PARSONS

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January 21, 2019

Mr. Peter Ouderkirk, P.E.
Environmental Engineer II
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
317 Washington Street
Watertown, New York 13601-3787

RE: 2018 Bi-Annual Groundwater Sampling Report
DuPont, Ferdula Landfill
Frankfort, New York

Dear Mr. Ouderkirk:

On behalf of E.I. du Pont de Nemours and Company (DuPont)), Parsons is pleased to provide you with the 2018 Annual Groundwater Sampling Report for the DuPont, Ferdula Landfill Site located in Frankfort, New York. This report is being submitted to fulfill the sampling requirement stipulated in the Administrative Consent Order (ACO) between DuPont and the New York State Department of Environmental Conservation (NYSDEC) dated December 1993 and to satisfy the NYSDEC request to sample a select number of groundwater monitoring wells for 1,4-Dioxane and Per-and Polyfluoroalkyl substances (PFAs). The request was made to DuPont in a letter from the NYSDEC dated May 16th, 2018. This letter report documents field activities associated with the groundwater sampling and presents groundwater analytical results.

## WORKPLAN FOR 1,4-DIOXANE AND PFAs GROUNDWATER SAMPLING

At the request of the NYSDEC, a work plan was prepared and submitted to the agency for review and approval for the sampling of a selected number of groundwater wells at the site for 1,4-Dioxane and PFA substances. An initial work plan dated August 1st, 2018, was submitted and rejected by the NYSDEC in a letter to DuPont dated August 22nd, 2018 (see Attachment A). The work plan was revised, in which, the NYSDEC comments were addressed and re-submitted for approval. The NYSDEC approved the revised work plan dated August 29th, 2018 in a letter to DuPont dated September 4th, 2018 (see Attachment A).

## FIELD ACTIVITIES

Between October 15th and October 19th, 2018, Parsons completed groundwater level measurements at all the landfill wells and collected groundwater samples from landfill groundwater monitoring wells F-6, F-7, F-8, F-14, F-16, F-17, P-17, and P-18. One additional groundwater monitoring well (P-11), which was not one of the routine wells sampled during

the bi-annual groundwater sampling event, was sampled during field activities. Reasoning for sampling of the well is presented below. The locations of the monitoring wells are shown on Figure 1.

All groundwater monitoring wells listed above were sampled and analyzed for volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8260C, except for well P-11. Well P-11 was only sampled and analyzed for 1,4-Dioxane and PFA substances by EPA Methods 8270D SIM and 537 Modified, respectively. Wells P-17 and F-8 were also analyzed for the same parameters as well P-11. These three wells were sampled to satisfy NYSDEC's request for 1,4-Dioxane and PFA substances to be sampled. As per the approved workplan, well P-11 was sampled because it represented groundwater quality upgradient of the landfill cap, well P-17 represented groundwater quality within the landfill cap, and well F-8 represented groundwater quality downgradient of the landfill cap.

In accordance with the Field Sampling and Analysis Plan dated June 2018 and other associated sampling protocol documents (Collection of Groundwater Samples for PFAS From Monitoring Wells Sample Protocol and United States Corps of Engineers Standard Operating Procedures 047; PFAS Field Sampling) groundwater monitoring wells were purged and sampled utilizing low-flow sampling techniques with a peristaltic pump, PFAS-free dedicated tubing, and a low flow-through cell. Field parameters were measured during the sampling event including pH, temperature, conductivity, turbidity, redox potential, and dissolved oxygen. All results were recorded in a field form.

Purged groundwater was collected and disposed of in the onsite leachate collection system, in accordance with the Waste Management Plan.

## GROUNDWATER SAMPLES COLLECTED

Immediately following collection, samples were packed on ice in coolers that were secured and shipped with accompanying chain of custody forms to Eurofins Lancaster Laboratories Environmental (ELLE) in Lancaster, Pennsylvania and to Alpha Analytical (Alpha) in Westborough, Massachusetts. ELLE and Alpha have been certified by the New York State Department of Health (NYSDOH) and Environmental Laboratory Approved Program (ELAP).

ELLE analyzed all VOCs and PFA substance samples, while Alpha analyzed all 1,4-Dioxane samples.

## ANALYSIS OF FIELD DATA AND GROUNDWATER ANALYTICAL DATA

### Groundwater Elevations and Trends

During field activities, depth-to-water measurements were taken at all groundwater monitoring wells remaining at the Site. Groundwater elevations are provided in Table 1 and have been added to the historical trend plots included as Attachment B. Monitoring wells P-10, P-16, and F-15 no longer exist.

The effectiveness of the engineered cap and upgradient diversion system (UDS) is demonstrated by the lower groundwater potentiometric surface in the wells within the landfill and downgradient of the UDS. The trend plots show that groundwater elevations in the wells downgradient of the UDS are generally constant (Figure B-1), while those outside of the UDS fluctuate (Figure B-2). The variation in fluctuations is easily observed with Figures B-3 and B-4 which offer a comparison between matched sets of wells with one being inside of the UDS and one being outside. In addition, this comparison of the water table elevations in downgradient and upgradient wells located across the UDS illustrate that there is a significantly lower elevation in the downgradient wells than those located upgradient. Groundwater elevation trends for other wells within the landfill are included on Figure B-5 and B-6. Refer to Attachment B for Figures B-1 through B-6.

The groundwater elevation data suggests that the UDS and the cap are functioning effectively and as designed to prevent infiltration of precipitation and flow through the landfill material.

### Groundwater Monitoring and Trends

Tables 2 and 3 present the analytical results for groundwater samples collected between October 16th and 19th, 2018. Attachment C includes trend plots (Figures C-1 through C-4) that illustrate the levels of chemical constituents-of-concern and their concentrations in the wells located within the landfill and downgradient of the UDS. Trend analysis indicated that concentrations of Trichloroethene (TCE) have been decreasing over time, while concentrations of cis-1,2 Dichloroethene (cis-1,2 DCE), trans-1,2 Dichloroethene (trans-1,2 DCE), and vinyl chloride had generally increased at various times during past sampling events and are now decreasing. This trend indicates that the remediation system operating at the Site is encouraging natural biodegradation to occur within the groundwater.

The concentrations of chemical constituents in the leachate from the Site also have been decreasing over time, suggesting the effectiveness of the remedial systems in-place at the Site. A sample from the leachate system was collected during field activities and analyzed. Leachate results for 2018 are provided in Attachment F. The historical and current data for the leachate chemicals of concerns are charted in Attachment C (Figure C-5).

Groundwater analytical data were compared to the NYSDEC Class GA Water Standards as listed in the NYSDEC document "Division of Technical and Operational Guidance Series (1.1.1) (TOGS), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Dated June 1998." Upon comparison with NYSDEC criteria, it was noted that groundwater from six Site wells (F-6, F-7, F-14, F-16, P-17, and P-18) exceeded the Class GA Water Standards for VOCs; while PFA substances were detected at wells P-8, P-11, and P-17 and 1,4-Dioxane was detected at well P-17. Neither the PFA substances, nor 1,4-Dioxane have NYSDEC Class GA Water Standards associated with them. Groundwater analytical results are summarized in Table 3.

A copy of the analytical laboratory data report with corresponding chain-of-custodies and ADQM Data Review Narrative for samples is provided in Attachment D and groundwater sampling forms for the October 2018 sampling event is provided in Attachment E.

In accordance with the NYSDEC ACO and NYSDEC response letter dated February 28th, 2011 (frequency change letter to bi-yearly), the next round of groundwater samples is scheduled to be collected during the fourth quarter of 2020.

Parsons looks forward to your favorable review of this report. If you have any questions requiring clarification, please call us at (315) 451-9560.

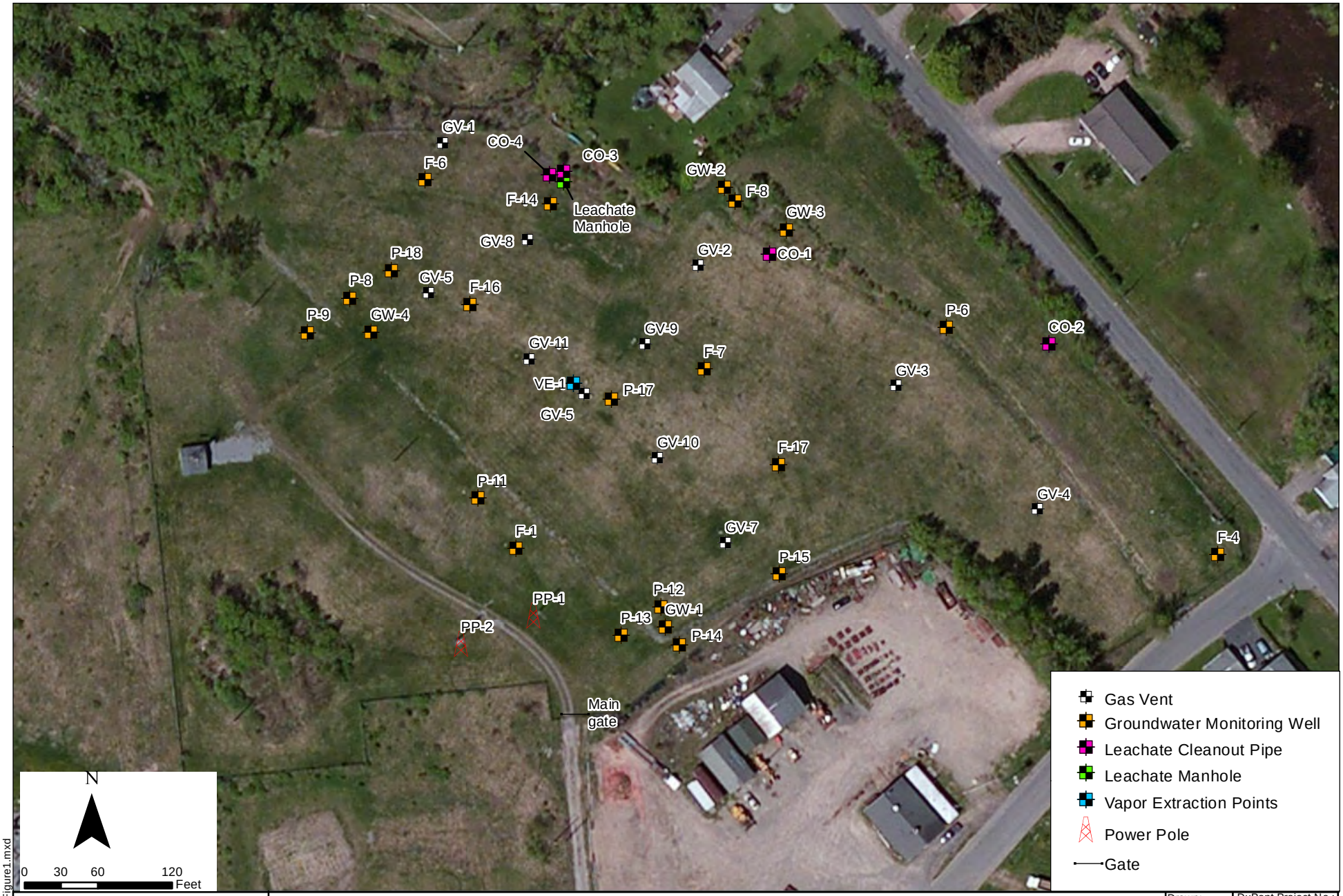
Sincerely,

PARSONS

Edward J. Ashton, P.G.
Project Manager

Attachment

cc: Mr. Thomas Stilley, E.I. du Pont de Nemours and Company
Project File: 450862




D:\GIS\Frankfort\MXD\Figure1.mxd

PARSONS
PE&I
4701 Hedgemore Dr.
Charlotte, NC 28209

Groundwater Monitoring Well, Gas Vent, Leachate Manhole, and Other Item Locations
DuPont Ferdula Landfill
Frankfort, New York

| | |
|---|---|
| Drawn: | DuPont Project No.: 4406 |
| Date: 10/17/2016 | Parsons Project No.: 449697.05050 |
| Revision: | Figure No.: 1 |
| File Name: Figure1 | |

# TABLES

# Table 1
## DuPont-Ferdula Landfill
## Historical Groundwater Elevations

| Location | Reference Point Description | Reference Point Elevation (ft-MSL) | Oct-96 (ft-MSL) | Nov-96 (ft-MSL) | Dec-96 (ft-MSL) | Feb-97 (ft-MSL) | Apr-97 (ft-MSL) | Jun-97 (ft-MSL) | Aug-97 (ft-MSL) | Oct-97 (ft-MSL) | Dec-97 (ft-MSL) | Mar-98 (ft-MSL) | Dec-98 (ft-MSL) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **P-8** | top of PVC | 452.07 | 442.04 | 432.30 | 436.44 | 436.12 | 435.75 | 435.55 | 435.37 | 435.22 | 435.01 | 434.68 | 434.08 |
| **P-9 *** | top of PVC | 447.92 | 435.32 | 434.99 | 435.03 | 436.04 | 437.30 | 436.35 | 434.86 | 434.61 | 435.74 | 438.31 | 434.41 |
| **P-10** | top of PVC | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **P-11 *** | top of PVC | 450.42 | 439.04 | 437.80 | 440.31 | 440.39 | 442.23 | 441.86 | 441.14 | 441.15 | 442.62 | 444.21 | 441.14 |
| **P-12** | top of PVC | 456.34 | 446.05 | 430.46 | 438.90 | 439.82 | 439.63 | 439.40 | 439.10 | 438.79 | 438.72 | 438.94 | 437.70 |
| **P-13 *** | top of PVC | 452.10 | 444.99 | 440.71 | 444.80 | 444.89 | 445.80 | 445.61 | 444.94 | 444.48 | 444.66 | 446.75 | 442.46 |
| **P-14 *** | top of PVC | 452.00 | 447.06 | 442.77 | 446.82 | 447.52 | 448.86 | 448.07 | 446.78 | 446.09 | 446.48 | 448.65 | 444.86 |
| **P-15 *** | top of PVC | 451.16 | 445.73 | 442.22 | 445.48 | 445.96 | 447.51 | 446.97 | 445.73 | 444.93 | 445.15 | 447.32 | 442.85 |
| **P-16** | top of PVC | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **P-17** | top of PVC | 455.39 | 435.24 | 429.46 | 436.96 | 436.54 | 436.30 | 436.15 | 436.03 | 435.70 | 435.42 | 435.22 | 434.54 |
| **P-18** | top of PVC | 451.36 | NM | NM | NM | NM | 435.76 | 435.57 | 435.42 | 435.28 | 435.08 | 434.75 | 432.39 |
| **F-16** | top of PVC | 452.79 | 441.60 | 431.40 | 436.29 | 435.94 | 435.53 | 435.35 | 435.23 | 435.05 | 434.79 | 434.39 | 433.71 |
| **F-17** | top of PVC | 449.35 | 437.00 | 437.61 | 437.60 | 437.40 | 437.37 | 437.30 | 437.21 | 437.01 | 436.87 | 436.95 | 436.46 |
| **F-4** | top of PVC | 425.55 | 407.59 | 430.04 | 407.75 | 408.29 | 408.39 | 408.32 | 407.57 | 406.61 | 407.11 | 407.84 | 403.41 |
| **F-6** | top of PVC | 433.35 | 426.16 | 436.96 | 422.48 | 421.92 | 422.29 | 422.14 | 422.00 | 421.92 | 421.93 | 418.33 | 421.60 |
| **F-7** | top of PVC | 444.47 | 440.77 | 440.20 | 437.03 | 436.07 | 435.98 | 435.90 | 435.84 | 435.65 | 435.33 | 435.25 | 434.50 |
| **F-8** | top of PVC | 427.59 | 414.29 | 434.62 | 414.31 | 414.27 | 414.77 | 414.57 | 413.57 | 413.75 | 414.95 | 418.14 | 415.21 |
| **F-14** | top of PVC | 430.84 | 422.32 | 431.44 | 414.39 | 414.64 | 415.82 | 414.63 | 414.74 | 414.52 | 414.74 | 410.72 | 414.56 |
| **F-15** | top of PVC | 408.02 | 403.03 | 443.00 | 403.15 | 402.65 | 402.95 | 402.72 | 402.04 | 402.40 | 402.76 | 403.50 | 402.70 |

Notes: NA - Non - Applicable
NM - Not Measured
Ft-MSL - Feet - mean sea level
* - Indicates well above the upgradient diversion system.

# Table 1
## DuPont-Ferdula Landfill
## Historical Groundwater Elevations

| Location | Reference Point Description | Reference Point Elevation (ft-MSL) | May-99 (ft-MSL) | Nov-99 (ft-MSL) | May-00 (ft-MSL) | Nov-00 (ft-MSL) | May-01 (ft-MSL) | Aug-02 (ft-MSL) | Aug-03 (ft-MSL) | Sep-04 (ft-MSL) | Aug-05 (ft-MSL) | Aug-06 (ft-MSL) | Aug-07 (ft-MSL) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **P-8** | top of PVC | 452.07 | 427.37 | 430.06 | 430.69 | 429.94 | 429.94 | 429.67 | 430.50 | 430.62 | 429.40 | 430.28 | 429.40 |
| **P-9 *** | top of PVC | 447.92 | 434.95 | 434.52 | 438.24 | 434.88 | 434.88 | 434.20 | 436.03 | 436.92 | 434.19 | 435.50 | 434.50 |
| **P-10** | top of PVC | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **P-11 *** | top of PVC | 450.42 | 441.02 | 443.21 | 443.51 | 442.68 | 442.68 | 440.94 | 442.00 | 443.34 | 441.21 | 442.34 | 441.67 |
| **P-12** | top of PVC | 456.34 | 437.80 | 437.44 | 438.43 | 437.79 | 437.79 | 437.68 | 438.55 | 438.39 | 437.52 | 437.54 | 437.63 |
| **P-13 *** | top of PVC | 452.10 | 442.99 | 445.20 | 446.25 | 444.98 | 444.98 | 442.66 | 445.17 | 445.60 | 442.48 | 445.08 | 442.24 |
| **P-14 *** | top of PVC | 452.00 | 445.75 | 444.94 | 447.84 | 436.55 | 446.77 | 445.35 | 446.84 | 446.57 | 444.82 | 446.34 | 445.49 |
| **P-15 *** | top of PVC | 451.16 | 444.00 | 442.41 | 451.16 | NM | NM | 443.49 | 445.60 | 445.28 | 443.16 | 445.00 | 443.91 |
| **P-16** | top of PVC | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **P-17** | top of PVC | 455.39 | 434.02 | 433.49 | 433.67 | 434.33 | 434.33 | 433.85 | 434.51 | 434.54 | 433.25 | 434.09 | 433.61 |
| **P-18** | top of PVC | 451.36 | 429.86 | 429.71 | 429.83 | 429.55 | 429.55 | 428.93 | 429.78 | 429.97 | 428.84 | 429.46 | 428.85 |
| **F-16** | top of PVC | 452.79 | 432.39 | 430.77 | 430.16 | 430.97 | 430.97 | 429.50 | 430.93 | 431.17 | 429.71 | 429.89 | 429.64 |
| **F-17** | top of PVC | 449.35 | 436.80 | 436.40 | 437.03 | 436.75 | 436.75 | 436.86 | 437.27 | 436.95 | 436.59 | 436.61 | 436.64 |
| **F-4** | top of PVC | 425.55 | 403.77 | NM | 425.55 | NM | NM | NM | NM | NM | NM | 405.01 | 407.29 |
| **F-6** | top of PVC | 433.35 | 421.64 | 421.54 | 421.67 | 421.54 | 421.54 | 421.21 | 421.78 | 421.96 | 421.29 | 421.79 | 421.45 |
| **F-7** | top of PVC | 444.47 | 434.45 | 433.94 | 434.54 | 434.82 | 434.82 | 434.74 | 435.32 | 434.92 | 434.43 | NM | 434.49 |
| **F-8** | top of PVC | 427.59 | 413.78 | NM | NM | NM | NM | NM | NM | NM | 413.17 | DRY | DRY |
| **F-14** | top of PVC | 430.84 | 415.37 | 415.41 | 414.54 | 414.94 | 414.94 | 414.48 | 414.55 | 414.85 | 414.38 | 414.04 | 414.55 |
| **F-15** | top of PVC | 408.02 | 402.65 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

Notes: NA - Non - Applicable
NM - Not Measured
Ft-MSL - Feet - mean sea level
* - Indicates well above the upgradient diversion system.

# Table 1
# DuPont-Ferdula Landfill
# Historical Groundwater Elevations

| Location | Reference Point Description | Reference Point Elevation (ft-MSL) | Oct-08 (ft-MSL) | Dec-09 (ft-MSL) | Oct-10 (ft-MSL) | Oct-12 (ft-MSL) | Aug-14 (ft-MSL) | Sep-16 (ft-MSL) | Oct-18 (ft-MSL) |
|---|---|---|---|---|---|---|---|---|---|
| **P-8** | top of PVC | 452.07 | 429.77 | 430.38 | 430.52 | 429.42 | NM | NM | 430.47 |
| **P-9 *** | top of PVC | 447.92 | 436.39 | 435.97 | 436.47 | 434.48 | 437.44 | 434.95 | 437.59 |
| **P-10** | top of PVC | NA | NA | NA | NA | NA | NA | NA | NA |
| **P-11 *** | top of PVC | 450.42 | 443.54 | 442.38 | 442.89 | 441.46 | 442.98 | 441.10 | 442.50 |
| **P-12** | top of PVC | 456.34 | 437.68 | 437.73 | 438.14 | 437.21 | 438.49 | 437.16 | 437.99 |
| **P-13 *** | top of PVC | 452.10 | 445.65 | 445.13 | 445.40 | 442.39 | 445.57 | 442.30 | 444.97 |
| **P-14 *** | top of PVC | 452.00 | 445.76 | 445.95 | 446.37 | 444.80 | 446.95 | Dry | 445.94 |
| **P-15 *** | top of PVC | 451.16 | 443.85 | 444.43 | 444.96 | 443.18 | 445.86 | 443.02 | 444.58 |
| **P-16** | top of PVC | NA | NA | NA | NA | NA | NA | NA | NA |
| **P-17** | top of PVC | 455.39 | 433.49 | 433.29 | 433.78 | 432.89 | 434.19 | 432.44 | 433.35 |
| **P-18** | top of PVC | 451.36 | 429.04 | 429.48 | 429.62 | 428.81 | 429.76 | 428.68 | 429.58 |
| **F-16** | top of PVC | 452.79 | 429.51 | 429.79 | 429.89 | 429.37 | 429.89 | 429.04 | 429.66 |
| **F-17** | top of PVC | 449.35 | 436.54 | 436.68 | 436.90 | 436.43 | 437.12 | 436.58 | 436.93 |
| **F-4** | top of PVC | 425.55 | 407.93 | 408.33 | 408.41 | NM | NM | Dry | 407.80 |
| **F-6** | top of PVC | 433.35 | 421.39 | 421.51 | 420.55 | 420.35 | 421.03 | 420.50 | 421.49 |
| **F-7** | top of PVC | 444.47 | 434.02 | 434.01 | 434.53 | 433.54 | 434.96 | 433.42 | 434.20 |
| **F-8** | top of PVC | 427.59 | 419.06 | 418.07 | 418.41 | Dry | 418.73 | Dry | 418.65 |
| **F-14** | top of PVC | 430.84 | 414.32 | 414.41 | 414.74 | 414.56 | 414.93 | 414.54 | 414.95 |
| **F-15** | top of PVC | 408.02 | NA | NA | NA | NA | NA | NA | NA |

Notes: NA - Non - Applicable
NM - Not Measured
Ft-MSL - Feet - mean sea level
* - Indicates well above the upgradient diversion system.

**Table 2**
**Groundwater Sample Results 2018**
**DuPont-Ferdula Landfill**
**Frankfort, New York**

| Parameter Name | Units | Number Samples | Number Detections | Average | Maximum |
|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | UG/L | 9 | 0 | 0.3 | NA |
| 1,1,2,2-Tetrachloroethane | UG/L | 9 | 0 | 0.2 | NA |
| 1,1,2-Trichloroethane | UG/L | 9 | 0 | 0.2 | NA |
| 1,1-Dichloroethane | UG/L | 9 | 0 | 0.2 | NA |
| 1,1-Dichloroethene | UG/L | 9 | 3 | 1.022222 | 4 |
| 1,2-Dichloroethane | UG/L | 9 | 1 | 0.3 | 0.3 |
| 1,2-Dichloropropane | UG/L | 9 | 1 | 0.211111 | 0.3 |
| 1,4-Dioxane | UG/L | 4 | 2 | 0.769325 | 1.48 |
| 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 F | ng/l | 4 | 0 | 1.95 | NA |
| 2-Hexanone | UG/L | 9 | 0 | 0.3 | NA |
| Acetone | UG/L | 9 | 3 | 0.877778 | 2 |
| Benzene | UG/L | 9 | 2 | 0.255556 | 0.6 |
| Bromodichloromethane | UG/L | 9 | 0 | 0.2 | NA |
| Bromoform | UG/L | 9 | 0 | 0.2 | NA |
| Carbon Disulfide | UG/L | 9 | 1 | 0.211111 | 0.3 |
| Carbon Tetrachloride | UG/L | 9 | 0 | 0.2 | NA |
| Chlorobenzene | UG/L | 9 | 0 | 0.2 | NA |
| Chlorodibromomethane | UG/L | 9 | 0 | 0.2 | NA |
| Chloroform | UG/L | 9 | 0 | 0.2 | NA |
| cis-1,2 Dichloroethene | UG/L | 9 | 7 | 396.488889 | 2000 |
| cis-1,3-Dichloropropene | UG/L | 9 | 0 | 0.2 | NA |
| Ethyl Chloride | UG/L | 9 | 0 | 0.2 | NA |
| Ethylbenzene | UG/L | 9 | 0 | 0.4 | NA |
| Methyl Bromide | UG/L | 9 | 0 | 0.3 | NA |
| Methyl Chloride | UG/L | 9 | 0 | 0.2 | NA |
| Methyl Ethyl Ketone | UG/L | 9 | 1 | 0.355556 | 0.8 |
| Methyl Isobutyl Ketone | UG/L | 9 | 0 | 0.5 | NA |
| Methylene Chloride | UG/L | 9 | 0 | 0.3 | NA |
| Perfluorobutane Sulfonic Acid | UG/L | 4 | 3 | 0.000465 | 0.00061 |
| Perfluorobutanoic Acid | UG/L | 4 | 2 | 0.00225 | 0.0027 |
| Perfluorodecane Sulfonic Acid | UG/L | 4 | 0 | 0.000588 | NA |
| Perfluorodecanoic Acid | UG/L | 4 | 0 | 0.00088 | NA |
| Perfluorododecanoic Acid | UG/L | 4 | 0 | 0.00049 | NA |
| Perfluoroheptane sulfonic acid (PFHpS) | ng/l | 4 | 0 | 0.3925 | NA |
| Perfluoroheptanoic Acid | UG/L | 4 | 0 | 0.000393 | NA |
| Perfluorohexane Sulfonic Acid | UG/L | 4 | 2 | 0.001108 | 0.002 |
| Perfluorohexanoic Acid | UG/L | 4 | 0 | 0.000393 | NA |
| Perfluorononanoic Acid | UG/L | 4 | 0 | 0.000393 | NA |
| Perfluorooctane Sulfonamide | ng/l | 4 | 0 | 0.49 | NA |
| Perfluoropentanoic Acid | UG/L | 4 | 1 | 0.0022 | 0.0028 |
| Perfluorotetradecanoic Acid | UG/L | 4 | 0 | 0.000292 | NA |
| Perfluorotridecanoic Acid | UG/L | 4 | 0 | 0.000393 | NA |

**Table 2**
**Groundwater Sample Results 2018**
**DuPont-Ferdula Landfill**
**Frankfort, New York**

| Parameter Name | Units | Number Samples | Number Detections | Average | Maximum |
|---|---|---|---|---|---|
| Perfluoroundecanoic Acid | UG/L | 4 | 0 | 0.000393 | NA |
| Perfluorooctanoic Acid (PFOA) | UG/L | 4 | 4 | 0.000592 | 0.00067 |
| Perfluorooctanesulfonic Acid (PFOS) | UG/L | 4 | 3 | 0.0007 | 0.00095 |
| Styrene | UG/L | 9 | 0 | 0.2 | NA |
| Tetrachloroethene | UG/L | 9 | 0 | 0.2 | NA |
| Toluene | UG/L | 9 | 1 | 0.244444 | 0.6 |
| trans-1,2-Dichloroethene | UG/L | 9 | 4 | 1.688889 | 10 |
| trans-1,3-Dichloropropene | UG/L | 9 | 0 | 0.2 | NA |
| Trichloroethene | UG/L | 9 | 6 | 44.955556 | 240 |
| Vinyl Chloride | UG/L | 9 | 7 | 22.444444 | 91 |
| Xylenes | UG/L | 9 | 0 | 1.0 | NA |

**Notes**

ug/L = Micrograms per liter

NA = Non-applicable

**Table 3**
**Groundwater Sample Results (October 2018)**
**DuPont-Ferdula Landfill**
**Frankfort, New York**

| | | Field Sample ID | | GW2018-F-6-D | GW2018-F-6 | GW2018-F-7 | GW2018-F-8-D | GW2018-F-8 |
|---|---|---|---|---|---|---|---|---|
| | | Location ID | | F-6 | F-6 | F-7 | F-8 | F-8 |
| | | Sample Date | | 10/17/2018 | 10/17/2018 | 10/18/2018 | 10/17/2018 | 10/17/2018 |
| | | Sample Purpose | | DUP | FS | FS | DUP | FS |
| | | Sample Type | | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |
| **Parameter Name** | **Units** | **Filtered** | **NYGWCLGA_2/09[1]** | | | | | |
| 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) | UG/L | N | NS | NS | NS | NS | <0.002 | <0.0022 |
| Perfluorobutane Sulfonic Acid | UG/L | N | NS | NS | NS | NS | **0.00061 J** | **0.00058 J** |
| Perfluorobutanoic Acid | UG/L | N | NS | NS | NS | NS | **0.0023 B** | <0.0022 |
| Perfluorodecane Sulfonic Acid | UG/L | N | NS | NS | NS | NS | <0.00061 | <0.00065 |
| Perfluorodecanoic Acid | UG/L | N | NS | NS | NS | NS | <0.00091 | <0.00097 |
| Perfluorododecanoic Acid | UG/L | N | NS | NS | NS | NS | <0.00051 | <0.00054 |
| Perfluoroheptane sulfonic acid (PFHpS) | UG/L | N | NS | NS | NS | NS | <0.00041 | <0.00043 |
| Perfluoroheptanoic Acid | UG/L | N | NS | NS | NS | NS | <0.00041 | <0.00043 |
| Perfluorohexane Sulfonic Acid | UG/L | N | NS | NS | NS | NS | **0.0017 J** | **0.002 J** |
| Perfluorohexanoic Acid | UG/L | N | NS | NS | NS | NS | <0.00041 | <0.00043 |
| Perfluorononanoic Acid | UG/L | N | NS | NS | NS | NS | <0.00041 | <0.00043 |
| Perfluorooctane Sulfonamide | UG/L | N | NS | NS | NS | NS | <0.00051 | <0.00054 |
| Perfluoropentanoic Acid | UG/L | N | NS | NS | NS | NS | <0.002 | <0.0022 |
| Perfluorotetradecanoic Acid | UG/L | N | NS | NS | NS | NS | <0.0003 | <0.00032 |
| Perfluorotridecanoic Acid | UG/L | N | NS | NS | NS | NS | <0.00041 | <0.00043 |
| Perfluoroundecanoic Acid | UG/L | N | NS | NS | NS | NS | <0.00041 | <0.00043 |
| Perfluorooctanoic Acid (PFOA) | UG/L | N | **0.02** | NS | NS | NS | **0.00057 J** | **0.00067 J** |
| Perfluorooctanesulfonic Acid (PFOS) | UG/L | N | **0.02** | NS | NS | NS | **0.00095 J** | **0.00094 J** |
| 1,1,1-Trichloroethane | UG/L | N | **5** | <0.3 | <0.3 | <0.3 | NS | <0.3 |
| 1,1,2,2-Tetrachloroethane | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| 1,1,2-Trichloroethane | UG/L | N | **1** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| 1,1-Dichloroethane | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| 1,1-Dichloroethene | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| 1,2-Dichloroethane | UG/L | N | **0.6** | <0.3 | <0.3 | <0.3 | NS | <0.3 |
| 1,2-Dichloropropane | UG/L | N | **1** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| 2-Hexanone | UG/L | N | **50** | <0.3 | <0.3 | <0.3 | NS | <0.3 |
| Acetone | UG/L | N | **50** | <0.7 | <0.7 | <0.7 | NS | <0.7 |
| Benzene | UG/L | N | **1** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Bromodichloromethane | UG/L | N | **50** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Bromoform | UG/L | N | **50** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Carbon Disulfide | UG/L | N | **60** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Carbon Tetrachloride | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Chlorobenzene | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Chlorodibromomethane | UG/L | N | **50** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Chloroform | UG/L | N | **7** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| cis-1,2 Dichloroethene | UG/L | N | **5** | **13** | **11** | **7** | NS | <0.2 |
| cis-1,3-Dichloropropene | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Ethyl Chloride | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Ethylbenzene | UG/L | N | **5** | <0.4 | <0.4 | <0.4 | NS | <0.4 |
| Methyl Bromide | UG/L | N | **5** | <0.3 | <0.3 | <0.3 | NS | <0.3 |
| Methyl Chloride | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Methyl Ethyl Ketone | UG/L | N | **50** | <0.3 | <0.3 | <0.3 | NS | <0.3 |
| Methyl Isobutyl Ketone | UG/L | N | **NS** | <0.5 | <0.5 | <0.5 | NS | <0.5 |
| Methylene Chloride | UG/L | N | **5** | <0.3 | <0.3 | <0.3 | NS | <0.3 |
| Styrene | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Tetrachloroethene | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| Toluene | UG/L | N | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |

**Table 3**
**Groundwater Sample Results (October 2018)**
**DuPont-Ferdula Landfill**
**Frankfort, New York**

| | | Field Sample ID | | GW2018-F-6-D | GW2018-F-6 | GW2018-F-7 | GW2018-F-8-D | GW2018-F-8 |
|---|---|---|---|---|---|---|---|---|
| | | Location ID | | F-6 | F-6 | F-7 | F-8 | F-8 |
| | | Sample Date | | 10/17/2018 | 10/17/2018 | 10/18/2018 | 10/17/2018 | 10/17/2018 |
| | | Sample Purpose | | DUP | FS | FS | DUP | FS |
| | | Sample Type | | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |
| **Parameter Name** | **Units** | **Filtered** | **NYGWCLGA_2/09[(1)]** | | | | | |
| **trans-1,2-Dichloroethene** | **UG/L** | **N** | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| **trans-1,3-Dichloropropene** | **UG/L** | **N** | **5** | <0.2 | <0.2 | <0.2 | NS | <0.2 |
| **Trichloroethene** | **UG/L** | **N** | **5** | <0.2 | <0.2 | **5** | NS | **1** |
| **Vinyl Chloride** | **UG/L** | **N** | **2** | **1** | **1** | **1** | NS | <0.2 |
| **Xylenes** | **UG/L** | **N** | **5** | <1 | <1 | <1 | NS | <1 |
| **1,4-Dioxane** | **UG/L** | **N** | **NS** | NS | NS | NS | NS | NS |

Notes:
Ug/L - micrograms per liter
B - Not detected substantially above the level reported in the laboratory or field blanks.
UJ - The analyte was detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
N - No
NS - Parameter not sampled or no criteria specified.
J - The analyte was positively identified, but the quantitation is an estimation.
FS - Field sample
Dup - Duplicate sample
(1) Groundwater criteria obtained from the NYSDEC document "Division of Technical and Operational Guidance Services (1.1.1), Ambient Water Quality Standards and Groundwater Effluent Limitations. June 1996, Errata sheet for June 1998 Edition."
Concentration of parameter(s) exceeds regulatory screening criteria.
Class GA criteria used.

**Table 3**
**Groundwater Sample Results (October 2018)**
**DuPont-Ferdula Landfill**
**Frankfort, New York**

| | | Field Sample ID | | GW2018-F-8 | GW2018-F-14 | GW2018-F-16 | GW2018-F-17 | GW2018-P-11 | GW2018-P-11 |
|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | | F-8 | F-14 | F-16 | F-17 | P-11 | P-11 |
| | | Sample Date | | 10/17/2018 | 10/18/2018 | 10/19/2018 | 10/19/2018 | 10/16/2018 | 10/16/2018 |
| | | Sample Purpose | | FS | FS | FS | FS | FS | FS |
| | | Sample Type | | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |
| **Parameter Name** | **Units** | **Filtered** | **NYGWCLGA_2/09[(1)]** | | | | | | |
| 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) | UG/L | N | NS | NS | NS | NS | NS | <0.0018 | NS |
| Perfluorobutane Sulfonic Acid | UG/L | N | NS | NS | NS | NS | NS | **0.00039 J** | NS |
| Perfluorobutanoic Acid | UG/L | N | NS | NS | NS | NS | NS | **0.0027 B** | NS |
| Perfluorodecane Sulfonic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.00054 | NS |
| Perfluorodecanoic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.00081 | NS |
| Perfluorododecanoic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.00045 | NS |
| Perfluoroheptane sulfonic acid (PFHpS) | UG/L | N | NS | NS | NS | NS | NS | <0.00036 | NS |
| Perfluoroheptanoic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.00036 | NS |
| Perfluorohexane Sulfonic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.00036 | NS |
| Perfluorohexanoic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.00036 | NS |
| Perfluorononanoic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.00036 | NS |
| Perfluorooctane Sulfonamide | UG/L | N | NS | NS | NS | NS | NS | <0.00045 | NS |
| Perfluoropentanoic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.0018 | NS |
| Perfluorotetradecanoic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.00027 | NS |
| Perfluorotridecanoic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.00036 | NS |
| Perfluoroundecanoic Acid | UG/L | N | NS | NS | NS | NS | NS | <0.00036 | NS |
| Perfluorooctanoic Acid (PFOA) | UG/L | N | **0.02** | NS | NS | NS | NS | **0.00057 J** | NS |
| Perfluorooctanesulfonic Acid (PFOS) | UG/L | N | **0.02** | NS | NS | NS | NS | **0.00054 J** | NS |
| 1,1,1-Trichloroethane | UG/L | N | **5** | NS | <0.3 | <0.3 | <0.3 | NS | NS |
| 1,1,2,2-Tetrachloroethane | UG/L | N | **5** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| 1,1,2-Trichloroethane | UG/L | N | **1** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| 1,1-Dichloroethane | UG/L | N | **5** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| 1,1-Dichloroethene | UG/L | N | **5** | NS | **4** | **1** | <0.2 | NS | NS |
| 1,2-Dichloroethane | UG/L | N | **0.6** | NS | <0.3 | <0.3 | <0.3 | NS | NS |
| 1,2-Dichloropropane | UG/L | N | **1** | NS | <0.2 | **0.3 J** | <0.2 | NS | NS |
| 2-Hexanone | UG/L | N | **50** | NS | <0.3 | <0.3 | <0.3 | NS | NS |
| Acetone | UG/L | N | **50** | NS | <0.7 | **2 J** | **1 J** | NS | NS |
| Benzene | UG/L | N | **1** | NS | <0.2 | **0.6 J** | **0.3 J** | NS | NS |
| Bromodichloromethane | UG/L | N | **50** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| Bromoform | UG/L | N | **50** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| Carbon Disulfide | UG/L | N | **60** | NS | <0.2 | **0.3 J** | <0.2 | NS | NS |
| Carbon Tetrachloride | UG/L | N | **5** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| Chlorobenzene | UG/L | N | **5** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| Chlorodibromomethane | UG/L | N | **50** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| Chloroform | UG/L | N | **7** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| cis-1,2 Dichloroethene | UG/L | N | **5** | NS | **2000** | **730** | <0.2 | NS | NS |
| cis-1,3-Dichloropropene | UG/L | N | **5** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| Ethyl Chloride | UG/L | N | **5** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| Ethylbenzene | UG/L | N | **5** | NS | <0.4 | <0.4 | <0.4 | NS | NS |
| Methyl Bromide | UG/L | N | **5** | NS | <0.3 | <0.3 | <0.3 | NS | NS |
| Methyl Chloride | UG/L | N | **5** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| Methyl Ethyl Ketone | UG/L | N | **50** | NS | <0.3 | **0.8 J** | <0.3 | NS | NS |
| Methyl Isobutyl Ketone | UG/L | N | **NS** | NS | <0.5 | <0.5 | <0.5 | NS | NS |
| Methylene Chloride | UG/L | N | **5** | NS | <0.3 | <0.3 | <0.3 | NS | NS |
| Styrene | UG/L | N | **5** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| Tetrachloroethene | UG/L | N | **5** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| Toluene | UG/L | N | **5** | NS | <0.2 | **0.6 J** | <0.2 | NS | NS |

**Table 3**
**Groundwater Sample Results (October 2018)**
**DuPont-Ferdula Landfill**
**Frankfort, New York**

| | | Field Sample ID | | GW2018-F-8 | GW2018-F-14 | GW2018-F-16 | GW2018-F-17 | GW2018-P-11 | GW2018-P-11 |
|---|---|---|---|---|---|---|---|---|---|
| | | Location ID | | F-8 | F-14 | F-16 | F-17 | P-11 | P-11 |
| | | Sample Date | | 10/17/2018 | 10/18/2018 | 10/19/2018 | 10/19/2018 | 10/16/2018 | 10/16/2018 |
| | | Sample Purpose | | FS | FS | FS | FS | FS | FS |
| | | Sample Type | | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |
| **Parameter Name** | **Units** | **Filtered** | **NYGWCLGA_2/09[(1)]** | | | | | | |
| **trans-1,2-Dichloroethene** | **UG/L** | **N** | **5** | NS | **10** | **2** | <0.2 | NS | NS |
| **trans-1,3-Dichloropropene** | **UG/L** | **N** | **5** | NS | <0.2 | <0.2 | <0.2 | NS | NS |
| **Trichloroethene** | **UG/L** | **N** | **5** | NS | **26** | **130** | <0.2 | NS | NS |
| **Vinyl Chloride** | **UG/L** | **N** | **2** | NS | **91** | **37** | <0.2 | NS | NS |
| **Xylenes** | **UG/L** | **N** | **5** | NS | <1 | <1 | <1 | NS | NS |
| **1,4-Dioxane** | **UG/L** | **N** | **NS** | <0.0852 | NS | NS | NS | NS | <0.0721 UJ |

Notes:

Ug/L - micrograms per liter

B - Not detected substantially above the level reported in the laboratory or field blanks.

UJ - The analyte was detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

N - No

NS - Parameter not sampled or no criteria specified.

J - The analyte was positively identified, but the quantitation is an estimation.

FS - Field sample

Dup - Duplicate sample

(1) Groundwater criteria obtained from the NYSDEC document "Division of Technical and Operational Guidance Services (1.1.1), Ambient Water Quality Standards and Groundwater Effluent Limitations. June 1996, Errata sheet for June 1998 Edition." Concentration of parameter(s) exceeds regulatory screening criteria. Class GA criteria used.

**Table 3**
**Groundwater Sample Results (October 2018)**
**DuPont-Ferdula Landfill**
**Frankfort, New York**

| | | Field Sample ID | | GW2018-P-17 | GW2018-P-17-D | GW2018-P-17 | GW2018-P-18 |
|---|---|---|---|---|---|---|---|
| | | Location ID | | P-17 | P-17 | P-17 | P-18 |
| | | Sample Date | | 10/17/2018 | 10/17/2018 | 10/17/2018 | 10/18/2018 |
| | | Sample Purpose | | FS | DUP | FS | FS |
| | | Sample Type | | Groundwater | Groundwater | Groundwater | Groundwater |
| **Parameter Name** | **Units** | **Filtered** | **NYGWCLGA_2/09[1]** | | | | |
| 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) | UG/L | N | NS | <0.0018 | NS | NS | NS |
| Perfluorobutane Sulfonic Acid | UG/L | N | NS | <0.00028 | NS | NS | NS |
| Perfluorobutanoic Acid | UG/L | N | NS | <0.0018 | NS | NS | NS |
| Perfluorodecane Sulfonic Acid | UG/L | N | NS | <0.00055 | NS | NS | NS |
| Perfluorodecanoic Acid | UG/L | N | NS | <0.00083 | NS | NS | NS |
| Perfluorododecanoic Acid | UG/L | N | NS | <0.00046 | NS | NS | NS |
| Perfluoroheptane sulfonic acid (PFHpS) | UG/L | N | NS | <0.00037 | NS | NS | NS |
| Perfluoroheptanoic Acid | UG/L | N | NS | <0.00037 | NS | NS | NS |
| Perfluorohexane Sulfonic Acid | UG/L | N | NS | <0.00037 | NS | NS | NS |
| Perfluorohexanoic Acid | UG/L | N | NS | <0.00037 | NS | NS | NS |
| Perfluorononanoic Acid | UG/L | N | NS | <0.00037 | NS | NS | NS |
| Perfluorooctane Sulfonamide | UG/L | N | NS | <0.00046 | NS | NS | NS |
| Perfluoropentanoic Acid | UG/L | N | NS | **0.0028 J** | NS | NS | NS |
| Perfluorotetradecanoic Acid | UG/L | N | NS | <0.00028 | NS | NS | NS |
| Perfluorotridecanoic Acid | UG/L | N | NS | <0.00037 | NS | NS | NS |
| Perfluoroundecanoic Acid | UG/L | N | NS | <0.00037 | NS | NS | NS |
| Perfluorooctanoic Acid (PFOA) | UG/L | N | **0.02** | **0.00056 J** | NS | NS | NS |
| Perfluorooctanesulfonic Acid (PFOS) | UG/L | N | **0.02** | <0.00037 | NS | NS | NS |
| 1,1,1-Trichloroethane | UG/L | N | **5** | <0.3 | NS | NS | <0.3 |
| 1,1,2,2-Tetrachloroethane | UG/L | N | **5** | <0.2 | NS | NS | <0.2 |
| 1,1,2-Trichloroethane | UG/L | N | **1** | <0.2 | NS | NS | <0.2 |
| 1,1-Dichloroethane | UG/L | N | **5** | <0.2 | NS | NS | <0.2 |
| 1,1-Dichloroethene | UG/L | N | **5** | **3** | NS | NS | <0.2 |
| 1,2-Dichloroethane | UG/L | N | **0.6** | **0.3 J** | NS | NS | <0.3 |
| 1,2-Dichloropropane | UG/L | N | **1** | <0.2 | NS | NS | <0.2 |
| 2-Hexanone | UG/L | N | **50** | <0.3 | NS | NS | <0.3 |
| Acetone | UG/L | N | **50** | **0.7 J** | NS | NS | <0.7 |
| Benzene | UG/L | N | **1** | <0.2 | NS | NS | <0.2 |
| Bromodichloromethane | UG/L | N | **50** | <0.2 | NS | NS | <0.2 |
| Bromoform | UG/L | N | **50** | <0.2 | NS | NS | <0.2 |
| Carbon Disulfide | UG/L | N | **60** | <0.2 | NS | NS | <0.2 |
| Carbon Tetrachloride | UG/L | N | **5** | <0.2 | NS | NS | <0.2 |
| Chlorobenzene | UG/L | N | **5** | <0.2 | NS | NS | <0.2 |
| Chlorodibromomethane | UG/L | N | **50** | <0.2 | NS | NS | <0.2 |
| Chloroform | UG/L | N | **7** | <0.2 | NS | NS | <0.2 |
| cis-1,2 Dichloroethene | UG/L | N | **5** | **730** | NS | NS | **77** |
| cis-1,3-Dichloropropene | UG/L | N | **5** | <0.2 | NS | NS | <0.2 |
| Ethyl Chloride | UG/L | N | **5** | <0.2 | NS | NS | <0.2 |
| Ethylbenzene | UG/L | N | **5** | <0.4 | NS | NS | <0.4 |
| Methyl Bromide | UG/L | N | **5** | <0.3 | NS | NS | <0.3 |
| Methyl Chloride | UG/L | N | **5** | <0.2 | NS | NS | <0.2 |
| Methyl Ethyl Ketone | UG/L | N | **50** | <0.3 | NS | NS | <0.3 |
| Methyl Isobutyl Ketone | UG/L | N | **NS** | <0.5 | NS | NS | <0.5 |
| Methylene Chloride | UG/L | N | **5** | <0.3 | NS | NS | <0.3 |
| Styrene | UG/L | N | **5** | <0.2 | NS | NS | <0.2 |
| Tetrachloroethene | UG/L | N | **5** | <0.2 | NS | NS | <0.2 |
| Toluene | UG/L | N | **5** | <0.2 | NS | NS | <0.2 |

**Table 3**
**Groundwater Sample Results (October 2018)**
**DuPont-Ferdula Landfill**
**Frankfort, New York**

| | | Field Sample ID | | GW2018-P-17 | GW2018-P-17-D | GW2018-P-17 | GW2018-P-18 |
|---|---|---|---|---|---|---|---|
| | | Location ID | | P-17 | P-17 | P-17 | P-18 |
| | | Sample Date | | 10/17/2018 | 10/17/2018 | 10/17/2018 | 10/18/2018 |
| | | Sample Purpose | | FS | DUP | FS | FS |
| | | Sample Type | | Groundwater | Groundwater | Groundwater | Groundwater |
| **Parameter Name** | **Units** | **Filtered** | **NYGWCLGA_2/09[1]** | | | | |
| **trans-1,2-Dichloroethene** | **UG/L** | **N** | **5** | **2** | NS | NS | **0.2 J** |
| **trans-1,3-Dichloropropene** | **UG/L** | **N** | **5** | <0.2 | NS | NS | <0.2 |
| **Trichloroethene** | **UG/L** | **N** | **5** | **240** | NS | NS | **2** |
| **Vinyl Chloride** | **UG/L** | **N** | **2** | **70** | NS | NS | **0.6 J** |
| **Xylenes** | **UG/L** | **N** | **5** | <1 | NS | NS | <1 |
| **1,4-Dioxane** | **UG/L** | **N** | **NS** | NS | **1.44** | **1.48** | NS |

Notes:

Ug/L - micrograms per liter

B - Not detected substantially above the level reported in the laboratory or field blanks.

