | GR |
| Nitrogen, Nitrate (As N) | BRL | 10.0 | | mg/L | R253080 | 1 | 09/26/2013 16:41 | GR |
| Sulfate | BRL | 1.00 | | mg/L | R253080 | 1 | 09/26/2013 16:41 | GR |
| **Dissolved Metals by ICP/MS SW6020A** | | | | | **(SW3005A)** | | | |
| Manganese | BRL | 10.0 | | ug/L | 181644 | 1 | 10/03/2013 19:50 | TA |
| **Cyanide SW9014** | | | | | **(SW9010C)** | | | |
| Cyanide, Total | BRL | 0.200 | | mg/L | 181810 | 1 | 10/01/2013 14:00 | EH |
| **Chemical Oxygen Demand (COD) E410.4** | | | | | | | | |
| Chemical Oxygen Demand | BRL | 10.0 | | mg/L | R252984 | 1 | 09/30/2013 15:00 | MG |
| **APPENDIX I VOLATILE ORGANICS SW8260B** | | | | | **(SW5030B)** | | | |
| 1,1,1,2-Tetrachloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,1,1-Trichloroethane | BRL | 200 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |

**Qualifiers:**

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

## Analytical Environmental Services, Inc

**Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | EQUIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:45:00 PM |
| **Lab ID:** | 1309K39-002 | **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 | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,1,2-Trichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,1-Dichloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,1-Dichloroethene | BRL | 7.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,2,3-Trichloropropane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,2-Dichlorobenzene | BRL | 600 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,2-Dichloroethane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,2-Dichloropropane | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 1,4-Dichlorobenzene | BRL | 75 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 2-Butanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 2-Hexanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| 4-Methyl-2-pentanone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Acetone | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Acrylonitrile | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Benzene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Bromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Bromodichloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Bromoform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Bromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Carbon disulfide | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Carbon tetrachloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Chlorobenzene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Chloroethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Chloroform | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Chloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| cis-1,2-Dichloroethene | BRL | 70 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| cis-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Dibromochloromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Dibromomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Ethylbenzene | BRL | 700 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Iodomethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Methylene chloride | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Styrene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Tetrachloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Toluene | BRL | 1000 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| trans-1,2-Dichloroethene | BRL | 100 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| trans-1,3-Dichloropropene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| trans-1,4-Dichloro-2-butene | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Trichloroethene | BRL | 5.0 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Trichlorofluoromethane | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Vinyl acetate | BRL | 10 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |

**Qualifiers:**

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

**Analytical Environmental Services, Inc** **Date:** 15-Oct-13

| | | | |
|---|---|---|---|
| **Client:** | Santek Environmental Inc. | **Client Sample ID:** | EQUIP BLANK |
| **Project Name:** | Loudon Co. (Matlock Bend LF) | **Collection Date:** | 9/25/2013 4:45:00 PM |
| **Lab ID:** | 1309K39-002 | **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 | 181736 | 1 | 09/28/2013 21:40 | GK |
| Xylenes, Total | BRL | 10000 | | ug/L | 181736 | 1 | 09/28/2013 21:40 | GK |
| Surr: 4-Bromofluorobenzene | 98.2 | 64.6-123 | | %REC | 181736 | 1 | 09/28/2013 21:40 | GK |
| Surr: Dibromofluoromethane | 96.5 | 76.6-133 | | %REC | 181736 | 1 | 09/28/2013 21:40 | GK |
| Surr: Toluene-d8 | 101 | 77.8-120 | | %REC | 181736 | 1 | 09/28/2013 21:40 | GK |
| **APPENDIX I METALS SW6020A** | | | | **(SW3005A)** | | | | |
| Antimony | BRL | 0.00600 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Arsenic | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Barium | BRL | 2.00 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Beryllium | BRL | 0.00400 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Cadmium | BRL | 0.00500 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Chromium | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Cobalt | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Copper | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Lead | BRL | 0.0150 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Nickel | BRL | 0.100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Selenium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Silver | BRL | 0.0500 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Thallium | BRL | 0.00200 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Vanadium | BRL | 0.0100 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | TA |
| Zinc | BRL | 0.0200 | | mg/L | 181689 | 1 | 10/03/2013 21:38 | 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 |

