2018 ANNUAL
PROGRESS REPORT
PENTAIR FLOW TECHNOLOGIES, LLC
DELAVAN, WISCONSIN FACILITY
SOURCE AREA REMEDIATION

BRRTS# 02-65-529579
FACILITY ID# 265091640

February 20, 2019

Prepared For:

Pentair Flow Technologies, LLC
293 Wright Street
Delavan, Wisconsin 53115

Prepared By:

Tetra Tech
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Project No. 117-7469002

CERTIFICATION

Hydrogeologist:

I hereby certify that I am a hydrogeologist as that term is defined in s. NR712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR700 to 726, Wis. Adm. Code.

Mark A. Manthey, P.G.
Associate Hydrogeologist
Tetra Tech

TETRA TECH

TETRA TECH

February 20, 2019
(117-7469002.02)

Mr. Thomas Wentland
Waste Management Engineer
Wisconsin Department of Natural Resources
P.O. Box 408
Plymouth, WI 53073-0408

RE: Annual Progress Report, Source Area Remedial Action, Pentair Flow Technologies, LLC Facility, Delavan, Wisconsin
BRRTS# 02-65-529579, FID# 265091640

Dear Mr. Wentland:

Enclosed is the Annual Progress Report for the source area remedial action at the Pentair Flow Technologies, LLC (former Sta-Rite Industries) facility in Delavan, Wisconsin.

SITE NAME/ACTIVITY:	DATE: February 20, 2019
Contract No. SF-90-02	
Delavan Municipal Well #4	
Delavan, Wisconsin	
Source Area Remediation	PERIOD: January 1 through December 31, 2018

The format of this report follows the Wisconsin Department of Natural Resources (WDNR) "Guidance for Design, Installation, and Operation of Soil Venting Systems," WDNR Emergency and Remedial Response Section, July 1993, PUBL-SW185-93.

The following activities took place in 2018:

1. The groundwater extraction wells on the Delavan facility were operated and monthly samples were collected from the storm sewer outfall (SS-1 sample identification) where the groundwater is discharged.

2. Quarterly groundwater samples were collected from monitor well TW-4 per the request of the WDNR in February, May and July. Based on the quarterly sampling results from 2017 and 2018, the WDNR and U.S. Environmental Protection Agency (EPA) approved resuming annual sampling of TW-4 in a June 7, 2018 letter from Michelle Norman, Supervisor, WDNR Remediation & Redevelopment Program, Southeast Region.

3. Annual sampling of the wells that are part of the groundwater monitoring program for the Delavan facility was performed in July. All existing site monitor wells were also inspected and any damage to the surface seals, protective casings or well casings were noted. Monitor wells

D-3 and D-5, which are not part of the Delavan facility groundwater monitoring program, were found to be damaged during the well inspection. It is recommended that these two monitor wells and monitor wells D-4, which is nested with D-3, and D-6, which is nested with D-5, be abandoned in accordance with Chapter NR141 of the Wisconsin Administrative Code as all four monitor wells are no longer being sampled. The abandonment of the four monitor wells will be performed in 2019 if the recommendation is approved by the WDNR project manager. WDNR Well / Drillhole / Borehole Filling & Sealing Report (Form 3300-005) forms will be filled out for each monitor well and will be submitted to the WDNR. The locks were missing on the above-grade protector tops of five of the site monitor wells (TW-1A, D-1R, D-23, D-26 and P-2010) and the locks on the above-grace protector tops of two of the site monitor wells were found to be broken (D-25R and D-27) during the well inspection. New locks will be installed on the protector tops of these monitor wells in 2019.

4. A Final Institutional Control Implementation and Assurance Plan (ICIAP) was prepared for the Delavan facility property and submitted to the WDNR and EPA on Mach 6, 2018. The ICIAP was approved by the WDNR and EPA in a June 7, 2018 letter from Michelle Norman, Supervisor, WDNR Remediation & Redevelopment Program, Southeast Region.

5. As described in the ICIAP, an annual site inspection of the Delavan facility was performed during the annual groundwater sampling event to document the surface conditions in the two areas on the Delavan facility property containing residual volatile organic compounds (VOCs) impacts in the subsurface soil. A visual inspection of the entire Delavan facility property was also performed to document any potential land-use changes including the undeveloped east half of the property. Photographs were also be taken to document site conditions.

6. Pumping rate measurements were collected from Delavan facility extraction wells EX-1, EX-2R, EX-3R, EX-4R, EX-5R and EX-7R on March 26th, from extraction wells EX-1, EX-2R, EX-3R. EX-4R, EX-5R, EX-6 and EX-7R on June 29th and from EX-6 and EX-7R on July 31st. EX-6 was not operating when the pumping rate measurements were collected on March 26th because the water line from EX-6 was frozen and pumping rate measurements were only taken from EX-6 and EX-7R in July because the flow rates in the other extraction wells were being measured with electronic flow meters as discussed below.

7. Six Badger Meter Dynansonics® U500w Ultrasonic meters and Orion LTE cellular endpoints were installed on the groundwater discharge lines of the groundwater extraction system between May and November to eliminate having to take manual flow measurements at the extraction wells wellheads. The Orion cellular endpoints transmit the meter readings to the Badger Meter AquaCUE® Flow Measurement Manager site, which can be accessed over the internet to users who are given authorization to access the data. The meters that read flow from extraction wells EX-1, EX-2R, EX-3R, EX-4R and EX-5R were installed and brought on-line in May (note, one meter reads the combined flow from EX-3R and EX-4R). The meter that reads flow from EX-6 was installed and brought on-line in August and the meter that reads flow from EX-7R was installed and brought on-line in November.

If you require additional information or have any questions regarding these matters, please contact me at your convenience.

Sincerely,

Tetra Tech

Mark A. Manthey, P.G.
Associate Hydrogeologist
mark.manthey@tetratech.com

Encs.

cc: Maxwell Geyer, Pentair Flow Technologies, LLC (Electronic copy via email.)
Robert Thiboldeaux, PhD, Senior Toxicologist, Wisconsin Department of Health Services (Electronic copy via email.)
William Ryan, EPA (Electronic copy via email.)

SUMMARY OF PROGRESS MADE THIS REPORTING PERIOD

The following remedial action activities took place in 2018:

1. The groundwater extraction wells on the Delavan facility were operated and monthly samples were collected from the storm sewer outfall (SS-1 sample identification) where the groundwater is discharged.

2. As requested by the Wisconsin Department of Natural Resources (WNDR) in its February 8, 2017 letter, Pentair Flow Technologies began collecting groundwater samples from monitor well TW-4 on a quarterly schedule beginning in 2017. The increase in sampling frequency of TW-4 from annual to quarterly was requested because the trichloroethene (TCE) concentration in the annual groundwater samples collected from TW-4 increased from 20 ug/L for the 2014 sample to 36 ug/L for the 2015 sample. Quarterly groundwater samples were collected from TW-4 during the first, second and third quarters of 2018 (January through September). The quarterly groundwater samples were collected from TW-4 on February 28th, May 10th and July 30th. Based on the results from the 2017 and 2018 sampling events, the WDNR and U.S. Environmental Protection Agency (EPA) approved resuming annual sampling of TW-4 in a June 7, 2018 letter from Michelle Norman, Supervisor, WDNR Remediation & Redevelopment Program, Southeast Region. A copy of the letter is included in Appendix A. The results from the first quarter and second quarter sampling events were reported to the WDNR, Wisconsin Department of Health Services and EPA in quarterly progress reports. The results from the third quarter sampling event are included and discussed in this progress report.

3. One round of groundwater samples was collected from the monitor wells and groundwater extraction wells that are part of the groundwater monitoring program for the Delavan facility July 30th to July 31st. All existing Delavan facility monitor wells were also inspected and any damage to the surface seals, protective casings or well casings were noted.

   Two of the Delavan facility monitor wells were found to be damaged during the well

inspection. Photographs of the damaged monitor wells are included in Appendix B. The protective casing and well casing of monitor well D-3, which is a water table monitor well approximately 50 feet deep located on the Delavan facility property northeast of Plant 2, are damaged. As shown on the photograph in Appendix B, the protective casing and PVC well casing of D-3 are bent and the protective casing cover is missing. Monitor well D-4 is nested with D-3 and is approximately 80 feet deep. As shown on the photograph in Appendix B, the protective casing cover of monitor well D-5 cannot be closed because the top of the protective cover sunk below the top of the PVC well casing. Monitor well D-5 is a water table monitor well approximately 50 feet deep that is located on the property across the street from Plant 1. Monitor well D-6 is nested with D-5 and is approximately 110 feet deep. It is recommended that all four of these monitor wells be abandoned in 2019 as the monitor wells are no longer part of the Delavan facility groundwater monitoring program and therefore continued maintenance of these wells is not necessary. The monitor wells will be abandoned in accordance with Chapter NR141 of the Wisconsin Code if this recommendation is approved by the WDNR project manager. WDNR Well / Drillhole / Borehole Filling & Sealing Report (Form 3300-005) forms will be filled out for each monitor well and will be submitted to the WDNR.

The above-grade protector tops of monitor wells TW-1A, D-1R, D-23, D-26 and P-2010 were found to be missing locks during the well inspection and the locks on the above-grade protector tops of monitor wells D-25R and D-27 were broken. New locks will be installed on the protector tops of these monitor wells in 2019.

The analytical results from 2018 showed moderate to slight decreases in the concentrations or no detections of the volatile organic compounds (VOCs) analyzed in thirteen (13) of the wells sampled, a slight increase in concentrations in the sample collected from extraction well EX-1 and similar concentrations in the quarterly samples collected from monitor well TW-4 compared to the 2017 data. The analytical results from the 2018 sampling round indicate the contaminant plume is exhibiting an overall stable to decreasing trend in the site contaminants. The analytical results for the groundwater samples collected from the site during this reporting

period are summarized on Table 1, Table 2 and Figure 1. Charts showing the trends in VOC concentrations for select site monitor wells are included as Figures 2 through 8. Laboratory results and field data sheets for the annual groundwater sampling event are included in Appendix C and copies of the monthly discharge monitoring reports containing the analytical results collected at the storm sewer outfall where the groundwater pumped from the Delavan facility groundwater extraction system extraction wells discharges are provided in Appendix D.

4. A Final Institutional Control Implementation and Assurance Plan (ICIAP) was prepared for the Delavan facility property. The ICIAP was submitted to the WDNR and EPA via email on Mach 6, 2018. The ICIAP was approved by the WDNR and EPA in a June 7, 2018 letter from Michelle Norman, Supervisor, WDNR Remediation & Redevelopment Program, Southeast Region. A copy of the letter is included in Appendix A.

5. As described in the ICIAP, an annual site inspection of the Delavan facility was performed during the annual groundwater sampling event to document the surface conditions in the two areas on the Delavan facility property containing residual volatile organic compounds (VOCs) impacts in the subsurface soil. The first area is located next to the north wall of Plant 2 in the former sump source area and contains residual TCE impacts in the soil at a depth of 28 feet below ground surface that are protective of commercial and industrial site uses but are not protective of non-commercial/non-industrial uses. The second area is found beneath the concrete floor of Plant 1 and south of the south wall of Plant 1 and contains pervasive low-level VOCs impacts in the subsurface soil. The approximate extent of the low-level VOCs impacts in the soil beneath and south of Plant 1 is shown on Figure 1. Inspection of surface conditions in this area is needed to confirm the surface cover of the concrete floor of Plant 1 and the paved areas south of the south wall of Plant 1 are still intact to prevent direct-contact with the potentially impacted soils. A visual inspection of the entire Delavan facility property was also performed to document any potential land-use changes including the former locations of the chip storage extraction system (CSES) and southeast extraction system (SES) and the

undeveloped land on the east half of the property. Photographs were taken to document site conditions.

The site inspection confirmed the surface cover remains intact in the area of the residual VOCs impacts beneath and south of Plant 1 and the surface conditions in the former sump source area are unchanged. The undeveloped land on the east half of the property remains undeveloped and land use in and around the developed portion of the Delavan facility property including the former CSES area and former SES area remains the same. Photographs documenting site conditions are included in Appendix B.

6. Pumping rate measurements were collected from Delavan facility extraction wells EX-1, EX-2R, EX-3R, EX-4R, EX-5R and EX-7R on March 26th, from extraction wells EX-1, EX-2R, EX-3R. EX-4R, EX-5R, EX-6 and EX-7R on June 29th and from EX-6 and EX-7R on July 31st. EX-6 was not operating when the pumping rate measurements were collected on March 26th because the water line from EX-6 was frozen. Pumping from EX-6 was resumed in April. Pumping rate measurements were only taken from EX-6 and EX-7R in July because the flow rates in the other extraction wells were being measured with electronic flow meters as discussed below.

7. Six Badger Meter Dynansonics® U500w Ultrasonic meters and Orion LTE cellular endpoints were installed on the groundwater discharge lines of the groundwater extraction system between May and November to eliminate having to take manual flow measurements at the extraction wells wellheads. The Orion cellular endpoints transmit the meter readings to the Badger Meter AquaCUE® Flow Measurement Manager site, which can be accessed over the internet to users who are given authorization to access the data.

GROUNDWATER

Residual groundwater impacts originating from the former SES and former sump source areas are controlled by extraction wells EX-1 and EX-7R. Groundwater downgradient of the former CSES source area and the pervasive low-level residual VOCs impacts in the subsurface soil beneath a portion of the concrete floor of Plant 1 and south of the south wall of Plant 1 is controlled by extraction wells EX-2R, EX-3R, EX-4R, EX-5R, and EX-6 (see Figure 1). Wastewater discharge monitoring reports documenting the flow rate and effluent chemistry where the combined flow from the seven extraction wells is discharged to the storm sewer (storm sewer outfall SS-1) are provided in Appendix D.

Groundwater Sampling

As noted above quarterly groundwater samples were collected from monitor well TW-4 on February 28th, May 10th and July 30th. The annual groundwater sampling round was conducted July 30th to July 31st. The monitor wells and groundwater extraction wells that are part of the Delavan facility groundwater monitoring program are listed on Table 4. The field sampling forms and the analytical results for the annual sampling round are provided in Appendix C. The analytical results for the sampling points that are part of the Delavan facility groundwater monitoring plan are summarized on Table 1 and Table 2. Table 1 presents the analytical results for the chlorinated volatile organic compounds (CVOCs) for which all of the site monitoring points are analyzed, which include tetrachloroethene (PCE), 1,1,1-trichloroethane (TCA), trichloroethene (TCE), 1,1,2-trichloroethane and vinyl chloride. Table 2 summarizes the analytical results for monitor well TW-4, which is analyzed for the full list of volatile organic compounds (VOCs). Total VOC concentrations for the annual sampling event are also listed next to each sampling point on Figure 1. Time versus concentration plots were prepared and graphed for contaminant concentrations in the most highly impacted wells near Plant 1 and Plant 2 and are included as Figures 2 through 8.

The following summarizes the trends in water quality at site monitoring points.

Plant 1: Four monitor wells and two extraction wells were sampled during this reporting period. Contaminants of concern are 1,1,1-trichloroethane (TCA) and trichloroethene (TCE). The tetrachloroethene (PCE) results for the Plant 1 wells are also discussed as it is a contaminant of concern at Plant 2.

PCE: No PCE was detected in any of the groundwater samples collected from the Plant 1 wells.

TCA: TCA was detected in the groundwater samples collected from three of the Plant 1 monitor wells sampled and the samples collected from extraction wells EX-2R and EX-3R. All the reported TCA concentrations were below the TCA Chapter NR140 groundwater quality standards. Comparison of the 2017 TCA results to the 2018 TCA results is presented below:
TCA NR140 Enforcement Standard (ES) = 200 ug/L
TCA NR140 Preventive Action Limit (PAL) = 40 ug/L

- TCA concentrations in MW-1026 decreased from 14 ug/L to 11 ug/L. The reported TCA concentrations in previous samples collected from MW-1026 were 21 ug/L in 2016, 18 ug/L in 2015, 7.4 ug/L in 2014, 15 ug/L in 2013, 25 ug/L in 2012, 20 ug/L in 2011, 15 ug/L in 2010, 6.9 ug/L in 2009, not detected in 2008, 41 ug/L in 2007 and 93 ug/L in 2006. The 2018 analytical data confirms an overall declining trend in TCA concentrations at MW-1026 over the past twelve years.

- The TCA concentration in MW-1027 decreased from 7.1 ug/L to 4.9 ug/L. TCA concentrations in MW-1027 have exhibited a declining trend since the 2005 sampling event and TCA concentrations in MW-1027 have not exceeded its PAL since the July 2006 sampling event. 1994 was the last time the TCA concentration in MW-1027 exceeded the ES.

- TCA concentrations in TW-4 decreased slightly from 27 ug/L to 26 ug/L between the July 2017 and July 2018 sampling events. The TCA concentration in the first quarter sample collected from TW-4 was 20 ug/L and the second quarter sample had a reported TCA concentration of 27 ug/L. TCA concentrations in TW-4 have been below its PAL since the July 2013 sampling round and the 2011 through 2018 TCA concentrations are the lowest reported TCA concentrations for samples collected from TW-4. The TCA data suggest there is a declining trend in TCA impacts at TW-4. 2001 was the last time the TCA concentration in TW-4 exceeded the ES.

- The TCA concentration in D-25R decreased from 2.9 ug/L in 2017 to no detection (detection limit = 0.38 ug/L) in 2018. TCA concentrations in the D-25R samples have exhibited a declining trend since the 2005 sampling event and TCA concentrations have been below the PAL since the October 1996 sampling round.

- The TCA concentration in extraction well EX-2R decreased from 3.7 ug/L to 1.7 ug/L. TCA concentration in EX-2R have not exceeded the PAL since 1997.

- The TCA concentration in extraction well EX-3R increased slightly from 2.3 ug/L in 2017 to 2.4 ug/l in 2018. EX-3R is the replacement extraction well for original extraction well EX-3 and was brought on-line in September 2017.

TCE: TCE concentrations exceeded the NR140 ES of 5.0 ug/L in the groundwater samples collected from monitor wells MW-1027 and TW-4 during this reporting period. The reported TCE concentration in the sample collected from monitor well MW-1026 and D-25R and extraction wells EX-2R and EX-3R exceeded the PAL of 0.50 ug/L. Comparison of the 2017 TCE

results to the 2018 TCE results is presented below:

TCE NR140 ES = 5.0 ug/L

TCE NR140 PAL = 0.50 ug/L

- TCE concentrations in MW-1026 decreased from 3.6 ug/L to 2.6 ug/L. Review of the TCE results on Table 1 reveals TCE concentrations in the groundwater samples from MW-1026 are exhibiting an overall declining trend since the 2005 sampling round when the reported TCE concentration in the MW-1026 sample was 21 ug/L.

- The reported TCE concentrations in MW-1027 were the same in 2017 and 2018 (27 ug/L). The two 27 ug/L concentrations are the lowest historical TCE concentration for groundwater samples collected from MW-1027 and confirms a declining trend in TCE impacts at MW-1027.

- The reported TCE concentration in monitor well TW-4 decreased slightly from 19 ug/L in July 2017 to 18 ug/L in July 2018. The TCE concentrations in the quarterly samples collected from TW-4 during the first three quarters of 2018 ranged from 11 ug/L to 18 ug/L, which is similar to the range in TCE concentrations for the four quarterly samples collected from TW-4 in 2017 (8.0 ug/ L to 19 ug/L). Review of the TCE results for the TW-4 samples presented on Table 1 shows TCE concentrations have been below 20 ug/L since the July 2016 sampling event and have exhibited on overall declining trend since 1993.

- At monitor well D-25R, the TCE concentration decreased from 2.3 ug/L to 0.55 ug/L. The 0.55 ug/L TCE concentration is the lowest TCE concentration reported for samples collected from D-25R since April of 1997 when no TCE was detected in the sample above the detection limit of 0.5 ug/L. The TCE data indicate an overall declining trend in TCE

impacts at D-25R. TCE concentrations in groundwater samples collected from D-25R have not exceeded the ES since the July 2010 sampling event.