UJ - The analyte was detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

N - No

NS - Parameter not sampled or no criteria specified.

J - The analyte was positively identified, but the quantitation is an estimation.

FS - Field sample

Dup - Duplicate sample

(1) Groundwater criteria obtained from the NYSDEC document "Division of Technical and Operational Guidance Services (1.1.1), Ambient Water Quality Standards and Groundwater Effluent Limitations. June 1996, Errata sheet for June 1998 Edition."
Concentration of parameter(s) exceeds regulatory screening criteria.
Class GA criteria used.

# ATTACHMENT A

# NYSDEC LETTERS TO DUPONT IN REFERENCE TO PFAS WORK PLAN

# NYSDEC LETTER TO DUPONT DATED AUGUST 22ND, 2018

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**Division of Environmental Remediation, Region 6**
Dulles State Office Building, 317 Washington Street, Watertown, NY 13601-3787
P: (315) 785-2513 | F: (315) 785-2422
www.dec.ny.gov

August 22, 2018

Mr. Edward J. Ashton, P.G.
Parsons
301 Plainfield Road, Suite 350
Syracuse, NY 13212

Re: 622002, Ferdula Landfill, Frankfort (T), Herkimer County

Dear Mr. Ashton:

The Department has reviewed the August 1, 2018, Groundwater Sampling of 1,4, -Dioxane and Per- and Polyfluoroalkyl Substances (PFAS) Work Plan for the above referenced site. Based on the previously provided guidance on Groundwater Sampling for Emerging Contaminants, sampling of groundwater from individual monitoring wells both upgradient and downgradient of the site is the recommended approach and use of the leachate collection basin as the singular point of sampling is not acceptable. Therefore, we are requesting that you provide a revised work plan that meets the previously provided guidance by August 31, 2018.

If you wish to discuss the scope of the testing and which monitoring wells should be sampled, please contact me at 315-785-2523 or peter.ouderkirk@dec.ny.gov.

Sincerely,

Peter S. Ouderkirk, P.E.
Project Manager

ec: Peter Taylor

# NYSDEC LETTER TO DUPONT DATED SEPTEMBER 4TH, 2018

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**Division of Environmental Remediation, Region 6**
Dulles State Office Building, 317 Washington Street, Watertown, NY 13601-3787
P: (315) 785-2513 I F: (315) 785-2422
www.dec.ny.gov

September 4, 2018

Mr. Edward J. Ashton, P.G.
Project Manager/Principal Geologist
PARSONS
301 Plainfield Road, Suite 350
Syracuse, NY 13212

**Re: 622002, Ferdula Landfill, Herkimer County**
**Revised Work Plan for 2018 Groundwater Sampling of 1,4-Dioxane and Per- and Polyfluoroalkyl Substances**

Dear Mr. Ashton:

The Department has reviewed the revised work plan for the above referenced project dated August 29, 2018. Based on our review the revised work plan is approved. Please provide a schedule when the work will be conducted at your earliest convenience.

Thank you for providing this document for our review. If you have any questions, please let me know.

Sincerely,

Peter S. Ouderkirk, P.E.
Project Manager

PSO:ebl

ec: Peter Taylor

# ATTACHMENT B

# TREND PLOTS
# GROUNDWATER ELEVATIONS

**Figure B-1**

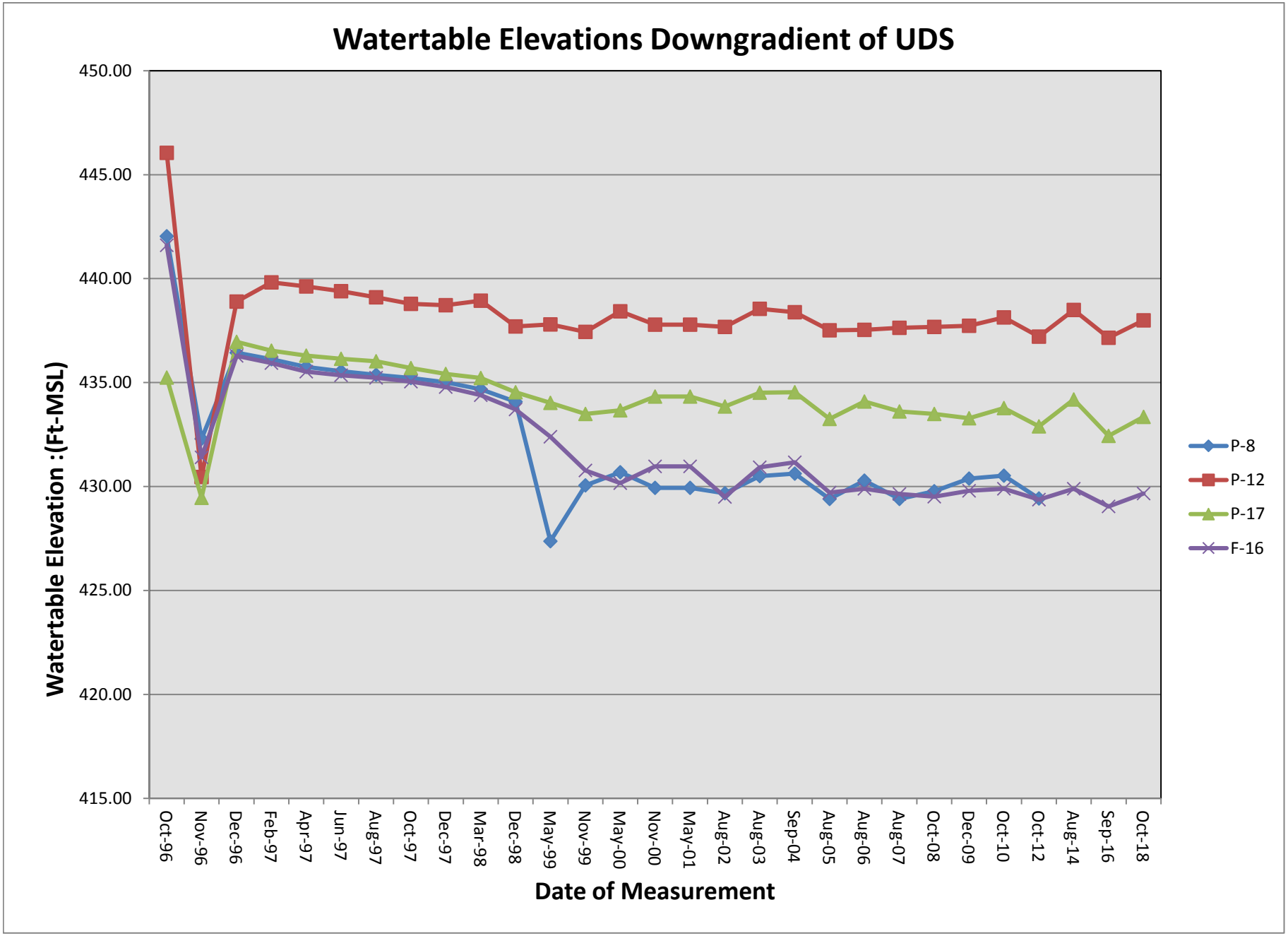
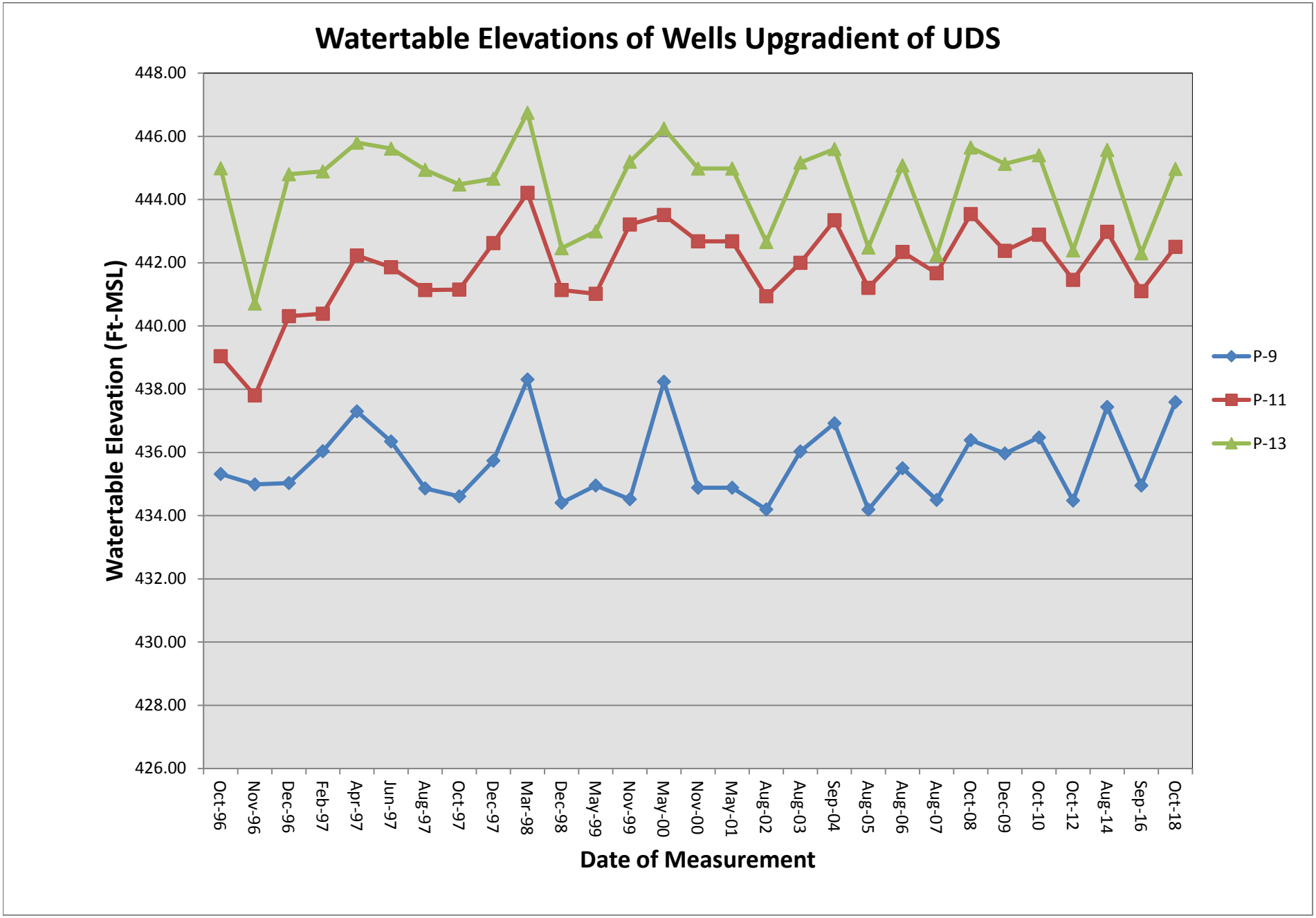

Watertable Elevations Downgradient of UDS
Watertable Elevation :(Ft-MSL)
450.00
445.00
440.00
435.00
430.00
425.00
420.00
415.00
Oct-96
Nov-96
Dec-96
Feb-97
Apr-97
Jun-97
Aug-97
Oct-97
Dec-97
Mar-98
Dec-98
May-99
Nov-99
May-00
Nov-00
May-01
Aug-02
Aug-03
Sep-04
Aug-05
Aug-06
Aug-07
Oct-08
Dec-09
Oct-10
Oct-12
Aug-14
Sep-16
Oct-18
Date of Measurement
P-8
P-12
P-17
F-16

**Figure B-2**


Watertable Elevations of Wells Upgradient of UDS
Watertable Elevation (Ft-MSL)
448.00
446.00
444.00
442.00
440.00
438.00
436.00
434.00
432.00
430.00
428.00
426.00
Oct-96
Nov-96
Dec-96
Feb-97
Apr-97
Jun-97
Aug-97
Oct-97
Dec-97
Mar-98
Dec-98
May-99
Nov-99
May-00
Nov-00
May-01
Aug-02
Aug-03
Sep-04
Aug-05
Aug-06
Aug-07
Oct-08
Dec-09
Oct-10
Oct-12
Aug-14
Sep-16
Oct-18
Date of Measurement
P-9
P-11
P-13

# Figure B-3

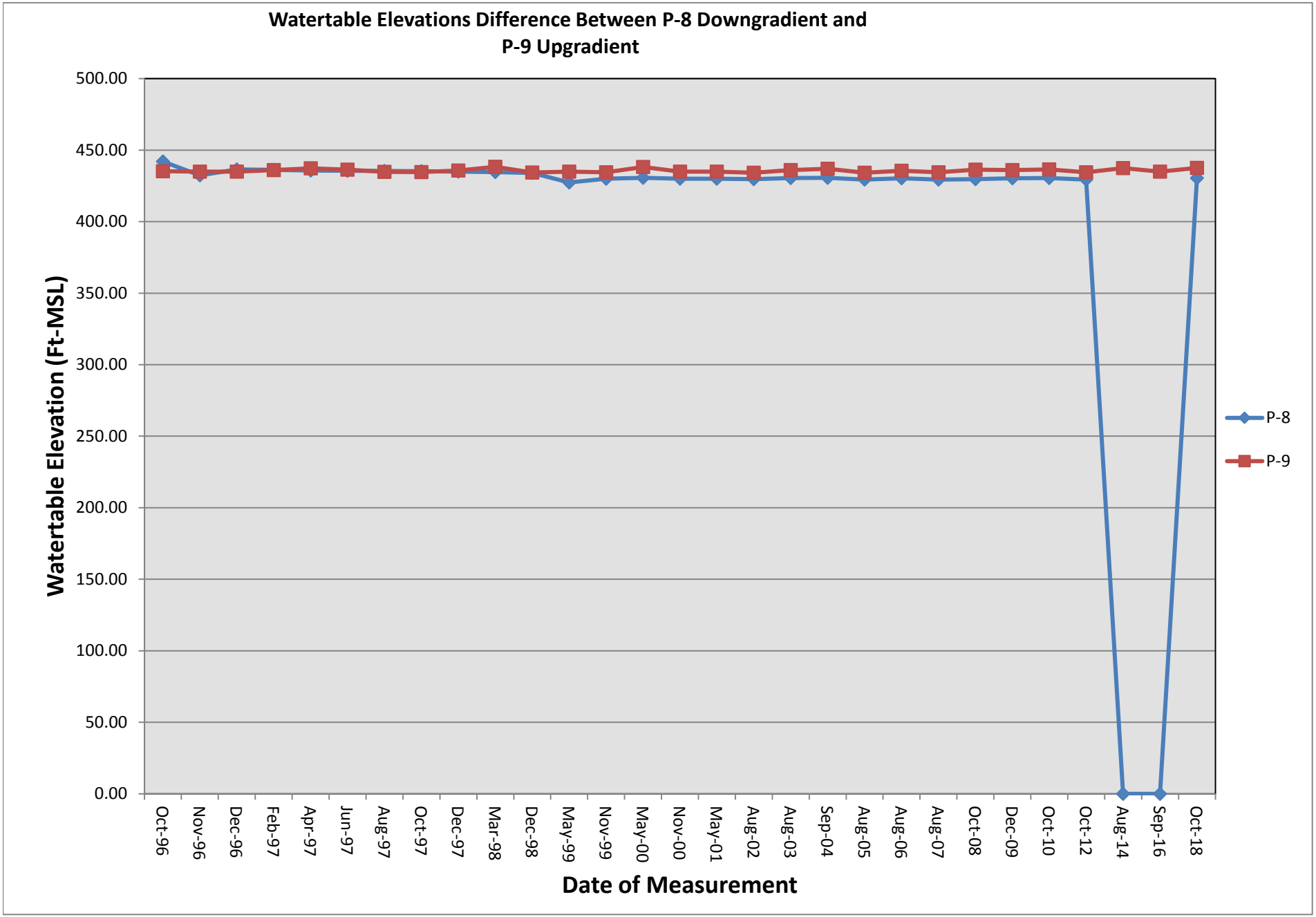

Watertable Elevations Difference Between P-8 Downgradient and P-9 Upgradient
Watertable Elevation (Ft-MSL)
500.00
450.00
400.00
350.00
300.00
250.00
200.00
150.00
100.00
50.00
0.00
Oct-96
Nov-96
Dec-96
Feb-97
Apr-97
Jun-97
Aug-97
Oct-97
Dec-97
Mar-98
Dec-98
May-99
Nov-99
May-00
Nov-00
May-01
Aug-02
Aug-03
Sep-04
Aug-05
Aug-06
Aug-07
Oct-08
Dec-09
Oct-10
Oct-12
Aug-14
Sep-16
Oct-18
Date of Measurement
P-8
P-9

**Figure B-4**

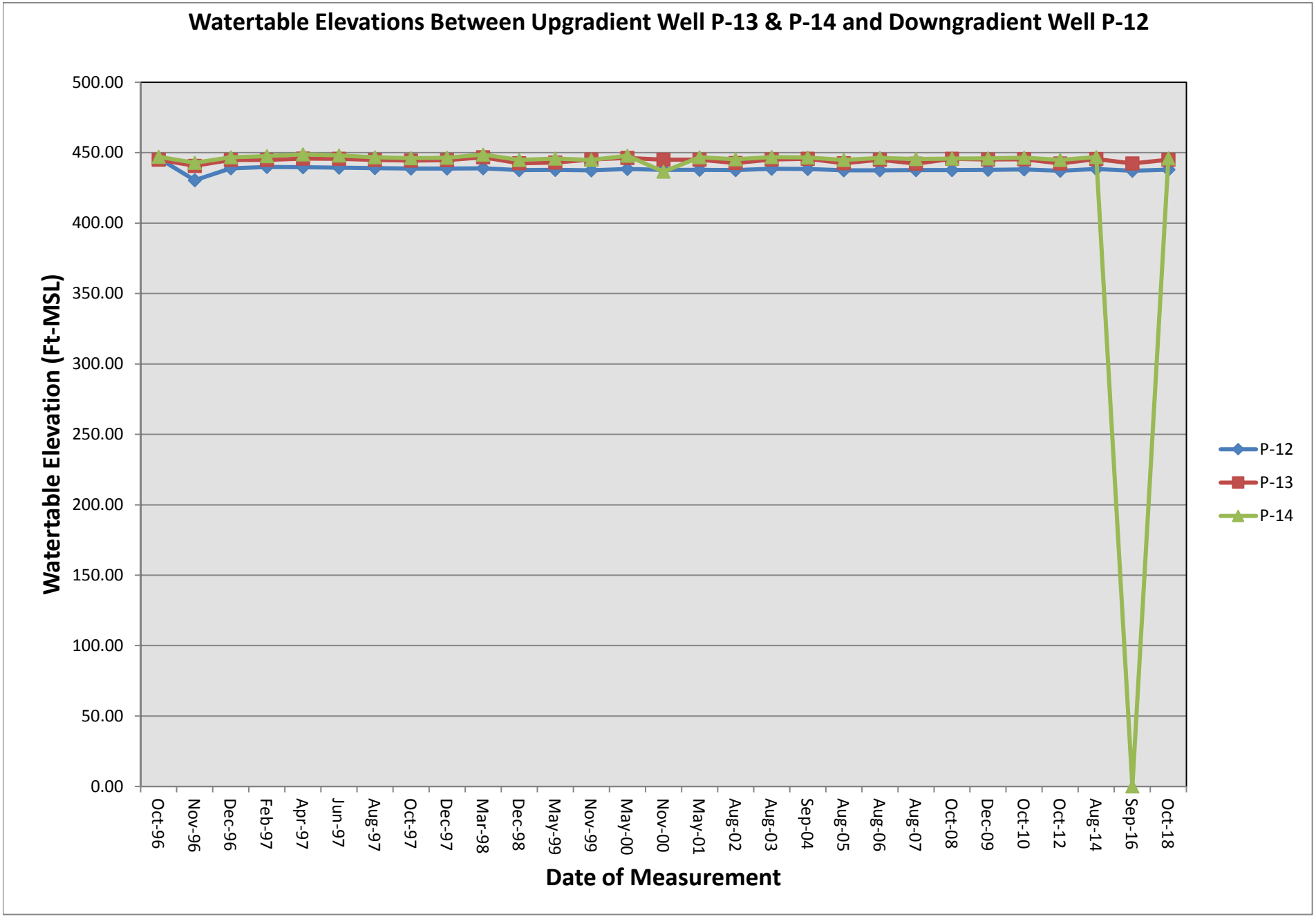

Watertable Elevations Between Upgradient Well P-13 & P-14 and Downgradient Well P-12
Watertable Elevation (Ft-MSL)
500.00
450.00
400.00
350.00
300.00
250.00
200.00
150.00
100.00
50.00
0.00
Oct-96
Nov-96
Dec-96
Feb-97
Apr-97
Jun-97
Aug-97
Oct-97
Dec-97
Mar-98
Dec-98
May-99
Nov-99
May-00
Nov-00
May-01
Aug-02
Aug-03
Sep-04
Aug-05
Aug-06
Aug-07
Oct-08
Dec-09
Oct-10
Oct-12
Aug-14
Sep-16
Oct-18
Date of Measurement
P-12
P-13
P-14

**Figure B-5**

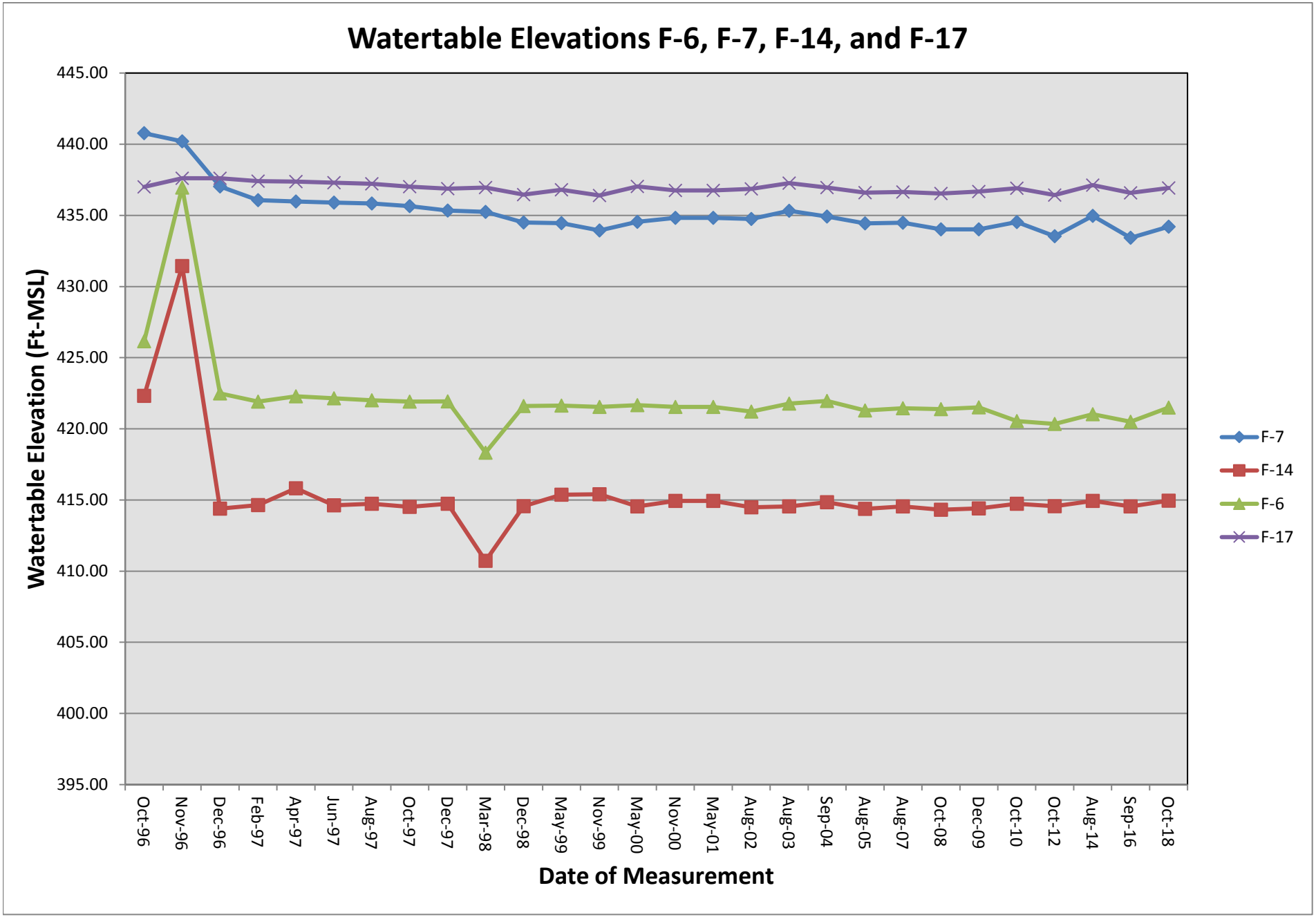
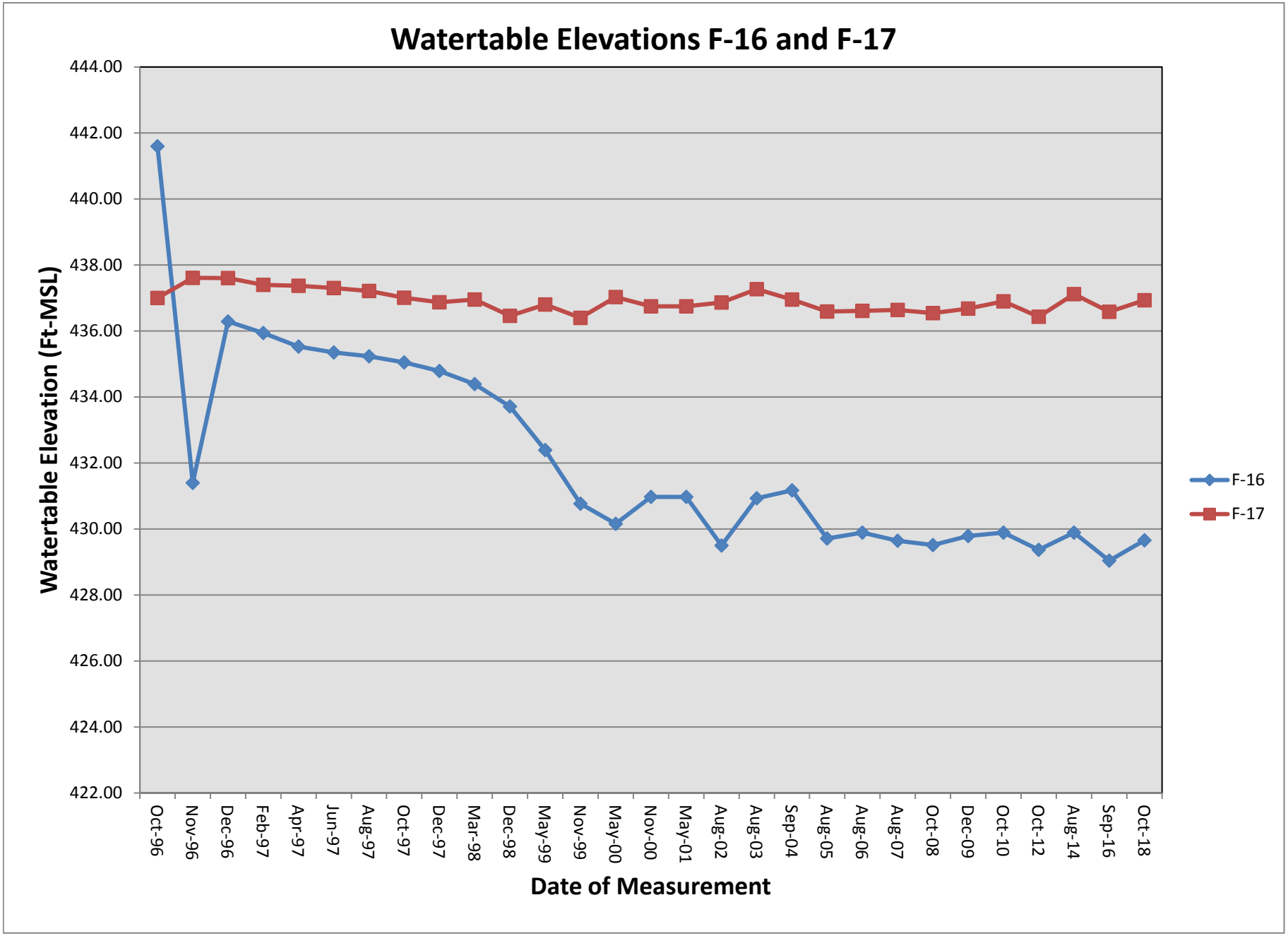

Watertable Elevations F-6, F-7, F-14, and F-17
Watertable Elevation (Ft-MSL)
445.00
440.00
435.00
430.00
425.00
420.00
415.00
410.00
405.00
400.00
395.00
Oct-96
Nov-96
Dec-96
Feb-97
Apr-97
Jun-97
Aug-97
Oct-97
Dec-97
Mar-98
Dec-98
May-99
Nov-99
May-00
Nov-00
May-01
Aug-02
Aug-03
Sep-04
Aug-05
Aug-07
Oct-08
Dec-09
Oct-10
Oct-12
Aug-14
Sep-16
Oct-18
Date of Measurement
F-7
F-14
F-6
F-17

**Figure B-6**


Watertable Elevations F-16 and F-17
Watertable Elevation (Ft-MSL)
444.00
442.00
440.00
438.00
436.00
434.00
432.00
430.00
428.00
426.00
424.00
422.00
Oct-96
Nov-96
Dec-96
Feb-97
Apr-97
Jun-97
Aug-97
Oct-97
Dec-97
Mar-98
Dec-98
May-99
Nov-99
May-00
Nov-00
May-01
Aug-02
Aug-03
Sep-04
Aug-05
Aug-06
Aug-07
Oct-08
Dec-09
Oct-10
Oct-12
Aug-14
Sep-16
Oct-18
Date of Measurement
F-16
F-17

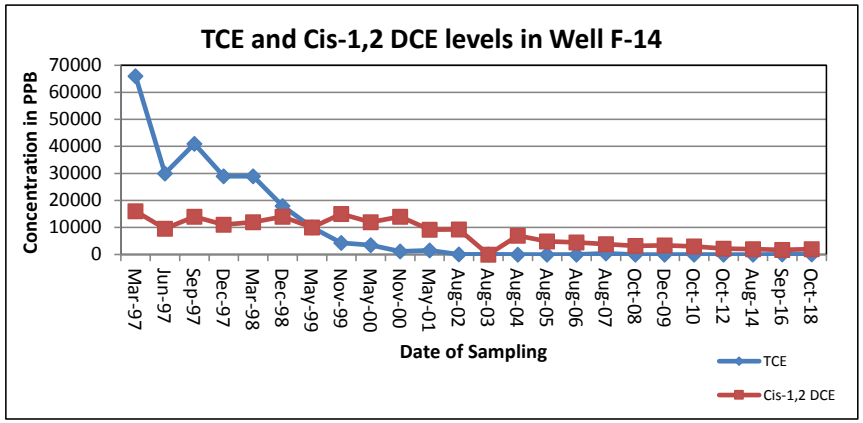
# ATTACHMENT C

# TREND PLOTS
# CHEMICAL CONSTITUENTS OF CONCERN
# IN MONITORING WELLS

**Figure C-1**
**Indicator Compounds of Concern in Well F-14**

| Analyte | Mar-97 | Jun-97 | Sep-97 | Dec-97 | Mar-98 | Dec-98 | May-99 | Nov-99 | May-00 | Nov-00 | May-01 | Aug-02 | Aug-03 | Aug-04 | Aug-05 | Aug-06 | Aug-07 | Oct-08 | Dec-09 | Oct-10 | Oct-12 | Aug-14 | Sep-16 | Oct-18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TCE | 66000 | 30000 | 41000 | 29000 | 29000 | 18000 | 10000 | 4300 | 3500 | 1200 | 1500 | 98 | 12 | ND | 3 | ND | 410 | 5 | 4 | ND | 3 | 1 | 9 | 26 |
| Cis-1,2 DCE | 16000 | 9600 | 14000 | 11000 | 12000 | 14000 | 10000 | 15000 | 12000 | 14000 | 9200 | 9300 | ND | 7000 | 4900 | 4500 | 3800 | 3200 | 3400 | 3000 | 2200 | 2000 | 1700 | 2000 |
| Trans-1,2 DCE | 250 | 57 | 380 | 66 | 66 | 76 | 52 | 70 | ND | 58 | 56 | 35 | ND | ND | 79 | 16 | 15 | 13 | 21 | 12 | 11 | 12 | 11 | 10 |
| Vinyl Chloride | 79 | 20 | 65 | 73 | 71 | 150 | 110 | 130 | 130 | 210 | 110 | 170 | 400 | 540 | 690 | 640 | 410 | 340 | 300 | 190 | 200 | 110 | 66 | 91 |

All results in ppb.
ND: Below detection limit. Concentration value below 0 ppb.



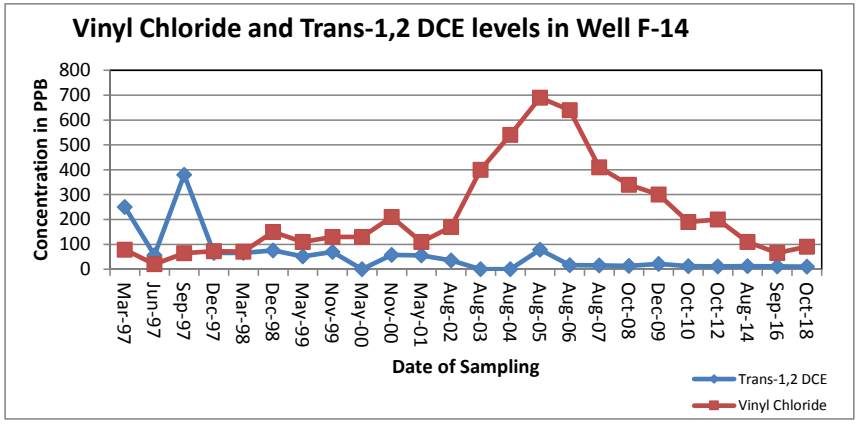



**Figure C-2**
**Indicator Compounds of Concern in Well F-6**

| Analyte | Jun-96 | Mar-97 | Jun-97 | Sep-97 | Dec-97 | Mar-98 | Dec-98 | May-99 | Nov-99 | May-00 | Nov-00 | May-01 | Aug-02 | Aug-03 | Aug-04 | Aug-05 | Aug-06 | Aug-07 | Oct-08 | Dec-09 | Oct-10 | Oct-12 | Aug-14 | Sep-16 | Oct-18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 320 | 40 | 62 | 47 | 27 | 25 | 16 | 17 | 8 | 9.6 | 8.8 | 7 | 6 | 4 | 4 | 5 | 4 | 3 | 3 | 1 | 3 | 3 | 2 | 2 | 1 |
| Cis-1,2 DCE | 910 | 170 | 260 | 190 | 150 | 190 | 93 | 140 | 66 | 94 | 67 | 75 | 82 | 63 | ND | 39 | 32 | 35 | 33 | 30 | 34 | 28 | 23 J | 13 | 13 |
| TCE | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trans-1,2 DCE | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

All results in ppb.
ND: Below detection limit. Concentration value below 0 ppb.

J -The analyte was positively identified, but the quantitation is an estimation.

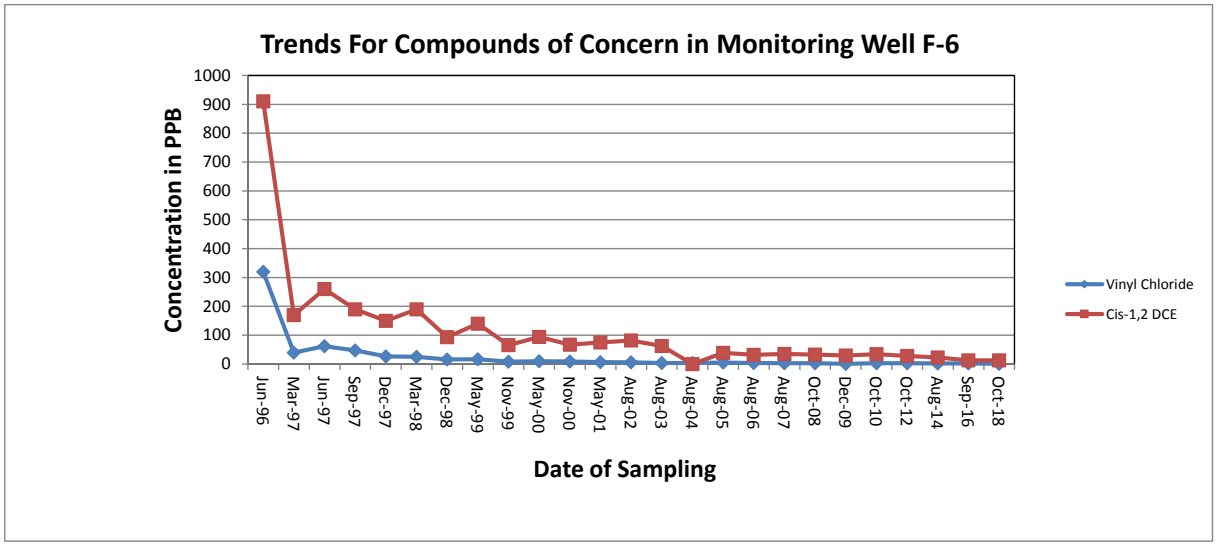


**Figure C-3**
**Indicator Compounds of Concern in Well F-7**

| Analyte | Jun-96 | Mar-97 | Jun-97 | Sep-97 | Dec-97 | Mar-98 | Dec-98 | May-99 | Nov-99 | May-00 | Nov-00 | May-01 | Aug-02 | Aug-03 | Aug-04 | Aug-05 | Aug-06 | Aug-07 | Oct-08 | Dec-09 | Oct-10 | Oct-12 | Aug-14 | Sep-16 | Oct-18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 13 | 19 | 7 | 15 | 3 | ND | 4 | 5 | 4 | 7.3 | ND | 1 | 6 | 2 | 3 | 1 | 4 | 2 | 2 | ND | 2 | 2 | 2 | 1 | 1 |
| TCE | 280 | 91 | 16 | 72 | 8 | 2 | 6 | 4 | 30 | 6.7 | ND | 4 | 6 | 1 | 2 | 12 | 2 | 8 | 7 | 5 | 12 | 4 | 6 | 15 | 5 |
| Cis-1,2 DCE | 66 | 61 | 23 | 60 | 28 | 7 | 14 | 28 | 32 | 14 | 25 | 7 | 13 | 4 | ND | 22 | 32 | 19 | 14 | 6 | 8 | 7 | 9 | 7 | 7 |
| Trans-1,2 DCE | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

All results in ppb.

ND: Below detection limit. Concentration value below 0 ppb.

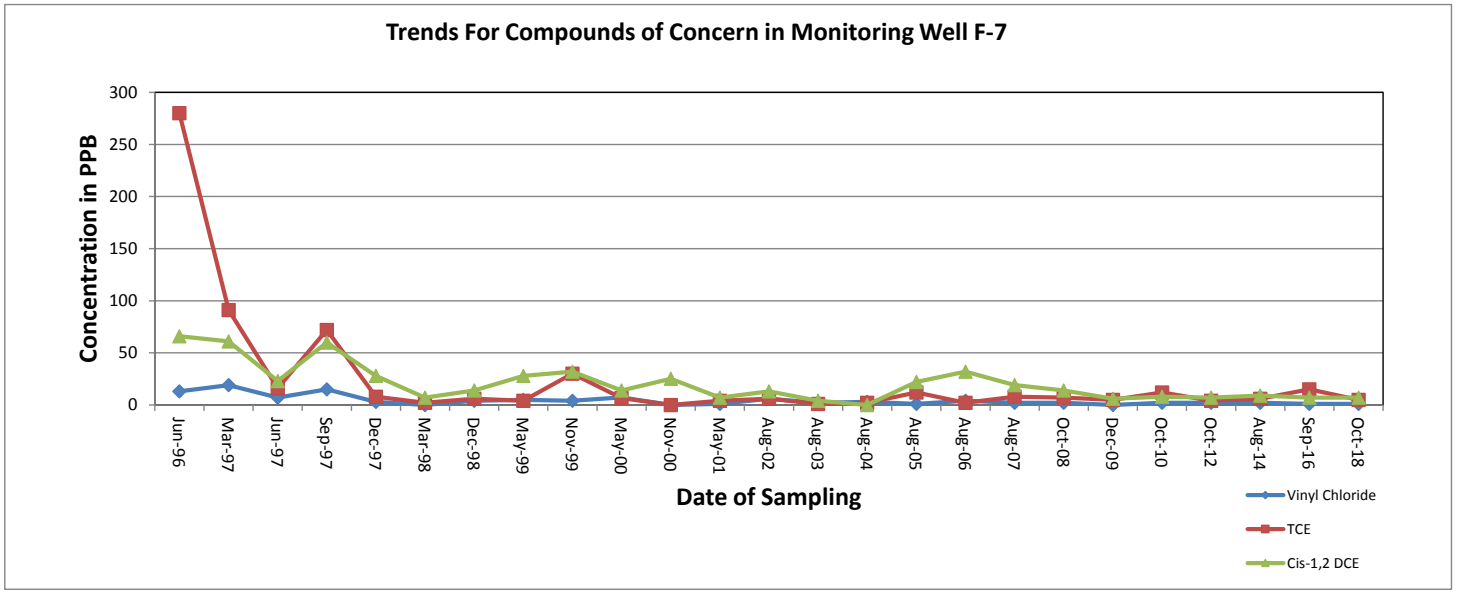


**Figure C-4**
**Indicator Compounds of Concern in Well F-16**

| Analyte | Dec-96 | Mar-97 | Jun-97 | Sep-97 | Dec-97 | Mar-98 | Dec-98 | May-99 | Nov-99 | May-00 | Nov-00 | May-01 | Aug-02 | Aug-03 | Aug-04 | Aug-05 | Aug-06 | Aug-07 | Oct-08 | Dec-09 | Oct-10 | Oct-12 | Aug-14 | Sep-16 | Oct-18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 99 | 45 | 27 | 24 | 490 | 850 | 700 | 930 | 4 | 45 | 76 | 1400 | 530 | 580 | 26000 | 4700 | 490 | 1200 | 290 | 350 | 190 | 220 | 670 | 2 | 37 |
| TCE | 4 | 3 | 2 | 2 | 1500 | 25 | ND | 18 | 6 | 2.7 | 13 | 130 | ND | 4 | ND | 13000 | 14 | 6 | 3 | 240 | ND | 550 | 7 | 1 | 130 |
| Cis-1,2 DCE | 72 | 30 | 21 | 11 | 820 | 1200 | 420 | 1400 | 32 | 37 | 110 | 4500 | 3400 | 970 | 130000 | 22000 | 1500 | 1800 | 770 | 2200 | 1800 | 3600 | 2300 | 75 | 730 |
| Trans-1,2 DCE | ND | ND | ND | ND | 14 | ND | ND | ND | ND | ND | ND | 24 | 10 | 2 | ND | 79 | 6 | 3 | 1 | 6 | 3 | 18 | 5 | ND | 2 |

All results in ppb.

ND: Below detection limit. Concentration value below 0 ppb.

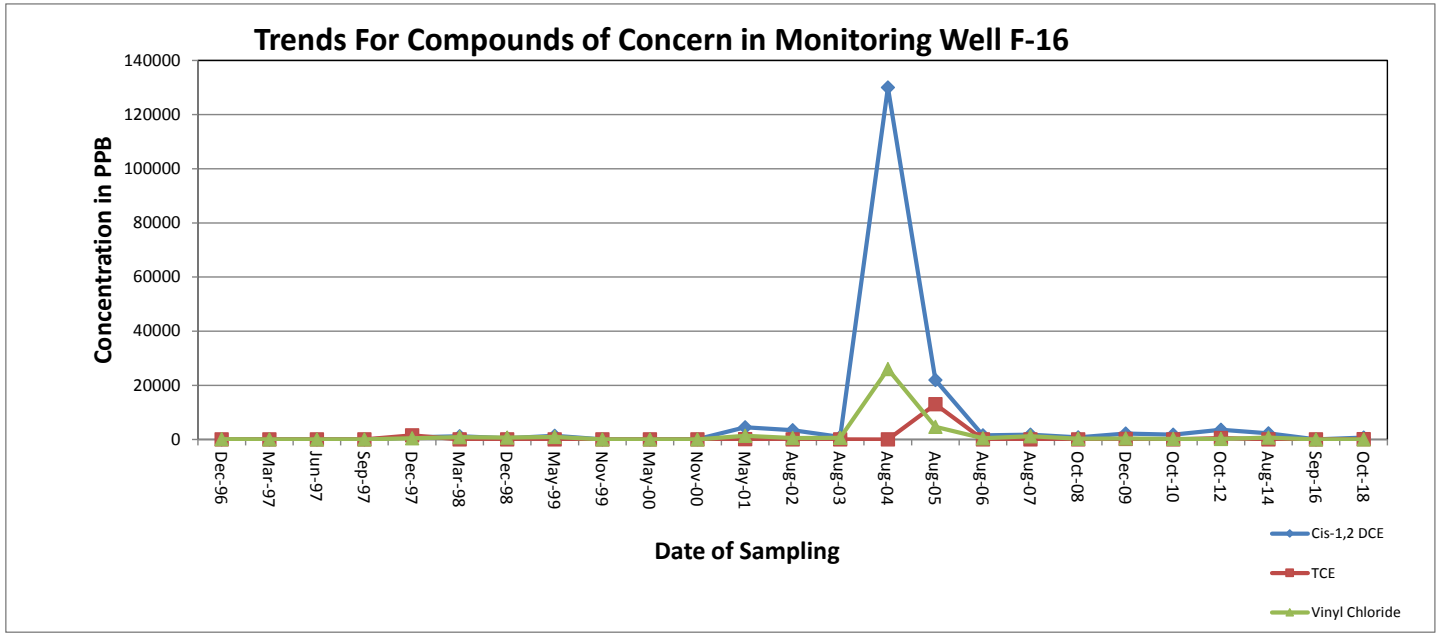


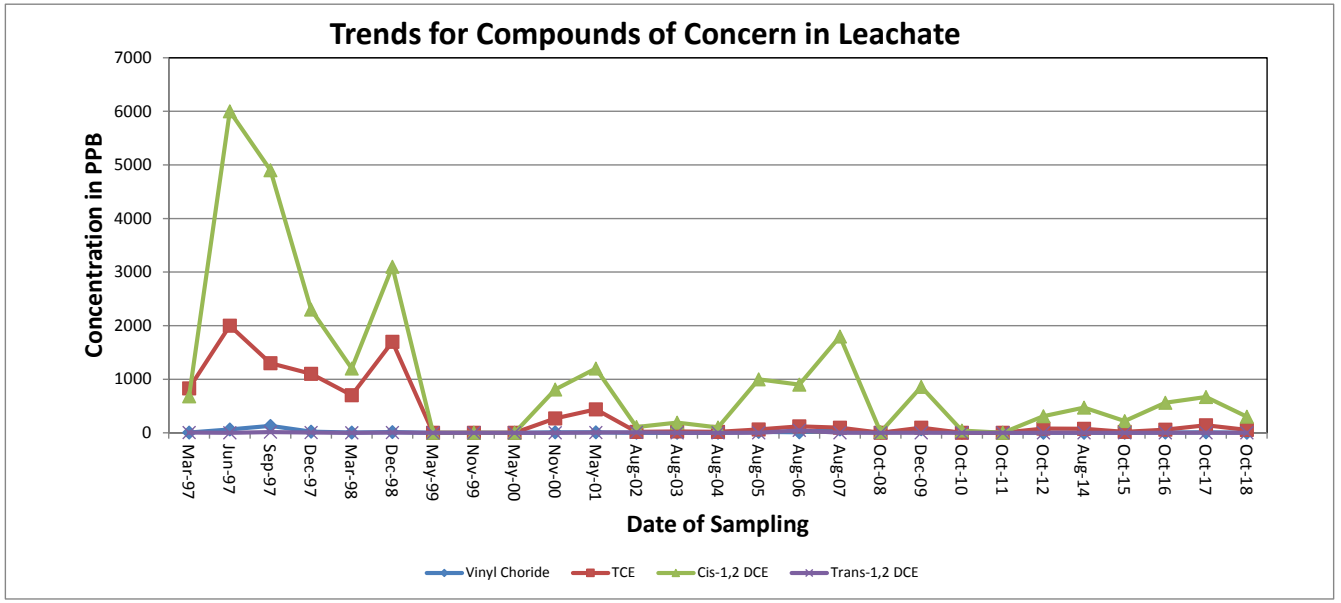
**Figure C-5**
**Indicator Compounds of Concern in Leachate**

| Analyte | Mar-97 | Jun-97 | Sep-97 | Dec-97 | Mar-98 | Dec-98 | May-99 | Nov-99 | May-00 | Nov-00 | May-01 | Aug-02 | Aug-03 | Aug-04 | Aug-05 | Aug-06 | Aug-07 | Oct-08 | Dec-09 | Oct-10 | Oct-11 | Oct-12 | Aug-14 | Oct-15 | Oct-16 | Oct-17 | Oct-18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 7 | 63 | 130 | 22 | 5 | 13 | NF | ND | ND | 8.7 | 11 | ND | ND | ND | 16 | 9 | 65 | ND | 66 | ND | 0.005 | 3 | 2 | 1 | 7 | 9 | 1 |
| TCE | 830 | 2000 | 1300 | 1100 | 700 | 1700 | NF | ND | ND | 270 | 440 | 16 | 25 | 19 | 65 | 120 | 95 | 3 | 94 | ND | 0.056 | 81 | 76 | 17 | 60 | 140 | 54 |
| Cis-1,2 DCE | 680 | 6000 | 4900 | 2300 | 1200 | 3100 | NF | ND | ND | 810 | 1200 | 110 | 190 | 100 | 1000 | 900 | 1800 | 14 | 860 | 41 | 0.28 | 310 | 470 | 220 | 560 | 670 | 300 |
| Trans-1,2 DCE | 7 | 0 | 13 | 4 | ND | 6 | NF | ND | ND | ND | 7 | 11 | ND | ND | 2 | 45 | 3 | ND | 3 | ND | ND | 1 | 0.8 | ND | 1 | 1 | 0.4 |

All Results in ppb.