# APPENDIX C

LOUDON COUNTY
COMPLIANCE WELL
MONITORING WELL #03

| INORGANIC | APPENDIX I LIMITS | 3-23-94 | 5-2-94 | **7-13-94 | 10-18-94 | 12-1-94 | 3-2-95 | 10-30-95 | 4-12-96 | 11-2-96 | 3-21-97 | 9-20-97 | 05-19-98 | 10-29-98 | 3-16-99 | 9-16-99 | 03-23-00 | 9-6-00 | 2-10-01 | 4-25-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-27-06 | 10-04-06 | 3-22-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-1-09 | 10-2-09 | 4-7-10 | 10-6-10 | 1-5-11 | 10-5-11 | 3-15-12 | 10-3-12 | 3-28-13 | 9-25-13 | MW-03 AVG | MW-4R AVG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5.00 | 5.95 |
| Arsenic | 50 | 3.2 | 2 | 8.8 | 7.8 | 3.2 | 10 | 2 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 37.43 | 47.75 |
| Barium | 2000 | 140 | 10 | 300 | 100 | 50 | 40 | 57 | 63 | 40 | 50 | 30 | 60 | 50 | 39.1 | 39 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 1342.46 | 1512.26 |
| Beryllium | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3.82 | 7.40 |
| Cadmium | 5 | 4.4 | 5 | 6.6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.02 | 5.08 |
| Chromium | 100 | 27 | 10 | 42 | 32 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 70.93 | 85.00 |
| Cobalt | NA | 24 | 10 | 69 | 39 | 10 | 10 | 10 | 13 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 50.5 | 10.0 | 26.0 | 10.0 | 48.4 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 14.54 | 15.89 |
| Copper | NA | 43 | 10 | 150 | 160 | 26 | 10 | 10 | 25 | 10 | 10 | 10 | 10 | 20 | 10 | 10 | 10 | 20.4 | 10 | 10 | 10 | 13.6 | 18.0 | 10.0 | 26.4 | 10.0 | 23.6 | 10.0 | 49.8 | 50.0 | 50.0 | 10.0 | 10.0 | 10.0 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 22.18 | 18.85 |
| Fluoride*** | 4 | 0.05 | 0.22 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 2.60 | 2.93 |
| Lead | †15 | 45 | 8.7 | 350 | 97 | 32 | 25 | 17 | 34 | 20 | 10 | 10 | 10 | 40 | 10 | 10 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 135 | 50 | 95.4 | 50.0 | 111.0 | 50.0 | 50.0 | 50.0 | 15.0 | 15.0 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 43.30 | 41.81 |
| Mercury | 2 | 0.2 | * | 0.88 | 0.2 | 0.2 | 0.4 | 0.2 | 0.2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1.55 | 1.74 |
| Nickel | 100 | 33 | 10 | 100 | 57 | 23 | 20 | 12 | 20 | 10 | 10 | 10 | 20 | 50 | 50 | 11 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 75.82 | 100.28 |
| Selenium | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 35.14 | 38.78 |
| Silver | 50 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 2.10 | 3.23 |
| Thallium | 2 | 1 | 1 | 2.4 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 14.07 | 23.25 |
| Vanadium | NA | 25 | 10 | 79 | 40 | 15 | 10 | 10 | 16 | 10 | 10 | 10 | 20 | 20 | 20 | 10 | 10 | 13.3 | 10 | 10 | 10 | 10 | 14.6 | 10.0 | 15.6 | 10.0 | 16.3 | 10.0 | 24.1 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 71.72 | 220.76 |
| Zinc | ‡5000 | 170 | 33 | 420 | 240 | 95 | 50 | 164 | 114 | 70 | 50 | 50 | 190 | 150 | 24.4 | 54 | 36 | 99.1 | 20 | 27.1 | 47.6 | 98.6 | 131 | 46 | 98.0 | 26.6 | 71.3 | 33.6 | 155.0 | 28.6 | 25.9 | 47.0 | 42.9 | 20.0 | 20.1 | 20.0 | 20.0 | 25.8 | 20.0 | 21.2 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 71.72 | 220.76 |