- The TCE concentration in extraction well EX-2R decreased from 6.3 ug/L to 3.6 ug/L. TCE concentrations in the EX-2R samples have been below 10 ug/L since the July 2012 sampling event.

- The TCE concentration in extraction well EX-3R decreased from 3.3 ug/L in 2017 to 2.4 ug/L in 2018.

Plant 2: Seven monitor wells and two extraction wells were sampled during this reporting period. Contaminants of concern are PCE, TCA, and TCE.

PCE: PCE was detected above its ES of 5.0 ug/L in the groundwater sample collected from monitor well D-15. The PAL for PCE, which is 0.50 ug/L, was exceeded in the groundwater samples collected from extraction wells EX-1 and EX-7R. No PCE was detected in the groundwater samples collected from monitor wells D-18, MW-2004, MW-2005R, MW-2011, TW-1 and TW-3. A comparison of the 2017 PCE results to the 2018 PCE results is presented below:
PCE NR140 ES = 5.0 ug/L
PCE NR140 PAL = 0.50 ug/L

- No PCE was detected in the samples collected from monitor wells D-18, MW-2004, MW-2005R, MW-2011 and TW-1 in 2017 and 2018. PCE was last detected in D-18 in 2009 and was last detected in MW-2004 in 1997. PCE has never been detected in MW-2011 and was last detected in TW-1 in 2008. The PCE concentrations in the samples collected from MW-2005R, which replaced original monitor well MW-2005 in 2007, have been below 3 ug/L since the July 2007 sampling

event and suggest an overall stable to declining trend in PCE impacts at MW-2005R since 2007. The last sample collected from MW-2005 in September 2004 had a reported PCE concentration of 17 ug/L.

- PCE concentrations in monitor well D-15 decreased from 9.8 ug/L to 6.3 ug/L. The PCE concentration in the 2016 sample was 10 ug/L and it was 4.5 ug/L in 2015. The 2014 sample had a reported PCE concentration of 4.2 ug/L. The PCE concentrations for the 2014 and 2015 samples are the lowest reported PCE concentration for samples collected from D-15 between the November 1991 sampling round and the 2018 sampling round. The 2018 PCE results confirms a decreasing trend in PCE concentrations at monitor well D-15.

- The PCE concentration in TW-3 decreased slightly from 0.59 ug/L to not detected above the detection of 0.37 ug/L. PCE impacts in TW-3 have been below the 5.0 ug/L ES since the 2002 sampling event.

- The PCE concentration in extraction well EX-1 increased slightly from no detection (0.37 ug/L detection limit) to 0.60 ug/L. PCE concentrations in EX-1 have been below the ES of 5.0 ug/L since the 2004 sampling event.

- The PCE concentration in replacement extraction well EX-7R, which replaced original extraction well EX-7 and was brought on-line in September 2017, decreased from 7.3 ug/L in 2017 to 4.7 ug/L in 2018. The PCE results from EX-7 and EX-7R from the 2010 to 2018 sampling rounds suggest an overall declining trend in PCE impacts in the former sump source area.

TCA: TCA was only detected in the groundwater sample collected from monitor well MW-2011 at a concentration of 1.2 ug/L, which is well below the

Chapter NR140 PAL of 40 ug/L. All the reported TCA detections in samples collected from MW-2011 are below the NR140 PAL.

TCE: The Chapter NR140 ES for TCE of 5.0 ug/L was exceeded in the groundwater samples collected from monitor wells MW-2011 and D-15. The PAL for TCE (0.50 ug/L) was exceeded in the groundwater sample collected from replacement extraction well EX-7R. TCE was detected in EX-1 at a reported concentration of 0.30 ug/L, which is below the PAL. No TCE was detected in the groundwater samples collected from monitor wells D-18, MW-2004, MW-2005R, TW-1 and TW-3. A comparison of the 2017 TCE results to the 2018 TCE results is presented below:

TCE NR140 ES = 5.0 ug/L

TCE NR140 PAL = 0.50 ug/L

- No TCE was detected in the 2017 and 2018 groundwater samples collected from monitor wells MW-2004, MW-2005R, TW-1 and TW-3. TCE concentrations have been below the ES of 5.0 ug/L in groundwater samples collected from monitor well MW-2004 since the 1997 annual sampling event and the PAL has not been exceeded since the 2015 sampling event. TCE has never been detected in a groundwater sample collected from MW-2005R, which replaced original monitor well MW-2005 in 2007. The last sample collected from MW-2005 in September 2004 had a reported TCE concentration of 1.3 ug/L. TCE was last detected in a groundwater sample collected from monitor well TW-1 in July 2012 at a concentration of 0.31 ug/L. TCE concentrations in monitor well TW-3 decreased from 0.29 ug/L in 2016 to not being detected above the detection limit of 0.16 ug/L in 2017. The TCE concentration of 0.29 ug/L reported for the 2016 sample was the lowest reported TCE concentration for a groundwater sample collected from TW-3 between 1991 and 2016 and the 2017 sample was the first time

TCE has not been detected in a sample collected from TW-3.

- The TCE concentration in monitor well D-18 decreased from 0.61 ug/L to not being detected above the detection limit of 0.16 ug/L. TCE impacts in D-18 have been below 1.0 ug/L since the July 2010 sampling event and have not exceeded the ES of 5.0 ug/L since 2003.

- The TCE concentration in monitor well MW-2011 decreased from 16 ug/L to 7.6 ug/L. The reported TCE concentration in the 2016 sample was 29 ug/L and the TCE concentration in the 2015 sample was 7.2 ug/L. The TCE concentrations in the 2015 and 2018 samples are the lowest reported TCE concentrations for samples collected from MW-2011.

- The TCE concentration in monitor well D-15 decreased from 12 ug/L to 7.0 ug/L. The reported TCE concentration in the July 2016 sample was 13 ug/L. The July 2015 sample collected from D-15 had a reported TCE concentration of 8.5 ug/L and the July 2014 had a reported TCE concentration 7.7 ug/L. The 7.0 ug/L, 7.7 ug/L and 8.5 ug/L concentrations are the lowest TCE concentrations reported for samples collected from D-15 between 1991 and 2018. Review of the TCE data presented on Figure 5 shows TCE concentrations in D-15 are exhibiting on overall decreasing trend since the April 2001 sampling event.

- The TCE concentration in EX-1 increased slightly from not being detected above the detection of 0.16 ug/L in 2017 to 0.30 ug/L in 2018. TCE concentrations in EX-1 have been below the PAL of 0.50 ug/L since the July 2013 sampling event and have been below the ES of 5.0 since the September 2004 sampling event.

- The TCE concentration in replacement extraction well EX-7R

decreased from 3.8 ug/L in 2017 to 2.4 ug/L in 2018. The TCE results from EX-7 and EX-7R from the 2010 to 2018 sampling rounds suggest an overall declining trend in PCE impacts in the former sump source area.

Installation of Electronic Flow Meters and Extraction Wells Pumping Rate Measurements

As noted in the summary section, six Badger Meter Dynansonics® U500w Ultrasonic meters and Orion LTE cellular endpoints were installed on the groundwater discharge lines of the groundwater extraction system between May and November to eliminate having to take manual flow measurements at the extraction wells wellheads. The Orion cellular endpoints transmit the meter readings to the Badger Meter AquaCUE® Flow Measurement Manager site, which can be accessed over the internet to users who are given authorization to access the data. The meters that read flow from extraction wells EX-1, EX-2R, EX-3R, EX-4R and EX-5R were installed and brought on-line in May. The meter that reads flow from EX-6 was installed and brought on-line in August and the meter that reads flow from EX-7R was installed and brought on-line in November. The meters that read flow from extraction wells EX-1, EX-2R, EX-3R, EX-4R, EX-5R and EX-6 are installed in storm sewer manholes on the Delavan facility property. One meter reads the combined flow from extraction wells EX-2R and EX-3R and four meters read the individual flow from EX-1, EX-4R, EX-5R and EX-6. The meter that reads the flow from extraction well EX-7R is installed in an insulated enclosure at the wellhead.

Delavan facility personnel collected manual pumping rate measurements from extraction wells EX-1, EX-2R, EX-3R, EX-4R, EX-5R and EX-7R on March 26th, from extraction wells EX-1, EX-2R, EX-3R. EX-4R, EX-5R, EX-6 and EX-7R on June 29th and from EX-6 and EX-7R on July 31st. As noted in the summary section, EX-6 was not operating when the pumping rate measurements were collected on March 26th because the water line from EX-6 was frozen. Pumping from EX-6 was resumed in April. Pumping rate measurements were only taken from EX-6 and EX-7R in July because the flow rates in the other extraction wells were being measured with the new U500w Ultrasonic meters. The pumping rates were measured by fully closing the valve

to the buried groundwater discharge line that transports groundwater flow from the extraction well to the storm sewer and fully opening the valve on the sample tap line of the extraction well. The groundwater was then discharged into a 55-gallon drum and the amount of time required to fill the 55-gallon drum was recorded. Three pumping rate measurements were taken at each extraction well and the average pumping rate was calculated from the three measurements. The pumping rate measurements are summarized on Table 3. The July 31st pumping rates include the pumping rates registered by the U500w Ultrasonic meters that were in operation on July 31st.

The flow data from the U500w Ultrasonic meters indicate extraction wells EX-2R, EX-3R, EX-4R and EX-7R are operating at pumping rates of approximately 40 to 43 gallons per minute (gpm), EX-5R is operating at pumping rates of approximately 36 to 42 gpm and EX-6 is operating at pumping rates of approximately 80 to 87 gpm. The data from the U500w Ultrasonic meter installed on the groundwater discharge line of extraction EX-1 indicate very erratic pumping rates for the submersible pump in EX-1 with average daily pumping rates ranging from less than one gpm to approximately 61 gpm. The flow data from the U500w Ultrasonic meter also indicates the pumping rate in EX-1 has been below 15 gpm since November 6th.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Significant reductions in VOC impacts at site monitor wells have been observed since the remedial action began. While VOC removal from the dual soil vapor extraction/groundwater extraction (SVE/GWE) wells in the former CSES and former SES areas and the SVE wells in the former sump source area has been discontinued, hydraulic control of the contaminant plume is maintained by pumping from the seven groundwater extraction wells located on the Delavan facility property (EX-1, EX-2R, EX-3R, EX-4R, EX-5R, EX-6 and EX-7R).

Recommendations

1. Pumping from extraction wells EX-1, EX-2R, EX-3R, EX-4R, EX-5R, EX-6 and EX-7R

will continue.

2. The erratic pumping rate readings in extraction well EX-1 suggest the wiring to the electric submersible pump in EX-1 or the pump itself are damaged and should be replaced. A new pump and pump wiring will be installed in EX-1 in 2019.

   The groundwater samples collected from EX-1 indicate concentrations of the Delavan facility contaminants of concern have been below their respective ESs since the September 2004 sampling event, which suggest it may be appropriate to stop groundwater extraction from EX-1 within a few years. If it is determined that pumping from EX-1 is longer necessary, EX-1 will not be decommissioned as it will be used as a backup for extraction well EX-7R for instances when EX-7R is shut down for repairs or if the pump in EX-7R fails.

3. It is recommended that damaged monitor wells D-3 and D-5 and monitor wells D-4 and D-6, which are nested with D-3 and D-5, be abandoned in accordance with Chapter NR141 of the Wisconsin Code. Monitor wells D-3, D-4, D-5 and D-6 are no longer part of the Delavan facility groundwater monitoring program and therefore continued maintenance of these wells is not necessary. The monitor wells will be abandoned in 2019 if this recommendation is approved by the WDNR project manager. WDNR Well / Drillhole / Borehole Filling & Sealing Report (Form 3300-005) forms will be filled out for each monitor well and the completed forms will be submitted to the WDNR.

4. New locks will be installed on the seven monitor wells (TW-1A, D-1R, D-23, D-25R, D-26, D-27 and P-2010) that were found to have broken or missing locks during the well inspection in 2019.

5. Annual sampling of the monitor wells and extraction wells that are part of the groundwater monitoring program for the Delavan facility will continue (Table 4). All the site monitor wells will be inspected as part of the annual groundwater sampling event. Groundwater samples will also be collected from all the Delavan facility groundwater extraction wells

that are not part of the Delavan facility groundwater monitoring program during the annual groundwater sampling event. The groundwater samples collected from the extraction wells will be submitted for laboratory analysis of VOCs to document current contaminant concentrations in the extraction wells.

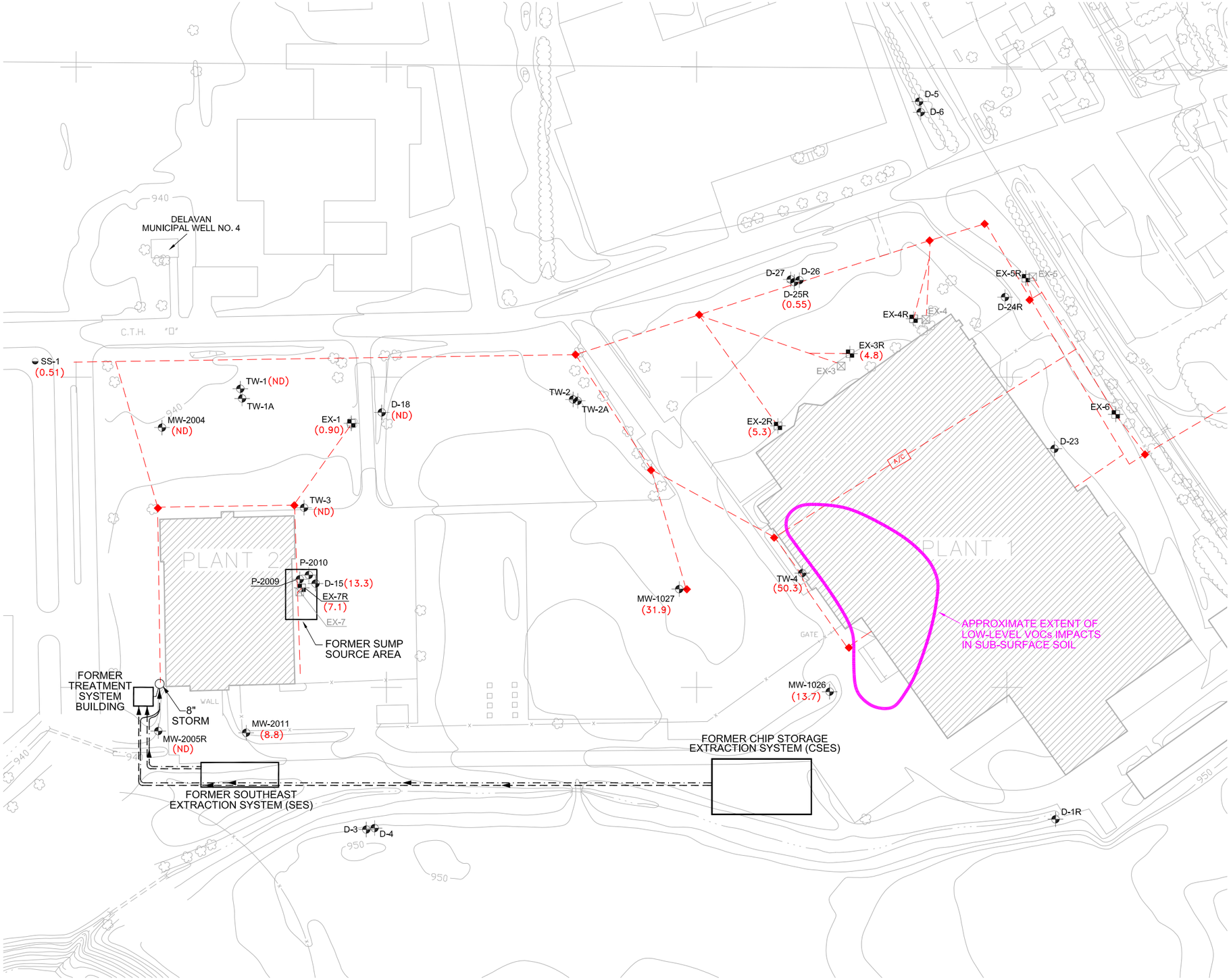
6. An annual site inspection of the Delavan facility property to document current site conditions and land use as described in the Draft ICIAP will be performed in conjunction with the annual groundwater sampling event.

FIGURES

TABLES

APPENDICES

FIGURES



EXPLANATION

MW-2004	MONITOR WELL LOCATION AND DESIGNATION
E-3	EXTRACTION WELL LOCATION AND DESIGNATION
SS-1	STORM SEWER SAMPLE LOCATION AND DESIGNATION
P-2009	PIEZOMETER LOCATION AND DESIGNATION
EX-7	FORMER EXTRACTION WELL LOCATION AND DESIGNATION (FILLED AND SEALED IN 2017)
	EXTRACTION WELL/ STORM SEWER PIPING
(11.1)	TOTAL VOCs CONCENTRATION (ug/L) FROM 2018 SAMPLING ROUND
(ND)	NO VOCs DETECTED

N

SCALE

0 330

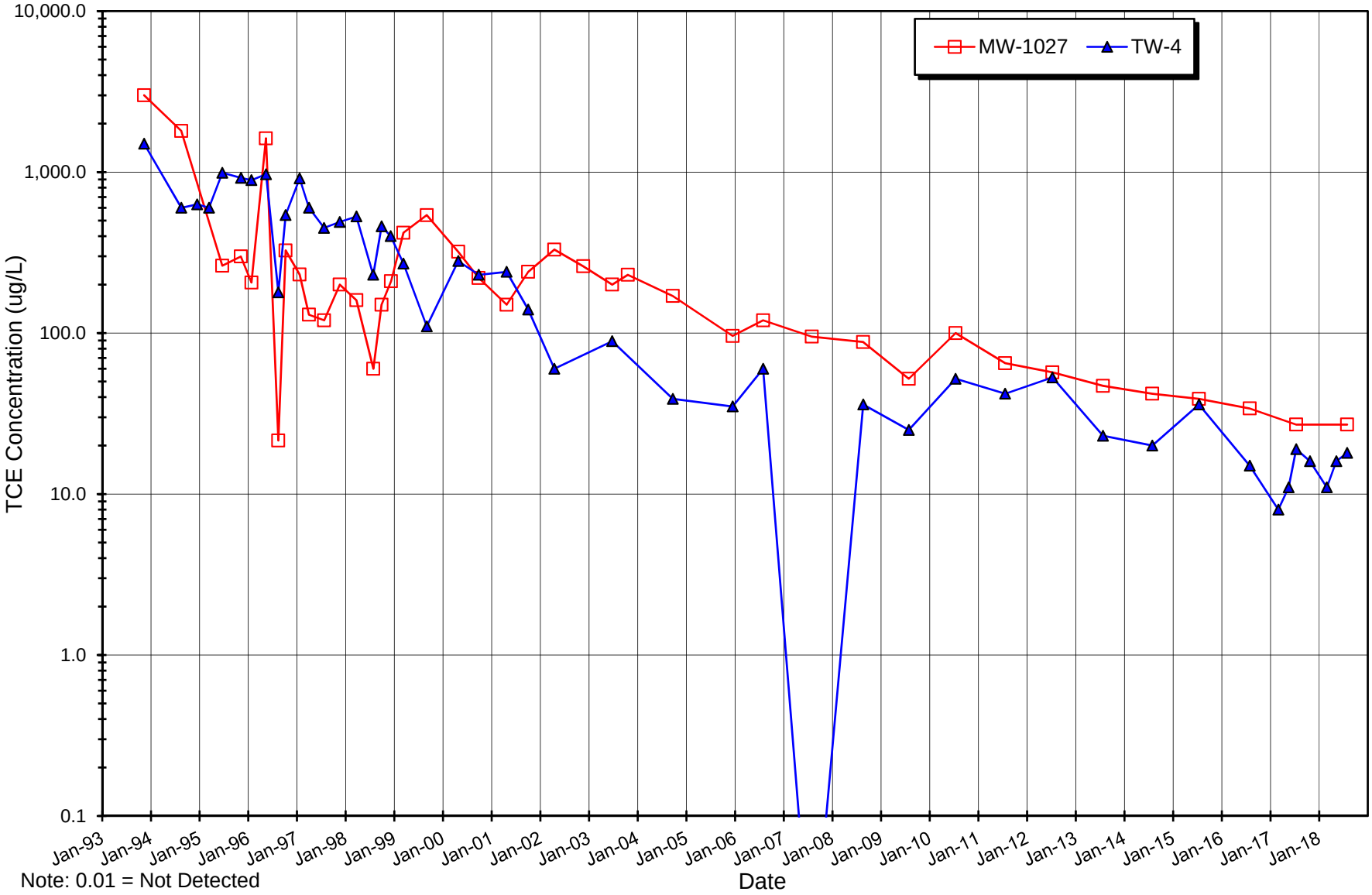
Feet

Base map from Areo-Metric Engineering, 4/16/88.

