# Long-Term SSD/SVE System
# Operation, Maintenance and Monitoring
# Groundwater Monitoring

## June 2017 Data Summary Report

**Wendell Avenue Site**

**Fairbanks, Alaska**

**July 2017**

ERM Alaska, Inc.
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# ATTACHMENT 1

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FIGURE 1

# JUNE 2017 DATA SUMMARY REPORT
# SFY 2017 PCE AND TCE SAMPLE RESULTS

WENDELL AVENUE STUDY
Fairbanks, Alaska

| | |
|---|---|
| DATE: | AUG. 2017 |
| CHKD: | T.M. |
| DRWN: | A.V.K. |
| PROJ. No.: | 0227323 |

825 W. 8th Ave., Anchorage, AK 99501, (907) 258-4880

ERM

| RS-1 | | | | |
|---|---|---|---|---|
| DATE | TCE | PCE | t-1,2-DCE | TYPE |
| 9/24/15 | ND | 14,000 | ND | PRIMARY |
| 6/9/16 | ND | 96,000 | 110 | PRIMARY |
| 9/28/16 | ND | 2,000 | ND | RS-SSD |
| 9/28/16 | ND | 10,000 | 140 | RS-SVE |
| 3/30/17 | 110 | 9,700 | 170 | RS-SVE |
| 5/10/17 | 16 | 3,100 | 150 | RS-SVE |

| SS-8 | | | | |
|---|---|---|---|---|
| DATE | TCE | PCE | t-1,2-DCE | TYPE |
| 11/3/16 | ND | 160 | ND | PRIMARY |
| 5/10/17 | ND | 9.9 | ND | PRIMARY |

| SS-9 | | | | |
|---|---|---|---|---|
| DATE | TCE | PCE | t-1,2-DCE | TYPE |
| 11/2/16 | ND | 35 | ND | PRIMARY |
| 5/10/17 | ND | 4.5 | ND | PRIMARY |

| IA-12 | | | | |
|---|---|---|---|---|
| DATE | TCE | PCE | t-1,2-DCE | TYPE |
| 11/3/16 | ND | ND | ND | PRIMARY |
| 5/10/17 | ND | ND | ND | PRIMARY |

| SG-3 | | | | |
|---|---|---|---|---|
| DATE | TCE | PCE | t-1,2-DCE | TYPE |
| 3/22/16 | 89 | 2,200 | 27 | PRIMARY |

| SVE-4 | | | | |
|---|---|---|---|---|
| DATE | TCE | PCE | t-1,2-DCE | TYPE |
| 9/28/16 | ND | 76,000 | 720 | PRIMARY |
| 3/30/17 | 140 | 18,000 | 280 | PRIMARY |

| SS-4 | | | | |
|---|---|---|---|---|
| DATE | TCE | PCE | t-1,2-DCE | TYPE |
| 3/22/16 | ND | 30,000 | ND | PRIMARY |
| 3/22/16 | ND | 28,000 | ND | DUPLICATE |
| 6/9/16 | ND | 99 | ND | PRIMARY |
| 6/9/16 | ND | 100 | ND | DUPLICATE |
| 5/10/17 | ND | 6,500 | ND | PRIMARY |

| SG-24 | | | | |
|---|---|---|---|---|
| DATE | TCE | PCE | t-1,2-DCE | TYPE |
| 3/22/16 | 25 | 2,600 | 100 | PRIMARY |
| 11/2/16 | 7.2 | 800 | 24 | PRIMARY |

| SS-10 | | | | |
|---|---|---|---|---|
| DATE | TCE | PCE | t-1,2-DCE | TYPE |
| 11/2/16 | 2.7 | 240 | 6.0 | PRIMARY |
| 5/9/17 | 2.3 | 210.0 | 2.9 | PRIMARY |

| IA-13 | | | | |
|---|---|---|---|---|
| DATE | TCE | PCE | t-1,2-DCE | TYPE |
| 11/3/16 | ND | ND | ND | PRIMARY |
| 5/9/17 | ND | 1.1 | ND | PRIMARY |

ES LAUNDROMAT (314 WENDELL AVE)
LAW OFFICES (330 WENDELL AVE)
SSD / SVE BUILDING
MIDNIGHT MINE (308 WENDELL AVE)
STRUCTURE NO LONGER EXISTS (302 WENDELL AVE)
FNA COMMUNITY SERVICES BLDG. (315 WENDELL AVE)
FNA HANNAH SOLOMON BLDG. (317 WENDELL AVE)
DUNKEL ST
WENDELL AVE

## Legend

- SFY 2017 Sample
- Vapor Monitoring Point (SS = Sub-Slab, SG = Soil Gas, CS = Crawl Space)
- Indoor Air Sample
- Outdoor Air Sample
- Soil Vapor Extraction Well
- Exhaust Stack Sample
- UAF Sample Location

**NOTES:**
1) DEEP BLUE INDICATES SAMPLING IN SFY 2017
2) PCE = TETRACHLOROETHENE
3) TCE = TRICHLOREHENE
4) ALL CONCENTRATIONS ARE IN MICROGRAM PER CUBIC METER (ug/m$^3$)

0 15 30 60 Feet

IMAGERY SOURCE: FBNSB 2012-13 Imagery Web Mapping Service

Q:\Team\DMM\GIS\ADEC Wendell\data\ADEC Wendell 201708\ADEC Wendell 201708.aprx

PW-3
MW-11M
MW-11S
GWE: 427.25
PW-2
PW-4
MW-10M
MW-10S
MW-4D
MW-4M
PCE: ND(1.0)
TCE: 3.47
cDCE: 21.0
tDCE: 9.14
ORP: -65.5
DO: 0.11
MW-4S
GWE: 427.30
PCE: ND(0.5)
TCE: 1.79
cDCE: 26.4
tDCE: 9.32
ORP: -16.0
DO: 0.33
MW-12S
GWE: 427.40
MW-12D
MW-12M
PCE: 1.48
TCE: 12.3
cDCE: 10.9
tDCE: 1.90
ORP: -70.6
DO: 0.17
MW-9S
GWE: 427.48
MW-9M
PCE: 6.76
TCE: 13.0
cDCE: 21.0
tDCE: 3.16
ORP: -10.2
DO: 0.30
MW-1
GWE: 427.57
MW-8SR
GWE: 427.63
PCE: 412/421
TCE: 96.3/99.0
cDCE: 112/117
tDCE: 3.4/3.3
ORP: 148.5
DO: 0.55
MW-13M
MW-8D
MW-8S
MW-7
PCE: 3.45
TCE: 1.49
cDCE: 11.1
tDCE: ND(0.5)
ORP: NR
DO: NR
MW-6S
GWE: 427.71
PCE: 56.6
TCE: 52.3
cDCE: 197
tDCE: 51.8
ORP: 211
DO: 0.86
MW-5
427.4
427.5
427.6
427.3
N
0 30 60 120 Feet

## Legend

- Monitoring Well
- Porewater Sample Location
- Groundwater Elevation Contour
- Conceptual Source Zone
- Conceptual Dissolved Phase Plume

NOTES:
GWE = GROUNDWATER ELEVATIONS COLLECTED MARCH 25, 2014
PCE = TETRACHLOROETHENE (ug/L)
TCE = TRICHLOREHENE (ug/L)
cDCE = cis-1,2-DICHLOROETHENE (ug/L)
tDCE = trans-DICHLOROETHENE (ug/L)
ORP = OXIDATION-REDUCTION POTENTIAL (mV)
DO = DISSOLVED OXYGEN (mg/L)
ND = NOT DETECTED
NR = NOT RECORDED
ALL ELEVATIONS GIVEN IN FEET ABOVE MEAN SEA LEVEL, NAVD88

IMAGERY SOURCE: FBNSB 2012-13 Imagery Web Mapping Service

C:\Team\DMM\GIS\ADEC Wendell\data\ADEC Wendell 2017\08\ADEC Wendell 2017 08.aprx

FIGURE 2

# JUNE 2017 DATA SUMMARY REPORT
# GROUNDWATER MONITORING LOCATIONS WITH MARCH 2017 RESULTS

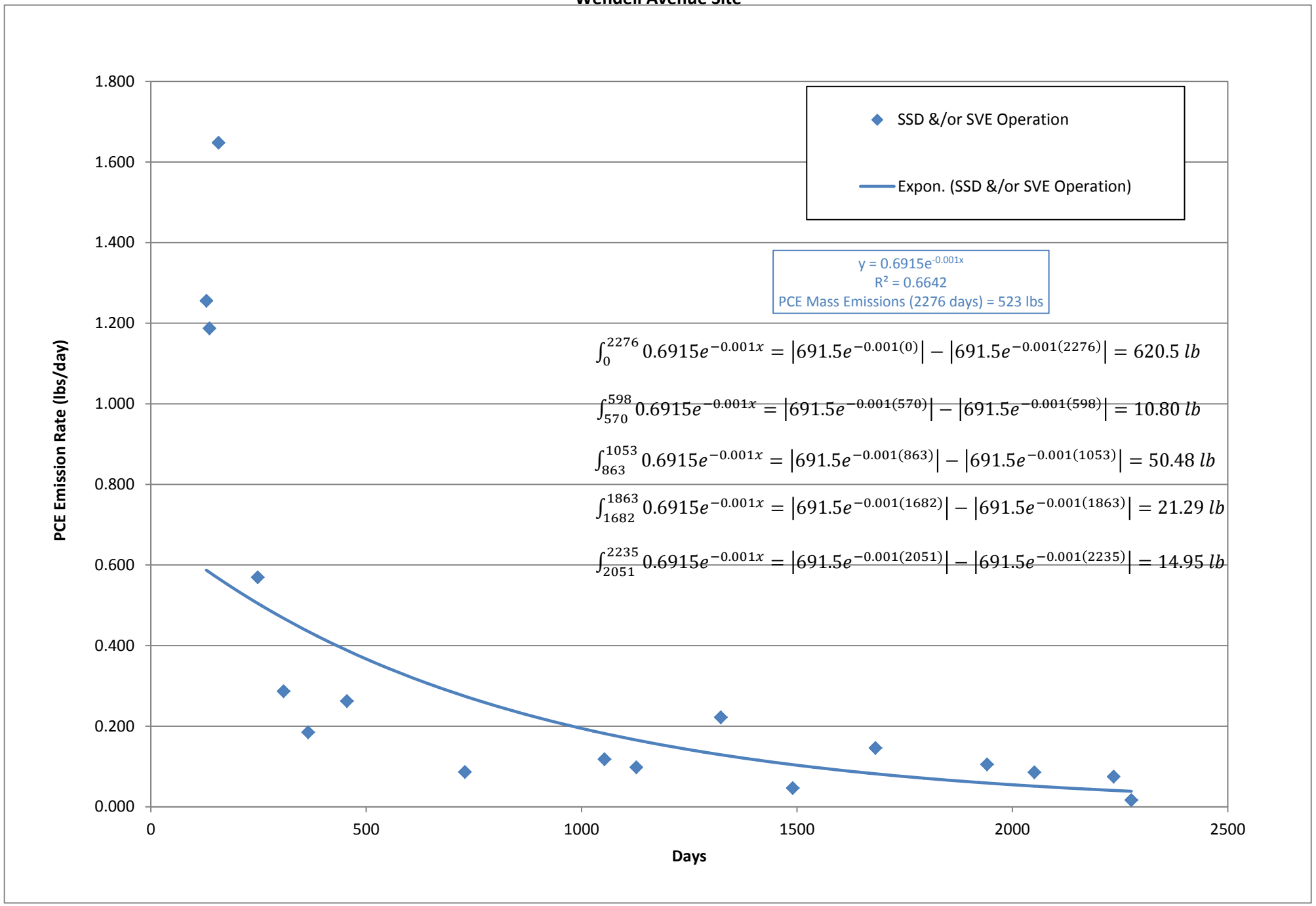
WENDELL AVENUE STUDY
Fairbanks, Alaska

DATE: AUG. 2017
CHKD: T.M.
DRWN: A.V.K.
PROJ. No.: 0227323

825 W. 8th Ave., Anchorage, AK 99501, (907) 258-4880

ERM

**Figure 3: SSD/SVE System PCE Emission Mass Estimate**
**June 2017 Data Summary Report**
**Wendell Avenue Site**



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# ATTACHMENT 2

## Tables

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# Table 1: OM&M and VI Assessment Analytical Results - October 2010 to May 2017
## June 2017 Data Summary Report
## 314 Wendell Avenue Site

| Remediation System Status | Location | Sample ID | Date Measured | Sample Type | Matrix | Tetrachloroethene (µg/m³) | | | Trichloroethene (µg/m³) | | | cis-1,2-Dichloroethene (µg/m³) | | | trans-1,2-Dichloroethene (µg/m³) | | | Vinyl Chloride (µg/m³) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag |
| Pre-Installation | IA-7 | 10WAS402IA | 10/21/2010 | Primary | Indoor Air | **320** | 0.48 | | 1.2 | 0.38 | | 0.82 | 0.28 | | | 1.4 | ND | | 0.09 | ND |
| | | 10WAS403IA | 10/21/2010 | Duplicate | Indoor Air | **320** | 0.5 | | 1.2 | 0.39 | | 0.81 | 0.29 | | | 1.4 | ND | | 0.093 | ND |
| SSD System Operating | | 11-WAS-006-IA | 2/24/2011 | Primary | Indoor Air | **110** | 0.22 | | 0.34 | 0.18 | | 0.24 | 0.13 | | 7.1 | 0.65 | | | 0.042 | ND |
| | | 11-WAS-007-IA | 2/24/2011 | Duplicate | Indoor Air | **110** | 0.24 | | 0.32 | 0.19 | | 0.24 | 0.14 | | 6.9 | 0.71 | | | 0.046 | ND |
| | | 11-WAS-047-IA | 5/18/2011 | Primary | Indoor Air | **160** | 0.24 | | 0.4 | 0.19 | | 0.25 | 0.14 | | 1.5 | 0.71 | | | 0.046 | ND |
| | | 11-WAS-048-IA | 5/18/2011 | Duplicate | Indoor Air | **160** | 0.29 | | 0.41 | 0.23 | | 0.25 | 0.17 | | 1.5 | 0.85 | | | 0.055 | ND |
| SSD/SVE System Operating | | 11-WAS-064-IA | 10/20/2011 | Primary | Indoor Air | 27 | 0.23 | | | 0.18 | ND | | 0.14 | ND | | 0.68 | ND | | 0.044 | ND |
| | | 11-WAS-065-IA | 10/20/2011 | Duplicate | Indoor Air | 27 | 0.24 | | | 0.19 | ND | | 0.14 | ND | | 0.69 | ND | | 0.045 | ND |
| SVE System Operating | | 13-WAS-007-IA | 2/13/2013 | Primary | Indoor Air | 7.5 | 0.18 | | | 0.15 | ND | | 0.11 | ND | | 0.54 | ND | | 0.035 | ND |
| Post 190-day Shutdown | | 14-WAS-002-IA | 1/2/2014 | Primary | Indoor Air | 22 | 0.17 | JA | | 0.13 | JA | | 0.098 | JA | | 0.49 | JA | | 0.032 | JA |
| SVE System Operating | | 14-WAS-024-IA | 3/18/2014 | Primary | Indoor Air | 4.6 | 0.19 | | | 0.15 | ND | | 0.11 | ND | | 0.56 | ND | | 0.036 | ND |
| Pre-Installation | IA-8 | 10WAS401IA | 10/21/2010 | Primary | Indoor Air | **400** | 0.68 | | 1.7 | 0.54 | | 0.96 | 0.4 | | | 2 | ND | | 0.13 | ND |
| SSD System Operating | | 11-WAS-005-IA | 2/24/2011 | Primary | Indoor Air | **180** | 0.24 | | 0.53 | 0.19 | | 0.32 | 0.14 | | 8.1 | 0.69 | | | 0.045 | ND |
| | | 11-WAS-049-IA | 5/18/2011 | Primary | Indoor Air | **210** | 0.28 | | 0.5 | 0.22 | | 0.26 | 0.17 | | 1.5 | 0.83 | | | 0.054 | ND |
| SSD/SVE System Operating | | 11-WAS-063-IA | 10/20/2011 | Primary | Indoor Air | **66** | 0.25 | | | 0.2 | ND | | 0.14 | ND | | 0.73 | ND | | 0.047 | ND |
| | | 12-WAS-074-IA | 2/15/2012 | Primary | Indoor Air | 3.3 | 0.23 | | | 0.18 | ND | | 0.13 | ND | | 0.67 | ND | | 0.043 | ND |
| | | 12-WAS-075-IA | 2/15/2012 | Duplicate | Indoor Air | 3.4 | 0.28 | | | 0.22 | ND | | 0.16 | ND | | 0.82 | ND | | 0.053 | ND |
| | | 12-WAS-129-IA | 9/5/2012 | Primary | Indoor Air | 3.5 | 0.22 | | | 0.18 | ND | 0.23 | 0.13 | | | 0.65 | ND | | 0.042 | ND |
| Post 28-day Shutdown | | 12-WAS-133-IA | 10/4/2012 | Primary | Indoor Air | 16 | 0.18 | | | 0.15 | ND | 0.98 | 0.11 | | | 0.54 | ND | | 0.035 | ND |
| | | 12-WAS-134-IA | 10/4/2012 | Duplicate | Indoor Air | 16 | 0.2 | | 0.16 | 0.15 | | 0.92 | 0.11 | | | 0.57 | ND | | 0.037 | ND |
| SVE System Operating | | 13-WAS-005-IA | 2/13/2013 | Primary | Indoor Air | 6.9 | 0.2 | | | 0.15 | ND | | 0.11 | ND | | 0.57 | ND | | 0.037 | ND |
| | | 13-WAS-006-IA | 2/13/2013 | Duplicate | Indoor Air | 7.6 | 0.2 | | | 0.15 | ND | | 0.11 | ND | | 0.57 | ND | | 0.037 | ND |
| Post 190-day Shutdown | | 14-WAS-003-IA | 1/2/2014 | Primary | Indoor Air | 20 | 0.16 | JA | 0.2 | 0.13 | JA | | 0.097 | JA | | 0.48 | JA | | 0.031 | JA |
| | | 14-WAS-004-IA | 1/2/2014 | Duplicate | Indoor Air | 23 | 0.18 | JA | | 0.14 | JA | | 0.1 | JA | | 0.51 | JA | | 0.033 | JA |
| SVE System Operating | | 14-WAS-022-IA | 3/18/2014 | Primary | Indoor Air | 4.3 | 0.21 | | | 0.17 | ND | | 0.12 | ND | | 0.63 | ND | | 0.04 | ND |
| | | 14-WAS-023-IA | 3/18/2014 | Duplicate | Indoor Air | 4.4 | 0.21 | JA | | 0.17 | JA | | 0.12 | JA | | 0.62 | JA | | 0.04 | JA |
| **ADEC Target Levels for Commercial Indoor Air** | | | | | | **180 - 41** | | | **8.4** | | | **31 - NA** | | | **260 - NA** | | | **28** | | |
| Pre-Installation | SS-4 | 10WAS405SS | 10/21/2010 | Primary | Sub-Slab Soil Gas | **5,900,000** | **5900** | | **10000** | **4600** | | | **3400** | ND | | **3400** | ND | | **2200** | ND |
| SSD System Operating | | 11-WAS-008-SS | 2/24/2011 | Primary | Sub-Slab Soil Gas | **12,000** | 34 | | | 27 | ND | | 20 | ND | | 20 | ND | | **13** | ND |
| | | 11-WAS-052-SS | 5/18/2011 | Primary | Sub-Slab Soil Gas | **2,000** | 6.1 | | | 4.8 | ND | | 3.5 | ND | | 3.5 | ND | | 2.3 | ND |
| SSD/SVE System Operating | | 11-WAS-066-SS | 10/21/2011 | Primary | Sub-Slab Soil Gas | 520 | 6.0 | | | 4.7 | ND | | 3.5 | ND | | 3.5 | ND | | 2.2 | ND |
| | | 12-WAS-076-SS | 2/15/2012 | Primary | Sub-Slab Soil Gas | 390 | 5.0 | | | 4.0 | ND | | 3.0 | ND | | 3.0 | ND | | 1.9 | ND |
| | | 12-WAS-077-SS | 2/15/2012 | Duplicate | Sub-Slab Soil Gas | 400 | 5.4 | | | 4.2 | ND | | 3.1 | ND | | 3.1 | ND | | 2 | ND |
| | | 12-WAS-130-SS | 9/5/2012 | Primary | Sub-Slab Soil Gas | 240 | 6.6 | | | 5.3 | ND | | 3.9 | ND | | 3.9 | ND | | 2.5 | ND |
| Post 28-day Shutdown | | 12-WAS-135-SS | 10/5/2012 | Primary | Sub-Slab Soil Gas | **94,000** | 390 | | | **310** | ND | | 230 | ND | | 230 | ND | | 150 | ND |
| SVE System Operating | | 13-WAS-010-SS | 2/14/2013 | Primary | Sub-Slab Soil Gas | 560 | 5.7 | | | 4.5 | ND | | 3.3 | ND | | 3.3 | ND | | 2.1 | ND |
| | | 13-WAS-011-SS | 2/14/2013 | Duplicate | Sub-Slab Soil Gas | 560 | 5.5 | | | 4.3 | ND | | 3.2 | ND | | 3.2 | ND | | 2.0 | ND |
| Post 190-day Shutdown | | 14-WAS-010-SS | 1/2/2014 | Primary | Sub-Slab Soil Gas | **52,000** | 220 | | | **170** | ND | | 130 | ND | | 130 | ND | | 82 | ND |
| | | 14-WAS-011-SS | 1/2/2014 | Duplicate | Sub-Slab Soil Gas | **49,000** | 220 | | | **170** | ND | | 130 | ND | | 130 | ND | | 82 | ND |
| SVE System Operating | | 14-WAS-026-SS | 3/18/2014 | Primary | Sub-Slab Soil Gas | **13,000** | 49 | | | **39** | ND | | 29 | ND | | 29 | ND | | 18 | ND |
| | | 14-WAS-027-SS | 3/18/2014 | Duplicate | Sub-Slab Soil Gas | **14,000** | 59 | | | 46 | ND | | 34 | ND | | 34 | ND | | 22 | ND |
| Post 92-day Shutdown | | 15-WAS-004-SS | 1/7/2015 | Primary | Sub-Slab Soil Gas | **35,000** | 120 | | | **98** | ND | | 72 | ND | | 72 | ND | | 46 | ND |
| | | 15-WAS-005-SS | 1/7/2015 | Duplicate | Sub-Slab Soil Gas | **33,000** | 130 | | | **100** | ND | | 74 | ND | | 74 | ND | | 48 | ND |
| SVE System Operating | | 15-WAS-006-SS | 3/16/2015 | Primary | Sub-Slab Soil Gas | **6,900** | 26 | | | 20 | ND | | 15 | ND | | 15 | ND | | 9.7 | ND |
| | | 15-WAS-007-SS | 3/16/2015 | Duplicate | Sub-Slab Soil Gas | **6,900** | 26 | | | 20 | ND | | 15 | ND | | 15 | ND | | 9.6 | ND |
| Post 180-day Shutdown | | 16-WAS-018-SS | 3/22/2016 | Primary | Sub-Slab Soil Gas | **30,000** | 55 | | | 43 | ND | | 32 | ND | | 32 | ND | | 20 | ND |
| | | 16-WAS-019-SS | 3/22/2016 | Duplicate | Sub-Slab Soil Gas | **28,000** | 52 | | | 41 | ND | | 30 | ND | | 30 | ND | | 19 | ND |
| SVE System Operating | | 16-WAS-022-SS | 6/9/2016 | Primary | Sub-Slab Soil Gas | 99 | 1.2 | | | 0.91 | ND | | 0.67 | ND | | 0.67 | ND | | 0.43 | ND |
| | | 16-WAS-023-SS | 6/9/2016 | Duplicate | Sub-Slab Soil Gas | 100 | 1.2 | | | 0.92 | ND | | 0.68 | ND | | 0.68 | ND | | 0.44 | ND |
| | | 17-WAS-004-SS | 5/10/2017 | Primary | Sub-Slab Soil Gas | **6,500** | 21 | | | 17 | ND | | 12 | ND | | 12 | ND | | 8.0 | ND |
| **ADEC Target Levels for Commercial Sub-Slab Soil Gas** | | | | | | **1,800** | | | **88 - 84** | | | **310 - NA** | | | **2,600 - NA** | | | **280** | | |