ND: Below detection limit. Concentration value below 0 ppb.

J -The analyte was positively identified, but the quantitation is an estimation.



# ATTACHMENT D

# ANALYTICAL LABORATORY REPORT
# WITH CHAIN-OF-CUSTODIES AND
# ADQM WHITEBOOK DATA REVIEW NARRATIVE

**ADQM DATA REVIEW NARRATIVE**

**Site:** **DuPont Ferdula (FER)**

**Project:** **Groundwater Sampling Annual 2018**

**Project Reviewer:** **Sharon Nordstrom**

**Sampling Dates**: **October 16 - 19, 2018**

**Laboratories:** **Eurofins Lancaster Laboratories, Lancaster, PA**

**Alpha Analytical, Westborough, MA**

**Analytical Protocols:**

| Analysis | Laboratory | Method Reference |
|---|---|---|
| Target Volatile Organics | Eurofins Lancaster | SW-846 8260C |
| PFAS Compounds | Eurofins Lancaster | EPA 537 v1.1 mod |
| 1,4-Dioxane | Alpha Analytical | SW-846 8270D SIM |

**Sample Receipt:**

The groundwater samples collected from 9 well locations were received at Eurofins Lancaster Laboratories in two delivery groups on 10/18/18 and 10/20/18. All samples were received in satisfactory condition, properly preserved, and within EPA temperature guidelines (<6 degrees C). No anomalies or sample breakage were noted at the time of sample log-in. Field duplicate samples collected at well F-6, F-8, and P-17 plus additional volume for the analysis of matrix spikes, voa trip blank, field blank and equipment blank for PFAS, were also submitted with the sample set. Not all sample locations required analysis for PFAS Compounds or 1,4-Dioxane.

The 1, 4-dioxane sample aliquots for F-8, P-11, P-17, and P-17-D were transferred from Eurofins to Alpha Analytical for analysis to comply with NY State certification requirements. The samples were received at Alpha on 10/20/18 in satisfactory condition.

**Data Review:**

The electronic data deliverable submitted for this program was inserted into the Locus EIM™ database, and reviewed via the DuPont Data Verification Module (DVM), supplemented with a manual review of the laboratory data reports. Some of the analytical results have been qualified in the database, as discussed below. Please refer to the DVM Narrative Report for a full listing of the samples that were qualified, the specific reasons for qualification, and potential bias in the reported results.

**Volatile Organics -** The result for cis-1,2-dichloroethene in well F-6 was J qualified as estimated (possible high bias) because the associated matrix spike and matrix spike duplicate were recovered above the laboratory control window of 80%-120%. Although not qualified by the data review program, the cis-1,2-dichloroethene detection in the field duplicate F-6-D should also be considered estimated. Tetrachloroethene (PCE) was also recovered above the control limits in the same spikes, however, it was not detected in either F-6 or the field duplicate.

No target volatile compounds were detected above the reporting limit in the trip blank or in the laboratory method blanks.

**1,4-Dioxane-** The 7-day extraction holding time was exceeded by 1 day for sample P-11. The sample was incorrectly logged-in at Alpha with a collection date of 10/17/18 instead of the correct date of 10/16/18. The non-detect 1,4-Dioxane result was UJ qualified during data review, and the reporting limit shown on the report may be inaccurate.

**PFAS Compounds-** The detections reported for Perfluoropentanoic Acid and PFOA in well P-17 were J qualified as estimated because the associated sample surrogate 13C3-PFBS was recovered slightly above the laboratory control window of 26%-148%.

The target compound Perfluorobutanoic Acid was detected at a trace level (0.0028 ug/l) in the equipment blank sample; there were no target detections reported in the field blank.

**General Discussion-** All positive results detected between the method detection limit (MDL) and the practical quantitation limit (PQL), were qualified “J” and should be considered estimated values. Several samples required dilutions to bring all target analytes into the calibration range and have elevated reporting limits.

Except as noted above, all sample analyses were completed within the EPA recommended holding time. Positive detections in the field duplicate samples were comparable (<30% RPD). No other analytical difficulties or anomalies were reported by the laboratories for this sample set, and all data is considered usable.

The Eurofins Lancaster and Alpha Analytical data reports are attached to this document for reference. Eurofins Lancaster Laboratories holds State of New York Laboratory Certification No. 10670 and Alpha Analytical holds certification numer 11148.

**Data Verification Module (DVM)**

The DVM is an internal review process used by the ADQM group to assist with the determination of data usability. The electronic data deliverables received from the laboratory are loaded into the Locus EIM™ database and processed through a series of data quality checks, which are a combination of software (Locus EIM™ database Data Verification Module (DVM)) and manual reviewer evaluations. The data is evaluated against the following data usability checks:

- Field and laboratory blank contamination
- US EPA hold time criteria
- Missing Quality Control (QC) samples
- Matrix spike(MS)/matrix spike duplicate (MSD) recoveries and the relative percent differences (RPDs) between these spikes
- Laboratory control sample(LCS)/control sample duplicate (LCSD) recoveries and the RPD between these spikes
- Surrogate spike recoveries for organic analyses
- RPD between field duplicate sample pairs
- RPD between laboratory replicates for inorganic analyses
- Difference / percent difference between total and dissolved sample pairs.

There are two qualifier fields in EIM:

**Lab Qualifier** is the qualifier assigned by the lab and may not reflect the usability of the data. This qualifier may have many different meanings and can vary between labs and over time within the same lab. Please refer to the laboratory report for a description of the lab qualifiers. As they are lab descriptors they are not to be used when evaluating the data.

**Validation Qualifier** is the 3rd party formal validation qualifier if this was performed. Otherwise this field contains the qualifier resulting from the ADQM DVM review process. This qualifier assesses the usability of the data and may not equal the lab qualifier. The DVM applies the following data evaluation qualifiers to analysis results, as warranted:

| Qualifier | Definition |
|---|---|
| B | Not detected substantially above the level reported in the laboratory or field blanks. |
| R | Unusable result. Analyte may or may not be present in the sample. |
| J | Analyte present. Reported value may not be accurate or precise. |
| UJ | Not detected. Reporting limit may not be accurate or precise. |

The **Validation Status Code** field is set to “DVM” if the ADQM DVM process has been performed. If the DVM has not been run, the field will be blank.

If the DVM has been run (**Validation Status Code** equals “DVM”), use the **Validation Qualifier.**

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



# ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CRG-E.I.DuPont de Nemours & Co
AECOM
Sabre Building
4051 Ogletown Road, Suite 300
Newark DE 19713

Report Date: October 31, 2018 20:49

**Project: FER - GW SAMPLING**

Account #: 06643
Group Number: 2000185
PO Number: LBIO-67047
State of Sample Origin: NY

Respectfully Submitted,

Lyssa M. Longenecker
Specialist

(717) 556-7321

To view our laboratory's current scopes of accreditation please go to http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

## SAMPLE INFORMATION

| Client Sample Description | Sample Collection Date/Time | ELLE# |
|---|---|---|
| GW2018-F-6 Groundwater | 10/17/2018 11:45 | 9859191 |
| GW2018-F-6 MS Groundwater | 10/17/2018 11:45 | 9859192 |
| GW2018-F-6 MSD Groundwater | 10/17/2018 11:45 | 9859193 |
| GW2018-F-6-D Groundwater | 10/17/2018 11:45 | 9859194 |
| GW2018-P-17 Groundwater | 10/16/2018 14:30 | 9859195 |
| GW2018-F-8 Groundwater | 10/17/2018 10:05 | 9859196 |
| GW2018-F-8 MS Groundwater | 10/17/2018 10:05 | 9859197 |
| GW2018-F-8 MSD Groundwater | 10/17/2018 10:05 | 9859198 |
| GW2018-FB-GW Groundwater | 10/16/2018 13:35 | 9859199 |
| GW2018-EB-GW Groundwater | 10/16/2018 12:40 | 9859200 |
| GW2018-F-8-D Groundwater | 10/17/2018 10:05 | 9859201 |
| GW2018-P-11 Groundwater | 10/16/2018 13:20 | 9859202 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

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Project Name: FER - GW SAMPLING
ELLE Group #: 2000185

**General Comments:**

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

**SW-846 8260C, GC/MS Volatiles**

Batch #: E183032AA (Sample number(s): 9859191-9859196 UNSPK: 9859191)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: cis-1,2-Dichloroethene, Tetrachloroethene

**EPA 537 Version 1.1 Modified, LC/MS/MS Miscellaneous**

Sample #s: 9859195

The recovery for labeled compound used as extraction standards is outside of QC acceptance limits as noted on the QC Summary.

Batch #: 18292009 (Sample number(s): 9859195-9859202 UNSPK: 9859196)

The recovery(ies) for one or more surrogates exceeded the acceptance window indicating a positive bias for sample(s) 9859195

**Sample Description:** **GW2018-F-6 Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 11:45

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859191**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Acetone | 67-64-1 | 0.7 U | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **11** | 0.2 | 1 | 1 |
| 11997 | trans-1,2-Dichloroethene | 156-60-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **1** | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-6 Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 11:45

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859191**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | E183032AA | 10/30/2018 11:28 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | E183032AA | 10/30/2018 11:28 | Jason M Long | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW2018-F-6 MS Groundwater
GW SAMPLING ANNUAL 2018

**Project Name:** FER - GW SAMPLING

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 11:45

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #:** GW 9859192
**ELLE Group #:** 2000185
**Matrix:** Groundwater

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | ug/l | ug/l | |
| 11997 | **Acetone** | 67-64-1 | **150** | 0.7 | 20 | 1 |
| 11997 | **Benzene** | 71-43-2 | **23** | 0.2 | 1 | 1 |
| 11997 | **Bromodichloromethane** | 75-27-4 | **22** | 0.2 | 1 | 1 |
| 11997 | **Bromoform** | 75-25-2 | **21** | 0.2 | 4 | 1 |
| 11997 | **Bromomethane** | 74-83-9 | **18** | 0.3 | 1 | 1 |
| 11997 | **2-Butanone** | 78-93-3 | **150** | 0.3 | 10 | 1 |
| 11997 | **Carbon Disulfide** | 75-15-0 | **23** | 0.2 | 5 | 1 |
| 11997 | **Carbon Tetrachloride** | 56-23-5 | **24** | 0.2 | 1 | 1 |
| 11997 | **Chlorobenzene** | 108-90-7 | **23** | 0.2 | 1 | 1 |
| 11997 | **Chloroethane** | 75-00-3 | **21** | 0.2 | 1 | 1 |
| 11997 | **Chloroform** | 67-66-3 | **23** | 0.2 | 1 | 1 |
| 11997 | **Chloromethane** | 74-87-3 | **21** | 0.2 | 1 | 1 |
| 11997 | **Dibromochloromethane** | 124-48-1 | **22** | 0.2 | 1 | 1 |
| 11997 | **1,1-Dichloroethane** | 75-34-3 | **23** | 0.2 | 1 | 1 |
| 11997 | **1,2-Dichloroethane** | 107-06-2 | **21** | 0.3 | 1 | 1 |
| 11997 | **1,1-Dichloroethene** | 75-35-4 | **25** | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **36** | 0.2 | 1 | 1 |
| 11997 | **trans-1,2-Dichloroethene** | 156-60-5 | **24** | 0.2 | 1 | 1 |
| 11997 | **1,2-Dichloropropane** | 78-87-5 | **23** | 0.2 | 1 | 1 |
| 11997 | **cis-1,3-Dichloropropene** | 10061-01-5 | **22** | 0.2 | 1 | 1 |
| 11997 | **trans-1,3-Dichloropropene** | 10061-02-6 | **21** | 0.2 | 1 | 1 |
| 11997 | **Ethylbenzene** | 100-41-4 | **23** | 0.4 | 1 | 1 |
| 11997 | **2-Hexanone** | 591-78-6 | **100** | 0.3 | 10 | 1 |
| 11997 | **4-Methyl-2-pentanone** | 108-10-1 | **100** | 0.5 | 10 | 1 |
| 11997 | **Methylene Chloride** | 75-09-2 | **22** | 0.3 | 1 | 1 |
| 11997 | **Styrene** | 100-42-5 | **23** | 0.2 | 5 | 1 |
| 11997 | **1,1,2,2-Tetrachloroethane** | 79-34-5 | **22** | 0.2 | 1 | 1 |
| 11997 | **Tetrachloroethene** | 127-18-4 | **24** | 0.2 | 1 | 1 |
| 11997 | **Toluene** | 108-88-3 | **23** | 0.2 | 1 | 1 |
| 11997 | **1,1,1-Trichloroethane** | 71-55-6 | **23** | 0.3 | 1 | 1 |
| 11997 | **1,1,2-Trichloroethane** | 79-00-5 | **22** | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **23** | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **24** | 0.2 | 1 | 1 |
| 11997 | **Xylene (Total)** | 1330-20-7 | **69** | 1 | 5 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-6 MS Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 11:45

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859192**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | E183032AA | 10/30/2018 13:09 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | E183032AA | 10/30/2018 13:09 | Jason M Long | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW2018-F-6 MSD Groundwater
GW SAMPLING ANNUAL 2018

**Project Name:** FER - GW SAMPLING

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 11:45

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #:** GW 9859193
**ELLE Group #:** 2000185
**Matrix:** Groundwater

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | ug/l | ug/l | ug/l | |
| 11997 | **Acetone** | 67-64-1 | **140** | 0.7 | 20 | 1 |
| 11997 | **Benzene** | 71-43-2 | **23** | 0.2 | 1 | 1 |
| 11997 | **Bromodichloromethane** | 75-27-4 | **22** | 0.2 | 1 | 1 |
| 11997 | **Bromoform** | 75-25-2 | **21** | 0.2 | 4 | 1 |
| 11997 | **Bromomethane** | 74-83-9 | **18** | 0.3 | 1 | 1 |
| 11997 | **2-Butanone** | 78-93-3 | **150** | 0.3 | 10 | 1 |
| 11997 | **Carbon Disulfide** | 75-15-0 | **23** | 0.2 | 5 | 1 |
| 11997 | **Carbon Tetrachloride** | 56-23-5 | **24** | 0.2 | 1 | 1 |
| 11997 | **Chlorobenzene** | 108-90-7 | **22** | 0.2 | 1 | 1 |
| 11997 | **Chloroethane** | 75-00-3 | **20** | 0.2 | 1 | 1 |
| 11997 | **Chloroform** | 67-66-3 | **23** | 0.2 | 1 | 1 |
| 11997 | **Chloromethane** | 74-87-3 | **21** | 0.2 | 1 | 1 |
| 11997 | **Dibromochloromethane** | 124-48-1 | **21** | 0.2 | 1 | 1 |
| 11997 | **1,1-Dichloroethane** | 75-34-3 | **23** | 0.2 | 1 | 1 |
| 11997 | **1,2-Dichloroethane** | 107-06-2 | **21** | 0.3 | 1 | 1 |
| 11997 | **1,1-Dichloroethene** | 75-35-4 | **25** | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **36** | 0.2 | 1 | 1 |
| 11997 | **trans-1,2-Dichloroethene** | 156-60-5 | **24** | 0.2 | 1 | 1 |
| 11997 | **1,2-Dichloropropane** | 78-87-5 | **23** | 0.2 | 1 | 1 |
| 11997 | **cis-1,3-Dichloropropene** | 10061-01-5 | **22** | 0.2 | 1 | 1 |
| 11997 | **trans-1,3-Dichloropropene** | 10061-02-6 | **21** | 0.2 | 1 | 1 |
| 11997 | **Ethylbenzene** | 100-41-4 | **23** | 0.4 | 1 | 1 |
| 11997 | **2-Hexanone** | 591-78-6 | **100** | 0.3 | 10 | 1 |
| 11997 | **4-Methyl-2-pentanone** | 108-10-1 | **100** | 0.5 | 10 | 1 |
| 11997 | **Methylene Chloride** | 75-09-2 | **22** | 0.3 | 1 | 1 |
| 11997 | **Styrene** | 100-42-5 | **22** | 0.2 | 5 | 1 |
| 11997 | **1,1,2,2-Tetrachloroethane** | 79-34-5 | **22** | 0.2 | 1 | 1 |
| 11997 | **Tetrachloroethene** | 127-18-4 | **24** | 0.2 | 1 | 1 |
| 11997 | **Toluene** | 108-88-3 | **23** | 0.2 | 1 | 1 |
| 11997 | **1,1,1-Trichloroethane** | 71-55-6 | **23** | 0.3 | 1 | 1 |
| 11997 | **1,1,2-Trichloroethane** | 79-00-5 | **22** | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **23** | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **24** | 0.2 | 1 | 1 |
| 11997 | **Xylene (Total)** | 1330-20-7 | **69** | 1 | 5 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-6 MSD Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 11:45

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859193**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | E183032AA | 10/30/2018 13:29 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | E183032AA | 10/30/2018 13:29 | Jason M Long | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-6-D Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 11:45

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859194**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Acetone | 67-64-1 | 0.7 U | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **13** | 0.2 | 1 | 1 |
| 11997 | trans-1,2-Dichloroethene | 156-60-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **1** | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-6-D Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 11:45

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859194**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | E183032AA | 10/30/2018 11:48 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | E183032AA | 10/30/2018 11:48 | Jason M Long | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-P-17 Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/16/2018 14:30

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859195**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | **Acetone** | 67-64-1 | **0.7 J** | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **1,2-Dichloroethane** | 107-06-2 | **0.3 J** | 0.3 | 1 | 1 |
| 11997 | **1,1-Dichloroethene** | 75-35-4 | **3** | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **730** | 1 | 5 | 5 |
| 11997 | **trans-1,2-Dichloroethene** | 156-60-5 | **2** | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **240** | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **70** | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |
| **LC/MS/MS Miscellaneous** | **EPA 537 Version 1.1 Modified** | | **ng/l** | **ng/l** | **ng/l** | |
| 14473 | 6:2 fluorotelomersulfonate | 27619-97-2 | 0.92 U | 0.92 | 1.8 | 1 |
| 14473 | 8:2 fluorotelomersulfonate | 39108-34-4 | 1.8 U | 1.8 | 5.5 | 1 |
| 14473 | NEtFOSAA | 2991-50-6 | 0.92 U | 0.92 | 2.8 | 1 |
| | NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | NMeFOSAA | 2355-31-9 | 0.92 U | 0.92 | 2.8 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-P-17 Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/16/2018 14:30

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859195**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **LC/MS/MS Miscellaneous** | **EPA 537 Version 1.1 Modified** | | **ng/l** | **ng/l** | **ng/l** | |
| | NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | Perfluorobutanesulfonate | 375-73-5 | 0.28 U | 0.28 | 0.92 | 1 |
| 14473 | Perfluorobutanoic acid | 375-22-4 | 1.8 U | 1.8 | 5.5 | 1 |
| 14473 | Perfluorodecanesulfonate | 335-77-3 | 0.55 U | 0.55 | 1.8 | 1 |
| 14473 | Perfluorodecanoic acid | 335-76-2 | 0.83 U | 0.83 | 1.8 | 1 |
| 14473 | Perfluorododecanoic acid | 307-55-1 | 0.46 U | 0.46 | 1.8 | 1 |
| 14473 | Perfluoroheptanesulfonate | 375-92-8 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluoroheptanoic acid | 375-85-9 | 0.37 U | 0.37 | 0.92 | 1 |
| 14473 | Perfluorohexanesulfonate | 355-46-4 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorohexanoic acid | 307-24-4 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorononanoic acid | 375-95-1 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorooctanesulfonamide | 754-91-6 | 0.46 U | 0.46 | 2.8 | 1 |
| 14473 | Perfluoro-octanesulfonate | 1763-23-1 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | **Perfluorooctanoic acid** | 335-67-1 | **0.56 J** | 0.28 | 0.92 | 1 |
| 14473 | **Perfluoropentanoic acid** | 2706-90-3 | **2.8 J** | 1.8 | 5.5 | 1 |
| 14473 | Perfluorotetradecanoic acid | 376-06-7 | 0.28 U | 0.28 | 0.92 | 1 |
| 14473 | Perfluorotridecanoic acid | 72629-94-8 | 0.37 U | 0.37 | 0.92 | 1 |
| 14473 | Perfluoroundecanoic acid | 2058-94-8 | 0.37 U | 0.37 | 1.8 | 1 |

The recovery for labeled compound used as extraction standards is outside of QC acceptance limits as noted on the QC Summary.

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | E183032AA | 10/30/2018 12:28 | Jason M Long | 5 |
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | E183032AA | 10/30/2018 20:34 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | E183032AA | 10/30/2018 12:28 | Jason M Long | 5 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 2 | E183032AA | 10/30/2018 20:34 | Jason M Long | 1 |
| 14473 | 21 PFAS EPA 537 v1.1 Mod | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/23/2018 00:56 | Joshua P Trost | 1 |
| 14091 | PFAS Water Prep | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/21/2018 12:00 | Danielle D McCully | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-8 Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 10:05

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859196**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Acetone | 67-64-1 | 0.7 U | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,2-Dichloroethene | 156-60-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **1** | 0.2 | 1 | 1 |
| 11997 | Vinyl Chloride | 75-01-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |
| **LC/MS/MS Miscellaneous** | **EPA 537 Version 1.1 Modified** | | **ng/l** | **ng/l** | **ng/l** | |
| 14473 | 6:2 fluorotelomersulfonate | 27619-97-2 | 1.1 U | 1.1 | 2.2 | 1 |
| 14473 | 8:2 fluorotelomersulfonate | 39108-34-4 | 2.2 U | 2.2 | 6.5 | 1 |
| 14473 | NEtFOSAA | 2991-50-6 | 1.1 U | 1.1 | 3.2 | 1 |
| | NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | NMeFOSAA | 2355-31-9 | 1.1 U | 1.1 | 3.2 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-8 Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 10:05

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859196**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **LC/MS/MS Miscellaneous** | **EPA 537 Version 1.1 Modified** | | **ng/l** | **ng/l** | **ng/l** | |
| | NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | **Perfluorobutanesulfonate** | 375-73-5 | **0.58 J** | 0.32 | 1.1 | 1 |
| 14473 | Perfluorobutanoic acid | 375-22-4 | 2.2 U | 2.2 | 6.5 | 1 |
| 14473 | Perfluorodecanesulfonate | 335-77-3 | 0.65 U | 0.65 | 2.2 | 1 |
| 14473 | Perfluorodecanoic acid | 335-76-2 | 0.97 U | 0.97 | 2.2 | 1 |
| 14473 | Perfluorododecanoic acid | 307-55-1 | 0.54 U | 0.54 | 2.2 | 1 |
| 14473 | Perfluoroheptanesulfonate | 375-92-8 | 0.43 U | 0.43 | 2.2 | 1 |
| 14473 | Perfluoroheptanoic acid | 375-85-9 | 0.43 U | 0.43 | 1.1 | 1 |
| 14473 | **Perfluorohexanesulfonate** | 355-46-4 | **2.0 J** | 0.43 | 2.2 | 1 |
| 14473 | Perfluorohexanoic acid | 307-24-4 | 0.43 U | 0.43 | 2.2 | 1 |
| 14473 | Perfluorononanoic acid | 375-95-1 | 0.43 U | 0.43 | 2.2 | 1 |
| 14473 | Perfluorooctanesulfonamide | 754-91-6 | 0.54 U | 0.54 | 3.2 | 1 |
| 14473 | **Perfluoro-octanesulfonate** | 1763-23-1 | **0.94 J** | 0.43 | 2.2 | 1 |
| 14473 | **Perfluorooctanoic acid** | 335-67-1 | **0.67 J** | 0.32 | 1.1 | 1 |
| 14473 | Perfluoropentanoic acid | 2706-90-3 | 2.2 U | 2.2 | 6.5 | 1 |
| 14473 | Perfluorotetradecanoic acid | 376-06-7 | 0.32 U | 0.32 | 1.1 | 1 |
| 14473 | Perfluorotridecanoic acid | 72629-94-8 | 0.43 U | 0.43 | 1.1 | 1 |
| 14473 | Perfluoroundecanoic acid | 2058-94-8 | 0.43 U | 0.43 | 2.2 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | E183032AA | 10/30/2018 12:08 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | E183032AA | 10/30/2018 12:08 | Jason M Long | 1 |
| 14473 | 21 PFAS EPA 537 v1.1 Mod | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/23/2018 01:05 | Joshua P Trost | 1 |
| 14091 | PFAS Water Prep | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/21/2018 12:00 | Danielle D McCully | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-8 MS Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 10:05

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859197**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **LC/MS/MS Miscellaneous** | **EPA 537 Version 1.1 Modified** | | **ng/l** | | **ng/l** | **ng/l** | |
| 14473 | **6:2 fluorotelomersulfonate** | 27619-97-2 | **14** | | 1.1 | 2.1 | 1 |
| 14473 | **8:2 fluorotelomersulfonate** | 39108-34-4 | **15** | | 2.1 | 6.4 | 1 |
| 14473 | **NEtFOSAA** | 2991-50-6 | **7.0** | | 1.1 | 3.2 | 1 |
| | NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid. | | | | | | |
| 14473 | **NMeFOSAA** | 2355-31-9 | **6.4** | | 1.1 | 3.2 | 1 |
| | NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid. | | | | | | |
| 14473 | **Perfluorobutanesulfonate** | 375-73-5 | **5.4** | | 0.32 | 1.1 | 1 |
| 14473 | **Perfluorobutanoic acid** | 375-22-4 | **7.4** | | 2.1 | 6.4 | 1 |
| 14473 | **Perfluorodecanesulfonate** | 335-77-3 | **4.3** | | 0.64 | 2.1 | 1 |
| 14473 | **Perfluorodecanoic acid** | 335-76-2 | **5.9** | | 0.96 | 2.1 | 1 |
| 14473 | **Perfluorododecanoic acid** | 307-55-1 | **5.7** | | 0.53 | 2.1 | 1 |
| 14473 | **Perfluoroheptanesulfonate** | 375-92-8 | **4.8** | | 0.43 | 2.1 | 1 |
| 14473 | **Perfluoroheptanoic acid** | 375-85-9 | **5.6** | | 0.43 | 1.1 | 1 |
| 14473 | **Perfluorohexanesulfonate** | 355-46-4 | **7.0** | | 0.43 | 2.1 | 1 |
| 14473 | **Perfluorohexanoic acid** | 307-24-4 | **6.1** | | 0.43 | 2.1 | 1 |
| 14473 | **Perfluorononanoic acid** | 375-95-1 | **5.6** | | 0.43 | 2.1 | 1 |
| 14473 | **Perfluorooctanesulfonamide** | 754-91-6 | **5.8** | | 0.53 | 3.2 | 1 |
| 14473 | **Perfluoro-octanesulfonate** | 1763-23-1 | **5.6** | | 0.43 | 2.1 | 1 |
| 14473 | **Perfluorooctanoic acid** | 335-67-1 | **6.1** | | 0.32 | 1.1 | 1 |
| 14473 | **Perfluoropentanoic acid** | 2706-90-3 | **5.7** | **J** | 2.1 | 6.4 | 1 |
| 14473 | **Perfluorotetradecanoic acid** | 376-06-7 | **6.2** | | 0.32 | 1.1 | 1 |
| 14473 | **Perfluorotridecanoic acid** | 72629-94-8 | **5.8** | | 0.43 | 1.1 | 1 |
| 14473 | **Perfluoroundecanoic acid** | 2058-94-8 | **5.2** | | 0.43 | 2.1 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 14473 | 21 PFAS EPA 537 v1.1 Mod | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/23/2018 04:15 | Joshua P Trost | 1 |
| 14091 | PFAS Water Prep | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/21/2018 12:00 | Danielle D McCully | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-8 MSD Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 10:05

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859198**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **LC/MS/MS Miscellaneous** | **EPA 537 Version 1.1 Modified** | | **ng/l** | | **ng/l** | **ng/l** | |
| 14473 | **6:2 fluorotelomersulfonate** | 27619-97-2 | **16** | | 1.1 | 2.1 | 1 |
| 14473 | **8:2 fluorotelomersulfonate** | 39108-34-4 | **15** | | 2.1 | 6.4 | 1 |
| 14473 | **NEtFOSAA** | 2991-50-6 | **7.6** | | 1.1 | 3.2 | 1 |
| | NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid. | | | | | | |
| 14473 | **NMeFOSAA** | 2355-31-9 | **5.7** | | 1.1 | 3.2 | 1 |
| | NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid. | | | | | | |
| 14473 | **Perfluorobutanesulfonate** | 375-73-5 | **5.3** | | 0.32 | 1.1 | 1 |
| 14473 | **Perfluorobutanoic acid** | 375-22-4 | **7.1** | | 2.1 | 6.4 | 1 |
| 14473 | **Perfluorodecanesulfonate** | 335-77-3 | **4.2** | | 0.64 | 2.1 | 1 |
| 14473 | **Perfluorodecanoic acid** | 335-76-2 | **5.2** | | 0.96 | 2.1 | 1 |
| 14473 | **Perfluorododecanoic acid** | 307-55-1 | **5.3** | | 0.53 | 2.1 | 1 |
| 14473 | **Perfluoroheptanesulfonate** | 375-92-8 | **4.5** | | 0.43 | 2.1 | 1 |
| 14473 | **Perfluoroheptanoic acid** | 375-85-9 | **5.4** | | 0.43 | 1.1 | 1 |
| 14473 | **Perfluorohexanesulfonate** | 355-46-4 | **6.7** | | 0.43 | 2.1 | 1 |
| 14473 | **Perfluorohexanoic acid** | 307-24-4 | **5.5** | | 0.43 | 2.1 | 1 |
| 14473 | **Perfluorononanoic acid** | 375-95-1 | **5.7** | | 0.43 | 2.1 | 1 |
| 14473 | **Perfluorooctanesulfonamide** | 754-91-6 | **5.3** | | 0.53 | 3.2 | 1 |
| 14473 | **Perfluoro-octanesulfonate** | 1763-23-1 | **5.8** | | 0.43 | 2.1 | 1 |
| 14473 | **Perfluorooctanoic acid** | 335-67-1 | **5.8** | | 0.32 | 1.1 | 1 |
| 14473 | **Perfluoropentanoic acid** | 2706-90-3 | **5.5** | **J** | 2.1 | 6.4 | 1 |
| 14473 | **Perfluorotetradecanoic acid** | 376-06-7 | **5.6** | | 0.32 | 1.1 | 1 |
| 14473 | **Perfluorotridecanoic acid** | 72629-94-8 | **6.0** | | 0.43 | 1.1 | 1 |
| 14473 | **Perfluoroundecanoic acid** | 2058-94-8 | **5.6** | | 0.43 | 2.1 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 14473 | 21 PFAS EPA 537 v1.1 Mod | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/23/2018 04:24 | Joshua P Trost | 1 |
| 14091 | PFAS Water Prep | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/21/2018 12:00 | Danielle D McCully | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-FB-GW Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/16/2018 13:35

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859199**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **LC/MS/MS Miscellaneous** | **EPA 537 Version 1.1 Modified** | | **ng/l** | **ng/l** | **ng/l** | |
| 14473 | 6:2 fluorotelomersulfonate | 27619-97-2 | 0.92 U | 0.92 | 1.8 | 1 |
| 14473 | 8:2 fluorotelomersulfonate | 39108-34-4 | 1.8 U | 1.8 | 5.5 | 1 |
| 14473 | NEtFOSAA | 2991-50-6 | 0.92 U | 0.92 | 2.8 | 1 |
| | NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | NMeFOSAA | 2355-31-9 | 0.92 U | 0.92 | 2.8 | 1 |
| | NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | Perfluorobutanesulfonate | 375-73-5 | 0.28 U | 0.28 | 0.92 | 1 |
| 14473 | Perfluorobutanoic acid | 375-22-4 | 1.8 U | 1.8 | 5.5 | 1 |
| 14473 | Perfluorodecanesulfonate | 335-77-3 | 0.55 U | 0.55 | 1.8 | 1 |
| 14473 | Perfluorodecanoic acid | 335-76-2 | 0.83 U | 0.83 | 1.8 | 1 |
| 14473 | Perfluorododecanoic acid | 307-55-1 | 0.46 U | 0.46 | 1.8 | 1 |
| 14473 | Perfluoroheptanesulfonate | 375-92-8 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluoroheptanoic acid | 375-85-9 | 0.37 U | 0.37 | 0.92 | 1 |
| 14473 | Perfluorohexanesulfonate | 355-46-4 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorohexanoic acid | 307-24-4 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorononanoic acid | 375-95-1 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorooctanesulfonamide | 754-91-6 | 0.46 U | 0.46 | 2.8 | 1 |
| 14473 | Perfluoro-octanesulfonate | 1763-23-1 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorooctanoic acid | 335-67-1 | 0.28 U | 0.28 | 0.92 | 1 |
| 14473 | Perfluoropentanoic acid | 2706-90-3 | 1.8 U | 1.8 | 5.5 | 1 |
| 14473 | Perfluorotetradecanoic acid | 376-06-7 | 0.28 U | 0.28 | 0.92 | 1 |
| 14473 | Perfluorotridecanoic acid | 72629-94-8 | 0.37 U | 0.37 | 0.92 | 1 |
| 14473 | Perfluoroundecanoic acid | 2058-94-8 | 0.37 U | 0.37 | 1.8 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 14473 | 21 PFAS EPA 537 v1.1 Mod | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/23/2018 01:14 | Joshua P Trost | 1 |
| 14091 | PFAS Water Prep | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/21/2018 12:00 | Danielle D McCully | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-EB-GW Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/16/2018 12:40

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859200**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **LC/MS/MS Miscellaneous** | **EPA 537 Version 1.1 Modified** | | **ng/l** | **ng/l** | **ng/l** | |
| 14473 | 6:2 fluorotelomersulfonate | 27619-97-2 | 0.91 U | 0.91 | 1.8 | 1 |
| 14473 | 8:2 fluorotelomersulfonate | 39108-34-4 | 1.8 U | 1.8 | 5.5 | 1 |
| 14473 | NEtFOSAA | 2991-50-6 | 0.91 U | 0.91 | 2.7 | 1 |
| | NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | NMeFOSAA | 2355-31-9 | 0.91 U | 0.91 | 2.7 | 1 |
| | NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | Perfluorobutanesulfonate | 375-73-5 | 0.27 U | 0.27 | 0.91 | 1 |
| 14473 | **Perfluorobutanoic acid** | 375-22-4 | **2.8 J** | 1.8 | 5.5 | 1 |
| 14473 | Perfluorodecanesulfonate | 335-77-3 | 0.55 U | 0.55 | 1.8 | 1 |
| 14473 | Perfluorodecanoic acid | 335-76-2 | 0.82 U | 0.82 | 1.8 | 1 |
| 14473 | Perfluorododecanoic acid | 307-55-1 | 0.46 U | 0.46 | 1.8 | 1 |
| 14473 | Perfluoroheptanesulfonate | 375-92-8 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluoroheptanoic acid | 375-85-9 | 0.37 U | 0.37 | 0.91 | 1 |
| 14473 | Perfluorohexanesulfonate | 355-46-4 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorohexanoic acid | 307-24-4 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorononanoic acid | 375-95-1 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorooctanesulfonamide | 754-91-6 | 0.46 U | 0.46 | 2.7 | 1 |
| 14473 | Perfluoro-octanesulfonate | 1763-23-1 | 0.37 U | 0.37 | 1.8 | 1 |
| 14473 | Perfluorooctanoic acid | 335-67-1 | 0.27 U | 0.27 | 0.91 | 1 |
| 14473 | Perfluoropentanoic acid | 2706-90-3 | 1.8 U | 1.8 | 5.5 | 1 |
| 14473 | Perfluorotetradecanoic acid | 376-06-7 | 0.27 U | 0.27 | 0.91 | 1 |
| 14473 | Perfluorotridecanoic acid | 72629-94-8 | 0.37 U | 0.37 | 0.91 | 1 |
| 14473 | Perfluoroundecanoic acid | 2058-94-8 | 0.37 U | 0.37 | 1.8 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 14473 | 21 PFAS EPA 537 v1.1 Mod | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/23/2018 01:23 | Joshua P Trost | 1 |
| 14091 | PFAS Water Prep | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/21/2018 12:00 | Danielle D McCully | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-8-D Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/17/2018 10:05

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859201**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **LC/MS/MS Miscellaneous** | **EPA 537 Version 1.1 Modified** | | **ng/l** | **ng/l** | **ng/l** | |
| 14473 | 6:2 fluorotelomersulfonate | 27619-97-2 | 1.0 U | 1.0 | 2.0 | 1 |
| 14473 | 8:2 fluorotelomersulfonate | 39108-34-4 | 2.0 U | 2.0 | 6.1 | 1 |
| 14473 | NEtFOSAA | 2991-50-6 | 1.0 U | 1.0 | 3.0 | 1 |
| | NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | NMeFOSAA | 2355-31-9 | 1.0 U | 1.0 | 3.0 | 1 |
| | NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | **Perfluorobutanesulfonate** | 375-73-5 | **0.61 J** | 0.30 | 1.0 | 1 |
| 14473 | **Perfluorobutanoic acid** | 375-22-4 | **2.3 J** | 2.0 | 6.1 | 1 |
| 14473 | Perfluorodecanesulfonate | 335-77-3 | 0.61 U | 0.61 | 2.0 | 1 |
| 14473 | Perfluorodecanoic acid | 335-76-2 | 0.91 U | 0.91 | 2.0 | 1 |
| 14473 | Perfluorododecanoic acid | 307-55-1 | 0.51 U | 0.51 | 2.0 | 1 |
| 14473 | Perfluoroheptanesulfonate | 375-92-8 | 0.41 U | 0.41 | 2.0 | 1 |
| 14473 | Perfluoroheptanoic acid | 375-85-9 | 0.41 U | 0.41 | 1.0 | 1 |
| 14473 | **Perfluorohexanesulfonate** | 355-46-4 | **1.7 J** | 0.41 | 2.0 | 1 |
| 14473 | Perfluorohexanoic acid | 307-24-4 | 0.41 U | 0.41 | 2.0 | 1 |
| 14473 | Perfluorononanoic acid | 375-95-1 | 0.41 U | 0.41 | 2.0 | 1 |
| 14473 | Perfluorooctanesulfonamide | 754-91-6 | 0.51 U | 0.51 | 3.0 | 1 |
| 14473 | **Perfluoro-octanesulfonate** | 1763-23-1 | **0.95 J** | 0.41 | 2.0 | 1 |
| 14473 | **Perfluorooctanoic acid** | 335-67-1 | **0.57 J** | 0.30 | 1.0 | 1 |
| 14473 | Perfluoropentanoic acid | 2706-90-3 | 2.0 U | 2.0 | 6.1 | 1 |
| 14473 | Perfluorotetradecanoic acid | 376-06-7 | 0.30 U | 0.30 | 1.0 | 1 |
| 14473 | Perfluorotridecanoic acid | 72629-94-8 | 0.41 U | 0.41 | 1.0 | 1 |
| 14473 | Perfluoroundecanoic acid | 2058-94-8 | 0.41 U | 0.41 | 2.0 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 14473 | 21 PFAS EPA 537 v1.1 Mod | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/23/2018 01:32 | Joshua P Trost | 1 |
| 14091 | PFAS Water Prep | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/21/2018 12:00 | Danielle D McCully | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-P-11 Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/18/2018 10:20
Collection Date/Time: 10/16/2018 13:20

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9859202**
**ELLE Group #: 2000185**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **LC/MS/MS Miscellaneous** | **EPA 537 Version 1.1 Modified** | | **ng/l** | **ng/l** | **ng/l** | |
| 14473 | 6:2 fluorotelomersulfonate | 27619-97-2 | 0.90 U | 0.90 | 1.8 | 1 |
| 14473 | 8:2 fluorotelomersulfonate | 39108-34-4 | 1.8 U | 1.8 | 5.4 | 1 |
| 14473 | NEtFOSAA | 2991-50-6 | 0.90 U | 0.90 | 2.7 | 1 |
| | NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | NMeFOSAA | 2355-31-9 | 0.90 U | 0.90 | 2.7 | 1 |
| | NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid. | | | | | |
| 14473 | **Perfluorobutanesulfonate** | 375-73-5 | **0.39 J** | 0.27 | 0.90 | 1 |
| 14473 | **Perfluorobutanoic acid** | 375-22-4 | **2.7 J** | 1.8 | 5.4 | 1 |
| 14473 | Perfluorodecanesulfonate | 335-77-3 | 0.54 U | 0.54 | 1.8 | 1 |
| 14473 | Perfluorodecanoic acid | 335-76-2 | 0.81 U | 0.81 | 1.8 | 1 |
| 14473 | Perfluorododecanoic acid | 307-55-1 | 0.45 U | 0.45 | 1.8 | 1 |
| 14473 | Perfluoroheptanesulfonate | 375-92-8 | 0.36 U | 0.36 | 1.8 | 1 |
| 14473 | Perfluoroheptanoic acid | 375-85-9 | 0.36 U | 0.36 | 0.90 | 1 |
| 14473 | Perfluorohexanesulfonate | 355-46-4 | 0.36 U | 0.36 | 1.8 | 1 |
| 14473 | Perfluorohexanoic acid | 307-24-4 | 0.36 U | 0.36 | 1.8 | 1 |
| 14473 | Perfluorononanoic acid | 375-95-1 | 0.36 U | 0.36 | 1.8 | 1 |
| 14473 | Perfluorooctanesulfonamide | 754-91-6 | 0.45 U | 0.45 | 2.7 | 1 |
| 14473 | **Perfluoro-octanesulfonate** | 1763-23-1 | **0.54 J** | 0.36 | 1.8 | 1 |
| 14473 | **Perfluorooctanoic acid** | 335-67-1 | **0.57 J** | 0.27 | 0.90 | 1 |
| 14473 | Perfluoropentanoic acid | 2706-90-3 | 1.8 U | 1.8 | 5.4 | 1 |
| 14473 | Perfluorotetradecanoic acid | 376-06-7 | 0.27 U | 0.27 | 0.90 | 1 |
| 14473 | Perfluorotridecanoic acid | 72629-94-8 | 0.36 U | 0.36 | 0.90 | 1 |
| 14473 | Perfluoroundecanoic acid | 2058-94-8 | 0.36 U | 0.36 | 1.8 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 14473 | 21 PFAS EPA 537 v1.1 Mod | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/23/2018 01:41 | Joshua P Trost | 1 |
| 14091 | PFAS Water Prep | EPA 537 Version 1.1 Modified | 1 | 18292009 | 10/21/2018 12:00 | Danielle D McCully | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Group Number: 2000185
Reported: 10/31/2018 20:49

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | MDL** | LOQ |
|---|---|---|---|
| | ug/l | ug/l | ug/l |
| Batch number: E183032AA | Sample number(s): 9859191-9859196 | | |
| Acetone | 0.7 U | 0.7 | 20 |
| Benzene | 0.2 U | 0.2 | 1 |
| Bromodichloromethane | 0.2 U | 0.2 | 1 |
| Bromoform | 0.2 U | 0.2 | 4 |
| Bromomethane | 0.3 U | 0.3 | 1 |
| 2-Butanone | 0.3 U | 0.3 | 10 |
| Carbon Disulfide | 0.2 U | 0.2 | 5 |
| Carbon Tetrachloride | 0.2 U | 0.2 | 1 |
| Chlorobenzene | 0.2 U | 0.2 | 1 |
| Chloroethane | 0.2 U | 0.2 | 1 |
| Chloroform | 0.2 U | 0.2 | 1 |
| Chloromethane | 0.2 U | 0.2 | 1 |
| Dibromochloromethane | 0.2 U | 0.2 | 1 |
| 1,1-Dichloroethane | 0.2 U | 0.2 | 1 |
| 1,2-Dichloroethane | 0.3 U | 0.3 | 1 |
| 1,1-Dichloroethene | 0.2 U | 0.2 | 1 |
| cis-1,2-Dichloroethene | 0.2 U | 0.2 | 1 |
| trans-1,2-Dichloroethene | 0.2 U | 0.2 | 1 |
| 1,2-Dichloropropane | 0.2 U | 0.2 | 1 |
| cis-1,3-Dichloropropene | 0.2 U | 0.2 | 1 |
| trans-1,3-Dichloropropene | 0.2 U | 0.2 | 1 |
| Ethylbenzene | 0.4 U | 0.4 | 1 |
| 2-Hexanone | 0.3 U | 0.3 | 10 |
| 4-Methyl-2-pentanone | 0.5 U | 0.5 | 10 |
| Methylene Chloride | 0.3 U | 0.3 | 1 |
| Styrene | 0.2 U | 0.2 | 5 |
| 1,1,2,2-Tetrachloroethane | 0.2 U | 0.2 | 1 |
| Tetrachloroethene | 0.2 U | 0.2 | 1 |
| Toluene | 0.2 U | 0.2 | 1 |
| 1,1,1-Trichloroethane | 0.3 U | 0.3 | 1 |
| 1,1,2-Trichloroethane | 0.2 U | 0.2 | 1 |
| Trichloroethene | 0.2 U | 0.2 | 1 |
| Vinyl Chloride | 0.2 U | 0.2 | 1 |
| Xylene (Total) | 1 U | 1 | 5 |
| | ng/l | ng/l | ng/l |
| Batch number: 18292009 | Sample number(s): 9859195-9859202 | | |
| 6:2 fluorotelomersulfonate | 1.0 U | 1.0 | 2.0 |
| 8:2 fluorotelomersulfonate | 2.0 U | 2.0 | 6.0 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 10/31/2018 20:49