STA-RITE INDUSTRIES, INC. DELAVAN, WISCONSIN	DATE:	1/24/19
	DESIGNED:	CMP
SITE LAYOUT AND TOTAL VOCs CONCENTRATIONS FOR GROUNDWATER MONITORING POINTS	CHECKED:	MAM
	APPROVED:	MAM
	DRAWN:	CMP
	PROJ.:	117-7469002
TETRA TECH	Figure	1

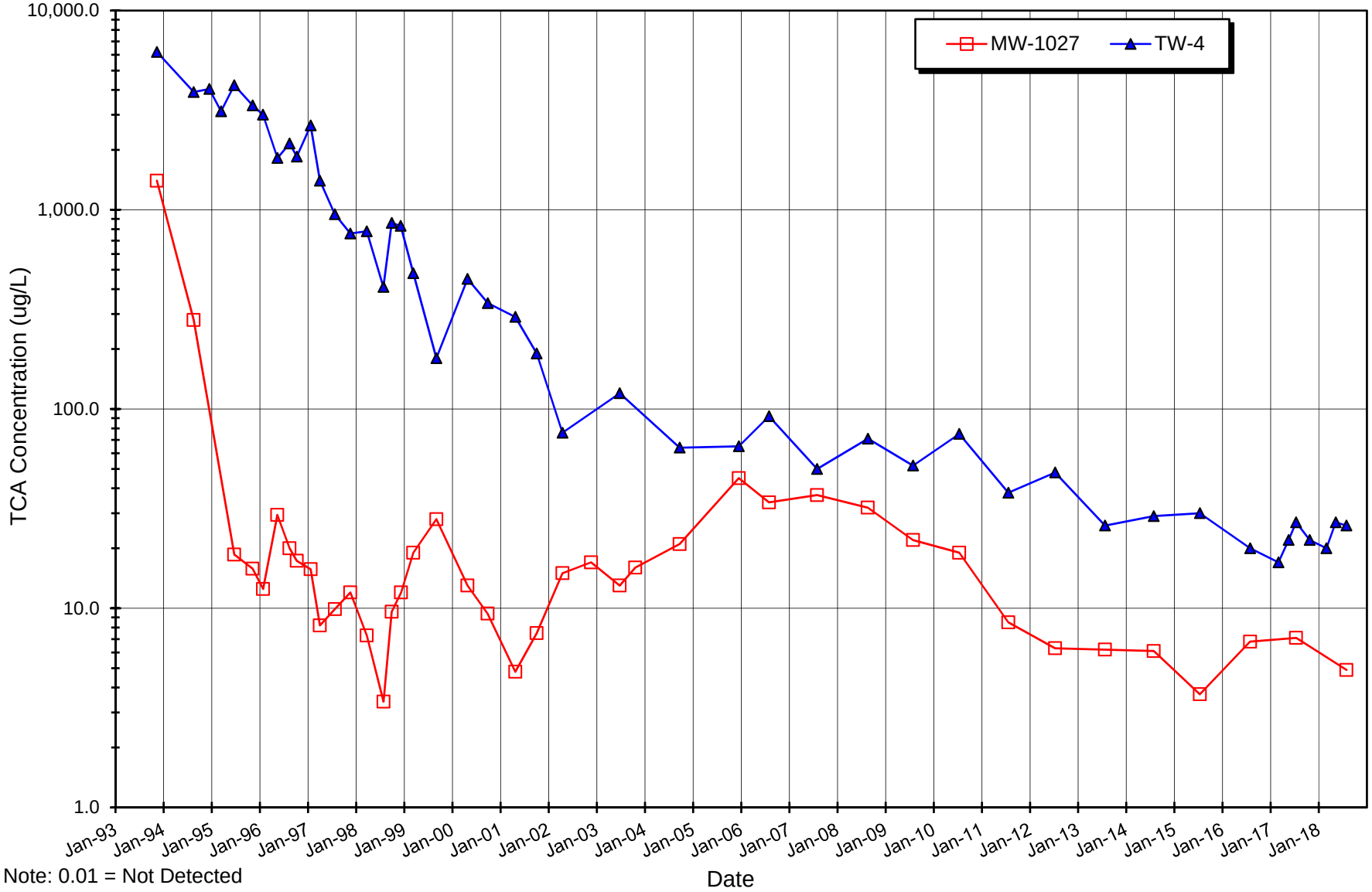
S:\CAD\STA-RITE\DELAVAN\JANUARY 2019\7469002FIG1_1-24-19.DWG

Figure 2. Plant 1 Trichloroethene (TCE) Concentration Changes
ES = 5 ug/L, PAL = 0.5 ug/L



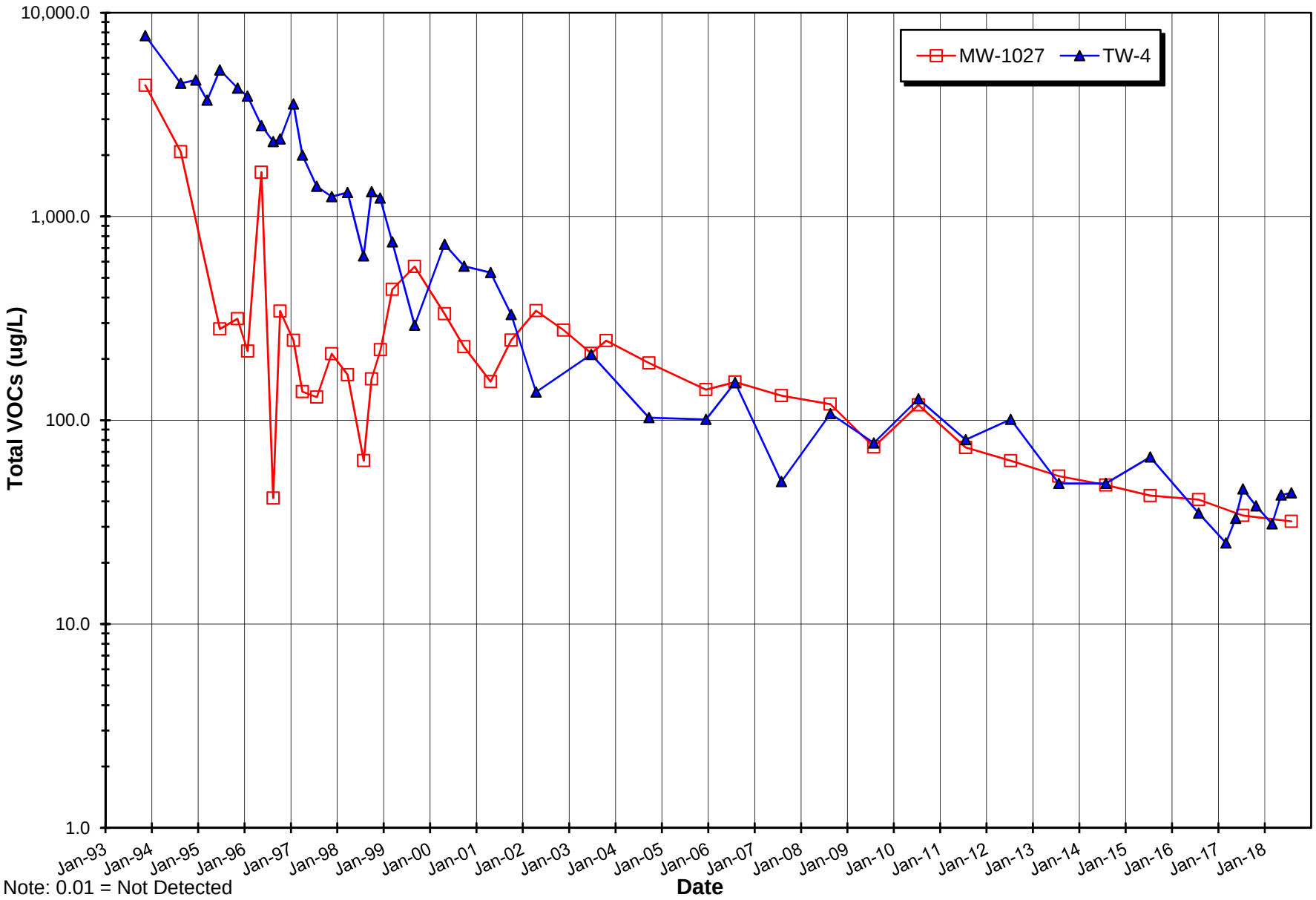
Note: 0.01 = Not Detected

Figure 3. Plant 1 1,1,1-Trichloroethane (TCA) Concentration Changes
ES = 200 ug/L, PAL = 40 ug/L



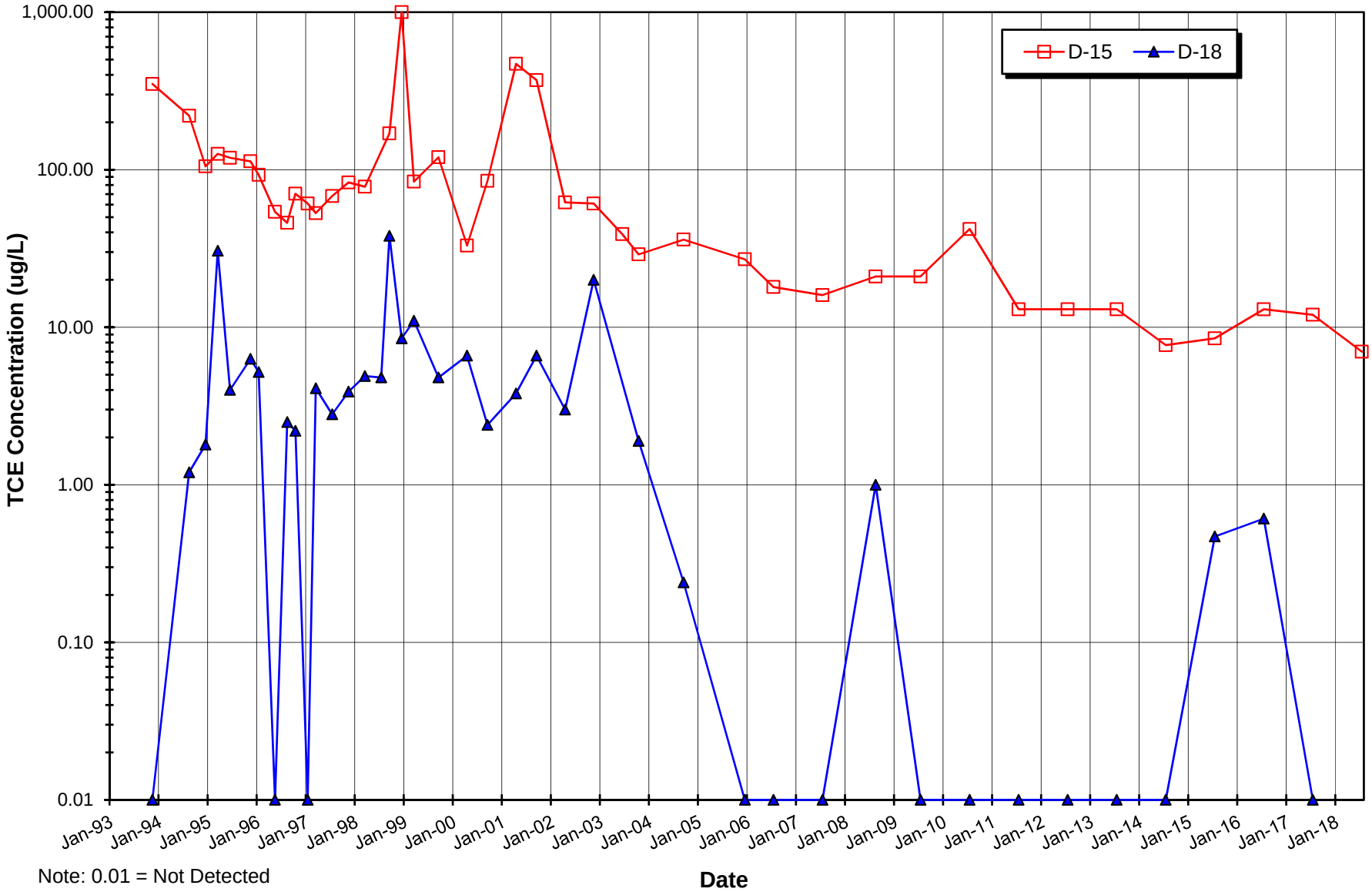
Note: 0.01 = Not Detected

Figure 4. Plant 1 Total VOC Concentration Changes



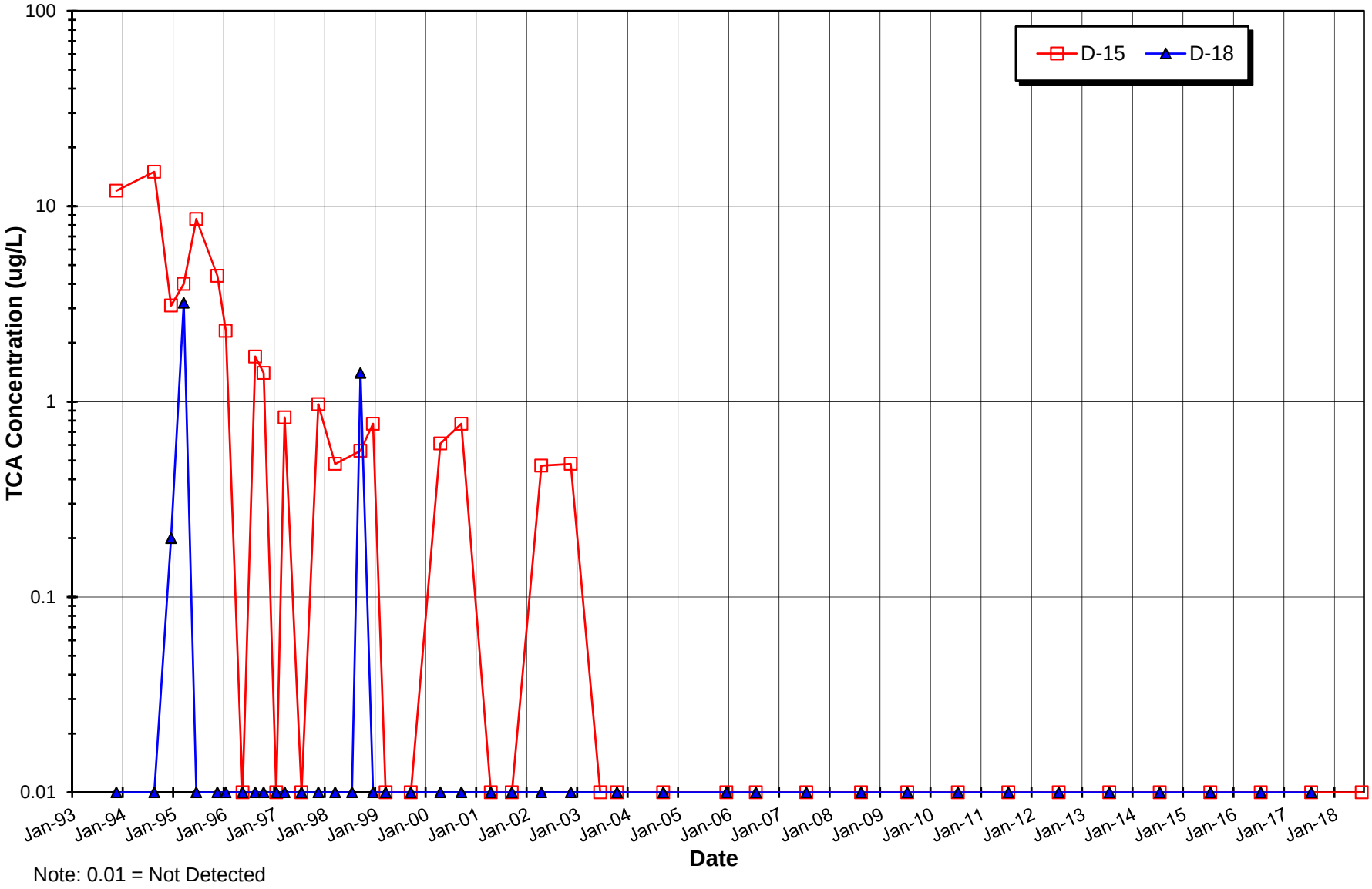
Note: 0.01 = Not Detected

Figure 5. Plant 2 Trichloroethene (TCE) Concentration Changes
ES = 5 ug/L, PAL = 0.5 ug/L



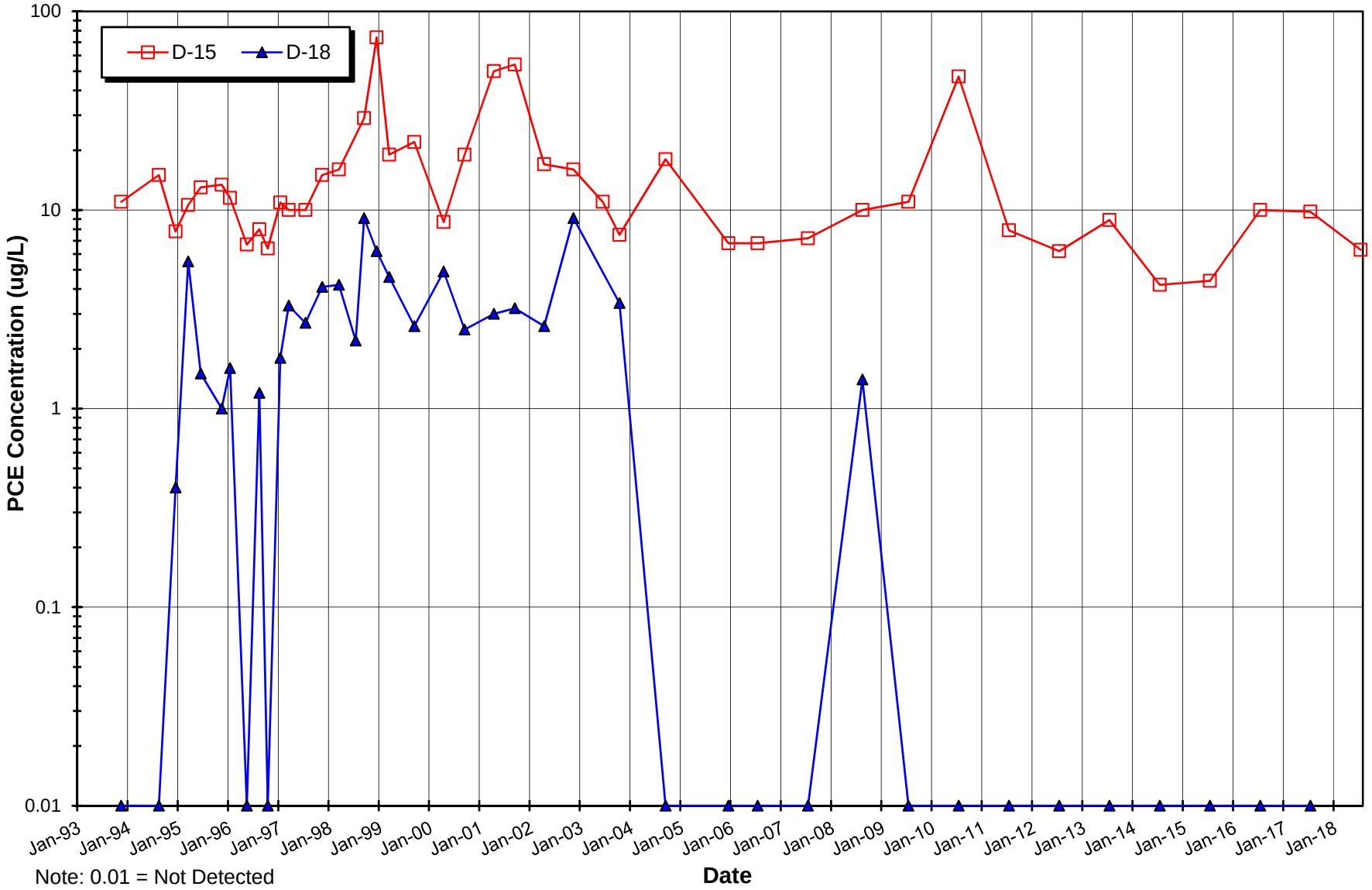
Note: 0.01 = Not Detected

Figure 6. Plant 2 1,1,1-Trichloroethane (TCA) Concentration Changes
ES = 200 ug/L, PAL = 40 ug/L