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

| ORGANIC | 3-23-94 | 5-02-94 | **7-13-94 | 10-18-94 | 12-1-94 | 3-02-95 | 10-30-95 | 4-12-96 | 11-2-96 | 3-21-97 | 9-20-97 | 05-19-98 | 10-29-98 | 3-16-99 | 9-16-99 | 03-23-00 | 9-6-00 | 2-10-01 | 4-25-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-27-06 | 10-04-06 | 3-22-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-1-09 | 10-1-09 | 4-6-10 | 10-5-10 | 1-4-11 | 10-4-11 | 3-14-12 | 10-3-12 | 3-28-13 | 9-25-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Acrylonitrile | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromochloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromodichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromoform; Tribomomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Carbon disulfide | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Carbon tetrachloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chloroethane; Ethyl chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chloroform; Trichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Dibromochloromethane; Chlorodibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromo-3-chloropropane; DBCP | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromoethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| o-Dichlorobenzene; 1,2-Dichlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| p-Dichlorobenzene; 1,4-Dichlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,4-Dichloro-2-butene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloroethane; Ethylene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloropropane; Propylene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| cis-1,3-Dichloropropene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,3-Dichloropropene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 2-Hexanone; Methyl butyl ketone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl bromide; Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl chloride; Chloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene bromide; Dibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene chloride; Dichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl ethyl ketone; MEK; 2-Butanone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl iodide; Iodomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 4-Methyl-2-Pentanone; Methyl isobutyl ketone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Styrene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,1,2-Tetrachloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Tetrachloroethylene; Tetrachloroethene; Perchloroethylene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Toluene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,1-Trichloroethane; Methylchloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichloroethylene; Trichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichlorofluoromethane; CFC-11 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2,3-Trichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Vinyl acetate | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Vinyl chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Xylenes | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

**LOUDON COUNTY**
**BACKGROUND WELL**
**MONITORING WELL #4R**

| INORGANIC | APPENDIX I LIMITS | 11-2-96 | 12-13-96 | 12-19-96 | 12-30-96 | 3-21-97 | 10-10-97 | 05-19-98 | 11-6-98 | 3-16-99 | 9-16-99 | 03-23-00 | 2-10-01 | 4-25-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-27-06 | 10-04-06 | 1-3-07 | 3-22-07 | 11-1-07 | 3-27-08 | 6-25-08 | 8-29-08 | 10-2-08 | 10-13-08 | 4-2-09 | 10-2-09 | 4-7-10 | 10-6-10 | 1-5-11 | 10-5-11 | 3-15-12 | 10-3-12 | 3-28-13 | 9-25-13 | MW-4R AVG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6 | 5 | 13 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | DRY | 6 | 6 | DRY | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5.95 |
| Arsenic | 50 | 130 | 40 | 60 | 50 | 20 | 20 | 20 | 30 | 20 | 20 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | DRY | 50 | 50 | DRY | 50 | 50 | 50 | 53 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 47.75 |
| Barium | 2000 | 120 | 50 | 90 | 60 | 40 | 20 | 20 | 50 | 20.5 | 20 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | DRY | 2000 | 2000 | DRY | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 1512.26 |
| Beryllium | 4 | 54 | 16 | 40 | 25 | 14 | 4 | 4 | 11 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | DRY | 4 | 4 | DRY | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 7.40 |
| Cadmium | 5 | 6 | 5 | 5 | 7 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | DRY | 5 | 5 | DRY | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.08 |
| Chromium | 100 | 130 | 50 | 80 | 40 | 30 | 10 | 10 | 30 | 10 | 10 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | DRY | 100 | 100 | DRY | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 85.00 |
| Cobalt | NA | 70 | 30 | 50 | 30 | 20 | 10 | 10 | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | DRY | 10 | 10 | DRY | 50.6 | 10 | 10 | 10 | 10 | 30.1 | 10.0 | 10.0 | 10.0 | 14.0 | 10.0 | 10.0 | 10.0 | 10.3 | 10.0 | 15.89 |
| Copper | NA | 140 | 50 | 90 | 60 | 30 | 20 | 10 | 30 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | DRY | 10 | 10 | DRY | 14 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 18.85 |
| Fluoride* | 4 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 4 | 4 | 4 | DRY | 4 | 4 | 0.2 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | DRY | 4 | 4 | DRY | 4 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 2.93 |
| Lead | †15 | 200 | 70 | 140 | 80 | 60 | 20 | 10 | 60 | 17.9 | 10 | 50 | 68.8 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | DRY | 50 | 50 | DRY | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 41.81 |
| Mercury | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | DRY | 2 | 2 | DRY | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1.74 |
| Nickel | 100 | 310 | 110 | 210 | 120 | 90 | 30 | 20 | 90 | 21.3 | 10 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | DRY | 100 | 100 | DRY | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100.28 |
| Selenium | 10 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | DRY | 10 | 10 | DRY | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 12.50 |
| Silver | 50 | 5 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | DRY | 50 | 50 | DRY | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 38.78 |
| Thallium | 2 | 18 | 9 | 17 | 9 | 6 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | DRY | 2 | 2 | DRY | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3.23 |
| Vanadium | NA | 200 | 70 | 130 | 80 | 50 | 10 | 10 | 60 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | DRY | 10 | 10 | DRY | 10 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 23.25 |
| Zinc | ‡5000 | 1950 | 700 | 1370 | 740 | 490 | 330 | 240 | 520 | 58 | 69 | 129 | 128 | 79.4 | 230.0 | 143.0 | 305.0 | 57.4 | 91.0 | 37.3 | 20.0 | 56.7 | 144.0 | 76.2 | DRY | 68.7 | 81.1 | DRY | 43.9 | 32.1 | 54.3 | 20.0 | 66.0 | 83.9 | 100.0 | 26.4 | 20.0 | 74.8 | 41.3 | 20.0 | 32.0 | 82.4 | 20.0 | 220.76 |