Group Number: 2000185

## Method Blank (continued)

| Analysis Name | Result | MDL** | LOQ |
|---|---|---|---|
| | ng/l | ng/l | ng/l |
| NEtFOSAA | 1.0 U | 1.0 | 3.0 |
| NMeFOSAA | 1.0 U | 1.0 | 3.0 |
| Perfluorobutanesulfonate | 0.30 U | 0.30 | 1.0 |
| Perfluorobutanoic acid | 2.0 U | 2.0 | 6.0 |
| Perfluorodecanesulfonate | 0.60 U | 0.60 | 2.0 |
| Perfluorodecanoic acid | 0.90 U | 0.90 | 2.0 |
| Perfluorododecanoic acid | 0.50 U | 0.50 | 2.0 |
| Perfluoroheptanesulfonate | 0.40 U | 0.40 | 2.0 |
| Perfluoroheptanoic acid | 0.40 U | 0.40 | 1.0 |
| Perfluorohexanesulfonate | 0.40 U | 0.40 | 2.0 |
| Perfluorohexanoic acid | 0.40 U | 0.40 | 2.0 |
| Perfluorononanoic acid | 0.40 U | 0.40 | 2.0 |
| Perfluorooctanesulfonamide | 0.50 U | 0.50 | 3.0 |
| Perfluoro-octanesulfonate | 0.40 U | 0.40 | 2.0 |
| Perfluorooctanoic acid | 0.30 U | 0.30 | 1.0 |
| Perfluoropentanoic acid | 2.0 U | 2.0 | 6.0 |
| Perfluorotetradecanoic acid | 0.30 U | 0.30 | 1.0 |
| Perfluorotridecanoic acid | 0.40 U | 0.40 | 1.0 |
| Perfluoroundecanoic acid | 0.40 U | 0.40 | 2.0 |

## LCS/LCSD

| Analysis Name | LCS Spike Added ug/l | LCS Conc ug/l | LCSD Spike Added ug/l | LCSD Conc ug/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: E183032AA | Sample number(s): 9859191-9859196 | | | | | | | | |
| Acetone | 150 | 158.54 | | | 106 | | 54-157 | | |
| Benzene | 20 | 21.21 | | | 106 | | 80-120 | | |
| Bromodichloromethane | 20 | 21.34 | | | 107 | | 71-120 | | |
| Bromoform | 20 | 21.25 | | | 106 | | 51-120 | | |
| Bromomethane | 20 | 17.96 | | | 90 | | 53-128 | | |
| 2-Butanone | 150 | 148.98 | | | 99 | | 59-135 | | |
| Carbon Disulfide | 20 | 20.87 | | | 104 | | 65-128 | | |
| Carbon Tetrachloride | 20 | 21.42 | | | 107 | | 64-134 | | |
| Chlorobenzene | 20 | 21.27 | | | 106 | | 80-120 | | |
| Chloroethane | 20 | 19.82 | | | 99 | | 55-123 | | |
| Chloroform | 20 | 21.31 | | | 107 | | 80-120 | | |
| Chloromethane | 20 | 20.38 | | | 102 | | 56-121 | | |
| Dibromochloromethane | 20 | 21.16 | | | 106 | | 71-120 | | |
| 1,1-Dichloroethane | 20 | 21.45 | | | 107 | | 80-120 | | |
| 1,2-Dichloroethane | 20 | 20.54 | | | 103 | | 73-124 | | |
| 1,1-Dichloroethene | 20 | 21.67 | | | 108 | | 80-131 | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 10/31/2018 20:49

Group Number: 2000185

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added ug/l | LCS Conc ug/l | LCSD Spike Added ug/l | LCSD Conc ug/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethene | 20 | 21.67 | | | 108 | | 80-120 | | |
| trans-1,2-Dichloroethene | 20 | 21.7 | | | 108 | | 80-120 | | |
| 1,2-Dichloropropane | 20 | 21.19 | | | 106 | | 80-120 | | |
| cis-1,3-Dichloropropene | 20 | 21.46 | | | 107 | | 75-120 | | |
| trans-1,3-Dichloropropene | 20 | 20.59 | | | 103 | | 67-120 | | |
| Ethylbenzene | 20 | 21.13 | | | 106 | | 80-120 | | |
| 2-Hexanone | 100 | 99.76 | | | 100 | | 56-135 | | |
| 4-Methyl-2-pentanone | 100 | 99.17 | | | 99 | | 62-133 | | |
| Methylene Chloride | 20 | 20.73 | | | 104 | | 80-120 | | |
| Styrene | 20 | 21.35 | | | 107 | | 80-120 | | |
| 1,1,2,2-Tetrachloroethane | 20 | 21.2 | | | 106 | | 72-120 | | |
| Tetrachloroethene | 20 | 22.3 | | | 111 | | 80-120 | | |
| Toluene | 20 | 21.4 | | | 107 | | 80-120 | | |
| 1,1,1-Trichloroethane | 20 | 20.64 | | | 103 | | 67-126 | | |
| 1,1,2-Trichloroethane | 20 | 21.98 | | | 110 | | 80-120 | | |
| Trichloroethene | 20 | 21.03 | | | 105 | | 80-120 | | |
| Vinyl Chloride | 20 | 21.08 | | | 105 | | 56-120 | | |
| Xylene (Total) | 60 | 64.52 | | | 108 | | 80-120 | | |
| | **ng/l** | **ng/l** | **ng/l** | **ng/l** | | | | | |
| Batch number: 18292009 | Sample number(s): 9859195-9859202 | | | | | | | | |
| 6:2 fluorotelomersulfonate | 15.17 | 13.74 | | | 91 | | 66-155 | | |
| 8:2 fluorotelomersulfonate | 15.33 | 14.85 | | | 97 | | 66-148 | | |
| NEtFOSAA | 5.44 | 6.14 | | | 113 | | 55-169 | | |
| NMeFOSAA | 5.44 | 5.49 | | | 101 | | 62-167 | | |
| Perfluorobutanesulfonate | 4.81 | 4.23 | | | 88 | | 73-128 | | |
| Perfluorobutanoic acid | 5.44 | 5.07 | | | 93 | | 74-142 | | |
| Perfluorodecanesulfonate | 5.24 | 4.62 | | | 88 | | 60-135 | | |
| Perfluorodecanoic acid | 5.44 | 4.71 | | | 87 | | 69-148 | | |
| Perfluorododecanoic acid | 5.44 | 5.19 | | | 95 | | 75-136 | | |
| Perfluoroheptanesulfonate | 5.18 | 4.70 | | | 91 | | 64-135 | | |
| Perfluoroheptanoic acid | 5.44 | 5.09 | | | 94 | | 76-140 | | |
| Perfluorohexanesulfonate | 5.14 | 5.13 | | | 100 | | 71-131 | | |
| Perfluorohexanoic acid | 5.44 | 4.96 | | | 91 | | 75-135 | | |
| Perfluorononanoic acid | 5.44 | 5.36 | | | 99 | | 72-148 | | |
| Perfluorooctanesulfonamide | 5.44 | 4.90 | | | 90 | | 65-164 | | |
| Perfluoro-octanesulfonate | 5.20 | 4.56 | | | 88 | | 67-138 | | |
| Perfluorooctanoic acid | 5.44 | 4.99 | | | 92 | | 72-138 | | |
| Perfluoropentanoic acid | 5.44 | 5.09 | | | 94 | | 74-134 | | |
| Perfluorotetradecanoic acid | 5.44 | 5.40 | | | 99 | | 74-135 | | |
| Perfluorotridecanoic acid | 5.44 | 5.40 | | | 99 | | 61-145 | | |
| Perfluoroundecanoic acid | 5.44 | 4.98 | | | 92 | | 75-146 | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 10/31/2018 20:49

Group Number: 2000185

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | MS Spike Added ug/l | MS Conc ug/l | MSD Spike Added ug/l | MSD Conc ug/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| Batch number: E183032AA | Sample number(s): 9859191-9859196 UNSPK: 9859191 | | | | | | | | | |
| Acetone | 0.7 U | 150 | 150.71 | 150 | 143.75 | 100 | 96 | 54-157 | 5 | 30 |
| Benzene | 0.2 U | 20 | 22.95 | 20 | 22.78 | 115 | 114 | 80-120 | 1 | 30 |
| Bromodichloromethane | 0.2 U | 20 | 21.92 | 20 | 21.99 | 110 | 110 | 71-120 | 0 | 30 |
| Bromoform | 0.2 U | 20 | 20.83 | 20 | 20.97 | 104 | 105 | 51-120 | 1 | 30 |
| Bromomethane | 0.3 U | 20 | 17.95 | 20 | 18.21 | 90 | 91 | 53-128 | 1 | 30 |
| 2-Butanone | 0.3 U | 150 | 146.52 | 150 | 149.98 | 98 | 100 | 59-135 | 2 | 30 |
| Carbon Disulfide | 0.2 U | 20 | 23.21 | 20 | 23.07 | 116 | 115 | 65-128 | 1 | 30 |
| Carbon Tetrachloride | 0.2 U | 20 | 23.83 | 20 | 23.99 | 119 | 120 | 64-134 | 1 | 30 |
| Chlorobenzene | 0.2 U | 20 | 22.67 | 20 | 22.41 | 113 | 112 | 80-120 | 1 | 30 |
| Chloroethane | 0.2 U | 20 | 20.63 | 20 | 20.43 | 103 | 102 | 55-123 | 1 | 30 |
| Chloroform | 0.2 U | 20 | 22.69 | 20 | 22.5 | 113 | 113 | 80-120 | 1 | 30 |
| Chloromethane | 0.2 U | 20 | 21.09 | 20 | 20.59 | 105 | 103 | 56-121 | 2 | 30 |
| Dibromochloromethane | 0.2 U | 20 | 21.6 | 20 | 21.38 | 108 | 107 | 71-120 | 1 | 30 |
| 1,1-Dichloroethane | 0.2 U | 20 | 23.26 | 20 | 23.42 | 116 | 117 | 80-120 | 1 | 30 |
| 1,2-Dichloroethane | 0.3 U | 20 | 21.38 | 20 | 21.46 | 107 | 107 | 73-124 | 0 | 30 |
| 1,1-Dichloroethene | 0.2 U | 20 | 24.9 | 20 | 24.72 | 124 | 124 | 80-131 | 1 | 30 |
| cis-1,2-Dichloroethene | 11.49 | 20 | 36.21 | 20 | 35.62 | 124* | 121* | 80-120 | 2 | 30 |
| trans-1,2-Dichloroethene | 0.2 U | 20 | 23.66 | 20 | 23.7 | 118 | 119 | 80-120 | 0 | 30 |
| 1,2-Dichloropropane | 0.2 U | 20 | 22.5 | 20 | 22.56 | 113 | 113 | 80-120 | 0 | 30 |
| cis-1,3-Dichloropropene | 0.2 U | 20 | 21.94 | 20 | 22.4 | 110 | 112 | 75-120 | 2 | 30 |
| trans-1,3-Dichloropropene | 0.2 U | 20 | 21.25 | 20 | 21.14 | 106 | 106 | 67-120 | 1 | 30 |
| Ethylbenzene | 0.4 U | 20 | 22.8 | 20 | 22.75 | 114 | 114 | 80-120 | 0 | 30 |
| 2-Hexanone | 0.3 U | 100 | 100.13 | 100 | 100.23 | 100 | 100 | 56-135 | 0 | 30 |
| 4-Methyl-2-pentanone | 0.5 U | 100 | 99.84 | 100 | 100.79 | 100 | 101 | 62-133 | 1 | 30 |
| Methylene Chloride | 0.3 U | 20 | 22.06 | 20 | 21.62 | 110 | 108 | 80-120 | 2 | 30 |
| Styrene | 0.2 U | 20 | 22.59 | 20 | 22.17 | 113 | 111 | 80-120 | 2 | 30 |
| 1,1,2,2-Tetrachloroethane | 0.2 U | 20 | 21.72 | 20 | 21.57 | 109 | 108 | 72-120 | 1 | 30 |
| Tetrachloroethene | 0.2 U | 20 | 24.21 | 20 | 23.84 | 121* | 119 | 80-120 | 2 | 30 |
| Toluene | 0.2 U | 20 | 23.04 | 20 | 22.73 | 115 | 114 | 80-120 | 1 | 30 |
| 1,1,1-Trichloroethane | 0.3 U | 20 | 23.27 | 20 | 22.65 | 116 | 113 | 67-126 | 3 | 30 |
| 1,1,2-Trichloroethane | 0.2 U | 20 | 22.06 | 20 | 22.24 | 110 | 111 | 80-120 | 1 | 30 |
| Trichloroethene | 0.2 U | 20 | 23.16 | 20 | 23.15 | 116 | 116 | 80-120 | 0 | 30 |
| Vinyl Chloride | 1.29 | 20 | 24.23 | 20 | 23.73 | 115 | 112 | 56-120 | 2 | 30 |
| Xylene (Total) | 1 U | 60 | 69.18 | 60 | 68.75 | 115 | 115 | 80-120 | 1 | 30 |
| | **ng/l** | **ng/l** | **ng/l** | **ng/l** | **ng/l** | | | | | |
| Batch number: 18292009 | Sample number(s): 9859195-9859202 UNSPK: 9859196 | | | | | | | | | |
| 6:2 fluorotelomersulfonate | 1.1 U | 16.19 | 13.71 | 16.21 | 15.53 | 85 | 96 | 70-130 | 12 | 30 |
| 8:2 fluorotelomersulfonate | 2.2 U | 16.37 | 14.98 | 16.38 | 14.7 | 92 | 90 | 60-150 | 2 | 30 |
| NEtFOSAA | 1.1 U | 5.81 | 7.00 | 5.81 | 7.56 | 121 | 130 | 49-159 | 8 | 30 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 10/31/2018 20:49

Group Number: 2000185

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ng/l | MS Spike Added ng/l | MS Conc ng/l | MSD Spike Added ng/l | MSD Conc ng/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| NMeFOSAA | 1.1 U | 5.81 | 6.40 | 5.81 | 5.66 | 110 | 97 | 58-157 | 12 | 30 |
| Perfluorobutanesulfonate | 0.576 | 5.14 | 5.37 | 5.14 | 5.26 | 93 | 91 | 73-134 | 2 | 30 |
| Perfluorobutanoic acid | 2.2 U | 5.81 | 7.44 | 5.81 | 7.08 | 128 | 122 | 58-155 | 5 | 30 |
| Perfluorodecanesulfonate | 0.65 U | 5.59 | 4.33 | 5.60 | 4.19 | 77 | 75 | 41-148 | 3 | 30 |
| Perfluorodecanoic acid | 0.97 U | 5.81 | 5.91 | 5.81 | 5.15 | 102 | 89 | 73-142 | 14 | 30 |
| Perfluorododecanoic acid | 0.54 U | 5.81 | 5.72 | 5.81 | 5.34 | 98 | 92 | 76-136 | 7 | 30 |
| Perfluoroheptanesulfonate | 0.43 U | 5.53 | 4.82 | 5.53 | 4.49 | 87 | 81 | 50-145 | 7 | 30 |
| Perfluoroheptanoic acid | 0.43 U | 5.81 | 5.59 | 5.81 | 5.42 | 96 | 93 | 67-137 | 3 | 30 |
| Perfluorohexanesulfonate | 2.00 | 5.49 | 6.95 | 5.50 | 6.68 | 90 | 85 | 73-129 | 4 | 30 |
| Perfluorohexanoic acid | 0.43 U | 5.81 | 6.08 | 5.81 | 5.54 | 105 | 95 | 70-130 | 9 | 30 |
| Perfluorononanoic acid | 0.43 U | 5.81 | 5.56 | 5.81 | 5.75 | 96 | 99 | 70-130 | 3 | 30 |
| Perfluorooctanesulfonamide | 0.54 U | 5.81 | 5.78 | 5.81 | 5.33 | 100 | 92 | 70-130 | 8 | 30 |
| Perfluoro-octanesulfonate | 0.941 | 5.55 | 5.59 | 5.56 | 5.83 | 84 | 88 | 48-154 | 4 | 30 |
| Perfluorooctanoic acid | 0.671 | 5.81 | 6.09 | 5.81 | 5.78 | 93 | 88 | 48-160 | 5 | 30 |
| Perfluoropentanoic acid | 2.2 U | 5.81 | 5.75 | 5.81 | 5.53 | 99 | 95 | 53-161 | 4 | 30 |
| Perfluorotetradecanoic acid | 0.32 U | 5.81 | 6.19 | 5.81 | 5.57 | 107 | 96 | 78-133 | 10 | 30 |
| Perfluorotridecanoic acid | 0.43 U | 5.81 | 5.77 | 5.81 | 5.97 | 99 | 103 | 57-151 | 3 | 30 |
| Perfluoroundecanoic acid | 0.43 U | 5.81 | 5.23 | 5.81 | 5.60 | 90 | 96 | 66-137 | 7 | 30 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- 5ml Water by 8260C
Batch number: E183032AA

| | Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|---|
| 9859191 | 100 | 100 | 101 | 101 |
| 9859192 | 99 | 97 | 101 | 100 |
| 9859193 | 99 | 97 | 100 | 100 |
| 9859194 | 98 | 100 | 101 | 100 |
| 9859195 | 99 | 100 | 101 | 101 |
| 9859196 | 100 | 99 | 101 | 101 |
| Blank | 100 | 100 | 100 | 100 |
| LCS | 99 | 98 | 100 | 99 |
| MS | 99 | 97 | 101 | 100 |
| MSD | 99 | 97 | 100 | 100 |
| Limits: | 80-120 | 80-120 | 80-120 | 80-120 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Group Number: 2000185
Reported: 10/31/2018 20:49

## Labeled Isotope Quality Control (continued)

Labeled isotope recoveries which are outside of the QC window are confirmed unless otherwise noted on the analysis report.

Analysis Name: 21 PFAS EPA 537 v1.1 Mod
Batch number: 18292009

| | 13C4-PFBA | 13C5-PFPeA | 13C3-PFBS | 13C5-PFHxA | 13C3-PFHxS | 13C4-PFHpA |
|---|---|---|---|---|---|---|
| 9859195 | 86 | 97 | 162* | 64 | 90 | 89 |
| 9859196 | 91 | 111 | 131 | 93 | 100 | 97 |
| 9859197 | 85 | 104 | 116 | 82 | 90 | 91 |
| 9859198 | 78 | 91 | 101 | 79 | 85 | 82 |
| 9859199 | 83 | 82 | 83 | 75 | 80 | 75 |
| 9859200 | 98 | 107 | 101 | 99 | 102 | 97 |
| 9859201 | 85 | 104 | 120 | 78 | 87 | 84 |
| 9859202 | 81 | 96 | 101 | 81 | 82 | 78 |
| Blank | 74 | 73 | 74 | 76 | 82 | 77 |
| LCS | 84 | 83 | 85 | 82 | 84 | 84 |
| MS | 85 | 104 | 116 | 82 | 90 | 91 |
| MSD | 78 | 91 | 101 | 79 | 85 | 82 |
| Limits: | 33-123 | 31-157 | 26-148 | 35-138 | 34-126 | 35-126 |

| | 13C2-6:2-FTS | 13C8-PFOA | 13C8-PFOS | 13C9-PFNA | 13C6-PFDA | 13C2-8:2-FTS |
|---|---|---|---|---|---|---|
| 9859195 | 212* | 83 | 83 | 95 | 79 | 128 |
| 9859196 | 162 | 96 | 92 | 90 | 81 | 112 |
| 9859197 | 157 | 84 | 81 | 83 | 74 | 105 |
| 9859198 | 127 | 81 | 70 | 72 | 67 | 92 |
| 9859199 | 99 | 76 | 82 | 80 | 79 | 111 |
| 9859200 | 117 | 103 | 98 | 95 | 98 | 128 |
| 9859201 | 140 | 82 | 79 | 85 | 74 | 119 |
| 9859202 | 108 | 80 | 77 | 76 | 78 | 112 |
| Blank | 92 | 81 | 73 | 70 | 76 | 104 |
| LCS | 101 | 83 | 84 | 81 | 80 | 97 |
| MS | 157 | 84 | 81 | 83 | 74 | 105 |
| MSD | 127 | 81 | 70 | 72 | 67 | 92 |
| Limits: | 32-170 | 48-122 | 50-121 | 41-144 | 47-125 | 27-164 |

| | d3-NMeFOSAA | 13C7-PFUnDA | d5-NEtFOSAA | 13C2-PFDoDA | 13C2-PFTeDA | 13C8-PFOSA |
|---|---|---|---|---|---|---|
| 9859195 | 72 | 74 | 66 | 66 | 61 | 78 |
| 9859196 | 74 | 74 | 73 | 67 | 64 | 74 |
| 9859197 | 69 | 73 | 65 | 65 | 63 | 73 |
| 9859198 | 61 | 61 | 51 | 57 | 61 | 63 |
| 9859199 | 72 | 81 | 65 | 73 | 68 | 68 |
| 9859200 | 95 | 104 | 83 | 90 | 88 | 87 |
| 9859201 | 66 | 67 | 61 | 58 | 56 | 67 |
| 9859202 | 74 | 76 | 68 | 78 | 66 | 68 |
| Blank | 73 | 80 | 69 | 74 | 72 | 66 |
| LCS | 75 | 81 | 64 | 75 | 69 | 71 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Group Number: 2000185
Reported: 10/31/2018 20:49

## Labeled Isotope Quality Control (continued)

Labeled isotope recoveries which are outside of the QC window are confirmed unless otherwise noted on the analysis report.

Analysis Name: 21 PFAS EPA 537 v1.1 Mod
Batch number: 18292009

| | d3-NMeFOSAA | 13C7-PFUnDA | d5-NEtFOSAA | 13C2-PFDoDA | 13C2-PFTeDA | 13C8-PFOSA |
|---|---|---|---|---|---|---|
| MS | 69 | 73 | 65 | 65 | 63 | 73 |
| MSD | 61 | 61 | 51 | 57 | 61 | 63 |
| Limits: | 30-127 | 30-128 | 30-142 | 39-130 | 26-119 | 11-127 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Analysis Request / Environmental Services Chain of Custody

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For Eurofins Lancaster Laboratories Use Only
Group No.: 2000185 Sample Nos.: 985191-202
Acct: 06643 SF: 115523 SCR No.: 232367 Cooler No.: 12800
Cooler Temperature upon receipt: 2.8 - 5.1 °C Container No.: 1-2

39247

| | |
|---|---|
| Facility Name: Business | Project Manager: Ed Ashton |
| Facility Contact: Ed Ashton | Facility Contact Phone No.: 315-451-9560 |
| Facility Address: 301 Plainfield Road | Job No.: 9267-7720100C-WH06-507052 |
| Suite 350 | Release No.: |
| Syracuse NY 13212 | PO Number: LBIO-67047 |
| Sampler(s): Dale Dolph D. Douglass | |
| Project Name: GW SAMPLING ANNUAL 2018 | |

| Sample Identification | Date Collected | Time Collected | Matrix | Containers Volume (ml) | Preserv | No. | PFAA | A2-1,4-Dioxane-SIM | VOCs 8260C | Comments / Condition upon receipt |
|---|---|---|---|---|---|---|---|---|---|---|
| GW2018-F-6 | 10/17/18 | 1145 | GW | 40 | HCl | 3/2 | X | | X | Condition upon receipt: Intact |
| GW2018-F-6 MS | | 1145 | GW | | | 3/2 | X | | X | Matrix Spike |
| GW2018-F-6 MSD | | 1145 | GW | | | 3/2 | X | | X | Matrix Spike Dup |
| GW2018-F-6-D | | 1145 | GW | | | 3/2 | X | | X | Duplicate |
| ~~GW2018-F-7~~ | | | GW | | | 2 | X | | | |
| ~~GW2018-F-14~~ | | | GW | | | 2 | X | | | |
| ~~GW2018-F-16~~ | | | GW | | | 2 | X | | | |
| ~~GW2018-F-17~~ | | | GW | | | 2 | X | | | |
| GW2018-P-17 | 10/16/18 | 1430 | GW | 40 ml / 250 ml | HCl / None | 5/2 | X | | X | |
| ~~GW2018-P-18~~ | | | GW | | | 2 | X | | | |
| GW2018-F-8 | 10/17/18 | 1005 | GW | 40 | HCl | 3/2 | X | X | X | |

Comments: 1,4 Dioxane by SIM was not to be analyzed by ELLE per S. Nordstrom. LMM 10/24/18

**Turnaround Time Requested** (please circle): Normal Rush Number of days: _____

**Special Instructions:**

| | Date | Time | | Date | Time |
|---|---|---|---|---|---|
| Bottles Relinquished by: Rachel Reitz | 10-1-18 | 1:10 | Bottles Received by: | 10-16-18 | 0630 |
| Bottles Relinquished by: | 10-17-18 | 1600 | Bottles Received by: Fedex | 10-17-18 | 1600 |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: 10-18-18 | Time: 1020 |

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# Analysis Request / Environmental Services Chain of Custody

For Eurofins Lancaster Laboratories Use Only
Group No.: 2000185 Sample Nos.: 9859191-202
Acc't: 06643 SF: 115523 SCR No.: 232367 Cooler No.:
Cooler Temperature upon receipt: 2.8-3.1 °C Container No.: 1-2

39247

| | |
|---|---|
| Facility Name: Business | Project Manager: Ed Ashton |
| Facility Contact: Ed Ashton | Facility Contact Phone No.: 315-451-9560 |
| Facility Address: 301 Plainfield Road | Job No.: 9267-7720100C-WH06-507052 |
| Suite 350 | Release No.: |
| Syracuse NY 13212 | PO Number: LBIO-67047 |
| Sampler(s): Dale Dolph D. Douglass | |
| Project Name: GW SAMPLING ANNUAL 2018 | |

**Analyses Required**

| Sample Identification | Date Collected | Time Collected | Matrix | Containers Volume (ml) | Preserv | No. | PFAA | A2-1,4-Dioxane-SIM * | Comments |
|---|---|---|---|---|---|---|---|---|---|
| GW2018-FB- GW | 10/16/18 | 1335 | ~~WW~~ GW | 250 | None | 2 | X | | Field/Ambient Blank |
| ~~GW2018-TB~~ GW2018-EB-GW | 10/16/18 | 1240 | WW | 250 | None | 2 | X | | Equipment Blank |
| GW2018-F-8-D | 10/17/18 | 1005 | GW | 250 | None | 2 | X | | Duplicate |
| GW2018-F-8 MS | 10/17/18 | 1005 | GW | 250 | None | 2 | X | | Matrix Spike |
| GW2018-F-8-MSD | 10/17/18 | 1005 | GW | 250 | None | 2 | X | | Matrix Spike Dup |
| GW2018-P-11 | 10/16/18 | 1320 | GW | 250 | None | 4 | X | X | |
| GW2018-P-17 | 10/17/18 | 0905 | GW | 250 | None | 2 | | X | |
| GW2018-P-17 MS | | 0905 | GW | 250 | None | 2 | | X | Matrix Spike |
| GW2018-P-17 MSD | | 0905 | GW | 250 | None | 2 | | X | Matrix Spike Dup |
| GW2018-P-17-D | | 0905 | GW | 250 | None | 2 | | X | Duplicate |
| | | | | | | | | | |

Comments: See pg 1 of COC re: 1,4-dioxane @ SLE. MM 10/29/18

Condition upon receipt: Intact

**Turnaround Time Requested** (please circle): Normal Rush Number of days: _____

**Special Instructions:**

| | Date | Time | | Date | Time |
|---|---|---|---|---|---|
| Bottles Relinquished by: | 10/17/18 | 1600 | Bottles Received by: Fedex | 10/17/18 | 1600 |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: 10-18-18 | Time: 1020 |

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# Sample Administration Receipt Documentation Log

Doc Log ID: 230488

Group Number(s): 2000185

Client: DuPont

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 10/18/2018 10:20 |
| Number of Packages: | 2 | Number of Projects: | 1 |
| State/Province of Origin: | NY | | |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 0 |
| Paperwork Enclosed: | Yes | Air Quality Samples Present: | No |
| Samples Intact: | Yes | | |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | Yes | | |

*Unpacked by Cory Jeremiah (10469) at 20:18 on 10/18/2018*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT42-03 | 2.8 | DT | Wet | Y | Bagged | N |
| 2 | 32170023 | 5.1 | IR | Wet | Y | Bagged | N |

## Container Quantity Discrepancy Details

| Sample ID on COC | Container Qty. Received | Container Qty. on COC | Comments |
|---|---|---|---|
| GW2018-F-8 | 4 | 2 | |



2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mL** | milliliter(s) |
| **C** | degrees Celsius | **MPN** | Most Probable Number |
| **cfu** | colony forming units | **N.D.** | non-detect |
| **CP Units** | cobalt-chloroplatinate units | **ng** | nanogram(s) |
| **F** | degrees Fahrenheit | **NTU** | nephelometric turbidity units |
| **g** | gram(s) | **pg/L** | picogram/liter |
| **IU** | International Units | **RL** | Reporting Limit |
| **kg** | kilogram(s) | **TNTC** | Too Numerous To Count |
| **L** | liter(s) | **µg** | microgram(s) |
| **lb.** | pound(s) | **µL** | microliter(s) |
| **m3** | cubic meter(s) | **umhos/cm** | micromhos/cm |
| **meq** | milliequivalents | **MCL** | Maximum Contamination Limit |
| **mg** | milligram(s) | | |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| D1 | Indicates for dual column analyses that the result is reported from column 1 |
| D2 | Indicates for dual column analyses that the result is reported from column 2 |
| E | Concentration exceeds the calibration range |
| K1 | Initial Calibration Blank is above the QC limit and the sample result is ND |
| K2 | Continuing Calibration Blank is above the QC limit and the sample result is ND |
| K3 | Initial Calibration Verification is above the QC limit and the sample result is ND |
| K4 | Continuing Calibration Verification is above the QC limit and the sample result is ND |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| P^ | Concentration difference between the primary and confirmation column > 40%. The higher result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

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# ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CRG-E.I.DuPont de Nemours & Co
AECOM
Sabre Building
4051 Ogletown Road, Suite 300
Newark DE 19713

Report Date: November 08, 2018 14:41

**Project: FER - GW SAMPLING**

Account #: 06643
Group Number: 2000764
PO Number: LBIO-67047
State of Sample Origin: NY

Respectfully Submitted,

Lyssa M. Longenecker
Specialist

(717) 556-7321

To view our laboratory's current scopes of accreditation please go to http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . Historical copies may be requested through your project manager.



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## SAMPLE INFORMATION

| Client Sample Description | Sample Collection Date/Time | ELLE# |
|---|---|---|
| GW2018-F-14 Grab Groundwater | 10/18/2018 09:25 | 9861880 |
| GW2018-F-7 Grab Groundwater | 10/18/2018 13:25 | 9861881 |
| GW2018-P-18 Grab Groundwater | 10/18/2018 13:30 | 9861882 |
| GW2018-F-17 Grab Groundwater | 10/19/2018 09:10 | 9861883 |
| GW2018-F-16 Grab Groundwater | 10/19/2018 09:15 | 9861884 |
| GW2018-TB-101918 Blank Water | 10/19/2018 09:30 | 9861885 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

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Project Name: FER - GW SAMPLING
ELLE Group #: 2000764

**General Comments:**

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

No additional comments are necessary.

**Sample Description:** **GW2018-F-14 Grab Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/18/2018 09:25

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9861880**
**ELLE Group #: 2000764**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Acetone | 67-64-1 | 0.7 U | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | **1,1-Dichloroethene** | 75-35-4 | **4** | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **2,000** | 2 | 10 | 10 |
| 11997 | **trans-1,2-Dichloroethene** | 156-60-5 | **10** | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **26** | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **91** | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-14 Grab Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/18/2018 09:25

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9861880**
**ELLE Group #: 2000764**
**Matrix: Groundwater**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5183041AA | 10/31/2018 15:56 | Jennifer K Howe | 1 |
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5183041AA | 10/31/2018 16:17 | Jennifer K Howe | 10 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5183041AA | 10/31/2018 15:56 | Jennifer K Howe | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 2 | 5183041AA | 10/31/2018 16:17 | Jennifer K Howe | 10 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-7 Grab Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/18/2018 13:25

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9861881**
**ELLE Group #: 2000764**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Acetone | 67-64-1 | 0.7 U | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **7** | 0.2 | 1 | 1 |
| 11997 | trans-1,2-Dichloroethene | 156-60-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **5** | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **1** | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-7 Grab Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/18/2018 13:25

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9861881**
**ELLE Group #: 2000764**
**Matrix: Groundwater**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5183041AA | 10/31/2018 15:14 | Jennifer K Howe | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5183041AA | 10/31/2018 15:14 | Jennifer K Howe | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-P-18 Grab Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/18/2018 13:30

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9861882**
**ELLE Group #: 2000764**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Acetone | 67-64-1 | 0.7 U | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **77** | 0.2 | 1 | 1 |
| 11997 | **trans-1,2-Dichloroethene** | 156-60-5 | **0.2 J** | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **2** | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **0.6 J** | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-P-18 Grab Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/18/2018 13:30

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9861882**
**ELLE Group #: 2000764**
**Matrix: Groundwater**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5183041AA | 10/31/2018 15:35 | Jennifer K Howe | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5183041AA | 10/31/2018 15:35 | Jennifer K Howe | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-17 Grab Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/19/2018 09:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9861883**
**ELLE Group #: 2000764**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | **Acetone** | 67-64-1 | **1 J** | 0.7 | 20 | 1 |
| 11997 | **Benzene** | 71-43-2 | **0.3 J** | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,2-Dichloroethene | 156-60-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Vinyl Chloride | 75-01-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-17 Grab Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/19/2018 09:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9861883**
**ELLE Group #: 2000764**
**Matrix: Groundwater**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5183042AA | 10/31/2018 23:05 | Corie Mellinger | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5183042AA | 10/31/2018 23:05 | Corie Mellinger | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-16 Grab Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/19/2018 09:15

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9861884**
**ELLE Group #: 2000764**
**Matrix: Groundwater**

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | **Acetone** | 67-64-1 | **2 J** | 0.7 | 20 | 1 |
| 11997 | **Benzene** | 71-43-2 | **0.6 J** | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | **2-Butanone** | 78-93-3 | **0.8 J** | 0.3 | 10 | 1 |
| 11997 | **Carbon Disulfide** | 75-15-0 | **0.3 J** | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | **1,1-Dichloroethene** | 75-35-4 | **1** | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **730** | 2 | 10 | 10 |
| 11997 | **trans-1,2-Dichloroethene** | 156-60-5 | **2** | 0.2 | 1 | 1 |
| 11997 | **1,2-Dichloropropane** | 78-87-5 | **0.3 J** | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Toluene** | 108-88-3 | **0.6 J** | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **130** | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **37** | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-F-16 Grab Groundwater**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/19/2018 09:15

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: GW 9861884**
**ELLE Group #: 2000764**
**Matrix: Groundwater**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5183042AA | 11/01/2018 00:07 | Corie Mellinger | 1 |
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5183052AA | 11/02/2018 01:16 | Corie Mellinger | 10 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5183042AA | 11/01/2018 00:07 | Corie Mellinger | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 2 | 5183052AA | 11/02/2018 01:16 | Corie Mellinger | 10 |

*=This limit was used in the evaluation of the final result

**Sample Description:** GW2018-TB-101918 Blank Water
GW SAMPLING ANNUAL 2018

**Project Name:** FER - GW SAMPLING

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/19/2018 09:30

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9861885**
**ELLE Group #: 2000764**
**Matrix: Blank Water**

| CAT No. | Analysis Name | CAS Number | Result | | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | |
| 11997 | Acetone | 67-64-1 | 0.7 | U | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 | U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 | U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 | U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 | U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 | U | 0.3 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | trans-1,2-Dichloroethene | 156-60-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 | U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 | U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 | U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 | U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 | U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 | U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Vinyl Chloride | 75-01-4 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 1 | 5 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|

*=This limit was used in the evaluation of the final result

**Sample Description:** **GW2018-TB-101918 Blank Water**
**GW SAMPLING ANNUAL 2018**

**Project Name:** **FER - GW SAMPLING**

Submittal Date/Time: 10/20/2018 09:40
Collection Date/Time: 10/19/2018 09:30

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9861885**
**ELLE Group #: 2000764**
**Matrix: Blank Water**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5183042AA | 10/31/2018 21:39 | Corie Mellinger | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5183042AA | 10/31/2018 21:39 | Corie Mellinger | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Group Number: 2000764
Reported: 11/08/2018 14:41

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | | MDL** | LOQ |
|---|---|---|---|---|
| | ug/l | | ug/l | ug/l |
| Batch number: 5183041AA | Sample number(s): 9861880-9861882 | | | |
| Acetone | 0.7 | U | 0.7 | 20 |
| Benzene | 0.2 | U | 0.2 | 1 |
| Bromodichloromethane | 0.2 | U | 0.2 | 1 |
| Bromoform | 0.2 | U | 0.2 | 4 |
| Bromomethane | 0.3 | U | 0.3 | 1 |
| 2-Butanone | 0.3 | U | 0.3 | 10 |
| Carbon Disulfide | 0.2 | U | 0.2 | 5 |
| Carbon Tetrachloride | 0.2 | U | 0.2 | 1 |
| Chlorobenzene | 0.2 | U | 0.2 | 1 |
| Chloroethane | 0.2 | U | 0.2 | 1 |
| Chloroform | 0.2 | U | 0.2 | 1 |
| Chloromethane | 0.2 | U | 0.2 | 1 |
| Dibromochloromethane | 0.2 | U | 0.2 | 1 |
| 1,1-Dichloroethane | 0.2 | U | 0.2 | 1 |
| 1,2-Dichloroethane | 0.3 | U | 0.3 | 1 |
| 1,1-Dichloroethene | 0.2 | U | 0.2 | 1 |
| cis-1,2-Dichloroethene | 0.2 | U | 0.2 | 1 |
| trans-1,2-Dichloroethene | 0.2 | U | 0.2 | 1 |
| 1,2-Dichloropropane | 0.2 | U | 0.2 | 1 |
| cis-1,3-Dichloropropene | 0.2 | U | 0.2 | 1 |
| trans-1,3-Dichloropropene | 0.2 | U | 0.2 | 1 |
| Ethylbenzene | 0.4 | U | 0.4 | 1 |
| 2-Hexanone | 0.3 | U | 0.3 | 10 |
| 4-Methyl-2-pentanone | 0.5 | U | 0.5 | 10 |
| Methylene Chloride | 0.3 | U | 0.3 | 1 |
| Styrene | 0.2 | U | 0.2 | 5 |
| 1,1,2,2-Tetrachloroethane | 0.2 | U | 0.2 | 1 |
| Tetrachloroethene | 0.2 | U | 0.2 | 1 |
| Toluene | 0.2 | U | 0.2 | 1 |
| 1,1,1-Trichloroethane | 0.3 | U | 0.3 | 1 |
| 1,1,2-Trichloroethane | 0.2 | U | 0.2 | 1 |
| Trichloroethene | 0.2 | U | 0.2 | 1 |
| Vinyl Chloride | 0.2 | U | 0.2 | 1 |
| Xylene (Total) | 1 | U | 1 | 5 |
| Batch number: 5183042AA | Sample number(s): 9861883-9861885 | | | |
| Acetone | 0.7 | U | 0.7 | 20 |
| Benzene | 0.2 | U | 0.2 | 1 |
| Bromodichloromethane | 0.2 | U | 0.2 | 1 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 11/08/2018 14:41

Group Number: 2000764

## Method Blank (continued)

| Analysis Name | Result | | MDL** | LOQ |
|---|---|---|---|---|
| | ug/l | | ug/l | ug/l |
| Bromoform | 0.2 | U | 0.2 | 4 |
| Bromomethane | 0.3 | U | 0.3 | 1 |
| 2-Butanone | 0.3 | U | 0.3 | 10 |
| Carbon Disulfide | 0.2 | U | 0.2 | 5 |
| Carbon Tetrachloride | 0.2 | U | 0.2 | 1 |
| Chlorobenzene | 0.2 | U | 0.2 | 1 |
| Chloroethane | 0.2 | U | 0.2 | 1 |
| Chloroform | 0.2 | U | 0.2 | 1 |
| Chloromethane | 0.2 | U | 0.2 | 1 |
| Dibromochloromethane | 0.2 | U | 0.2 | 1 |
| 1,1-Dichloroethane | 0.2 | U | 0.2 | 1 |
| 1,2-Dichloroethane | 0.3 | U | 0.3 | 1 |
| 1,1-Dichloroethene | 0.2 | U | 0.2 | 1 |
| cis-1,2-Dichloroethene | 0.2 | U | 0.2 | 1 |
| trans-1,2-Dichloroethene | 0.2 | U | 0.2 | 1 |
| 1,2-Dichloropropane | 0.2 | U | 0.2 | 1 |
| cis-1,3-Dichloropropene | 0.2 | U | 0.2 | 1 |
| trans-1,3-Dichloropropene | 0.2 | U | 0.2 | 1 |
| Ethylbenzene | 0.4 | U | 0.4 | 1 |
| 2-Hexanone | 0.3 | U | 0.3 | 10 |
| 4-Methyl-2-pentanone | 0.5 | U | 0.5 | 10 |
| Methylene Chloride | 0.3 | U | 0.3 | 1 |
| Styrene | 0.2 | U | 0.2 | 5 |
| 1,1,2,2-Tetrachloroethane | 0.2 | U | 0.2 | 1 |
| Tetrachloroethene | 0.2 | U | 0.2 | 1 |
| Toluene | 0.2 | U | 0.2 | 1 |
| 1,1,1-Trichloroethane | 0.3 | U | 0.3 | 1 |
| 1,1,2-Trichloroethane | 0.2 | U | 0.2 | 1 |
| Trichloroethene | 0.2 | U | 0.2 | 1 |
| Vinyl Chloride | 0.2 | U | 0.2 | 1 |
| Xylene (Total) | 1 | U | 1 | 5 |
| Batch number: 5183052AA | Sample number(s): 9861884 | | | |
| cis-1,2-Dichloroethene | 0.2 | U | 0.2 | 1 |

## LCS/LCSD

| Analysis Name | LCS Spike Added ug/l | LCS Conc ug/l | LCSD Spike Added ug/l | LCSD Conc ug/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: 5183041AA | Sample number(s): 9861880-9861882 | | | | | | | | |
| Acetone | 150 | 155.82 | | | 104 | | 54-157 | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 11/08/2018 14:41

Group Number: 2000764

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added ug/l | LCS Conc ug/l | LCSD Spike Added ug/l | LCSD Conc ug/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20 | 21.04 | | | 105 | | 80-120 | | |
| Bromodichloromethane | 20 | 20.3 | | | 102 | | 71-120 | | |
| Bromoform | 20 | 16.99 | | | 85 | | 51-120 | | |
| Bromomethane | 20 | 14.59 | | | 73 | | 53-128 | | |
| 2-Butanone | 150 | 149.71 | | | 100 | | 59-135 | | |
| Carbon Disulfide | 20 | 19.05 | | | 95 | | 65-128 | | |
| Carbon Tetrachloride | 20 | 20.48 | | | 102 | | 64-134 | | |
| Chlorobenzene | 20 | 20.51 | | | 103 | | 80-120 | | |
| Chloroethane | 20 | 18.04 | | | 90 | | 55-123 | | |
| Chloroform | 20 | 21.23 | | | 106 | | 80-120 | | |
| Chloromethane | 20 | 17.9 | | | 90 | | 56-121 | | |
| Dibromochloromethane | 20 | 19.61 | | | 98 | | 71-120 | | |
| 1,1-Dichloroethane | 20 | 21.11 | | | 106 | | 80-120 | | |
| 1,2-Dichloroethane | 20 | 21.19 | | | 106 | | 73-124 | | |
| 1,1-Dichloroethene | 20 | 21.95 | | | 110 | | 80-131 | | |
| cis-1,2-Dichloroethene | 20 | 21.38 | | | 107 | | 80-120 | | |
| trans-1,2-Dichloroethene | 20 | 21.56 | | | 108 | | 80-120 | | |
| 1,2-Dichloropropane | 20 | 21.67 | | | 108 | | 80-120 | | |
| cis-1,3-Dichloropropene | 20 | 20.27 | | | 101 | | 75-120 | | |
| trans-1,3-Dichloropropene | 20 | 19.46 | | | 97 | | 67-120 | | |
| Ethylbenzene | 20 | 20.39 | | | 102 | | 80-120 | | |
| 2-Hexanone | 100 | 100.99 | | | 101 | | 56-135 | | |
| 4-Methyl-2-pentanone | 100 | 99.06 | | | 99 | | 62-133 | | |
| Methylene Chloride | 20 | 21.09 | | | 105 | | 80-120 | | |
| Styrene | 20 | 19.87 | | | 99 | | 80-120 | | |
| 1,1,2,2-Tetrachloroethane | 20 | 20.81 | | | 104 | | 72-120 | | |
| Tetrachloroethene | 20 | 20.4 | | | 102 | | 80-120 | | |
| Toluene | 20 | 20.75 | | | 104 | | 80-120 | | |
| 1,1,1-Trichloroethane | 20 | 20.59 | | | 103 | | 67-126 | | |
| 1,1,2-Trichloroethane | 20 | 21.73 | | | 109 | | 80-120 | | |
| Trichloroethene | 20 | 20.7 | | | 103 | | 80-120 | | |
| Vinyl Chloride | 20 | 18.68 | | | 93 | | 56-120 | | |
| Xylene (Total) | 60 | 61.06 | | | 102 | | 80-120 | | |
| Batch number: 5183042AA | Sample number(s): 9861883-9861885 | | | | | | | | |
| Acetone | 150 | 140.05 | 150 | 144.12 | 93 | 96 | 54-157 | 3 | 30 |
| Benzene | 20 | 20.06 | 20 | 19.95 | 100 | 100 | 80-120 | 1 | 30 |
| Bromodichloromethane | 20 | 20.05 | 20 | 19.99 | 100 | 100 | 71-120 | 0 | 30 |
| Bromoform | 20 | 16.51 | 20 | 16.87 | 83 | 84 | 51-120 | 2 | 30 |
| Bromomethane | 20 | 14.66 | 20 | 17.82 | 73 | 89 | 53-128 | 19 | 30 |
| 2-Butanone | 150 | 152.13 | 150 | 149.44 | 101 | 100 | 59-135 | 2 | 30 |
| Carbon Disulfide | 20 | 16.33 | 20 | 16.58 | 82 | 83 | 65-128 | 2 | 30 |
| Carbon Tetrachloride | 20 | 19.07 | 20 | 19.08 | 95 | 95 | 64-134 | 0 | 30 |
| Chlorobenzene | 20 | 20.47 | 20 | 20.28 | 102 | 101 | 80-120 | 1 | 30 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 11/08/2018 14:41

Group Number: 2000764

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added ug/l | LCS Conc ug/l | LCSD Spike Added ug/l | LCSD Conc ug/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | 20 | 18.53 | 20 | 17.5 | 93 | 88 | 55-123 | 6 | 30 |
| Chloroform | 20 | 20.81 | 20 | 20.52 | 104 | 103 | 80-120 | 1 | 30 |
| Chloromethane | 20 | 18.73 | 20 | 18.6 | 94 | 93 | 56-121 | 1 | 30 |
| Dibromochloromethane | 20 | 19.42 | 20 | 19.51 | 97 | 98 | 71-120 | 0 | 30 |
| 1,1-Dichloroethane | 20 | 20.11 | 20 | 20.03 | 101 | 100 | 80-120 | 0 | 30 |
| 1,2-Dichloroethane | 20 | 21.83 | 20 | 21.59 | 109 | 108 | 73-124 | 1 | 30 |
| 1,1-Dichloroethene | 20 | 19.97 | 20 | 19.72 | 100 | 99 | 80-131 | 1 | 30 |
| cis-1,2-Dichloroethene | 20 | 20.36 | 20 | 20.05 | 102 | 100 | 80-120 | 2 | 30 |
| trans-1,2-Dichloroethene | 20 | 19.89 | 20 | 19.67 | 99 | 98 | 80-120 | 1 | 30 |
| 1,2-Dichloropropane | 20 | 21.56 | 20 | 21.35 | 108 | 107 | 80-120 | 1 | 30 |
| cis-1,3-Dichloropropene | 20 | 19.95 | 20 | 20.12 | 100 | 101 | 75-120 | 1 | 30 |
| trans-1,3-Dichloropropene | 20 | 19.17 | 20 | 19.5 | 96 | 98 | 67-120 | 2 | 30 |
| Ethylbenzene | 20 | 20.22 | 20 | 20.24 | 101 | 101 | 80-120 | 0 | 30 |
| 2-Hexanone | 100 | 107.78 | 100 | 106.62 | 108 | 107 | 56-135 | 1 | 30 |
| 4-Methyl-2-pentanone | 100 | 106.11 | 100 | 104.89 | 106 | 105 | 62-133 | 1 | 30 |
| Methylene Chloride | 20 | 19.97 | 20 | 19.87 | 100 | 99 | 80-120 | 1 | 30 |
| Styrene | 20 | 20.25 | 20 | 19.97 | 101 | 100 | 80-120 | 1 | 30 |
| 1,1,2,2-Tetrachloroethane | 20 | 22.13 | 20 | 21.93 | 111 | 110 | 72-120 | 1 | 30 |
| Tetrachloroethene | 20 | 18.61 | 20 | 18.38 | 93 | 92 | 80-120 | 1 | 30 |
| Toluene | 20 | 19.92 | 20 | 19.84 | 100 | 99 | 80-120 | 0 | 30 |
| 1,1,1-Trichloroethane | 20 | 19.35 | 20 | 19.24 | 97 | 96 | 67-126 | 1 | 30 |
| 1,1,2-Trichloroethane | 20 | 22.37 | 20 | 21.99 | 112 | 110 | 80-120 | 2 | 30 |
| Trichloroethene | 20 | 19.95 | 20 | 19.67 | 100 | 98 | 80-120 | 1 | 30 |
| Vinyl Chloride | 20 | 18.93 | 20 | 19.06 | 95 | 95 | 56-120 | 1 | 30 |
| Xylene (Total) | 60 | 60.23 | 60 | 59.78 | 100 | 100 | 80-120 | 1 | 30 |
| Batch number: 5183052AA | Sample number(s): 9861884 | | | | | | | | |
| cis-1,2-Dichloroethene | 20 | 21.36 | 20 | 21.15 | 107 | 106 | 80-120 | 1 | 30 |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | MS Spike Added ug/l | MS Conc ug/l | MSD Spike Added ug/l | MSD Conc ug/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| Batch number: 5183041AA | Sample number(s): 9861880-9861882 UNSPK: P862002 | | | | | | | | | |
| Acetone | 0.7 U | 150 | 150.68 | 150 | 151.16 | 100 | 101 | 54-157 | 0 | 30 |
| Benzene | 0.2 U | 20 | 22.49 | 20 | 22.52 | 112 | 113 | 80-120 | 0 | 30 |
| Bromodichloromethane | 0.2 U | 20 | 20.98 | 20 | 20.91 | 105 | 105 | 71-120 | 0 | 30 |
| Bromoform | 0.2 U | 20 | 16.13 | 20 | 15.98 | 81 | 80 | 51-120 | 1 | 30 |
| Bromomethane | 0.3 U | 20 | 18.62 | 20 | 18.03 | 93 | 90 | 53-128 | 3 | 30 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 11/08/2018 14:41