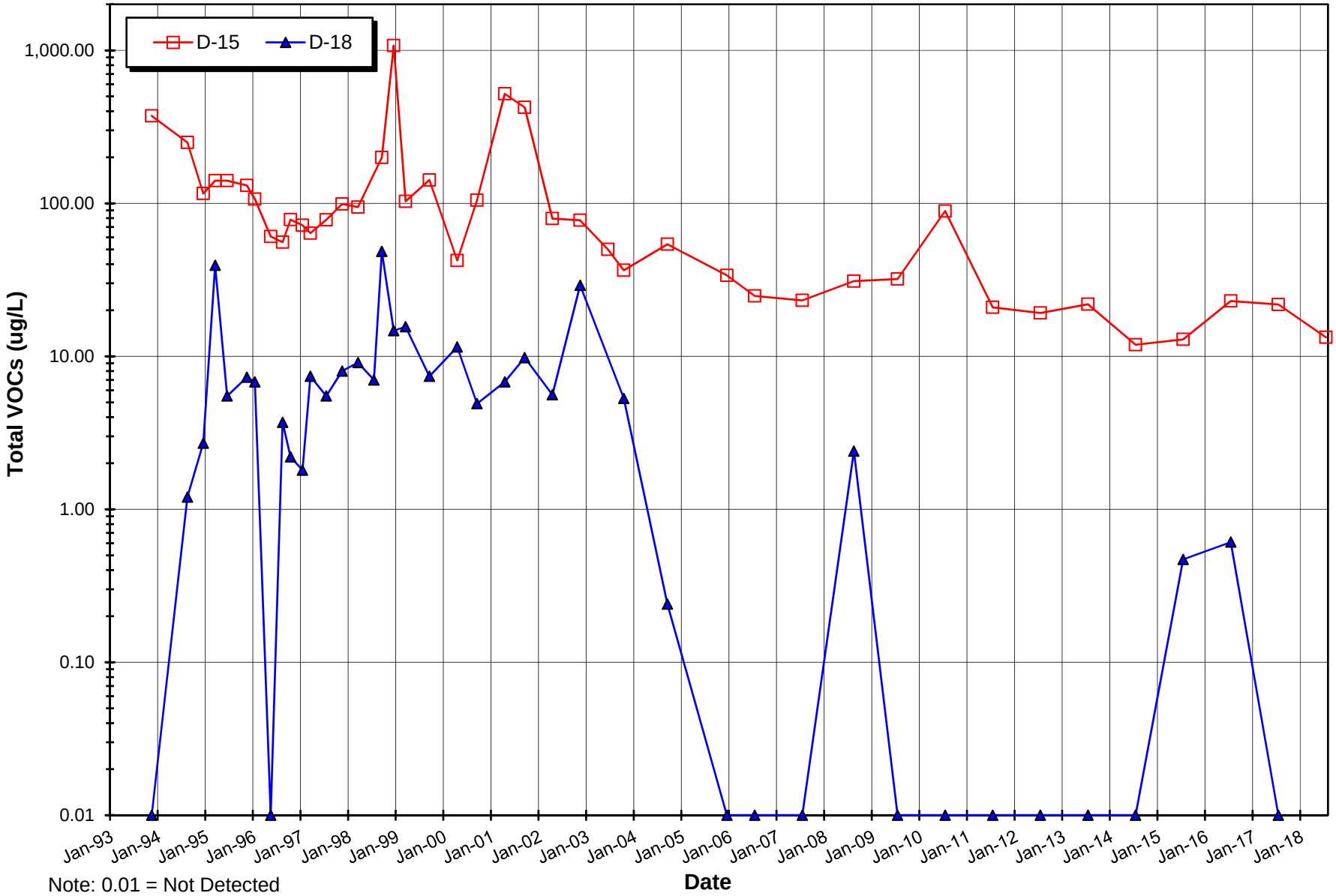
Note: 0.01 = Not Detected

Figure 7. Plant 2 Tetrachloroethene (PCE) Concentration Changes
ES = 5 ug/L, PAL = 0.5 ug/L



Note: 0.01 = Not Detected

Figure 8. Plant 2 Total VOC Concentration Changes



Note: 0.01 = Not Detected

TABLES

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
Plant #1							
MW-1026	10/29/91	**0.60**	**16000**	**1300**	**8.2**	<0.3	17308.8
	10/29/91	**1.2**	**15000**	**1300**	**7.1**	<0.3	16308.3
Downgradient	12/11/91	**1.0**	**22000**	**1500**	**10**	<0.3	23511
Monitor	11/11/93	<0.5	**4500**	**250**	**1.0**	<0.3	4751
Wells	08/16/94	<1	**1500**	**210**	NA	<5	1710
MW-1026	12/13/94	<25	**865**	**183**	NA	<25	1048
	03/13/95	NA	NA	NA	NA	NA	0
	06/21/95	<0.34	**41.9**	**72**	<0.19	<0.27	113.9
	11/07/95	<0.5	<0.5	**52.4**	NA	<0.5	52.4
	01/25/96	<0.5	**49.6**	**30.8**	NA	<0.5	80.4
	05/13/96	<0.5	**74.4**	**27.1**	NA	<0.5	101.5
	08/13/96	<0.5	**41**	**33.1**	**5.6**	<0.5	79.7
	10/08/96	<0.5	**26.1**	**21.5**	**1.8**	<0.5	49.4
	01/21/97	<0.5	**27**	**17.1**	NA	<0.5	44.1
	04/01/97	<0.63	**28**	**15**	NA	<0.46	43
	07/23/97	<0.63	**22**	**11**	**1.0**	<0.46	34
	11/18/97	<0.25	**20**	**13**	NA	<0.25	33
	03/23/98	<0.63	**15**	**10**	NA	<0.46	25
	07/27/98	<0.25	**8.4**	**4.5**	**1.8**	<0.25	14.7
	09/28/98	<0.63	**21**	**15**	**1.7**	<0.46	37.7
	12/08/98	<0.63	**24**	**14**	NA	<0.46	38
	03/12/99	<0.63	**21**	**13**	NA	<0.46	34
	09/25/03	<0.50	**25**	**6.1**	<0.25	<0.25	31.1
	12/15/03	<0.50	**34**	**10**	<0.20	<0.25	44
	12/14/05	<0.50	**91**	**21**	**0.27**	<0.20	112.27
	07/31/06	<1.0	**93**	**18**	NA	NA	111
	07/31/07	<0.50	**41**	**9.8**	<0.25	<0.20	50.8
	08/19/08	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/28/09	<0.50	**6.9**	**8**	<0.25	<0.20	14.9
	07/14/10	<0.50	**15**	**3.2**	<0.25	<0.20	18.2
	07/21/11	<0.50	**20**	**5.9**	<0.25	<0.20	25.9
MW-1026	07/10/12	<0.17	**25**	**7.3**	<0.28	<0.10	32.3

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
MW-1026	07/24/13	<0.17	**15**	**4.4**	<0.28	<0.10	19.4
	07/29/14	<0.17	**7.4**	**1.8**	<0.28	<0.10	9.2
	07/14/15	<0.17	**18**	**5.3**	<0.28	<0.10	23.3
	07/29/16	<0.37	**21**	**6.2**	<0.35	<0.20	27.2
	07/13/17	<0.37	**14**	**3.6**	<0.35	<0.20	17.6
MW-1026	07/30/18	<0.37	**11**	**2.7**	<0.35	<0.20	13.7
MW-1027	10/29/91	<0.5	**780**	**1700**	<0.5	<0.3	2480
	12/12/91	<0.5	**500**	**1200**	<0.5	<0.3	1700
	11/11/93	<0.5	**1400**	**3000**	<0.5	<0.3	4400
	08/17/94	<1	**280**	**1800**	NA	<5	2080
	06/21/95	<0.34	**18.6**	**262**	<0.19	<0.27	280.6
	11/07/95	<0.5	**15.8**	**299**	NA	<0.5	314.8
	01/26/96	<0.5	**12.5**	**206**	NA	<0.5	218.5
	05/13/96	<0.5	**29.4**	**1620**	NA	<0.5	1649.4
	08/14/96	<0.5	**20**	**21.5**	<0.5	<0.5	41.5
	10/08/96	<0.5	**17.3**	**326**	<0.5	<0.5	343.3
	01/21/97	<0.5	**15.7**	**231**	NA	<0.5	246.7
	04/01/97	<0.63	**8.2**	**130**	NA	<0.46	138.2
	07/24/97	<0.63	**9.9**	**120**	<0.15	<0.46	129.9
	11/18/97	<0.25	**12**	**200**	NA	<0.25	212
	03/23/98	<0.63	**7.3**	**160**	NA	<0.46	167.3
	07/28/98	<1.2	**3.4**	**60**	<1.2	<1.2	63.4
	09/28/98	<0.63	**9.6**	**150**	<0.28	<0.46	159.6
	12/08/98	<1.3	**12**	**210**	NA	<0.46	222
	03/11/99	<3.2	**19**	**420**	NA	<2.3	439
	09/02/99	<3.2	**28**	**540**	NA	NA	568
	04/25/00	<3.2	**13**	**320**	NA	<2.3	333
	09/25/00	<3.2	**9.4**	**220**	NA	NA	229.4
	04/23/01	<1.0	**4.8**	**150**	NA	<1.0	154.8
	10/02/01	<1.0	**7.5**	**240**	<1.0	NA	247.5
	04/16/02	<1.2	**15**	**330**	<1.2	NA	345
	11/19/02	<1.2	**17**	**260**	<1.2	NA	277
MW-1027	06/24/03	<5.0	**13**	**200**	<2.5	NA	213

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
MW-1027	10/20/03	<0.50	**16**	**230**	<0.25	NA	246
	09/21/04	<2.0	**21**	**170**	NA	<0.80	191
	12/14/05	<0.50	**45**	**96**	**0.38**	<0.20	141.38
	07/31/06	<1.0	**34**	**120**	NA	NA	154
	07/31/07	<0.50	**37**	**95**	<0.25	<0.20	132
	08/19/08	<0.50	**32**	**88**	<0.25	<0.20	120
MW-1027	07/28/09	<0.50	**22**	**52**	<0.25	<0.20	74
	07/14/10	<0.50	**19**	**100**	<0.25	<0.20	119
	07/21/11	<0.50	**8.5**	**65**	<0.25	<0.20	73.5
	07/10/12	<0.17	**6.3**	**57**	<0.28	<0.10	63.3
	07/24/13	<0.17	**6.2**	**47**	<0.28	<0.10	53.2
	07/29/14	<0.17	**6.1**	**42**	<0.28	<0.10	48.1
	07/14/15	<0.17	**3.7**	**39**	<0.28	<0.10	42.7
	07/29/16	<0.37	**6.8**	**34**	<0.35	<0.20	40.8
	07/13/17	<0.37	**7.1**	**27**	<0.35	<0.20	34.1
MW-1027	07/30/18	<0.37	**4.9**	**27**	<0.35	<0.20	31.9
TW-4	11/05/91	**0.50**	**10000**	**1100**	**5.6**	<0.3	11106.1
	12/12/91	**0.60**	**11000**	**1200**	**4.5**	<0.3	12205.1
	11/11/93	**0.80**	**6200**	**1500**	**3.2**	<0.3	7704
	08/17/94	<1	**3900**	**600**	NA	<5	4500
	12/14/94	<50	**4040**	**630**	NA	<50	4670
	03/13/95	ND	**3120**	**600**	NA	ND	3720
	06/21/95	NA	**4220**	**990**	**17.6**	**5.4**	5233
TW-4	11/08/95	**1.2**	**3340**	**920**	NA	<0.5	4261.2
	01/25/96	**1.1**	**3000**	**891**	NA	<0.5	3892.1
	05/14/96	**0.90**	**1820**	**969**	NA	<0.5	2789.9
	08/14/96	<0.5	**2150**	**179**	**1.8**	<0.5	2330.8
	10/08/96	**0.90**	**1850**	**541**	**6.3**	<0.5	2398.2
	01/21/97	<0.5	**2650**	**913**	NA	<0.5	3563
	04/01/97	**0.83**	**1400**	**600**	NA	<0.46	2000.83
	07/23/97	**0.67**	**950**	**450**	**4.4**	<0.46	1405.07
	11/18/97	**0.83**	**760**	**490**	NA	<0.25	1250.83
TW-4	03/23/98	**0.74**	**780**	**530**	NA	<0.46	1310.74

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
TW-4	07/27/98	<2.5	**410**	**230**	<2.5	<2.5	640
	09/28/98	<0.63	**860**	**460**	**2.8**	<0.46	1322.8
	12/05/98	<6.3	**830**	**400**	NA	<4.6	1230
	03/11/99	<6.3	**480**	**270**	NA	<4.6	750
	09/02/99	<3.2	**180**	**110**	**2.4**	<2.3	292.4
	04/25/00	<3.2	**450**	**280**	NA	<2.3	730
	09/26/00	<6.3	**340**	**230**	<1.5	<4.6	570
	04/23/01	**0.60**	**290**	**240**	NA	<0.25	530.6
	10/02/01	<2.0	**190**	**140**	<2.0	<2.0	330
	04/16/02	<0.25	**76**	**60**	**1.5**	<0.25	137.5
TW-4	06/24/03	<1.0	**120**	**89**	**1.4**	<1.0	210.4
	09/21/04	<0.50	**64**	**39**	NA	<0.20	103
	12/14/05	<0.50	**65**	**35**	**0.92**	<0.20	100.92
	07/31/06	<0.50	**92**	**60**	**1.3**	<0.20	153.3
	07/31/07	<0.50	**50**	<0.20	<0.25	<0.20	50
	08/20/08	<0.50	**71**	**36**	**0.73**	<0.20	107.73
	07/28/09	<0.50	**52**	**25**	**0.34**	<0.20	77.34
TW-4	07/14/10	<0.50	**75**	**52**	**0.28**	<0.20	127.28
	07/21/11	<0.50	**38**	**42**	**0.28**	<0.20	80.28
	07/10/12	<0.17	**48**	**53**	<0.28	<0.10	101
	07/24/13	<0.17	**26**	**23**	<0.28	<0.10	49
	07/29/14	<0.17	**29**	**20**	<0.28	<0.10	49
	07/14/15	<0.17	**30**	**36**	<0.28	<0.10	66
TW-4	07/29/16	<0.37	**20**	**15**	<0.35	<0.20	35
	03/01/17	<0.37	**17**	**8.0**	<0.35	<0.20	25
	05/17/17	<0.37	**22**	**11**	<0.35	<0.20	33
	07/13/17	<0.37	**27**	**19**	<0.35	<0.20	46
	10/24/17	<0.37	**22**	**16**	<0.35	<0.20	38
	02/28/18	<0.37	**20**	**11**	<0.35	<0.20	31
	05/10/18	<0.74	**27**	**16**	<0.33	<0.50	43
TW-4	07/30/18	<0.37	**26**	**18**	<0.35	<0.20	44
D-25R	10/29/91	<0.5	<0.5	**11**	<0.5	<0.3	11
D-25R	12/13/91	**0.60**	13	**13**	<0.5	<0.3	26.6

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
D-25R	11/11/93	<0.5	**6.0**	**4.7**	<0.5	<0.3	10.7
	08/17/94	<1	**3.1**	**4.6**	NA	<5	7.7
	12/13/94	**0.40**	**4.7**	**5.4**	NA	<0.5	10.5
	03/13/95	ND	**4.3**	**3.2**	NA	ND	7.5
	06/26/95	<0.34	**3.1**	<0.19	<0.19	<0.27	3.1
D-25R	11/07/95	<0.5	**5.1**	<0.5	NA	<0.5	5.1
	01/25/96	<0.5	**4.7**	**5.1**	NA	<0.5	9.8
	05/14/96	<0.5	**6.9**	**6.3**	NA	<0.5	13.2
	08/14/96	**1.5**	**43.7**	**38.3**	<0.5	<0.5	83.5
D-25R	10/09/96	<0.5	**8.2**	**10.1**	<0.5	<0.5	18.3
	01/20/97	<0.5	**10.4**	<0.5	NA	<0.5	10.4
	04/01/97	**0.77**	**11**	**9.1**	NA	<0.46	20.87
	07/24/97	**0.86**	**9.5**	**9.8**	<0.15	<0.46	20.16
	11/18/97	**0.84**	**6.7**	**8.7**	NA	<0.25	16.24
	03/23/98	**0.71**	**5**	**7.5**	NA	<0.46	13.21
	07/28/98	<0.25	**2.1**	**2.7**	<0.25	<0.25	4.8
	09/28/98	**0.78**	**6.6**	**9.2**	<0.28	<0.46	16.58
	12/08/98	**0.70**	**6.5**	**8.7**	NA	<0.46	15.9
	03/12/99	**0.78**	**5.6**	**7.7**	NA	<0.46	14.08
	09/02/99	**0.72**	**6.7**	**8.4**	NA	NA	15.82
	04/25/00	**1.0**	**3.5**	**4.0**	NA	<0.46	8.5
	09/26/00	**0.82**	**4.5**	**4.7**	NA	NA	10.02
D-25R	04/23/01	**0.45**	**3.1**	**4.3**	NA	<0.25	7.85
	10/02/01	**0.58**	**4.0**	**3.8**	<0.25	NA	8.38
	04/16/02	**0.58**	**4.3**	**4.7**	<0.25	NA	9.58
	11/19/02	**0.87**	**7.6**	**6.2**	<0.25	NA	14.67
	06/24/03	**0.86**	**6.1**	**7.7**	<0.25	NA	14.66
	10/20/03	**0.71**	**4.3**	**4.6**	<0.25	NA	9.61
	09/21/04	**0.61**	**3.5**	**3.3**	NA	<0.20	7.41
	12/13/05	**0.59**	**15**	**12**	<0.25	<0.20	27.59
	07/31/06	**0.53**	**12**	**25**	NA	NA	37.53
	07/31/07	<0.50	**8.0**	**12**	<0.25	<0.20	20
D-25R	08/20/08	**0.51**	**7.3**	**8.3**	<0.25	<0.20	16.11