# Table 1: OM&M and VI Assessment Analytical Results - October 2010 to May 2017
## June 2017 Data Summary Report
## 314 Wendell Avenue Site

| Remediation System Status | Location | Sample ID | Date Measured | Sample Type | Matrix | Tetrachloroethene (µg/m³) | | | Trichloroethene (µg/m³) | | | cis-1,2-Dichloroethene (µg/m³) | | | trans-1,2-Dichloroethene (µg/m³) | | | Vinyl Chloride (µg/m³) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag |
| Pre-Installation | SS-5 | 10WAS404SS | 10/21/2010 | Primary | Sub-Slab Soil Gas | **310,000** | 490 | | **3900** | **390** | | | 280 | ND | | 280 | ND | | 180 | ND |
| SSD System Operating | | 11-WAS-011-SS | 2/24/2011 | Primary | Sub-Slab Soil Gas | 200 | 5.9 | | | 4.7 | ND | | 3.5 | ND | | 3.5 | ND | | 2.2 | ND |
| | | 11-WAS-053-SS | 5/18/2011 | Primary | Sub-Slab Soil Gas | 61 | 7.4 | | | 5.8 | ND | | 4.3 | ND | | 4.3 | ND | | 2.8 | ND |
| SSD/SVE System Operating | | 11-WAS-067-SS | 10/21/2011 | Primary | Sub-Slab Soil Gas | 19 | 6.7 | | | 5.3 | ND | | 3.9 | ND | | 3.9 | ND | | 2.5 | ND |
| SVE System Operating | | 13-WAS-012-SS | 2/13/2013 | Primary | Sub-Slab Soil Gas | 8.9 | 6.5 | | | 5.1 | ND | | 3.8 | ND | | 3.8 | ND | | 2.4 | ND |
| SVE System Operating | | 14-WAS-028-SS | 3/18/2014 | Primary | Sub-Slab Soil Gas | 16 | 5.2 | | | 4.1 | ND | | 3 | ND | | 3 | ND | | 2 | ND |
| Pre-Installation | SS-6 | 10WAS406SS | 10/21/2010 | Primary | Sub-Slab Soil Gas | **14,000** | 40 | | | 31 | ND | | 23 | ND | | 23 | ND | | 15 | ND |
| | | 10WAS407SS | 10/21/2010 | Duplicate | Sub-Slab Soil Gas | **15,000** | 43 | | | 34 | ND | | 25 | ND | | 25 | ND | | 16 | ND |
| SSD System Operating | | 11-WAS-009-SS | 2/24/2011 | Primary | Sub-Slab Soil Gas | 19 | 5.2 | | | 4.1 | ND | | 3 | ND | | 3 | ND | | 1.9 | ND |
| | | 11-WAS-010-SS | 2/24/2011 | Duplicate | Sub-Slab Soil Gas | 19 | 5.7 | | | 4.5 | ND | | 3.3 | ND | | 3.3 | ND | | 2.1 | ND |
| | | 11-WAS-050-SS | 5/18/2011 | Primary | Sub-Slab Soil Gas | 21 | 5.5 | | | 4.3 | ND | | 3.2 | ND | | 3.2 | ND | | 2 | ND |
| | | 11-WAS-051-SS | 5/18/2011 | Duplicate | Sub-Slab Soil Gas | 22 | 5.8 | | | 4.6 | ND | | 3.4 | ND | | 3.4 | ND | | 2.2 | ND |
| SSD/SVE System Operating | | 11-WAS-068-SS | 10/21/2011 | Primary | Sub-Slab Soil Gas | | 5.5 | ND | | 4.4 | ND | | 3.2 | ND | | 3.2 | ND | | 2.1 | ND |
| | | 11-WAS-069-SS | 10/21/2011 | Duplicate | Sub-Slab Soil Gas | | 5.6 | ND | | 4.4 | ND | | 3.2 | ND | | 3.3 | ND | | 2.1 | ND |
| SVE System Operating | | 13-WAS-009-SS | 2/13/2013 | Primary | Sub-Slab Soil Gas | 100 | 5.6 | | | 4.4 | ND | | 3.2 | ND | | 3.2 | ND | | 2.1 | ND |
| Post 190-day Shutdown | | 14-WAS-012-SS | 1/2/2014 | Primary | Sub-Slab Soil Gas | 250 | 5.2 | | | **4.1** | ND | | 3 | ND | | 3 | ND | | 1.9 | ND |
| **ADEC Target Levels for Commercial Sub-Slab Soil Gas** | | | | | | **1,800** | | | **88 - 84** | | | **310 - NA** | | | **2,600 - NA** | | | **280** | | |
| Pre-Installation | SG-2 @ 8' bgs | 08WAS531SG | 10/8/2008 | Primary | Deep Soil Gas | 8,200 | 39 | | 790 | 31 | | 150 | 23 | | 73 | 23 | | | 15 | ND |
| SSD/SVE System Operating | | 12-WAS-132-SG | 9/5/2012 | Primary | Deep Soil Gas | 930 | 6.6 | | 15 | **5.3** | | | 3.9 | ND | | 3.9 | ND | | 2.5 | ND |
| Post 28-day Shutdown | | 12-WAS-137-SG | 10/5/2012 | Primary | Deep Soil Gas | 3,000 | 11 | | 87 | 9 | | 10 | 6.7 | | | 6.7 | ND | | 4.3 | ND |
| Post 190-day Shutdown | | 14-WAS-014-SG | 1/2/2014 | Primary | Deep Soil Gas | 280 | 7.3 | | | 5.8 | ND | | 4.3 | ND | | 4.3 | ND | | 2.8 | ND |
| Post 180-day Shutdown | | 16-WAS-017-SG | 3/22/2016 | Primary | Deep Soil Gas | 990 | 5.2 | | 98 | 4.2 | | 36 | 3.1 | | 14 | 3.1 | | | 2.0 | ND |
| SSD System Operating | SG-3 @ 8' bgs | 11-WAS-003-SG | 2/18/2011 | Primary | Deep Soil Gas | **560,000** | 1500 | | **4800** | **1200** | | 1600 | 860 | | | 860 | ND | | 550 | ND |
| | | 11-WAS-054-SG | 5/18/2011 | Primary | Deep Soil Gas | **91,000** | 370 | | **970** | 290 | | 370 | 210 | | | 210 | ND | | 140 | ND |
| SSD/SVE System Operating | | 11-WAS-058-SG | 6/24/2011 | Primary | Deep Soil Gas | **150,000** | 440 | | 390 | 350 | | | 260 | ND | | 260 | ND | | 160 | ND |
| | | 11-WAS-061-SG | 7/22/2011 | Primary | Deep Soil Gas | **20,000** | 91 | | | 72 | ND | | 53 | ND | | 53 | ND | | 34 | ND |
| | | 11-WAS-070-SG | 10/21/2011 | Primary | Deep Soil Gas | 2300 | 9.7 | | 10 | 7.7 | | | 5.7 | ND | | 5.7 | ND | | 3.6 | ND |
| | | 12-WAS-078-SS | 2/15/2012 | Primary | Deep Soil Gas | 720 | 5.5 | | 5.7 | 4.3 | | | 3.2 | ND | | 3.2 | ND | | 2 | ND |
| | | 12-WAS-131-SG | 9/5/2012 | Primary | Deep Soil Gas | 1200 | 6.5 | | 10 | 5.1 | | | 3.8 | ND | | 3.8 | ND | | 2.4 | ND |
| Post 28-day Shutdown | | 12-WAS-136-SG | 10/5/2012 | Primary | Deep Soil Gas | 6500 | 26 | | 87 | 21 | | 48 | 15 | | | 15 | ND | | 10 | ND |
| SVE System Operating | | 13-WAS-008-SG | 2/13/2013 | Primary | Deep Soil Gas | 330 | 7.6 | | | 6.0 | ND | | 4.4 | ND | | 4.4 | ND | | 2.9 | ND |
| Post 190-day Shutdown | | 14-WAS-013-SG | 1/2/2014 | Primary | Deep Soil Gas | 8800 | 29 | | 360 | 23 | | 120 | 17 | | 58 | 17 | | | 11 | ND |
| SVE System Operating | | 14-WAS-029-SG | 3/18/2014 | Primary | Deep Soil Gas | 360 | 7.2 | | | 5.7 | ND | | 4.2 | ND | | 4.2 | ND | | 2.7 | ND |
| Post 180-day Shutdown | | 16-WAS-016-SG | 3/22/2016 | Primary | Deep Soil Gas | 2200 | 10 | | 89 | 8.3 | | 73 | 6.1 | | 27 | 6.1 | | | 4.0 | ND |
| SVE System Operating | SVE-4 | 16-WAS-001-SG | 9/28/2016 | Primary | Deep Soil Gas | **76,000** | 120 | | | 93 | ND | | 68 | ND | 720 | 68 | | | 44 | ND |
| Post 180-day Shutdown | | 17-WAS-001-SG | 3/30/2017 | Primary | Deep Soil Gas | **18,000** | 82 | | 140 | 65 | | 69 | 48 | | 280 | 48 | | | 31 | ND |
| **ADEC Target Levels for Commercial Deep Soil Gas** | | | | | | **18,000** | | | **880 - 840** | | | **3,100 - NA** | | | **26,000 - NA** | | | **2,800** | | |

# Table 1: OM&M and VI Assessment Analytical Results - October 2010 to May 2017
## June 2017 Data Summary Report
## 314 Wendell Avenue Site

| Remediation System Status | Location | Sample ID | Date Measured | Sample Type | Matrix | Tetrachloroethene (µg/m³) | | | Trichloroethene (µg/m³) | | | cis-1,2-Dichloroethene (µg/m³) | | | trans-1,2-Dichloroethene (µg/m³) | | | Vinyl Chloride (µg/m³) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag |
| Pre-Installation | AA-3 | 10WAS400AA | 10/21/2010 | Primary | Outdoor Air | 1.6 | 0.21 | | | 0.17 | ND | | 0.12 | ND | | 0.63 | ND | | 0.04 | ND |
| SSD System Operating | | 11WAS-001-AA | 2/17/2011 | Primary | Outdoor Air | 1.7 | 0.17 | | | 0.13 | ND | | 0.099 | ND | | 0.5 | ND | | 0.032 | ND |
| | | 11-WAS-004-AA | 2/24/2011 | Primary | Outdoor Air | 3.6 | 0.19 | | | 0.15 | ND | | 0.11 | ND | | 0.55 | ND | | 0.036 | ND |
| | | 11-WAS-046-AA | 5/18/2011 | Primary | Outdoor Air | 1.5 | 0.21 | | | 0.17 | ND | | 0.12 | ND | | 0.61 | ND | | 0.04 | ND |
| SSD/SVE System Operating | | 11-WAS-056-AA | 6/23/2011 | Primary | Outdoor Air | 1.2 | 0.23 | | | 0.18 | ND | | 0.13 | ND | 0.7 | 0.67 | | | 0.043 | ND |
| | | 11-WAS-062-AA | 10/20/2011 | Primary | Outdoor Air | 0.76 | 0.2 | | | 0.16 | ND | | 0.12 | ND | | 0.59 | ND | | 0.038 | ND |
| | | 12-WAS-073-AA | 2/15/2012 | Primary | Outdoor Air | 2.3 | 0.19 | | | 0.15 | ND | | 0.11 | ND | | 0.55 | ND | | 0.036 | ND |
| SVE System Operating | | 13-WAS-004-AA | 2/13/2013 | Primary | Outdoor Air | 6.3 | 0.26 | | | 0.2 | ND | | 0.15 | ND | | 0.76 | ND | | 0.049 | ND |
| Post 190-day Shutdown | | 14-WAS-001-AA | 1/2/2014 | Primary | Outdoor Air | 1.3 | 0.16 | JA | | 0.13 | JA | | 0.096 | JA | | 0.48 | JA | | 0.031 | JA |
| SVE System Operating | | 14-WAS-021-AA | 3/18/2014 | Primary | Outdoor Air | 1.6 | 0.22 | | | 0.17 | ND | | 0.13 | ND | | 0.64 | ND | | 0.041 | ND |
| SSD System Operating | RS-1 | 11WAS-002-ES | 2/17/2011 | Primary | RS Exhaust Stack | 130,000 | 570 | | | 450 | ND | | 330 | ND | | 330 | ND | | 210 | ND |
| | | 11-WAS-012-ES | 2/25/2011 | Primary | RS Exhaust Stack | 120,000 | 360 | | 330 | 280 | | | 210 | ND | | 210 | ND | | 140 | ND |
| | | 11-WAS-055-ES | 5/19/2011 | Primary | RS Exhaust Stack | 57,000 | 220 | | | 170 | ND | | 120 | ND | | 120 | ND | | 81 | ND |
| SSD/SVE System Operating | | 11-WAS-057-ES | 6/24/2011 | Primary | RS Exhaust Stack | 97,000 | 350 | | 450 | 280 | | 260 | 200 | | | 200 | ND | | 130 | ND |
| | | 11-WAS-059-ES | 7/1/2011 | Primary | RS Exhaust Stack | 93,000 | 360 | | | 280 | ND | | 210 | ND | | 210 | ND | | 140 | ND |
| | | 11-WAS-060-ES | 7/22/2011 | Primary | RS Exhaust Stack | 130,000 | 450 | | | 350 | ND | | 260 | ND | 2700 | 260 | | | 170 | ND |
| | | 11-WAS-071-ES | 10/21/2011 | Primary | RS Exhaust Stack | 44,000 | 120 | | | 94 | ND | | 69 | ND | 440 | 69 | | | 44 | ND |
| | | 11-WAS-072-ES | 12/20/2011 | Primary | RS Exhaust Stack | 22,000 | 71 | | | 56 | ND | | 42 | ND | 250 | 42 | | | 27 | ND |
| | | 12-WAS-079-ES | 2/15/2012 | Primary | RS Exhaust Stack | 14,000 | 85 | | | 67 | ND | | 50 | ND | 140 | 50 | | | 32 | ND |
| SVE System Operating | | 13-WAS-003-ES | 2/13/2013 | Primary | RS Exhaust Stack | 13,000 | 41 | | 64 | 32 | | 60 | 24 | | 240 | 24 | | | 15 | ND |
| Post 190-day Shutdown | | 14-WAS-015-ES | 1/3/2014 | Primary | RS Exhaust Stack | 18,000 | 76 | | 290 | 60 | | 260 | 44 | | 690 | 44 | | | 29 | ND |
| SVE System Operating | | 14-WAS-030-ES | 3/18/2014 | Primary | RS Exhaust Stack | 14,000 | 83 | | | 66 | ND | | 49 | ND | 180 | 49 | | | 31 | ND |
| | | 14-WAS-047-ES | 10/7/2014 | Primary | RS Exhaust Stack | 19,000 | 79 | | | 63 | ND | | 46 | ND | | | | | 30 | ND |
| | | 15-WAS-008-ES | 3/16/2015 | Primary | RS Exhaust Stack | 7,400 | 34 | | 33 | 27 | | 24 | 20 | | 130 | 20 | | | 13 | ND |
| | | 15-WAS-009-ES | 9/24/2015 | Primary | RS Exhaust Stack | 14,000 | 54 | | | 42 | ND | | 31 | ND | 170 | 31 | | | 20 | ND |
| | | 16-WAS-024-ES | 6/9/2016 | Primary | RS Exhaust Stack | 9,600 | 34 | | | 27 | ND | | 20 | ND | 110 | 20 | | | 13 | ND |
| | RS-SSD | 16-WAS-001-ES | 9/28/2016 | Primary | SSD Exhaust Stack | 2,000 | 6.8 | JA | | 5.4 | ND, JA | | 4.0 | ND, JA | | 4.0 | ND, JA | | 2.6 | ND, JA |
| | RS-SVE | 16-WAS-002-ES | 9/28/2016 | Primary | SVE Exhaust Stack | 10,000 | 41 | | | 32 | ND | | 24 | ND | 140 | 24 | | | 15 | ND |
| Post 180 day Shutdown | RS-SVE | 17-WAS-001-ES | 3/30/2017 | Primary | SVE Exhaust Stack | 9,700 | 42 | | 110 | 33 | | 140 | 24 | | 170 | 24 | | | 16 | ND |
| SVE System Operating | RS-SVE | 17-WAS-002-ES | 5/10/2017 | Primary | SVE Exhaust Stack | 3,100 | 12 | | 16 | 9.7 | | | 7.2 | ND | 150 | 7.2 | | | 4.6 | ND |

Notes:

Significant figures may not have been retained from the original laboratory results

Bold values indicate exceedance of ADEC Target Levels

NA = ADEC has not calculated a Target Level for this chemical due to lack of toxicity information for inhalation exposure pathway.

Soil gas samples were taken at an interval of 7.5 - 8.0 feet below ground surface

' bgs = feet below ground surface

µg/m³ = micrograms per cubic meter

MRL = Method Reporting Limit

ND = Not detected above method reporting limit

JA = Analytical result considered estimated because canister received by laboratory at ambient pressure

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**Table 2: VI Assessment Chlorinated Analytical Results - Boundary Vicinity January 2014 - May 2017**
**June 2017 Data Summary Report**
**314 Wendell Avenue Site**

| Building | Location | Sample ID | Date Measured | Sample Type | Matrix | Tetrachloroethene (µg/m3) | | | Trichloroethene (µg/m3) | | | cis-1,2-Dichloroethene (µg/m3) | | | trans-1,2-Dichloroethene (µg/m3) | | | Vinyl Chloride (µg/m3) | | | 1,1-Dichloroethene (µg/m3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag |
| FNA Hanna | CS-1 | 14-WAS-006-CS | 1/2/2014 | Primary | Crawl Space Air | 1.6 | 0.24 | | | 0.19 | ND | | 0.14 | ND | | 0.69 | ND | | 0.044 | ND | | | |
| | | 14-WAS-017-CS | 3/18/2014 | Primary | Crawl Space Air | 2.4 | 0.23 | | | 0.18 | ND | | 0.14 | ND | | 0.68 | ND | | 0.044 | ND | | | |
| | | 14-WAS-043-CS | 9/30/2014 | Primary | Crawl Space Air | 1.3 | 0.28 | | | 0.22 | ND | | 0.16 | ND | | 0.82 | ND | | 0.053 | ND | | | |
| | | 15-WAS-001-CS | 1/7/2015 | Primary | Crawl Space Air | 2.2 | 0.22 | | | 0.18 | ND | | 0.13 | ND | | 0.65 | ND | | 0.042 | ND | | | |
| FNA Hanna | CS-3 | 14-WAS-007-CS | 1/2/2014 | Primary | Crawl Space Air | 2.2 | 0.21 | | | 0.17 | ND | | 0.12 | ND | | 0.63 | ND | | 0.040 | ND | | | |
| | | 14-WAS-018-CS | 3/18/2014 | Primary | Crawl Space Air | 2.6 | 0.23 | | | 0.18 | ND | | 0.13 | ND | | 0.67 | ND | | 0.043 | ND | | | |
| | | 14-WAS-044-CS | 9/30/2014 | Primary | Crawl Space Air | 1.4 | 0,26 | | | 0.20 | ND | | 0.15 | ND | | 0.74 | ND | | 0.048 | ND | | | |
| | | 15-WAS-002-CS | 1/7/2015 | Primary | Crawl Space Air | 2.0 | 0.23 | | | 0.18 | ND | | 0.13 | ND | | 0.67 | ND | | 0.043 | ND | | | |
| FNA Services | IA-1 | 14-WAS-008-IA | 1/2/2014 | Primary | Indoor Air | 0.81 | 0.22 | | | 0.18 | ND | | 0.13 | ND | | 0.65 | ND | | 0.042 | ND | | | |
| | | 14-WAS-019-IA | 3/18/2014 | Primary | Indoor Air | 1.5 | 0.22 | | | 0.18 | ND | | 0.13 | ND | | 0.66 | ND | | 0.042 | ND | | | |
| FNA Hanna | IA-4 | 14-WAS-005-IA | 1/2/2014 | Primary | Indoor Air | 0.94 | 0.30 | JA | 0.23 | 0.23 | JA | 0.17 | 0.17 | JA | 0.86 | 0.86 | JA | | 0.056 | JA | | | |
| | | 14-WAS-016-IA | 3/18/2014 | Primary | Indoor Air | 2.0 | 0.22 | | | 0.17 | ND | | 0.13 | ND | | 0.63 | ND | | 0.041 | ND | | | |
| Midnight Basement | IA-12 | 16-WAS-029-IA | 11/3/2016 | Primary | Indoor Air | | 60 | ND, JA | | **47** | **ND, JA** | | **35** | **ND, JA** | | 35 | ND, JA | | 22 | ND, JA | | 35 | ND, JA |
| | | 16-WAS-030-IA | 11/3/2016 | Duplicate | Indoor Air | | 86 | ND | | **68** | **ND** | | **50** | **ND** | | 50 | ND | | **32** | **ND** | | 50 | ND |
| | | 17-WAS-002-IA | 5/10/2017 | Primary | Indoor Air | | 1.4 | ND | | 1.1 | ND | | 0.83 | ND | | 4.2 | ND | | 0.27 | ND | | 0.42 | ND |
| | | 17-WAS-003-IA | 5/10/2017 | Duplicate | Indoor Air | | 1.2 | ND | | 0.95 | ND | | 0.70 | ND | | 3.5 | ND | | 0.23 | ND | | 0.35 | ND |
| Midnight Upstairs | IA-13 | 16-WAS-031-IA | 11/3/2016 | Primary | Indoor Air | | 71 | ND | | **56** | **ND** | | **42** | **ND** | | 42 | ND | | 27 | ND | | 42 | ND |
| | | 17-WAS-001-IA | 5/10/2017 | Primary | Indoor Air | 1.1 | 0.94 | JA | | 0.75 | ND, JA | | 0.55 | ND, JA | | 2.8 | ND, JA | | 0.18 | ND, JA | | 0.28 | ND, JA |
| | | | | | | | | | | | | | | | | | | | | | | | |
| **ADEC Target Levels for Commercial Indoor Air** | | | | | | **180 - 41** | | | **8.4** | | | **31 - NA** | | | **260 - NA** | | | **28** | | | **880** | | |
| FNA Services | SS-1 | 14-WAS-009-SS | 1/2/2014 | Primary | Sub-Slab Soil Gas | 1600 | 16 | | | 13 | ND | | 9.5 | ND | 140 | 9.5 | | | 6.1 | ND | | | |
| | | 14-WAS-025-SS | 3/18/2014 | Primary | Sub-Slab Soil Gas | 410 | 6.9 | | | 5.4 | ND | | 4.0 | ND | 14 | 4.0 | | | 2.6 | ND | | | |
| | | 14-WAS-045-SS | 9/30/2014 | Primary | Sub-Slab Soil Gas | 510 | 1.7 | | | 1.3 | ND | | 0.97 | ND | 8.5 | 0.97 | | | 0.63 | ND | | | |
| | | 14-WAS-046-SS | 9/30/2014 | Duplicate | Sub-Slab Soil Gas | 530 | 1.7 | | | 1.3 | ND | | 1.0 | ND | 8.8 | 1.0 | | | 0.64 | ND | | | |
| | | 15-WAS-003-SS | 1/7/2015 | Primary | Sub-Slab Soil Gas | 1600 | 5.8 | | | 4.6 | ND | | 3.4 | ND | 260 | 3.4 | | | 2.2 | ND | | | |
| | | 16-WAS-020-SS | 3/23/2016 | Primary | Sub-Slab Soil Gas | 1100 | 5.9 | | | 4.7 | ND | | 3.5 | ND | 250 | 3.5 | | | 2.2 | ND | | 3.5 | ND |
| FNA Services | SS-2 | 16-WAS-021-SS | 3/23/2016 | Primary | Sub-Slab Soil Gas | 690 | 11 | | | 8.6 | ND | | 6.4 | ND | 1000 | 6.4 | | | 4.1 | ND | | 6.4 | ND |
| Midnight Mine | SS-8 | 16-WAS-028-SS | 11/3/2016 | Primary | Sub-Slab Soil Gas | 160 | 1.2 | | | 0.92 | ND | | 0.68 | ND | | 0.68 | ND | | 0.44 | ND | | 0.68 | ND |
| | | 17-WAS-003-SS | 5/10/2017 | Primary | Sub-Slab Soil Gas | 9.9 | 1.3 | | | 1.1 | ND | | 0.78 | ND | | 0.78 | ND | | 0.51 | ND | | 0.78 | ND |
| | SS-9 | 16-WAS-027-SS | 11/2/2016 | Primary | Sub-Slab Soil Gas | 35 | 2.5 | | | 2.0 | ND | | 1.4 | ND | | 1.4 | ND | | 0.94 | ND | | 1.4 | ND |
| | | 17-WAS-001-SS | 5/9/2017 | Primary | Sub-Slab Soil Gas | 4.5 | 1.5 | | | 1.2 | ND | | 0.85 | ND | | 0.85 | ND | | 0.55 | ND | | 0.85 | ND |
| | SS-10 | 16-WAS-026-SS | 11/2/2016 | Primary | Sub-Slab Soil Gas | 240 | 1.2 | JA | 2.7 | 0.92 | JA | | 0.68 | ND, JA | 6.0 | 0.68 | JA | | 0.44 | ND, JA | | 0.68 | ND, JA |
| | | 17-WAS-002-SS | 5/9/2017 | Primary | Sub-Slab Soil Gas | 210 | 1.3 | | 2.3 | 1.0 | | | 0.76 | ND | 2.9 | 0.76 | | | 0.49 | ND | | 0.76 | ND |
| | | | | | | | | | | | | | | | | | | | | | | | |
| **ADEC Target Levels for Commercial Sub-Slab Soil Gas** | | | | | | **1,800** | | | **88 - 84** | | | **310 - NA** | | | **2,600 - NA** | | | **280** | | | **8,800** | | |
| | SG-20 | 15-WAS-011-SG | 11/6/2015 | Primary | Deep Soil Gas | 2000 | 5.9 | JD | 4.8 | 4.7 | | | 3.4 | ND | | 3.4 | ND | | 2.2 | ND | | 3.4 | ND |
| | | 15-WAS-012-SG | 11/6/2015 | Duplicate | Deep Soil Gas | 2400 | 12 | JD | | 9.5 | ND | | 7.0 | ND | | 7.0 | ND | | 4.5 | ND | | 7 | ND |
| | SG-21 | 15-WAS-013-SG | 11/6/2015 | Primary | Deep Soil Gas | 2000 | 5.6 | | 5.7 | 4.4 | | | 3.2 | ND | | 3.2 | ND | | 2.1 | ND | | 3.2 | ND |
| | SG-22 | 16-WAS-015-SG | 3/22/2016 | Primary | Deep Soil Gas | 290 | 5.8 | | | 4.6 | ND | | 3.4 | ND | 19 | 3.4 | | | 2.2 | ND | | 3.4 | ND |
| | SG-23 | 15-WAS-010-SG | 11/6/2015 | Primary | Deep Soil Gas | 4400 | 19 | | 89 | 15 | | | 11 | ND | 96 | 11 | | | 7.3 | ND | | 11 | ND |
| Midnight Mine | SG-24 | 16-WAS-014-SG | 3/22/2016 | Primary | Deep Soil Gas | 2600 | 12 | | 25 | 9.2 | | | 6.8 | ND | 100 | 6.8 | | | 4.4 | ND | | 6.8 | ND |
| | | 16-WAS-025-SG | 11/2/2016 | Primary | Deep Soil Gas | 800 | 5.2 | | 7.2 | 4.1 | | | 3.0 | ND | 24 | 3.0 | | | 2.0 | ND | | 3.0 | ND |
| **ADEC Target Levels for Commercial Deep Soil Gas** | | | | | | **18,000** | | | **880 - 840** | | | **3,100 - NA** | | | **26,000 - NA** | | | **2,800** | | | **88,000** | | |
| AA-5 | | 14-WAS-020-AA | 3/18/2014 | Primary | Outdoor Air | 1.6 | 0.21 | | | 0.17 | ND | | 0.12 | ND | | 0.63 | ND | | 0.040 | ND | | | |

Notes:
Bold/shaded values indicate exceedance of ADEC Target Levels
Underlined values indicate method reporting limit (MRL) exceedance of ADEC Target Levels
NA = ADEC has not calculated a Target Level for this chemical due to lack of toxicity information for inhalation exposure pathway.
µg/$m^3$ = micrograms per cubic meter
MRL = Method Reporting Limit
ND = Not detected above method reporting limit
JA = Analytical result considered estimated because canister received by laboratory at ambient pressure
JD = Results qualified as estimated due to RPD between primary and duplicate sample not meeting criteria.