*ALL DATA IN UG/L EXCEPT FLUORIDE (MG/L)
† = TREATMENT TECHNIQUE ACTION LEVEL
‡ = NATIONAL SECONDARY DRINKING WATER STANDARD
Note: Results from 11-2-96 to 3-27-08 were taken from MW-04. MW-04 was replaced by MW-4R.

| ORGANIC | 11-2-96 | 12-13-96 | 12-19-96 | 12-30-96 | 3-21-97 | 10-10-97 | 05-19-98 | 11-6-98 | 3-16-99 | 9-16-99 | 03-23-00 | 2-10-01 | 4-25-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-27-06 | 10-04-06 | 1-2-07 | 3-22-07 | 11-1-07 | 3-27-08 | 6-25-08 | 8-29-08 | 8-29-08 | 8-29-08 | 4-1-09 | 10-1-09 | 4-6-10 | 10-5-10 | 1-4-11 | 10-4-11 | 3-14-12 | 10-2-12 | 3-27-13 | 9-24-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | 26 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Acrylonitrile | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Benzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromochloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromodichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bromoform; Tribromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Carbon disulfide | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 50 | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| ·bon tetrachloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| ·obenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| .roethane; Ethyl chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| ·loroform; Trichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Dibromochloromethane; Chlorodibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromo-3-chloropropane; DBCP | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromoethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dibromoethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| o-Dichlorobenzene; 1,2-Dichlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| p-Dichlorobenzene; 1,4-Dichlorobenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,4-Dichloro-2-butene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethane; Ethylidene chloride; Ethylidene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloroethane; Ethylene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloropropane; Propylene dichloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| cis-1,3-Dichloropropene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| trans-1,3-Dichloropropene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Ethylbenzene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 2-Hexanone; Methyl butyl ketone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl bromide; Bromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl chloride; Chloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene bromide; Dibromomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methylene chloride; Dichloromethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl ethyl ketone; MEK; 2-Butanone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Methyl iodide; Iodomethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 4-Methyl-2-Pentanone; Methyl isobutyl ketone | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Styrene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,1,2-Tetrachloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,2,2-Tetrachloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Tetrachloroethylene; Tetrachloroethene; Perchloroethylene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Toluene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,1-Trichloroethane; Methylchloroform | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,1,2-Trichloroethane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichloroethylene; Trichloroethene | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichlorofluoromethane; CFC-11 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 1,2,3-Trichloropropane | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Vinyl acetate | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Vinyl chloride | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Xylenes | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | DRY | ND | ND | DRY | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