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
D-25R	07/28/09	<0.50	**6.2**	**6.0**	<0.25	<0.20	12.2
	07/13/10	<0.50	**8.4**	**7.6**	<0.25	<0.20	16
	07/20/11	<0.50	**1.4**	**2.7**	<0.25	<0.20	4.1
	07/10/12	<0.17	**1.3**	**1.4**	<0.28	<0.10	2.7
	07/24/13	<0.17	**1.0**	**1.0**	<0.28	<0.10	2
D-25R	07/29/14	<0.17	**0.7**	**0.82**	<0.28	<0.10	1.49
	07/14/15	<0.17	<0.20	**0.71**	<0.28	<0.10	0.71
	07/28/16	<0.37	<0.38	**0.57**	<0.35	<0.20	0.57
	07/12/17	<0.37	**2.9**	**2.3**	<0.35	<0.20	5.2
D-25R	07/30/18	<0.37	<0.38	**0.55**	<0.35	<0.20	0.55
EX-2	11/07/91	<0.5	**870**	**210**	**1.1**	<0.3	1081.1
	12/18/91	<0.5	**1260**	**268**	**1.4**	<0.3	1529.4
Original	11/11/93	<0.5	**890**	**250**	**1.3**	<0.3	1141.3
Extraction	12/13/94	<0.5	**17.3**	**3.5**	NA	<0.5	20.8
Wells	06/21/95	<0.34	**375**	**96.4**	<0.19	<0.27	471.4
EX-2 /	08/14/96	<0.5	**99.8**	**52**	<0.5	<0.5	151.8
EX-2R	07/25/97	<0.63	**1.2**	**2.6**	<0.15	<0.46	3.8
	07/28/98	<0.25	**0.79**	**2.1**	<0.25	<0.25	2.89
	09/07/99	<0.63	**15**	**34**	NA	NA	49
	04/18/00	<0.63	**1.3**	**3.7**	NA	<0.46	5
	09/26/00	<0.63	**18**	**36**	NA	<0.46	54
	04/19/01	<0.25	**2.6**	**8.4**	NA	<0.25	11
	10/02/01	<0.25	**16**	**34**	<0.25	NA	50
	04/16/02	<0.25	**8.4**	**22**	<0.25	NA	30.4
	06/24/03	<0.50	**0.69**	**2.9**	<0.25	NA	3.59
	09/21/04	<0.50	**11**	**25**	NA	<0.20	36
	07/31/06	<0.50	**0.61**	**1.7**	NA	NA	2.31
	07/31/07	<0.50	**6.3**	**6.7**	<0.25	<0.20	13
EX-2R	08/20/08	<0.50	**15**	**22**	<0.25	<0.20	37
	07/28/09	<0.50	**5.0**	**4.5**	<0.25	<0.20	9.5
	10/05/10	<0.50	**8.2**	**21**	<0.25	<0.20	29.2
	07/21/11	<0.50	**5.0**	**15**	<0.25	<0.20	20
EX-2R	07/11/12	<0.17	**3.2**	**9.8**	<0.28	<0.10	13

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
EX-2R	07/24/13	<0.17	**4.6**	**7.0**	<0.28	<0.10	11.6
	07/30/14	<0.17	**3.3**	**5.8**	<0.28	<0.10	9.1
	07/15/15	<0.17	**1.4**	**3.8**	<0.28	<0.10	5.2
	07/28/16	<0.37	**4.2**	**7.1**	<0.35	<0.20	11.3
	10/24/17	<0.37	**3.7**	**6.3**	<0.35	<0.20	10
EX-2R	07/31/18	<0.37	**1.7**	**3.6**	<0.35	<0.20	5.3
EX-3	11/07/91	<0.5	**50**	**14**	<0.5	<0.3	64
	12/18/91	<0.5	30.3	**9.5**	<0.5	<0.3	39.8
Original	11/11/93	<0.5	<0.5	<0.5	<0.5	<0.3	0
Extraction	12/13/94	<0.5	**14.4**	**5.8**	NA	<0.5	20.2
Wells	06/21/95	<0.34	**8.7**	**4.0**	<0.19	<0.27	12.7
	08/14/96	<0.5	**4.5**	**3.6**	<0.5	<0.5	8.1
	07/25/97	<0.63	**93**	**52**	**0.4**	<0.46	145.4
EX-3	07/28/98	<0.25	**30**	**28**	<0.25	<0.25	58
	09/07/99	<0.63	**22**	**26**	NA	NA	48
	04/18/00	<0.63	**37**	**55**	NA	<0.46	92
	09/26/00	<0.63	**25**	**28**	NA	NA	53
	04/19/01	<0.25	**27**	**38**	NA	<0.25	65
	10/02/01	<0.25	**13**	**17**	<0.25	NA	30
	04/16/02	<0.25	**21**	**28**	<0.25	NA	49
	06/24/03	<0.50	**23**	**46**	<0.25	NA	69
	09/21/04	<0.50	**13**	**17**	NA	<0.20	30
	12/14/05	<0.50	**28**	**34**	**0.29**	<0.20	62.29
	07/31/06	<0.50	**32**	**66**	NA	NA	98
	07/31/07	<0.50	**15**	**25**	<0.25	<0.20	40
	08/20/08	<0.50	**7.5**	**3.6**	<0.25	<0.20	11.1
	07/28/09	<0.50	**14**	**21**	<0.25	<0.20	35
	07/14/10	<0.50	**38**	**29**	**0.34**	<0.20	67.34
EX-3	07/21/11	<0.50	**34**	**33**	**0.33**	<0.20	67.33
	07/11/12	<0.17	**15**	**18**	<0.28	<0.10	33
	07/24/13	<0.17	**2.2**	**2.2**	<0.28	<0.10	4.4
	07/30/14	<0.17	**1.6**	**2.2**	<0.28	<0.10	3.8
EX-3/	07/15/15	<0.17	**3.1**	**3.5**	<0.28	<0.10	6.6

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
EX-3R	10/24/17	<0.37	**2.3**	**3.3**	<0.35	<0.20	5.6
EX-3R	07/31/18	<0.37	**2.4**	**2.4**	<0.35	<0.20	4.8
SS-1	11/11/93	**0.90**	**71**	**24**	<0.5	<0.3	95.9
	08/16/94	<1	**55**	**25**	NA	<5	80
Storm Sewer	12/14/94	0.10	**11.2**	**3.0**	NA	<0.5	14.3
Outfall	06/21/95	<0.34	**31.2**	**18.1**	<0.19	<0.27	49.3
	11/06/95	<0.5	**21.7**	<0.5	NA	<0.5	21.7
	01/25/96	**2.6**	**17.1**	**21.1**	NA	<0.5	40.8
SS-1	05/13/96	**0.60**	**12.6**	**8.2**	NA	<0.5	21.4
	08/13/96	**0.70**	**8.3**	**7.8**	<0.5	<0.5	16.8
	10/08/96	**0.70**	**6.7**	**8.8**	<0.5	<0.5	16.2
	01/20/97	**0.70**	**8.1**	**8.9**	<0.5	<0.5	17.7
	04/01/97	**0.74**	**5.8**	**6.6**	NA	<0.46	13.14
	07/23/97	<0.63	**1.2**	**1.5**	<0.15	<0.46	2.7
	11/18/97	<0.25	**4.9**	**4.9**	NA	<0.25	9.8
SS-1	09/02/99	**3.4**	**3.1**	**17**	NA	<0.46	23.5
	09/25/00	<0.63	**0.37**	**2.1**	NA	NA	2.47
	10/01/01	<0.25	**1.5**	**3.7**	<0.25	<0.25	5.2
	04/17/02	**1.1**	**1.4**	**5.2**	<0.25	NA	7.7
	12/04/02	**0.71**	**1.2**	**4.4**	<0.25	<0.25	6.31
	03/08/04	<0.50	**0.90**	**2.5**	<0.25	<0.20	3.4
	04/05/04	<0.50	<0.50	**3.2**	<0.25	<0.20	3.2
	06/22/05	**0.78**	**0.52**	**2.2**	<0.25	<0.20	3.5
	12/07/05	**1.8**	**0.67**	**0.64**	<0.25	<0.20	3.11
	08/01/06	**0.71**	<0.50	**1.6**	NA	<0.20	2.31
	08/01/07	<0.50	**0.80**	**1.9**	<0.25	<0.20	2.7
	08/20/08	**0.50**	<0.50	**0.79**	<0.25	<0.20	1.29
	07/28/09	<0.50	**1.8**	**3.2**	<0.25	<0.20	5
	07/20/10	<0.50	<0.50	**0.47**	<0.25	<0.20	0.47
	07/13/11	<0.50	<0.50	**1.5**	<0.25	<0.20	1.5
	07/10/12	<0.17	<0.20	**1.5**	<0.28	<0.10	1.5
	07/15/13	<0.17	<0.20	<0.19	<0.28	<0.10	0
SS-1	07/14/14	<0.17	<0.20	**0.75**	<0.28	<0.10	0.75

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
SS-1	07/06/15	**0.67**	<0.20	**0.85**	<0.28	<0.10	1.52
	07/20/16	<0.37	<0.38	**0.88**	<0.35	<0.20	0.88
	07/19/17	<0.37	<0.38	<0.16	<0.35	<0.20	0
SS-1	07/11/18	<0.37	<0.38	**0.51**	<0.35	<0.20	0.51
Plant #2							
D-18	11/04/91	<0.5	<0.5	**1.5**	<0.5	<0.3	1.5
D-18	12/12/91	**0.90**	0.5	**2.1**	<0.5	<0.3	3.5
Southeast	11/11/93	<0.5	<0.5	<0.5	<0.5	<0.3	0
Source Area	08/16/94	<1	<1	**1.2**	NA	<5	1.2
and	12/13/94	**0.40**	**0.20**	**1.8**	NA	**0.30**	2.7
Former Sump	03/13/95	**5.5**	**3.2**	**30.6**	NA	ND	39.3
Source Area	06/21/95	**1.5**	<0.13	**4.0**	<0.19	<0.27	5.5
Monitor	11/06/95	**1.0**	<0.5	**6.3**	NA	<0.5	7.3
Wells	01/25/96	**1.6**	<0.5	**5.2**	NA	<0.5	6.8
D-18	05/13/96	**<0.5**	<0.5	<0.5	NA	<0.5	0
	08/13/96	**1.2**	<0.5	**2.5**	<0.5	<0.5	3.7
D-18	10/08/96	<0.5	<0.5	**2.2**	<0.5	<0.5	2.2
D-18	01/20/97	**1.8**	<0.5	<0.5	NA	<0.5	1.8
	03/31/97	**3.3**	<0.28	**4.1**	NA	<0.46	7.4
	07/23/97	**2.7**	<0.28	**2.8**	<0.15	<0.46	5.5
	11/17/97	**4.1**	<0.28	**3.9**	NA	<0.48	8
	03/23/98	**4.2**	<0.28	**4.9**	NA	<0.46	9.1
	07/27/98	**2.2**	<0.25	**4.8**	<0.15	<0.25	7
	09/25/98	**9.1**	**1.4**	**38**	<0.28	<0.46	48.5
	12/08/98	**6.2**	<0.28	**8.5**	NA	<0.46	14.7
	03/11/99	**4.6**	<0.28	**11**	NA	<0.46	15.6
	09/07/99	**2.6**	<0.28	**4.8**	NA	NA	7.4
	04/25/00	**4.9**	<0.28	**6.6**	NA	<0.46	11.5
	09/25/00	**2.5**	<0.28	**2.4**	NA	NA	4.9
	04/19/01	**3.0**	<0.25	**3.8**	NA	<0.25	6.8
	09/27/01	**3.2**	<0.25	**6.6**	<0.25	NA	9.8
	04/17/02	**2.6**	<0.25	**3.0**	<0.25	NA	5.6
D-18	06/20/03	**9.1**	<0.50	**20**	<0.25	NA	29.1

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
D-18	10/20/03	**Not Sampled.**					
	09/20/04	**3.4**	<0.50	**1.9**	NA	<0.20	5.3
	12/14/05	<0.50	<0.50	**0.24**	<0.25	<0.20	0.24
	07/31/06	<0.50	<0.50	<0.20	NA	NA	0
D-18	07/31/07	<0.50	<0.50	<0.20	<0.25	<0.20	0
	08/19/08	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/28/09	**1.4**	<0.50	**1.0**	<0.25	<0.20	2.4
D-18	07/13/10	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/20/11	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/10/12	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/24/13	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/29/14	<0.17	<0.20	<0.19	<0.28	<0.10	0
D-18	07/14/15	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/28/16	<0.37	<0.38	**0.47**	<0.35	<0.20	0.47
	07/12/17	<0.37	<0.38	**0.61**	<0.35	<0.20	0.61
D-18	07/30/18	<0.37	<0.38	<0.16	<0.35	<0.20	0
MW-2004	10/29/91	**6.4**	**4.8**	**37**	<0.5	<0.3	48.2
	12/13/91	**11**	**2.6**	**61**	<0.5	<0.3	74.6
	11/11/93	**2.5**	**14**	**5.6**	<0.5	<0.3	22.1
	12/13/94	**0.70**	**0.20**	**1.8**	NA	**0.3**	3
	06/21/95	**3.2**	**17.6**	**14.2**	**3.4**	<0.27	38.4
	08/13/96	**0.96**	**7.2**	**5.2**	<0.5	<0.5	13.36
	07/23/97	<0.63	**1.9**	**1.7**	<0.15	<0.46	3.6
	07/27/98	<0.25	<0.25	**0.94**	<0.15	<0.25	0.94
MW-2004	09/07/99	<0.63	<0.28	<0.49	NA	NA	0
	04/26/00	<0.63	<0.28	<0.49	NA	NA	0
	09/27/01	<0.25	<0.25	<0.25	<0.25	NA	0
	11/18/02	<0.25	<0.25	<0.25	<0.25	NA	0
	06/20/03	<0.50	<0.50	<0.25	<0.25	NA	0
	09/20/04	<0.50	<0.50	<0.20	NA	<0.20	0
	12/13/05	<0.50	<0.50	**0.50**	<0.25	<0.20	0.5
	07/29/06	<0.50	<0.50	**0.37**	NA	NA	0.37
	07/31/07	<0.50	<0.50	<0.20	<0.25	<0.20	0
MW-2004	08/19/08	<0.50	<0.50	<0.20	<0.25	<0.20	0

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
MW-2004	07/28/09	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/13/10	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/20/11	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/10/12	<0.17	<0.20	<0.19	<0.28	<0.10	0
MW-2004	07/24/13	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/29/14	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/14/15	<0.17	<0.20	**0.65**	<0.28	<0.10	0.65
	07/28/16	<0.37	<0.38	<0.16	<0.35	<0.20	0
	07/12/17	<0.37	<0.38	<0.16	<0.35	<0.20	0
MW-2004	07/30/18	<0.37	<0.38	<0.16	<0.35	<0.20	0
MW-2005	10/28/91	**30**	**2.7**	**20**	<0.5	<0.3	52.7
	12/13/91	**32**	**3.0**	**23**	<0.5	<0.3	58
MW-2005	11/11/93	**47**	**3.1**	**31**	<0.5	<0.3	81.1
	12/13/94	**0.40**	<0.5	<0.5	NA	<0.5	0.4
	08/16/94	<1	<1	<1	NA	<5	0
	06/21/95	**0.70**	<0.13	**0.70**	<0.19	<0.27	1.4
	11/07/95	**1.9**	<0.5	**2.7**	NA	<0.5	4.6
	01/25/96	**10.9**	<0.5	**5.2**	NA	<0.5	16.1
	05/13/96	<0.5	<0.5	<0.5	NA	<0.5	0
	08/13/96	**10.2**	<0.5	**2.1**	<0.5	<0.5	12.3
MW-2005	10/08/96	**13**	<0.5	<0.5	<0.5	<0.5	13
	01/20/97	**24**	<0.5	**10.1**	NA	<0.5	34.1
	04/01/97	**47**	0.76	**8.8**	NA	<0.46	56.56
	07/23/97	<0.63	15	**1.6**	<0.15	<0.46	16.6
	11/18/97	**2.7**	<0.25	**0.33**	NA	<0.25	3.03
	03/23/98	**3.0**	<0.28	**0.51**	NA	<0.46	3.51
	07/21/98	**19**	<0.25	**1.3**	<0.15	<0.25	20.3
	09/25/98	**14**	<0.28	**1.1**	<0.28	<0.46	15.1
	12/05/98	**6.2**	<0.28	**5.2**	NA	<0.46	11.4
	03/12/99	**7.8**	<0.28	**8.9**	NA	<0.46	16.7
	09/07/99	**7.8**	<0.28	**1.0**	NA	NA	8.8
	04/25/00	**1.2**	<0.28	<0.49	NA	<0.46	1.2
MW-2005	09/25/00	**1.7**	<0.28	<0.49	NA	NA	1.7

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
MW-2005	04/19/01	**5.7**	<0.25	**0.60**	NA	<0.25	6.3
	09/27/01	**7.5**	<0.25	**0.62**	<0.25	NA	8.12
	04/17/02	**9.8**	<0.25	**0.89**	<0.25	NA	10.69
	06/20/03	**6.0**	<0.50	**0.87**	<0.25	NA	6.87
MW-2005	09/20/04	**17**	<0.50	**1.3**	NA	<0.20	18.3
MW-2005R	07/30/07	**2.8**	<0.50	<0.20	<0.25	<0.20	2.8
	08/18/08	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/27/09	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/13/10	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/20/11	<0.50	<0.50	<0.20	<0.25	<0.20	0
	07/10/12	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/24/13	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/29/14	**2.9**	<0.20	<0.19	<0.28	<0.10	2.9
MW-2005R	07/14/15	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/28/16	**2.4**	<0.38	<0.16	<0.35	<0.20	2.4
	07/12/17	<0.37	<0.38	<0.16	<0.35	<0.20	0
MW-2005R	07/30/18	<0.37	<0.38	<0.16	<0.35	<0.20	0
MW-2011	07/30/07	<0.50	**2.9**	**30**	<0.25	<0.20	32.9
	08/18/08	<0.50	**2.0**	**12**	<0.25	<0.20	14
MW-2011	07/27/09	<0.50	**1.5**	**14**	<0.25	<0.20	15.5
	07/13/10	<0.50	**2.8**	**13**	<0.25	<0.20	15.8
	07/20/11	<0.50	**2.7**	**20**	<0.25	<0.20	22.7
	07/10/12	<0.17	**3.4**	**39**	<0.28	<0.10	42.4
MW-2011	07/24/13	<0.17	**2.3**	**9.0**	<0.28	<0.10	11.3
	07/29/14	<0.17	**4.1**	**35**	<0.28	<0.10	39.1
	07/14/15	<0.17	<0.20	**7.2**	<0.28	<0.10	7.2
	07/28/16	<0.37	**3.3**	**29**	<0.35	<0.20	32.3
	07/12/17	<0.37	**2.1**	**16**	<0.35	<0.20	18.1
MW-2011	07/30/18	<0.37	**1.2**	**7.6**	<0.35	<0.20	8.8
D-15	11/05/91	**26**	**45**	**420**	<0.5	<0.3	491
	12/12/91	**24**	31	**390**	<0.5	<0.3	445
	11/11/93	**11**	12	**350**	<0.5	<0.3	373
D-15	08/16/94	**15**	**15**	**220**	NA	<5	250