**Table 3: VI Assessment Petroleum Analytical Results - Boundary Vicinity November 2015 - May 2017**
**June 2017 Data Summary Report**
**314 Wendell Avenue Site**

| Building | Location | Sample ID | Date Measured | Sample Type | Matrix | TPH-Gasoline (µg/m3) | | | Benzene (µg/m3) | | | Toluene (µg/m3) | | | Ethylbenzene (µg/m3) | | | Xylenes (total) (µg/m3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag | Result | MRL | Dataflag |
| | | | | | | | | | | | | | | | | | | | | |
| Midnight Basement | IA-12 | 16-WAS-029-IA | 11/3/2016 | Primary | Indoor Air | 910 | 130 | JA,JN | | | | | | | | | | | | |
| | | 16-WAS-030-IA | 11/3/2016 | Duplicate | Indoor Air | 790 | 190 | JN | | | | | | | | | | | | |
| | | 17-WAS-002-IA | 5/10/2017 | Primary | Indoor Air | 390 | 210 | JN, JD | | | | | | | | | | | | |
| | | 17-WAS-003-IA | 5/10/2017 | Duplicate | Indoor Air | 240 | 180 | JN, JD | | | | | | | | | | | | |
| Midnight Upstairs | IA-13 | 16-WAS-031-IA | 11/3/2016 | Primary | Indoor Air | 680 | 160 | JN | | | | | | | | | | | | |
| | | 17-WAS-001-IA | 5/10/2017 | Primary | Indoor Air | 810 | 140 | JN | | | | | | | | | | | | |
| **ADEC Target Levels for Commercial Indoor Air** | | | | | | | | | **16** | | | **21,900 - 7,500** | | | **49** | | | **440** | | |
| | | | | | | | | | | | | | | | | | | | | |
| Midnight Mine | SS-8 | 16-WAS-028-SS | 11/3/2016 | Primary | Sub-Slab Soil Gas | 230 | 170 | JN | | 0.55 | ND | 1.8 | 0.64 | | | 0.74 | ND | 1.7 | 1.48 | |
| | | 17-WAS-003-SS | 5/10/2017 | Primary | Sub-Slab Soil Gas | | 200 | ND | | 0.63 | ND | | 0.75 | ND | | 0.86 | ND | | 1.72 | ND |
| | SS-9 | 16-WAS-027-SS | 11/2/2016 | Primary | Sub-Slab Soil Gas | 2800 | 190 | JN | | 1.2 | ND | 2.3 | 1.4 | | | 1.6 | ND | 2.2 | 3.2 | |
| | | 17-WAS-001-SS | 5/9/2017 | Primary | Sub-Slab Soil Gas | | 220 | ND | 1.1 | 0.68 | | 7.5 | 0.81 | | 2.4 | 0.93 | | 19 | 1.86 | |
| | SS-10 | 16-WAS-026-SS | 11/2/2016 | Primary | Sub-Slab Soil Gas | 650 | 140 | JA,JN | 2.5 | 0.55 | JA | 19 | 0.64 | JA | 1.9 | 0.74 | JA | 8.1 | 1.48 | JA |
| | | 17-WAS-002-SS | 5/9/2017 | Primary | Sub-Slab Soil Gas | 790 | 200 | JN | | 0.61 | ND | 1.2 | 0.72 | | | 0.83 | ND | 1.8 | 1.66 | |
| **ADEC Target Levels for Commercial Sub-Slab Soil Gas** | | | | | | | | | **160** | | | **220,000** | | | **490 - 94** | | | **4,400** | | |
| | SG-20 | 15-WAS-011-SG | 11/6/2015 | Primary | Deep Soil Gas | | | | | | | | | | | | | | | |
| | | 15-WAS-012-SG | 11/6/2015 | Duplicate | Deep Soil Gas | | | | | | | | | | | | | | | |
| | SG-21 | 15-WAS-013-SG | 11/6/2015 | Primary | Deep Soil Gas | | | | | | | | | | | | | | | |
| | SG-22 | 16-WAS-015-SG | 3/22/2016 | Primary | Deep Soil Gas | | | | | | | | | | | | | | | |
| | SG-23 | 15-WAS-010-SG | 11/6/2015 | Primary | Deep Soil Gas | | | | | | | | | | | | | | | |
| Midnight Mine | SG-24 | 16-WAS-014-SG | 3/22/2016 | Primary | Deep Soil Gas | | | | | | | | | | | | | | | |
| | | 16-WAS-025-SG | 11/2/2016 | Primary | Deep Soil Gas | 560 | 160 | JN | | 2.4 | ND | | 2.9 | ND | | 3.3 | ND | | 6.6 | ND |
| **ADEC Target Levels for Commercial Deep Soil Gas** | | | | | | | | | **1,600** | | | **2,200,000** | | | **4,900** | | | **44,000** | | |
| | | | | | | | | | | | | | | | | | | | | |

Notes:
Bold/shaded values indicate exceedance of ADEC Target Levels
All samples were collected with Summa™ Canisters
µg/$m^3$ = micrograms per cubic meter
MRL = Method Reporting Limit
ND = Not detected above method reporting limit
JA = Analytical result considered estimated because canister received by laboratory at ambient pressure
JD = Results qualified as estimated due to RPD between primary and duplicate sample not meeting criteria.
JN = Results for TPH-Gasoline qualified as estimated due to uncertain identification that did not represent commercial gasoline.

**TABLE 4: COMPREHENSIVE CHLORINATED ETHENE RESULTS 2008-2017**
**Groundwater and Chena River Monitoring**
**314 Wendell Avenue Site**

| | | | | | | | Chemical Name | Tetrachloroethene | | | Trichloroethene | | | cis-1,2-Dichloroethene | | | trans-1,2-Dichloroethene | | | Vinyl Chloride | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | ADEC Cleanup Levels for Groundwater | 41 | | | 2.8 | | | 36 | | | 360 | | | 0.19 | | |
| | | | | | | | Units | µg/L | | | µg/L | | | µg/L | | | µg/L | | | µg/L | | |
| Area | Location | Date Measured | Sample ID | Sample Type | Sample QC Type | Lab Name | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags |
| Northeast Delineation | MW-1 | 10/9/2008 | 08WAS389GW | Groundwater | Primary | Onsite | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-1 | 10/20/2009 | 09WAS208GW | Groundwater | Primary | Onsite | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-1 | 4/19/2010 | 10WAS129GW | Groundwater | Primary | Onsite | 0.39 | | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-1 | 6/22/2010 | 10WAS183GW | Groundwater | Primary | Onsite | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-1 | 3/27/2012 | 12-WAS-083-GW | Groundwater | Primary | Onsite | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-1 | 6/5/2012 | 12-WAS-098-GW | Groundwater | Primary | Onsite | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | PP-3 | 10/9/2008 | 08WAS388GW | Groundwater | Primary | Onsite | 0.89 | | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| Upgradient | MW-5 | 10/18/2008 | 08WAS429GW | Groundwater | Primary | Onsite | 31 | | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-5 | 10/18/2009 | 09WAS198GW | Groundwater | Primary | Onsite | 27 | | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-5 | 5/11/2010 | 10WAS165GW | Groundwater | Primary | Onsite | 10 | | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-5 | 6/22/2010 | 10WAS184GW | Groundwater | Primary | Onsite | 11 | | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-5 | 10/20/2010 | 10WAS-216-GW | Groundwater | Primary | Onsite | 28 | 0.2 | | | 0.2 | ND | | 0.2 | ND | | 0.2 | ND | | **0.2** | **ND** |
| | MW-5 | 3/27/2012 | 12-WAS-087-GW | Groundwater | Primary | Onsite | 9.6 | 0.20 | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-5 | 6/5/2012 | 12-WAS-104-GW | Groundwater | Primary | Onsite | 6.8 | 0.20 | | 0.29 | 0.20 | | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | PP-2 | 10/10/2008 | 08WAS400GW | Groundwater | Primary | Onsite | 21 | | | 0.65 | | | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | PP-2 | 10/20/2009 | 09WAS209GW | Groundwater | Primary | Onsite | 22 | | | 0.72 | | | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| Source Area | MW-6S | 10/18/2008 | 10WAS430GW | Groundwater | Primary | Onsite | **1200** | | | **77** | | | **150** | | | 26 | | | | **10** | **ND** |
| | MW-6S | 10/20/2009 | 09WAS210GW | Groundwater | Primary | Onsite | **630** | | | **100** | | | **220** | | | 31 | | | | **4.0** | **ND** |
| | MW-6S | 5/11/2010 | 10WAS164GW | Groundwater | Primary | Onsite | **200** | | | **30** | | | **160** | | | 39 | | | | **1.0** | **ND** |
| | MW-6S | 6/22/2010 | 10WAS189GW | Groundwater | Primary | Onsite | **240** | | | **20** | | | **96** | | | 18 | | | | **1.0** | **ND** |
| | MW-6S | 5/6/2011 | 11-WAS-044-GW | Groundwater | Primary | Onsite | **96** | **1** | | **12** | **1** | | **50** | **1** | | 18 | 1 | | | **1** | **ND** |
| | MW-6S | 3/28/2012 | 12-WAS-090-GW | Groundwater | Primary | Onsite | **150** | **1.0** | | **56** | **1.0** | | **180** | **1.0** | | 57 | 1.0 | | | **1.0** | **ND** |
| | MW-6S | 6/5/2012 | 12-WAS-105-GW | Groundwater | Primary | Onsite | **85** | **0.40** | | **13** | **0.40** | | 31 | 0.40 | | 64 | 0.40 | | | **0.40** | **ND** |
| | MW-6S | 3/29/2017 | 17-MW6S-002-GW | Groundwater | Primary | SGS | **56.6** | **0.500** | | **52.3** | **0.500** | | **197** | **0.500** | | 51.8 | 0.500 | | | 0.0750 | ND |
| | MW-6M | 3/26/2013 | 13-WAS-021-GW | Groundwater | Primary | Onsite | 2.3 | 0.20 | | 0.22 | 0.20 | | | 0.20 | ND | 0.46 | 0.20 | | | **0.20** | **ND** |
| | MW-6M | 5/16/2013 | 13-WAS-030-GW | Groundwater | Primary | Onsite | | 1.0 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-7 | 10/18/2008 | 08WAS432GW | Groundwater | Primary | Onsite | **390** | | | **14** | | | 34 | | | | 2.0 | ND | | **2.0** | **ND** |
| | MW-7 | 10/20/2009 | 09WAS214GW | Groundwater | Primary | Onsite | **360** | | | **8.8** | | | 14 | | | | 2.0 | ND | | **2.0** | **ND** |
| | MW-7 | 4/20/2010 | 10WAS133GW | Groundwater | Primary | Onsite | **350** | | | **14** | | | **42** | | | | 2.0 | ND | | **2.0** | **ND** |
| | MW-7 | 5/22/2010 | 10WAS188GW | Groundwater | Primary | Onsite | **320** | | | **14** | | | 25 | | | | 2.0 | ND | | **2.0** | **ND** |
| | MW-7 | 3/29/2017 | 17-MW7-001-GW | Groundwater | Primary | SGS | 3.45 | 0.500 | | 1.49 | 0.500 | | 11.1 | 0.500 | | | 0.500 | ND | | 0.0750 | ND |
| | MW-8S | 10/18/2008 | 08WAS433GW | Groundwater | Primary | Onsite | **13000** | | | **150** | | | **200** | | | | 60 | ND | | **60** | **ND** |
| | MW-8S | 10/20/2009 | 09WAS212GW | Groundwater | Primary | Onsite | **3700** | | | **230** | | | **420** | | | | 20 | ND | | **20** | **ND** |
| | MW-8S | 4/20/2010 | 10WAS132GW | Groundwater | Primary | Onsite | **8900** | | | **280** | | | **340** | | | | 50 | ND | | **50** | **ND** |
| | MW-8S | 6/22/2010 | 10WAS186GW | Groundwater | Primary | Onsite | **3400** | | | **200** | | | **580** | | | | 20 | ND | | **20** | **ND** |
| | MW-8S | 10/20/2010 | 10WAS-213-GW | Groundwater | Primary | Onsite | **10000** | **50** | | **610** | **50** | | **590** | **50** | | | 50 | ND | | **50** | **ND** |
| | MW-8S | 5/6/2011 | 11-WAS-042-GW | Groundwater | Primary | Onsite | **6900** | **50** | | **400** | **50** | | **800** | **50** | | | 50 | ND | | **50** | **ND** |
| | MW-8S | 3/28/2012 | 12-WAS-091-GW | Groundwater | Primary | Onsite | **2600** | **20** | | **320** | **20** | | **230** | **20** | | | 20 | ND | | **20** | **ND** |
| | MW-8S | 6/5/2012 | 12-WAS-106-GW | Groundwater | Primary | Onsite | **550** | **10** | | **41** | **0.40** | | **66** | **0.40** | | 6.4 | 0.40 | | | **0.40** | **ND** |
| | MW-8S | 8/14/2012 | 12-WAS-125-GW | Groundwater | Primary | Microseeps | **1500** | **50** | | **120** | **5** | | **290** | **50** | | | | | | | |
| | MW-8S | 8/14/2012 | 12-WAS-125-GW | Groundwater | Primary | Onsite | **1400** | **10** | **J** | **130** | **10** | **J** | **240** | **10** | **J** | 11 | 10 | J | | **10** | **ND,J** |
| | MW-8SR | 3/25/2013 | 13-WAS-015-GW | Groundwater | Primary | Onsite | **1100** | **10** | | **140** | **10** | | **260** | **10** | | 10 | 10 | | | **10** | **ND** |
| | MW-8SR | 5/16/2013 | 13-WAS-027-GW | Groundwater | Primary | Onsite | **760** | **20** | | **90** | **4.0** | | **230** | **4.0** | | 7.8 | 4.0 | | | **4.0** | **ND** |
| | MW-8SR | 3/26/2014 | 14-WAS-039-GW | Groundwater | Primary | Pace | **902** | **10.0** | | **213** | **4.0** | | **304** | **10.0** | | 6.4 | 1.0 | | | **0.40** | **ND** |
| | MW-8SR | 3/26/2014 | 14-WAS-040-GW | Groundwater | Duplicate | Pace | **887** | **10.0** | | **205** | **4.0** | | **294** | **10.0** | | 7.0 | 1.0 | | | **0.40** | **ND** |
| | MW-8SR | 3/29/2017 | 17-MW8SR-003-GW | Groundwater | Primary | SGS | **412** | **10.0** | | **96.3** | **0.500** | **JM** | **112** | **0.500** | **JM** | 3.40 | 0.500 | | | 0.0750 | ND |
| | MW-8SR | 3/29/2017 | 17-MWX-006-GW | Groundwater | Duplicate | SGS | **421** | **10.0** | | **99.0** | **0.500** | **JM** | **117** | **0.500** | **JM** | 3.30 | 0.500 | | | 0.0750 | ND |
| | MW-8M | 3/25/2013 | 13-WAS-016-GW | Groundwater | Primary | Onsite | 1.0 | 0.20 | JD | 0.26 | 0.20 | | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-8M | 3/25/2013 | 13-WAS-017-GW | Groundwater | Duplicate | Onsite | 1.5 | 0.20 | JD | 0.29 | 0.20 | | 0.26 | 0.20 | | | 0.20 | ND | | **0.20** | **ND** |
| | MW-8M | 5/16/2013 | 13-WAS-028-GW | Groundwater | Primary | Onsite | | 1.0 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-8M | 5/16/2013 | 13-WAS-029-GW | Groundwater | Duplicate | Onsite | 1.1 | 1.0 | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-8D | 6/22/2010 | 10WAS187GW | Groundwater | Primary | Onsite | 5.9 | | | | 0.20 | ND | 0.5 | | | | 0.20 | ND | | **0.20** | **ND** |
| | MW-8D | 10/20/2010 | 10WAS-214-GW | Groundwater | Primary | Onsite | 0.23 | 0.2 | | | 0.2 | ND | | 0.2 | ND | | 0.2 | ND | | **0.2** | **ND** |
| | MW-8D | 10/20/2010 | 10WAS-215-GW | Groundwater | Duplicate | Onsite | 0.24 | 0.2 | | | 0.2 | ND | | 0.2 | ND | | 0.2 | ND | | **0.2** | **ND** |
| | MW-8D | 5/6/2011 | 11-WAS-043-GW | Groundwater | Primary | Onsite | | 0.2 | ND | | 0.2 | ND | | 0.2 | ND | | 0.2 | ND | | **0.2** | **ND** |

**TABLE 4: COMPREHENSIVE CHLORINATED ETHENE RESULTS 2008-2017**
**Groundwater and Chena River Monitoring**
**314 Wendell Avenue Site**