Group Number: 2000764

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | MS Spike Added ug/l | MS Conc ug/l | MSD Spike Added ug/l | MSD Conc ug/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| 2-Butanone | 0.3 U | 150 | 149.79 | 150 | 147.13 | 100 | 98 | 59-135 | 2 | 30 |
| Carbon Disulfide | 0.2 U | 20 | 20.25 | 20 | 20.49 | 101 | 102 | 65-128 | 1 | 30 |
| Carbon Tetrachloride | 0.2 U | 20 | 22.65 | 20 | 22.86 | 113 | 114 | 64-134 | 1 | 30 |
| Chlorobenzene | 0.2 U | 20 | 21.56 | 20 | 21.79 | 108 | 109 | 80-120 | 1 | 30 |
| Chloroethane | 0.2 U | 20 | 19 | 20 | 18.18 | 95 | 91 | 55-123 | 4 | 30 |
| Chloroform | 0.2 U | 20 | 22.62 | 20 | 22.67 | 113 | 113 | 80-120 | 0 | 30 |
| Chloromethane | 0.2 U | 20 | 18.67 | 20 | 19 | 93 | 95 | 56-121 | 2 | 30 |
| Dibromochloromethane | 0.2 U | 20 | 19.78 | 20 | 19.5 | 99 | 98 | 71-120 | 1 | 30 |
| 1,1-Dichloroethane | 0.2 U | 20 | 22.65 | 20 | 22.81 | 113 | 114 | 80-120 | 1 | 30 |
| 1,2-Dichloroethane | 0.3 U | 20 | 22.7 | 20 | 22.62 | 113 | 113 | 73-124 | 0 | 30 |
| 1,1-Dichloroethene | 0.2 U | 20 | 24.34 | 20 | 24.89 | 122 | 124 | 80-131 | 2 | 30 |
| cis-1,2-Dichloroethene | 0.2 U | 20 | 22.52 | 20 | 22.66 | 113 | 113 | 80-120 | 1 | 30 |
| trans-1,2-Dichloroethene | 0.2 U | 20 | 23.25 | 20 | 23.19 | 116 | 116 | 80-120 | 0 | 30 |
| 1,2-Dichloropropane | 0.2 U | 20 | 23.11 | 20 | 22.86 | 116 | 114 | 80-120 | 1 | 30 |
| cis-1,3-Dichloropropene | 0.2 U | 20 | 20.11 | 20 | 20.58 | 101 | 103 | 75-120 | 2 | 30 |
| trans-1,3-Dichloropropene | 0.2 U | 20 | 19.06 | 20 | 19.22 | 95 | 96 | 67-120 | 1 | 30 |
| Ethylbenzene | 0.4 U | 20 | 22.05 | 20 | 22.08 | 110 | 110 | 80-120 | 0 | 30 |
| 2-Hexanone | 0.3 U | 100 | 104.41 | 100 | 103.15 | 104 | 103 | 56-135 | 1 | 30 |
| 4-Methyl-2-pentanone | 0.5 U | 100 | 103.2 | 100 | 101.61 | 103 | 102 | 62-133 | 2 | 30 |
| Methylene Chloride | 0.3 U | 20 | 22.02 | 20 | 22.13 | 110 | 111 | 80-120 | 0 | 30 |
| Styrene | 0.2 U | 20 | 21.03 | 20 | 21.36 | 105 | 107 | 80-120 | 2 | 30 |
| 1,1,2,2-Tetrachloroethane | 0.2 U | 20 | 21.23 | 20 | 21.06 | 106 | 105 | 72-120 | 1 | 30 |
| Tetrachloroethene | 0.2 U | 20 | 21.36 | 20 | 21.46 | 107 | 107 | 80-120 | 0 | 30 |
| Toluene | 0.2 U | 20 | 21.99 | 20 | 22.36 | 110 | 112 | 80-120 | 2 | 30 |
| 1,1,1-Trichloroethane | 0.3 U | 20 | 22.57 | 20 | 22.94 | 113 | 115 | 67-126 | 2 | 30 |
| 1,1,2-Trichloroethane | 0.2 U | 20 | 22.47 | 20 | 22.25 | 112 | 111 | 80-120 | 1 | 30 |
| Trichloroethene | 0.2 U | 20 | 22.57 | 20 | 22.67 | 113 | 113 | 80-120 | 0 | 30 |
| Vinyl Chloride | 0.2 U | 20 | 20.02 | 20 | 20.27 | 100 | 101 | 56-120 | 1 | 30 |
| Xylene (Total) | 1 U | 60 | 64.8 | 60 | 65.3 | 108 | 109 | 80-120 | 1 | 30 |
| Batch number: 5183042AA | Sample number(s): 9861883-9861885 UNSPK: 9861883 | | | | | | | | | |
| Acetone | 1.15 | 150 | 150.96 | 150 | 142.39 | 100 | 94 | 54-157 | 6 | 30 |
| Benzene | 0.281 | 20 | 23.47 | 20 | 23.29 | 116 | 115 | 80-120 | 1 | 30 |
| Bromodichloromethane | 0.2 U | 20 | 21.67 | 20 | 21.5 | 108 | 108 | 71-120 | 1 | 30 |
| Bromoform | 0.2 U | 20 | 16.7 | 20 | 16.57 | 84 | 83 | 51-120 | 1 | 30 |
| Bromomethane | 0.3 U | 20 | 20.23 | 20 | 18.54 | 101 | 93 | 53-128 | 9 | 30 |
| 2-Butanone | 0.3 U | 150 | 157.68 | 150 | 156.12 | 105 | 104 | 59-135 | 1 | 30 |
| Carbon Disulfide | 0.2 U | 20 | 20.91 | 20 | 21.1 | 105 | 105 | 65-128 | 1 | 30 |
| Carbon Tetrachloride | 0.2 U | 20 | 23.55 | 20 | 23.32 | 118 | 117 | 64-134 | 1 | 30 |
| Chlorobenzene | 0.2 U | 20 | 22.25 | 20 | 22.32 | 111 | 112 | 80-120 | 0 | 30 |
| Chloroethane | 0.2 U | 20 | 20.2 | 20 | 21.26 | 101 | 106 | 55-123 | 5 | 30 |
| Chloroform | 0.2 U | 20 | 23.44 | 20 | 23.21 | 117 | 116 | 80-120 | 1 | 30 |
| Chloromethane | 0.2 U | 20 | 21.06 | 20 | 21.86 | 105 | 109 | 56-121 | 4 | 30 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 11/08/2018 14:41

Group Number: 2000764

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | MS Spike Added ug/l | MS Conc ug/l | MSD Spike Added ug/l | MSD Conc ug/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| Dibromochloromethane | 0.2 U | 20 | 20.06 | 20 | 19.9 | 100 | 100 | 71-120 | 1 | 30 |
| 1,1-Dichloroethane | 0.2 U | 20 | 23.47 | 20 | 23.29 | 117 | 116 | 80-120 | 1 | 30 |
| 1,2-Dichloroethane | 0.3 U | 20 | 23.76 | 20 | 23.55 | 119 | 118 | 73-124 | 1 | 30 |
| 1,1-Dichloroethene | 0.2 U | 20 | 25 | 20 | 24.88 | 125 | 124 | 80-131 | 0 | 30 |
| cis-1,2-Dichloroethene | 0.2 U | 20 | 23.32 | 20 | 23.21 | 117 | 116 | 80-120 | 0 | 30 |
| trans-1,2-Dichloroethene | 0.2 U | 20 | 23.8 | 20 | 23.64 | 119 | 118 | 80-120 | 1 | 30 |
| 1,2-Dichloropropane | 0.2 U | 20 | 23.95 | 20 | 23.81 | 120 | 119 | 80-120 | 1 | 30 |
| cis-1,3-Dichloropropene | 0.2 U | 20 | 20.89 | 20 | 20.82 | 104 | 104 | 75-120 | 0 | 30 |
| trans-1,3-Dichloropropene | 0.2 U | 20 | 19.96 | 20 | 19.88 | 100 | 99 | 67-120 | 0 | 30 |
| Ethylbenzene | 0.4 U | 20 | 22.65 | 20 | 22.53 | 113 | 113 | 80-120 | 1 | 30 |
| 2-Hexanone | 0.3 U | 100 | 110.23 | 100 | 108.6 | 110 | 109 | 56-135 | 1 | 30 |
| 4-Methyl-2-pentanone | 0.5 U | 100 | 108.53 | 100 | 107.38 | 109 | 107 | 62-133 | 1 | 30 |
| Methylene Chloride | 0.3 U | 20 | 22.86 | 20 | 22.51 | 114 | 113 | 80-120 | 2 | 30 |
| Styrene | 0.2 U | 20 | 21.86 | 20 | 21.85 | 109 | 109 | 80-120 | 0 | 30 |
| 1,1,2,2-Tetrachloroethane | 0.2 U | 20 | 22 | 20 | 22.02 | 110 | 110 | 72-120 | 0 | 30 |
| Tetrachloroethene | 0.2 U | 20 | 21.67 | 20 | 21.52 | 108 | 108 | 80-120 | 1 | 30 |
| Toluene | 0.2 U | 20 | 22.57 | 20 | 22.46 | 113 | 112 | 80-120 | 0 | 30 |
| 1,1,1-Trichloroethane | 0.3 U | 20 | 23.52 | 20 | 23.21 | 118 | 116 | 67-126 | 1 | 30 |
| 1,1,2-Trichloroethane | 0.2 U | 20 | 23.29 | 20 | 22.79 | 116 | 114 | 80-120 | 2 | 30 |
| Trichloroethene | 0.2 U | 20 | 23.15 | 20 | 22.93 | 116 | 115 | 80-120 | 1 | 30 |
| Vinyl Chloride | 0.2 U | 20 | 22.68 | 20 | 23.02 | 113 | 115 | 56-120 | 1 | 30 |
| Xylene (Total) | 1 U | 60 | 67.17 | 60 | 66.5 | 112 | 111 | 80-120 | 1 | 30 |
| Batch number: 5183052AA | Sample number(s): 9861884 UNSPK: P868528 | | | | | | | | | |
| cis-1,2-Dichloroethene | 4 U | 400 | 439.76 | 400 | 459.52 | 110 | 115 | 80-120 | 4 | 30 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- 5ml Water by 8260C
Batch number: 5183041AA

| | Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|---|
| 9861880 | 102 | 101 | 104 | 97 |
| 9861881 | 99 | 101 | 103 | 96 |
| 9861882 | 101 | 101 | 103 | 96 |
| Blank | 99 | 100 | 102 | 97 |
| LCS | 99 | 101 | 102 | 101 |
| MS | 100 | 99 | 102 | 103 |
| MSD | 99 | 100 | 102 | 103 |

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Group Number: 2000764
Reported: 11/08/2018 14:41

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- 5ml Water by 8260C
Batch number: 5183041AA

| | | | | |
|---|---|---|---|---|
| Limits: | 80-120 | 80-120 | 80-120 | 80-120 |

Analysis Name: VOCs- 5ml Water by 8260C
Batch number: 5183042AA

| | Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|---|
| 9861883 | 100 | 101 | 103 | 96 |
| 9861884 | 100 | 101 | 102 | 97 |
| 9861885 | 99 | 100 | 103 | 97 |
| Blank | 98 | 100 | 103 | 97 |
| LCS | 100 | 100 | 103 | 103 |
| LCSD | 100 | 101 | 102 | 103 |
| MS | 101 | 101 | 103 | 104 |
| MSD | 100 | 100 | 102 | 103 |
| Limits: | 80-120 | 80-120 | 80-120 | 80-120 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories Environmental use only

Acct. # 6643 Group # 2006764 Sample # 9861980-85

**COC #** 578742

## Client Information

Client: Parsons
Acct. #: 06643
Project Name/#: DuPont Ferdula NY
PWSID #:
Project Manager: Ed Ashton
P.O. #: LBIO-67047
Sampler: Dale Dolph
Quote #:
State where samples were collected: NY
For Compliance: Yes ☐ No ☐

## Matrix

Soil ☐ Sediment ☐ Tissue ☐ Water ☐ Potable ☐ Ground ☐ NPDES ☐ Surface ☐ Other: ____

## Analysis Requested

Preservation and Filtration Codes

For Lab Use Only
FSC:
SCR#:

**Preservation Codes**
H=HCl T=Thiosulfate
N=$HNO_3$ B=NaOH
S=$H_2SO_4$ P=$H_3PO_4$
F=Field Filtered O=Other

**Remarks**

| Sample Identification | Collected Date | Collected Time | Grab | Composite | Total # of Containers | VOCs 8260C |
|---|---|---|---|---|---|---|
| GW2018-F-14 | 10/18/18 | 0925 | X | | 3 | X |
| GW2018-F-7 | 10/18/18 | 1325 | X | | 3 | X |
| GW2018-P-18 | 10/18/18 | 1330 | X | | 3 | X |
| GW2018-F-17 | 10/19/18 | 0910 | X | | 3 | X |
| GW2018-F-16 | 10/19/18 | 0915 | X | | 3 | X |
| GW2018-TB-101918 | 10/19/18 | 0930 | | | 2 | X |

10/19/18

**Turnaround Time (TAT) Requested** (please circle)
Standard Rush
(Rush TAT is subject to laboratory approval and surcharge.)

Requested TAT in business days: ____

E-mail address: ____

**Data Package Options** (circle if required)
Type I (EPA Level 3 Equivalent/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) NJ DKQP TX TRRP-13
NYSDEC Category A or B MA MCP CT RCP

| Relinquished by | Date | Time | Received by | Date | Time |
|---|---|---|---|---|---|
| | 10/19/18 | 1130 | FedEx | 10/19/18 | 1130 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

EDD Required? Yes No
If yes, format: ____

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS ____ FedEx ✓ Other ____

Temperature upon receipt 0.8 °C

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# Sample Administration Receipt Documentation Log

Doc Log ID: 230688

Group Number(s): 2000764

Client: Parsons

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 10/20/2018 9:40 |
| Number of Packages: | 1 | Number of Projects: | 1 |
| State/Province of Origin: | NY | | |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | Yes |
| Samples Chilled: | Yes | VOA IDs (≥ 6mm): | See Below |
| Paperwork Enclosed: | Yes | Total Trip Blank Qty: | 2 |
| Samples Intact: | Yes | Trip Blank Type: | HCL |
| Missing Samples: | No | Air Quality Samples Present: | No |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

VOA Vial IDs (Headspace ≥ 6mm): GW2018-TB (1 vial)

*Unpacked by Conrad Burkholder (12671) at 12:44 on 10/20/2018*

## Samples Chilled Details

*Thermometer Types:* *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT42-01 | 0.8 | DT | Wet | Y | Bagged | N |



2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mL** | milliliter(s) |
| **C** | degrees Celsius | **MPN** | Most Probable Number |
| **cfu** | colony forming units | **N.D.** | non-detect |
| **CP Units** | cobalt-chloroplatinate units | **ng** | nanogram(s) |
| **F** | degrees Fahrenheit | **NTU** | nephelometric turbidity units |
| **g** | gram(s) | **pg/L** | picogram/liter |
| **IU** | International Units | **RL** | Reporting Limit |
| **kg** | kilogram(s) | **TNTC** | Too Numerous To Count |
| **L** | liter(s) | **µg** | microgram(s) |
| **lb.** | pound(s) | **µL** | microliter(s) |
| **m3** | cubic meter(s) | **umhos/cm** | micromhos/cm |
| **meq** | milliequivalents | **MCL** | Maximum Contamination Limit |
| **mg** | milligram(s) | | |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| D1 | Indicates for dual column analyses that the result is reported from column 1 |
| D2 | Indicates for dual column analyses that the result is reported from column 2 |
| E | Concentration exceeds the calibration range |
| K1 | Initial Calibration Blank is above the QC limit and the sample result is ND |
| K2 | Continuing Calibration Blank is above the QC limit and the sample result is ND |
| K3 | Initial Calibration Verification is above the QC limit and the sample result is ND |
| K4 | Continuing Calibration Verification is above the QC limit and the sample result is ND |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| P^ | Concentration difference between the primary and confirmation column > 40%. The higher result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

# Certification Information

**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**
**EPA 624/624.1:** m/p-xylene, o-xylene
**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
**EPA 8270D:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

**EPA 6860:** SCM: Perchlorate

**SM4500**: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

**Mansfield Facility**
**SM 2540D:** TSS
**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
**Biological Tissue Matrix:** EPA 3050B

**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

***Drinking Water***
**EPA 300.0**: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
**EPA 332**: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
**Microbiology**: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

***Non-Potable Water***
**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
**EPA 624.1**: Volatile Halocarbons & Aromatics,
**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
**EPA 625.1**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
**Microbiology**: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

**Mansfield Facility:**

***Drinking Water***
**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
**EPA 522.**

***Non-Potable Water***
**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
**EPA 245.1** Hg.
**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

# Analysis Request / Environmental Services Chain of Custody

eurofins Lancaster Laboratories

For Eurofins Lancaster Laboratories Use Only

L1842912

Group No.: _____ Sample Nos.: _____

Acct: 06643 SF: 115523 SCR No: 232367 Cooler No.: 12800 39247

Cooler Temperature upon receipt: 2.8-5.1 °C Container No.: 1-2

| | |
|---|---|
| Facility Name: Business | Project Manager: Ed Ashton |
| Facility Contact: Ed Ashton | Facility Contact Phone No.: 315-451-9560 |
| Facility Address: 301 Plainfield Road | Job No.: 9267-7720100C-WH06-507052 |
| Suite 350 | Release No.: |
| Syracuse NY 13212 | PO Number: LBIO-67047 |
| Sampler(s): Dale Doph D. Douglass | |
| Project Name: GW SAMPLING ANNUAL 2018 | |

| Sample Identification | Date Collected | Time Collected | Matrix | Containers: Volume (ml) | Preserv | No. | PFAA | A2-1,4-Dioxane-SIM | VOCs 8260C | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| GW2018-F-6 | 10/17/18 | 1145 | GW | 40 | HCl | 3/2 | X | | X | Condition upon receipt: Intact |
| GW2018-F-6 MS | | 1145 | GW | | | 3/2 | X | | X | Matrix Spike |
| GW2018-F-6 MSD | | 1145 | GW | | | 3/2 | X | | X | Matrix Spike Dup |
| GW2018-F-6-D | | 1145 | GW | | | 3/2 | X | | X | Duplicate |
| ~~GW2018-F-7~~ | | | ~~GW~~ | | | 2 | X | | | |
| ~~GW2018-F-14~~ | | | ~~GW~~ | | | 2 | X | | | |
| ~~GW2018-F-16~~ | | | ~~GW~~ | | | 2 | X | | | |
| ~~GW2018-F-17~~ | | | ~~GW~~ | | | 2 | X | | | |
| GW2018-P-17 | 10/16/18 | 1430 | GW | 40 ml / 250 ml | HCl / None | 5/2 | X | | X | |
| ~~GW2018-P-18~~ | | | ~~GW~~ | | | 2 | X | | | |
| GW2018-F-8 | 10/17/18 | 1005 | GW | 40 | HCl | 3/2 | X | X | X | |

**Turnaround Time Requested** (please circle): Normal Rush Number of days: _____

**Special Instructions:**

| | Date | Time |
|---|---|---|
| Bottles Relinquished by: Rachel Potter | 10-1-18 | 1:10 |
| Bottles Relinquished by: | 10-17-18 | 1600 |
| Bottles Relinquished by: | Date | Time |
| Bottles Relinquished by: | Date | Time |

| | Date | Time |
|---|---|---|
| Bottles Received by: | 10-16-18 | 0630 |
| Bottles Received by: Fedex | 10-17-18 | 1600 |
| Bottles Received by: | Date | Time |
| Bottles Received by: | 10-18-18 | 1020 |

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Copies: White copy should accompany samples to Lancaster Laboratories. The pink copy should be retained by the samplers.



Relinquished HLC2213 10-19-18 @1630 Chris Lebeau 10/20/18 10:16

# Analysis Request / Environmental Services Chain of Custody

eurofins | Lancaster Laboratories

For Eurofins Lancaster Laboratories Use Only

L184912

Group No.: _____ Sample Nos.: _____

Acct: 06643 SF: 115523 SCR No.: 232367 Cooler No: _____

39247

Cooler Temperature upon receipt: 2.8-3.1 °C Container No.: 1-2

| | |
|---|---|
| Facility Name: Business | Project Manager: Ed Ashton |
| Facility Contact: Ed Ashton | Facility Contact Phone No.: 315-451-9560 |
| Facility Address: 301 Plainfield Road | Job No.: 9267-7720100C-WH06-507052 |
| Suite 350 | Release No.: |
| Syracuse NY 13212 | PO Number: LBIO-67047 |
| Sampler(s): Dale Dolph D Douglass | |
| Project Name: GW SAMPLING ANNUAL 2018 | |

| Sample Identification | Date Collected | Time Collected | Matrix | Containers: Volume (ml) | Preserv | No. | Analyses Required: PFAA | 1,4-Dioxane - SIM | Comments |
|---|---|---|---|---|---|---|---|---|---|
| GW2018-FB- GW | 10/16/18 | 1335 | ~~WW~~ GW | 250 | None | 2 | X | | Field/Ambient Blank |
| ~~GW2018-TB~~ GW2018-EB-GW | 10/16/18 | 1240 | WW | 250 | None | 2 | X | | Equipment Blank |
| GW2018-F-8-D | 10/17/18 | 1005 | GW | 250 | None | 2 | X | | Duplicate |
| GW2018-F-8 MS | 10/17/18 | 1005 | GW | 250 | None | 2 | X | | Matrix Spike |
| GW2018-F-8-MSD | 10/17/18 | 1005 | GW | 250 | None | 2 | X | | Matrix Spike Dup |
| GW2018-P-11 | 10/16/18 | 1320 | GW | 250 | None | 4 | X | X | |
| GW2018-P-17 | 10/17/18 | 0905 | GW | 250 | None | 2 | | X | |
| GW2018-P-17 MS | | 0905 | GW | 250 | None | 2 | | X | Matrix Spike |
| GW2018-P-17 MSD | | 0905 | GW | 250 | None | 2 | | X | Matrix Spike Dup |
| GW2018-P-17-D | | 0905 | GW | 250 | None | 2 | | X | Duplicate |
| | | | | | | | | | |

Condition upon receipt: Intact

Turnaround Time Requested (please circle): Normal Rush Number of days: _____

Special Instructions:

| | Date | Time | | Date | Time |
|---|---|---|---|---|---|
| Bottles Relinquished by: | 10/17/18 | 1600 | Bottles Received by: Fedex | 10/17/18 | 1600 |
| Bottles Relinquished by: | | | Bottles Received by: | | |
| Bottles Relinquished by: | | | Bottles Received by: | | |
| Bottles Relinquished by: | | | Bottles Received by: | 10-18-18 | 1020 |

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Copies: White copy should accompany samples to Lancaster Laboratories. The pink copy should be retained by the samplers.

Relinquished HLL 2013 10-19-18 @ 1630

Chris a Olsen 10/20/18 10:16

# ATTACHMENT E

# OCTOBER 2018 GROUNDWATER SAMPLING FORMS

**PARSONS**

## LOW FLOW (MINIMAL DRAWDOWN) SAMPLING RECORD

**SITE NAME:** DuPont Ferdula Landfill, Frankfort, NY
**PROJECT NUMBER:** 450862

**WELL NUMBER:** F-6 **WEATHER:** Cloudy, ~40 degrees
**DATE:** 10/17/2018 **TIME:** 1040

**SAMPLERS:** D Dolph of Parsons
D Douglass of Parsons

**DESCRIPTION OF WELL**

Total Depth: 17.75 Diameter: 2"
Screen Interval from Top of Riser: Riser Elevation:

**GROUNDWATER PURGING**

Initial Static Water Level: 11.89
One Well Volume:
2-Inch Casing: 5.86 Feet of Water x 0.16 Gallons/Foot = 0.94 Gallons (1 Well Volume)

Volume of groundwater purged:
Purging Device: Peristaltic pump and dedicated polyurethane tubing
Purge Water Disposition Method: 5-gallon bucket, transferred to on-site leachate system
Sampling Point (Below Top of Riser (ft.)):

**FIELD MEASUREMENTS**

| Time | DTW (ft) | Temp. (°C) | pH | Conductivity (mS/cm) | Turbidity (NTU's) | Dissolved Oxygen (mg/L) | ORP (mV) | Pump Rate (mL/min) | Purged (gal) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1045 | ~500 mL pumped to clear silt | | | | | | | | | |
| 1055 | 13.23 | 15.77 | 6.62 | 0.441 | 87.8 | 1.52 | 155 | 120 | | |
| 1100 | 13.41 | 15.75 | 5.86 | 0.432 | 69.6 | 0.94 | 87 | 120 | | |
| 1105 | 13.70 | 15.60 | 5.94 | 0.43 | 58.4 | 0.86 | 49 | 120 | | |
| 1110 | 13.83 | 15.44 | 6.18 | 0.425 | 49.3 | 0.86 | 29 | 120 | | |
| 1115 | 13.95 | 15.35 | 6.16 | 0.423 | 44.8 | 0.81 | 23 | 120 | | |
| 1120 | 14.06 | 15.20 | 6.62 | 0.426 | 42.2 | 0.76 | -2 | 120 | | |
| 1125 | 14.16 | 15.12 | 6.64 | 0.423 | 41.4 | 0.73 | -14 | 120 | | |
| 1130 | | 15.02 | 6.64 | 0.412 | 40.4 | 0.98 | -25 | 120 | | |
| 1135 | 14.31 | 14.95 | 6.63 | 0.413 | 40.7 | 1.05 | -28 | 120 | | |
| 1140 | | 14.90 | 6.62 | 0.411 | 40.7 | 1.20 | -30 | 120 | | |
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Note: Collected samples F-6 for VOCs at 1145, collected MS/MSD/Dup for VOCs

**PARSONS**

# LOW FLOW (MINIMAL DRAWDOWN) SAMPLING RECORD

**SITE NAME:** DuPont Ferdula Landfill, Frankfort, NY
**PROJECT NUMBER:** 450862

**WELL NUMBER:** F-7 **WEATHER:** sunny, ~30 degrees
**DATE:** 10/18/2018 **TIME:** 1230

**SAMPLERS:** D Dolph of Parsons
D Douglass of Parsons

**DESCRIPTION OF WELL**

Total Depth: 16.05 Diameter: 2"
Screen Interval from Top of Riser: Riser Elevation:

**GROUNDWATER PURGING**

Initial Static Water Level: 10.43
One Well Volume:
2-Inch Casing: 5.62 Feet of Water x 0.16 Gallons/Foot = 0.90 Gallons (1 Well Volume)

Volume of groundwater purged:
Purging Device: Peristaltic pump and dedicated polyurethane tubing
Purge Water Disposition Method: 5-gallon bucket, transferred to on-site leachate system
Sampling Point (Below Top of Riser (ft.)):

**FIELD MEASUREMENTS**

| Time | DTW (ft) | Temp. (°C) | pH | Conductivity (mS/cm) | Turbidity (NTU's) | Dissolved Oxygen (mg/L) | ORP (mV) | Pump Rate (mL/min) | Purged (gal) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1240 | | 14.16 | 7.64 | 0.750 | 444 | 1.98 | 26 | 120 | | |
| 1245 | 11.45 | 14.18 | 7.42 | 0.748 | 126 | 0.89 | -4 | 120 | | |
| 1250 | 11.45 | 14.18 | 7.45 | 0.735 | 40.0 | 0.73 | -2 | 120 | | |
| 1255 | 11.45 | 14.12 | 7.49 | 0.712 | 20.3 | 0.51 | -5 | 120 | | |
| 1300 | 11.53 | 14.04 | 7.42 | 0.673 | 17.5 | 0.23 | -12 | 120 | | |
| 1305 | 11.6 | 13.94 | 7.41 | 0.656 | 16.0 | 0.25 | -20 | 120 | | |
| 1310 | 11.71 | 13.8 | 7.36 | 0.643 | 11.7 | 0.16 | -27 | 120 | | |
| 1315 | | 13.71 | 7.36 | 0.580 | 9.5 | 0.12 | -31 | 120 | | |
| 1320 | | 13.66 | 7.38 | 0.559 | 7.4 | 0.09 | -33 | 120 | | |
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Notes: Collected sample F-7 at 1325 for VOCs.

**PARSONS**

## LOW FLOW (MINIMAL DRAWDOWN) SAMPLING RECORD

**SITE NAME:** DuPont Ferdula Landfill, Frankfort, NY
**PROJECT NUMBER:** 450862

**WELL NUMBER:** F-8 **WEATHER:** Cloudy, ~40 degrees
**DATE:** 10/17/2018 **TIME:** 0935

**SAMPLERS:** D Dolph of Parsons
D Douglass of Parsons

**DESCRIPTION OF WELL**

Total Depth: 25.21 Diameter: 2"
Screen Interval from Top of Riser: Riser Elevation:

**GROUNDWATER PURGING**

Initial Static Water Level: 8.94 feet
One Well Volume:
2-Inch Casing: 16.27 Feet of Water x 0.16 Gallons/Foot = 2.60 Gallons (1 Well Volume)

Volume of groundwater purged:
Purging Device: Peristaltic pump and dedicated HDPE tubing
Purge Water Disposition Method: 5-gallon bucket, transferred to on-site leachate system
Sampling Point (Below Top of Riser (ft.)):

**FIELD MEASUREMENTS**

| Time | DTW (ft) | Temp. (°C) | pH | Conductivity (mS/cm) | Turbidity (NTU's) | Dissolved Oxygen (mg/L) | ORP (mV) | Pump Rate (mL/min) | Purged (gal) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 0935 | | 13.60 | 6.19 | 0.682 | 16.5 | 6.97 | 218 | 120 | | |
| 0940 | | 13.83 | 5.89 | 0.652 | 1.9 | 7.17 | 222 | | | |
| 0945 | | 14.06 | 5.87 | 0.643 | 0.0 | 6.82 | 219 | 100 | | |
| 0950 | | 14.30 | 5.74 | 0.642 | 0.0 | 6.18 | 228 | 100 | | |
| 0955 | | 14.40 | 5.99 | 0.629 | 0.0 | 6.29 | 219 | 100 | | |
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Note: Collected Sample F-8 at 1005 for VOCs, PFAs, and 1,4-dioxane. MS/MSD/Dup for VOCs

**PARSONS**

# LOW FLOW (MINIMAL DRAWDOWN) SAMPLING RECORD

**SITE NAME:** DuPont Ferdula Landfill, Frankfort, NY
**PROJECT NUMBER:** 450862

**WELL NUMBER:** F-14 **WEATHER:** sunny, ~30 degrees
**DATE:** 10/18/2018 **TIME:** 0850

**SAMPLERS:** D Dolph of Parsons
D Douglass of Parsons

**DESCRIPTION OF WELL**

Total Depth: 20.3 Diameter: 2"
Screen Interval from Top of Riser: Riser Elevation:

**GROUNDWATER PURGING**

Initial Static Water Level: 15.89
One Well Volume:
2-Inch Casing: 4.41 Feet of Water x 0.16 Gallons/Foot = 0.71 Gallons (1 Well Volume)

Volume of groundwater purged:
Purging Device: Peristaltic pump and dedicated polyurethane tubing
Purge Water Disposition Method: 5-gallon bucket, transferred to on-site leachate system
Sampling Point (Below Top of Riser (ft.)):

**FIELD MEASUREMENTS**

| Time | DTW (ft) | Temp. (°C) | pH | Conductivity (mS/cm) | Turbidity (NTU's) | Dissolved Oxygen (mg/L) | ORP (mV) | Pump Rate (mL/min) | Purged (gal) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 0850 | blockage prevented use of depth meter | 12.64 | 6.95 | 0.333 | 41.9 | 0.73 | 32 | 120 | | |
| 0855 | | 12.54 | 7.31 | 0.330 | 14.6 | 0.30 | -33 | 120 | | |
| 0900 | | 12.54 | 7.58 | 0.327 | 9.6 | 0.00 | -69 | 120 | | |
| 0905 | | 12.53 | 7.73 | 0.326 | 5.6 | 0.00 | -87 | 120 | | |
| 0910 | | 12.47 | 7.83 | 0.324 | 0.1 | 0.00 | -97 | 120 | | |
| 0915 | | 12.54 | 7.89 | 0.323 | 0.0 | 0.00 | -102 | 120 | | |
| 0920 | | 12.60 | 7.92 | 0.323 | 0.0 | 0.00 | -105 | 120 | | |
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Notes: Collected sample F-14 at 0925 for VOCs.

**PARSONS**

# LOW FLOW (MINIMAL DRAWDOWN) SAMPLING RECORD

**SITE NAME:** DuPont Ferdula Landfill, Frankfort, NY
**PROJECT NUMBER:** 450862

**WELL NUMBER:** F-16 **WEATHER:** sunny, ~30 degrees
**DATE:** 10/18/2018 **TIME:** 1010

**SAMPLERS:** D Dolph of Parsons
D Douglass of Parsons

**DESCRIPTION OF WELL**

Total Depth: 24.3 Diameter: 2"
Screen Interval from Top of Riser: Riser Elevation:

**GROUNDWATER PURGING**

Initial Static Water Level: 23.1
One Well Volume:
2-Inch Casing: 1.2 Feet of Water x 0.16 Gallons/Foot = 0.192 Gallons (1 Well Volume)

Volume of groundwater purged: until dry
Purging Device: Peristaltic pump and dedicated polyurethane tubing
Purge Water Disposition Method: 5-gallon bucket, transferred to on-site leachate system
Sampling Point (Below Top of Riser (ft.)):

**FIELD MEASUREMENTS**

| Time | DTW (ft) | Temp. (°C) | pH | Conductivity (mS/cm) | Turbidity (NTU's) | Dissolved Oxygen (mg/L) | ORP (mV) | Pump Rate (mL/min) | Purged (gal) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1015 | | 11.33 | 7.16 | 0.886 | 56.4 | 0.47 | -56 | 120 | | |
| 1020 | 23.47 | 11.28 | 7.06 | 0.882 | 20.7 | 0.41 | -52 | 120 | | |
| 1025 | 23.7 | 11.15 | 7.09 | 0.874 | 6.5 | 0.82 | -42 | 120 | | |
| 1030 | 23.84 | 11.02 | 7.09 | 0.869 | 0.8 | 0.82 | -35 | 120 | | |
| 1035 | 24.05 | 10.88 | 7.09 | 0.863 | 0.0 | 1.68 | -25 | 120 | | |
| 1040 | | 10.78 | 7.09 | 0.853 | 0.0 | 2.00 | -19 | 120 | | |
| 1045 | well dry | | | | | | | | | |
| 1340 | no able to collect sample, well not recharged | | | | | | | | | |
| 10/19/2018 | | | | | | | | | | |
| 0915 | collected sample after well recharge | | | | | | | | | |
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Note: Well Dry 1045. Sampled on 10/19/18 at 0915 for VOCs

**PARSONS**

# LOW FLOW (MINIMAL DRAWDOWN) SAMPLING RECORD

**SITE NAME:** DuPont Ferdula Landfill, Frankfort, NY
**PROJECT NUMBER:** 450862

**WELL NUMBER:** F-17 **WEATHER:** Sunny, 31°F
**DATE:** 10/19/2018 **TIME:** 0830

**SAMPLERS:** D Dolph of Parsons
D Douglass of Parsons

**DESCRIPTION OF WELL**

Total Depth: 21.55 Diameter: 4"
Screen Interval from Top of Riser: Riser Elevation:

**GROUNDWATER PURGING**

Initial Static Water Level: 12.42
One Well Volume:
2-Inch Casing: 9.13 Feet of Water x 0.16 Gallons/Foot = 1.46 Gallons (1 Well Volume)

Volume of groundwater purged:
Purging Device: Peristaltic pump and dedicated polyurethane tubing
Purge Water Disposition Method: 5-gallon bucket, transferred to on-site leachate system
Sampling Point (Below Top of Riser (ft.)):

**FIELD MEASUREMENTS**

| Time | DTW (ft) | Temp. (°C) | pH | Conductivity (mS/cm) | Turbidity (NTU's) | Dissolved Oxygen (mg/L) | ORP (mV) | Pump Rate (mL/min) | Purged (gal) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 0835 | | 16.94 | 6.59 | 0.955 | 47.6 | 0.00 | 7 | 120 | | |
| 0840 | 12.83 | 16.88 | 7.05 | 0.922 | 32.9 | 0.00 | -76 | 120 | | |
| 0845 | 12.30 | 16.80 | 7.18 | 0.912 | 19.7 | 0.00 | -93 | 120 | | |
| 0850 | 13.68 | 16.77 | 7.23 | 0.910 | 13.0 | 0.00 | -101 | 120 | | |
| 0855 | | 16.79 | 7.25 | 0.905 | 13.0 | 0.00 | -100 | 120 | | |
| 0900 | 13.91 | 16.85 | 7.29 | 0.896 | 11.1 | 0.00 | -103 | 120 | | |
| 0905 | | 16.90 | 7.28 | 0.893 | 10.3 | 0.00 | -105 | 120 | | |
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Notes: Collected sample F-17 at 0910 for VOCs.

**PARSONS**

# LOW FLOW (MINIMAL DRAWDOWN) SAMPLING RECORD

**SITE NAME:** DuPont Ferdula Landfill, Frankfort, NY
**PROJECT NUMBER:** 450862

**WELL NUMBER:** P-11 **WEATHER:** cloudy, 50 degrees
**DATE:** 10/16/2018 **TIME:** 1230

**SAMPLERS:** D Dolph of Parsons
D Douglass of Parsons

**DESCRIPTION OF WELL**

Total Depth: 19.92 Diameter: 2"
Screen Interval from Top of Riser: Riser Elevation:

**GROUNDWATER PURGING**

Initial Static Water Level: 7.92
One Well Volume:
2-Inch Casing: 12 Feet of Water x 0.16 Gallons/Foot = 1.92 Gallons (1 Well Volume)

Volume of groundwater purged:
Purging Device: Peristaltic pump and dedicated HDPE tubing
Purge Water Disposition Method: 5-gallon bucket, transferred to on-site leachate system
Sampling Point (Below Top of Riser (ft.)):

**FIELD MEASUREMENTS**

| Time | DTW (ft) | Temp. (°C) | pH | Conductivity (mS/cm) | Turbidity (NTU's) | Dissolved Oxygen (mg/L) | ORP (mV) | Pump Rate (mL/min) | Purged (gal) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1250 | 8.34 | 16.02 | 6.94 | 0.591 | 121 | 8.77 | 156 | 120 | | |
| 1255 | 8.50 | 17.69 | 7.25 | 0.598 | 83.4 | 8.18 | 142 | 120 | | |
| 1300 | 8.78 | 17.16 | 7.36 | 0.605 | 50.6 | 7.88 | 142 | 120 | | |
| 1305 | 8.96 | 16.93 | 7.33 | 0.613 | 47.6 | 7.69 | 147 | 120 | | |
| 1310 | 9.15 | 16.76 | 7.3 | 0.615 | 44.6 | 7.54 | 153 | 120 | | |
| 1315 | 9.23 | 16.59 | 7.4 | 0.615 | 41.3 | 7.3 | 149 | 120 | | |
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Notes: Collected sample P-11 at 1320 for PFAS and 1,4-dioxane

**PARSONS**

# LOW FLOW (MINIMAL DRAWDOWN) SAMPLING RECORD

**SITE NAME:** DuPont Ferdula Landfill, Frankfort, NY
**PROJECT NUMBER:** 450862

**WELL NUMBER:** P-17 **WEATHER:** cloudy, 50 degrees
**DATE:** 10/16/2018 **TIME:** 1335

**SAMPLERS:** D Dolph of Parsons
D Douglass of Parsons

**DESCRIPTION OF WELL**

Total Depth: 25.25 Diameter: 2"
Screen Interval from Top of Riser: Riser Elevation:

**GROUNDWATER PURGING**

Initial Static Water Level: 22.04
One Well Volume:
2-Inch Casing: 3.21 Feet of Water x 0.16 Gallons/Foot = 0.51 Gallons (1 Well Volume)

Volume of groundwater purged:
Purging Device: Peristaltic pump and dedicated polyurethane tubing
Purge Water Disposition Method: 5-gallon bucket, transferred to on-site leachate system
Sampling Point (Below Top of Riser (ft.)):

**FIELD MEASUREMENTS**

| Time | DTW (ft) | Temp. (°C) | pH | Conductivity (mS/cm) | Turbidity (NTU's) | Dissolved Oxygen (mg/L) | ORP (mV) | Pump Rate (mL/min) | Purged (gal) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1340 | 22.38 | 16.34 | 7.82 | 0.748 | 17.2 | 2.15 | 157 | 120 | | |
| 1345 | 22.50 | 16.12 | 7.75 | 0.753 | 10.5 | 2.01 | 143 | 100 | | |
| 1350 | 22.70 | 16.09 | 7.69 | 0.754 | 7.2 | 1.66 | 137 | 100 | | |
| 1355 | 22.85 | 16.07 | 7.64 | 0.753 | 5.4 | 1.13 | 124 | 120 | | |
| 1400 | 23.00 | 15.99 | 7.64 | 0.751 | 5.0 | 0.50 | 116 | 120 | | |
| 1405 | 23.12 | 15.88 | 7.65 | 0.752 | 0.5 | 0.26 | 79 | 120 | | |
| 1410 | | 15.79 | 7.56 | 0.746 | 1.3 | 0.00 | 62 | 120 | | |
| 1412 | battery died, replaced/resumed | | | | | | | | | |
| 1415 | 23.20 | 15.73 | 7.75 | 0.751 | 0.6 | 0.00 | 49 | 100 | | |
| 1420 | 23.40 | 15.69 | 7.56 | 0.754 | 0.1 | 0.04 | 41 | 120 | | |
| 1425 | 23.52 | 15.65 | 7.62 | 0.749 | 0.1 | 0.00 | 39 | 120 | | |
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Notes: Collected sample P-17 at 1430 for VOCs, PFAs, and 1,4-dioxane, well went dry after initial sample set collected. MS/MSD/Dup for dioxane collected from P-17 on 10/17/18 after well recharged

**PARSONS**

## LOW FLOW (MINIMAL DRAWDOWN) SAMPLING RECORD

**SITE NAME:** DuPont Ferdula Landfill, Frankfort, NY
**PROJECT NUMBER:** 450862

**WELL NUMBER:** P-18 **WEATHER:** sunny, ~30 degrees
**DATE:** 10/18/2018 **TIME:** 0930

**SAMPLERS:** D Dolph of Parsons
D Douglass of Parsons

**DESCRIPTION OF WELL**

Total Depth: 24.5 Diameter: 2"
Screen Interval from Top of Riser: Riser Elevation:

**GROUNDWATER PURGING**

Initial Static Water Level: 21.92
One Well Volume:
2-Inch Casing: 2.58 Feet of Water x 0.16 Gallons/Foot = 2.42 Gallons (1 Well Volume)

Volume of groundwater purged: until dry
Purging Device: Peristaltic pump and dedicated polyurethane tubing
Purge Water Disposition Method: 5-gallon bucket, transferred to on-site leachate system
Sampling Point (Below Top of Riser (ft.)):

**FIELD MEASUREMENTS**

| Time | DTW (ft) | Temp. (°C) | pH | Conductivity (mS/cm) | Turbidity (NTU's) | Dissolved Oxygen (mg/L) | ORP (mV) | Pump Rate (mL/min) | Purged (gal) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 0935 | 22.15 | 12.90 | 7.46 | 0.649 | 34.1 | 3.81 | -6 | 120 | | |
| 0940 | | 12.79 | 7.46 | 0.641 | 8.3 | 3.82 | 10 | 120 | | |
| 0945 | 22.55 | 12.63 | 7.45 | 0.635 | 1.2 | 3.5 | 20 | 120 | | |
| 0950 | 22.88 | 12.45 | 7.43 | 0.634 | 0.3 | 2.81 | 30 | 120 | | |
| 0955 | 23.08 | 12.22 | 7.29 | 0.640 | 0.0 | 2.15 | 43 | 120 | | |
| 1000 | 23.45 | 11.93 | 7.40 | 0.641 | 0.0 | 1.78 | 42 | 120 | | |
| 1005 | well dry | | | | | | | | | |
| 1330 | returned to well to collect sample after allowing to recharge | | | | | | | | | |
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Note: Collected sample P-18 at 1330 for VOCs

# ATTACHMENT F

# 2018 LEACHATE DISCHARGE SAMPLE DATA

**ADQM DATA REVIEW NARRATIVE**

**Site:** DuPont Ferdula (FER)

**Project**: Leachate Sampling 2018

**Project Reviewer:** Sharon Nordstrom

**Sampling Dates**: September 13, 2018 and October 15, 2018

**Laboratories:** Eurofins Lancaster Laboratories, Lancaster, PA

Alpha Analytical, Westborough, MA

**Analytical Protocols:**

| Analysis | Laboratory | Method Reference |
|---|---|---|
| Target Volatile Organics | Eurofins Lancaster | SW-846 8260C |
| Target Semivolatile Organics | Eurofins Lancaster | SW-846 8270D |
| 1, 4-Dioxane | Alpha Analytical | SW-846 8270D |
| Total Metals - Ba, Cd, Cr, Cu, Fe, Ag, Zn | Eurofins Lancaster | SW-846 3010A/6010C |
| Total Metals - Ni, Pb, As | Eurofins Lancaster | SW-846 3010A mod./6020A |
| Low Level Hg | Alpha Analytical | EPA 1631A Revision E |
| pH | Eurofins Lancaster | SM 4500-H+B-2000 |
| Biochemical Oxygen Demand (BOD5) | Eurofins Lancaster | Standard Methods 5210B-2001 |
| Total Phenols | Eurofins Lancaster | SW-846 9066 |
| Total Cyanide | Eurofins Lancaster | SW-846 9012A |
| Amenable Cyanide | Eurofins Lancaster | SW-846 9012A |
| Hexane-Extractable (HEM) Oil & Grease | Eurofins Lancaster | EPA 1664A |
| Sulfide | Eurofins Lancaster | Standard Methods 4500 S2 F-2000 |
| Total Suspended Solids (TSS) | Eurofins Lancaster | Standard Methods 2540D-1997 |

**Sample Receipt :**

The leachate samples collected on 9/13/18 were received at Eurofins Lancaster Laboratories (Eurofins Lancaster) on 10/5/17 in satisfactory condition and within EPA temperature guidelines (incoming cooler temperatures ranged between 0.3-0.8 degrees C). A field duplicate sample (LEACHATE-D), additional sample volume for the analysis of matrix spikes, and a voa trip blank set were also submitted in the sample set.