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
D-15	12/13/94	**7.8**	**3.1**	**105**	NA	<5	115.9
	03/13/95	**10.6**	**4.0**	**126**	NA	ND	140.6
	06/21/95	**13**	**8.6**	**119**	<0.19	<0.27	140.6
	11/06/95	**13.4**	**4.4**	**113**	NA	<0.5	130.8
D-15	01/25/96	**11.5**	**2.3**	**92.8**	NA	<0.5	106.6
	05/13/96	**6.7**	<0.5	**54**	NA	<0.5	60.7
	08/15/96	**8.0**	**1.7**	**46**	<0.5	<0.5	55.7
D-15	10/08/96	**6.4**	**1.4**	**70.4**	<0.5	<0.5	78.2
	01/20/97	**10.9**	<0.5	**61**	NA	<0.5	71.9
	03/31/97	**10**	**0.83**	**53**	NA	<0.46	63.83
	07/23/97	**10**	<0.28	**68**	<0.15	<0.46	78
	11/17/97	**15**	**0.97**	**83**	NA	<0.48	98.97
	03/23/98	**16**	**0.48**	**78**	NA	<0.46	94.48
	07/27/98	**Not Sampled.**					
	09/26/98	**29**	**0.56**	**170**	<0.28	<0.46	199.56
	12/08/98	**74**	**0.77**	**1000**	NA	<0.46	1074.77
	03/11/99	**19**	<0.56	**84**	NA	<0.92	103
	09/07/99	**22**	<0.56	**120**	NA	NA	142
	04/25/00	**8.7**	**0.61**	**33**	NA	<0.46	42.31
	09/28/00	**19**	**0.77**	**85**	NA	NA	104.77
	04/19/01	**50**	<2.5	**470**	NA	<2.5	520
	09/27/01	**54**	<2.5	**370**	<2.5	NA	424
D-15	04/15/02	**17**	**0.47**	**62**	<2.5	NA	79.47
	11/19/02	**16**	**0.48**	**61**	<0.25	NA	77.48
	06/20/03	**11**	<0.50	**39**	<0.25	NA	50
	10/20/03	**7.5**	<0.50	**29**	<0.25	NA	36.5
D-15	09/20/04	**18**	<0.50	**36**	NA	<0.20	54
	12/13/05	**6.8**	<0.50	**27**	<0.25	<0.20	33.8
	07/27/06	**6.8**	<0.50	**18**	NA	NA	24.8
	07/31/07	**7.2**	<0.50	**16**	<0.25	<0.20	23.2
	08/18/08	**10**	<0.50	**21**	<0.25	<0.20	31
	07/27/09	**11**	<0.50	**21**	<0.25	<0.20	32
D-15	07/13/10	**47**	<0.50	**42**	<0.25	<0.20	89

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
D-15	07/20/11	**7.9**	<0.50	**13**	<0.25	<0.20	20.9
	07/10/12	**6.2**	<0.20	**13**	<0.28	<0.10	19.2
	07/24/13	**8.9**	<0.20	**13**	<0.28	<0.10	21.9
	07/29/14	**4.2**	<0.20	**7.7**	<0.28	<0.10	11.9
D-15	07/14/15	**4.4**	<0.20	**8.5**	<0.28	<0.10	12.9
	07/28/16	**10**	<0.38	**13**	<0.35	<0.20	23
	07/12/17	**9.8**	<0.38	**12**	<0.35	<0.20	21.8
D-15	07/31/18	**6.3**	<0.38	**7.0**	<0.35	<0.20	13.3
TW-1	10/29/91	<0.5	**1.3**	**18**	<0.5	<0.3	19.3
	12/13/91	**4.9**	**1.1**	**48**	<0.5	<0.3	54
	11/11/93	**4.0**	**9.1**	**20**	<0.5	<0.3	33.1
	08/16/94	**2.4**	<1	**14**	NA	<5	16.4
	12/13/94	**0.40**	**0.30**	**4.1**	NA	<0.5	4.8
	03/13/95	NA	**NA**	**NA**	NA	NA	0
	06/21/95	**1.1**	**1.8**	**4.9**	<0.19	<0.27	7.8
	11/07/95	**1.0**	<0.5	**8.7**	NA	<0.5	9.7
	01/25/96	**1.5**	**1.3**	**4.7**	NA	<0.5	7.5
	05/13/96	**1.1**	**0.60**	**2.9**	NA	<0.5	4.6
	08/13/96	**0.90**	**0.70**	**2.7**	<0.5	<0.5	4.3
	10/08/96	<0.5	<0.5	<0.5	<0.5	<0.5	0
	01/20/97	**2.1**	**3.0**	**10**	NA	<0.5	15.1
	03/31/97	**2.0**	**3.1**	**5.9**	NA	<0.46	11
	07/23/97	**0.88**	**0.74**	**2.5**	<1.1	<0.46	4.12
	11/17/97	**0.88**	**0.55**	**2.0**	NA	<0.48	3.43
	03/23/98	<0.63	<0.28	**1.7**	NA	<0.46	1.7
	07/28/98	<0.25	<0.25	**1.7**	<0.15	<0.25	1.7
	09/26/98	<0.63	<0.28	**1.7**	<0.28	<0.46	1.7
	12/08/98	<0.63	<0.28	**1.5**	NA	<0.46	1.5
TW-1	03/12/99	<0.63	<0.28	**1.0**	NA	<0.46	1
	09/07/99	<0.63	**0.57**	**2.4**	NA	NA	2.97
	09/26/00	**1.1**	**0.81**	**7.3**	NA	NA	9.21
TW-1	09/28/01	<0.25	<0.25	**1.2**	<0.25	NA	1.2
TW-1	12/13/05	<0.50	<0.50	**0.22**	<0.25	<0.20	0.22

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
TW-1	12/13/05	<0.50	<0.50	**0.22**	<0.25	<0.20	0.22
	07/29/06	<0.50	<0.50	**0.20**	NA	NA	0.2
	07/31/07	<0.50	<0.50	**1.2**	<0.25	<0.20	1.2
	08/19/08	**0.53**	<0.50	**0.62**	<0.25	<0.20	1.15
TW-1	07/28/09	<0.50	<0.50	**0.27**	<0.25	<0.20	0.27
	07/13/10	<0.50	<0.50	**0.38**	<0.25	<0.20	0.38
	07/20/11	<0.50	<0.50	**0.28**	<0.25	<0.20	0.28
	07/10/12	<0.17	<0.20	**0.31**	<0.28	<0.10	0.31
TW-1	07/24/13	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/29/14	<0.17	<0.20	<0.19	<0.28	<0.10	0
TW-1	07/14/15	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/28/16	<0.37	<0.38	<0.16	<0.35	<0.20	0
	07/12/17	<0.37	<0.38	<0.16	<0.35	<0.20	0
TW-1	07/30/18	<0.37	<0.38	<0.16	<0.35	<0.20	0
TW-3	10/30/91	**6.8**	**1.7**	**19**	<0.5	<0.3	27.5
	12/12/91	**8.3**	**1.3**	**22**	<0.5	<0.3	31.6
	11/11/93	**7.5**	**0.70**	**12**	<0.5	<0.3	20.2
	12/14/94	**5.3**	**11.6**	**5.5**	NA	<0.5	22.4
	06/21/95	**5.5**	**11.9**	**7.4**	<0.19	<0.27	24.8
	08/13/96	**2.3**	**9.7**	**8.1**	<0.5	<0.5	20.1
	07/23/97	**1.7**	**3.6**	**4.3**	<0.15	<0.46	9.6
	07/28/98	<0.25	**1.0**	**1.6**	<0.15	<0.25	2.6
	09/07/99	**1.9**	**1.1**	**3.2**	NA	NA	6.2
	04/25/00	**1.2**	**0.74**	**1.9**	NA	<0.46	3.84
TW-3	09/25/00	**1.5**	**0.72**	**3.0**	NA	NA	5.22
	04/19/01	**2.7**	**0.68**	**6.0**	NA	<0.25	9.38
	09/27/01	**7.5**	**1.3**	**21.0**	<0.25	NA	29.8
	04/16/02	**2.1**	**0.40**	**3.2**	<0.25	NA	5.7
	11/19/02	**4.0**	**0.53**	**7.8**	<0.25	NA	12.33
	06/24/03	**2.5**	<0.50	**2.6**	<0.25	NA	5.1
TW-3	10/20/03	**2.8**	<0.50	**2.0**	<0.25	NA	4.8
	09/20/04	**2.8**	<0.50	**2.8**	NA	<0.20	5.6
TW-3	12/13/05	**1.7**	<0.50	**1.6**	<0.25	<0.20	3.3

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
TW-3	07/27/06	**1.4**	<0.50	**1.2**	NA	NA	2.6
	07/31/07	**0.97**	<0.50	**0.94**	<0.25	<0.20	1.91
	08/20/08	**1.5**	<0.50	**0.79**	<0.25	<0.20	2.29
	07/27/09	**1.8**	<0.50	**0.86**	<0.25	<0.20	2.66
TW-3	07/13/10	**3.1**	<0.50	**4.9**	<0.25	<0.20	8
	07/20/11	**1.5**	<0.50	**0.63**	<0.25	<0.20	2.13
TW-3	07/10/12	**2.7**	<0.20	**1.1**	<0.28	<0.10	3.8
	07/24/13	**1.3**	<0.20	**0.61**	<0.28	<0.10	1.91
	07/29/14	**0.63**	<0.20	**0.38**	<0.28	<0.10	1.01
TW-3	07/14/15	<0.17	<0.20	**0.64**	<0.28	<0.10	0.64
	07/28/16	**0.54**	<0.38	**0.29**	<0.35	<0.20	0.83
	07/12/17	**0.59**	<0.38	<0.16	<0.35	<0.20	0.59
TW-3	07/30/18	<0.37	<0.38	<0.16	<0.35	<0.20	0
EX-1	11/07/91	**8.2**	**3.7**	**20**	<0.5	<0.3	31.9
Original	12/18/91	**6.3**	**3.9**	**14.6**	<0.5	<0.3	24.8
Extraction	11/11/93	**6.8**	**2.3**	**13**	<0.5	<0.3	22.1
Well	12/13/94	**4.7**	**2.7**	**11**	NA	<0.5	18.4
EX-1	06/21/95	**6.2**	<0.13	**14.7**	<0.19	<0.27	20.9
	08/13/96	**2.8**	**1.6**	**6.7**	<0.5	<0.5	11.1
	07/23/97	**3.1**	**1.5**	**5.4**	<0.15	<0.46	10
	07/28/98	<0.25	**0.47**	**5.2**	<0.15	<0.25	5.67
	09/07/99	**3.4**	**0.32**	**8.7**	NA	NA	12.42
	09/26/00	**3.0**	**0.39**	**11**	NA	NA	14.39
	10/02/01	**7.1**	<0.25	**27**	<0.25	NA	34.1
	09/21/04	**3.8**	<0.50	**4.2**	NA	<0.20	8
	12/14/05	**1.4**	<0.50	**1.4**	<0.25	<0.20	2.8
	07/31/06	**1.4**	<0.50	**1.5**	NA	NA	2.9
	07/31/07	**1.3**	<0.50	**0.84**	<0.25	<0.20	2.14
	08/20/08	**1.1**	<0.50	**0.75**	<0.25	<0.20	1.85
	07/14/10	**1.7**	<0.50	**3.1**	<0.25	<0.20	4.8
	07/21/11	**1.1**	<0.50	**1.0**	<0.25	<0.20	2.1
	07/11/12	**1.3**	<0.20	**1.2**	<0.28	<0.10	2.5
EX-1	07/24/13	**0.89**	<0.20	**0.47**	<0.28	<0.10	1.36

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
EX-1	07/30/14	**0.71**	<0.20	**0.42**	<0.28	<0.10	1.13
	07/15/15	<0.17	<0.20	<0.19	<0.28	<0.10	0
	07/28/16	**0.72**	<0.38	<0.16	<0.35	<0.20	0.72
	07/13/17	<0.37	<0.38	<0.16	<0.35	<0.20	0
EX-1	07/31/18	**0.60**	<0.38	**0.30**	<0.35	<0.20	0.9
EX-7	11/07/91	**37**	**5.0**	**350**	<0.5	<0.3	392
Original	12/18/91	**44**	**5.1**	**241**	<0.5	<0.3	290.1
Extraction	11/11/93	**27**	**8.1**	**160**	<0.5	<0.3	195.1
Well	12/13/94	**19.6**	**0.80**	**62.8**	NA	<0.5	83.2
	06/21/95	**60.6**	<0.13	**105**	<0.19	<0.27	165.6
EX-7	08/13/96	**48.3**	<0.5	**243**	<0.5	<0.5	291.3
	07/23/97	**24**	**0.49**	**130**	<0.15	<0.5	154.49
	07/28/98	<50	<50	**1000**	<50	<50	1000
	09/07/99	**130**	<2.8	**490**	NA	NA	620
	04/18/00	**77**	**0.87**	**150**	NA	<0.46	227.87
	09/26/00	**56**	<0.56	**140**	NA	NA	196
	04/19/01	**56**	<1.0	**110**	NA	<1.0	166
	04/16/02	**19**	<0.25	**35**	NA	<1.0	54
	11/19/02	**26**	**0.40**	**58**	<0.25	NA	84.4
EX-7	06/24/03	**20**	<0.50	**26**	<0.25	NA	46
	10/20/03	<0.50	<0.50	**30**	<0.25	NA	30
	09/21/04	**25**	<0.50	**36**	NA	<0.20	61
	12/14/05	**14**	<0.50	**29**	<0.25	<0.20	43
	07/31/06	**14**	<0.50	**22**	NA	NA	36
	07/31/07	**9.0**	<0.50	**10**	<0.25	<0.20	19
	08/20/08	**6.2**	<0.50	**7.5**	<0.25	<0.20	13.7
	07/29/09	**7.5**	<0.50	**9.3**	<0.25	<0.20	16.8
	07/15/10	**98**	<0.50	**130**	<0.25	<0.20	228
	07/21/11	**7.8**	<0.50	**8.6**	<0.25	<0.20	16.4
	07/11/12	**7.0**	<0.20	<0.19	<0.28	<0.10	7
	07/24/13	**5.6**	<0.20	**3.9**	<0.28	<0.10	9.5
	07/30/14	**6.4**	<0.20	**4.6**	<0.28	<0.10	11
EX-7	07/15/15	**8.8**	<0.20	**6.4**	<0.28	<0.10	15.2

Table 1. Summary of Target Compound List VOCs Groundwater Monitoring Analytical Results for Pentair Flow Technologies, LLC Delavan Facility Monitoring

SAMPLE ID	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140 ES		5.0	200	5	5	0.2	
NR 140 PAL		0.5	40	0.5	0.5	0.02	
EX-7/	07/28/16	**6.5**	<0.38	**3.4**	<0.35	<0.20	9.9
EX-7R	10/24/17	**7.3**	<0.38	**3.8**	<0.35	<0.20	11.1
EX-7R	07/31/18	**4.7**	<0.38	**2.4**	<0.35	<0.20	7.1

Notes:
VOCs = Volatile Organic Compounds
ug/L = micrograms parts per liter, which is equivalent to parts per billion (ppb).
ES = Enforcement Standard, PAL = Preventative Action Limit
Orange Highlight = above ES, Yellow Highlight = above PAL
PCE = Tetrachloroethene
TCA = Trichloroethane TCE = Trichloroethene

Table 2. Summary of VOCs Groundwater Monitoring Analytical Results for Plant #1 Monitor Well TW-4

WELL	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	Acetone	Benzene	Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	CIS-1,2-DCE	Trans-1,2-DCE	Methylene Chloride	Ethylbenzene	Xylenes, Total	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140	ES	5.0	200	5	5	0.2	9000	5.0	6	850	5	7	70	100	5	700	2000	
NR 140	PAL	0.5	40	0.5	0.5	0.02	1800	0.5	0.6	85	0.5	0.7	7	20	0.5	140	400	
TW-4	11/05/91	**0.50**	**10000**	**1100**	**5.6**	<0.3	<1.0	<0.5	**4.0**	**61**	<0.5	**440.0**	**50**	<0.5	**2.4**	<0.5	<1.0	11663.5
	12/12/91	**0.60**	**11000**	**1200**	**4.5**	<0.3	<1.0	<0.5	**3.7**	**93**	**3**	**680.0**	**52**	<0.5	<1	<0.5	<1.0	13036.8
	11/11/93	**0.80**	**6200**	**1500**	**3.2**	<0.3	<1.0	<0.5	<0.5	**26**	<0.5	**490**	**25**	<0.5	<1.0	<0.5	<1.0	8245
	08/17/94	<1	**3900**	**600**	NA	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4500
	12/14/94	<50	**4040**	**630**	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4670
	03/13/95	ND	**3120**	**600**	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3720
	06/21/95	NA	**4220**	**990**	**17.6**	**5.4**	<1.0	NA	**3.8**	**113**	<0.5	**415**	**93.6**	NA	NA	NA	NA	5858.4
	11/08/95	**1.2**	**3340**	**920**	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4261.2
	01/25/96	**1.1**	**3000**	**891**	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3892.1
	05/14/96	**0.90**	**1820**	**969**	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2789.9
	08/14/96	<0.5	**2150**	**179**	**1.8**	<0.5	<1.0	<0.5	<0.5	**12**	<1.6	**36.7**	NA	<0.5	NA	<0.5	NA	2379.5
	10/08/96	**0.90**	**1850**	**541**	**6.3**	<0.5	<1.0	<0.5	**1.0**	**36.3**	<1.6	**196**	NA	<0.5	NA	<0.5	NA	2631.5
	01/21/97	<0.5	**2650**	**913**	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3563
	04/01/97	**0.83**	**1400**	**600**	NA	<0.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2000.83
	07/23/97	**0.67**	**950**	**450**	**4.4**	<0.46	**3.4**	**0.3**	**0.70**	**24**	<0.20	**66**	**36**	0.5	<0.87	<0.38	<1.1	1535.97
	11/18/97	**0.83**	**760**	**490**	NA	<0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1250.83
	03/23/98	**0.74**	**780**	**530**	NA	<0.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1310.74
	07/27/98	<2.5	**410**	**230**	<2.5	<2.5	<20	<1.0	<2.5	**13**	<2.5	**16**	**21**	<2.5	**15**	<2.5	<5.0	705
	09/28/98	<0.63	**860**	**460**	**2.8**	<0.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1322.8
	12/05/98	<6.3	**830**	**400**	NA	<4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1230
	03/11/99	<6.3	**480**	**270**	NA	<4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	750
	09/02/99	<3.2	**180**	**110**	**2.4**	<2.3	NA	<1.6	<0.90	<1.2	<1.0	**19**	**2.0**	<2.0	<4.4	<1.9	<5.5	313.4
	04/25/00	<3.2	**450**	**280**	NA	<2.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5.5	730
	09/26/00	<6.3	**340**	**230**	<1.5	<4.6	NA	<3.1	<1.8	**5.2**	<2.0	**15**	**10**	<3.9	<8.7	<3.8	<5.5	600.2
	04/23/01	**0.60**	**290**	**240**	NA	<0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	530.6
	10/02/01	<2.0	**190**	**140**	<2.0	<2.0	NA	<0.80	<2.0	**2.1**	<2.0	**6.8**	**3.0**	<2.0	**8.1**	<2.0	<2.0	350
TW-4	04/16/02	<0.25	**76**	**60**	**1.5**	<0.25	NA	<0.10	<0.25	**1.4**	<0.25	**2.5**	**0.76**	<0.25	**0.47**	<0.25	<0.25	142.63

Table 2. Summary of VOCs Groundwater Monitoring Analytical Results for Plant #1 Monitor Well TW-4