| | | | | | | | Chemical Name | Tetrachloroethene | | | Trichloroethene | | | cis-1,2-Dichloroethene | | | trans-1,2-Dichloroethene | | | Vinyl Chloride | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | ADEC Cleanup Levels for Groundwater | 41 | | | 2.8 | | | 36 | | | 360 | | | 0.19 | | |
| | | | | | | | Units | µg/L | | | µg/L | | | µg/L | | | µg/L | | | µg/L | | |
| Area | Location | Date Measured | Sample ID | Sample Type | Sample QC Type | Lab Name | | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags |
| Source Area | MW-9S | 10/18/2008 | 08WAS434GW | Groundwater | Primary | Onsite | | 1.7 | | | **5** | | | 19 | | | 3.4 | | | | **0.20** | **ND** |
| | MW-9S | 10/18/2009 | 09WAS196GW | Groundwater | Primary | Onsite | | 1.2 | | | **4.7** | | | 25 | | | 4.6 | | | | **0.20** | **ND** |
| | MW-9S | 10/20/2010 | 10WAS-212-GW | Groundwater | Primary | Onsite | | 1.2 | 0.2 | | **4.3** | **0.2** | | 19 | 0.2 | | 6.8 | 0.2 | | | **0.2** | **ND** |
| | MW-9S | 5/5/2011 | 11-WAS-038-GW | Groundwater | Primary | Onsite | | 1.4 | 0.2 | | 2.4 | 0.2 | | 19 | 0.2 | | 8.9 | 0.2 | | | **0.2** | **ND** |
| | MW-9M | 10/18/2008 | 08WAS435GW | Groundwater | Primary | Onsite | | **92** | | | **63** | | | 19 | | | 4.7 | | | | **0.40** | **ND** |
| | MW-9M | 10/18/2009 | 09WAS197GW | Groundwater | Primary | Onsite | | **66** | | | **59** | | | 15 | | | 3.7 | | | | **0.40** | **ND** |
| | MW-9M | 4/19/2010 | 10WAS128GW | Groundwater | Primary | Onsite | | **140** | | | **63** | | | 22 | | | 3.9 | | | | **1.0** | **ND** |
| | MW-9M | 6/22/2010 | 10WAS182GW | Groundwater | Primary | Onsite | | 20 | | | **150** | | | 29 | | | 5.2 | | | | **1.0** | **ND** |
| | MW-9M | 10/20/2010 | 10WAS-210-GW | Groundwater | Primary | Onsite | | 30 | 0.2 | | **49** | **0.2** | | 16 | 0.2 | | 4.5 | 0.2 | | | **0.2** | **ND** |
| | MW-9M | 10/20/2010 | 10WAS-211-GW | Groundwater | Duplicate | Onsite | | 30 | 0.2 | | **49** | **0.2** | | 16 | 0.2 | | 4.3 | 0.2 | | | **0.2** | **ND** |
| | MW-9M | 4/6/2011 | 11-WAS-025-GW | Groundwater | Primary | Onsite | | **63** | **0.4** | | **69** | **0.4** | | 16 | 0.4 | | 3.2 | 0.4 | | | **0.4** | **ND** |
| | MW-9M | 4/6/2011 | 11-WAS-026-GW | Groundwater | Duplicate | Onsite | | **64** | **0.4** | | **69** | **0.4** | | 16 | 0.4 | | 3.1 | 0.4 | | | **0.4** | **ND** |
| | MW-9M | 5/5/2011 | 11-WAS-037-GW | Groundwater | Primary | Onsite | | 3.4 | 0.2 | | **43** | **0.2** | | 11 | 0.2 | | 2.3 | 0.2 | | | **0.2** | **ND** |
| | MW-9M | 3/28/2012 | 12-WAS-089-GW | Groundwater | Primary | Onsite | | **52** | **0.40** | | **76** | **0.40** | | 21 | 0.40 | | 3.3 | 0.40 | | | **0.40** | **ND** |
| | MW-9M | 3/28/2012 | 12-WAS-093-GW | Groundwater | Duplicate | Onsite | | **55** | **0.40** | | **76** | **0.40** | | 22 | 0.40 | | 3.2 | 0.40 | | | **0.40** | **ND** |
| | MW-9M | 6/5/2012 | 12-WAS-103-GW | Groundwater | Primary | Onsite | | 0.78 | 0.40 | | **83** | **0.40** | | 33 | 0.40 | | 4.4 | 0.40 | | | **0.40** | **ND** |
| | MW-9M | 6/5/2012 | 12-WAS-108-GW | Groundwater | Duplicate | Onsite | | 1.3 | 0.40 | JD | **83** | **0.40** | | 34 | 0.40 | | 4.5 | 0.40 | | | **0.40** | **ND** |
| | MW-9M | 8/14/2012 | 12-WAS-123-GW | Groundwater | Primary | Microseeps | | **61** | **5** | | **45** | **5** | | 25 | 5 | | | | | | | |
| | MW-9M | 8/14/2012 | 12-WAS-123-GW | Groundwater | Primary | Onsite | | **56** | **0.40** | **J** | **51** | **0.40** | **J** | 19 | 0.40 | J | 3.1 | 0.40 | J | | **0.40** | **ND,J** |
| | MW-9M | 1/14/2013 | 13-WAS-002-GW | Groundwater | Primary | Microseeps | | **80** | **5** | | **110** | **5** | | **52** | **5** | | | | | | | |
| | MW-9M | 3/26/2013 | 13-WAS-019-GW | Groundwater | Primary | Microseeps | | 14 | 5 | | **50** | **5** | | **51** | **5** | | | | | | | |
| | MW-9M | 3/26/2013 | 13-WAS-019-GW | Groundwater | Primary | Onsite | | 13 | 0.40 | | **48** | **0.40** | | **41** | **0.40** | | 3.3 | 0.40 | | | **0.40** | **ND** |
| | MW-9M | 5/15/2013 | 13-WAS-025-GW | Groundwater | Primary | Onsite | | 6.1 | 2.0 | | **20** | **0.40** | | **43** | **0.40** | | 3.6 | 0.40 | | | **0.40** | **ND** |
| | MW-9M | 3/26/2014 | 14-WAS-037-GW | Groundwater | Primary | Pace | | 31.1 | 1.0 | | **38.4** | **0.40** | | 18.6 | 1.0 | | 2.8 | 1.0 | | | **0.40** | **ND** |
| | MW-9M | 3/29/2017 | 17-MW9M-004-GW | Groundwater | Primary | SGS | | 6.76 | 0.500 | | **13.0** | **0.500** | | 21.0 | 0.500 | | 3.16 | 0.500 | | | 0.0750 | ND |
| | MW-13M | 3/26/2013 | 13-WAS-020-GW | Groundwater | Primary | Onsite | | 0.47 | 0.20 | | 0.51 | 0.20 | | 0.24 | 0.20 | | | 0.20 | ND | | **0.20** | **ND** |
| | MW-13M | 5/15/2013 | 13-WAS-026-GW | Groundwater | Primary | Onsite | | | 1.0 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-13M | 3/26/2014 | 14-WAS-038-GW | Groundwater | Primary | Pace | | | 1.0 | ND | 0.59 | 0.40 | | | 1.0 | ND | | 1.0 | ND | | **0.40** | **ND** |
| | PP-1 | 10/5/2008 | 08WAS336GW | Groundwater | Primary | Onsite | | **560** | | | **74** | | | **560** | | | 82 | | | | **4.0** | **ND** |
| | PP-5 | 10/10/2008 | 08WAS401GW | Groundwater | Primary | Onsite | | 24 | | | 2.4 | | | 2.4 | | | 0.57 | | | | **0.20** | **ND** |
| | PP-5 | 10/20/2009 | 09WAS213GW | Groundwater | Primary | Onsite | | 38 | | | **4.5** | | | 5 | | | 0.99 | | | | **0.20** | **ND** |
| | PP-5 | 4/20/2010 | 10WAS130GW | Groundwater | Primary | Onsite | | 39 | | | **4.7** | | | 5.2 | | | 1.1 | | | | **0.20** | **ND** |
| | PP-5 | 6/22/2010 | 10WAS185GW | Groundwater | Primary | Onsite | | **61** | | | **10** | | | 11 | | | 2.2 | | | | **0.20** | **ND** |
| | PP-5 | 4/6/2011 | 11-WAS-027-GW | Groundwater | Primary | Onsite | | **46** | **0.2** | | **7.6** | **0.2** | | 7.9 | 0.2 | | 2 | 0.2 | | | **0.2** | **ND** |
| Dissolved Phase Plume | MW-4S | 10/18/2008 | 08WAS437GW | Groundwater | Primary | Onsite | | 1 | | | **61** | | | 19 | | | 11 | | | | **0.40** | **ND** |
| | MW-4S | 10/19/2009 | 09WAS203GW | Groundwater | Primary | Onsite | | 0.72 | | | **53** | | | 17 | | | 9.9 | | | | **0.40** | **ND** |
| | MW-4S | 4/19/2010 | 10WAS123GW | Groundwater | Primary | Onsite | | 0.81 | | | **49** | | | 21 | | | 12 | | | | **0.40** | **ND** |
| | MW-4S | 4/19/2010 | 10WAS124GW | Groundwater | Duplicate | Onsite | | 0.78 | | | **48** | | | 21 | | | 12 | | | | **0.40** | **ND** |
| | MW-4S | 6/21/2010 | 10WAS174GW | Groundwater | Primary | Onsite | | | 0.20 | ND | **9.3** | | | 22 | | | 19 | | | | **0.20** | **ND** |
| | MW-4S | 10/19/2010 | 10WAS-202-GW | Groundwater | Primary | Onsite | | 1.4 | 0.2 | | **32** | **0.2** | | 15 | 0.2 | | 12 | 0.2 | | | **0.2** | **ND** |
| | MW-4S | 4/6/2011 | 11-WAS-023-GW | Groundwater | Primary | Onsite | | 0.69 | 0.2 | | **37** | **0.2** | | 16 | 0.2 | | 12 | 0.2 | | | **0.2** | **ND** |
| | MW-4S | 5/6/2011 | 11-WAS-035-GW | Groundwater | Primary | Onsite | | | 0.2 | ND | **7.9** | **0.2** | | 14 | 0.2 | | 13 | 0.2 | | | **0.2** | **ND** |
| | MW-4S | 3/30/2017 | 17-MW4S-008-GW | Groundwater | Primary | SGS | | | 0.500 | ND | 1.79 | 0.500 | | 26.4 | 0.500 | | 9.32 | 0.500 | | | 0.0750 | ND |
| | MW-4M | 10/18/2008 | 08WAS438GW | Groundwater | Primary | Onsite | | 2 | | | **69** | | | 12 | | | 4.9 | | | | **0.40** | **ND** |
| | MW-4M | 10/19/2009 | 09WAS205GW | Groundwater | Primary | Onsite | | 1.7 | | | **60** | | | 10 | | | 4.2 | | | | **0.40** | **ND** |
| | MW-4M | 4/19/2010 | 10WAS122GW | Groundwater | Primary | Onsite | | 4.3 | | | **55** | | | 13 | | | 5 | | | | **0.40** | **ND** |
| | MW-4M | 6/21/2010 | 10WAS175GW | Groundwater | Primary | Onsite | | 2.1 | | | **58** | | | 19 | | | 5.9 | | | | **0.20** | **ND** |
| | MW-4M | 10/19/2010 | 10WAS-203-GW | Groundwater | Primary | Onsite | | 3.9 | 0.2 | | **39** | **0.2** | | 7.4 | 0.2 | | 3.6 | 0.2 | | | **0.2** | **ND** |
| | MW-4M | 4/6/2011 | 11-WAS-022-GW | Groundwater | Primary | Onsite | | 3 | 0.2 | | **40** | **0.2** | | 9 | 0.2 | | 4 | 0.2 | | | **0.2** | **ND** |
| | MW-4M | 5/6/2011 | 11-WAS-041-GW | Groundwater | Primary | Onsite | | 1.7 | 0.2 | | **43** | **0.2** | | 13 | 0.2 | | 5.2 | 0.2 | | | **0.2** | **ND** |
| | MW-4M | 3/27/2012 | 12-WAS-085-GW | Groundwater | Primary | Onsite | | 2.5 | 0.20 | | **44** | **0.20** | | 14 | 0.20 | | 4.3 | 0.20 | | | **0.20** | **ND** |
| | MW-4M | 6/5/2012 | 12-WAS-101-GW | Groundwater | Primary | Onsite | | | 0.20 | ND | **39** | **0.20** | | 31 | 0.20 | | 8.9 | 0.20 | | | **0.20** | **ND** |
| | MW-4M | 8/14/2012 | 12-WAS-117-GW | Groundwater | Primary | Microseeps | | 0.7 | 5 | J | **35** | **5** | | 19 | 5 | | | | | | | |
| | MW-4M | 8/14/2012 | 12-WAS-117-GW | Groundwater | Primary | Onsite | | 0.60 | 0.20 | J | **40** | **0.20** | **J** | 14 | 0.20 | J | 4.0 | 0.20 | J | | **0.20** | **ND,J** |
| | MW-4M | 3/25/2013 | 13-WAS-013-GW | Groundwater | Primary | Onsite | | 1.0 | 0.20 | | **35** | **0.20** | | 23 | 0.20 | | 5.3 | 0.20 | | | **0.20** | **ND** |
| | MW-4M | 5/15/2013 | 13-WAS-023-GW | Groundwater | Primary | Onsite | | | 1.0 | ND | **17** | **0.20** | | 21 | 0.20 | | 4.5 | 0.20 | | | **0.20** | **ND** |
| | MW-4M | 3/26/2014 | 14-WAS-035-GW | Groundwater | Primary | Pace | | | 1.0 | ND | **11.8** | **0.40** | | 20.5 | 1.0 | | 7.2 | 1.0 | | | **0.40** | **ND** |
| | MW-4M | 3/30/2017 | 17-MW4M-007-GW | Groundwater | Primary | SGS | | | 0.500 | ND | **3.47** | **0.500** | | 21.0 | 0.500 | | 9.14 | 0.500 | | | 0.0750 | ND |

**TABLE 4: COMPREHENSIVE CHLORINATED ETHENE RESULTS 2008-2017**
**Groundwater and Chena River Monitoring**
**314 Wendell Avenue Site**

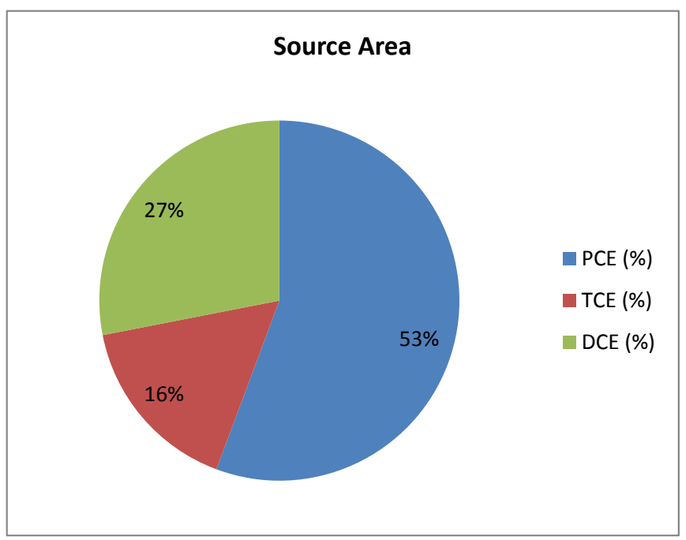
| | | | | | | | Chemical Name | Tetrachloroethene | | | Trichloroethene | | | cis-1,2-Dichloroethene | | | trans-1,2-Dichloroethene | | | Vinyl Chloride | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | ADEC Cleanup Levels for Groundwater | 41 | | | 2.8 | | | 36 | | | 360 | | | 0.19 | | |
| | | | | | | | Units | µg/L | | | µg/L | | | µg/L | | | µg/L | | | µg/L | | |
| Area | Location | Date Measured | Sample ID | Sample Type | Sample QC Type | Lab Name | | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags |
| Dissolved Phase Plume | MW-4D | 6/21/2010 | 10WAS173GW | Groundwater | Primary | Onsite | | 1.3 | | | **12** | | | 4.9 | | | 2.6 | | | | **0.20** | **ND** |
| | MW-4D | 10/19/2010 | 10WAS-204-GW | Groundwater | Primary | Onsite | | 2.4 | 0.2 | | **7.9** | **0.2** | | 2.1 | 0.2 | | 1.2 | 0.2 | | | **0.2** | **ND** |
| | MW-4D | 4/5/2011 | 11-WAS-021-GW | Groundwater | Primary | Onsite | | 2.5 | 0.2 | | **13** | **0.2** | | 4.1 | 0.2 | | 2.5 | 0.2 | | | **0.2** | **ND** |
| | MW-4D | 5/5/2011 | 11-WAS-031-GW | Groundwater | Primary | Onsite | | 0.41 | 0.2 | | **3.8** | **0.2** | | 1.9 | 0.2 | | 0.66 | 0.2 | | | **0.2** | **ND** |
| | MW-12S | 10/19/2009 | 09WAS201GW | Groundwater | Primary | Onsite | | 0.23 | | | 0.64 | | | 0.72 | | | 0.33 | | | | **0.20** | **ND** |
| | MW-12S | 4/19/2010 | 10WAS125GW | Groundwater | Primary | Onsite | | 0.22 | | | 0.96 | | | 1.3 | | | 0.96 | | | | **0.20** | **ND** |
| | MW-12S | 6/22/2010 | 10WAS181GW | Groundwater | Primary | Onsite | | | 0.20 | ND | 2.3 | | | 7 | | | 3.5 | | | | **0.20** | **ND** |
| | MW-12S | 10/20/2010 | 10WAS-208-GW | Groundwater | Primary | Onsite | | 0.24 | 0.2 | | 0.81 | 0.2 | | 0.63 | 0.2 | | 0.64 | 0.2 | | | **0.2** | **ND** |
| | MW-12S | 5/5/2011 | 11-WAS-032-GW | Groundwater | Primary | Onsite | | 0.21 | 0.2 | | **3.3** | **0.2** | | 5.7 | 0.2 | | 4.3 | 0.2 | | | **0.2** | **ND** |
| | MW-12M | 10/19/2009 | 09WAS200GW | Groundwater | Primary | Onsite | | 6.2 | | | **58** | | | 7.5 | | | 3.1 | | | | **0.40** | **ND** |
| | MW-12M | 4/19/2010 | 10WAS126GW | Groundwater | Primary | Onsite | | 20 | | | **34** | | | 8.9 | | | 2.2 | | | | **0.20** | **ND** |
| | MW-12M | 6/22/2010 | 10WAS180GW | Groundwater | Primary | Onsite | | 5.5 | | | **60** | | | 13 | | | 3.7 | | | | **0.20** | **ND** |
| | MW-12M | 10/20/2010 | 10WAS-207-GW | Groundwater | Primary | Onsite | | 4.4 | 0.2 | | **31** | **0.2** | | 4.7 | 0.2 | | 2 | 0.2 | | | **0.2** | **ND** |
| | MW-12M | 4/6/2011 | 11-WAS-024-GW | Groundwater | Primary | Onsite | | 7.7 | 0.2 | | **33** | **0.2** | | 6.1 | 0.2 | | 2.2 | 0.2 | | | **0.2** | **ND** |
| | MW-12M | 5/5/2011 | 11-WAS-033-GW | Groundwater | Primary | Onsite | | 10 | 0.2 | | **24** | **0.2** | | 5.2 | 0.2 | | 1.7 | 0.2 | | | **0.2** | **ND** |
| | MW-12M | 5/5/2011 | 11-WAS-034-GW | Groundwater | Duplicate | Onsite | | 11 | 0.2 | | **24** | **0.2** | | 5.2 | 0.2 | | 1.8 | 0.2 | | | **0.2** | **ND** |
| | MW-12M | 3/28/2012 | 12-WAS-088-GW | Groundwater | Primary | Onsite | | 7.8 | 0.20 | | **39** | **0.20** | | 9.1 | 0.20 | | 2.4 | 0.20 | | | **0.20** | **ND** |
| | MW-12M | 3/28/2012 | 12-WAS-092-GW | Groundwater | Duplicate | Onsite | | 6.9 | 0.20 | | **39** | **0.20** | | 9.1 | 0.20 | | 2.2 | 0.20 | | | **0.20** | **ND** |
| | MW-12M | 6/5/2012 | 12-WAS-102-GW | Groundwater | Primary | Onsite | | 1.5 | 0.40 | | **52** | **0.40** | | 21 | 0.40 | | 4.8 | 0.40 | | | **0.40** | **ND** |
| | MW-12M | 6/5/2012 | 12-WAS-107-GW | Groundwater | Duplicate | Onsite | | 2.1 | 0.40 | JD | **51** | **0.40** | | 22 | 0.40 | | 4.8 | 0.40 | | | **0.40** | **ND** |
| | MW-12M | 8/14/2012 | 12-WAS-119-GW | Groundwater | Primary | Microseeps | | 4.8 | 5 | J | **34** | **5** | | 14 | 5 | | | | | | | |
| | MW-12M | 8/14/2012 | 12-WAS-119-GW | Groundwater | Primary | Onsite | | 4.8 | 0.20 | J | **42** | **0.20** | **J** | 12 | 0.20 | J | 2.8 | 0.20 | J | | **0.20** | **ND,J** |
| | MW-12M | 8/14/2012 | 12-WAS-120-GW | Groundwater | Duplicate | Onsite | | 4.5 | 0.20 | J | **39** | **0.20** | **J** | 11 | 0.20 | J | 2.4 | 0.20 | J | | **0.20** | **ND,J** |
| | MW-12M | 3/25/2013 | 13-WAS-014-GW | Groundwater | Primary | Onsite | | 9.2 | 0.20 | | **31** | **0.20** | | 12 | 0.20 | | 2.5 | 0.20 | | | **0.20** | **ND** |
| | MW-12M | 5/15/2013 | 13-WAS-024-GW | Groundwater | Primary | Onsite | | 11 | 1.0 | | **23** | **0.20** | | 8.5 | 0.20 | | 1.7 | 0.20 | | | **0.20** | **ND** |
| | MW-12M | 3/26/2014 | 14-WAS-036-GW | Groundwater | Primary | Pace | | 7.4 | 1.0 | | **16.8** | **0.40** | | 4.9 | 1.0 | | 1.5 | 1.0 | | | **0.40** | **ND** |
| | MW-12M | 3/29/2017 | 17-MW12M-005-GW | Groundwater | Primary | SGS | | 1.48 | 0.500 | | **12.3** | **0.500** | | 10.9 | 0.500 | | 1.90 | 0.500 | | | 0.0750 | ND |
| | MW-12D | 10/19/2009 | 09WAS202GW | Groundwater | Primary | Onsite | | 0.98 | | | 1.7 | | | 0.31 | | | | 0.20 | ND | | **0.20** | **ND** |
| | MW-12D | 4/19/2010 | 10WAS127GW | Groundwater | Primary | Onsite | | 0.85 | | | 0.38 | | | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | MW-12D | 6/21/2010 | 10WAS178GW | Groundwater | Primary | Onsite | | 0.73 | | | 0.89 | | | 0.28 | | | | 0.20 | ND | | **0.20** | **ND** |
| | MW-12D | 6/21/2010 | 10WAS179GW | Groundwater | Duplicate | Onsite | | 0.78 | | | 0.82 | | | 0.24 | | | | 0.20 | ND | | **0.20** | **ND** |
| | MW-12D | 10/20/2010 | 10WAS-209-GW | Groundwater | Primary | Onsite | | 0.45 | 0.2 | | 0.26 | 0.2 | | | 0.2 | ND | | 0.2 | ND | | **0.2** | **ND** |
| | MW-12D | 5/6/2011 | 11-WAS-039-GW | Groundwater | Primary | Onsite | | 1 | 0.2 | | 0.92 | 0.2 | | 0.27 | 0.2 | | | 0.2 | ND | | **0.2** | **ND** |
| | MW-12D | 5/6/2011 | 11-WAS-040-GW | Groundwater | Duplicate | Onsite | | 0.9 | 0.2 | | 0.92 | 0.2 | | 0.25 | 0.2 | | | 0.2 | ND | | **0.2** | **ND** |
| Downgradient Boundary | MW-10S | 10/19/2009 | 09WAS206GW | Groundwater | Primary | Onsite | | | 0.20 | ND | | 0.20 | ND | 6.7 | | | 5.5 | | | | **0.20** | **ND** |
| | MW-10S | 4/19/2010 | 10WAS120GW | Groundwater | Primary | Onsite | | | 0.20 | ND | 0.24 | | | 2.3 | | | 2.3 | | | | **0.20** | **ND** |
| | MW-10S | 6/21/2010 | 10WAS171GW | Groundwater | Primary | Onsite | | | 0.20 | ND | | 0.20 | ND | 4.2 | | | 4.3 | | | | **0.2** | **ND** |
| | MW-10S | 10/19/2010 | 10WAS-200-GW | Groundwater | Primary | Onsite | | | 0.2 | ND | 0.33 | 0.2 | | 2.9 | 0.2 | | 3 | 0.2 | | | **0.2** | **ND** |
| | MW-10S | 5/5/2011 | 11-WAS-030-GW | Groundwater | Primary | Onsite | | | 0.2 | ND | 0.63 | 0.2 | | 3.2 | 0.2 | | 2.9 | 0.2 | | | **0.2** | **ND** |
| | MW-10M | 5/11/2010 | 10WAS167GW | Groundwater | Primary | Onsite | | 2 | | | **14** | | | 5.3 | | | 4.3 | | | | **0.20** | **ND** |
| | MW-10M | 6/21/2010 | 10WAS172GW | Groundwater | Primary | Onsite | | 1.4 | | | **9.1** | | | 5.9 | | | 6.2 | | | | **0.20** | **ND** |
| | MW-10M | 10/19/2010 | 10WAS-201-GW | Groundwater | Primary | Onsite | | 3.7 | 0.2 | | **10** | **0.2** | | 1.7 | 0.2 | | 0.89 | 0.2 | | | **0.2** | **ND** |
| | MW-10M | 4/5/2011 | 11-WAS-020-GW | Groundwater | Primary | Onsite | | 3.5 | 0.2 | | **10** | **0.2** | | 1.3 | 0.2 | | 0.89 | 0.2 | | | **0.2** | **ND** |
| | MW-10M | 5/6/2011 | 11-WAS-036-GW | Groundwater | Primary | Onsite | | 1.9 | 0.2 | | **9** | **0.2** | | 3 | 0.2 | | 3 | 0.2 | | | **0.2** | **ND** |
| | MW-10M | 3/27/2012 | 12-WAS-084-GW | Groundwater | Primary | Onsite | | 4.6 | 0.20 | | **15** | **0.20** | | 3.4 | 0.20 | | 1.1 | 0.20 | | | **0.20** | **ND** |
| | MW-10M | 6/5/2012 | 12-WAS-100-GW | Groundwater | Primary | Onsite | | 0.54 | 0.20 | | **3.0** | **0.20** | | 5.7 | 0.20 | | 6.1 | 0.20 | | | **0.20** | **ND** |
| | MW-11S | 10/20/2009 | 09WAS207GW | Groundwater | Primary | Onsite | | | 0.20 | ND | | 0.20 | ND | 25 | | | 14 | | | | **0.20** | **ND** |
| | MW-11S | 4/19/2010 | 10WAS121GW | Groundwater | Primary | Onsite | | | 0.20 | ND | 0.31 | | | 26 | | | 17 | | | | **0.20** | **ND** |
| | MW-11S | 6/21/2010 | 10WAS177GW | Groundwater | Primary | Onsite | | | 0.20 | ND | 0.2 | | | 19 | | | 11 | | | | **0.20** | **ND** |
| | MW-11S | 10/19/2010 | 10WAS-206-GW | Groundwater | Primary | Onsite | | | 0.2 | ND | 0.54 | 0.2 | | 24 | 0.2 | | 16 | 0.2 | | | **0.2** | **ND** |
| | MW-11S | 5/5/2011 | 11-WAS-028-GW | Groundwater | Primary | Onsite | | | 0.2 | ND | 1.5 | 0.2 | | 22 | 0.2 | | 14 | 0.2 | | | **0.2** | **ND** |

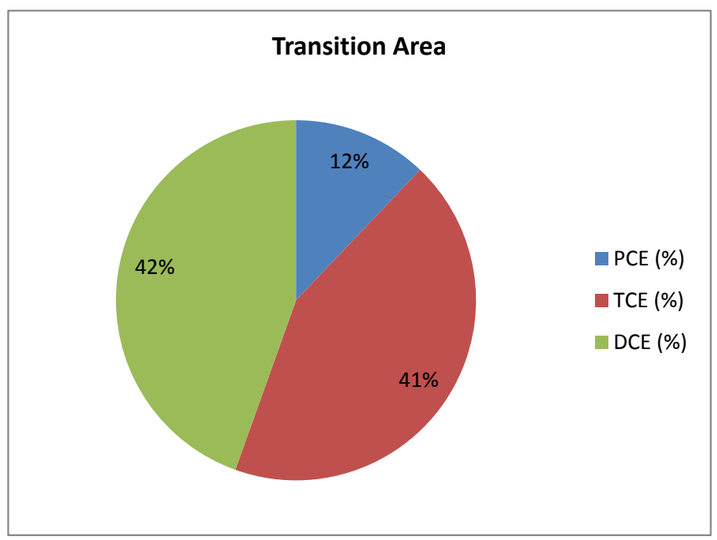
**TABLE 4: COMPREHENSIVE CHLORINATED ETHENE RESULTS 2008-2017**
**Groundwater and Chena River Monitoring**
**314 Wendell Avenue Site**