**LOUDON COUNTY**
**COMPLIANCE WELL**
**MONITORING WELL #05**

| INORGANIC | APPENDIX I LIMITS | 2-10-01 | 4-25-01 | 6-13-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-27-06 | 10-04-06 | 3-22-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-1-09 | 10-2-09 | 4-7-10 | 10-6-10 | 10-6-10 | 1-5-11 | 10-5-11 | 3-15-12 | 10-3-12 | 3-28-13 | 9-25-13 | MW-05 AVG. | MW-4R AVG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6.00 | 5.95 |
| Arsenic | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50.00 | 47.75 |
| Barium | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000.00 | 1512.26 |
| Beryllium | 4 | 4 | 8.62 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4.16 | 7.40 |
| Cadmium | 5 | 5 | 5.35 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.01 | 5.08 |
| Chromium | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100.00 | 85.00 |
| Cobalt | NA | 10 | 25.1 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10.52 | 15.89 |
| Copper | NA | 10 | 11.5 | 10 | 10 | 21.4 | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10.46 | 18.85 |
| Fluoride* | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 0.2 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 3.87 | 2.93 |
| Lead | †15 | 50 | 77.4 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 34.05 | 41.81 |
| Thallium | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.00 | 1.74 |
| Nickel | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100.00 | 100.28 |
| Selenium | 10 | 10 | 10 | 50 | 50 | 50 | 50 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 15.52 | 12.50 |
| Silver | 50 | 50 | 50 | 10 | 10 | 10 | 10 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 44.48 | 38.78 |
| Thallium | 2 | 2 | 3.65 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.06 | 3.23 |
| Vanadium | NA | 10 | 10 | 10 | 10 | 27.1 | 17.7 | 10 | 10 | 10 | 11.9 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.92 | 23.25 |
| Zinc | ‡5000 | 258 | 693 | 361 | 260 | 360 | 288 | 231 | 20 | 20 | 195 | 91.4 | 109.0 | 116.0 | 61.2 | 64.7 | 138.0 | 39.9 | 91.0 | 88.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 127.08 | 220.76 |

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

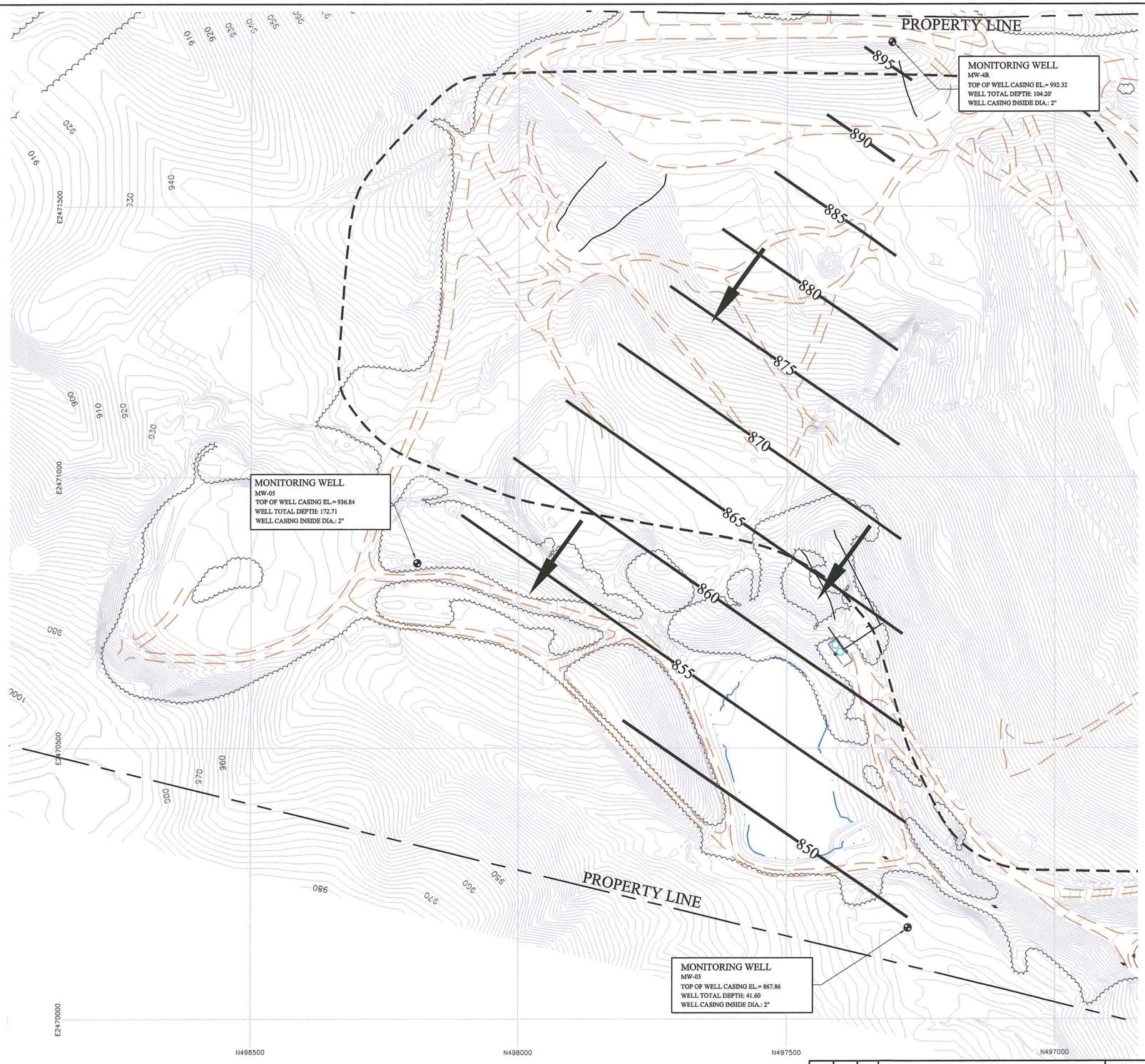
| ORGANIC | 2-10-01 | 4-25-01 | 6-13-01 | 9-18-01 | 4-17-02 | 9-30-02 | 4-21-03 | 9-30-03 | 4-28-04 | 9-22-04 | 4-11-05 | 9-29-05 | 3-27-06 | 10-04-06 | 3-22-07 | 11-1-07 | 3-27-08 | 10-13-08 | 4-1-09 | 10-1-09 | 4-6-10 | 10-5-10 | 10-5-10 | 1-4-11 | 10-4-11 | 3-14-12 | 10-2-12 | 3-27-13 | 9-24-13 |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