WELL	DATE	PCE	1,1,1-TCA	TCE	1,1,2-TCA	Vinyl Chloride	Acetone	Benzene	Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	CIS-1,2-DCE	Trans-1,2-DCE	Methylene Chloride	Ethylbenzene	Xylenes, Total	**Total VOCs**
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NR 140	ES	5.0	200	5	5	0.2	9000	5.0	6	850	5	7	70	100	5	700	2000	
NR 140	PAL	0.5	40	0.5	0.5	0.02	1800	0.5	0.6	85	0.5	0.7	7	20	0.5	140	400	
TW-4	06/24/03	<1.0	**120**	**89**	**1.4**	<1.0	NA	<0.50	<0.50	**2.1**	<1.0	**4.7**	**3.7**	<1.0	<2.0	<1.0	<1.0	220.9
	09/21/04	<0.50	**64**	**39**	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	103
	12/14/05	<0.50	**65**	**35**	**0.92**	<0.20	<2.0	<0.20	<0.20	**0.76**	<0.50	**1.6**	**0.55**	<0.50	<1.0	<0.50	<0.50	103.83
	07/31/06	<0.50	**92**	**60**	**1.3**	<0.20	<2.0	<0.20	<0.20	**1.3**	<0.50	**2.9**	**1.4**	<0.50	<1.0	<0.50	<0.50	158.9
	07/31/07	<0.50	**50**	<0.20	<0.25	<0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50
	08/20/08	<0.50	**71**	**36**	**0.73**	<0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	107.73
	07/28/09	<0.50	**52**	**25**	**0.34**	<0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	77.34
	07/14/10	<0.50	**75**	**52**	**0.28**	<0.20	NA	<0.20	<0.20	<0.50	<0.50	**2.1**	<0.50	<0.50	<1.0	<0.50	<0.50	129.38
	07/21/11	<0.50	**38**	**42**	**0.28**	<0.20	NA	<0.20	<0.20	**0.52**	<0.50	**0.78**	<0.50	<0.50	<1.0	<0.50	<0.50	81.58
	07/10/12	<0.17	**48**	**53**	<0.28	<0.10	NA	<0.074	<0.20	**1.8**	<0.28	**1.8**	<0.12	<0.25	<0.68	<0.50	<0.068	104.6
	07/24/13	<0.17	**26**	**23**	<0.28	<0.10	NA	<0.074	<0.20	**0.54**	<0.28	**1.1**	<0.12	<0.25	<0.68	**0.13**	**0.20**	50.97
	07/29/14	<0.17	**29**	**20**	<0.28	<0.10	NA	<0.074	<0.20	<0.19	<0.28	**0.9**	<0.12	<0.25	<0.68	<0.13	<0.068	49.9
	07/14/15	<0.17	**30**	**36**	<0.28	<0.10	NA	<0.074	<0.20	**4.9**	<0.28	**1.4**	**1.7**	<0.25	**8.2 B**	<0.10	<0.068	82.2
	07/29/16	<0.37	**20**	**15**	<0.35	<0.20	NA	<0.15	<0.37	<0.41	<0.39	<0.39	<0.41	<0.35	<1.6	<0.18	<0.22	35
	03/01/17	<0.37	**17**	**8.0**	<0.35	<0.20	NA	<0.15	<0.37	<0.41	<0.39	<0.39	<0.41	<0.35	<1.6	<0.18	<0.22	25
	05/17/17	<0.37	**22**	**11**	<0.35	<0.20	NA	<0.15	<0.37	**0.96**	<0.39	**0.90**	<0.41	<0.35	<1.6	<0.18	<0.22	34.86
	07/13/17	<0.37	**27**	**19**	<0.35	<0.20	NA	<0.15	<0.37	**1.1**	<0.39	**1.0**	<0.41	<0.35	<1.6	<0.18	<0.22	48.1
	10/24/17	<0.37	**22**	**16**	<0.35	<0.20	NA	<0.15	<0.37	<0.41	<0.39	**0.91**	<0.41	<0.35	<1.6	<0.18	<0.22	38.91
	02/28/18	<0.37	**20**	**11**	<0.35	<0.20	NA	<0.15	<0.37	<0.41	<0.39	<0.39	<0.41	<0.35	<1.6	<0.18	<0.22	31
TW-4	05/10/18	<0.74	**27**	**16**	<0.33	<0.50	NA	<0.43	<0.50	**0.58**	<0.50	**0.70**	<0.41	<0.37	<2.5	<0.33	<0.23	44.28
	07/30/18	<0.37	**26**	**18**	<0.35	<0.20	NA	<0.15	<0.37	**4.7**	<0.39	**1.6**	<0.41	<0.35	<1.6	<0.18	<0.22	50.3

Notes: All values listed are in parts per billion (ug/L).
VOCs = Volatile Organic Compounds
ES = Enforcement Standard, PAL = Preventative Action Limit
Orange Highlight = above ES, Yellow Highlight = above PAL
ND = not detected, NA = not analyzed or no data available

PCE = Tetrachloroethene
TCA = Trichloroethane
TCE = Trichloroethene

DCA = Dichloroethane
DCE = Dichloroethene

B = Detected in blank sample at a similar concentration.

Table 3. Pentair Flow Technologies, LLC Delavan Facility Extraction Wells Pumping Rates Measurements

Well Identification	Date	Pumping Rate (gpm)	Comments
EX-1	3/26/2018	48.1	
EX-2R	3/26/2018	47.8	
EX-3R	3/26/2018	43.8	
EX-4R	3/26/2018	44.4	
EX-5R	3/26/2018	44.8	
EX-6	3/26/2018	0.0	Down since mid-January due to frozen water line.
EX-7R	3/26/2018	44.0	
TOTAL PUMPING RATES		**272.9**	**gpm**
		392,948.1	**gallons per day**
		0.3929	**million gallons per day**
Well Identification	Date	Pumping Rate (gpm)	Comments
EX-1	6/29/2018	56.6	
EX-2R	6/29/2018	52.9	
EX-3R	6/29/2018	46.3	
EX-4R	6/29/2018	44.8	
EX-5R	6/29/2018	44.4	
EX-6	6/29/2018	117.9	
EX-7R	6/29/2018	44.8	
TOTAL PUMPING RATES		**407.7**	**gpm**
		587,088.0	**gallons per day**
		0.5871	**million gallons per day**
Well Identification	Date	Pumping Rate (gpm)	Comments
EX-1	7/31/2018	6.3	Calculated from Badger Meter daily flow data.
EX-2R & EX-3R	7/31/2018	85.2	Calculated from Badger Meter daily flow data.
EX-4R	7/31/2018	41.5	Calculated from Badger Meter daily flow data.
EX-5R	7/31/2018	41.9	Calculated from Badger Meter daily flow data.
EX-6	7/31/2008	116.5	Calculated from manual flow measurements
EX-7R	7/31/2018	44.6	using 55-gallon drum.
TOTAL PUMPING RATES		**336.0**	**gpm**
		483,897.6	**gallons per day**
		0.4839	**million gallons per day**

Notes: gpm = gallons per minute NM = Not Measured

Table 4. Delavan Facility Groundwater Monitoring Program Well List
Pentair Flow Technologies, LLC, Delavan, Wisconsin

Monitoring Point	Sampling Frequency	Parameters
Plant 1 Monitoring Points		
D-25R	Annual	PCE, TCA, TCE, VC
MW-1026	Annual	PCE, TCA, TCE, VC
MW-1027	Annual	PCE, TCA, TCE, VC
TW-4	Annual	VOCs
EX-2R	Annual	PCE, TCA, TCE, VC
EX-3R	Annual	PCE, TCA, TCE, VC
Plant 2 Monitoring Points		
D-15	Annual	PCE, TCA, TCE, VC
D-18	Annual	PCE, TCA, TCE, VC
MW-2004	Annual	PCE, TCA, TCE, VC
MW-2005R	Annual	PCE, TCA, TCE, VC
MW-2011	Annual	PCE, TCA, TCE, VC
TW-1	Annual	PCE, TCA, TCE, VC
TW-3	Annual	PCE, TCA, TCE, VC
EX-1	Annual	PCE, TCA, TCE, VC
EX-7R	Annual	PCE, TCA, TCE, VC
Site Monitoring Point		
Storm Sewer Grate (SS-1)	Annual	PCE, TCA, TCE, VC

PCE = Tetrachloroethene
TCA = 1,1,1-Trichloroethane and 1,1,2-Trichloroethane
TCE = Trichloroethene
VC = Vinyl Chloride
VOCs = Volatile Organic Compounds

APPENDIX A

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CORRESPONDENCE

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Plymouth Service Center
1155 Pilgrim Road
Plymouth WI 53073

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

June 7, 2018

Mr. Steve Scharinger
EHS Manager
Pentair Flow Technologies
293 Wright Street
Delavan, WI 53115

Subject: Resumption of Annual Sampling
Delavan Municipal Well No. 4 Superfund Site
290 S. Wright Street, Delavan, Wisconsin
BRRTS #02-65-529579, FID #265091640

Dear Mr. Scharinger:

The Wisconsin Department of Natural Resources (DNR), in cooperation with the U.S. Environmental Protection Agency (EPA), has reviewed the 2017 Annual Progress Report, Pentair Flow Technologies, LLC, Delavan, Wisconsin, Source Area Remediation, (Report) dated February 13, 2018, as submitted by Tetra Tech, for the site identified above. Specific to Monitoring Well TW-4, the Report indicates the last five monitoring events have concentrations of trichloroethylene (TCE) below the EPA Office of Land Emergency Management, Removal Management Level of 22 µg/L. Based on these results, the DNR and the EPA are no longer requiring quarterly sampling of Monitoring Well TW-4, and Pentair can resume annual sampling of TW-4. Enclosed with this letter is a memorandum from Mr. Keith Fusinski, EPA Toxicologist, further explaining the decision to discontinue quarterly sampling and to resume an annual sampling and reporting schedule.

The DNR appreciates your efforts to restore the environment at the Pentair site. If you have any questions regarding this remedial action approval or anything outlined in the letter, please contact the DNR Project Manager, Thomas Wentland at 920-893-8528, or at thomas.wentland@wisconsin.gov.

Sincerely,

Michele R. Norman

Michele R. Norman, Supervisor
Remediation & Redevelopment Program
Southeast Region

Attachment:

EPA Memo – Updated Recommendation for TCE monitoring well TW-4, dated Feb. 22, 2018

cc: Mr. Mark Manthey, Tetra Tech
Mr. William J. Ryan,, EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
9311 GROH ROAD
GROSSE ILE, MI 48138

MEMORANDUM

SUBJECT: Updated recommendation for TCE monitoring well TW-4 at the Delavan Municipal Well No.4 Superfund site

FROM: Keith Fusinski, PhD Toxicologist US EPA
Superfund Division, Remedial Response Branch #1,
Science and Quality Assurance Section.

TO: Michelle Heger, Remedial Project Manager, US EPA
Superfund Division, Remedial Response Branch #1,
Remedial Response Section #2

DATE: 02/22/2018

STATEMENT OF THE ISSUES:

RPM Heger requested a review of the most recent groundwater data for the Delavan Municipal Well No. 4 site for potential vapor intrusion issues.

DISCUSSION

The following provides a brief discussion about vapor intrusion and the hazard quotient (HQ) for TCE. Vapor intrusion is the migration of volatile chemicals from the subsurface into overlying buildings. Volatile chemicals in contaminated groundwater can emit vapors that may migrate through subsurface soils and into indoor air spaces of overlying buildings. In extreme cases, the vapors may accumulate in dwellings or occupied buildings to levels that may pose near-term safety hazards (e.g., explosion), acute health effects, or aesthetic problems (e.g., odors).

The vapor intrusion pathway is considered complete when the vapors move from the source (or groundwater contamination) through the deep soil and subsurface soil gas, and into a structure. Each of these components must exist in order for the pathway to be considered complete. It is possible for volatile compounds to impact deep and subsurface soil gas but still not impact indoor air. In this case the pathway would not be considered complete and no mitigation would be required.

The US EPA determines probability of a non-cancer detrimental health effect to occur by calculating a hazard quotient (HQ). The HQ is a ratio of a single substance exposure level over a specified period of time to a reference dose of the same substance derived from a similar exposure period. It is recommended that the HQ of an exposure to a chemical of concern be below or equal to 1, which is the level at which no adverse human health effects are expected to occur. For cancer risk, the US EPA recommends a screening level that would equate to a one in a million ($1x10^{-6}$) or greater lifetime risk of developing cancer from exposure to a contaminated site. US EPA Office of Land Emergency Management (OLEM) has recommended that Removal Management Levels (RML) be set at a non-cancer risk (HQ) greater than 3, or a lifetime cancer risk greater than 1 in 10,000 for most chemicals, whichever is most protective.

The IRIS Toxicological Review for trichloroethene (TCE) describes the basis for the chronic oral Reference Dose (RfD) and chronic inhalation Reference Concentration (RfC) used to determine risk at Superfund sites. One of the health endpoints for the TCE RfD and RfC is increased fetal cardiac malformations observed in laboratory animals exposed *in utero* to TCE. There is also some human evidence of developmental heart defects from TCE exposure in community studies. Because this health endpoint, by definition, is the result of a short-term exposure (during a two week period of human gestation), the chronic RfD and chronic RfC provide important information to incorporate into the evaluation of short-term exposures to TCE, including the potential for Imminent Hazards based on potential noncancer risk.

As stated previously, OLEM has set the RML for most chemicals at 3. However, due to the short-term exposure effects which may occur during gestation, the RML for TCE has been set to a HQ of 1. This would equate to 22µg/L for TCE in groundwater to protect against a commercial/industrial exposure.

PREVIOUS REVIEW

The previous review on May 2, 2016, of the groundwater data 2012 through 2014, showed TCE concentrations in monitoring well TW-4 (on the southeast side of plant 1) were decreasing. In 2012, the TCE concentration was 53µg/L. In 2013, it dropped to 23µg/L. In 2014, the TCE concentration fell below the HQ of 1 value to 20µg/L. However, in 2015 the concentration rose to 36µg/L, above the EPA HQ of 1 value. Therefore, it was recommended that monitoring of well TW-4 be increased to quarterly sampling until TCE concentrations fall below 22µg/L and show a consistent trend of staying below this value in order to protect female workers of child-bearing age. It is important to note that these recommendations were made with no information on the manufacturing process which take place near the area of Plant 1, well TW-4 or on the employee demographics.

CURRENT REVIEW

RPM Heger provided the following TCE concentrations results from sampling data which was collected from TW-4 based the recommendations above.

7/29/16 TCE = 15 µg/L
Q1: 3/1/17 TCE = 8 µg/L
Q2: 5/17/17 TCE = 11 µg/L
Q3: 7/13/17 TCE = 19 µg/L
Q4: 10/24/17 TCE = 16 µg/L

CURRENT RECOMMENDATIONS

Since the quarterly sampling results shown above are below the RML of 22 µg/L, it is currently recommended that sampling of TW-4 revert back to annual sampling and that no additional vapor intrusion investigation is required at this time.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee WI 53212-3128

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

June 7, 2018

Mr. Steve Scharinger
EHS Manager
Pentair Flow Technologies
293 Wright Street
Delavan, WI 53115

Subject: Approval of Institutional Control Implementation and Assurance Plan
Delavan Municipal Well No. 4 Superfund Site
290 S. Wright Street, Delavan, Wisconsin
BRRTS #02-65-529579, FID #265091640

Dear Mr. Scharinger:

The Wisconsin Department of Natural Resources (DNR) and the U.S. Environmental Protection Agency (EPA) are in receipt of your submittal entitled, "Institutional Control Implementation and Assurance Plan" (ICIAP), dated February 16, 2018, and submitted by Tetra Tech on behalf of Pentair Flow Technologies (Pentair), formerly Sta-Rite Industries, Inc., for the Delavan Municipal Well No.4 Superfund site (Site). The purpose of this letter is to approve the ICIAP, including the use of Institutional Controls (ICs) as a component of remedial actions at the Site. You, as the current owner, as well as future owners of the Site, must comply with the ICs within the final ICIAP, as approved, and as explained in the conditions in this letter. Please read this letter closely to ensure that you comply with all conditions and other on-going requirements.

ICs are non-engineered instruments, such as administrative and/or legal controls, that help minimize the potential for exposure to contamination and protect the integrity of the remedy. Compliance with ICs is required to ensure long-term protectiveness for any areas which do not allow for unlimited use and unrestricted exposure. Groundwater at the Site currently exceeds applicable groundwater cleanup standards, and ICs are required to restrict groundwater use until the groundwater cleanup standards are achieved. Soils at the Site have been cleaned up to levels that are protective of industrial uses, but are not protective of non-industrial uses. The residual soil contamination on the Site requires ICs to prevent non-industrial uses.

For this Site, ICs are imposed through DNR's Continuing Obligations (COs) process which includes listing on the DNR's Bureau for Remediation and Redevelopment Tracking System (BRRTS) database. BRRTS is an online, publicly-accessible registry of sites in Wisconsin which have environmental contamination. The DNR has placed the Delavan Municipal Well No. 4 Site on BRRTS, issued the CO notice letter on October 25, 2017, received the final IC Implementation and Assurance Plan (ICIAP) from Pentair on February 16, 2018 and imposes the continuing obligations on the site with this approval letter. EPA concurs with the implementation of the final ICIAP upon formal approval by DNR via this letter.

Due to contamination remaining on the Site, the COs are part of the cleanup and remedial actions approved for the Site. The continuing obligations imposed on the Site are listed below:

1. Groundwater contamination exists across the Site above regulatory standards. Water supply wells shall not be constructed on the Site without prior approval of the DNR pursuant to Wis. Admin. Code § NR 812.09(4)(w). This requirement also applies to private drinking water wells and high capacity wells. See Wis. Admin. Code § NR 812.09(4)(a).

2. The following Industrial Soil Standards apply to the three former TCE-source areas (former sump area, former chip storage area, and former southeast extraction area) where contaminated soils remain at levels exceeding the non-industrial standard, per Wis. Admin. Code §§ NR 726.15, NR 727.07. Refer to Figure 1: Site Layout and Total VOCs Concentrations for Groundwater Monitoring Points, Jan. 23, 2018. These areas may not be used or developed for a residential, commercial, agricultural or other non-industrial use, unless prior written approval has been obtained from the DNR. Pentair or future property owners shall notify the DNR at least 45 days before changing the use in these areas. An investigation and remedial action to meet applicable soil cleanup standards may be required at that time.

3. All site monitoring wells shall be inspected annually and repaired as needed to maintain the integrity of the wells.

The DNR expects the continued submittal of annual reports and plans to prepare the next 5-Year Review of the Site in 2020, as required by the EPA.

The DNR appreciates your efforts to restore the environment at the Pentair site. If you have any questions regarding this remedial action approval or anything outlined in the letter, please contact the DNR Project Manager, Thomas Wentland at 920-893-8528, or at thomas.wentland@wisconsin.gov.

Sincerely,

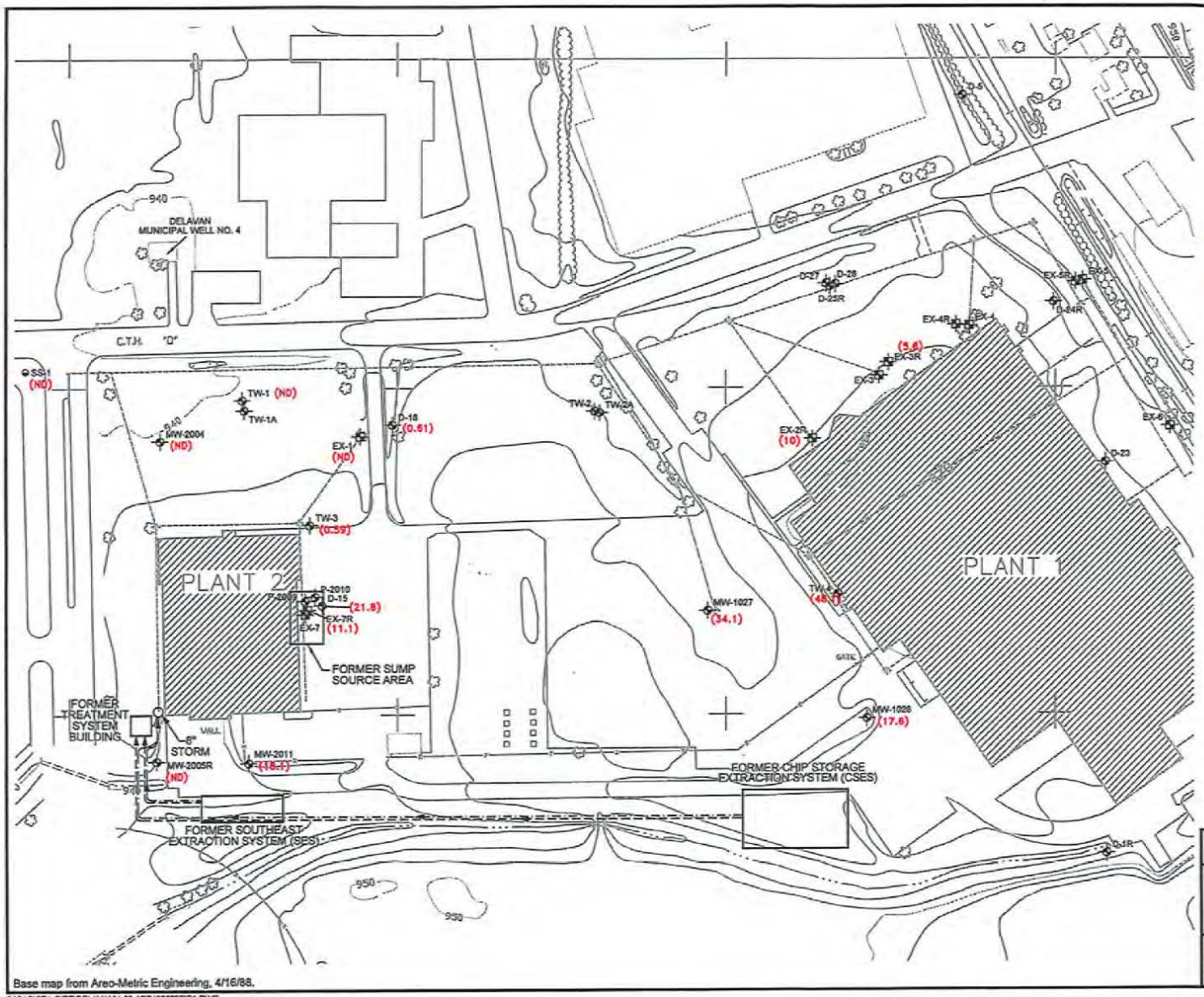
Michele R. Norman

Michele R. Norman, Supervisor
Remediation & Redevelopment Program
Southeast Region

Attachment:

Figure 1: Site Layout and Total VOCs Concentrations for Groundwater Monitoring Points, Jan. 23, 2018

cc: Mr. Mark Manthey, Tetra Tech
Ms. Michelle Heger, U.S. Environmental Protection Agency



Base map from Areo-Metric Engineering, 4/16/88.