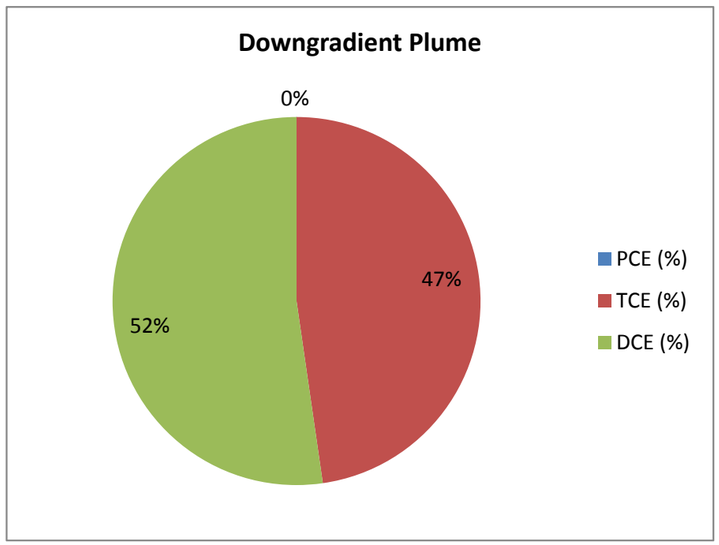
| | | | | | | | Chemical Name | Tetrachloroethene | | | Trichloroethene | | | cis-1,2-Dichloroethene | | | trans-1,2-Dichloroethene | | | Vinyl Chloride | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | ADEC Cleanup Levels for Groundwater | 41 | | | 2.8 | | | 36 | | | 360 | | | 0.19 | | |
| | | | | | | | Units | µg/L | | | µg/L | | | µg/L | | | µg/L | | | µg/L | | |
| Area | Location | Date Measured | Sample ID | Sample Type | Sample QC Type | Lab Name | | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags | Result | MRL | Data Flags |
| Downgradient Boundary | MW-11M | 5/11/2010 | 10WAS168GW | Groundwater | Primary | Onsite | | 0.87 | | | 1.2 | | | 12 | | | 7 | | | | **0.20** | **ND** |
| | MW-11M | 6/21/2010 | 10WAS176GW | Groundwater | Primary | Onsite | | 0.27 | | | 1.2 | | | 9.8 | | | 5.9 | | | | **0.20** | **ND** |
| | MW-11M | 10/19/2010 | 10WAS-205-GW | Groundwater | Primary | Onsite | | 0.59 | 0.2 | | 2.2 | 0.2 | | 2.8 | 0.2 | | 1.5 | 0.2 | | | **0.2** | **ND** |
| | MW-11M | 4/5/2011 | 11-WAS-019-GW | Groundwater | Primary | Onsite | | 0.45 | 0.2 | | 2.7 | 0.2 | | 3.2 | 0.2 | | 1.5 | 0.2 | | | **0.2** | **ND** |
| | MW-11M | 5/5/2011 | 11-WAS-029-GW | Groundwater | Primary | Onsite | | 0.21 | 0.2 | | 2.4 | 0.2 | | 9.8 | 0.2 | | 4.4 | 0.2 | | | **0.2** | **ND** |
| | MW-11M | 3/27/2012 | 12-WAS-086-GW | Groundwater | Primary | Onsite | | 0.31 | 0.20 | | 2.3 | 0.20 | | 6.9 | 0.20 | | 2.7 | 0.20 | | | **0.20** | **ND** |
| | MW-11M | 6/5/2012 | 12-WAS-099-GW | Groundwater | Primary | Onsite | | | 0.20 | ND | 0.84 | 0.20 | | 21 | 0.20 | | 9.1 | 0.20 | | | **0.20** | **ND** |
| | MW-11M | 3/26/2014 | 14-WAS-041-GW | Groundwater | Primary | Pace | | | 1.0 | ND | | 0.40 | ND | | 1.0 | ND | | 1.0 | ND | | **0.40** | **ND** |
| Chena River Discharge Boundary | PW-1 | 10/1/2008 | 09WAS003SW | Surface Water | Primary | Onsite | | | 0.20 | ND | | 0.20 | ND | 0.81 | | | 0.25 | | | | **0.20** | **ND** |
| | PW-1 | 6/10/2010 | 10WAS191PW | Porewater | Primary | Onsite | | | 0.20 | ND | | 0.20 | ND | 0.29 | | | | 0.20 | ND | | **0.20** | **ND** |
| | PW-1 | 10/20/2010 | 10WAS-300-PW | Porewater | Primary | Onsite | | | 0.2 | ND | | 0.2 | ND | 1.5 | 0.2 | | 0.41 | 0.2 | | | **0.2** | **ND** |
| | PW-2 | 10/8/2008 | 09WAS002SW | Porewater | Primary | Onsite | | | 0.20 | ND | 0.66 | | | 7.9 | | | 7.5 | | | | **0.20** | **ND** |
| | PW-2 | 6/10/2010 | 10WAS192PW | Porewater | Primary | Onsite | | | 0.20 | ND | 0.21 | | | 1.7 | | | 1.2 | | | | **0.20** | **ND** |
| | PW-2 | 10/20/2010 | 10WAS-303-PW | Porewater | Primary | Onsite | | | 0.2 | ND | 2.4 | 0.2 | | 4.9 | 0.2 | | 5.4 | 0.2 | | | **0.2** | **ND** |
| | PW-2 | 3/29/2012 | 12-WAS-080-PW | Porewater | Primary | Onsite | | | 0.20 | ND | 2.1 | 0.20 | | 7.0 | 0.20 | | 5.6 | 0.20 | | | **0.20** | **ND** |
| | PW-2 | 6/4/2012 | 12-WAS-095-PW | Porewater | Primary | Onsite | | | 0.20 | ND | 0.23 | 0.20 | | 0.58 | 0.20 | | 0.45 | 0.20 | | | **0.20** | **ND** |
| | PW-2 | 3/24/2014 | 14-WAS-032-PW | Porewater | Primary | Pace | | | 1.0 | ND | 0.54 | 0.40 | | 4.6 | 1.0 | | 3.2 | 1.0 | | | **0.40** | **ND** |
| | PW-2 | 3/24/2014 | 14-WAS-033-PW | Porewater | Duplicate | Pace | | | 1.0 | ND | 0.41 | 0.40 | | 6.2 | 1.0 | | 4.2 | 1.0 | | | **0.40** | **ND** |
| | PW-3 | 10/8/2008 | 09WAS001SW | Porewater | Primary | Onsite | | | 0.20 | ND | 0.49 | | | 9.9 | | | 9.7 | | | | **0.20** | **ND** |
| | PW-3 | 6/10/2010 | 10WAS193PW | Porewater | Primary | Onsite | | | 0.20 | ND | | 0.20 | ND | 3.5 | | | 3.5 | | | | **0.20** | **ND** |
| | PW-3 | 10/20/2010 | 10WAS-307-PW | Porewater | Primary | Onsite | | | 0.2 | ND | **5.7** | **0.2** | | 7.9 | 0.2 | | 8.4 | 0.2 | | | **0.2** | **ND** |
| | PW-3 | 10/20/2010 | 10WAS-310-PW | Porewater | Duplicate | Onsite | | | 0.2 | ND | **5.7** | **0.2** | | 7.6 | 0.2 | | 8.1 | 0.2 | | | **0.2** | **ND** |
| | PW-3 | 3/24/2014 | 14-WAS-034-PW | Porewater | Primary | Pace | | | 1.0 | ND | 0.41 | 0.40 | | 9.2 | 1.0 | | 6.8 | 1.0 | | | **0.40** | **ND** |
| | PW-4 | 6/10/2010 | 10WAS194PW | Porewater | Primary | Onsite | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | PW-4 | 10/20/2010 | 10WAS-301-PW | Porewater | Primary | Onsite | | | 0.2 | ND | | 0.2 | ND | 1 | 0.2 | | | 0.2 | ND | | **0.2** | **ND** |
| | PW-4 | 3/24/2014 | 14-WAS-031-PW | Porewater | Primary | Pace | | | 1.0 | ND | | 0.40 | ND | 1.8 | 1.0 | | | 1.0 | ND | | **0.40** | **ND** |
| | PW-5 | 6/10/2010 | 10WAS195PW | Porewater | Primary | Onsite | | | 0.20 | ND | 0.23 | | | 2.6 | | | 2.4 | | | | **0.20** | **ND** |
| | PW-5 | 10/20/2010 | 10WAS-305-PW | Porewater | Primary | Onsite | | | 0.2 | ND | **3.2** | **0.2** | | 6.1 | 0.2 | | 6.6 | 0.2 | | | **0.2** | **ND** |
| | PW-6 | 10/20/2010 | 10WAS-309-PW | Porewater | Primary | Onsite | | | 0.2 | ND | 0.55 | 0.2 | | 15 | 0.2 | | 8.1 | 0.2 | | | **0.2** | **ND** |
| | PW-7 | 10/20/2010 | 10WAS-302-PW | Porewater | Primary | Onsite | | | 0.2 | ND | 0.56 | 0.2 | | 5.6 | 0.2 | | 5.7 | 0.2 | | | **0.2** | **ND** |
| | PW-8 | 10/20/2010 | 10WAS-304-PW | Porewater | Primary | Onsite | | | 0.2 | ND | 1.4 | 0.2 | | 5.9 | 0.2 | | 6.1 | 0.2 | | | **0.2** | **ND** |
| | PW-9 | 10/20/2010 | 10WAS-306-PW | Porewater | Primary | Onsite | | | 0.2 | ND | 2.5 | 0.2 | | 6.8 | 0.2 | | 7.5 | 0.2 | | | **0.2** | **ND** |
| | PW-9 | 3/29/2012 | 12-WAS-081-PW | Porewater | Primary | Onsite | | | 0.20 | ND | 1.5 | 0.20 | | 9.5 | 0.20 | | 7.9 | 0.20 | | | **0.20** | **ND** |
| | PW-9 | 6/4/2012 | 12-WAS-096-PW | Porewater | Primary | Onsite | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | PW-10 | 10/20/2010 | 10WAS-308-PW | Porewater | Primary | Onsite | | | 0.2 | ND | **3.6** | **0.2** | | 8.6 | 0.2 | | 9.3 | 0.2 | | | **0.2** | **ND** |
| | PW-10 | 3/30/2012 | 12-WAS-082-PW | Porewater | Primary | Onsite | | | 0.20 | ND | 0.86 | 0.20 | | 12 | 0.20 | | 8.0 | 0.20 | | | **0.20** | **ND** |
| | PW-10 | 6/4/2012 | 12-WAS-097-PW | Porewater | Primary | Onsite | | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | 0.20 | ND | | **0.20** | **ND** |
| | PW-11 | 4/5/2011 | 11-WAS-013-PW | Porewater | Primary | Onsite | | | 0.2 | ND | 1.4 | 0.2 | | 5.7 | 0.2 | | 8.4 | 0.2 | | | **0.2** | **ND** |
| | PW-12 | 4/5/2011 | 11-WAS-014-PW | Porewater | Primary | Onsite | | | 0.2 | ND | 0.35 | 0.2 | | 1.3 | 0.2 | | 0.99 | 0.2 | | | **0.2** | **ND** |
| | PW-13 | 4/5/2011 | 11-WAS-015-PW | Porewater | Primary | Onsite | | | 0.2 | ND | 1.6 | 0.2 | | 1.7 | 0.2 | | 0.47 | 0.2 | | | **0.2** | **ND** |
| | PW-13 | 4/5/2011 | 11-WAS-016-PW | Porewater | Duplicate | Onsite | | | 0.2 | ND | 1.5 | 0.2 | | 1.7 | 0.2 | | 0.48 | 0.2 | | | **0.2** | **ND** |
| | PW-14 | 4/5/2011 | 11-WAS-017-PW | Porewater | Primary | Onsite | | | 0.2 | ND | 2 | 0.2 | | 3.5 | 0.2 | | 2.3 | 0.2 | | | **0.2** | **ND** |
| | PW-15 | 4/5/2011 | 11-WAS-018-PW | Porewater | Primary | Onsite | | | 0.2 | ND | **3** | **0.2** | | 11 | 0.2 | | 7.6 | 0.2 | | | **0.2** | **ND** |

**Table 5: Chlorinated Ethene Molar Percentages**
**June 2017 Data Summary Report**
**314 Wendell Avenue Site**

| Area | Well | March 2013 | | | | March 2014 | | | | March 2017 | | | | Median | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PCE (%) | TCE (%) | DCE (%) | Total Chlorinated Ethenes (µmol/L) | PCE (%) | TCE (%) | DCE (%) | Total Chlorinated Ethenes (µmol/L) | PCE (%) | TCE (%) | DCE (%) | Total Chlorinated Ethenes (µmol/L) | PCE (%) | TCE (%) | DCE (%) |
| Source Area | MW-6S/M | 68% | 8% | 23% | 0.020 | | | | | 10% | 12% | 78% | 3.310 | 53% | 16% | 27% |
| | MW-8SR | 63% | 10% | 27% | 10.480 | 53% | 16% | 31% | 10.260 | 56% | 17% | 27% | 4.410 | | | |
| | MW-13M | 31% | 42% | 27% | 0.009 | 0% | 100% | 0% | 0.004 | | | | | | | |
| Transition Area | MW-9M | 9% | 41% | 51% | 0.900 | 27% | 42% | 32% | 0.700 | 10% | 25% | 64% | 0.390 | 12% | 41% | 42% |
| | MW-12M | 13% | 54% | 34% | 0.440 | 19% | 54% | 28% | 0.240 | 4% | 40% | 56% | 0.230 | | | |
| Downgradient Plume | MW-4M | 1% | 47% | 52% | 0.560 | 0% | 24% | 76% | 0.380 | 0% | 8% | 92% | 0.340 | 0% | 47% | 52% |
| | PW-2 | | | | | 0% | 5% | 95% | 0.080 | | | | | | | |




Notes:

| | |
|---|---|
| PCE | tetrachloroethene |
| TCE | trichloroethene |
| DCE | dichloroethene (sum of cis- and trans-isomers) |
| VC | vinyl chloride |
| µmol/L | micromoles per liter |

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# ATTACHMENT 3

**Groundwater Sample Data Sheets**

**March 2017**

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# GROUNDWATER SAMPLING FORM

CLIENT: ADEC

SITE: Wendell

DATE: 3/30/17

MONITORING WELL ID: MW 4M

SHEET 1 OF 1

SAMPLER(S) NAME: A. Cox, A. Stewart

SAMPLE ID ON COC: 17-MW-4M-007-GW

YSI #/SN:

Weather: partly cloudy

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

PRODUCT PRESENT:

PURGE AND SAMPLE METHOD: Low Flow

WATER LEVEL MEASURING DEVICE: Oil/Water Interface Probe

TYPE OF PUMP: Peristaltic

WELL INTEGRITY: good, has P.T.

REQUIRED REPAIRS: none

PUMP INTAKE DEPTH: 28'

DIAMETER OF WELL: 0.125 (FT)

RADIUS OF WELL (R): 0.0625 (FT)

TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 29.52 (FT)

DEPTH TO GW BELOW MEASURING POINT (d): ~~12.03~~ AS 11.63 (FT)

LENGTH OF WATER COLUMN (L): (D-d)= ~~17.89~~ AS 17.89 (FT)

VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.27 (CUBIC FT)

WELL VOLUME: (7.48xV)= ~~1.65~~ AS 1.64 (GAL) X3= ~~4.95~~ AS 4.92 (GAL)

Min Purge Volume — Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

| TIME | VOLUME (GAL) | WATER LEVEL (ft BTOC) | TEMP (deg C) | Conductivity (µS/cm) | DO (mg/L) | pH | ORP (mV) | TURBIDITY (Visual: High, Med, Low, Clear) | APPEARANCE OF WATER (Visual) |
|---|---|---|---|---|---|---|---|---|---|
| 1009 | 0.00 | 11.63 | 3.42 | 331 | 2.70 | 6.89 | -75.6 | clear * | clear |
| 1014 | 0.20 | 11.71 | 3.64 | 333 | 0.32 | 6.89 | -71.9 | clear * | clear |
| 1019 | 0.40 | 11.70 | 3.66 | 334 | 0.20 | 6.89 | -72.1 | clear * | clear |
| 1024 | 0.60 | 11.70 | 3.70 | 335 | 0.25 | 6.89 | -71.2 | clear * | clear |
| 1029 | 0.80 | 11.70 | 3.69 | 336 | 0.15 | 6.89 | -67.7 | clear * | clear |
| 1034 | 1.00 | 11.70 | 3.68 | 336 | 0.11 | 6.89 | -65.5 | clear * | clear |
| | | | | | | | | | |
| | | | AS 3rd well volume | | | | | | |
| | | | well stabilized | | | | | | |
| | | | Amw&swart | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

(1) STABILIZATION is achieved when three (3) consecutive readings of pH, conductivity, and DO collected in 3-5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±3% for temperature
- ±3% for conductivity
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stable.

PURGE UNTIL PARAMETER STABILIZATION or UNTIL 3 WELL VOLUMES ARE REMOVED

TOTAL VOLUME PURGED: 1.25 (GAL)

FLOW RATE (desired range is 100 to 500 mL/min): 180 ml/m - 0.04gal/m

SAMPLE TIME: 1045

QC SAMPLES COLLECTED: none

ANALYSIS (fill in number of bottles collected)

| | | | | |
|---|---|---|---|---|
| GRO (3 vials, HCL) | VOCs (3 vials, HCL) - ~~DSM Shop Site Only~~ | | | 3 vials |
| BTEX (3 vials, HCL) | | | | |
| DRO ([2] 250ml ambers, HCL) | | | | |
| PAHs ([2] 1-L ambers) - SW Only | | | Other: | |

COMMENTS: Strong sulfur smell * organic suspended solids present

Turbidity (NTU): _____

Sampler Signature

QC Check Signature

# GROUNDWATER SAMPLING FORM

CLIENT: ADEC
SITE: Wendell
DATE: 3/29/17
MONITORING WELL ID: MW 65
SHEET 1 OF 1

SAMPLER(S) NAME: A. Cox, A. Surratt
SAMPLE ID ON COC: 17-MW65-002-GW
YSI #/SN: 14H100450
Weather: Overcast

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

PRODUCT PRESENT: None
PURGE AND SAMPLE METHOD: Low Flow
WATER LEVEL MEASURING DEVICE: Oil/Water Interface Probe
TYPE OF PUMP: Peristaltic
WELL INTEGRITY: Good
REQUIRED REPAIRS: None, bolt needed
PUMP INTAKE DEPTH: 14'

DIAMETER OF WELL: 0.125 (FT)
RADIUS OF WELL (R): 0.0625 (FT)
TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 14.48 (FT)
DEPTH TO GW BELOW MEASURING POINT (d): 13.39 (FT)
LENGTH OF WATER COLUMN (L): (D-d)= 1.09 (FT)
VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.013 (CUBIC FT)
WELL VOLUME: (7.48xV)= 0.1 (GAL) X3= 0.3 (GAL)
Min Purge Volume Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

| TIME | VOLUME (GAL) | WATER LEVEL (ft BTOC) | TEMP (deg C) | Conductivity (µS/cm) | DO (mg/L) | pH | ORP (mV) | TURBIDITY (Visual: High, Med, Low, Clear) | APPEARANCE OF WATER (Visual) |
|---|---|---|---|---|---|---|---|---|---|
| 1017 | 0 | ~~13.52~~ | -0.15 | 813 | 5.00 | 6.65 | 218.9 | Low | Clear |
| 1022 | 250mL | 13.52 | -0.18 | 817 | 2.35 | 6.64 | 193.2 | Low | Clear |
| 1026 | 500mL | 13.54 | -0.19 | 817 | 1.41 | 6.65 | 232.3 | Low | Clear |
| 1029 | 900mL | 13.55 | -0.02 | 817 | 1.11 | 6.66 | 215 | low | Clear |
| 1034 | 1000 ml | 13.60 | 0.45 | 828 | 0.86 | 6.66 | 211 | low | clear |
| | | | | | | | | | |
| | | | | | | | | | |
| | | 3 well volumes purged | | | | | | | |
| | | | | stabilized | | | | | |
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| | | | | | | | | | |

(1) STABILIZATION is achieved when three (3) consecutive readings of pH, conductivity, and DO collected in 3-5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±3% for temperature
- ±3% for conductivity
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stable.

PURGE UNTIL PARAMETER STABILIZATION or UNTIL 3 WELL VOLUMES ARE REMOVED

TOTAL VOLUME PURGED: 0.3 (GAL)
FLOW RATE (desired range is 100 to 500 mL/min): 130
SAMPLE TIME: 1040
QC SAMPLES COLLECTED: None

ANALYSIS (fill in number of bottles collected)

| | | | |
|---|---|---|---|
| GRO (3 vials, HCL) | VOCs (3 vials, HCL) ~~-DSM Shop Site Only~~ | ✓ | 3 |
| BTEX (3 vials, HCL) | | | |
| DRO ([2] 250ml ambers, HCL) | | | |
| PAHs ([2] 1-L ambers) - SW Only | | Other: | |

COMMENTS:

1 gal = 3785.4mL
.3 gal = 1135.6

Turbidity (NTU): _____

Sampler Signature: [signature]
QC Check Signature: [signature]

# GROUNDWATER SAMPLING FORM

CLIENT: ADEC

~~SITE:~~ Date 3/30/17

~~DATE:~~ Site Merrill

MONITORING WELL ID: MW45

SHEET 1 OF 1

SAMPLER(S) NAME: A. Cox, A. Surratt

~~MPLE~~ SAMPLE ID ON COC: 17-MW45-008-GW

YSI #/SN: 14H100450

Weather: Sunny

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

PRODUCT PRESENT: No

PURGE AND SAMPLE METHOD: Low Flow

WATER LEVEL MEASURING DEVICE: Oil/Water Interface Probe

TYPE OF PUMP: Peristaltic

WELL INTEGRITY: Good, has PT

REQUIRED REPAIRS: none

PUMP INTAKE DEPTH: 18.64

DIAMETER OF WELL: 0.125 (FT)

RADIUS OF WELL (R): 0.063 (FT)

TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 19.64 (FT)

DEPTH TO GW BELOW MEASURING POINT (d): 11.64 (FT)

LENGTH OF WATER COLUMN (L): (D-d)= 8.00 (FT)

VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.1 (CUBIC FT)

WELL VOLUME: (7.48xV)= 0.75 (GAL) X3= 2.24 (GAL)

Min Purge Volume Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

| TIME | VOLUME (GAL) | WATER LEVEL (ft BTOC) | TEMP (deg C) | Conductivity (µS/cm) | DO (mg/L) | pH | ORP (mV) | TURBIDITY (Visual: High, Med, Low, Clear) | APPEARANCE OF WATER (Visual) |
|---|---|---|---|---|---|---|---|---|---|
| 0920 | 0.05 | 11.67 | 3.52 | 328 | 4.12 | 6.61 | 62.2 | Clear | Clear |
| 0925 | ~~0.07~~ 0.25 | 11.67 | 3.46 | 323 | 0.62 | 6.71 | -133 | Clear | Clear |
| 0930 | ~~0.09~~ 0.45 | 11.67 | 3.42 | 320 | 0.36 | 6.75 | -163 | Clear | Clear |
| 0935 | 0.65 | 11.67 | 3.21 | 319 | 0.36 | 6.77 | -153 | Clear | Clear |
| 0940 | 0.85 | 11.67 | 3.18 | 320 | 0.33 | 6.78 | -160 | Clear | Clear |
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | Parameters Stabilized | | | | | | |
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| | | | | | | | | | |

(1) STABILIZATION is achieved when three (3) consecutive readings of pH, conductivity, and DO collected in 3-5 minute intervals meet the following criteria:

- ±0.1 standard units for pH ✓
- ±3% for temperature
- ±3% for conductivity ✓
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV ✓
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stable. ✓

PURGE UNTIL PARAMETER STABILIZATION or UNTIL 3 WELL VOLUMES ARE REMOVED

TOTAL VOLUME PURGED: (GAL)

FLOW RATE (desired range is 100 to 500 mL/min): 175 ml/min

SAMPLE TIME: 0945

QC SAMPLES COLLECTED: None

ANALYSIS (fill in number of bottles collected)

| | | | | |
|---|---|---|---|---|
| GRO (3 vials, HCL) | VOCs (3 vials, HCL) - ~~DSM Shop Site Only~~ ✓ | | | 3 vials |
| BTEX (3 vials, HCL) | | | | |
| DRO ([2] 250ml ambers, HCL) | | | | |
| PAHs ([2] 1-L ambers) - SW Only | | | Other: | |

~~MMENTS~~ COMMENTS: sulfur smell

Turbidity (NTU): _____

Sampler Signature

QC Check Signature

# GROUNDWATER SAMPLING FORM

CLIENT: ADEC
SITE: Windell
DATE: 3/29/17
MONITORING WELL ID: MW7
SHEET 1 OF 1

SAMPLER(S) NAME: A. Cox, A. Surratt
SAMPLE ID ON COC: 17-MW7-001-GW
YSI #/SN: 14H100450
Weather: Overcast

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

PRODUCT PRESENT: No
PURGE AND SAMPLE METHOD: Low Flow
WATER LEVEL MEASURING DEVICE: Oil/Water Interface Probe
TYPE OF PUMP: Peristaltic
WELL INTEGRITY: Good
REQUIRED REPAIRS: none
PUMP INTAKE DEPTH: 14.2

DIAMETER OF WELL: 1.5" = 0.125 (FT)
RADIUS OF WELL (R): 0.063 (FT)
TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 14.55 (FT)
DEPTH TO GW BELOW MEASURING POINT (d): 13.95 (FT)
LENGTH OF WATER COLUMN (L): (D-d)= 0.6 (FT)
VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.00736 (CUBIC FT)
WELL VOLUME: (7.48xV)= 0.06 (GAL) X3= 0.165 (GAL)
Min Purge Volume Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

| TIME | VOLUME (GAL) | WATER LEVEL (ft BTOC) | TEMP (deg C) | Conductivity (µS/cm) | DO (mg/L) | pH | ORP (mV) | TURBIDITY (Visual: High, Med, Low, Clear) | APPEARANCE OF WATER (Visual) |
|---|---|---|---|---|---|---|---|---|---|
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Only Collected Sample not enough water to purge

(1) STABILIZATION is achieved when three (3) consecutive readings of pH, conductivity, and DO collected in 3-5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±3% for temperature
- ±3% for conductivity
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stable.