Additional leachate and field duplicate samples for the analysis of 1,4-dioxane and low-level mercury were collected on 10/15/18 and submitted to Alpha Analytical (Alpha). The samples were received on October 16, 2018 in satisfactory condition and within EPA temperature guidelines (cooler temperature 4.1 degrees C).

**Data Review:**

The electronic data deliverables submitted for this program were inserted into the Locus EIM™ database, and reviewed via the DuPont Data Review Module, supplemented with a manual review of the laboratory data reports. Some analytical results have been qualified in the database, as discussed below. Please refer to the DuPont DVM Narrative Report for a full listing of the samples that were qualified, the specific reasons for qualification, and potential bias in the reported results.

**Amenable Cyanide:** The non-detect results reported for amenable cyanide in the LEACHATE and LEACHATE-D were R qualified as unusable during the data review process due to very low recoveries (0%) in the associated lab control spike and matrix spike. The laboratory uses control windows of -20% - +20% recovery, so no corrective action or re-analysis was initiated. It should be noted that this analyte typically has very low recoveries at most laboratories and is particularly prone to matrix interferences. It was noted that total cyanide was also not detected in the LEACHATE, the LEACHATE-D, or the lab duplicate, however it was successfully recovered in both the laboratory control spikes and matrix spikes.

**Inorganics and metals:** The non-detect results for Oil & Grease/Hexane Extractables and Sulfide were UJ qualified, and the detections reported for Lead were J qualified as estimated due to low associated matrix spike recoveries.

**Volatile organics:** Trichloroethene was recovered above the laboratory control window in the associated matrix spikes. The detection in the LEACHATE was J qualified due to possible high bias, and both this detection and the Trichloroethene detection in LEACHATE-D should be considered estimated.

**Semi-volatile organics:** 2,4-Dimethyl phenol was recovered below the laboratory control window in the associated matrix spikes. The non-detect reported for this analyte in the LEACHATE was UJ qualified due to possible low bias. The reporting limit for this compound may be higher than shown on the report for both the LEACHATE and LEACHATE-D samples. Interference from the sample matrix has been a contributing factor in low matrix spike recoveries for previous samples collected at this location.

**General Comments**:

All positive results detected between the method detection limit (MDL) and the practical quantitation limit (PQL), were J qualified and should be considered estimated values.

The correlation of positive detections in the LEACHATE and the field duplicate was very good (<30 % RPD).

All sample analyses were completed within the EPA recommended holding time, and the associated QC spikes were recovered within the laboratory acceptance limits. No target volatiles were detected above the reporting limit in the associated trip blank. No other analytical difficulties or anomalies were reported by the laboratory, and, with the exception of Amenable Cyanide, all data is considerable usable.

The laboratory data reports are attached to this memo for reference, and additional information regarding the analyses are provided in the data report narratives. Eurofins Lancaster holds State of New York Laboratory Certification No. 10670, and Alpha holds State of New York Laboratory Certification No. 11148.

**Data Verification Module (DVM)**

The DVM is an internal review process used by the ADQM group to assist with the determination of data usability. The electronic data deliverables received from the laboratory are loaded into the Locus EIM™ database and processed through a series of data quality checks, which are a combination of software (Locus EIM™ database Data Verification Module (DVM)) and manual reviewer evaluations. The data is evaluated against the following data usability checks:

- Field and laboratory blank contamination
- US EPA hold time criteria
- Missing Quality Control (QC) samples
- Matrix spike(MS)/matrix spike duplicate (MSD) recoveries and the relative percent differences (RPDs) between these spikes
- Laboratory control sample(LCS)/control sample duplicate (LCSD) recoveries and the RPD between these spikes
- Surrogate spike recoveries for organic analyses
- RPD between field duplicate sample pairs
- RPD between laboratory replicates for inorganic analyses
- Difference / percent difference between total and dissolved sample pairs.

There are two qualifier fields in EIM:

**Lab Qualifier** is the qualifier assigned by the lab and may not reflect the usability of the data. This qualifier may have many different meanings and can vary between labs and over time within the same lab. Please refer to the laboratory report for a description of the lab qualifiers. As they are lab descriptors they are not to be used when evaluating the data.

**Validation Qualifier** is the 3rd party formal validation qualifier if this was performed. Otherwise this field contains the qualifier resulting from the ADQM DVM review process. This qualifier assesses the usability of the data and may not equal the lab qualifier. The DVM applies the following data evaluation qualifiers to analysis results, as warranted:

| Qualifier | Definition |
|---|---|
| B | Not detected substantially above the level reported in the laboratory or field blanks. |
| R | Unusable result. Analyte may or may not be present in the sample. |
| J | Analyte present. Reported value may not be accurate or precise. |
| UJ | Not detected. Reporting limit may not be accurate or precise. |

The **Validation Status Code** field is set to “DVM” if the ADQM DVM process has been performed. If the DVM has not been run, the field will be blank.

If the DVM has been run (**Validation Status Code** equals “DVM”), use the **Validation Qualifer.**

# DVM Narrative Report

**Site:** Ferdula **Sampling Program:** LEACHATE SAMPLING 2018 **Validation Options:** LABSTATS

**Validation Reason Code:** Associated LCS and/or LCSD analysis had relative percent recovery (RPR) values below the data rejection level. The reported non-detect result is unusable.

| Field Sample ID | Date Sampled | Lab Sample ID | Analyte | Result | Units | Type | MDL | PQL | Validation Qualifier | Analytical Method | Pre-prep | Prep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF2018-LEACHATE | 09/13/2018 | 9802870 | Amenable Cyanide | 0.0050 | MG/L | MDL | 0.0050 | 0.010 | R | 9012B | | 9012B |
| EF2018-LEACHATE-D | 09/13/2018 | 9802874 | Amenable Cyanide | 0.0050 | MG/L | MDL | 0.0050 | 0.010 | R | 9012B | | 9012B |

**Site:** Ferdula **Sampling Program:** LEACHATE SAMPLING 2018 **Validation Options:** LABSTATS

**Validation Reason Code:** Associated MS and/or MSD analysis had relative percent recovery (RPR) values less than the lower control limit. The actual detection limits may be higher than reported.

| Field Sample ID | Date Sampled | Lab Sample ID | Analyte | Result | Units | Type | MDL | PQL | Validation Qualifier | Analytical Method | Pre-prep | Prep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF2018-LEACHATE-D | 09/13/2018 | 9802874 | Oil + Grease, Hexane | 1.4 | MG/L | MDL | 1.4 | 5.0 | UJ | 1664A | | |
| EF2018-LEACHATE-D | 09/13/2018 | 9802874 | Sulfide | 0.70 | MG/L | MDL | 0.70 | 2.0 | UJ | 4500-S2 F-2011 | | |
| EF2018-LEACHATE | 09/13/2018 | 9802870 | 2,4-Dimethylphenol | 3 | UG/L | MDL | 3 | 10 | UJ | 8270D | | 3510C |
| EF2018-LEACHATE | 09/13/2018 | 9802870 | Sulfide | 0.70 | MG/L | MDL | 0.70 | 2.0 | UJ | 4500-S2 F-2011 | | |
| EF2018-LEACHATE | 09/13/2018 | 9802870 | Oil + Grease, Hexane | 1.4 | MG/L | MDL | 1.4 | 5.0 | UJ | 1664A | | |

**Site:** Ferdula **Sampling Program:** LEACHATE SAMPLING 2018 **Validation Options:** LABSTATS

**Validation Reason Code:** Associated MS and/or MSD analysis had relative percent recovery (RPR) values higher than the upper control limit. The reported result may be biased high.

| Field Sample ID | Date Sampled | Lab Sample ID | Analyte | Result | Units | Type | MDL | PQL | Validation Qualifier | Analytical Method | Pre-prep | Prep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF2018-LEACHATE | 09/13/2018 | 9802870 | Trichloroethene | 52 | UG/L | MDL | 0.2 | 1 | J | 8260C | | 5030C |

**Site:** Ferdula **Sampling Program:** LEACHATE SAMPLING 2018 **Validation Options:** LABSTATS

**Validation Reason Code:** Associated MS and/or MSD analysis had relative percent recovery (RPR) values less than the lower control limit but above the rejection limit. The reported result may be biased low.

| Field Sample ID | Date Sampled | Lab Sample ID | Analyte | Result | Units | Type | MDL | PQL | Validation Qualifier | Analytical Method | Pre-prep | Prep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF2018-LEACHATE | 09/13/2018 | 9802870 | Lead | 0.0442 | MG/L | MDL | 0.0011 | 0.0060 | J | 6020A | | 3020A |
| EF2018-LEACHATE-D | 09/13/2018 | 9802874 | Lead | 0.0367 | MG/L | MDL | 0.0011 | 0.0060 | J | 6020A | | 3020A |

**Site:** Ferdula **Sampling Program:** LEACHATE SAMPLING 2018 **Validation Options:** LABSTATS

**Validation Reason Code:** The result is estimated since the concentration is between the method detection limit and practical quantitation limit.

| Field Sample ID | Date Sampled | Lab Sample ID | Analyte | Result | Units | Type | MDL | PQL | Validation Qualifier | Analytical Method | Pre-prep | Prep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF2018-LEACHATE-D | 09/13/2018 | 9802874 | Nickel | 0.0023 | MG/L | MDL | 0.00060 | 0.0080 | J | 6020A | | 3020A |
| EF2018-LEACHATE-D | 09/13/2018 | 9802874 | Zinc | 0.0094 | MG/L | MDL | 0.0030 | 0.0400 | J | 6010C | | 3010A |
| EF2018-LEACHATE-D | 09/13/2018 | 9802874 | Ethyl Chloride | 0.3 | UG/L | MDL | 0.2 | 1 | J | 8260C | | 5030C |
| EF2018-LEACHATE-D | 09/13/2018 | 9802874 | Acetone | 2 | UG/L | MDL | 0.7 | 20 | J | 8260C | | 5030C |
| EF2018-LEACHATE-D | 09/13/2018 | 9802874 | trans-1,2-Dichloroethene | 0.4 | UG/L | MDL | 0.2 | 1 | J | 8260C | | 5030C |
| EF2018-LEACHATE | 09/13/2018 | 9802870 | Nickel | 0.0025 | MG/L | MDL | 0.00060 | 0.0080 | J | 6020A | | 3020A |
| EF2018-LEACHATE | 09/13/2018 | 9802870 | Zinc | 0.0091 | MG/L | MDL | 0.0030 | 0.0400 | J | 6010C | | 3010A |
| EF2018-LEACHATE | 09/13/2018 | 9802870 | Acetone | 5 | UG/L | MDL | 0.7 | 20 | J | 8260C | | 5030C |
| EF2018-LEACHATE | 09/13/2018 | 9802870 | trans-1,2-Dichloroethene | 0.4 | UG/L | MDL | 0.2 | 1 | J | 8260C | | 5030C |

# Certification Information

**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**
**EPA 624/624.1:** m/p-xylene, o-xylene
**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
**EPA 8270D:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

**EPA 6860:** SCM: Perchlorate

**SM4500**: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

**Mansfield Facility**
**SM 2540D:** TSS
**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
**Biological Tissue Matrix:** EPA 3050B

**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

***Drinking Water***
**EPA 300.0**: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
**EPA 332**: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
**Microbiology**: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

***Non-Potable Water***
**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
**EPA 624.1**: Volatile Halocarbons & Aromatics,
**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
**EPA 625.1**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
**Microbiology**: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

**Mansfield Facility:**

***Drinking Water***
**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
**EPA 522.**

***Non-Potable Water***
**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
**EPA 245.1** Hg.
**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

# NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

**Service Centers**
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 10-17-18

ALPHA Job #: L1842204

**Client Information**
Client: Parsons
Address: 301 Plainfield Rd, Ste 350 Syracuse, NY 13212
Phone: 315-552-9673
Fax: 315-451-9570
Email: edward.j.ashton@parsons.com

**Project Information**
Project Name: DuPont-Fordyce Landfill
Project Location: Frankfort, NY
Project #
(Use Project name as Project #) [X]
Project Manager: Ed Ashton
ALPHAQuote #:

**Turn-Around Time**
Standard [X] Due Date:
Rush (only if pre approved) [ ] # of Days:

**Deliverables**
[ ] ASP-A [ ] ASP-B
[ ] EQuIS (1 File) [ ] EQuIS (4 File)
[ ] Other

**Billing Information**
[ ] Same as Client Info
PO #

**Regulatory Requirement**
[ ] NY TOGS [ ] NY Part 375
[ ] AWQ Standards [ ] NY CP-51
[ ] NY Restricted Use [ ] Other
[ ] NY Unrestricted Use
[ ] NYC Sewer Discharge

**Disposal Site Information**
Please identify below location of applicable disposal facilities.
Disposal Facility:
[ ] NJ [ ] NY
[ ] Other:

These samples have been previously analyzed by Alpha [ ]

**Other project specific requirements/comments:**
Contact Sharon Nordstrom of Aecom at 1-302-781-5936 for analysis questions

**Please specify Metals or TAL.**

**ANALYSIS**
1,4-Dioxane via 8270D-SIM
Total Hg (CAF)

**Sample Filtration**
[ ] Done
[ ] Lab to do
**Preservation**
[ ] Lab to do
*(Please Specify below)*

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | 1,4-Dioxane via 8270D-SIM | Total Hg (CAF) | Sample Specific Comments | Total Bottle |
|---|---|---|---|---|---|---|---|---|---|
| 42204-01 | EF248-Leachate | 10-15-18 | 0945 | water | EM/DRD | ✓ | ✓ | | |
| 01 02 | EF2018-Leachate-MS | 10-15-18 | 0945 | water | EM/DRD | ✓ | ✓ | | |
| 01 03 | EF2018-Leachate-MSD | 10-15-18 | 0945 | water | EM/DRD | ✓ | ✓ | | |
| 02 04 | EF2018-Leachate-D | 10-15-18 | 1000 | water | EM/DRD | ✓ | ✓ | | |
| sm 10-18-18 | | | | | | | | | |

Preservative Code:
A = None
B = HCl
C = $HNO_3$
D = $H_2SO_4$
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | A | P | | | | | | | | | | | |
| Preservative | A | B | | | | | | | | | | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Ed Ashton | 10-15-18 <1600 | Chris Tebeau | 10/17/18 10:22 |
| | | | |
| | | | |
| | | | |

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)




ORIGIN ID:SYRA (315) 451-9560
DALE DOLPH

301 PLAINFIELD RD STE 350

SYRACUSE, NY 13212
UNITED STATES US

SHIP DATE: 15OCT18
ACTWGT: 46.30 LB
CAD: 006995061/SSFE1904
DIMS: 24x14x13 IN

BILL THIRD PARTY

TO **PO# 450862.05023**
**ALPHA ANALYTICAL**
**8 WALKUP DR**

**WESTBOROUGH MA 01581**

(508) 898-9220 REF:
INV:
PO: DEPT:

FedEx
Express

TRK# 0201 **7832 5929 7023**

**TUE - 16 OCT 10:30A**
**PRIORITY OVERNIGHT**

**EM BBFA**

**01581**
MA-US **BOS**

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv



# ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

CRG-E.I.DuPont de Nemours & Co
AECOM
Sabre Building
4051 Ogletown Road, Suite 300
Newark DE 19713

Report Date: September 30, 2018 20:00

**Project: FER - LEACHATE SAMPLING**

Account #: 06643
Group Number: 1987210
PO Number: LBIO-67047
State of Sample Origin: NY

Respectfully Submitted,

Nancy Jean Bornholm

Nancy Jean Bornholm
Principal Specialist

(717) 556-7250

To view our laboratory's current scopes of accreditation please go to http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . Historical copies may be requested through your project manager.



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

## SAMPLE INFORMATION

| Client Sample Description | Sample Collection Date/Time | ELLE# |
|---|---|---|
| EF2018_LEACHATE Leachate | 09/13/2018 11:10 | 9802870 |
| EF2018_LEACHATE MS Leachate | 09/13/2018 11:20 | 9802871 |
| EF2018_LEACHATE MSD Leachate | 09/13/2018 11:30 | 9802872 |
| EF2018_LEACHATE Dupl Leachate | 09/13/2018 11:10 | 9802873 |
| EF2018_LEACHATE-D Leachate | 09/13/2018 12:01 | 9802874 |
| EF2018-TB Blank Water | 09/13/2018 11:10 | 9802875 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

Project Name: FER - LEACHATE SAMPLING
ELLE Group #: 1987210

**General Comments:**

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

**SW-846 8260C, GC/MS Volatiles**

Sample #s: 9802870, 9802871, 9802872, 9802874, 9802875

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

Batch #: 5182651AA (Sample number(s): 9802870-9802872, 9802874-9802875 UNSPK: 9802870)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Carbon Tetrachloride, Trichloroethene

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: cis-1,2-Dichloroethene

**SW-846 8270D, GC/MS Semivolatiles**

Batch #: 18260WAM026 (Sample number(s): 9802870-9802872, 9802874 UNSPK: 9802870)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: 2,4-Dimethylphenol

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside acceptance windows: 2,4-Dinitrophenol

**SW-846 6010C, Metals**

Batch #: 182611063602 (Sample number(s): 9802870-9802874 UNSPK: 9802870 BKG: 9802870)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Iron

**SW-846 6020A, Metals**

Batch #: 182611063901A (Sample number(s): 9802870-9802874 UNSPK: 9802870 BKG: 9802870)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Lead

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Nickel

**SW-846 9066, Wet Chemistry**

Batch #: 18262126101A (Sample number(s): 9802874 UNSPK: P798592)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Phenols (water)

Batch #: 18262126101B (Sample number(s): 9802870-9802872 UNSPK: 9802870)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: Phenols (water)

**EPA 1664A, Wet Chemistry**

Batch #: 18263807902A (Sample number(s): 9802870-9802871, 9802874 UNSPK: 9802870)

The recovery(ies) for the following analyte(s) in the MS were below the acceptance window: HEM (oil & grease)

**SM 2540 D-2011, Wet Chemistry**

Batch #: 18261385802A (Sample number(s): 9802870, 9802873 BKG: 9802870)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Total Suspended Solids

Batch #: 18261385802B (Sample number(s): 9802874 BKG: 9802874)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Total Suspended Solids

**SM 4500-S2 F-2011, Wet Chemistry**

Batch #: 18263133301A (Sample number(s): 9802870-9802874 UNSPK: 9802870 BKG: 9802870)

The recovery(ies) for the following analyte(s) in the MS and/or MSD were below the acceptance window: Sulfide

**Sample Description:** **EF2018_LEACHATE Leachate**
**LEACHATE SAMPLING 2018**

**Project Name:** **FER - LEACHATE SAMPLING**

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802870**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | |
| 11997 | **Acetone** | 67-64-1 | **5** | **J** | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 | U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 | U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 | U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 | U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 | U | 0.3 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **250** | | 2 | 10 | 10 |
| 11997 | **trans-1,2-Dichloroethene** | 156-60-5 | **0.4** | **J** | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 | U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 | U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 | U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 | U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 | U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 | U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 | U | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **52** | | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **1** | | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 | U | 1 | 5 | 1 |

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | | **ug/l** | **ug/l** | |
| 14241 | Acenaphthene | 83-32-9 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Acenaphthylene | 208-96-8 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Anthracene | 120-12-7 | 0.1 | U | 0.1 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **EF2018_LEACHATE Leachate**
**LEACHATE SAMPLING 2018**

**Project Name:** **FER - LEACHATE SAMPLING**

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802870**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | **ug/l** | **ug/l** | |
| 14241 | Benzo(a)anthracene | 56-55-3 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Benzo(a)pyrene | 50-32-8 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Benzo(b)fluoranthene | 205-99-2 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Benzo(g,h,i)perylene | 191-24-2 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Benzo(k)fluoranthene | 207-08-9 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | 4-Bromophenyl-phenylether | 101-55-3 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | Butylbenzylphthalate | 85-68-7 | 2 U | 2 | 5 | 1 |
| 14241 | Di-n-butylphthalate | 84-74-2 | 2 U | 2 | 5 | 1 |
| 14241 | Carbazole | 86-74-8 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 4-Chloro-3-methylphenol | 59-50-7 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 4-Chloroaniline | 106-47-8 | 4 U | 4 | 10 | 1 |
| 14241 | bis(2-Chloroethoxy)methane | 111-91-1 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | bis(2-Chloroethyl)ether | 111-44-4 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 2-Chloronaphthalene | 91-58-7 | 0.4 U | 0.4 | 1 | 1 |
| 14241 | 2-Chlorophenol | 95-57-8 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 4-Chlorophenyl-phenylether | 7005-72-3 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | 0.5 U | 0.5 | 2 | 1 |
| | Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds. | | | | | |
| 14241 | Chrysene | 218-01-9 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Dibenz(a,h)anthracene | 53-70-3 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Dibenzofuran | 132-64-9 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 1,2-Dichlorobenzene | 95-50-1 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 1,3-Dichlorobenzene | 541-73-1 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 1,4-Dichlorobenzene | 106-46-7 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 3,3'-Dichlorobenzidine | 91-94-1 | 3 U | 3 | 10 | 1 |
| 14241 | 2,4-Dichlorophenol | 120-83-2 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | Diethylphthalate | 84-66-2 | 2 U | 2 | 5 | 1 |
| 14241 | 2,4-Dimethylphenol | 105-67-9 | 3 U | 3 | 10 | 1 |
| 14241 | Dimethylphthalate | 131-11-3 | 2 U | 2 | 5 | 1 |
| 14241 | 4,6-Dinitro-2-methylphenol | 534-52-1 | 8 U | 8 | 21 | 1 |
| 14241 | 2,4-Dinitrophenol | 51-28-5 | 14 U | 14 | 30 | 1 |
| 14241 | 2,4-Dinitrotoluene | 121-14-2 | 1 U | 1 | 5 | 1 |
| 14241 | 2,6-Dinitrotoluene | 606-20-2 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 5 U | 5 | 11 | 1 |
| 14241 | Fluoranthene | 206-44-0 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Fluorene | 86-73-7 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Hexachlorobenzene | 118-74-1 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Hexachlorobutadiene | 87-68-3 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | Hexachlorocyclopentadiene | 77-47-4 | 5 U | 5 | 11 | 1 |
| 14241 | Hexachloroethane | 67-72-1 | 1 U | 1 | 5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802870**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | **ug/l** | **ug/l** | |
| 14241 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Isophorone | 78-59-1 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 2-Methylnaphthalene | 91-57-6 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | 2-Methylphenol | 95-48-7 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 4-Methylphenol | 106-44-5 | 0.5 U | 0.5 | 2 | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 14241 | Naphthalene | 91-20-3 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | 2-Nitroaniline | 88-74-4 | 2 U | 2 | 7 | 1 |
| 14241 | 3-Nitroaniline | 99-09-2 | 3 U | 3 | 7 | 1 |
| 14241 | 4-Nitroaniline | 100-01-6 | 0.9 U | 0.9 | 3 | 1 |
| 14241 | Nitrobenzene | 98-95-3 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 2-Nitrophenol | 88-75-5 | 3 U | 3 | 10 | 1 |
| 14241 | 4-Nitrophenol | 100-02-7 | 10 U | 10 | 30 | 1 |
| 14241 | N-Nitroso-di-n-propylamine | 621-64-7 | 0.7 U | 0.7 | 3 | 1 |
| 14241 | N-Nitrosodiphenylamine | 86-30-6 | 0.7 U | 0.7 | 3 | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 14241 | Di-n-octylphthalate | 117-84-0 | 5 U | 5 | 11 | 1 |
| 14241 | Pentachlorophenol | 87-86-5 | 1 U | 1 | 5 | 1 |
| 14241 | Phenanthrene | 85-01-8 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Phenol | 108-95-2 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | Pyrene | 129-00-0 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | 1,2,4-Trichlorobenzene | 120-82-1 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 2,4,5-Trichlorophenol | 95-95-4 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 2,4,6-Trichlorophenol | 88-06-2 | 0.5 U | 0.5 | 2 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | |
| 07046 | **Barium** | 7440-39-3 | **0.509** | 0.0010 | 0.0100 | 1 |
| 07049 | Cadmium | 7440-43-9 | 0.0010 U | 0.0010 | 0.0100 | 1 |
| 07051 | Chromium | 7440-47-3 | 0.0053 U | 0.0053 | 0.0300 | 1 |
| 07053 | Copper | 7440-50-8 | 0.0062 U | 0.0062 | 0.0400 | 1 |
| 01754 | **Iron** | 7439-89-6 | **36.4** | 0.0400 | 0.400 | 1 |
| 07066 | Silver | 7440-22-4 | 0.0050 U | 0.0050 | 0.0200 | 1 |
| 07072 | **Zinc** | 7440-66-6 | **0.0091 J** | 0.0030 | 0.0400 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | **Arsenic** | 7440-38-2 | **0.0157** | 0.00068 | 0.0040 | 1 |
| 06035 | **Lead** | 7439-92-1 | **0.0442** | 0.0011 | 0.0060 | 1 |
| 06039 | **Nickel** | 7440-02-0 | **0.0025 J** | 0.00060 | 0.0080 | 1 |
| **Wet Chemistry** | **SW-846 9012B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802870**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Wet Chemistry** | **SW-846 9012B** | | **mg/l** | **mg/l** | **mg/l** | |
| 01549 | Amenable Cyanide (water) | n.a. | 0.0050 U | 0.0050 | 0.010 | 1 |
| 08255 | Total Cyanide (water) | 57-12-5 | 0.0050 U | 0.0050 | 0.010 | 1 |
| | **SW-846 9066** | | **mg/l** | **mg/l** | **mg/l** | |
| 14088 | Phenols (water) | n.a. | 0.010 U | 0.010 | 0.020 | 1 |
| | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | 1.4 U | 1.4 | 5.0 | 1 |
| | **EPA 170.1** | | **Degrees C** | **Degrees C** | **Degrees C** | |
| 12151 | **Temperature of pH** | n.a. | **19.7** | 0.010 | 0.010 | 1 |
| | **SM 2540 D-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 13858 | **Total Suspended Solids** | n.a. | **71.3** | 7.00 | 21.0 | 1 |
| | **SM 4500-H+ B-2011** | | **Std. Units** | **Std. Units** | **Std. Units** | |
| 12152 | **pH** | n.a. | **6.7** | 0.010 | 0.010 | 1 |
| | **SM 4500-S2 F-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 01333 | Sulfide | 18496-25-8 | 0.70 U | 0.70 | 2.0 | 1 |
| | **SM 5210 B-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 14108 | **Biochemical Oxygen Demand-BOD** | n.a. | **7.24** | 2.00 | 2.00 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5182651AA | 09/22/2018 16:16 | Patrick T Herres | 1 |
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5182651AA | 09/22/2018 18:47 | Patrick T Herres | 10 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5182651AA | 09/22/2018 16:16 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 2 | 5182651AA | 09/22/2018 18:47 | Patrick T Herres | 10 |
| 14241 | TCL SVOCs 8270D | SW-846 8270D | 1 | 18260WAM026 | 09/20/2018 01:08 | Ashley R Transue | 1 |
| 11010 | 8270D BNA Extraction | SW-846 3510C | 1 | 18260WAM026 | 09/18/2018 08:30 | Logan M Brosemer | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:13 | Elaine F Stoltzfus | 1 |
| 07049 | Cadmium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:13 | Elaine F Stoltzfus | 1 |
| 07051 | Chromium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:13 | Elaine F Stoltzfus | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:13 | Elaine F Stoltzfus | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:13 | Elaine F Stoltzfus | 1 |
| 07066 | Silver | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:13 | Elaine F Stoltzfus | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **EF2018_LEACHATE Leachate**
**LEACHATE SAMPLING 2018**

**Project Name:** **FER - LEACHATE SAMPLING**

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802870**
**ELLE Group #: 1987210**
**Matrix: Leachate**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07072 | Zinc | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:13 | Elaine F Stoltzfus | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:45 | Bradley M Berlot | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:45 | Bradley M Berlot | 1 |
| 06039 | Nickel | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:45 | Bradley M Berlot | 1 |
| 10636 | ICP-WW/TL, 3010A (tot) - U4 | SW-846 3010A | 1 | 182611063602 | 09/19/2018 05:30 | Annamaria Kuhns | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 182611063901 | 09/19/2018 07:28 | James L Mertz | 1 |
| 01549 | Amenable Cyanide (water) | SW-846 9012B | 1 | 18261103101A | 09/18/2018 20:44 | Gregory Baldree | 1 |
| 08255 | Total Cyanide (water) | SW-846 9012B | 1 | 18262117101A | 09/20/2018 11:01 | Brianna A Poole | 1 |
| 14088 | Phenols (water) | SW-846 9066 | 1 | 18262126101B | 09/19/2018 12:48 | Brianna A Poole | 1 |
| 01548 | Amenable Cyanide Water Distill | SW-846 9012B | 1 | 18261103101A | 09/18/2018 06:50 | Nancy J Shoop | 1 |
| 08256 | Cyanide Water Distillation | SW-846 9012B | 1 | 18262117101A | 09/19/2018 18:15 | Barbara A Washington | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 18263807902A | 09/20/2018 08:12 | Yolunder Y Bunch | 1 |
| 12151 | Temperature of pH | EPA 170.1 | 1 | 18257121521A | 09/14/2018 19:20 | Jeremy L Bolf | 1 |
| 13858 | Total Suspended Solids | SM 2540 D-2011 | 1 | 18261385802A | 09/18/2018 13:36 | Amy L Hankins | 1 |
| 12152 | pH | SM 4500-H+ B-2011 | 1 | 18257121521A | 09/14/2018 19:20 | Jeremy L Bolf | 1 |
| 01333 | Sulfide | SM 4500-S2 F-2011 | 1 | 18263133301A | 09/20/2018 09:50 | Kevin Litwa | 1 |
| 14108 | Biochemical Oxygen Demand-BOD | SM 5210 B-2011 | 1 | 18257141084A | 09/14/2018 23:34 | Joseph Knisely | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE MS Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:20

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802871**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | |
| 11997 | **Acetone** | 67-64-1 | **150** | | 0.7 | 20 | 1 |
| 11997 | **Benzene** | 71-43-2 | **21** | | 0.2 | 1 | 1 |
| 11997 | **Bromodichloromethane** | 75-27-4 | **21** | | 0.2 | 1 | 1 |
| 11997 | **Bromoform** | 75-25-2 | **18** | | 0.2 | 4 | 1 |
| 11997 | **Bromomethane** | 74-83-9 | **21** | | 0.3 | 1 | 1 |
| 11997 | **2-Butanone** | 78-93-3 | **130** | | 0.3 | 10 | 1 |
| 11997 | **Carbon Disulfide** | 75-15-0 | **21** | | 0.2 | 5 | 1 |
| 11997 | **Carbon Tetrachloride** | 56-23-5 | **29** | | 0.2 | 1 | 1 |
| 11997 | **Chlorobenzene** | 108-90-7 | **21** | | 0.2 | 1 | 1 |
| 11997 | **Chloroethane** | 75-00-3 | **21** | | 0.2 | 1 | 1 |
| 11997 | **Chloroform** | 67-66-3 | **22** | | 0.2 | 1 | 1 |
| 11997 | **Chloromethane** | 74-87-3 | **16** | | 0.2 | 1 | 1 |
| 11997 | **Dibromochloromethane** | 124-48-1 | **20** | | 0.2 | 1 | 1 |
| 11997 | **1,1-Dichloroethane** | 75-34-3 | **21** | | 0.2 | 1 | 1 |
| 11997 | **1,2-Dichloroethane** | 107-06-2 | **21** | | 0.3 | 1 | 1 |
| 11997 | **1,1-Dichloroethene** | 75-35-4 | **26** | | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **310** | **E** | 0.2 | 1 | 1 |
| 11997 | **trans-1,2-Dichloroethene** | 156-60-5 | **23** | | 0.2 | 1 | 1 |
| 11997 | **1,2-Dichloropropane** | 78-87-5 | **20** | | 0.2 | 1 | 1 |
| 11997 | **cis-1,3-Dichloropropene** | 10061-01-5 | **18** | | 0.2 | 1 | 1 |
| 11997 | **trans-1,3-Dichloropropene** | 10061-02-6 | **17** | | 0.2 | 1 | 1 |
| 11997 | **Ethylbenzene** | 100-41-4 | **21** | | 0.4 | 1 | 1 |
| 11997 | **2-Hexanone** | 591-78-6 | **83** | | 0.3 | 10 | 1 |
| 11997 | **4-Methyl-2-pentanone** | 108-10-1 | **89** | | 0.5 | 10 | 1 |
| 11997 | **Methylene Chloride** | 75-09-2 | **22** | | 0.3 | 1 | 1 |
| 11997 | **Styrene** | 100-42-5 | **20** | | 0.2 | 5 | 1 |
| 11997 | **1,1,2,2-Tetrachloroethane** | 79-34-5 | **15** | | 0.2 | 1 | 1 |
| 11997 | **Tetrachloroethene** | 127-18-4 | **24** | | 0.2 | 1 | 1 |
| 11997 | **Toluene** | 108-88-3 | **21** | | 0.2 | 1 | 1 |
| 11997 | **1,1,1-Trichloroethane** | 71-55-6 | **24** | | 0.3 | 1 | 1 |
| 11997 | **1,1,2-Trichloroethane** | 79-00-5 | **19** | | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **72** | | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **20** | | 0.2 | 1 | 1 |
| 11997 | **Xylene (Total)** | 1330-20-7 | **65** | | 1 | 5 | 1 |

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | | **ug/l** | **ug/l** | |
| 14241 | **Acenaphthene** | 83-32-9 | **45** | | 0.1 | 0.5 | 1 |
| 14241 | **Acenaphthylene** | 208-96-8 | **48** | | 0.1 | 0.5 | 1 |
| 14241 | **Anthracene** | 120-12-7 | **48** | | 0.1 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE MS Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:20

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802871**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | ug/l | ug/l | ug/l | |
| 14241 | **Benzo(a)anthracene** | 56-55-3 | **52** | 0.1 | 0.5 | 1 |
| 14241 | **Benzo(a)pyrene** | 50-32-8 | **49** | 0.1 | 0.5 | 1 |
| 14241 | **Benzo(b)fluoranthene** | 205-99-2 | **47** | 0.1 | 0.5 | 1 |
| 14241 | **Benzo(g,h,i)perylene** | 191-24-2 | **44** | 0.1 | 0.5 | 1 |
| 14241 | **Benzo(k)fluoranthene** | 207-08-9 | **48** | 0.1 | 0.5 | 1 |
| 14241 | **4-Bromophenyl-phenylether** | 101-55-3 | **45** | 0.5 | 2 | 1 |
| 14241 | **Butylbenzylphthalate** | 85-68-7 | **49** | 2 | 5 | 1 |
| 14241 | **Di-n-butylphthalate** | 84-74-2 | **49** | 2 | 5 | 1 |
| 14241 | **Carbazole** | 86-74-8 | **50** | 0.5 | 2 | 1 |
| 14241 | **4-Chloro-3-methylphenol** | 59-50-7 | **41** | 0.5 | 2 | 1 |
| 14241 | **4-Chloroaniline** | 106-47-8 | **31** | 4 | 10 | 1 |
| 14241 | **bis(2-Chloroethoxy)methane** | 111-91-1 | **42** | 0.5 | 2 | 1 |
| 14241 | **bis(2-Chloroethyl)ether** | 111-44-4 | **38** | 0.5 | 2 | 1 |
| 14241 | **2-Chloronaphthalene** | 91-58-7 | **41** | 0.4 | 1 | 1 |
| 14241 | **2-Chlorophenol** | 95-57-8 | **36** | 0.5 | 2 | 1 |
| 14241 | **4-Chlorophenyl-phenylether** | 7005-72-3 | **44** | 0.5 | 2 | 1 |
| 14241 | **2,2'-oxybis(1-Chloropropane)** | 108-60-1 | **37** | 0.5 | 2 | 1 |
| | Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds. | | | | | |
| 14241 | **Chrysene** | 218-01-9 | **49** | 0.1 | 0.5 | 1 |
| 14241 | **Dibenz(a,h)anthracene** | 53-70-3 | **48** | 0.1 | 0.5 | 1 |
| 14241 | **Dibenzofuran** | 132-64-9 | **45** | 0.5 | 2 | 1 |
| 14241 | **1,2-Dichlorobenzene** | 95-50-1 | **35** | 0.5 | 2 | 1 |
| 14241 | **1,3-Dichlorobenzene** | 541-73-1 | **34** | 0.5 | 2 | 1 |
| 14241 | **1,4-Dichlorobenzene** | 106-46-7 | **35** | 0.5 | 2 | 1 |
| 14241 | **3,3'-Dichlorobenzidine** | 91-94-1 | **47** | 3 | 10 | 1 |
| 14241 | **2,4-Dichlorophenol** | 120-83-2 | **41** | 0.5 | 2 | 1 |
| 14241 | **Diethylphthalate** | 84-66-2 | **43** | 2 | 5 | 1 |
| 14241 | **2,4-Dimethylphenol** | 105-67-9 | **25** | 3 | 10 | 1 |
| 14241 | **Dimethylphthalate** | 131-11-3 | **38** | 2 | 5 | 1 |
| 14241 | **4,6-Dinitro-2-methylphenol** | 534-52-1 | **52** | 8 | 21 | 1 |
| 14241 | **2,4-Dinitrophenol** | 51-28-5 | **91** | 14 | 30 | 1 |
| 14241 | **2,4-Dinitrotoluene** | 121-14-2 | **46** | 1 | 5 | 1 |
| 14241 | **2,6-Dinitrotoluene** | 606-20-2 | **47** | 0.5 | 2 | 1 |
| 14241 | **bis(2-Ethylhexyl)phthalate** | 117-81-7 | **53** | 5 | 11 | 1 |
| 14241 | **Fluoranthene** | 206-44-0 | **51** | 0.1 | 0.5 | 1 |
| 14241 | **Fluorene** | 86-73-7 | **46** | 0.1 | 0.5 | 1 |
| 14241 | **Hexachlorobenzene** | 118-74-1 | **46** | 0.1 | 0.5 | 1 |
| 14241 | **Hexachlorobutadiene** | 87-68-3 | **36** | 0.5 | 2 | 1 |
| 14241 | **Hexachlorocyclopentadiene** | 77-47-4 | **59** | 5 | 11 | 1 |
| 14241 | **Hexachloroethane** | 67-72-1 | **31** | 1 | 5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE MS Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:20

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802871**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | **ug/l** | **ug/l** | |
| 14241 | **Indeno(1,2,3-cd)pyrene** | 193-39-5 | **46** | 0.1 | 0.5 | 1 |
| 14241 | **Isophorone** | 78-59-1 | **43** | 0.5 | 2 | 1 |
| 14241 | **2-Methylnaphthalene** | 91-57-6 | **41** | 0.1 | 0.5 | 1 |
| 14241 | **2-Methylphenol** | 95-48-7 | **34** | 0.5 | 2 | 1 |
| 14241 | **4-Methylphenol** | 106-44-5 | **31** | 0.5 | 2 | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 14241 | **Naphthalene** | 91-20-3 | **40** | 0.1 | 0.5 | 1 |
| 14241 | **2-Nitroaniline** | 88-74-4 | **48** | 2 | 7 | 1 |
| 14241 | **3-Nitroaniline** | 99-09-2 | **40** | 3 | 7 | 1 |
| 14241 | **4-Nitroaniline** | 100-01-6 | **41** | 0.9 | 3 | 1 |
| 14241 | **Nitrobenzene** | 98-95-3 | **41** | 0.5 | 2 | 1 |
| 14241 | **2-Nitrophenol** | 88-75-5 | **47** | 3 | 10 | 1 |
| 14241 | **4-Nitrophenol** | 100-02-7 | **36** | 10 | 30 | 1 |
| 14241 | **N-Nitroso-di-n-propylamine** | 621-64-7 | **41** | 0.7 | 3 | 1 |
| 14241 | **N-Nitrosodiphenylamine** | 86-30-6 | **47** | 0.7 | 3 | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 14241 | **Di-n-octylphthalate** | 117-84-0 | **45** | 5 | 11 | 1 |
| 14241 | **Pentachlorophenol** | 87-86-5 | **54** | 1 | 5 | 1 |
| 14241 | **Phenanthrene** | 85-01-8 | **46** | 0.1 | 0.5 | 1 |
| 14241 | **Phenol** | 108-95-2 | **22** | 0.5 | 2 | 1 |
| 14241 | **Pyrene** | 129-00-0 | **46** | 0.1 | 0.5 | 1 |
| 14241 | **1,2,4-Trichlorobenzene** | 120-82-1 | **38** | 0.5 | 2 | 1 |
| 14241 | **2,4,5-Trichlorophenol** | 95-95-4 | **49** | 0.5 | 2 | 1 |
| 14241 | **2,4,6-Trichlorophenol** | 88-06-2 | **49** | 0.5 | 2 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | |
| 07046 | **Barium** | 7440-39-3 | **2.51** | 0.0010 | 0.0100 | 1 |
| 07049 | **Cadmium** | 7440-43-9 | **0.0501** | 0.0010 | 0.0100 | 1 |
| 07051 | **Chromium** | 7440-47-3 | **0.202** | 0.0053 | 0.0300 | 1 |
| 07053 | **Copper** | 7440-50-8 | **0.262** | 0.0062 | 0.0400 | 1 |
| 01754 | **Iron** | 7439-89-6 | **36.5** | 0.0400 | 0.400 | 1 |
| 07066 | **Silver** | 7440-22-4 | **0.0535** | 0.0050 | 0.0200 | 1 |
| 07072 | **Zinc** | 7440-66-6 | **0.514** | 0.0030 | 0.0400 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | **Arsenic** | 7440-38-2 | **0.0259** | 0.00068 | 0.0040 | 1 |
| 06035 | **Lead** | 7439-92-1 | **0.0549** | 0.0011 | 0.0060 | 1 |
| 06039 | **Nickel** | 7440-02-0 | **0.0567** | 0.00060 | 0.0080 | 1 |
| **Wet Chemistry** | **SW-846 9012B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE MS Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:20

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802871**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Wet Chemistry** | **SW-846 9012B** | | **mg/l** | **mg/l** | **mg/l** | |
| 01549 | **Amenable Cyanide (water)** | n.a. | **0.18** | 0.0050 | 0.010 | 1 |
| 08255 | **Total Cyanide (water)** | 57-12-5 | **0.18** | 0.0050 | 0.010 | 1 |
| | **SW-846 9066** | | **mg/l** | **mg/l** | **mg/l** | |
| 14088 | **Phenols (water)** | n.a. | **0.22** | 0.010 | 0.020 | 1 |
| | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | **HEM (oil & grease)** | n.a. | **17.5** | 1.4 | 5.0 | 1 |
| | **SM 4500-S2 F-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 01333 | **Sulfide** | 18496-25-8 | **7.3** | 0.70 | 2.0 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5182651AA | 09/22/2018 16:38 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5182651AA | 09/22/2018 16:38 | Patrick T Herres | 1 |
| 14241 | TCL SVOCs 8270D | SW-846 8270D | 1 | 18260WAM026 | 09/20/2018 01:36 | Ashley R Transue | 1 |
| 11010 | 8270D BNA Extraction | SW-846 3510C | 1 | 18260WAM026 | 09/18/2018 08:30 | Logan M Brosemer | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:21 | Elaine F Stoltzfus | 1 |
| 07049 | Cadmium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:21 | Elaine F Stoltzfus | 1 |
| 07051 | Chromium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:21 | Elaine F Stoltzfus | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:21 | Elaine F Stoltzfus | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:21 | Elaine F Stoltzfus | 1 |
| 07066 | Silver | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:21 | Elaine F Stoltzfus | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:21 | Elaine F Stoltzfus | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:50 | Bradley M Berlot | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:50 | Bradley M Berlot | 1 |
| 06039 | Nickel | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:50 | Bradley M Berlot | 1 |
| 10636 | ICP-WW/TL, 3010A (tot) - U4 | SW-846 3010A | 1 | 182611063602 | 09/19/2018 05:30 | Annamaria Kuhns | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 182611063901 | 09/19/2018 07:28 | James L Mertz | 1 |
| 01549 | Amenable Cyanide (water) | SW-846 9012B | 1 | 18261103101A | 09/18/2018 20:46 | Gregory Baldree | 1 |
| 08255 | Total Cyanide (water) | SW-846 9012B | 1 | 18262117101A | 09/20/2018 11:02 | Brianna A Poole | 1 |
| 14088 | Phenols (water) | SW-846 9066 | 1 | 18262126101B | 09/19/2018 12:51 | Brianna A Poole | 1 |
| 01548 | Amenable Cyanide Water Distill | SW-846 9012B | 1 | 18261103101A | 09/18/2018 06:50 | Nancy J Shoop | 1 |
| 08256 | Cyanide Water Distillation | SW-846 9012B | 1 | 18262117101A | 09/19/2018 18:15 | Barbara A Washington | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 18263807902A | 09/20/2018 08:12 | Yolunder Y Bunch | 1 |
| 01333 | Sulfide | SM 4500-S2 F-2011 | 1 | 18263133301A | 09/20/2018 09:50 | Kevin Litwa | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE MSD Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:30

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802872**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | | **ug/l** | **ug/l** | |
| 11997 | **Acetone** | 67-64-1 | **140** | | 0.7 | 20 | 1 |
| 11997 | **Benzene** | 71-43-2 | **21** | | 0.2 | 1 | 1 |
| 11997 | **Bromodichloromethane** | 75-27-4 | **20** | | 0.2 | 1 | 1 |
| 11997 | **Bromoform** | 75-25-2 | **18** | | 0.2 | 4 | 1 |
| 11997 | **Bromomethane** | 74-83-9 | **21** | | 0.3 | 1 | 1 |
| 11997 | **2-Butanone** | 78-93-3 | **140** | | 0.3 | 10 | 1 |
| 11997 | **Carbon Disulfide** | 75-15-0 | **21** | | 0.2 | 5 | 1 |
| 11997 | **Carbon Tetrachloride** | 56-23-5 | **28** | | 0.2 | 1 | 1 |
| 11997 | **Chlorobenzene** | 108-90-7 | **20** | | 0.2 | 1 | 1 |
| 11997 | **Chloroethane** | 75-00-3 | **22** | | 0.2 | 1 | 1 |
| 11997 | **Chloroform** | 67-66-3 | **22** | | 0.2 | 1 | 1 |
| 11997 | **Chloromethane** | 74-87-3 | **17** | | 0.2 | 1 | 1 |
| 11997 | **Dibromochloromethane** | 124-48-1 | **20** | | 0.2 | 1 | 1 |
| 11997 | **1,1-Dichloroethane** | 75-34-3 | **20** | | 0.2 | 1 | 1 |
| 11997 | **1,2-Dichloroethane** | 107-06-2 | **21** | | 0.3 | 1 | 1 |
| 11997 | **1,1-Dichloroethene** | 75-35-4 | **26** | | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **320** | **E** | 0.2 | 1 | 1 |
| 11997 | **trans-1,2-Dichloroethene** | 156-60-5 | **24** | | 0.2 | 1 | 1 |
| 11997 | **1,2-Dichloropropane** | 78-87-5 | **20** | | 0.2 | 1 | 1 |
| 11997 | **cis-1,3-Dichloropropene** | 10061-01-5 | **18** | | 0.2 | 1 | 1 |
| 11997 | **trans-1,3-Dichloropropene** | 10061-02-6 | **18** | | 0.2 | 1 | 1 |
| 11997 | **Ethylbenzene** | 100-41-4 | **21** | | 0.4 | 1 | 1 |
| 11997 | **2-Hexanone** | 591-78-6 | **84** | | 0.3 | 10 | 1 |
| 11997 | **4-Methyl-2-pentanone** | 108-10-1 | **90** | | 0.5 | 10 | 1 |
| 11997 | **Methylene Chloride** | 75-09-2 | **22** | | 0.3 | 1 | 1 |
| 11997 | **Styrene** | 100-42-5 | **20** | | 0.2 | 5 | 1 |
| 11997 | **1,1,2,2-Tetrachloroethane** | 79-34-5 | **16** | | 0.2 | 1 | 1 |
| 11997 | **Tetrachloroethene** | 127-18-4 | **23** | | 0.2 | 1 | 1 |
| 11997 | **Toluene** | 108-88-3 | **21** | | 0.2 | 1 | 1 |
| 11997 | **1,1,1-Trichloroethane** | 71-55-6 | **24** | | 0.3 | 1 | 1 |
| 11997 | **1,1,2-Trichloroethane** | 79-00-5 | **19** | | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **77** | | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **21** | | 0.2 | 1 | 1 |
| 11997 | **Xylene (Total)** | 1330-20-7 | **65** | | 1 | 5 | 1 |