# APPENDIX D

# GROUNDWATER DATA
## Matlock Bend Landfill (Phase II/IV)
## September 24, 2013

| Well No. | Elev. Of TOC | Depth to GW (ft below TOC) | Water Elevation | Contour Elevation | Distance | Hydraulic Conductivity | Effective Porosity (n) | Hydraulic Gradient | Average Linear Velocity | | Directions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | ft/min | ft/day | |
| MW-03 | 867.86 | 17.90 | 849.96 | 850 | 15 | 1.20E-05 | 0.18 | 2.67E-03 | 1.78E-07 | 2.56E-04 | NW |
| MW-4R* | 992.32 | 95.99 | 896.33 | 895 | 35 | 1.90E-05 | 0.18 | 3.80E-02 | 4.01E-06 | 5.78E-03 | NW |
| MW-05 | 936.84 | 86.05 | 850.79 | 850 | 25 | 2.20E-05 | 0.18 | 3.16E-02 | 3.86E-06 | 5.56E-03 | NW |

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




## LEGEND:

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

NOTES:

1. POTENTIOMETRIC CONTOURS DEVELOPED FROM WATER ELEVATIONS TAKEN SEPTEMBER 24, 2013.
2. TOPOGRAPHIC CONTOURS SHOWN WERE PROVIDED BY SOUTHERN RESOURCES MAPPING CORP. , NORTHPORT, AL. PHOTO DATED SEPTEMBER 20, 2013.

| G.W. WELL NO. | WATER ELEV. |
|---|---|
| MW-03 | 849.96 |
| MW-4R | 896.33 |
| MW-05 | 850.79 |

RON VAUGHN REGISTERED ENGINEER AGRICULTURE 11/20/13 No. 0010679 STATE OF TENNESSEE

0' 100' 200' 300'

| DATE | DRWN | CHKD | REVISION |
|---|---|---|---|

2013 SEMI-ANNUAL (FALL) GROUNDWATER POTENTIOMETRIC CONTOUR MAP

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

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

| | |
|---|---|
| SCALE: | 1"=200' |
| DATE: | 11/11/13 |
| DRAWN BY: | RH |
| CHECKED BY: | WM |
| APPROVED BY: | RV |
| FILE: | 1310-F2 |
| JOB NO: | 200-1310 |

F-2
sheet number