PURGE UNTIL PARAMETER STABILIZATION or UNTIL 3 WELL VOLUMES ARE REMOVED

TOTAL VOLUME PURGED: 0 (GAL)
FLOW RATE (desired range is 100 to 500 mL/min): n/a
SAMPLE TIME: 0850
QC SAMPLES COLLECTED: None

ANALYSIS (fill in number of bottles collected)

| | | | |
|---|---|---|---|
| GRO (3 vials, HCL) | VOCs (3 vials, HCL) ~~-DSM Shop Site Only-~~ | | 3 vials |
| BTEX (3 vials, HCL) | | | |
| DRO ([2] 250ml ambers, HCL) | | | |
| PAHs ([2] 1-L ambers) - SW Only | | Other: | |

COMMENTS: FB to fill vial

Turbidity (NTU): _____

Sampler Signature: Amy Cox
QC Check Signature: Amy Cox

# GROUNDWATER SAMPLING FORM

CLIENT: ADEC

SITE: Wendell

DATE: 3/29/17

MONITORING WELL ID: MW8SR

SHEET 1 OF 1

SAMPLER(S) NAME: A. Cox, A. Swratt

SAMPLE ID ON COC: 17-MW8SR-003-GW/17-MWX-006-GW

YSI #/SN: 14H100450

Weather: overcast

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

PRODUCT PRESENT: none

PURGE AND SAMPLE METHOD: Low Flow

WATER LEVEL MEASURING DEVICE: Oil/Water Interface Probe

TYPE OF PUMP: Peristaltic

WELL INTEGRITY: Good, has PT

REQUIRED REPAIRS: more bolts

PUMP INTAKE DEPTH: 16'

DIAMETER OF WELL: 0.167 (FT)

RADIUS OF WELL (R): 0.083 (FT)

TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 16.68 (FT)

DEPTH TO GW BELOW MEASURING POINT (d): 13.28 (FT)

LENGTH OF WATER COLUMN (L): (D-d)= 3.40 ~~13.28~~ AC (FT)

VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.074 (CUBIC FT)

WELL VOLUME: (7.48xV)= AC ~~0.555~~ 0.55 (GAL) X3= 1.65 (GAL)

Min Purge Volume | Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

| TIME | VOLUME (GAL) | WATER LEVEL (ft BTOC) | TEMP (deg C) | Conductivity (µS/cm) | DO (mg/L) | pH | ORP (mV) | TURBIDITY (Visual: High, Med, Low, Clear) | APPEARANCE OF WATER (Visual) |
|---|---|---|---|---|---|---|---|---|---|
| 12:43 | 0.0 | 13.37 | 3.6 | 802 | 8.01 | 6.93 | 146.5 | Med | Cloudy |
| 12:46 | 0.1 | 13.38 | 3.71 | 806 | 10.2 | 6.92 | 147.1 | Med | Cloudy |
| 12:49 | 0.2 | 13.39 | 3.70 | 805 | 8.2 | 6.93 | 148.2 | Med | Cloudy |
| 12:52 | 0.4 | 13.39 | 3.67 | 805 | 8.0 | 6.94 | 147.5 | Med | Cloudy |
| 12:55 | 0.6 | 13.39 | 3.65 | 806 | 0.95 | 6.94 | 147.6 | Low | Clear |
| 12:58 | 0.8 | 13.40 | 3.70 | 807 | 0.75 | 6.94 | 147.6 | Clear | Clear |
| 13:01 | 1.0 | 13.39 | 3.70 | 809 | 0.59 | 6.93 | 148.4 | Clear | Clear |
| 13:04 | 1.2 | 13.40 | 3.69 | 810 | 0.55 | 6.92 | 148.5 | Clear | Clear |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

3 Parameters stabilized

(1) STABILIZATION is achieved when three (3) consecutive readings of pH, conductivity, and DO collected in 3-5 minute intervals meet the following criteria:

- ±0.1 standard units for pH ✓
- ±3% for temperature
- ±3% for conductivity ✓
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV ✓
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stable.

PURGE UNTIL PARAMETER STABILIZATION or UNTIL 3 WELL VOLUMES ARE REMOVED

TOTAL VOLUME PURGED: 1.3 (GAL)

FLOW RATE (desired range is 100 to 500 mL/min): 150

SAMPLE TIME: 13:10

QC SAMPLES COLLECTED: MWX @ 13:20 + MS/MSD

ANALYSIS (fill in number of bottles collected)

| | | | | |
|---|---|---|---|---|
| GRO (3 vials, HCL) | VOCs (3 vials, HCL) - ~~DSM Shop Site Only~~ AC | | | ✓ 3 vials |
| BTEX (3 vials, HCL) | | | | |
| DRO ([2] 250ml ambers, HCL) | | | | |
| PAHs ([2] 1-L ambers) - SW Only | | | Other: | |

COMMENTS:

Turbidity (NTU): _____

Sampler Signature: Amy Cox

QC Check Signature: Amy Cox

# GROUNDWATER SAMPLING FORM

CLIENT: ADEC

SITE: Wendell

DATE: 3/28/17

MONITORING WELL ID: MW 7

SHEET 1 OF 1

SAMPLER(S) NAME: A. Cox, A. Surratt

SAMPLE ID ON COC: 14H100450 No Sample

YSI #/SN: Y-7

Weather: Overcast

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

PRODUCT PRESENT: None

PURGE AND SAMPLE METHOD: Low Flow

WATER LEVEL MEASURING DEVICE: Oil/Water Interface Probe

TYPE OF PUMP: Peristaltic

WELL INTEGRITY: Good

REQUIRED REPAIRS: None

PUMP INTAKE DEPTH: 14.3

DIAMETER OF WELL: 1.5" 2" AC 0.167 0.125 (FT)

RADIUS OF WELL (R): ~~0.25~~ ~~0.083"~~ ~~2" AC 0.167~~ (FT) 0.063

TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 14.55 (FT)

DEPTH TO GW BELOW MEASURING POINT (d): 13.95 (FT)

LENGTH OF WATER COLUMN (L): (D-d)= 0.60 (FT)

VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.00736 (CUBIC FT)

WELL VOLUME: (7.48xV)= 0.06 (GAL) X3= 0.165 (GAL)

Min Purge Volume Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

| TIME | VOLUME (GAL) | WATER LEVEL (ft BTOC) | TEMP (deg C) | Conductivity (µS/cm) | DO (mg/L) | pH | ORP (mV) | TURBIDITY (Visual: High, Med, Low, Clear) | APPEARANCE OF WATER (Visual) |
|---|---|---|---|---|---|---|---|---|---|
| 17:53 | 0.01 | AC 14.55 | 4.66 | 504 | 2.39 | 6.63 | -7.7 | Low Clear | Clear |
| | | | | | | | | | |
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| | | | | | | | | | |

Purged dry
No Sample

(1) STABILIZATION is achieved when three (3) consecutive readings of pH, conductivity, and DO collected in 3-5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±3% for temperature
- ±3% for conductivity
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stable.

PURGE UNTIL PARAMETER STABILIZATION or UNTIL 3 WELL VOLUMES ARE REMOVED

TOTAL VOLUME PURGED: 0.01 (GAL)

FLOW RATE (desired range is 100 to 500 mL/min): n/a

SAMPLE TIME: n/a

QC SAMPLES COLLECTED: n/a

ANALYSIS (fill in number of bottles collected)

| | | | |
|---|---|---|---|
| GRO (3 vials, HCL) | VOCs (3 vials, HCL) - DSM Shop Site Only | | |
| BTEX (3 vials, HCL) | | | |
| DRO ([2] ~~250ml~~ ambers, HCL) | | | |
| PAHs ([2] 1-L ambers) - SW Only | | | Other: |

COMMENTS:

Purged dry.

1 gal = 3785.4 mL

0.165 gal = 625 mL

Turbidity (NTU): _____

Sampler Signature: Amy Cox

QC Check Signature: Amy Cox

# GROUNDWATER SAMPLING FORM

| | |
|---|---|
| CLIENT: | ADEC |
| SITE: | Wendell |
| DATE: | ~~8/~~ 3/29/17 |
| MONITORING WELL ID: | MW 9M |
| SHEET | 1 OF 1 |

SAMPLER(S) NAME: A. Cox, A. Surratt.

SAMPLE ID ON COC: 17-MW9M-004-GW

YSI #/SN: 14H100450

Weather: overcast

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

PRODUCT PRESENT: No

PURGE AND SAMPLE METHOD: Low Flow

WATER LEVEL MEASURING DEVICE: Oil/Water Interface Probe

TYPE OF PUMP: Peristaltic

WELL INTEGRITY: good, has P.T.

REQUIRED REPAIRS: none

PUMP INTAKE DEPTH: 28.5

DIAMETER OF WELL: 0.125 (FT)

RADIUS OF WELL (R): 0.0625 (FT)

TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 29.57 (FT)

DEPTH TO GW BELOW MEASURING POINT (d): 13.44 (FT)

LENGTH OF WATER COLUMN (L): (D-d)= 16.13 (FT)

VOLUME OF WATER COLUMN (V): (3.14xRxRxL) ~~0.075~~ ~~0.1~~ 0.198 (CUBIC FT)

WELL VOLUME: (7.48xV)= 1.48 (GAL) X3= 4.4 (GAL)

Min Purge Volume | Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

| TIME | VOLUME (GAL) | WATER LEVEL (ft BTOC) | TEMP (deg C) | Conductivity (µS/cm) | DO (mg/L) | pH | ORP (mV) | TURBIDITY (Visual: High, Med, Low, Clear) | APPEARANCE OF WATER (Visual) |
|---|---|---|---|---|---|---|---|---|---|
| 1447 | ~~0.050~~ 0.00 | 13.45 | 3.56 | 291 | 4.92 | 7.03 | -30.7 | clear | clear |
| 1452 | ~~0.10025~~ | 13.45 | 3.74 | 299 | 1.11 | 7.01 | -38.2 | clear | clear |
| 1457 | 0.50 | 13.45 | 3.81 | 334 | 0.38 | 6.97 | -45.6 | clear | clear |
| 1502 | 0.75 | 13.45 | 3.83 | 359 | 0.29 | 6.94 | -42.5 | clear | clear |
| 1507 | 1.00 | 13.44 | 3.85 | 376 | 0.31 | 6.92 | -28.2 | clear | clear |
| 1512 | 1.25 | 13.44 | 3.84 | 387 | 0.34 | 6.90 | -12.8 | clear | clear |
| 1517 | 1.50 | 13.45 | 3.88 | 391 | 0.38 | 6.91 | -7.9 | clear | clear |
| 1522 | 1.75 | 13.44 | 3.81 | 390 | 0.30 | 6.90 | -10.2 | clear | clear |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | Well Stabilized | | | | | | | |
| | | | | | | | | | |

(1) STABILIZATION is achieved when three (3) consecutive readings of pH, conductivity, and DO collected in 3-5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±3% for temperature
- ±3% for conductivity
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stable.

PURGE UNTIL PARAMETER STABILIZATION or UNTIL 3 WELL VOLUMES ARE REMOVED

TOTAL VOLUME PURGED: 2 (GAL) FLOW RATE (desired range is 100 to 500 mL/min): 175 (0.05 gal/m)

SAMPLE TIME: 1527 QC SAMPLES COLLECTED: None

ANALYSIS (fill in number of bottles collected)

| | | | |
|---|---|---|---|
| GRO (3 vials, HCL) | VOCs (3 vials, HCL) - ~~DSM Shop Site Only~~ ✓ | | |
| BTEX (3 vials, HCL) | | | |
| DRO ([2] 250ml ambers, HCL) | | | |
| PAHs ([2] 1-L ambers) - SW Only | | Other: | |

COMMENTS: sulfur odor

Turbidity (NTU):

Sampler Signature: Amy Cox

QC Check Signature: Amy Cox

# GROUNDWATER SAMPLING FORM

CLIENT: ADEC
SITE: MW-12M
DATE: 3/29/17
MONITORING WELL ID:
SHEET 1 OF 1

SAMPLER(S) NAME: A. Swatt, A. Cox
SAMPLE ID ON COC: 17-MW12m-005-GW
YSI #/SN: 14H100450
Weather: overcast
PRODUCT PRESENT: No
PURGE AND SAMPLE METHOD: Low Flow
WATER LEVEL MEASURING DEVICE: Oil/Water Interface Probe
TYPE OF PUMP: Peristaltic
WELL INTEGRITY: good
REQUIRED REPAIRS: needs longer bolts
PUMP INTAKE DEPTH: 27.4

1 in = 0.083 ft; 2 in = 0.167 ft; 3 in = 0.25 ft; 4 in = 0.333 ft

DIAMETER OF WELL: 0.125 (FT)
RADIUS OF WELL (R): 0.0625 (FT)
TOTAL DEPTH OF WELL BELOW MEASURING POINT (D): 29.40 (FT)
DEPTH TO GW BELOW MEASURING POINT (d): 12.51 (FT)
LENGTH OF WATER COLUMN (L): (D-d)= 16.89 (FT)
VOLUME OF WATER COLUMN (V): (3.14xRxRxL) 0.21 (CUBIC FT)
WELL VOLUME: (7.48xV)= 1.55 (GAL) X3= 4.65 (GAL)
Min Purge Volume Max Purge Volume

Note: Groundwater volumes above were calculated in the field and used for approximate purge volumes; rounded values are shown for informational purposes only.

| TIME | VOLUME (GAL) | WATER LEVEL (ft BTOC) | TEMP (deg C) | Conductivity (µS/cm) | DO (mg/L) | pH | ORP (mV) | TURBIDITY (Visual: High, Med, Low, Clear) | APPEARANCE OF WATER (Visual) |
|---|---|---|---|---|---|---|---|---|---|
| 16:22 | 0.04 | 12.51 | 3.56 | 352 | 1.32 | 6.84 | -82.5 | Clear | Clear |
| 16:27 | 0.26 | 12.52 | 3.64 | 386 | 0.48 | 6.85 | -98.1 | Clear | Clear |
| 16:32 | 0.46 | 12.52 | 3.66 | 395 | 0.40 | 6.87 | -98.6 | Clear | Clear |
| 16:37 | 0.66 | 12.52 | 3.71 | 399 | 0.25 ✓ | 6.87 ✓ | -91.4 ✓ | Clear | Clear |
| 16:42 | 0.86 | 12.53 | 3.70 | 400 ✓ | 0.21 ✓ | 6.88 ✓ | -81.5 | Clear | Clear |
| 16:46 | 1.06 | 12.53 | 3.68 | 401 | 0.17 ✓ | 6.88 ✓ | -70.6 | Clear | Clear |

Parameters Stabilized

(1) STABILIZATION is achieved when three (3) consecutive readings of pH, conductivity, and DO collected in 3-5 minute intervals meet the following criteria:

- ±0.1 standard units for pH
- ±3% for temperature
- ±3% for conductivity
- ±10 mV for ORP or ±10% if between -100 mV and +100 mV
- ±10% for DO > 0.50 mg/L. Three DO readings < 0.50 mg/L can be considered stable.

PURGE UNTIL PARAMETER STABILIZATION or UNTIL 3 WELL VOLUMES ARE REMOVED

TOTAL VOLUME PURGED: 1.2 (GAL)
FLOW RATE (desired range is 100 to 500 mL/min): 155
SAMPLE TIME: 16:45
QC SAMPLES COLLECTED: None

ANALYSIS (fill in number of bottles collected)

| | | |
|---|---|---|
| GRO (3 vials, HCL) | VOCs (3 vials, HCL) ~~-DSM Shop Site Only~~ ✓ | |
| BTEX (3 vials, HCL) | | |
| DRO ([2] 250ml ambers, HCL) | | |
| PAHs ([2] 1-L ambers) - SW Only | | Other: |

COMMENTS: Sulphur-like odor.

Turbidity (NTU): _____

Sampler Signature: Amy Cox
QC Check Signature: Amy Cox

# ATTACHMENT 4

## SVE/SSD System OM&M Data Sheets

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# Wendell Ave SVE/SSD System OM&M Data Sheet

**Wendell Ave - SVE/SSD OM&M Data Sheet**

**Date:** 3/30/17 **Time:** 7:40 **Ambient Temp ($^0$F):** 13 **Technician:** Cox/Surratt **Field Instrument Used/Last Calibrated:** RKI 3/27/17

**SSD System**

**Depressurization Wells**

| Line | Vacuum (inWC) | Flow (scfm) | Valve % Open | Hex (ppm) | % CO2 | %O2 |
|---|---|---|---|---|---|---|
| DW-1 | *<54* | *~10* | | | | |
| DW-2 | *<54* | *~10* | | | | |
| DW-3 | *<54* | *~10* | | | | |
| DW-4 | *<54* | *~10* | | | | |
| DW-5 | *<54* | *~10* | | | | |
| DW-6 | *<54* | *~10* | | | | |
| Spare | | | | | | |
| Spare | | | | | | |

**SSD System Mechanical Parameters**

| | | |
|---|---|---|
| Dilution Valve % open | | *Closed* |
| Knockout drum level | | *Empty* |
| Manifold Vacuum (inWC) | | *Max < 54 inWC* |
| Blower Vacuum (inWC) | | *Δ < 10 inWC* |
| Exhaust Temp Digital (°F) | | *< 215 °F* |
| Exhaust Temp Gauge (°F) | | *< 215 °F* |
| Exhaust Flow (cfm) | | *~60* |
| Filters Checked/Cleaned? | | |

**Indoor Vapor Monitoring Points**

| Point ID | Vacuum (inWC) | Hex (ppm) | % CO2 | % O2 |
|---|---|---|---|---|
| SS-4 | *> 0.02* | | | |
| SS-5 | *> 0.02* | | | |
| SS-8 | *> 0.02* | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**SVE System**

**Extraction Wells**

| Line | Vacuum (inWC) | | Flow (scfm) | | Valve % Open | Hex (ppm) | % CO2 | %O2 |
|---|---|---|---|---|---|---|---|---|
| SVE-1 | - | *<81* | - | *~15* | - | - | - | - |
| SVE-2 | 9 | *<81* | 16 | *~15* | 75 | 0 | 0.6 | 20.3 |
| SVE-3 | 9 | *<81* | 19 | *~15* | 75 | 0 | 1.7 | 17.4 |
| SVE-4 | 12 | *<81* | 17 | *~15* | 75 | 0 | 2.3 | 16.7 |
| SVE-5 | 15 | *<81* | 18 | *~15* | 75 | 0 | 2.7 | 16.4 |
| SVE-6 | 14 | *<81* | 16 | *~15* | 100 | 5 | 0.2 | 20.2 |
| Spare | | | | | | | | |
| TOTAL FLOW | | | **86** | | | | | |

**SVE System Mechanical Parameters**

| | | |
|---|---|---|
| Dilution Valve % open | 0 | *Closed* |
| Knockout drum level | Empty | *Empty* |
| Manifold Vacuum (inWC) | 31 | *Max < 81 inWC* |
| Blower Vacuum (inWC) | 34 | *Δ < 10 inWC* |
| Exhaust Temp Digital (°F) | 105 | *< 275 °F* |
| Exhaust Temp Gauge (°F) | 120 | *< 275 °F* |
| Exhaust Flow (cfm) | 105 | *~75* |
| Filters Checked/Cleaned? | no | |

**Outdoor Vapor Monitoring Points**

| Point ID | Vacuum (inWC) | Hex (ppm) | %CO2 | %O2 | |
|---|---|---|---|---|---|
| SG-2 @ 4' bgs | *> 0.1* | | | | *At least one reading below 20.9%* |
| SG-2 @ 8' bgs | *> 0.1* | | | | |
| SG-3 @ 4' bgs | *> 0.1* | | | | |
| SG-3 @ 8' bgs | *> 0.1* | | | | |
| SG-7 @ 5' bgs | *> 0.1* | | | | |
| SG-7 @ 9' bgs | *> 0.1* | | | | |
| SG-8 @ 5' bgs | *> 0.1* | | | | |
| SG-22 @ 8' bgs | *> 0.1* | | | | |
| SG-24 @ 8' bgs | *> 0.1* | | | | |

**Field Notes:**

**Additional Mechanical and Shared Elements**

**Control Room**

| Parameter | | SSD | SVE System |
|---|---|---|---|
| Motor Speed (Hz) | | | 65 |
| IDEC Hourmeter Reading/Time | | | 26378.98 |
| Hobbs Hourmeter Reading/Time | | | 4295.7 |
| Previous IDEC Hourmeter Reading/Date/Time | | | 26345.03 |
| Previous Hobbs Hourmeter Reading/Date/Time | | | 4257.6 |
| Total Hours Since Last Event IDEC/Hobbs | 0 | | 38.1 |
| Percent Operability | 33.95 | | 1% |

**Exhaust Stack/Heat Trace**

| | |
|---|---|
| Exhaust Stack Drained? | Yes |
| Exhaust Stack (Hex (ppm), %O2, %CO2) | 0.0, 18.3%, 1.5% |
| Exhaust Stack Colortec (ppm) | NA |
| Heat Trace On? | Yes |
| LEL Monitor Reading (%LEL) | 0 |
| GVEA Meter Reading (kW-hr) | 188041 |

**Laboratory Sample**

| | | |
|---|---|---|
| Effluent Sample ID | 17-WAS-001-ES | 17-WAS-001-SG |
| Summa Canister ID | 3825 | 1L1623 |
| Time/Date | 3/30/2017 13:51 | 3/30/2017 13:05 |
| Initial Vacuum ("Hg) | 30 | 28 |
| Final Vacuum ("Hg) | 5 | 5 |
| | SVE Exhaust Stack | SVE-4 |

**Field Notes:**

SVE System was started at 19:30 on 3/29/2017 after approximately 180 day shutdown period.

SSD System remains shut down.