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | | **ug/l** | **ug/l** | |
| 14241 | **Acenaphthene** | 83-32-9 | **44** | | 0.1 | 0.5 | 1 |
| 14241 | **Acenaphthylene** | 208-96-8 | **47** | | 0.1 | 0.5 | 1 |
| 14241 | **Anthracene** | 120-12-7 | **47** | | 0.1 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE MSD Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:30

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802872**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | ug/l | ug/l | ug/l | |
| 14241 | **Benzo(a)anthracene** | 56-55-3 | **50** | 0.1 | 0.5 | 1 |
| 14241 | **Benzo(a)pyrene** | 50-32-8 | **49** | 0.1 | 0.5 | 1 |
| 14241 | **Benzo(b)fluoranthene** | 205-99-2 | **47** | 0.1 | 0.5 | 1 |
| 14241 | **Benzo(g,h,i)perylene** | 191-24-2 | **43** | 0.1 | 0.5 | 1 |
| 14241 | **Benzo(k)fluoranthene** | 207-08-9 | **47** | 0.1 | 0.5 | 1 |
| 14241 | **4-Bromophenyl-phenylether** | 101-55-3 | **44** | 0.5 | 2 | 1 |
| 14241 | **Butylbenzylphthalate** | 85-68-7 | **48** | 2 | 5 | 1 |
| 14241 | **Di-n-butylphthalate** | 84-74-2 | **48** | 2 | 5 | 1 |
| 14241 | **Carbazole** | 86-74-8 | **50** | 0.5 | 2 | 1 |
| 14241 | **4-Chloro-3-methylphenol** | 59-50-7 | **41** | 0.5 | 2 | 1 |
| 14241 | **4-Chloroaniline** | 106-47-8 | **30** | 4 | 10 | 1 |
| 14241 | **bis(2-Chloroethoxy)methane** | 111-91-1 | **42** | 0.5 | 2 | 1 |
| 14241 | **bis(2-Chloroethyl)ether** | 111-44-4 | **39** | 0.5 | 2 | 1 |
| 14241 | **2-Chloronaphthalene** | 91-58-7 | **40** | 0.4 | 1 | 1 |
| 14241 | **2-Chlorophenol** | 95-57-8 | **35** | 0.5 | 2 | 1 |
| 14241 | **4-Chlorophenyl-phenylether** | 7005-72-3 | **43** | 0.5 | 2 | 1 |
| 14241 | **2,2'-oxybis(1-Chloropropane)** | 108-60-1 | **36** | 0.5 | 2 | 1 |
| | Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds. | | | | | |
| 14241 | **Chrysene** | 218-01-9 | **47** | 0.1 | 0.5 | 1 |
| 14241 | **Dibenz(a,h)anthracene** | 53-70-3 | **48** | 0.1 | 0.5 | 1 |
| 14241 | **Dibenzofuran** | 132-64-9 | **44** | 0.5 | 2 | 1 |
| 14241 | **1,2-Dichlorobenzene** | 95-50-1 | **37** | 0.5 | 2 | 1 |
| 14241 | **1,3-Dichlorobenzene** | 541-73-1 | **35** | 0.5 | 2 | 1 |
| 14241 | **1,4-Dichlorobenzene** | 106-46-7 | **35** | 0.5 | 2 | 1 |
| 14241 | **3,3'-Dichlorobenzidine** | 91-94-1 | **44** | 3 | 10 | 1 |
| 14241 | **2,4-Dichlorophenol** | 120-83-2 | **40** | 0.5 | 2 | 1 |
| 14241 | **Diethylphthalate** | 84-66-2 | **45** | 2 | 5 | 1 |
| 14241 | **2,4-Dimethylphenol** | 105-67-9 | **28** | 3 | 10 | 1 |
| 14241 | **Dimethylphthalate** | 131-11-3 | **42** | 2 | 5 | 1 |
| 14241 | **4,6-Dinitro-2-methylphenol** | 534-52-1 | **50** | 8 | 21 | 1 |
| 14241 | **2,4-Dinitrophenol** | 51-28-5 | **66** | 14 | 30 | 1 |
| 14241 | **2,4-Dinitrotoluene** | 121-14-2 | **47** | 1 | 5 | 1 |
| 14241 | **2,6-Dinitrotoluene** | 606-20-2 | **48** | 0.5 | 2 | 1 |
| 14241 | **bis(2-Ethylhexyl)phthalate** | 117-81-7 | **49** | 5 | 11 | 1 |
| 14241 | **Fluoranthene** | 206-44-0 | **49** | 0.1 | 0.5 | 1 |
| 14241 | **Fluorene** | 86-73-7 | **46** | 0.1 | 0.5 | 1 |
| 14241 | **Hexachlorobenzene** | 118-74-1 | **44** | 0.1 | 0.5 | 1 |
| 14241 | **Hexachlorobutadiene** | 87-68-3 | **36** | 0.5 | 2 | 1 |
| 14241 | **Hexachlorocyclopentadiene** | 77-47-4 | **58** | 5 | 11 | 1 |
| 14241 | **Hexachloroethane** | 67-72-1 | **31** | 1 | 5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE MSD Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:30

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802872**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | **ug/l** | **ug/l** | |
| 14241 | **Indeno(1,2,3-cd)pyrene** | 193-39-5 | **45** | 0.1 | 0.5 | 1 |
| 14241 | **Isophorone** | 78-59-1 | **42** | 0.5 | 2 | 1 |
| 14241 | **2-Methylnaphthalene** | 91-57-6 | **40** | 0.1 | 0.5 | 1 |
| 14241 | **2-Methylphenol** | 95-48-7 | **34** | 0.5 | 2 | 1 |
| 14241 | **4-Methylphenol** | 106-44-5 | **32** | 0.5 | 2 | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 14241 | **Naphthalene** | 91-20-3 | **39** | 0.1 | 0.5 | 1 |
| 14241 | **2-Nitroaniline** | 88-74-4 | **50** | 2 | 7 | 1 |
| 14241 | **3-Nitroaniline** | 99-09-2 | **41** | 3 | 7 | 1 |
| 14241 | **4-Nitroaniline** | 100-01-6 | **41** | 0.9 | 3 | 1 |
| 14241 | **Nitrobenzene** | 98-95-3 | **39** | 0.5 | 2 | 1 |
| 14241 | **2-Nitrophenol** | 88-75-5 | **44** | 3 | 10 | 1 |
| 14241 | **4-Nitrophenol** | 100-02-7 | **36** | 10 | 30 | 1 |
| 14241 | **N-Nitroso-di-n-propylamine** | 621-64-7 | **41** | 0.7 | 3 | 1 |
| 14241 | **N-Nitrosodiphenylamine** | 86-30-6 | **46** | 0.7 | 3 | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 14241 | **Di-n-octylphthalate** | 117-84-0 | **44** | 5 | 11 | 1 |
| 14241 | **Pentachlorophenol** | 87-86-5 | **55** | 1 | 5 | 1 |
| 14241 | **Phenanthrene** | 85-01-8 | **45** | 0.1 | 0.5 | 1 |
| 14241 | **Phenol** | 108-95-2 | **21** | 0.5 | 2 | 1 |
| 14241 | **Pyrene** | 129-00-0 | **45** | 0.1 | 0.5 | 1 |
| 14241 | **1,2,4-Trichlorobenzene** | 120-82-1 | **38** | 0.5 | 2 | 1 |
| 14241 | **2,4,5-Trichlorophenol** | 95-95-4 | **48** | 0.5 | 2 | 1 |
| 14241 | **2,4,6-Trichlorophenol** | 88-06-2 | **47** | 0.5 | 2 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | |
| 07046 | **Barium** | 7440-39-3 | **2.53** | 0.0010 | 0.0100 | 1 |
| 07049 | **Cadmium** | 7440-43-9 | **0.0503** | 0.0010 | 0.0100 | 1 |
| 07051 | **Chromium** | 7440-47-3 | **0.204** | 0.0053 | 0.0300 | 1 |
| 07053 | **Copper** | 7440-50-8 | **0.263** | 0.0062 | 0.0400 | 1 |
| 01754 | **Iron** | 7439-89-6 | **36.0** | 0.0400 | 0.400 | 1 |
| 07066 | **Silver** | 7440-22-4 | **0.0538** | 0.0050 | 0.0200 | 1 |
| 07072 | **Zinc** | 7440-66-6 | **0.517** | 0.0030 | 0.0400 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | **Arsenic** | 7440-38-2 | **0.0243** | 0.00068 | 0.0040 | 1 |
| 06035 | **Lead** | 7439-92-1 | **0.0538** | 0.0011 | 0.0060 | 1 |
| 06039 | **Nickel** | 7440-02-0 | **0.0556** | 0.00060 | 0.0080 | 1 |
| **Wet Chemistry** | **SW-846 9066** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE MSD Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:30

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802872**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Wet Chemistry** | **SW-846 9066** | | **mg/l** | **mg/l** | **mg/l** | |
| 14088 | **Phenols (water)** | n.a. | **0.23** | 0.010 | 0.020 | 1 |
| **Wet Chemistry** | **SM 4500-S2 F-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 01333 | **Sulfide** | 18496-25-8 | **7.1** | 0.70 | 2.0 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5182651AA | 09/22/2018 16:59 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5182651AA | 09/22/2018 16:59 | Patrick T Herres | 1 |
| 14241 | TCL SVOCs 8270D | SW-846 8270D | 1 | 18260WAM026 | 09/20/2018 02:05 | Ashley R Transue | 1 |
| 11010 | 8270D BNA Extraction | SW-846 3510C | 1 | 18260WAM026 | 09/18/2018 08:30 | Logan M Brosemer | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:24 | Elaine F Stoltzfus | 1 |
| 07049 | Cadmium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:24 | Elaine F Stoltzfus | 1 |
| 07051 | Chromium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:24 | Elaine F Stoltzfus | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:24 | Elaine F Stoltzfus | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:24 | Elaine F Stoltzfus | 1 |
| 07066 | Silver | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:24 | Elaine F Stoltzfus | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:24 | Elaine F Stoltzfus | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:52 | Bradley M Berlot | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:52 | Bradley M Berlot | 1 |
| 06039 | Nickel | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:52 | Bradley M Berlot | 1 |
| 10636 | ICP-WW/TL, 3010A (tot) - U4 | SW-846 3010A | 1 | 182611063602 | 09/19/2018 05:30 | Annamaria Kuhns | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 182611063901 | 09/19/2018 07:28 | James L Mertz | 1 |
| 14088 | Phenols (water) | SW-846 9066 | 1 | 18262126101B | 09/19/2018 12:54 | Brianna A Poole | 1 |
| 01333 | Sulfide | SM 4500-S2 F-2011 | 1 | 18263133301A | 09/20/2018 09:50 | Kevin Litwa | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE Dupl Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802873**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | |
| 07046 | **Barium** | 7440-39-3 | **0.508** | 0.0010 | 0.0100 | 1 |
| 07049 | Cadmium | 7440-43-9 | 0.0010 U | 0.0010 | 0.0100 | 1 |
| 07051 | Chromium | 7440-47-3 | 0.0053 U | 0.0053 | 0.0300 | 1 |
| 07053 | Copper | 7440-50-8 | 0.0062 U | 0.0062 | 0.0400 | 1 |
| 01754 | **Iron** | 7439-89-6 | **36.6** | 0.0400 | 0.400 | 1 |
| 07066 | Silver | 7440-22-4 | 0.0050 U | 0.0050 | 0.0200 | 1 |
| 07072 | **Zinc** | 7440-66-6 | **0.0092 J** | 0.0030 | 0.0400 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | **Arsenic** | 7440-38-2 | **0.0166** | 0.00068 | 0.0040 | 1 |
| 06035 | **Lead** | 7439-92-1 | **0.0447** | 0.0011 | 0.0060 | 1 |
| 06039 | **Nickel** | 7440-02-0 | **0.0020 J** | 0.00060 | 0.0080 | 1 |
| **Wet Chemistry** | **SW-846 9012B** | | **mg/l** | **mg/l** | **mg/l** | |
| 01549 | Amenable Cyanide (water) | n.a. | 0.0050 U | 0.0050 | 0.010 | 1 |
| 08255 | Total Cyanide (water) | 57-12-5 | 0.0050 U | 0.0050 | 0.010 | 1 |
| | **EPA 170.1** | | **Degrees C** | **Degrees C** | **Degrees C** | |
| 12151 | **Temperature of pH** | n.a. | **20.1** | 0.010 | 0.010 | 1 |
| | **SM 2540 D-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 13858 | **Total Suspended Solids** | n.a. | **67.3** | 7.00 | 21.0 | 1 |
| | **SM 4500-H+ B-2011** | | **Std. Units** | **Std. Units** | **Std. Units** | |
| 12152 | **pH** | n.a. | **6.7** | 0.010 | 0.010 | 1 |
| | **SM 4500-S2 F-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 01333 | Sulfide | 18496-25-8 | 0.70 U | 0.70 | 2.0 | 1 |
| | **SM 5210 B-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 14108 | **Biochemical Oxygen Demand-BOD** | n.a. | **7.03** | 2.00 | 2.00 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07046 | Barium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:18 | Elaine F Stoltzfus | 1 |
| 07049 | Cadmium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:18 | Elaine F Stoltzfus | 1 |
| 07051 | Chromium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:18 | Elaine F Stoltzfus | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **EF2018_LEACHATE Dupl Leachate**
**LEACHATE SAMPLING 2018**

**Project Name:** **FER - LEACHATE SAMPLING**

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802873**
**ELLE Group #: 1987210**
**Matrix: Leachate**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07053 | Copper | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:18 | Elaine F Stoltzfus | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:18 | Elaine F Stoltzfus | 1 |
| 07066 | Silver | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:18 | Elaine F Stoltzfus | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:18 | Elaine F Stoltzfus | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:48 | Bradley M Berlot | 1 |
| 06035 | Lead | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:48 | Bradley M Berlot | 1 |
| 06039 | Nickel | SW-846 6020A | 1 | 182611063901A | 09/28/2018 17:48 | Bradley M Berlot | 1 |
| 10636 | ICP-WW/TL, 3010A (tot) - U4 | SW-846 3010A | 1 | 182611063602 | 09/19/2018 05:30 | Annamaria Kuhns | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 182611063901 | 09/19/2018 07:28 | James L Mertz | 1 |
| 01549 | Amenable Cyanide (water) | SW-846 9012B | 1 | 18261103101A | 09/18/2018 20:47 | Gregory Baldree | 1 |
| 08255 | Total Cyanide (water) | SW-846 9012B | 1 | 18262117101A | 09/20/2018 11:03 | Brianna A Poole | 1 |
| 01548 | Amenable Cyanide Water Distill | SW-846 9012B | 1 | 18261103101A | 09/18/2018 06:50 | Nancy J Shoop | 1 |
| 08256 | Cyanide Water Distillation | SW-846 9012B | 1 | 18262117101A | 09/19/2018 18:15 | Barbara A Washington | 1 |
| 12151 | Temperature of pH | EPA 170.1 | 1 | 18257121521A | 09/14/2018 19:20 | Jeremy L Bolf | 1 |
| 13858 | Total Suspended Solids | SM 2540 D-2011 | 1 | 18261385802A | 09/18/2018 13:36 | Amy L Hankins | 1 |
| 12152 | pH | SM 4500-H+ B-2011 | 1 | 18257121521A | 09/14/2018 19:20 | Jeremy L Bolf | 1 |
| 01333 | Sulfide | SM 4500-S2 F-2011 | 1 | 18263133301A | 09/20/2018 09:50 | Kevin Litwa | 1 |
| 14108 | Biochemical Oxygen Demand-BOD | SM 5210 B-2011 | 1 | 18257141084A | 09/14/2018 23:34 | Joseph Knisely | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE-D Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 12:01

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802874**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | **Acetone** | 67-64-1 | **2 J** | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Chloroethane** | 75-00-3 | **0.3 J** | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **cis-1,2-Dichloroethene** | 156-59-2 | **300** | 0.2 | 1 | 1 |
| 11997 | **trans-1,2-Dichloroethene** | 156-60-5 | **0.4 J** | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | **Trichloroethene** | 79-01-6 | **54** | 0.2 | 1 | 1 |
| 11997 | **Vinyl Chloride** | 75-01-4 | **1** | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

| | | | | | | |
|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | **ug/l** | **ug/l** | |
| 14241 | Acenaphthene | 83-32-9 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Acenaphthylene | 208-96-8 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Anthracene | 120-12-7 | 0.1 U | 0.1 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE-D Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 12:01

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802874**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | | **ug/l** | **ug/l** | |
| 14241 | Benzo(a)anthracene | 56-55-3 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Benzo(a)pyrene | 50-32-8 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Benzo(b)fluoranthene | 205-99-2 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Benzo(g,h,i)perylene | 191-24-2 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Benzo(k)fluoranthene | 207-08-9 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | 4-Bromophenyl-phenylether | 101-55-3 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | Butylbenzylphthalate | 85-68-7 | 2 | U | 2 | 5 | 1 |
| 14241 | Di-n-butylphthalate | 84-74-2 | 2 | U | 2 | 5 | 1 |
| 14241 | Carbazole | 86-74-8 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | 4-Chloro-3-methylphenol | 59-50-7 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | 4-Chloroaniline | 106-47-8 | 4 | U | 4 | 10 | 1 |
| 14241 | bis(2-Chloroethoxy)methane | 111-91-1 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | bis(2-Chloroethyl)ether | 111-44-4 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | 2-Chloronaphthalene | 91-58-7 | 0.4 | U | 0.4 | 1 | 1 |
| 14241 | 2-Chlorophenol | 95-57-8 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | 4-Chlorophenyl-phenylether | 7005-72-3 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | 2,2'-oxybis(1-Chloropropane) | 108-60-1 | 0.5 | U | 0.5 | 2 | 1 |
| | Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds. | | | | | | |
| 14241 | Chrysene | 218-01-9 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Dibenz(a,h)anthracene | 53-70-3 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Dibenzofuran | 132-64-9 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | 1,2-Dichlorobenzene | 95-50-1 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | 1,3-Dichlorobenzene | 541-73-1 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | 1,4-Dichlorobenzene | 106-46-7 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | 3,3'-Dichlorobenzidine | 91-94-1 | 3 | U | 3 | 10 | 1 |
| 14241 | 2,4-Dichlorophenol | 120-83-2 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | Diethylphthalate | 84-66-2 | 2 | U | 2 | 5 | 1 |
| 14241 | 2,4-Dimethylphenol | 105-67-9 | 3 | U | 3 | 10 | 1 |
| 14241 | Dimethylphthalate | 131-11-3 | 2 | U | 2 | 5 | 1 |
| 14241 | 4,6-Dinitro-2-methylphenol | 534-52-1 | 8 | U | 8 | 21 | 1 |
| 14241 | 2,4-Dinitrophenol | 51-28-5 | 14 | U | 14 | 30 | 1 |
| 14241 | 2,4-Dinitrotoluene | 121-14-2 | 1 | U | 1 | 5 | 1 |
| 14241 | 2,6-Dinitrotoluene | 606-20-2 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | bis(2-Ethylhexyl)phthalate | 117-81-7 | 5 | U | 5 | 11 | 1 |
| 14241 | Fluoranthene | 206-44-0 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Fluorene | 86-73-7 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Hexachlorobenzene | 118-74-1 | 0.1 | U | 0.1 | 0.5 | 1 |
| 14241 | Hexachlorobutadiene | 87-68-3 | 0.5 | U | 0.5 | 2 | 1 |
| 14241 | Hexachlorocyclopentadiene | 77-47-4 | 5 | U | 5 | 11 | 1 |
| 14241 | Hexachloroethane | 67-72-1 | 1 | U | 1 | 5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE-D Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 12:01

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802874**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Semivolatiles** | **SW-846 8270D** | | **ug/l** | **ug/l** | **ug/l** | |
| 14241 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Isophorone | 78-59-1 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 2-Methylnaphthalene | 91-57-6 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | 2-Methylphenol | 95-48-7 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 4-Methylphenol | 106-44-5 | 0.5 U | 0.5 | 2 | 1 |
| | 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds. | | | | | |
| 14241 | Naphthalene | 91-20-3 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | 2-Nitroaniline | 88-74-4 | 2 U | 2 | 7 | 1 |
| 14241 | 3-Nitroaniline | 99-09-2 | 3 U | 3 | 7 | 1 |
| 14241 | 4-Nitroaniline | 100-01-6 | 0.9 U | 0.9 | 3 | 1 |
| 14241 | Nitrobenzene | 98-95-3 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 2-Nitrophenol | 88-75-5 | 3 U | 3 | 10 | 1 |
| 14241 | 4-Nitrophenol | 100-02-7 | 10 U | 10 | 30 | 1 |
| 14241 | N-Nitroso-di-n-propylamine | 621-64-7 | 0.7 U | 0.7 | 3 | 1 |
| 14241 | N-Nitrosodiphenylamine | 86-30-6 | 0.7 U | 0.7 | 3 | 1 |
| | N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds. | | | | | |
| 14241 | Di-n-octylphthalate | 117-84-0 | 5 U | 5 | 11 | 1 |
| 14241 | Pentachlorophenol | 87-86-5 | 1 U | 1 | 5 | 1 |
| 14241 | Phenanthrene | 85-01-8 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | Phenol | 108-95-2 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | Pyrene | 129-00-0 | 0.1 U | 0.1 | 0.5 | 1 |
| 14241 | 1,2,4-Trichlorobenzene | 120-82-1 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 2,4,5-Trichlorophenol | 95-95-4 | 0.5 U | 0.5 | 2 | 1 |
| 14241 | 2,4,6-Trichlorophenol | 88-06-2 | 0.5 U | 0.5 | 2 | 1 |
| **Metals** | **SW-846 6010C** | | **mg/l** | **mg/l** | **mg/l** | |
| 07046 | **Barium** | 7440-39-3 | **0.507** | 0.0010 | 0.0100 | 1 |
| 07049 | Cadmium | 7440-43-9 | 0.0010 U | 0.0010 | 0.0100 | 1 |
| 07051 | Chromium | 7440-47-3 | 0.0053 U | 0.0053 | 0.0300 | 1 |
| 07053 | Copper | 7440-50-8 | 0.0062 U | 0.0062 | 0.0400 | 1 |
| 01754 | **Iron** | 7439-89-6 | **35.6** | 0.0400 | 0.400 | 1 |
| 07066 | Silver | 7440-22-4 | 0.0050 U | 0.0050 | 0.0200 | 1 |
| 07072 | **Zinc** | 7440-66-6 | **0.0094 J** | 0.0030 | 0.0400 | 1 |
| | **SW-846 6020A** | | **mg/l** | **mg/l** | **mg/l** | |
| 06025 | **Arsenic** | 7440-38-2 | **0.0139** | 0.00068 | 0.0040 | 1 |
| 06035 | **Lead** | 7439-92-1 | **0.0367** | 0.0011 | 0.0060 | 1 |
| 06039 | **Nickel** | 7440-02-0 | **0.0023 J** | 0.00060 | 0.0080 | 1 |
| **Wet Chemistry** | **SW-846 9012B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** EF2018_LEACHATE-D Leachate
LEACHATE SAMPLING 2018

**Project Name:** FER - LEACHATE SAMPLING

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 12:01

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802874**
**ELLE Group #: 1987210**
**Matrix: Leachate**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Wet Chemistry** | **SW-846 9012B** | | **mg/l** | **mg/l** | **mg/l** | |
| 01549 | Amenable Cyanide (water) | n.a. | 0.0050 U | 0.0050 | 0.010 | 1 |
| 08255 | Total Cyanide (water) | 57-12-5 | 0.0050 U | 0.0050 | 0.010 | 1 |
| | **SW-846 9066** | | **mg/l** | **mg/l** | **mg/l** | |
| 14088 | Phenols (water) | n.a. | 0.010 U | 0.010 | 0.020 | 1 |
| | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | 1.4 U | 1.4 | 5.0 | 1 |
| | **EPA 170.1** | | **Degrees C** | **Degrees C** | **Degrees C** | |
| 12151 | **Temperature of pH** | n.a. | **20.3** | 0.010 | 0.010 | 1 |
| | **SM 2540 D-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 13858 | **Total Suspended Solids** | n.a. | **56.7** | 7.00 | 21.0 | 1 |
| | **SM 4500-H+ B-2011** | | **Std. Units** | **Std. Units** | **Std. Units** | |
| 12152 | **pH** | n.a. | **6.7** | 0.010 | 0.010 | 1 |
| | **SM 4500-S2 F-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 01333 | Sulfide | 18496-25-8 | 0.70 U | 0.70 | 2.0 | 1 |
| | **SM 5210 B-2011** | | **mg/l** | **mg/l** | **mg/l** | |
| 14108 | **Biochemical Oxygen Demand-BOD** | n.a. | **5.86** | 2.00 | 2.00 | 1 |

## Sample Comments

State of New York Certification No. 10670

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5182651AA | 09/22/2018 17:21 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5182651AA | 09/22/2018 17:21 | Patrick T Herres | 1 |
| 14241 | TCL SVOCs 8270D | SW-846 8270D | 1 | 18260WAM026 | 09/20/2018 02:34 | Ashley R Transue | 1 |
| 11010 | 8270D BNA Extraction | SW-846 3510C | 1 | 18260WAM026 | 09/18/2018 08:30 | Logan M Brosemer | 1 |
| 07046 | Barium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:29 | Elaine F Stoltzfus | 1 |
| 07049 | Cadmium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:29 | Elaine F Stoltzfus | 1 |
| 07051 | Chromium | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:29 | Elaine F Stoltzfus | 1 |
| 07053 | Copper | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:29 | Elaine F Stoltzfus | 1 |
| 01754 | Iron | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:29 | Elaine F Stoltzfus | 1 |
| 07066 | Silver | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:29 | Elaine F Stoltzfus | 1 |
| 07072 | Zinc | SW-846 6010C | 1 | 182611063602 | 09/22/2018 16:29 | Elaine F Stoltzfus | 1 |
| 06025 | Arsenic | SW-846 6020A | 1 | 182611063901A | 09/28/2018 18:04 | Bradley M Berlot | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **EF2018_LEACHATE-D Leachate**
**LEACHATE SAMPLING 2018**

**Project Name:** **FER - LEACHATE SAMPLING**

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 12:01

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802874**
**ELLE Group #: 1987210**
**Matrix: Leachate**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06035 | Lead | SW-846 6020A | 1 | 182611063901A | 09/28/2018 18:04 | Bradley M Berlot | 1 |
| 06039 | Nickel | SW-846 6020A | 1 | 182611063901A | 09/28/2018 18:04 | Bradley M Berlot | 1 |
| 10636 | ICP-WW/TL, 3010A (tot) - U4 | SW-846 3010A | 1 | 182611063602 | 09/19/2018 05:30 | Annamaria Kuhns | 1 |
| 10639 | ICPMS - Water, 3020A - U4 | SW-846 3020A | 1 | 182611063901 | 09/19/2018 07:28 | James L Mertz | 1 |
| 01549 | Amenable Cyanide (water) | SW-846 9012B | 1 | 18261103101A | 09/18/2018 20:48 | Gregory Baldree | 1 |
| 08255 | Total Cyanide (water) | SW-846 9012B | 1 | 18262117101A | 09/20/2018 11:05 | Brianna A Poole | 1 |
| 14088 | Phenols (water) | SW-846 9066 | 1 | 18262126101A | 09/19/2018 12:27 | Brianna A Poole | 1 |
| 01548 | Amenable Cyanide Water Distill | SW-846 9012B | 1 | 18261103101A | 09/18/2018 06:50 | Nancy J Shoop | 1 |
| 08256 | Cyanide Water Distillation | SW-846 9012B | 1 | 18262117101A | 09/19/2018 18:15 | Barbara A Washington | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 18263807902A | 09/20/2018 08:12 | Yolunder Y Bunch | 1 |
| 12151 | Temperature of pH | EPA 170.1 | 1 | 18257121521A | 09/14/2018 19:20 | Jeremy L Bolf | 1 |
| 13858 | Total Suspended Solids | SM 2540 D-2011 | 1 | 18261385802B | 09/18/2018 10:34 | Amy L Hankins | 1 |
| 12152 | pH | SM 4500-H+ B-2011 | 1 | 18257121521A | 09/14/2018 19:20 | Jeremy L Bolf | 1 |
| 01333 | Sulfide | SM 4500-S2 F-2011 | 1 | 18263133301A | 09/20/2018 09:50 | Kevin Litwa | 1 |
| 14108 | Biochemical Oxygen Demand-BOD | SM 5210 B-2011 | 1 | 18257141084A | 09/14/2018 23:34 | Joseph Knisely | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **EF2018-TB Blank Water**
**LEACHATE SAMPLING 2018**

**Project Name:** **FER - LEACHATE SAMPLING**

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802875**
**ELLE Group #: 1987210**
**Matrix: Blank Water**

| CAT No. | Analysis Name | CAS Number | Result | Method Detection Limit* | Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260C** | | **ug/l** | **ug/l** | **ug/l** | |
| 11997 | Acetone | 67-64-1 | 0.7 U | 0.7 | 20 | 1 |
| 11997 | Benzene | 71-43-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromodichloromethane | 75-27-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Bromoform | 75-25-2 | 0.2 U | 0.2 | 4 | 1 |
| 11997 | Bromomethane | 74-83-9 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 2-Butanone | 78-93-3 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | Carbon Disulfide | 75-15-0 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | Carbon Tetrachloride | 56-23-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chlorobenzene | 108-90-7 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroethane | 75-00-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloroform | 67-66-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Chloromethane | 74-87-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Dibromochloromethane | 124-48-1 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1-Dichloroethane | 75-34-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloroethane | 107-06-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1-Dichloroethene | 75-35-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,2-Dichloroethene | 156-59-2 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,2-Dichloroethene | 156-60-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,2-Dichloropropane | 78-87-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | cis-1,3-Dichloropropene | 10061-01-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | trans-1,3-Dichloropropene | 10061-02-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Ethylbenzene | 100-41-4 | 0.4 U | 0.4 | 1 | 1 |
| 11997 | 2-Hexanone | 591-78-6 | 0.3 U | 0.3 | 10 | 1 |
| 11997 | 4-Methyl-2-pentanone | 108-10-1 | 0.5 U | 0.5 | 10 | 1 |
| 11997 | Methylene Chloride | 75-09-2 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | Styrene | 100-42-5 | 0.2 U | 0.2 | 5 | 1 |
| 11997 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Tetrachloroethene | 127-18-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Toluene | 108-88-3 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | 1,1,1-Trichloroethane | 71-55-6 | 0.3 U | 0.3 | 1 | 1 |
| 11997 | 1,1,2-Trichloroethane | 79-00-5 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Trichloroethene | 79-01-6 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Vinyl Chloride | 75-01-4 | 0.2 U | 0.2 | 1 | 1 |
| 11997 | Xylene (Total) | 1330-20-7 | 1 U | 1 | 5 | 1 |

A Method Detection Limit (MDL) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The MDL standard shows adequate sensitivity at or below the reporting limit.

## Sample Comments

State of New York Certification No. 10670

*=This limit was used in the evaluation of the final result

**Sample Description:** **EF2018-TB Blank Water**
**LEACHATE SAMPLING 2018**

**Project Name:** **FER - LEACHATE SAMPLING**

Submittal Date/Time: 09/14/2018 10:10
Collection Date/Time: 09/13/2018 11:10

**CRG-E.I.DuPont de Nemours & Co**
**ELLE Sample #: WW 9802875**
**ELLE Group #: 1987210**
**Matrix: Blank Water**

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 11997 | VOCs- 5ml Water by 8260C | SW-846 8260C | 1 | 5182651AA | 09/22/2018 15:32 | Patrick T Herres | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030C | 1 | 5182651AA | 09/22/2018 15:32 | Patrick T Herres | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co Group Number: 1987210
Reported: 09/30/2018 20:00

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Method Blank

| Analysis Name | Result | MDL** | LOQ |
|---|---|---|---|
| | ug/l | ug/l | ug/l |
| Batch number: 5182651AA | Sample number(s): 9802870-9802872,9802874-9802875 | | |
| Acetone | 0.7 U | 0.7 | 20 |
| Benzene | 0.2 U | 0.2 | 1 |
| Bromodichloromethane | 0.2 U | 0.2 | 1 |
| Bromoform | 0.2 U | 0.2 | 4 |
| Bromomethane | 0.3 U | 0.3 | 1 |
| 2-Butanone | 0.3 U | 0.3 | 10 |
| Carbon Disulfide | 0.2 U | 0.2 | 5 |
| Carbon Tetrachloride | 0.2 U | 0.2 | 1 |
| Chlorobenzene | 0.2 U | 0.2 | 1 |
| Chloroethane | 0.2 U | 0.2 | 1 |
| Chloroform | 0.2 U | 0.2 | 1 |
| Chloromethane | 0.2 U | 0.2 | 1 |
| Dibromochloromethane | 0.2 U | 0.2 | 1 |
| 1,1-Dichloroethane | 0.2 U | 0.2 | 1 |
| 1,2-Dichloroethane | 0.3 U | 0.3 | 1 |
| 1,1-Dichloroethene | 0.2 U | 0.2 | 1 |
| cis-1,2-Dichloroethene | 0.2 U | 0.2 | 1 |
| trans-1,2-Dichloroethene | 0.2 U | 0.2 | 1 |
| 1,2-Dichloropropane | 0.2 U | 0.2 | 1 |
| cis-1,3-Dichloropropene | 0.2 U | 0.2 | 1 |
| trans-1,3-Dichloropropene | 0.2 U | 0.2 | 1 |
| Ethylbenzene | 0.4 U | 0.4 | 1 |
| 2-Hexanone | 0.3 U | 0.3 | 10 |
| 4-Methyl-2-pentanone | 0.5 U | 0.5 | 10 |
| Methylene Chloride | 0.3 U | 0.3 | 1 |
| Styrene | 0.2 U | 0.2 | 5 |
| 1,1,2,2-Tetrachloroethane | 0.2 U | 0.2 | 1 |
| Tetrachloroethene | 0.2 U | 0.2 | 1 |
| Toluene | 0.2 U | 0.2 | 1 |
| 1,1,1-Trichloroethane | 0.3 U | 0.3 | 1 |
| 1,1,2-Trichloroethane | 0.2 U | 0.2 | 1 |
| Trichloroethene | 0.2 U | 0.2 | 1 |
| Vinyl Chloride | 0.2 U | 0.2 | 1 |
| Xylene (Total) | 1 U | 1 | 5 |
| Batch number: 18260WAM026 | Sample number(s): 9802870-9802872,9802874 | | |
| Acenaphthene | 0.1 U | 0.1 | 0.5 |
| Acenaphthylene | 0.1 U | 0.1 | 0.5 |
| Anthracene | 0.1 U | 0.1 | 0.5 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 09/30/2018 20:00

Group Number: 1987210

## Method Blank (continued)

| Analysis Name | Result | MDL** | LOQ |
|---|---|---|---|
| | ug/l | ug/l | ug/l |
| Benzo(a)anthracene | 0.1 U | 0.1 | 0.5 |
| Benzo(a)pyrene | 0.1 U | 0.1 | 0.5 |
| Benzo(b)fluoranthene | 0.1 U | 0.1 | 0.5 |
| Benzo(g,h,i)perylene | 0.1 U | 0.1 | 0.5 |
| Benzo(k)fluoranthene | 0.1 U | 0.1 | 0.5 |
| 4-Bromophenyl-phenylether | 0.5 U | 0.5 | 2 |
| Butylbenzylphthalate | 2 U | 2 | 5 |
| Di-n-butylphthalate | 2 U | 2 | 5 |
| Carbazole | 0.5 U | 0.5 | 2 |
| 4-Chloro-3-methylphenol | 0.5 U | 0.5 | 2 |
| 4-Chloroaniline | 4 U | 4 | 10 |
| bis(2-Chloroethoxy)methane | 0.5 U | 0.5 | 2 |
| bis(2-Chloroethyl)ether | 0.5 U | 0.5 | 2 |
| 2-Chloronaphthalene | 0.4 U | 0.4 | 1 |
| 2-Chlorophenol | 0.5 U | 0.5 | 2 |
| 4-Chlorophenyl-phenylether | 0.5 U | 0.5 | 2 |
| 2,2'-oxybis(1-Chloropropane) | 0.5 U | 0.5 | 2 |
| Chrysene | 0.1 U | 0.1 | 0.5 |
| Dibenz(a,h)anthracene | 0.1 U | 0.1 | 0.5 |
| Dibenzofuran | 0.5 U | 0.5 | 2 |
| 1,2-Dichlorobenzene | 0.5 U | 0.5 | 2 |
| 1,3-Dichlorobenzene | 0.5 U | 0.5 | 2 |
| 1,4-Dichlorobenzene | 0.5 U | 0.5 | 2 |
| 3,3'-Dichlorobenzidine | 3 U | 3 | 10 |
| 2,4-Dichlorophenol | 0.5 U | 0.5 | 2 |
| Diethylphthalate | 2 U | 2 | 5 |
| 2,4-Dimethylphenol | 3 U | 3 | 10 |
| Dimethylphthalate | 2 U | 2 | 5 |
| 4,6-Dinitro-2-methylphenol | 8 U | 8 | 21 |
| 2,4-Dinitrophenol | 14 U | 14 | 30 |
| 2,4-Dinitrotoluene | 1 U | 1 | 5 |
| 2,6-Dinitrotoluene | 0.5 U | 0.5 | 2 |
| bis(2-Ethylhexyl)phthalate | 5 U | 5 | 11 |
| Fluoranthene | 0.1 U | 0.1 | 0.5 |
| Fluorene | 0.1 U | 0.1 | 0.5 |
| Hexachlorobenzene | 0.1 U | 0.1 | 0.5 |
| Hexachlorobutadiene | 0.5 U | 0.5 | 2 |
| Hexachlorocyclopentadiene | 5 U | 5 | 11 |
| Hexachloroethane | 1 U | 1 | 5 |
| Indeno(1,2,3-cd)pyrene | 0.1 U | 0.1 | 0.5 |
| Isophorone | 0.5 U | 0.5 | 2 |
| 2-Methylnaphthalene | 0.1 U | 0.1 | 0.5 |
| 2-Methylphenol | 0.5 U | 0.5 | 2 |
| 4-Methylphenol | 0.5 U | 0.5 | 2 |
| Naphthalene | 0.1 U | 0.1 | 0.5 |

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# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 09/30/2018 20:00

Group Number: 1987210

## Method Blank (continued)

| Analysis Name | Result | MDL** | LOQ |
|---|---|---|---|
| | ug/l | ug/l | ug/l |
| 2-Nitroaniline | 2 U | 2 | 7 |
| 3-Nitroaniline | 3 U | 3 | 7 |
| 4-Nitroaniline | 0.9 U | 0.9 | 3 |
| Nitrobenzene | 0.5 U | 0.5 | 2 |
| 2-Nitrophenol | 3 U | 3 | 10 |
| 4-Nitrophenol | 10 U | 10 | 30 |
| N-Nitroso-di-n-propylamine | 0.7 U | 0.7 | 3 |
| N-Nitrosodiphenylamine | 0.7 U | 0.7 | 3 |
| Di-n-octylphthalate | 5 U | 5 | 11 |
| Pentachlorophenol | 1 U | 1 | 5 |
| Phenanthrene | 0.1 U | 0.1 | 0.5 |
| Phenol | 0.5 U | 0.5 | 2 |
| Pyrene | 0.1 U | 0.1 | 0.5 |
| 1,2,4-Trichlorobenzene | 0.5 U | 0.5 | 2 |
| 2,4,5-Trichlorophenol | 0.5 U | 0.5 | 2 |
| 2,4,6-Trichlorophenol | 0.5 U | 0.5 | 2 |
| | mg/l | mg/l | mg/l |
| Batch number: 182611063602 | Sample number(s): 9802870-9802874 | | |
| Barium | 0.0010 U | 0.0010 | 0.0100 |
| Cadmium | 0.0010 U | 0.0010 | 0.0100 |
| Chromium | 0.0053 U | 0.0053 | 0.0300 |
| Copper | 0.0062 U | 0.0062 | 0.0400 |
| Iron | 0.0400 U | 0.0400 | 0.400 |
| Silver | 0.0050 U | 0.0050 | 0.0200 |
| Zinc | 0.0030 U | 0.0030 | 0.0400 |
| Batch number: 182611063901A | Sample number(s): 9802870-9802874 | | |
| Arsenic | 0.00068 U | 0.00068 | 0.0040 |
| Lead | 0.0011 U | 0.0011 | 0.0060 |
| Nickel | 0.00060 U | 0.00060 | 0.0080 |
| Batch number: 18261103101A | Sample number(s): 9802870-9802871,9802873-9802874 | | |
| Amenable Cyanide (water) | 0.0050 U | 0.0050 | 0.010 |
| Batch number: 18262117101A | Sample number(s): 9802870-9802871,9802873-9802874 | | |
| Total Cyanide (water) | 0.0050 U | 0.0050 | 0.010 |
| Batch number: 18262126101A | Sample number(s): 9802874 | | |
| Phenols (water) | 0.010 U | 0.010 | 0.020 |
| Batch number: 18262126101B | Sample number(s): 9802870-9802872 | | |
| Phenols (water) | 0.010 U | 0.010 | 0.020 |
| Batch number: 18261385802A | Sample number(s): 9802870,9802873 | | |
| Total Suspended Solids | 1.00 U | 1.00 | 3.00 |
| Batch number: 18261385802B | Sample number(s): 9802874 | | |
| Total Suspended Solids | 1.00 U | 1.00 | 3.00 |

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# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 09/30/2018 20:00

Group Number: 1987210

## Method Blank (continued)

| Analysis Name | Result | MDL** | LOQ |
|---|---|---|---|
| | mg/l | mg/l | mg/l |
| Batch number: 18263133301A | Sample number(s): 9802870-9802874 | | |
| Sulfide | 0.70 U | 0.70 | 2.0 |
| Batch number: 18263807902A | Sample number(s): 9802870-9802871,9802874 | | |
| HEM (oil & grease) | 1.4 U | 1.4 | 5.0 |

## LCS/LCSD

| Analysis Name | LCS Spike Added ug/l | LCS Conc ug/l | LCSD Spike Added ug/l | LCSD Conc ug/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: 5182651AA | Sample number(s): 9802870-9802872,9802874-9802875 | | | | | | | | |
| Acetone | 150 | 140.54 | | | 94 | | 54-157 | | |
| Benzene | 20 | 18.57 | | | 93 | | 80-120 | | |
| Bromodichloromethane | 20 | 18.7 | | | 94 | | 71-120 | | |
| Bromoform | 20 | 17.15 | | | 86 | | 51-120 | | |
| Bromomethane | 20 | 17.39 | | | 87 | | 53-128 | | |
| 2-Butanone | 150 | 129.2 | | | 86 | | 59-135 | | |
| Carbon Disulfide | 20 | 17.38 | | | 87 | | 65-128 | | |
| Carbon Tetrachloride | 20 | 23.94 | | | 120 | | 64-134 | | |
| Chlorobenzene | 20 | 18.17 | | | 91 | | 80-120 | | |
| Chloroethane | 20 | 17.72 | | | 89 | | 55-123 | | |
| Chloroform | 20 | 19.19 | | | 96 | | 80-120 | | |
| Chloromethane | 20 | 14.44 | | | 72 | | 56-121 | | |
| Dibromochloromethane | 20 | 18.04 | | | 90 | | 71-120 | | |
| 1,1-Dichloroethane | 20 | 18.05 | | | 90 | | 80-120 | | |
| 1,2-Dichloroethane | 20 | 18.45 | | | 92 | | 73-124 | | |
| 1,1-Dichloroethene | 20 | 21.12 | | | 106 | | 80-131 | | |
| cis-1,2-Dichloroethene | 20 | 20.27 | | | 101 | | 80-120 | | |
| trans-1,2-Dichloroethene | 20 | 20.38 | | | 102 | | 80-120 | | |
| 1,2-Dichloropropane | 20 | 18.13 | | | 91 | | 80-120 | | |
| cis-1,3-Dichloropropene | 20 | 17.19 | | | 86 | | 75-120 | | |
| trans-1,3-Dichloropropene | 20 | 16.05 | | | 80 | | 67-120 | | |
| Ethylbenzene | 20 | 18.93 | | | 95 | | 80-120 | | |
| 2-Hexanone | 100 | 79.98 | | | 80 | | 56-135 | | |
| 4-Methyl-2-pentanone | 100 | 86.14 | | | 86 | | 62-133 | | |
| Methylene Chloride | 20 | 18.85 | | | 94 | | 80-120 | | |
| Styrene | 20 | 18.01 | | | 90 | | 80-120 | | |
| 1,1,2,2-Tetrachloroethane | 20 | 14.83 | | | 74 | | 72-120 | | |
| Tetrachloroethene | 20 | 19.93 | | | 100 | | 80-120 | | |
| Toluene | 20 | 18.13 | | | 91 | | 80-120 | | |
| 1,1,1-Trichloroethane | 20 | 20.61 | | | 103 | | 67-126 | | |

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# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 09/30/2018 20:00

Group Number: 1987210

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added ug/l | LCS Conc ug/l | LCSD Spike Added ug/l | LCSD Conc ug/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | 20 | 18.05 | | | 90 | | 80-120 | | |
| Trichloroethene | 20 | 19.32 | | | 97 | | 80-120 | | |
| Vinyl Chloride | 20 | 15.72 | | | 79 | | 56-120 | | |
| Xylene (Total) | 60 | 57.23 | | | 95 | | 80-120 | | |
| | ug/l | ug/l | ug/l | ug/l | | | | | |
| Batch number: 18260WAM026 | Sample number(s): 9802870-9802872,9802874 | | | | | | | | |
| Acenaphthene | 50 | 43.16 | | | 86 | | 62-119 | | |
| Acenaphthylene | 50 | 46.44 | | | 93 | | 66-125 | | |
| Anthracene | 50 | 47.16 | | | 94 | | 70-118 | | |
| Benzo(a)anthracene | 50 | 51.71 | | | 103 | | 70-123 | | |
| Benzo(a)pyrene | 50 | 50.54 | | | 101 | | 71-122 | | |
| Benzo(b)fluoranthene | 50 | 48.31 | | | 97 | | 70-120 | | |
| Benzo(g,h,i)perylene | 50 | 45.14 | | | 90 | | 64-119 | | |
| Benzo(k)fluoranthene | 50 | 49.13 | | | 98 | | 73-122 | | |
| 4-Bromophenyl-phenylether | 50 | 44.04 | | | 88 | | 64-119 | | |
| Butylbenzylphthalate | 50 | 46.85 | | | 94 | | 57-119 | | |
| Di-n-butylphthalate | 50 | 47.16 | | | 94 | | 71-113 | | |
| Carbazole | 50 | 49.97 | | | 100 | | 71-128 | | |
| 4-Chloro-3-methylphenol | 50 | 44.54 | | | 89 | | 65-122 | | |
| 4-Chloroaniline | 50 | 32.57 | | | 65 | | 42-110 | | |
| bis(2-Chloroethoxy)methane | 50 | 43.56 | | | 87 | | 64-119 | | |
| bis(2-Chloroethyl)ether | 50 | 40.81 | | | 82 | | 60-110 | | |
| 2-Chloronaphthalene | 50 | 39.16 | | | 78 | | 51-114 | | |
| 2-Chlorophenol | 50 | 40.53 | | | 81 | | 58-108 | | |
| 4-Chlorophenyl-phenylether | 50 | 40.88 | | | 82 | | 58-115 | | |
| 2,2'-oxybis(1-Chloropropane) | 50 | 38.79 | | | 78 | | 48-118 | | |
| Chrysene | 50 | 48.25 | | | 96 | | 71-123 | | |
| Dibenz(a,h)anthracene | 50 | 49.14 | | | 98 | | 67-123 | | |
| Dibenzofuran | 50 | 43.18 | | | 86 | | 63-117 | | |
| 1,2-Dichlorobenzene | 50 | 35.61 | | | 71 | | 43-108 | | |
| 1,3-Dichlorobenzene | 50 | 33.89 | | | 68 | | 31-110 | | |
| 1,4-Dichlorobenzene | 50 | 34.62 | | | 69 | | 30-109 | | |
| 3,3'-Dichlorobenzidine | 50 | 46.23 | | | 92 | | 36-116 | | |
| 2,4-Dichlorophenol | 50 | 44.43 | | | 89 | | 65-117 | | |
| Diethylphthalate | 50 | 41.4 | | | 83 | | 61-111 | | |
| 2,4-Dimethylphenol | 50 | 34.68 | | | 69 | | 52-106 | | |
| Dimethylphthalate | 50 | 36.55 | | | 73 | | 37-116 | | |
| 4,6-Dinitro-2-methylphenol | 50 | 46.53 | | | 93 | | 63-129 | | |
| 2,4-Dinitrophenol | 100 | 55.33 | | | 55 | | 26-141 | | |
| 2,4-Dinitrotoluene | 50 | 44.34 | | | 89 | | 69-117 | | |
| 2,6-Dinitrotoluene | 50 | 45.9 | | | 92 | | 69-122 | | |
| bis(2-Ethylhexyl)phthalate | 50 | 50.04 | | | 100 | | 68-120 | | |
| Fluoranthene | 50 | 50 | | | 100 | | 70-124 | | |