*Itemized values are the operational target for this monitoring parameter. Observed values should be entered and compared to the target values to determine if operational adjustement or maintenance is required*

NR = not recorded

##/## = "/" between readings indicates guage reading "before" and "after" adjustment

SG-1 destroyed: SS-6, SS-7, SS-9, SS-10, SS-11, SS-12, SS-13 no longer safely accessible due to building condition

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# Wendell Ave SVE/SSD System OM&M Data Sheet

**Wendell Ave - SVE/SSD OM&M Data Sheet**

**Date:** 5/9/17 **Time:** 9:50 **Ambient Temp ($^0$F):** 40 **Technician:** Cox/Powers **Field Instrument Used/Last Calibrated:** RKI 5/9/17

**SSD System**

**Depressurization Wells**

| Line | Vacuum (inWC) | Flow (scfm) | Valve % Open | Hex (ppm) | % CO2 | %O2 |
|---|---|---|---|---|---|---|
| DW-1 | *<54* | *~10* | | | | |
| DW-2 | *<54* | *~10* | | | | |
| DW-3 | *<54* | *~10* | | | | |
| DW-4 | *<54* | *~10* | | | | |
| DW-5 | *<54* | *~10* | | | | |
| DW-6 | *<54* | *~10* | | | | |
| Spare | | | | | | |
| Spare | | | | | | |

**SSD System Mechanical Parameters**

| | | |
|---|---|---|
| Dilution Valve % open | | *Closed* |
| Knockout drum level | | *Empty* |
| Manifold Vacuum (inWC) | | *Max < 54 inWC* |
| Blower Vacuum (inWC) | | *Δ < 10 inWC* |
| Exhaust Temp Digital (°F) | | *< 215 °F* |
| Exhaust Temp Gauge (°F) | | *< 215 °F* |
| Exhaust Flow (cfm) | | *~60* |
| Filters Checked/Cleaned? | | |

**Indoor Vapor Monitoring Points**

| Point ID | Vacuum (inWC) | | Hex (ppm) | % CO2 | % O2 |
|---|---|---|---|---|---|
| SS-4 | 0.024 | *> 0.02* | 0 | 0.02 | 20.9 |
| SS-5 | 0.003 | *> 0.02* | 0 | 0.0 | 20.9 |
| SS-8 | NR | *> 0.02* | NR | NR | NR |
| SS-9 | 0.000 | *> 0.02* | 0 | 0.0 | 20.9 |
| SS-13 | 0.000 | *> 0.02* | 0 | 0.0 | 20.9 |
| | | | | | |
| | | | | | |
| | | | | | |

**SVE System**

**Extraction Wells**

| Line | Vacuum (inWC) | | Flow (scfm) | | Valve % Open | Hex (ppm) | % CO2 | %O2 |
|---|---|---|---|---|---|---|---|---|
| SVE-1 | - | *<81* | - | *~15* | - | - | - | - |
| SVE-2 | 10 | *<81* | 16 | *~15* | 75 | 20 | 0.42 | 20.9 |
| SVE-3 | 10 | *<81* | 20 | *~15* | 75 | 0 | 0.40 | 20.9 |
| SVE-4 | 16 | *<81* | 13 | *~15* | 75 | 5 | 0.76 | 20.9 |
| SVE-5 | 17 | *<81* | 18 | *~15* | 75 | 0 | 0.92 | 20.7 |
| SVE-6 | 16 | *<81* | 14 | *~15* | 100 | 35 | 0.0 | 20.9 |
| Spare | | | | | | | | |
| TOTAL FLOW | | | **81** | | | | | |

**SVE System Mechanical Parameters**

| | | |
|---|---|---|
| Dilution Valve % open | 0 | *Closed* |
| Knockout drum level | Empty | *Empty* |
| Manifold Vacuum (inWC) | 32 | *Max < 81 inWC* |
| Blower Vacuum (inWC) | 36 | *Δ < 10 inWC* |
| Exhaust Temp Digital (°F) | 110.6 | *< 275 °F* |
| Exhaust Temp Gauge (°F) | 126 | *< 275 °F* |
| Exhaust Flow (cfm) | 100 | *~75* |
| Filters Checked/Cleaned? | no | |

**Outdoor Vapor Monitoring Points**

| Point ID | Vacuum (inWC) | | Hex (ppm) | %CO2 | %O2 |
|---|---|---|---|---|---|
| SG-2 @ 4' bgs | 0.577 | *> 0.1* | 0 | 0.06 | 20.0 |
| SG-2 @ 8' bgs | 0.770 | *> 0.1* | 0 | 0.38 | 18.7 |
| SG-3 @ 4' bgs | 1.62 | *> 0.1* | 0 | 0.00 | 20.6 |
| SG-3 @ 8' bgs | 1.69 | *> 0.1* | 0 | 1.38 | 18.9 |
| SG-7 @ 5' bgs | NR | *> 0.1* | NR | NR | NR |
| SG-7 @ 9' bgs | NR | *> 0.1* | NR | NR | NR |
| SG-8 @ 5' bgs | 2.73 | *> 0.1* | 0 | 0.42 | 20.3 |
| SG-22 @ 8' bgs | NR | *> 0.1* | NR | NR | NR |
| SG-24 @ 8' bgs | 0.797 | *> 0.1* | 10 | 0.02 | 20.9 |

*At least one reading below 20.9%*

**Field Notes:**

**Additional Mechanical and Shared Elements**

**Control Room**

| Parameter | | SSD | SVE System |
|---|---|---|---|
| Motor Speed (Hz) | | | 65 |
| IDEC Hourmeter Reading/Time | | | No Reading |
| Hobbs Hourmeter Reading/Time | | | 5258.5 |
| Previous IDEC Hourmeter Reading/Date/Time | | | 26378.98 |
| Previous Hobbs Hourmeter Reading/Date/Time | | | 4295.7 |
| Total Hours Since Last Event IDEC/Hobbs | 0 | | 962.8 |
| Percent Operability | #VALUE! | | 100% |

**Exhaust Stack/Heat Trace**

| | |
|---|---|
| Exhaust Stack Drained? | Yes |
| Exhaust Stack (Hex (ppm), %O2, %CO2) | 20, 20.9%, 0.48% |
| Exhaust Stack Colortec (ppm) | NA |
| Heat Trace On? | Yes |
| LEL Monitor Reading (%LEL) | 0 |
| GVEA Meter Reading (kW-hr) | 192938 |

**Laboratory Sample**

| | | |
|---|---|---|
| Effluent Sample ID | | |
| Summa Canister ID | | |
| Time/Date | | |
| Initial Vacuum ("Hg) | | |
| Final Vacuum ("Hg) | | |

**Field Notes:**

SSD System remains shut down.

*Itemized values are the operational target for this monitoring parameter. Observed values should be entered and compared to the target values to determine if operational adjustement or maintenance is required*

NR = not recorded

##/## = "/" between readings indicates guage reading "before" and "after" adjustment

SG-1 destroyed: SS-6, SS-7, SS-9, SS-10, SS-11, SS-12, SS-13 no longer safely accessible due to building condition

# Wendell Ave SVE/SSD System OM&M Data Sheet

**Wendell Ave - SVE/SSD OM&M Data Sheet**

**Date:** 5/10/17 **Time:** 11:35 **Ambient Temp (°F):** 55 **Technician:** Cox/Powers **Field Instrument Used/Last Calibrated:** RKI 5/9/17

## SSD System

### Depressurization Wells

| Line | Vacuum (inWC) | Flow (scfm) | Valve % Open | Hex (ppm) | % CO2 | %O2 |
|---|---|---|---|---|---|---|
| DW-1 | *<54* | *~10* | | | | |
| DW-2 | *<54* | *~10* | | | | |
| DW-3 | *<54* | *~10* | | | | |
| DW-4 | *<54* | *~10* | | | | |
| DW-5 | *<54* | *~10* | | | | |
| DW-6 | *<54* | *~10* | | | | |
| Spare | | | | | | |
| Spare | | | | | | |

### SSD System Mechanical Parameters

| | | |
|---|---|---|
| Dilution Valve % open | | *Closed* |
| Knockout drum level | | *Empty* |
| Manifold Vacuum (inWC) | | *Max < 54 inWC* |
| Blower Vacuum (inWC) | | *Δ < 10 inWC* |
| Exhaust Temp Digital (°F) | | *< 215 °F* |
| Exhaust Temp Gauge (°F) | | *< 215 °F* |
| Exhaust Flow (cfm) | | *~60* |
| Filters Checked/Cleaned? | | |

### Indoor Vapor Monitoring Points

| Point ID | Vacuum (inWC) | | Hex (ppm) | % CO2 | % O2 |
|---|---|---|---|---|---|
| SS-4 | 0.036 | *> 0.02* | 0 | 0.04 | 20.9 |
| SS-5 | 0.003 | *> 0.02* | 0 | 0.02 | 20.9 |
| SS-8 | NR | *> 0.02* | NR | NR | NR |
| SS-9 | 0.003 | *> 0.02* | 0 | 0.04 | 20.9 |
| SS-13 | 0.000 | *> 0.02* | 0 | 0.02 | 20.9 |
| | | | | | |
| | | | | | |
| | | | | | |

## SVE System

### Extraction Wells

| Line | Vacuum (inWC) | | Flow (scfm) | | Valve % Open | Hex (ppm) | % CO2 | %O2 |
|---|---|---|---|---|---|---|---|---|
| SVE-1 | - | *<81* | - | *~15* | - | - | - | - |
| SVE-2 | - | *<81* | 0 | *~15* | 0 | - | - | - |
| SVE-3 | 23 | *<81* | 12 | *~15* | 75 | 0 | 0.38 | 20.9 |
| SVE-4 | 19 | *<81* | 15 | *~15* | 75 | 0 | 0.78 | 20.7 |
| SVE-5 | 21 | *<81* | 18 | *~15* | 75 | 0 | 0.98 | 20.5 |
| SVE-6 | 18 | *<81* | 15 | *~15* | 100 | 20 | 0.20 | 20.9 |
| Spare | | | | | | | | |
| TOTAL FLOW | | | **60** | | | | | |

**Field Notes:**

### SVE System Mechanical Parameters

| | | |
|---|---|---|
| Dilution Valve % open | 0 | *Closed* |
| Knockout drum level | Empty | *Empty* |
| Manifold Vacuum (inWC) | 35 | *Max < 81 inWC* |
| Blower Vacuum (inWC) | 39 | *Δ < 10 inWC* |
| Exhaust Temp Digital (°F) | 108.6 | *< 275 °F* |
| Exhaust Temp Gauge (°F) | 124 | *< 275 °F* |
| Exhaust Flow (cfm) | 60 | *~75* |
| Filters Checked/Cleaned? | no | |

### Outdoor Vapor Monitoring Points

| Point ID | Vacuum (inWC) | | Hex (ppm) | %CO2 | %O2 |
|---|---|---|---|---|---|
| SG-2 @ 4' bgs | 0.574 | *> 0.1* | 0 | 0.06 | 20.5 |
| SG-2 @ 8' bgs | 0.756 | *> 0.1* | 0 | 0.40 | 20.5 |
| SG-3 @ 4' bgs | 1.85 | *> 0.1* | 0 | 0.12 | 20.9 |
| SG-3 @ 8' bgs | 1.93 | *> 0.1* | 0 | 1.26 | 19.7 |
| SG-7 @ 5' bgs | NR | *> 0.1* | NR | NR | NR |
| SG-7 @ 9' bgs | NR | *> 0.1* | NR | NR | NR |
| SG-8 @ 5' bgs | 3.20 | *> 0.1* | 30 | 0.46 | 20.7 |
| SG-22 @ 8' bgs | NR | *> 0.1* | NR | NR | NR |
| SG-24 @ 8' bgs | 0.929 | *> 0.1* | 0 | 0.02 | 20.9 |

*At least one reading below 20.9%*

## Additional Mechanical and Shared Elements

### Control Room

| Parameter | | SSD | SVE System |
|---|---|---|---|
| Motor Speed (Hz) | | | 65 |
| IDEC Hourmeter Reading/Time | | | No Reading |
| Hobbs Hourmeter Reading/Time | | | 5283.2 |
| Previous IDEC Hourmeter Reading/Date/Time | | | No Reading |
| Previous Hobbs Hourmeter Reading/Date/Time | | | 5258.5 |
| Total Hours Since Last Event IDEC/Hobbs | 0 | | 24.7 |
| Percent Operability | #VALUE! | | 96% |

### Exhaust Stack/Heat Trace

| | |
|---|---|
| Exhaust Stack Drained? | Yes |
| Exhaust Stack (Hex (ppm), %O2, %CO2) | 0, 20.9%, 0.34% |
| Exhaust Stack Colortec (ppm) | NA |
| Heat Trace On? | No |
| LEL Monitor Reading (%LEL) | 0 |
| GVEA Meter Reading (kW-hr) | 193063 |

### Laboratory Sample

| | | |
|---|---|---|
| Effluent Sample ID | 17-WAS-002-ES | 17-WAS-004-SS |
| Summa Canister ID | 6L0450 | 000001877 |
| Time/Date | 5/10/2017 9:06 | 5/10/2017 10:30 |
| Initial Vacuum ("Hg) | 29 | 30 |
| Final Vacuum ("Hg) | 9 | 12.5 |
| | SVE Exhaust Stack | SS-4 |

**Field Notes:**

SSD System remains shut down.

Shut off flow to SVE-2 to concentrate flow on primary source of contamination.

192938

125

*Itemized values are the operational target for this monitoring parameter. Observed values should be entered and compared to the target values to determine if operational adjustement or maintenance is required*

NR = not recorded

##/## = "/" between readings indicates guage reading "before" and "after" adjustment

SG-1 destroyed: SS-6, SS-7, SS-9, SS-10, SS-11, SS-12, SS-13 no longer safely accessible due to building condition

# ATTACHMENT 5

## Photo Log

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**PHOTOGRAPH 1: LOCATING AND CLEARING MW-9.**


**PHOTOGRAPH 2: COLLECTING GROUNDWATER SAMPLE AT MW-12M.**


**PHOTOGRAPH 3: CONTROL PANEL WITH SVE SYSTEM OPERATING.**


**PHOTOGRAPH 4: SUB-SLAB SAMPLE LOCATION SS-8 AT MIDNITE MINE.**


**PHOTOGRAPH 5: SS-9 SUB-SLAB SAMPLE COLLECTION AT MIDNITE MINE.**


**PHOTOGRAPH 6: SS-10 SUB-SLAB SAMPLE COLLECTION AT MIDNITE MINE.**


**PHOTOGRAPH 7: MIDNITE MINE INDOOR AIR SAMPLE COLLECTION AT IA-12 (PRIMARY AND DUPLICATE SAMPLE).**


**PHOTOGRAPH 8: COLLECTING FIELD MEASUREMENTS AT SG-8 OUTSIDE 314 WENDELL AVENUE (ES LAUNDROMAT).**


**PHOTOGRAPH 9: MIDNITE MINE INDOOR AIR SAMPLE COLLECTION AT IA-13.**

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# ATTACHMENT 6

## Groundwater Mann-Kendall Trend Analysis

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**MOLAR TREND ANALYSIS**
**June 2017 Data Summary Report**
**314 Wendell Avenue Site**

## Wendell Avenue
## Mann-Kendall Test for Trend Analysis

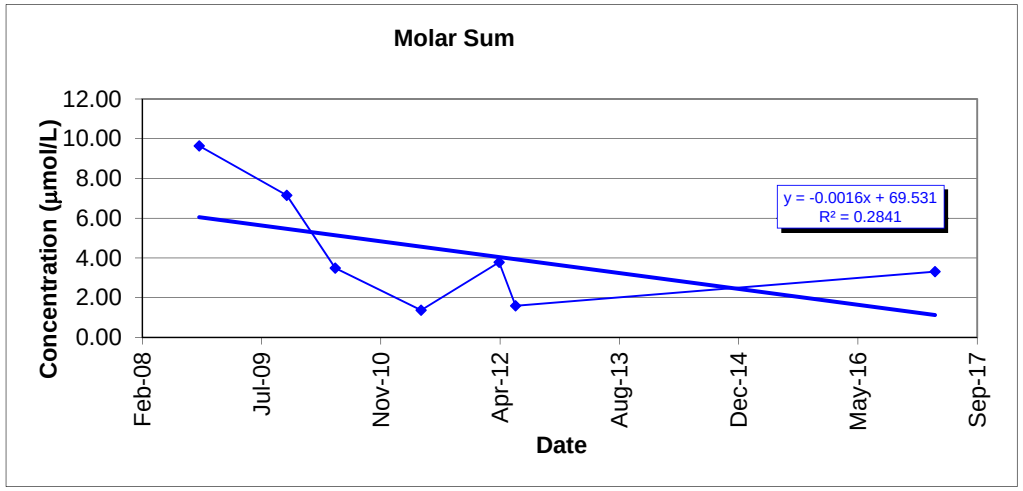
| | |
|---|---|
| **Monitoring Well No.** | MW-6S |
| **Contaminant** | PCE, TCE, cis-1,2-DCE, trans-1,2-DCE |

| Monitoring date: | 18-Oct-08 | 20-Oct-09 | 11-May-10 | 6-May-11 | 28-Mar-12 | 5-Jun-12 | 29-Mar-17 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Event 1 | Event 2 | Event 3 | Event 4 | Event 5 | Event 6 | Event 7 | Event 8 | Event 9 | Event 10 |
| Molar Sum (µmol/L) | 9.64 | 7.15 | 3.49 | 1.37 | 3.78 | 1.59 | 3.31 | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Row 1: Compare to Event 1 | -1 | -1 | -1 | -1 | -1 | -1 | | | | -6 |
| Row 2: Compare to Event 2 | | -1 | -1 | -1 | -1 | -1 | | | | -5 |
| Row 3: Compare to Event 3 | | | -1 | 1 | -1 | -1 | | | | -2 |
| Row 4: Compare to Event 4 | | | | 1 | 1 | 1 | | | | 3 |
| Row 5: Compare to Event 5 | | | | | -1 | -1 | | | | -2 |
| Row 6: Compare to Event 6 | | | | | | 1 | | | | 1 |
| Row 7: Compare to Event 7 | | | | | | | | | | 0 |
| Row 8: Compare to Event 8 | | | | | | | | | | 0 |
| Row 9: Compare to Event 9 | | | | | | | | | | 0 |

| | |
|---|---|
| **Mann-Kendall Statistic (S) = Total** | **-11** |
| **Confidence Level** | **> 90%** |
| **Coefficient of Variance (CV)** | **0.70** |

Notes:
– A minimum of four (4) independent sampling events are required for this test to be valid.
– Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
– A negative S value with confidence > 90% indicates a decreasing concentration trend.
– A positive S value with confidence > 90% indicates an increasing concentration trend.
– Any S value with confidence < 90% indicates that there is not a statistical concentration trend.
– A negative S value with confidence < 90% and CV <1 is a stable plume.
– The closer to zero the CV is, the less variation in concentrations between sampling events.
- R2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R2 values greater than 0.8 indicate a correlation, suggesting that there is a trend.
Confidence Level Determination Based on Table A18 (Gilbert 1987)
Effects of Coefficient of Variance based on Table 3.2 (AFCEE, 2000)




| Trend Analysis | |
|---|---|
| **Statistical Method** | **Result** |
| Linear Regression | No Trend |
| Mann-Kendall | Decreasing |

**MOLAR TREND ANALYSIS**
**June 2017 Data Summary Report**
**314 Wendell Avenue Site**

## Wendell Avenue
## Mann-Kendall Test for Trend Analysis

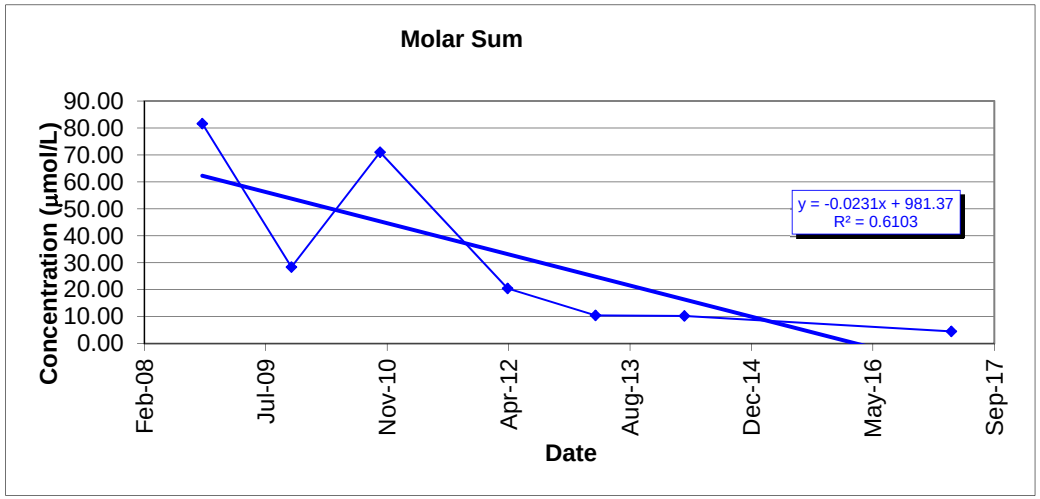
| | |
|---|---|
| **Monitoring Well No.** | MW-8S |
| **Contaminant** | PCE, TCE, cis-1,2-DCE, trans-1,2-DCE |

| Monitoring date: | 18-Oct-08 | 20-Oct-09 | 20-Oct-10 | 28-Mar-12 | 25-Mar-13 | 26-Mar-14 | 29-Mar-17 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Event 1 | Event 2 | Event 3 | Event 4 | Event 5 | Event 6 | Event 7 | Event 8 | Event 9 | Event 10 |
| Molar Sum (µmol/L) | 81.60 | 28.39 | 71.03 | 20.49 | 10.48 | 10.26 | 4.53 | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Row 1: Compare to Event 1 | | -1 | -1 | -1 | -1 | -1 | -1 | | | | -6 |
| Row 2: Compare to Event 2 | | | 1 | -1 | -1 | -1 | -1 | | | | -3 |
| Row 3: Compare to Event 3 | | | | -1 | -1 | -1 | -1 | | | | -4 |
| Row 4: Compare to Event 4 | | | | | -1 | -1 | -1 | | | | -3 |
| Row 5: Compare to Event 5 | | | | | | -1 | -1 | | | | -2 |
| Row 6: Compare to Event 6 | | | | | | | -1 | | | | -1 |
| Row 7: Compare to Event 7 | | | | | | | | | | | 0 |
| Row 8: Compare to Event 8 | | | | | | | | | | | 0 |
| Row 9: Compare to Event 9 | | | | | | | | | | | 0 |

| | |
|---|---|
| **Mann-Kendall Statistic (S) = Total** | **-19** |
| **Confidence Level** | **> 90%** |
| **Coefficient of Variance (CV)** | **0.96** |

Notes:
– A minimum of four (4) independent sampling events are required for this test to be valid.
– Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
– A negative S value with confidence > 90% indicates a decreasing concentration trend.
– A positive S value with confidence > 90% indicates an increasing concentration trend.
– Any S value with confidence < 90% indicates that there is not a statistical concentration trend.
– A negative S value with confidence < 90% and CV <1 is a stable plume.
– The closer to zero the CV is, the less variation in concentrations between sampling events.
- R2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R2 values greater than 0.8 indicate a correlation, suggesting that there is a trend.
Confidence Level Determination Based on Table A18 (Gilbert 1987)
Effects of Coefficient of Variance based on Table 3.2 (AFCEE, 2000)




| Trend Analysis | |
|---|---|
| **Statistical Method** | **Result** |
| Linear Regression | Possibly Decreasing |
| Mann-Kendall | Decreasing |

**MOLAR TREND ANALYSIS**
**June 2017 Data Summary Report**
**314 Wendell Avenue Site**

## Wendell Avenue
## Mann-Kendall Test for Trend Analysis

| | |
|---|---|
| **Monitoring Well No.** | MW-9M |
| **Contaminant** | PCE, TCE, cis-1,2-DCE, trans-1,2-DCE |

| Monitoring date: | 18-Oct-08 | 18-Oct-09 | 20-Oct-10 | 6-Apr-11 | 28-Mar-12 | 14-Jan-13 | 26-Mar-13 | 26-Mar-14 | 29-Mar-17 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Event 1 | Event 2 | Event 3 | Event 4 | Event 5 | Event 6 | Event 7 | Event 8 | Event 9 | Event 10 |
| Molar Sum (µmol/L) | 1.28 | 1.04 | 0.77 | 1.11 | 1.17 | 1.86 | 0.99 | 0.70 | 0.39 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Row 1: Compare to Event 1 | | -1 | -1 | -1 | -1 | 1 | -1 | -1 | -1 | |
| Row 2: Compare to Event 2 | | | -1 | 1 | 1 | 1 | -1 | -1 | -1 | |
| Row 3: Compare to Event 3 | | | | 1 | 1 | 1 | 1 | -1 | -1 | |
| Row 4: Compare to Event 4 | | | | | 1 | 1 | -1 | -1 | -1 | |
| Row 5: Compare to Event 5 | | | | | | 1 | -1 | -1 | -1 | |
| Row 6: Compare to Event 6 | | | | | | | -1 | -1 | -1 | |
| Row 7: Compare to Event 7 | | | | | | | | -1 | -1 | |
| Row 8: Compare to Event 8 | | | | | | | | | -1 | |
| Row 9: Compare to Event 9 | | | | | | | | | | |

| | |
|---|---|
| -6 | |
| -1 | |
| 2 | |
| -1 | |
| -2 | |
| -3 | |
| -2 | |
| -1 | |
| 0 | |

| | |
|---|---|
| **Mann-Kendall Statistic (S) = Total** | **-14** |
| **Confidence Level** | **> 90%** |
| **Coefficient of Variance (CV)** | **0.40** |

Notes:
– A minimum of four (4) independent sampling events are required for this test to be valid.
– Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
– A negative S value with confidence > 90% indicates a decreasing concentration trend.
– A positive S value with confidence > 90% indicates an increasing concentration trend.
– Any S value with confidence < 90% indicates that there is not a statistical concentration trend.
– A negative S value with confidence < 90% and CV <1 is a stable plume.
– The closer to zero the CV is, the less variation in concentrations between sampling events.
- R2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
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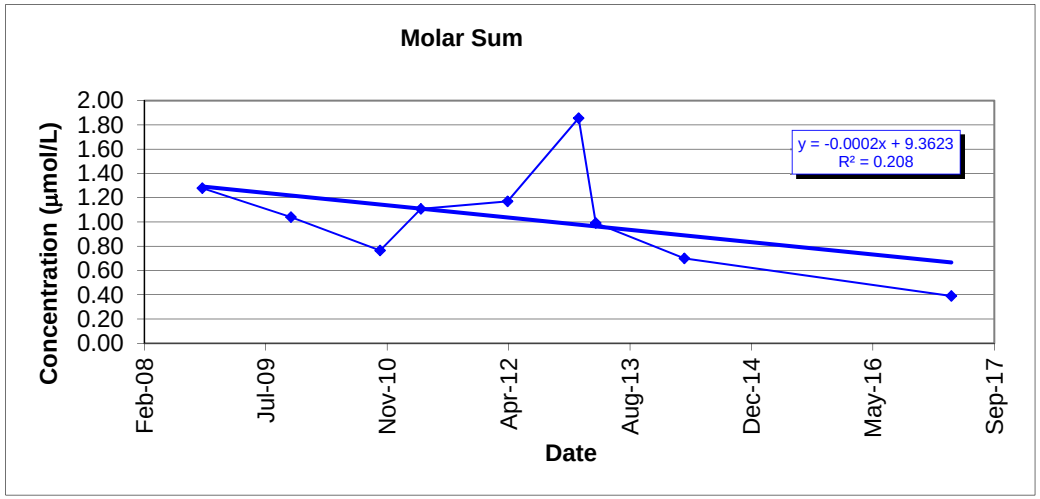


| Trend Analysis | |
|---|---|
| **Statistical Method** | **Result** |
| Linear Regression | No Trend |
| Mann-Kendall | Possibly Decreasing |

**MOLAR TREND ANALYSIS**
**June 2017 Data Summary Report**
**314 Wendell Avenue Site**

Wendell Avenue
Mann-Kendall Test for Trend Analysis

| | |
|---|---|
| **Monitoring Well No.** | MW-12M |
| **Contaminant** | PCE, TCE, cis-1,2-DCE, trans-1,2-DCE |

| Monitoring date: | 19-Oct-09 | 20-Oct-10 | 6-Apr-11 | 28-Mar-12 | 25-Mar-13 | 26-Mar-14 | 29-Mar-17 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Event 1 | Event 2 | Event 3 | Event 4 | Event 5 | Event 6 | Event 7 | Event 8 | Event 9 | Event 10 |
| Molar Sum (µmol/L) | 0.59 | 0.33 | 0.38 | 0.46 | 0.44 | 0.24 | 0.23 | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Row 1: Compare to Event 1 | | -1 | -1 | -1 | -1 | -1 | -1 | | | | -6 |
| Row 2: Compare to Event 2 | | | 1 | 1 | 1 | -1 | -1 | | | | 1 |
| Row 3: Compare to Event 3 | | | | 1 | 1 | -1 | -1 | | | | 0 |
| Row 4: Compare to Event 4 | | | | | -1 | -1 | -1 | | | | -3 |
| Row 5: Compare to Event 5 | | | | | | -1 | -1 | | | | -2 |
| Row 6: Compare to Event 6 | | | | | | | -1 | | | | -1 |
| Row 7: Compare to Event 7 | | | | | | | | | | | 0 |
| Row 8: Compare to Event 8 | | | | | | | | | | | 0 |
| Row 9: Compare to Event 9 | | | | | | | | | | | 0 |

| | |
|---|---|
| **Mann-Kendall Statistic (S) = Total** | **-11** |
| **Confidence Level** | **> 95%** |
| **Coefficient of Variance (CV)** | **0.33** |

Notes:
– A minimum of four (4) independent sampling events are required for this test to be valid.
– Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
– A negative S value with confidence > 90% indicates a decreasing concentration trend.
– A positive S value with confidence > 90% indicates an increasing concentration trend.
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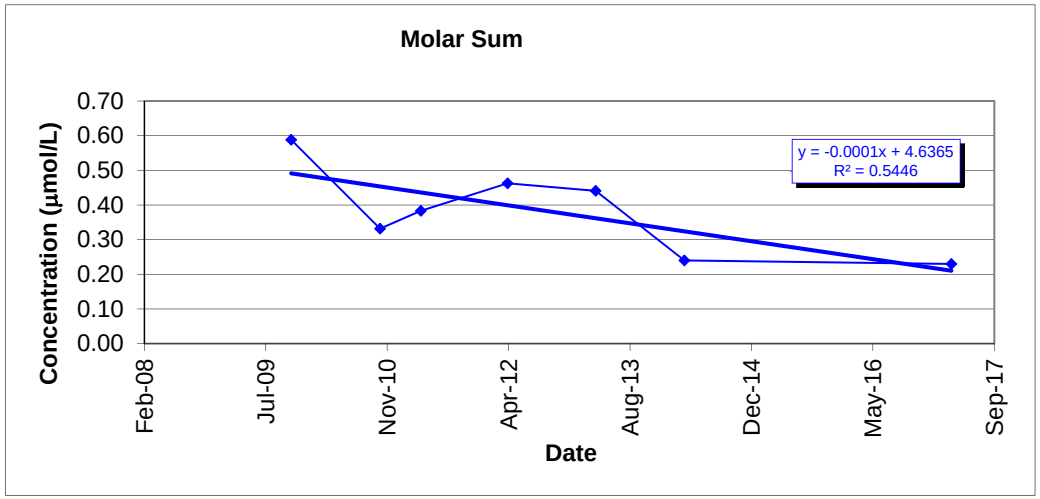


| Trend Analysis | |
|---|---|
| **Statistical Method** | **Result** |
| Linear Regression | Possibly Decreasing |
| Mann-Kendall | Decreasing |

**MOLAR TREND ANALYSIS**
**June 2017 Data Summary Report**
**314 Wendell Avenue Site**

Wendell Avenue
Mann-Kendall Test for Trend Analysis

| | |
|---|---|
| **Monitoring Well No.** | MW-4S |
| **Contaminant** | PCE, TCE, cis-1,2-DCE, trans-1,2-DCE |

| Monitoring date: | 18-Oct-08 | 19-Oct-09 | 19-Oct-10 | 6-Apr-11 | 30-Mar-17 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Event 1 | Event 2 | Event 3 | Event 4 | Event 5 | Event 6 | Event 7 | Event 8 | Event 9 | Event 10 |
| Molar Sum (µmol/L) | 0.78 | 0.69 | 0.53 | 0.57 | 0.38 | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Row 1: Compare to Event 1 | | -1 | -1 | -1 | -1 | | | | | | -4 |
| Row 2: Compare to Event 2 | | | -1 | -1 | -1 | | | | | | -3 |
| Row 3: Compare to Event 3 | | | | 1 | -1 | | | | | | 0 |
| Row 4: Compare to Event 4 | | | | | -1 | | | | | | -1 |
| Row 5: Compare to Event 5 | | | | | | | | | | | 0 |
| Row 6: Compare to Event 6 | | | | | | | | | | | 0 |
| Row 7: Compare to Event 7 | | | | | | | | | | | 0 |
| Row 8: Compare to Event 8 | | | | | | | | | | | 0 |
| Row 9: Compare to Event 9 | | | | | | | | | | | 0 |

| | |
|---|---|
| **Mann-Kendall Statistic (S) = Total** | **-8** |
| **Confidence Level** | **> 95%** |
| **Coefficient of Variance (CV)** | **0.26** |

Notes:
– A minimum of four (4) independent sampling events are required for this test to be valid.
– Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
– A negative S value with confidence > 90% indicates a decreasing concentration trend.
– A positive S value with confidence > 90% indicates an increasing concentration trend.
– Any S value with confidence < 90% indicates that there is not a statistical concentration trend.
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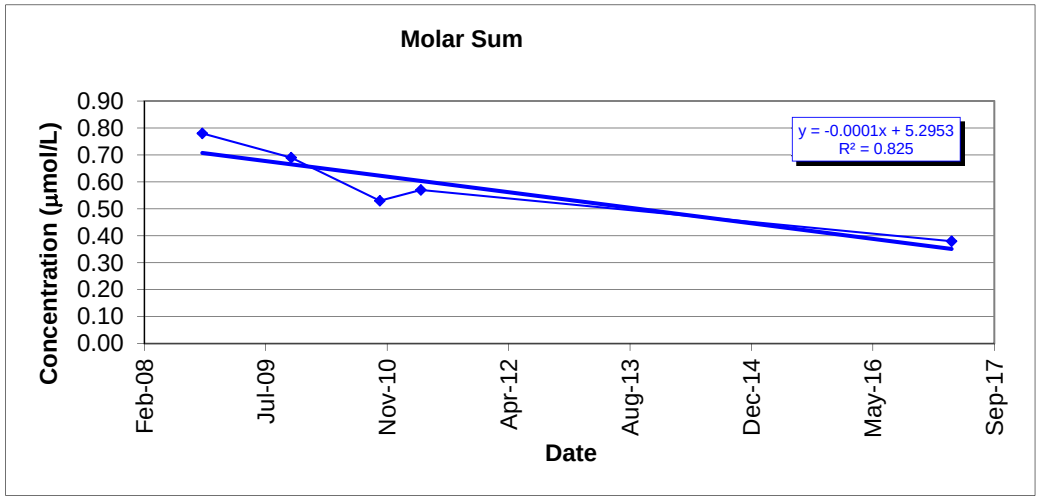


| Trend Analysis | |
|---|---|
| **Statistical Method** | **Result** |
| Linear Regression | Decreasing |
| Mann-Kendall | Decreasing |

**MOLAR TREND ANALYSIS**
**June 2017 Data Summary Report**
**314 Wendell Avenue Site**

## Wendell Avenue
## Mann-Kendall Test for Trend Analysis

| | |
|---|---|
| **Monitoring Well No.** | MW-4M |
| **Contaminant** | PCE, TCE, cis-1,2-DCE, trans-1,2-DCE |

| Monitoring date: | 18-Oct-08 | 19-Oct-09 | 19-Oct-10 | 6-Apr-11 | 27-Mar-12 | 14-Aug-12 | 26-Mar-14 | 30-Mar-17 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Event 1 | Event 2 | Event 3 | Event 4 | Event 5 | Event 6 | Event 7 | Event 8 | Event 9 | Event 10 |
| Molar Sum (µmol/L) | 0.71 | 0.61 | 0.43 | 0.46 | 0.54 | 0.56 | 0.38 | 0.34 | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Row 1: Compare to Event 1 | | -1 | -1 | -1 | -1 | -1 | -1 | -1 | | |
| Row 2: Compare to Event 2 | | | -1 | -1 | -1 | -1 | -1 | -1 | | |
| Row 3: Compare to Event 3 | | | | 1 | 1 | 1 | -1 | -1 | | |
| Row 4: Compare to Event 4 | | | | | 1 | 1 | -1 | -1 | | |
| Row 5: Compare to Event 5 | | | | | | 1 | -1 | -1 | | |
| Row 6: Compare to Event 6 | | | | | | | -1 | -1 | | |
| Row 7: Compare to Event 7 | | | | | | | | -1 | | |
| Row 8: Compare to Event 8 | | | | | | | | | | |
| Row 9: Compare to Event 9 | | | | | | | | | | |

| | |
|---|---|
| Row 1: Compare to Event 1 | -7 |
| Row 2: Compare to Event 2 | -6 |
| Row 3: Compare to Event 3 | 1 |
| Row 4: Compare to Event 4 | 0 |
| Row 5: Compare to Event 5 | -1 |
| Row 6: Compare to Event 6 | -2 |
| Row 7: Compare to Event 7 | -1 |
| Row 8: Compare to Event 8 | 0 |
| Row 9: Compare to Event 9 | 0 |

| | |
|---|---|
| **Mann-Kendall Statistic (S) = Total** | **-16** |
| **Confidence Level** | **> 95%** |
| **Coefficient of Variance (CV)** | **0.25** |

Notes:
– A minimum of four (4) independent sampling events are required for this test to be valid.
– Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
– A negative S value with confidence > 90% indicates a decreasing concentration trend.
– A positive S value with confidence > 90% indicates an increasing concentration trend.
– Any S value with confidence < 90% indicates that there is not a statistical concentration trend.
– A negative S value with confidence < 90% and CV <1 is a stable plume.
– The closer to zero the CV is, the less variation in concentrations between sampling events.
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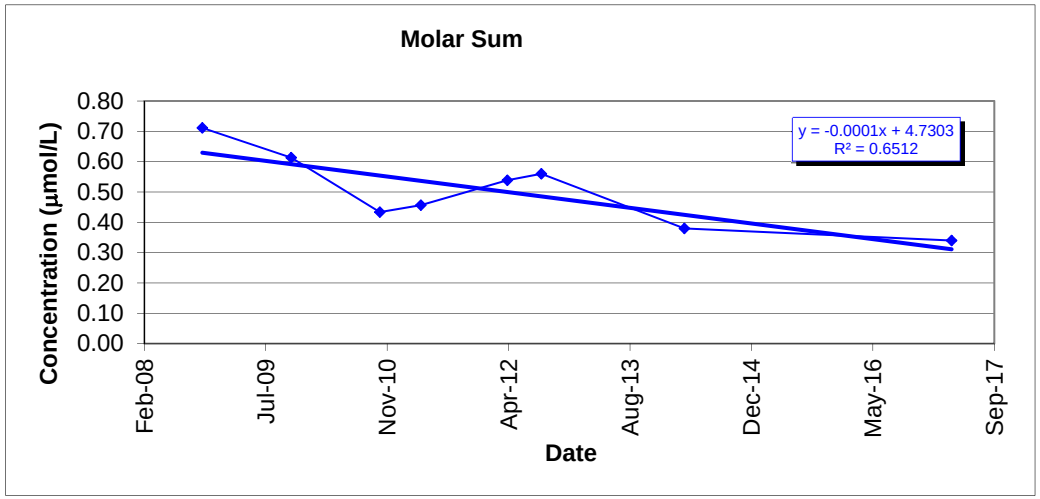


| Trend Analysis | |
|---|---|
| **Statistical Method** | **Result** |
| Linear Regression | Possibly Decreasing |
| Mann-Kendall | Decreasing |

# ATTACHMENT 7

## Laboratory Data Review Checklists

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# Laboratory Data Review Checklist

Completed by:

Elsie King

Title:

Project Chemist

Date:

April 27, 2017

CS Report Name:

Wendell Avenue

Report Date:

April 07, 2017

Consultant Firm:

ERM Alaska, Inc.

Laboratory Name:

SGS

Laboratory Report Number:

1171377

ADEC File Number:

Hazard Identification Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

      ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

      ☐ Yes ☑ No Comments:

      Samples were not transferred

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

      ☑ Yes ☐ No Comments:

   b. Correct analyses requested?

      ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

      ☑ Yes ☐ No Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

      ☑ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

      ☑ Yes ☐ No Comments:

      Five (5) VOA vials were received with bubbles > 6 mm. There were additional vials provided for the analysis of the samples.

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

      ☑ Yes ☐ No Comments:

e. Data quality or usability affected?

Comments:

Data is acceptable.

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☑ Yes ☐ No Comments:

MS/MSD %R were low for cis-1,2-dichloroethene and trichloroethene in sample 17-MW8SR-03-GW

c. Were all corrective actions documented?

☐ Yes ☑ No Comments:

NA - corrective action was not required

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Results for cis-1,2-dichloroethene and trichloroethene in sample 17-MW8SR-03-GW and the field duplicate were flagged JM as estimated, with a low bias due to matrix interference.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☑ Yes ☐ No Comments:

b. All applicable holding times met?

☑ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☐ Yes ☑ No Comments:

Only water samples

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☑ Yes ☐ No Comments:

e. Data quality or usability affected?

Comments:

Data is acceptable.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☑ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

NA- Blank results < LOQ.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☑ No Comments:

NA- Blank results < LOQ.

v. Data quality or usability affected?

Comments:

Data is acceptable.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐ Yes ☑ No Comments:

NA - Only organics

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

NA - LCS %R and RPD were within acceptance limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☑ No Comments:

NA - LCS %R and RPD were within acceptance limits.

vii. Data quality or usability affected?

Comments:

Data is acceptable.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☑ No Comments:

NA - Surrogate %Rs were within control limits.

iv. Data quality or usability affected?

Comments:

Data is acceptable.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☑ Yes ☐ No Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments:

Yes - One trip blank was listed on the COC with one sample cooler.

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

NA - Blanks results < LOQ.

v. Data quality or usability affected?

Comments:

Data is acceptable.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

17-MW8SR-003-GW and 17-MWX-006-GW

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where $R_1$ = Sample Concentration
$R_2$ = Field Duplicate Concentration

☑ Yes ☐ No Comments:

iv. Data quality or usability affected?

Comments:

Data is acceptable

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☐ Yes ☐ No ☑ Not Applicable

i. All results less than LOQ?

☐ Yes ☑ No Comments:

NA - disposable equipment was used

ii. If above LOQ, what samples are affected?

Comments:

NA - disposable equipment was used

iii. Data quality or usability affected?

Comments:

NA - disposable equipment was used

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☑ Yes ☐ No Comments:

# Laboratory Data Review Checklist for Air Samples

| | | | |
|---|---|---|---|
| Completed by: | Elsie King | | |
| Title: | Project Chemist | Date: | Apr 7, 2017 |
| CS Report Name: | Wendell Ave June 2017 Data Summary Report | Report Date: | Apr 7, 2017 |
| Consultant Firm: | ERM Alaska, Inc. | | |
| Laboratory Name: | Eurofins Air Toxics, Inc. | Laboratory Report Number: | 1704008A,B |
| ADEC File Number: | | ADEC Haz ID: | |

1. Laboratory

a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

(●) Yes ( ) No ( ) NA (Please explain.) Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

( ) Yes ( ) No (●) NA (Please explain.) Comments:

NA. Samples were not transferred or subcontracted to another laboratory.

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

(●) Yes ( ) No ( ) NA (Please explain.) Comments:

b. Correct analyses requested?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample condition documented -Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

b. If there were any discrepancies, were they documented? For example, incorrect sample containers/ preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

○ Yes ○ No ◉ NA (Please explain) Comments:

NA. There were no receiving discrepancies.

c. Data quality or usability affected? (Please explain.)

○ Yes ◉ No ○ NA (Please explain) Comments:

Data quality and usability is not affected with respect to the reported laboratory sample receipt documentation.

4. Case Narrative

a. Present and understandable?

◉ Yes ○ No ○ NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

○ Yes ○ No ◉ NA (Please explain) Comments:

NA. There were no discrepancies, errors or QC failures.

c. Were all corrective actions documented?

○ Yes ○ No ◉ NA (Please explain) Comments:

NA. There were no corrective actions.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Data quality and usability is not affected with respect to the case narrative report.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

○ Yes ◉ No ○ NA (Please explain) Comments:

Sample 17-WAS-001-SG was transferred from Low Level analysis to full scan TO-15 due to high levels of target compounds.

b. Samples analyzed within 30 days of collection or within the time required by the method?

◉ Yes ○ No ○ NA (Please explain) Comments:

c. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

◉ Yes ○ No ○ NA (Please explain) Comments:

Dilution was performed on sample 17-WAS-001-SG and 17-WAS-001-ES due to the presence of high level target species.

d. Data quality or usability affected?

Comments:

Data quality and usability is not affected with respect to the reported sample results.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

ii. All method blank results less than PQL?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iii. If above PQL, what samples are affected?

Comments:

NA. All method blank results were below PQL.

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

( ) Yes ( ) No (•) NA (Please explain) Comments:

NA. All method blank results were below PQL.

v. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported method blank results.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iii. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

○ Yes ○ No ◉ NA (Please explain) Comments:

All %R and RPD within acceptable limits.

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

○ Yes ○ No ◉ NA (Please explain) Comments:

All %R and RPD within acceptable limits.

vi. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported LCS/LCSD results.

c. Surrogates

i. Are surrogate recoveries reported for field, QC and laboratory samples?

◉ Yes ○ No ○ NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

◉ Yes ○ No ○ NA (Please explain) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

○ Yes ○ No ◉ NA (Please explain) Comments:

NA. All surrogates recoveries were within limits.

iv. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported surrogate results.

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 type (soil gas, indoor air etc.) samples?

○ Yes ◉ No ○ NA (Please explain) Comments:

Field duplicates were not submitted in this sampling event.

ii. Submitted blind to lab?

○ Yes ○ No ◉ NA (Please explain) Comments:

Field duplicates were not submitted in this sampling event.

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

$$RPD\ (\%) = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where $R_1$ = Sample Concentration

$R_2$ = Field Duplicate Concentration

○ Yes ○ No ◉ NA (Please explain) Comments:

Field duplicates were not submitted in this sampling event.

iv. Data quality or usability affected? (Please explain.) Comments:

Field duplicates were not submitted in this sampling event.

e. Field Blank (If not used explain why).

○ Yes ○ No ◉ NA (Please explain) Comments:

NA. Field blank was not required.

i. All results less than PQL?

○ Yes ○ No ◉ NA (Please explain) Comments:

NA. Field blank was not required.

ii. If above PQL, what samples are affected? Comments:

NA. Field blank was not required.

iii. Data quality or usability affected? (Please explain.)

Comments:

NA. Field blank was not required.

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

◉ Yes ○ No ○ NA (Please explain) Comments:

Defined within the laboratory case narrative.

Reset Form

# Laboratory Data Review Checklist for Air Samples

| | | | |
|---|---|---|---|
| Completed by: | Tim McDougall | | |
| Title: | Project Manager | Date: | May 26, 2017 |
| CS Report Name: | Wendell Ave June 2017 Data Summary Report | Report Date: | May 26, 2017 |
| Consultant Firm: | ERM Alaska, Inc. | | |
| Laboratory Name: | Eurofins Air Toxics, Inc. | Laboratory Report Number: | 1705292A,B,C |
| ADEC File Number: | | ADEC Haz ID: | |

1. Laboratory

a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

(•) Yes ( ) No ( ) NA (Please explain.) Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

( ) Yes ( ) No (•) NA (Please explain.) Comments:

NA. Samples were not transferred or subcontracted to another laboratory.

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

(•) Yes ( ) No ( ) NA (Please explain.) Comments:

b. Correct analyses requested?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample condition documented -Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

b. If there were any discrepancies, were they documented? For example, incorrect sample containers/ preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

There was a significant difference (greater than 5.0" Hg) between the measured canister receipt vacuum (1" Hg) and that reported on the Chain of Custody (COC) for sample 17-WAS-001-IA (8.5" Hg). A leak test indicated that the valve was functioning properly.

c. Data quality or usability affected? (Please explain.)

(●) Yes ( ) No ( ) NA (Please explain) Comments:

Results for samples 17-WAS-001-IA were flagged 'JA' due to possible leak during transit. Results may be biased low.

4. Case Narrative

a. Present and understandable?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

1705292B - TO-3: The hydrocarbon profile present in samples 17-WAS-001-IA, 17-WAS-002-IA, 17-WAS-003-IA, and 17-WAS-002-SS did not resemble that of commercial gasoline. Results were calculated using the response factor derived from the current gasoline linear calibration.

c. Were all corrective actions documented?

( ) Yes ( ) No (●) NA (Please explain) Comments:

NA. There were no corrective actions required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Results for TPH-Gasoline were flagged JN as estimated, with uncertain identification as gasoline.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

( ) Yes (●) No ( ) NA (Please explain) Comments:

1705292A: Samples 17-WAS-002-ES and 17-WAS-004-SS were transferred from Low Level analysis to full scan TO-15 due to high levels of target compounds.

b. Samples analyzed within 30 days of collection or within the time required by the method?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

c. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

Dilution was performed on samples 17-WAS-002-ES, 17-WAS-004-SS, 17-WAS-001-IA, 17-WAS-002-IA, and 17-WAS-003-IA due to the presence of high level compounds. All ND results were reported with elevated RLs.

d. Data quality or usability affected? Comments:

Data quality and usability is not affected with respect to the reported sample results. The reported RLs were less than the appropriate ADEC VI target levels.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

ii. All method blank results less than PQL?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

iii. If above PQL, what samples are affected?

Comments:

NA. All method blank results were below PQL.

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

( ) Yes ( ) No (●) NA (Please explain) Comments:

NA. All method blank results were below PQL.

v. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported method blank results.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

(●) Yes ( ) No ( ) NA (Please explain) Comments:

iii. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

( ) Yes ( ) No (•) NA (Please explain) Comments:

All %R and RPD within acceptable limits.

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

( ) Yes ( ) No (•) NA (Please explain) Comments:

All %R and RPD within acceptable limits.

vi. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported LCS/LCSD results.

c. Surrogates

i. Are surrogate recoveries reported for field, QC and laboratory samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

( ) Yes ( ) No (•) NA (Please explain) Comments:

NA. All surrogates recoveries were within limits.

iv. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported surrogate results.

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 type (soil gas, indoor air etc.) samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

Primary 17-WAS-002-IA with duplicate 17-WAS-003-IA

ii. Submitted blind to lab?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

$$RPD\ (\%) = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where $R_1$ = Sample Concentration

$R_2$ = Field Duplicate Concentration

( ) Yes (●) No ( ) NA (Please explain) Comments:

RPD for TPH-Gasoline is over control limit, results flagged JD as estimated.

iv. Data quality or usability affected? (Please explain.)

Comments:

TPH-Gasoline results for samples 17-WAS-002-IA and 17-WAS-003-IA were flagged 'JD' as estimated with high imprecision.

e. Field Blank (If not used explain why).

( ) Yes ( ) No (●) NA (Please explain) Comments:

NA. Field blank was not required.

i. All results less than PQL?

( ) Yes ( ) No (●) NA (Please explain) Comments:

NA. Field blank was not required.

ii. If above PQL, what samples are affected?

Comments:

NA. Field blank was not required.

iii. Data quality or usability affected? (Please explain.)

Comments:

NA. Field blank was not required.

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

Defined within the laboratory case narrative.

Reset Form