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# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Group Number: 1987210
Reported: 09/30/2018 20:00

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added ug/l | LCS Conc ug/l | LCSD Spike Added ug/l | LCSD Conc ug/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Fluorene | 50 | 44.79 | | | 90 | | 62-116 | | |
| Hexachlorobenzene | 50 | 44.68 | | | 89 | | 65-121 | | |
| Hexachlorobutadiene | 50 | 33.52 | | | 67 | | 21-114 | | |
| Hexachlorocyclopentadiene | 100 | 22.95 | | | 23 | | 10-117 | | |
| Hexachloroethane | 50 | 30.85 | | | 62 | | 24-100 | | |
| Indeno(1,2,3-cd)pyrene | 50 | 47.45 | | | 95 | | 61-121 | | |
| Isophorone | 50 | 43.09 | | | 86 | | 65-123 | | |
| 2-Methylnaphthalene | 50 | 39.86 | | | 80 | | 51-112 | | |
| 2-Methylphenol | 50 | 39.47 | | | 79 | | 59-109 | | |
| 4-Methylphenol | 50 | 38.33 | | | 77 | | 56-108 | | |
| Naphthalene | 50 | 39.32 | | | 79 | | 54-107 | | |
| 2-Nitroaniline | 50 | 46.64 | | | 93 | | 66-126 | | |
| 3-Nitroaniline | 50 | 39.68 | | | 79 | | 51-120 | | |
| 4-Nitroaniline | 50 | 39.03 | | | 78 | | 53-111 | | |
| Nitrobenzene | 50 | 41.76 | | | 84 | | 59-117 | | |
| 2-Nitrophenol | 50 | 42.69 | | | 85 | | 63-121 | | |
| 4-Nitrophenol | 50 | 31.8 | | | 64 | | 28-88 | | |
| N-Nitroso-di-n-propylamine | 50 | 43.44 | | | 87 | | 61-118 | | |
| N-Nitrosodiphenylamine | 50 | 47.36 | | | 95 | | 68-122 | | |
| Di-n-octylphthalate | 50 | 43.91 | | | 88 | | 67-120 | | |
| Pentachlorophenol | 50 | 48.69 | | | 97 | | 64-130 | | |
| Phenanthrene | 50 | 45.78 | | | 92 | | 68-118 | | |
| Phenol | 50 | 25.11 | | | 50 | | 23-82 | | |
| Pyrene | 50 | 46.05 | | | 92 | | 68-118 | | |
| 1,2,4-Trichlorobenzene | 50 | 36.06 | | | 72 | | 38-116 | | |
| 2,4,5-Trichlorophenol | 50 | 47.5 | | | 95 | | 73-124 | | |
| 2,4,6-Trichlorophenol | 50 | 46.7 | | | 93 | | 69-122 | | |
| | **mg/l** | **mg/l** | **mg/l** | **mg/l** | | | | | |
| Batch number: 182611063602 | Sample number(s): 9802870-9802874 | | | | | | | | |
| Barium | 2.00 | 1.98 | | | 99 | | 87-111 | | |
| Cadmium | 0.0500 | 0.0506 | | | 101 | | 90-111 | | |
| Chromium | 0.200 | 0.201 | | | 100 | | 87-110 | | |
| Copper | 0.250 | 0.259 | | | 104 | | 90-115 | | |
| Iron | 1.00 | 0.998 | | | 100 | | 80-114 | | |
| Silver | 0.0500 | 0.0516 | | | 103 | | 80-120 | | |
| Zinc | 0.500 | 0.502 | | | 100 | | 89-111 | | |
| Batch number: 182611063901A | Sample number(s): 9802870-9802874 | | | | | | | | |
| Arsenic | 0.0100 | 0.0107 | | | 107 | | 80-120 | | |
| Lead | 0.0150 | 0.0156 | | | 104 | | 90-110 | | |
| Nickel | 0.0500 | 0.0558 | | | 112 | | 90-114 | | |
| | **mg/l** | **mg/l** | **mg/l** | **mg/l** | | | | | |

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# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 09/30/2018 20:00

Group Number: 1987210

## LCS/LCSD (continued)

| Analysis Name | LCS Spike Added mg/l | LCS Conc mg/l | LCSD Spike Added mg/l | LCSD Conc mg/l | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: 18261103101A | Sample number(s): 9802870-9802871,9802873-9802874 | | | | | | | | |
| Amenable Cyanide (water) | 0.200 | 0.0050 U | | | 0 | | -20-20 | | |
| Batch number: 18262117101A | Sample number(s): 9802870-9802871,9802873-9802874 | | | | | | | | |
| Total Cyanide (water) | 0.200 | 0.213 | | | 106 | | 90-110 | | |
| Batch number: 18262126101A | Sample number(s): 9802874 | | | | | | | | |
| Phenols (water) | 0.250 | 0.245 | | | 98 | | 82-109 | | |
| Batch number: 18262126101B | Sample number(s): 9802870-9802872 | | | | | | | | |
| Phenols (water) | 0.250 | 0.245 | | | 98 | | 82-109 | | |
| | **mg/l** | **mg/l** | **mg/l** | **mg/l** | | | | | |
| Batch number: 18257141084A | Sample number(s): 9802870,9802873-9802874 | | | | | | | | |
| Biochemical Oxygen Demand-BOD | 198 | 210.2 | | | 106 | | 85-115 | | |
| Batch number: 18261385802A | Sample number(s): 9802870,9802873 | | | | | | | | |
| Total Suspended Solids | 150 | 152.3 | | | 102 | | 89-105 | | |
| Batch number: 18261385802B | Sample number(s): 9802874 | | | | | | | | |
| Total Suspended Solids | 150 | 152.3 | | | 102 | | 89-105 | | |
| Batch number: 18263133301A | Sample number(s): 9802870-9802874 | | | | | | | | |
| Sulfide | 20 | 16.9 | | | 84 | | 80-120 | | |
| Batch number: 18263807902A | Sample number(s): 9802870-9802871,9802874 | | | | | | | | |
| HEM (oil & grease) | 40 | 40.2 | 40 | 39.4 | 101 | 99 | 78-114 | 2 | 13 |
| | **Std. Units** | **Std. Units** | **Std. Units** | **Std. Units** | | | | | |
| Batch number: 18257121521A | Sample number(s): 9802870,9802873-9802874 | | | | | | | | |
| pH | 7.00 | 6.95 | | | 99 | | 95-105 | | |

## MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | MS Spike Added ug/l | MS Conc ug/l | MSD Spike Added ug/l | MSD Conc ug/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| Batch number: 5182651AA | Sample number(s): 9802870-9802872,9802874-9802875 UNSPK: 9802870 | | | | | | | | | |
| Acetone | 5.19 | 150 | 152.22 | 150 | 142.7 | 98 | 92 | 54-157 | 6 | 30 |
| Benzene | 0.2 U | 20 | 21.04 | 20 | 21.25 | 105 | 106 | 80-120 | 1 | 30 |
| Bromodichloromethane | 0.2 U | 20 | 20.54 | 20 | 20.5 | 103 | 102 | 71-120 | 0 | 30 |
| Bromoform | 0.2 U | 20 | 18.27 | 20 | 18.31 | 91 | 92 | 51-120 | 0 | 30 |

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# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 09/30/2018 20:00

Group Number: 1987210

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | MS Spike Added ug/l | MS Conc ug/l | MSD Spike Added ug/l | MSD Conc ug/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| Bromomethane | 0.3 U | 20 | 20.62 | 20 | 21.09 | 103 | 105 | 53-128 | 2 | 30 |
| 2-Butanone | 0.3 U | 150 | 134.84 | 150 | 136.19 | 90 | 91 | 59-135 | 1 | 30 |
| Carbon Disulfide | 0.2 U | 20 | 20.8 | 20 | 21.45 | 104 | 107 | 65-128 | 3 | 30 |
| Carbon Tetrachloride | 0.2 U | 20 | 28.85 | 20 | 27.96 | 144* | 140* | 64-134 | 3 | 30 |
| Chlorobenzene | 0.2 U | 20 | 20.55 | 20 | 20.31 | 103 | 102 | 80-120 | 1 | 30 |
| Chloroethane | 0.2 U | 20 | 21.36 | 20 | 22.02 | 107 | 110 | 55-123 | 3 | 30 |
| Chloroform | 0.2 U | 20 | 21.84 | 20 | 21.76 | 109 | 109 | 80-120 | 0 | 30 |
| Chloromethane | 0.2 U | 20 | 16.38 | 20 | 17.47 | 82 | 87 | 56-121 | 6 | 30 |
| Dibromochloromethane | 0.2 U | 20 | 20.17 | 20 | 19.77 | 101 | 99 | 71-120 | 2 | 30 |
| 1,1-Dichloroethane | 0.2 U | 20 | 20.52 | 20 | 20.4 | 103 | 102 | 80-120 | 1 | 30 |
| 1,2-Dichloroethane | 0.3 U | 20 | 20.66 | 20 | 20.58 | 103 | 103 | 73-124 | 0 | 30 |
| 1,1-Dichloroethene | 0.2 U | 20 | 25.71 | 20 | 25.7 | 129 | 129 | 80-131 | 0 | 30 |
| cis-1,2-Dichloroethene | 305.6 | 20 | 307.16 | 20 | 317.36 | 8 (2) | 59 (2) | 80-120 | 3 | 30 |
| trans-1,2-Dichloroethene | 0.371 | 20 | 23.45 | 20 | 24.01 | 115 | 118 | 80-120 | 2 | 30 |
| 1,2-Dichloropropane | 0.2 U | 20 | 20.12 | 20 | 19.92 | 101 | 100 | 80-120 | 1 | 30 |
| cis-1,3-Dichloropropene | 0.2 U | 20 | 17.67 | 20 | 18.34 | 88 | 92 | 75-120 | 4 | 30 |
| trans-1,3-Dichloropropene | 0.2 U | 20 | 17.43 | 20 | 17.85 | 87 | 89 | 67-120 | 2 | 30 |
| Ethylbenzene | 0.4 U | 20 | 21.47 | 20 | 21.27 | 107 | 106 | 80-120 | 1 | 30 |
| 2-Hexanone | 0.3 U | 100 | 83.4 | 100 | 84.24 | 83 | 84 | 56-135 | 1 | 30 |
| 4-Methyl-2-pentanone | 0.5 U | 100 | 89.29 | 100 | 90.21 | 89 | 90 | 62-133 | 1 | 30 |
| Methylene Chloride | 0.3 U | 20 | 21.56 | 20 | 21.67 | 108 | 108 | 80-120 | 1 | 30 |
| Styrene | 0.2 U | 20 | 20.15 | 20 | 20.29 | 101 | 101 | 80-120 | 1 | 30 |
| 1,1,2,2-Tetrachloroethane | 0.2 U | 20 | 15.48 | 20 | 15.77 | 77 | 79 | 72-120 | 2 | 30 |
| Tetrachloroethene | 0.2 U | 20 | 23.76 | 20 | 23.07 | 119 | 115 | 80-120 | 3 | 30 |
| Toluene | 0.2 U | 20 | 20.53 | 20 | 20.58 | 103 | 103 | 80-120 | 0 | 30 |
| 1,1,1-Trichloroethane | 0.3 U | 20 | 24.36 | 20 | 23.97 | 122 | 120 | 67-126 | 2 | 30 |
| 1,1,2-Trichloroethane | 0.2 U | 20 | 19.35 | 20 | 19.24 | 97 | 96 | 80-120 | 1 | 30 |
| Trichloroethene | 52.38 | 20 | 72.14 | 20 | 76.95 | 99 | 123* | 80-120 | 6 | 30 |
| Vinyl Chloride | 1.30 | 20 | 20.02 | 20 | 21.2 | 94 | 100 | 56-120 | 6 | 30 |
| Xylene (Total) | 1 U | 60 | 64.81 | 60 | 64.56 | 108 | 108 | 80-120 | 0 | 30 |
| | **ug/l** | **ug/l** | **ug/l** | **ug/l** | **ug/l** | | | | | |
| Batch number: 18260WAM026 | Sample number(s): 9802870-9802872,9802874 UNSPK: 9802870 | | | | | | | | | |
| Acenaphthene | 0.1 U | 50.4 | 45.14 | 50.81 | 44.17 | 90 | 87 | 62-119 | 2 | 30 |
| Acenaphthylene | 0.1 U | 50.4 | 47.86 | 50.81 | 47.33 | 95 | 93 | 66-125 | 1 | 30 |
| Anthracene | 0.1 U | 50.4 | 48.02 | 50.81 | 47.01 | 95 | 93 | 70-118 | 2 | 30 |
| Benzo(a)anthracene | 0.1 U | 50.4 | 52.46 | 50.81 | 49.83 | 104 | 98 | 70-123 | 5 | 30 |
| Benzo(a)pyrene | 0.1 U | 50.4 | 49.26 | 50.81 | 49.02 | 98 | 96 | 71-122 | 0 | 30 |
| Benzo(b)fluoranthene | 0.1 U | 50.4 | 47.34 | 50.81 | 47.01 | 94 | 93 | 70-120 | 1 | 30 |
| Benzo(g,h,i)perylene | 0.1 U | 50.4 | 44.44 | 50.81 | 43.24 | 88 | 85 | 64-119 | 3 | 30 |
| Benzo(k)fluoranthene | 0.1 U | 50.4 | 47.81 | 50.81 | 47.41 | 95 | 93 | 73-122 | 1 | 30 |
| 4-Bromophenyl-phenylether | 0.5 U | 50.4 | 45.32 | 50.81 | 43.96 | 90 | 87 | 64-119 | 3 | 30 |
| Butylbenzylphthalate | 2 U | 50.4 | 48.8 | 50.81 | 48.13 | 97 | 95 | 57-119 | 1 | 30 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 09/30/2018 20:00

Group Number: 1987210

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | MS Spike Added ug/l | MS Conc ug/l | MSD Spike Added ug/l | MSD Conc ug/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-butylphthalate | 2 U | 50.4 | 48.66 | 50.81 | 47.79 | 97 | 94 | 71-113 | 2 | 30 |
| Carbazole | 0.5 U | 50.4 | 50.5 | 50.81 | 49.99 | 100 | 98 | 71-128 | 1 | 30 |
| 4-Chloro-3-methylphenol | 0.5 U | 50.4 | 41.34 | 50.81 | 40.83 | 82 | 80 | 65-122 | 1 | 30 |
| 4-Chloroaniline | 4 U | 50.4 | 30.8 | 50.81 | 29.55 | 61 | 58 | 42-110 | 4 | 30 |
| bis(2-Chloroethoxy)methane | 0.5 U | 50.4 | 42.13 | 50.81 | 41.67 | 84 | 82 | 64-119 | 1 | 30 |
| bis(2-Chloroethyl)ether | 0.5 U | 50.4 | 38.27 | 50.81 | 38.92 | 76 | 77 | 60-110 | 2 | 30 |
| 2-Chloronaphthalene | 0.4 U | 50.4 | 41.46 | 50.81 | 40.37 | 82 | 79 | 51-114 | 3 | 30 |
| 2-Chlorophenol | 0.5 U | 50.4 | 36.4 | 50.81 | 35.46 | 72 | 70 | 58-108 | 3 | 30 |
| 4-Chlorophenyl-phenylether | 0.5 U | 50.4 | 43.91 | 50.81 | 43.39 | 87 | 85 | 58-115 | 1 | 30 |
| 2,2'-oxybis(1-Chloropropane) | 0.5 U | 50.4 | 36.65 | 50.81 | 36.26 | 73 | 71 | 48-118 | 1 | 30 |
| Chrysene | 0.1 U | 50.4 | 48.61 | 50.81 | 46.59 | 96 | 92 | 71-123 | 4 | 30 |
| Dibenz(a,h)anthracene | 0.1 U | 50.4 | 48.35 | 50.81 | 48.17 | 96 | 95 | 67-123 | 0 | 30 |
| Dibenzofuran | 0.5 U | 50.4 | 44.77 | 50.81 | 44.24 | 89 | 87 | 63-117 | 1 | 30 |
| 1,2-Dichlorobenzene | 0.5 U | 50.4 | 35.41 | 50.81 | 36.57 | 70 | 72 | 43-108 | 3 | 30 |
| 1,3-Dichlorobenzene | 0.5 U | 50.4 | 34.07 | 50.81 | 34.61 | 68 | 68 | 31-110 | 2 | 30 |
| 1,4-Dichlorobenzene | 0.5 U | 50.4 | 34.66 | 50.81 | 35.03 | 69 | 69 | 30-109 | 1 | 30 |
| 3,3'-Dichlorobenzidine | 3 U | 50.4 | 47.19 | 50.81 | 43.91 | 94 | 86 | 36-116 | 7 | 30 |
| 2,4-Dichlorophenol | 0.5 U | 50.4 | 41.48 | 50.81 | 39.73 | 82 | 78 | 65-117 | 4 | 30 |
| Diethylphthalate | 2 U | 50.4 | 43.01 | 50.81 | 44.67 | 85 | 88 | 61-111 | 4 | 30 |
| 2,4-Dimethylphenol | 3 U | 50.4 | 25.24 | 50.81 | 28.25 | 50* | 56 | 52-106 | 11 | 30 |
| Dimethylphthalate | 2 U | 50.4 | 37.84 | 50.81 | 42.23 | 75 | 83 | 37-116 | 11 | 30 |
| 4,6-Dinitro-2-methylphenol | 8 U | 50.4 | 52.21 | 50.81 | 50.04 | 104 | 98 | 63-129 | 4 | 30 |
| 2,4-Dinitrophenol | 14 U | 100.81 | 90.69 | 101.63 | 66.01 | 90 | 65 | 26-141 | 31* | 30 |
| 2,4-Dinitrotoluene | 1 U | 50.4 | 45.68 | 50.81 | 47.16 | 91 | 93 | 69-117 | 3 | 30 |
| 2,6-Dinitrotoluene | 0.5 U | 50.4 | 46.81 | 50.81 | 47.55 | 93 | 94 | 69-122 | 2 | 30 |
| bis(2-Ethylhexyl)phthalate | 5 U | 50.4 | 52.53 | 50.81 | 49.08 | 104 | 97 | 68-120 | 7 | 30 |
| Fluoranthene | 0.1 U | 50.4 | 50.7 | 50.81 | 49.29 | 101 | 97 | 70-124 | 3 | 30 |
| Fluorene | 0.1 U | 50.4 | 46.45 | 50.81 | 46.17 | 92 | 91 | 62-116 | 1 | 30 |
| Hexachlorobenzene | 0.1 U | 50.4 | 45.79 | 50.81 | 43.83 | 91 | 86 | 65-121 | 4 | 30 |
| Hexachlorobutadiene | 0.5 U | 50.4 | 35.85 | 50.81 | 35.89 | 71 | 71 | 21-114 | 0 | 30 |
| Hexachlorocyclopentadiene | 5 U | 100.81 | 58.55 | 101.63 | 58.42 | 58 | 57 | 10-117 | 0 | 30 |
| Hexachloroethane | 1 U | 50.4 | 30.52 | 50.81 | 31.34 | 61 | 62 | 24-100 | 3 | 30 |
| Indeno(1,2,3-cd)pyrene | 0.1 U | 50.4 | 45.55 | 50.81 | 44.79 | 90 | 88 | 61-121 | 2 | 30 |
| Isophorone | 0.5 U | 50.4 | 42.58 | 50.81 | 41.66 | 84 | 82 | 65-123 | 2 | 30 |
| 2-Methylnaphthalene | 0.1 U | 50.4 | 41.07 | 50.81 | 40.26 | 81 | 79 | 51-112 | 2 | 30 |
| 2-Methylphenol | 0.5 U | 50.4 | 33.71 | 50.81 | 33.94 | 67 | 67 | 59-109 | 1 | 30 |
| 4-Methylphenol | 0.5 U | 50.4 | 31.14 | 50.81 | 31.84 | 62 | 63 | 56-108 | 2 | 30 |
| Naphthalene | 0.1 U | 50.4 | 39.8 | 50.81 | 38.83 | 79 | 76 | 54-107 | 2 | 30 |
| 2-Nitroaniline | 2 U | 50.4 | 47.86 | 50.81 | 49.54 | 95 | 97 | 66-126 | 3 | 30 |
| 3-Nitroaniline | 3 U | 50.4 | 40.36 | 50.81 | 41.36 | 80 | 81 | 51-120 | 2 | 30 |
| 4-Nitroaniline | 0.9 U | 50.4 | 40.96 | 50.81 | 41.4 | 81 | 81 | 53-111 | 1 | 30 |
| Nitrobenzene | 0.5 U | 50.4 | 40.53 | 50.81 | 39.26 | 80 | 77 | 59-117 | 3 | 30 |
| 2-Nitrophenol | 3 U | 50.4 | 46.77 | 50.81 | 43.96 | 93 | 87 | 63-121 | 6 | 30 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 09/30/2018 20:00

Group Number: 1987210

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | MS Spike Added ug/l | MS Conc ug/l | MSD Spike Added ug/l | MSD Conc ug/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| 4-Nitrophenol | 10 U | 50.4 | 36.05 | 50.81 | 36.45 | 72 | 72 | 28-88 | 1 | 30 |
| N-Nitroso-di-n-propylamine | 0.7 U | 50.4 | 40.93 | 50.81 | 41.09 | 81 | 81 | 61-118 | 0 | 30 |
| N-Nitrosodiphenylamine | 0.7 U | 50.4 | 47.43 | 50.81 | 46.1 | 94 | 91 | 68-122 | 3 | 30 |
| Di-n-octylphthalate | 5 U | 50.4 | 45.23 | 50.81 | 44.19 | 90 | 87 | 67-120 | 2 | 30 |
| Pentachlorophenol | 1 U | 50.4 | 54.08 | 50.81 | 54.68 | 107 | 108 | 64-130 | 1 | 30 |
| Phenanthrene | 0.1 U | 50.4 | 46.07 | 50.81 | 44.68 | 91 | 88 | 68-118 | 3 | 30 |
| Phenol | 0.5 U | 50.4 | 21.54 | 50.81 | 21.43 | 43 | 42 | 23-82 | 0 | 30 |
| Pyrene | 0.1 U | 50.4 | 46.38 | 50.81 | 45.17 | 92 | 89 | 68-118 | 3 | 30 |
| 1,2,4-Trichlorobenzene | 0.5 U | 50.4 | 38.05 | 50.81 | 38.12 | 75 | 75 | 38-116 | 0 | 30 |
| 2,4,5-Trichlorophenol | 0.5 U | 50.4 | 48.56 | 50.81 | 47.63 | 96 | 94 | 73-124 | 2 | 30 |
| 2,4,6-Trichlorophenol | 0.5 U | 50.4 | 48.82 | 50.81 | 46.97 | 97 | 92 | 69-122 | 4 | 30 |
| | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | | | | | |
| Batch number: 182611063602 | Sample number(s): 9802870-9802874 UNSPK: 9802870 | | | | | | | | | |
| Barium | 0.509 | 2.00 | 2.51 | 2.00 | 2.53 | 100 | 101 | 75-125 | 1 | 20 |
| Cadmium | 0.0010 U | 0.0500 | 0.0501 | 0.0500 | 0.0503 | 100 | 101 | 75-125 | 0 | 20 |
| Chromium | 0.0053 U | 0.200 | 0.202 | 0.200 | 0.204 | 101 | 102 | 75-125 | 1 | 20 |
| Copper | 0.0062 U | 0.250 | 0.262 | 0.250 | 0.263 | 105 | 105 | 75-125 | 0 | 20 |
| Iron | 36.42 | 1.00 | 36.5 | 1.00 | 36.03 | 8 (2) | -39 (2) | 75-125 | 1 | 20 |
| Silver | 0.0050 U | 0.0500 | 0.0535 | 0.0500 | 0.0538 | 107 | 108 | 75-125 | 1 | 20 |
| Zinc | 0.00911 | 0.500 | 0.514 | 0.500 | 0.517 | 101 | 102 | 75-125 | 1 | 20 |
| Batch number: 182611063901A | Sample number(s): 9802870-9802874 UNSPK: 9802870 | | | | | | | | | |
| Arsenic | 0.0157 | 0.0100 | 0.0259 | 0.0100 | 0.0243 | 102 | 86 | 75-125 | 6 | 20 |
| Lead | 0.0442 | 0.0150 | 0.0549 | 0.0150 | 0.0538 | 71* | 64* | 75-125 | 2 | 20 |
| Nickel | 0.00253 | 0.0500 | 0.0567 | 0.0500 | 0.0556 | 108 | 106 | 75-125 | 2 | 20 |
| | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | | | | | |
| Batch number: 18261103101A | Sample number(s): 9802870-9802871,9802873-9802874 UNSPK: 9802870 | | | | | | | | | |
| Amenable Cyanide (water) | 0.0050 U | 0.200 | 0.0050 U | | | 0 | | -20-20 | | |
| Batch number: 18262117101A | Sample number(s): 9802870-9802871,9802873-9802874 UNSPK: 9802870 | | | | | | | | | |
| Total Cyanide (water) | 0.0050 U | 0.200 | 0.178 | | | 89 | | 72-114 | | |
| Batch number: 18262126101A | Sample number(s): 9802874 UNSPK: P798592 | | | | | | | | | |
| Phenols (water) | 0.010 U | 0.200 | 0.216 | 0.200 | 0.221 | 108 | 111* | 90-110 | 2 | 8 |
| Batch number: 18262126101B | Sample number(s): 9802870-9802872 UNSPK: 9802870 | | | | | | | | | |
| Phenols (water) | 0.010 U | 0.200 | 0.220 | 0.200 | 0.226 | 110 | 113* | 90-110 | 3 | 8 |
| | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | | | | | |
| Batch number: 18263133301A | Sample number(s): 9802870-9802874 UNSPK: 9802870 | | | | | | | | | |
| Sulfide | 0.70 U | 10 | 7.27 | 10 | 7.07 | 73* | 71* | 80-120 | 3 | 9 |

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P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Reported: 09/30/2018 20:00

Group Number: 1987210

## MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc mg/l | MS Spike Added mg/l | MS Conc mg/l | MSD Spike Added mg/l | MSD Conc mg/l | MS %Rec | MSD %Rec | MS/MSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| Batch number: 18263807902A | Sample number(s): 9802870-9802871,9802874 UNSPK: 9802870 | | | | | | | | | |
| HEM (oil & grease) | 1.4 U | 41.7 | 17.5 | | | 42* | | 78-114 | | |

## Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| | mg/l | mg/l | | |
| Batch number: 182611063602 | Sample number(s): 9802870-9802874 BKG: 9802870 | | | |
| Barium | 0.509 | 0.508 | 0 | 20 |
| Cadmium | 0.0010 U | 0.0010 U | 0 (1) | 20 |
| Chromium | 0.0053 U | 0.0053 U | 0 (1) | 20 |
| Copper | 0.0062 U | 0.0062 U | 0 (1) | 20 |
| Iron | 36.42 | 36.59 | 0 | 20 |
| Silver | 0.0050 U | 0.0050 U | 0 (1) | 20 |
| Zinc | 0.00911 | 0.00920 | 1 (1) | 20 |
| Batch number: 182611063901A | Sample number(s): 9802870-9802874 BKG: 9802870 | | | |
| Arsenic | 0.0157 | 0.0166 | 6 (1) | 20 |
| Lead | 0.0442 | 0.0447 | 1 | 20 |
| Nickel | 0.00253 | 0.00200 | 24* (1) | 20 |
| | mg/l | mg/l | | |
| Batch number: 18261103101A | Sample number(s): 9802870-9802871,9802873-9802874 BKG: 9802870 | | | |
| Amenable Cyanide (water) | 0.0050 U | 0.0050 U | 0 (1) | 20 |
| Batch number: 18262117101A | Sample number(s): 9802870-9802871,9802873-9802874 BKG: 9802870 | | | |
| Total Cyanide (water) | 0.0050 U | 0.0050 U | 0 (1) | 20 |
| | Degrees C | Degrees C | | |
| Batch number: 18257121521A | Sample number(s): 9802870,9802873-9802874 BKG: 9802870 | | | |
| Temperature of pH | 19.7 | 20.1 | 2 | 5 |
| | mg/l | mg/l | | |
| Batch number: 18257141084A | Sample number(s): 9802870,9802873-9802874 BKG: 9802870 | | | |
| Biochemical Oxygen Demand-BOD | 7.24 | 7.03 | 3 (1) | 28 |
| Batch number: 18261385802A | Sample number(s): 9802870,9802873 BKG: 9802870 | | | |
| Total Suspended Solids | 71.33 | 67.33 | 6* (1) | 5 |

*- Outside of specification
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P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Group Number: 1987210
Reported: 09/30/2018 20:00

## Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | BKG Conc | DUP Conc | DUP RPD | DUP RPD Max |
|---|---|---|---|---|
| | mg/l | mg/l | | |
| Batch number: 18261385802B | Sample number(s): 9802874 BKG: 9802874 | | | |
| Total Suspended Solids | 56.67 | 74.67 | 27* (1) | 5 |
| Batch number: 18263133301A | Sample number(s): 9802870-9802874 BKG: 9802870 | | | |
| Sulfide | 0.70 U | 0.70 U | 0 (1) | 20 |
| | Std. Units | Std. Units | | |
| Batch number: 18257121521A | Sample number(s): 9802870,9802873-9802874 BKG: 9802870 | | | |
| pH | 6.70 | 6.73 | 0 | 4 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- 5ml Water by 8260C
Batch number: 5182651AA

| | Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|---|
| 9802870 | 108 | 98 | 92 | 87 |
| 9802871 | 104 | 95 | 96 | 100 |
| 9802872 | 104 | 96 | 95 | 98 |
| 9802874 | 105 | 98 | 93 | 89 |
| 9802875 | 106 | 97 | 93 | 88 |
| Blank | 106 | 98 | 92 | 88 |
| LCS | 101 | 100 | 95 | 99 |
| MS | 104 | 95 | 96 | 100 |
| MSD | 104 | 96 | 95 | 98 |
| Limits: | 80-120 | 80-120 | 80-120 | 80-120 |

Analysis Name: TCL SVOCs 8270D
Batch number: 18260WAM026

| | Phenol-d6 | 2-Fluorophenol | 2,4,6-Tribromophenol | Nitrobenzene-d5 | 2-Fluorobiphenyl | Terphenyl-d14 |
|---|---|---|---|---|---|---|
| 9802870 | 30 | 39 | 91 | 79 | 84 | 92 |
| 9802871 | 38 | 49 | 100 | 77 | 81 | 86 |
| 9802872 | 38 | 48 | 99 | 75 | 80 | 85 |
| 9802874 | 17 | 25 | 83 | 74 | 80 | 93 |
| Blank | 36 | 48 | 87 | 77 | 79 | 96 |
| LCS | 46 | 60 | 93 | 80 | 80 | 91 |
| MS | 38 | 49 | 100 | 77 | 81 | 86 |
| MSD | 38 | 48 | 99 | 75 | 80 | 85 |

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary

Client Name: CRG-E.I.DuPont de Nemours & Co
Group Number: 1987210
Reported: 09/30/2018 20:00

## Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCL SVOCs 8270D
Batch number: 18260WAM026

| | | | | | | |
|---|---|---|---|---|---|---|
| Limits: | 10-72 | 10-85 | 29-133 | 30-111 | 39-105 | 27-126 |

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P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Analysis Request / Environmental Services Chain of Custody

eurofins | Lancaster Laboratories

For Eurofins Lancaster Laboratories Use Only

Group No.: 1987210 Sample Nos.: 9802870-75 2 & 4 **39035**

Acc't: 06643 SF: 29705 SCR No.: 229220 Cooler No.: 2 & 4

Cooler Temperature upon receipt: 0.4 & 0.8 °C Container No.:

| | |
|---|---|
| Facility Name: Ferdula | Project Manager: Ed Ashton |
| Facility Contact: Ed Ashton | Facility Contact Phone No.: 315-679-1170 |
| Facility Address: Chemours Ferdula | Job No.: 9267-7720100C-WH06-507052 |
| | Release No.: |
| Ferdula NY | PO Number: LBIO-67047 |
| Sampler(s): Ed Ashton, Dan Douglass | |
| Project Name: LEACHATE SAMPLING 2018 | |

**Comments:** Metals = Ba, Cd, Cr, Cu, Fe, Ag, Zn (6010C); As, Pb, Ni (6020A)

Condition upon receipt: Intact

| Sample Identification | Date Collected | Time Collected | Matrix | Containers Volume (ml) | Preserv | No. | TCL VOAs (8260C) | TCL Semivolatiles (8270D) | Amenable CN (9012B) | BOD (SM20 5210 B) | CN (9012B) | Metals | O&G (EPA 1664A) | Phenolics (9066) | S2- (SM20 4500 S2 F) | TSS (SM20 2540 D) | pH (SM20 4500-H+B) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF2018_LEACHATE | 9-13-18 | 1110 | WW | 250 | NaOH/asc | 1 | | | X | | X | | | | | | | | |
| EF2018_LEACHATE | | | WW | 1000 | HCl | 2 | | | | | | | X | | | | | | |
| EF2018_LEACHATE | | | WW | 250 | HNO3 | 1 | | | | | | X | | | | | | | |
| EF2018_LEACHATE | | | WW | 250 | H2SO4 | 1 | | | | | | | | X | | | | | |
| EF2018_LEACHATE | | | WW | 250 | None | 2 | | X | | | | | | | | | | | |
| EF2018_LEACHATE | | | WW | 500 | None | 1 | | | | X | | | | | | | | | |
| EF2018_LEACHATE | | | WW | 1000 | None | 1 | | | | | | | | | | X | | | |
| EF2018_LEACHATE | | | WW | 500 | NaOH/ZnAc | 1 | | | | | | | | | X | | | | |
| EF2018_LEACHATE | | | WW | 40 | HCl | 3 | X | | | | | | | | | | | | |
| EF2018_LEACHATE | | | WW | 250 | None | 1 | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | | | | | | | |

**Turnaround Time Requested** (please circle): (Standard) RUSH Number of days: 8

**Special Instructions:**

| | Date | Time | | Date | Time |
|---|---|---|---|---|---|
| Bottles Relinquished by: Lori L. Hunt | 8-3-18 | 1100 | Bottles Received by: Ed Ashton | 8-4-18 | 1200 |
| Bottles Relinquished by: Ed Ashton | 9-13-18 | 1600 | Bottles Received by: | | |
| Bottles Relinquished by: | | | Bottles Received by: | | |
| Bottles Relinquished by: | | | Bottles Received by: | 9/14/18 | 1010 |

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# Analysis Request / Environmental Services Chain of Custody

For Eurofins Lancaster Laboratories Use Only

Group No.: 1987210 Sample Nos.: 9802870-75 2 & 4

Acc't: 06643 SF: 29705 SCR No.: 229220 Cooler No.: 39036

Cooler Temperature upon receipt: 0.4 ±0.8 °C Container No.:

| | |
|---|---|
| Facility Name: Ferdula | Project Manager: Ed Ashton |
| Facility Contact: Ed Ashton | Facility Contact Phone No.: 315-679-1170 |
| Facility Address: Chemours Ferdula | Job No.: 9267-7720100C-WH06-507052 |
| | Release No.: |
| Ferdula NY | PO Number: LBIO-67047 |

Sampler(s): Ed Ashton, Dan Douglass

Project Name: LEACHATE SAMPLING 2018

| Sample Identification | Date Collected | Time Collected | Matrix | Containers Volume (ml) | Preserv | No. | TCL VOAs (8260C) | TCL Semivolatiles (8270D) | Amenable CN (9012B) | BOD (SM20 5210 B) | CN (9012B) | Metals | O&G (EPA 1664A) | Phenolics (9066) | S2- (SM20 4500 S2 F) | TSS (SM20 2540 D) | pH (SM20 4500-H+B) | | | Condition upon receipt: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF2018_LEACHATE | 9-13-18 | 1120 | WW | 250 | NaOH/asc | 1 | | | X | | X | | | | | | | | | MS |
| EF2018_LEACHATE | | | WW | 1000 | HCl | 2 | | | | | | | X | | | | | | | MS |
| EF2018_LEACHATE | | | WW | 250 | HNO3 | 1 | | | | | | X | | | | | | | | MS |
| EF2018_LEACHATE | | | WW | 250 | H2SO4 | 1 | | | | | | | | X | | | | | | MS |
| EF2018_LEACHATE | | | WW | 250 | None | 2 | | X | | | | | | | | | | | | MS |
| EF2018_LEACHATE | | | WW | 500 | None | 1 | | | | X | | | | | | | | | | MS |
| EF2018_LEACHATE | | | WW | 1000 | None | 1 | | | | | | | | | | X | | | | MS |
| EF2018_LEACHATE | | | WW | 500 | NaOH/ZnAc | 1 | | | | | | | | | X | | | | | MS |
| EF2018_LEACHATE | | | WW | 40 | HCl | 3 | X | | | | | | | | | | | | | MS |
| EF2018_LEACHATE | | | WW | 250 | None | 1 | | | | | | | | | | | X | | | MS |
| | | | | | | | | | | | | | | | | | | | | |

**Analyses Required**

**Comments:** Metals = Ba, Cd, Cr, Cu, Fe, Ag, Zn (6010C); As, Pb, Ni (6020A)

**Turnaround Time Requested** (please circle): (Standard) RUSH Number of days: 8

**Special Instructions:**

| | Date | Time | | Date: | Time: |
|---|---|---|---|---|---|
| Bottles Relinquished by: Ed Ashton | 9-13-18 | 1600 | Bottles Received by: | | |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | 9/14/18 | 1010 |

# Analysis Request / Environmental Services Chain of Custody

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For Eurofins Lancaster Laboratories Use Only
Group No.: 1987210 Sample Nos.: 9802870-75 & 0.8
Acc't: 06643 SF: 29705 SCR No.: 229220 Cooler No.: 1 & 4 39037
Cooler Temperature upon receipt: 0.3 0.3 °C 9/14/18 Container No.:

| | |
|---|---|
| Facility Name: Ferdula | Project Manager: Ed Ashton |
| Facility Contact: Ed Ashton | Facility Contact Phone No.: 315-679-1170 |
| Facility Address: Chemours Ferdula | Job No.: 9267-7720100C-WH06-507052 |
| | Release No.: |
| Ferdula NY | PO Number: LBIO-67047 |
| Sampler(s): Ed Ashton, Dan Douglass | |
| Project Name: LEACHATE SAMPLING 2018 | |

| Sample Identification | Date Collected | Time Collected | Matrix | Containers Volume (ml) | Preserv | No. | TCL VOAs (8260C) | TCL Semivolatiles (8270D) | Amenable CN (9012B) | BOD (SM20 5210 B) | CN (9012B) | Metals | O&G (EPA 1664A) | Phenolics (9066) | S2- (SM20 4500 S2 F) | TSS (SM20 2540 D) | pH (SM20 4500-H+B) | | | Comments / Condition upon receipt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyses Required** | | | | | | | | | | | | | Comments: Metals = Ba, Cd, Cr, Cu, Fe, Ag, Zn (6010C); As, Pb, Ni (6020A) |
| | | | | | | | | | | | | | | | | | | | | Condition upon receipt: Intact |
| EF2018_LEACHATE | 9-13-18 | 1130 | WW | 250 | NaOH/asc | 1 | | | X | | X | | | | | | | | | MSD |
| EF2018_LEACHATE | | | WW | 1000 | HCl | 2 | | | | | | | X | | | | | | | MSD |
| EF2018_LEACHATE | | | WW | 250 | HNO3 | 1 | | | | | | X | | | | | | | | MSD |
| EF2018_LEACHATE | | | WW | 250 | H2SO4 | 1 | | | | | | | | X | | | | | | MSD |
| EF2018_LEACHATE | | | WW | 250 | None | 2 | | X | | | | | | | | | | | | MSD |
| EF2018_LEACHATE | | | WW | 500 | None | 1 | | | | X | | | | | | | | | | MSD |
| EF2018_LEACHATE | | | WW | 1000 | None | 1 | | | | | | | | | | X | | | | MSD |
| EF2018_LEACHATE | | | WW | 500 | NaOH/ZnAc | 1 | | | | | | | | | X | | | | | MSD |
| EF2018_LEACHATE | | | WW | 40 | HCl | 3 | X | | | | | | | | | | | | | MSD |
| EF2018_LEACHATE | | | WW | 250 | None | 1 | | | | | | | | | | | X | | | MSD |
| | | | | | | | | | | | | | | | | | | | | |

**Turnaround Time Requested** (please circle): (Standard) RUSH Number of days: 8

**Special Instructions:**

| | | | | | |
|---|---|---|---|---|---|
| Bottles Relinquished by: Ed Ashton | Date 9-13-18 | Time 1600 | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: Kristin Z | Date: 9/14/18 | Time: 1010 |

# Analysis Request / Environmental Services Chain of Custody

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For Eurofins Lancaster Laboratories Use Only 9802870-75 ⑤ KMS 9/14/18

Group No.: 1987210 Sample Nos.: +0.8

Acc't: 06643 SF: 29705 SCR No.: 229220 Cooler No.: + 3 & 4 39038

Cooler Temperature upon receipt: 0.3 0.5 °C Container No.:

| | |
|---|---|
| Facility Name: Ferdula | Project Manager: Ed Ashton |
| Facility Contact: Ed Ashton | Facility Contact Phone No.: 315-679-1170 |
| Facility Address: Chemours Ferdula | Job No.: 9267-7720100C-WH06-507052 |
| | Release No.: |
| Ferdula NY | PO Number: LBIO-67047 |

Sampler(s): Ed Ashton, Dan Douglass

Project Name: LEACHATE SAMPLING 2018

**Comments:** Metals = Ba, Cd, Cr, Cu, Fe, Ag, Zn (6010C); As, Pb, Ni (6020A)

Condition upon receipt: Intact

| Sample Identification | Date Collected | Time Collected | Matrix | Containers Volume (ml) | Preserv | No. | TCL VOAs (8260C) | TCL Semivolatiles (8270D) | Amenable CN (9012B) | BOD (SM20 5210 B) | CN (9012B) | Metals | O&G (EPA 1664A) | Phenolics (9066) | S2- (SM20 4500 S2 F) | TSS (SM20 2540 D) | pH (SM20 4500-H+B) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF2018_LEACHATE-D | 9-13-18 | 1201 | WW | 250 | NaOH/asc | 1 | | | X | | X | | | | | | | | |
| EF2018_LEACHATE-D | | | WW | 1000 | HCl | 2 | | | | | | | X | | | | | | |
| EF2018_LEACHATE-D | | | WW | 250 | HNO3 | 1 | | | | | | X | | | | | | | |
| EF2018_LEACHATE-D | | | WW | 250 | H2SO4 | 1 | | | | | | | | X | | | | | |
| EF2018_LEACHATE-D | | | WW | 250 | None | 2 | | X | | | | | | | | | | | |
| EF2018_LEACHATE-D | | | WW | 500 | None | 1 | | | | X | | | | | | | | | |
| EF2018_LEACHATE-D | | | WW | 1000 | None | 1 | | | | | | | | | | X | | | |
| EF2018_LEACHATE-D | | | WW | 500 | NaOH/ZnAc | 1 | | | | | | | | | X | | | | |
| EF2018_LEACHATE-D | | | WW | 40 | HCl | 3 | X | | | | | | | | | | | | |
| EF2018_LEACHATE-D | | | WW | 250 | None | 1 | | | | | | | | | | | X | | |
| | | | | | | | | | | | | | | | | | | | |

**Turnaround Time Requested** (please circle): (Standard) RUSH Number of days: 8

**Special Instructions:**

| | | | | | |
|---|---|---|---|---|---|
| Bottles Relinquished by: Ed Ashton | Date 9-13-18 | Time 1600 | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: 9/14/18 | Time: 1010 |

# Analysis Request / Environmental Services Chain of Custody

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For Eurofins Lancaster Laboratories Use Only
Group No.: 1987210 Sample Nos.: 9802870-75 4
Acc't: 06643 SF: 29705 SCR No.: 229220 Cooler No.: 4
Cooler Temperature upon receipt: 0.8 °C Container No.:

39039

| | |
|---|---|
| Facility Name: Ferdula | Project Manager: Ed Ashton |
| Facility Contact: Ed Ashton | Facility Contact Phone No.: 315-679-1170 |
| Facility Address: Chemours Ferdula | Job No.: 9267-7720100C-WH06-507052 |
| | Release No.: |
| Ferdula NY | PO Number: LBIO-67047 |
| Sampler(s): Ed Ashton, Dan Douglass | |
| Project Name: LEACHATE SAMPLING 2018 | |

| Sample Identification | Date Collected | Time Collected | Matrix | Containers Volume (ml) | Preserv | No. | TCL VOAs (8260C) | Comments / Condition upon receipt |
|---|---|---|---|---|---|---|---|---|
| EF2018-TB | — | — | WW | 40 | HCl | 2 | X | Trips came w/ bottles |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Comments: Note: All VOAs w/ trip Blanks in cooler.

Condition upon receipt: Intact

**Analyses Required**

Turnaround Time Requested (please circle): (Standard) RUSH Number of days: 8

Special Instructions:

| | | | | | |
|---|---|---|---|---|---|
| Bottles Relinquished by: Ed Ashton | Date 9-13-18 | Time 1600 | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: | Time: |
| Bottles Relinquished by: | Date | Time | Bottles Received by: | Date: 9/14/18 | Time: 1010 |

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# Sample Administration Receipt Documentation Log

Doc Log ID: 227065

Group Number(s): 1987210

Client: Dupont

## Delivery and Receipt Information

| | | | |
|---|---|---|---|
| Delivery Method: | Fed Ex | Arrival Timestamp: | 09/14/2018 10:10 |
| Number of Packages: | 4 | Number of Projects: | 1 |
| State/Province of Origin: | NY | | |

## Arrival Condition Summary

| | | | |
|---|---|---|---|
| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace ≥ 6mm: | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 2 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCl |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No | | |
| Extra Samples: | No | | |
| Discrepancy in Container Qty on COC: | No | | |

*Unpacked by Kristin Zeigler (2123) at 11:56 on 09/14/2018*

## Samples Chilled Details

*Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

| Cooler # | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
|---|---|---|---|---|---|---|---|
| 1 | DT42-02 | 0.3 | DT | Wet | Y | Loose | N |
| 2 | DT42-02 | 0.4 | DT | Wet | Y | Loose | N |
| 3 | DT42-02 | 0.5 | DT | Wet | Y | Loose | N |
| 4 | DT42-02 | 0.8 | DT | Wet | Y | Loose | N |



2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **BMQL** | Below Minimum Quantitation Level | **mL** | milliliter(s) |
| **C** | degrees Celsius | **MPN** | Most Probable Number |
| **cfu** | colony forming units | **N.D.** | non-detect |
| **CP Units** | cobalt-chloroplatinate units | **ng** | nanogram(s) |
| **F** | degrees Fahrenheit | **NTU** | nephelometric turbidity units |
| **g** | gram(s) | **pg/L** | picogram/liter |
| **IU** | International Units | **RL** | Reporting Limit |
| **kg** | kilogram(s) | **TNTC** | Too Numerous To Count |
| **L** | liter(s) | **µg** | microgram(s) |
| **lb.** | pound(s) | **µL** | microliter(s) |
| **m3** | cubic meter(s) | **umhos/cm** | micromhos/cm |
| **meq** | milliequivalents | **MCL** | Maximum Contamination Limit |
| **mg** | milligram(s) | | |

| | |
|---|---|
| **<** | less than |
| **>** | greater than |
| **ppm** | parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas. |
| **ppb** | parts per billion |
| **Dry weight basis** | Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis. |

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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# Data Qualifiers

| Qualifier | Definition |
|---|---|
| C | Result confirmed by reanalysis |
| D1 | Indicates for dual column analyses that the result is reported from column 1 |
| D2 | Indicates for dual column analyses that the result is reported from column 2 |
| E | Concentration exceeds the calibration range |
| K1 | Initial Calibration Blank is above the QC limit and the sample result is ND |
| K2 | Continuing Calibration Blank is above the QC limit and the sample result is ND |
| K3 | Initial Calibration Verification is above the QC limit and the sample result is ND |
| K4 | Continuing Calibration Verification is above the QC limit and the sample result is ND |
| J (or G, I, X) | Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL) |
| P | Concentration difference between the primary and confirmation column >40%. The lower result is reported. |
| P^ | Concentration difference between the primary and confirmation column > 40%. The higher result is reported. |
| U | Analyte was not detected at the value indicated |
| V | Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. |
| W | The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L. |
| Z | Laboratory Defined - see analysis report |

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.