S:\CAD\STA-RITE\DELAVAN\1-23-1807469002\FIG1.DWG

EXPLANATION

MW-2004	MONITOR WELL LOCATION AND DESIGNATION
E-3	EXTRACTION WELL LOCATION AND DESIGNATION
SS-1	STORM SEWER SAMPLE LOCATION AND DESIGNATION
P-2009	PIEZOMETER LOCATION AND DESIGNATION
(11.1)	TOTAL VOCs CONCENTRATION (ug/L) FROM 2017 SAMPLING ROUND
(ND)	NO VOCs DETECTED

NOTE: EX-2R, EX-3R AND EX-7R SAMPLES COLLECTED ON OCTOBER 24, 2017. ALL OTHER SAMPLES WERE COLLECTED JULY 12-13, 2017.

N

SCALE

0 300

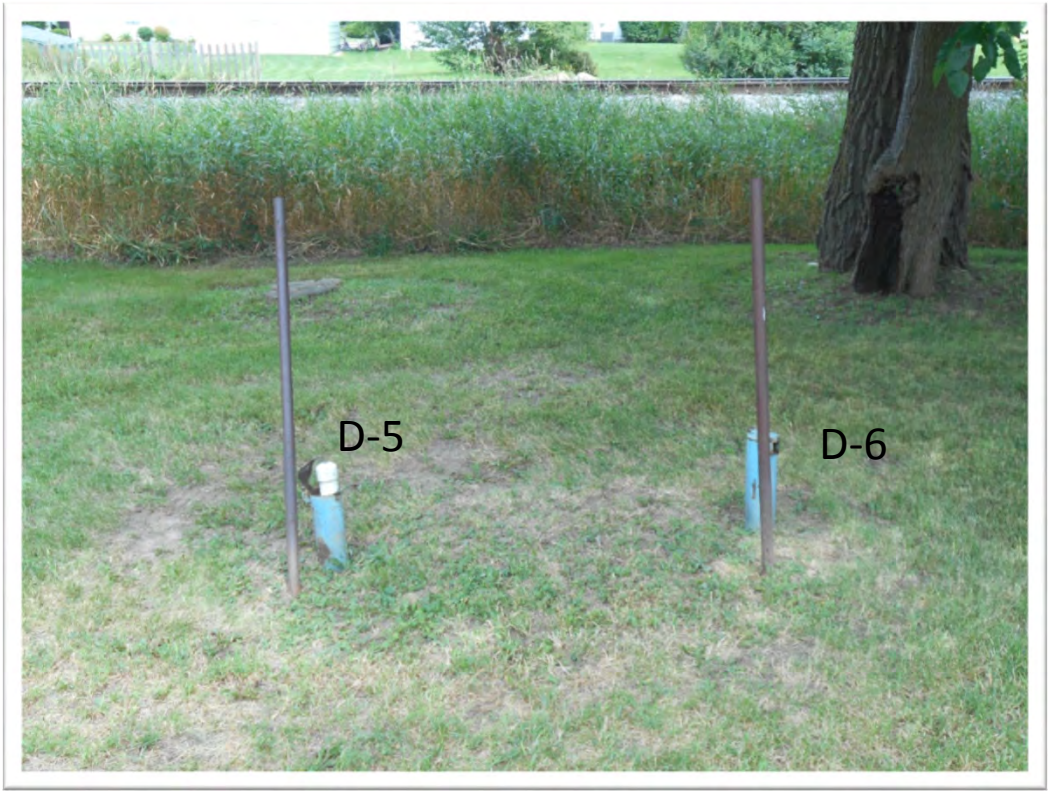
Feet

STA-RITE INDUSTRIES, INC. DELAVAN, WISCONSIN	DATE: 1/23/18
	DESIGNED: HJW
SITE LAYOUT AND TOTAL VOCs CONCENTRATIONS FOR GROUNDWATER MONITORING POINTS	CHECKED: MAM
	APPROVED: MAM
	DRAWN: HJW
	PROJ.: 117-7469002
TETRA TECH	Figure 1

APPENDIX B

MONITOR WELL AND SITE INSPECTON PHOTOGRAPHS

1. Monitoring wells D-5 and D-6 on property across the street of Plant 1.



2. Monitoring wells D-3 and D-4 located northeast of Plant 2.

3. North side of property next to Plant 1.

4.West side of property looking towards Plant 1.

5.West side of property located west of Plant 2.

6.South side of property looking towards Plant 2.

7.View looking north along east side of property. .

8.View looking east towards Extraction well EX-7R located on north side of Plant 2 in former sump source area.

9. View looking east towards monitoring well TW-4 located on south side of Plant 1.

10. View inside south side of Plant 1 in area where low-level VOCs impacts occur in the sub-surface soil.

APPENDIX C
GROUNDWATER MONITORING ANALYTICAL RESULTS AND FIELD DATA SHEETS

TETRA TECH FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HoribA
PROJECT NO.	117-7469002.0	Conductivity	HoribA
LOCATION	Delavan, WI	ORP	NA
PERSONNEL	Todd M. Thomson	DO	NA

SAMPLE POINT	MW-2005R	MW-2011	D-15	TW-3	MW-2004
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	7-30-18	7-30-18	7-31-18	7-30-18	7-30-18
CLOCK TIME (Military)	13:35	16:20	08:10	15:30	11:50
DEPTH TO WATER (ft)*	22.93	24.30	30.35	30.99	25.63
MEASURED WELL DEPTH (ft)*	37.81	36.51	38.18	50.73	39.33
CASING VOLUME (gallons)	2.4	2.0	1.3	3.2	2.1
PURGE VOLUME (gallons)	12	10	10	15	10
DEPTH SAMPLE TAKEN (ft)*	35	32	36	40	35
SAMPLING DEVICE	Horiba Bailer				→
FIELD TEMPERATURE (°C)	12.4	12.6	13.0	13.6	15.1
pH	7.05	7.11	7.10	7.03	6.80
ELEC. COND. (uS/cm) at 25° C	1563	2665	3033	1049	926
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
ODOR	NONE	NONE	NONE	NONE	NONE
CLARITY	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR

SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
PCE, TCE, TCA, Vinyl Chloride (EPA Method 8260B)	3 – 40 ml; G; L; HCl; No	3 – 40 ml; G; L; HCl; No	3 – 40 ml; G; L; HCl; No	3 – 40 ml; G; L; HCl; No	3 – 40 ml; G; L; HCl; No

Comments:

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	8-1-18	8-1-18	8-1-18	8-1-18	8-1-18
SAMPLER'S NAME	TMT	TMT	TMT	TMT	TMT

*Measured from top of well casing.

TETRA TECH

TETRA TECH FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HANNA
PROJECT NO.	117-7469002.01	Conductivity	HANNA
LOCATION	Delavan, WI	ORP	NA
PERSONNEL	Todd M. Thomson	DO	NA

SAMPLE POINT	TW-1	D-18	D-25R	MW-1027	TW-4
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	7-30-18	7-30-18	7-30-18	7-30-18	7-30-18
CLOCK TIME (Military)	12:45	14:30	11:00	3:45	2:30
DEPTH TO WATER (ft)*	25.25	28.87	30.80	28.10	36.11
MEASURED WELL DEPTH (ft)*	45.50	39.90	42.39	39.98	50.52
CASING VOLUME (gallons)	3.3	1.8	1.9	1.9	2.4
PURGE VOLUME (gallons)	15	10	10	10	10
DEPTH SAMPLE TAKEN (ft)*	40	35	40	35	45
SAMPLING DEVICE	HANGING BAILER				
FIELD TEMPERATURE (°C)	12.5	12.7	15.1	15.8	16.1
pH	6.97	7.00	7.38	7.52	7.08
ELEC. COND. (uS/cm) at 25° C	966	922	1005	1315	2499
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
ODOR	NONE	NONE	NONE	NONE	NONE
CLARITY	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR

SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
PCE, TCE, TCA, Vinyl Chloride (EPA Method 8260B)	3 – 40 ml; G; L; HCl; No	3 – 40 ml; G; L; HCl; No	3 – 40 ml; G; HCl; No	3 – 40 ml; G; L; HCl; No	
VOCs (EPA Method 8260B)					3 – 40 ml; G; L; HCl; No

Comments:

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	8-1-18	8-1-18	8-1-18	8-1-18	8-1-18
SAMPLER'S NAME	TMT	TMT	TMT	TMT	TMT

*Measured from top of well casing.

TETRA TECH FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HANNA
PROJECT NO.	117-7469002.01	Conductivity	HANNA
LOCATION	Delavan, WI	ORP	NA
PERSONNEL	Todd M. Thomson	DO	NA

SAMPLE POINT	MW-1026	EX-1	EX-2R	EX-3R	EX-7R
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	7-30-18	7-31-18	7-31-18	7-31-18	7-31-18
CLOCK TIME (Military)	1:15	09:10	09:40	10:00	08:30
DEPTH TO WATER (ft)*	29.79	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*	36.00	NA	NA	NA	NA
CASING VOLUME (gallons)	1.0	NA	NA	NA	NA
PURGE VOLUME (gallons)	5	GRAB	GRAB	GRAB	GRAB
DEPTH SAMPLE TAKEN (ft)*	35	NA	NA	NA	NA
SAMPLING DEVICE	HANGING BOILER	SPIGOT	SPIGOT	SPIGOT	SPIGOT
FIELD TEMPERATURE (°C)	13.2	11.8	14.5	14.6	13.6
pH	7.53	7.29	7.7	7.20	7.32
ELEC. COND. (uS/cm) at 25° C	929	1263	1995	1046	1287
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	BROWN	CLEAR	CLEAR	CLEAR	CLEAR
ODOR	NONE	NONE	NONE	NONE	NONE
CLARITY	TURBID	CLEAR	CLEAR	CLEAR	CLEAR
SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
PCE, TCE, TCA, Vinyl Chloride (EPA Method 8260B)	3 – 40 ml; G; L; HCl; No	3 – 40 ml; G; L; HCl; No	3 – 40 ml; G; L; HCl; No	3 – 40 ml; G; L; HCl; No	3 – 40 ml; G; L; HCl; No
Comments:					
NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	8-1-18	8-1-18	8-1-18	8-1-18	8-1-18
SAMPLER'S NAME	TMT	TMT	TMT	TMT	TMT

*Measured from top of well casing.

TETRA TECH

Sta-Rite Delavan Facility Field Water Level Data Sheet

Well ID	Date	Time	Depth to Groundwater (feet btoc)	Notes
Plant 1 Wells				
EX-2R	NA	NA	NA	
EX-3	NA	NA	NA	
EX-4	NA	NA	NA	
EX-5	NA	NA	NA	
EX-6	NA	NA	NA	
TW-2				
TW-2A				
TW-4	7-30-18	1:50	30.11	
D-1R	7-30-18	1:35	30.83	
D-5	7-30-18	10:45	31.01	
~~D-14R~~ D-6	7-30-18	11:40	31.00	
D-23	7-30-18	12:15	30.78	
D-24R	7-31-18	11:05	28.59	
D-25R	7-30-18	10:15	30.80	
D-26	7-30-18	11:15	30.32	
D-27	7-30-18	11:20	30.28	
MW-1026	7-30-18	12:45	29.77	
MW-1027	7-30-18	3:15	28.10	
Plant 2 Wells				
EX-1	NA	NA	NA	
EX-7	NA	NA	NA	
TW-1	7-30-18	12:10	25.25	2"PVC 4"PT
TW-1A	7-30-18	12:05	26.50	2"PVC 6"PT No Lock
TW-3	7-30-18	14:40	30.99	
D-15	7-31-18	07:35	30.35	
P-2009	7-31-18	07:25	30.05	
P-2010	7-31-18	07:30	29.75	6"PT No Lock
D-18	7-30-18	13:45	28.87	CAP VENT
MW-2004	7-30-18	11:25	25.63	2"PVC 4"PT
MW-2005R	7-30-18	13:05	22.93	
MW-2011	7-30-18	15:40	24.30	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-149315-1
Client Project/Site: Pentair - Delavan, WI - 117-7469002-04

For:
Tetra Tech GEO
175 N Corporate Drive
Suite 100
Brookfield, Wisconsin 53045

Attn: Mr. Mark Manthey

Authorized for release by:
8/15/2018 7:52:35 AM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.
Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Job ID: 500-149315-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-149315-1

Comments
No additional comments.

Receipt
The samples were received on 8/2/2018 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3º C.

GC/MS VOA
Method(s) 8260B: The following sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: Trip Blank (500-149315-16).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Client Sample ID: TW-4 — Lab Sample ID: 500-149315-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	4.7		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	1.6		1.0	0.39	ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	26		1.0	0.38	ug/L	1		8260B	Total/NA
Trichloroethene	18		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: D-25R — Lab Sample ID: 500-149315-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	0.55		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-1026 — Lab Sample ID: 500-149315-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	11		1.0	0.38	ug/L	1		8260B	Total/NA
Trichloroethene	2.7		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-1027 — Lab Sample ID: 500-149315-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	4.9		1.0	0.38	ug/L	1		8260B	Total/NA
Trichloroethene	27		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-2005R — Lab Sample ID: 500-149315-5

No Detections.

Client Sample ID: MW-2011 — Lab Sample ID: 500-149315-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	1.2		1.0	0.38	ug/L	1		8260B	Total/NA
Trichloroethene	7.6		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: TW-3 — Lab Sample ID: 500-149315-7

No Detections.

Client Sample ID: MW-2004 — Lab Sample ID: 500-149315-8

No Detections.

Client Sample ID: TW-1 — Lab Sample ID: 500-149315-9

No Detections.

Client Sample ID: D-18 — Lab Sample ID: 500-149315-10

No Detections.

Client Sample ID: D-15 — Lab Sample ID: 500-149315-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	6.3		1.0	0.37	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Chicago

Detection Summary

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Client Sample ID: D-15 (Continued) — Lab Sample ID: 500-149315-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	7.0		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: EX-1 — Lab Sample ID: 500-149315-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	0.60	J	1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.30	J	0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: EX-2R — Lab Sample ID: 500-149315-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	1.7		1.0	0.38	ug/L	1		8260B	Total/NA
Trichloroethene	3.6		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: EX-3 — Lab Sample ID: 500-149315-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	2.4		1.0	0.38	ug/L	1		8260B	Total/NA
Trichloroethene	2.4		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: EX-7 — Lab Sample ID: 500-149315-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	4.7		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	2.4		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 500-149315-16

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-149315-1	TW-4	Ground Water	07/30/18 02:30	08/02/18 09:15
500-149315-2	D-25R	Ground Water	07/30/18 11:00	08/02/18 09:15
500-149315-3	MW-1026	Ground Water	07/30/18 01:15	08/02/18 09:15
500-149315-4	MW-1027	Ground Water	07/30/18 03:45	08/02/18 09:15
500-149315-5	MW-2005R	Ground Water	07/30/18 13:35	08/02/18 09:15
500-149315-6	MW-2011	Ground Water	07/30/18 16:20	08/02/18 09:15
500-149315-7	TW-3	Ground Water	07/30/18 15:30	08/02/18 09:15
500-149315-8	MW-2004	Ground Water	07/30/18 11:50	08/02/18 09:15
500-149315-9	TW-1	Ground Water	07/30/18 12:45	08/02/18 09:15
500-149315-10	D-18	Ground Water	07/30/18 14:30	08/02/18 09:15
500-149315-11	D-15	Ground Water	07/31/18 08:10	08/02/18 09:15
500-149315-12	EX-1	Ground Water	07/31/18 09:10	08/02/18 09:15
500-149315-13	EX-2R	Ground Water	07/31/18 09:40	08/02/18 09:15
500-149315-14	EX-3	Ground Water	07/31/18 10:00	08/02/18 09:15
500-149315-15	EX-7	Ground Water	07/31/18 08:30	08/02/18 09:15
500-149315-16	Trip Blank	Water	07/31/18 00:00	08/02/18 09:15

Client Sample ID: TW-4
Date Collected: 07/30/18 02:30
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-1
Matrix: Ground Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			08/09/18 14:54	1
Bromobenzene	<0.36		1.0	0.36	ug/L			08/09/18 14:54	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			08/09/18 14:54	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			08/09/18 14:54	1
Bromoform	<0.48		1.0	0.48	ug/L			08/09/18 14:54	1
Bromomethane	<0.80		2.0	0.80	ug/L			08/09/18 14:54	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/09/18 14:54	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			08/09/18 14:54	1
Chloroethane	<0.51		1.0	0.51	ug/L			08/09/18 14:54	1
Chloroform	<0.37		2.0	0.37	ug/L			08/09/18 14:54	1
Chloromethane	<0.32		1.0	0.32	ug/L			08/09/18 14:54	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			08/09/18 14:54	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			08/09/18 14:54	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			08/09/18 14:54	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			08/09/18 14:54	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			08/09/18 14:54	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			08/09/18 14:54	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			08/09/18 14:54	1
Dibromomethane	<0.27		1.0	0.27	ug/L			08/09/18 14:54	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			08/09/18 14:54	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			08/09/18 14:54	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			08/09/18 14:54	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			08/09/18 14:54	1
1,1-Dichloroethane	**4.7**		1.0	0.41	ug/L			08/09/18 14:54	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			08/09/18 14:54	1
1,1-Dichloroethene	**1.6**		1.0	0.39	ug/L			08/09/18 14:54	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			08/09/18 14:54	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			08/09/18 14:54	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			08/09/18 14:54	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			08/09/18 14:54	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/09/18 14:54	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			08/09/18 14:54	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			08/09/18 14:54	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			08/09/18 14:54	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/09/18 14:54	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			08/09/18 14:54	1
Naphthalene	<0.34		1.0	0.34	ug/L			08/09/18 14:54	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			08/09/18 14:54	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			08/09/18 14:54	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			08/09/18 14:54	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			08/09/18 14:54	1
Styrene	<0.39		1.0	0.39	ug/L			08/09/18 14:54	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			08/09/18 14:54	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			08/09/18 14:54	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			08/09/18 14:54	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/09/18 14:54	1
Toluene	<0.15		0.50	0.15	ug/L			08/09/18 14:54	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			08/09/18 14:54	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			08/09/18 14:54	1

Client Sample ID: TW-4

Lab Sample ID: 500-149315-1
Date Collected: 07/30/18 02:30
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			08/09/18 14:54	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			08/09/18 14:54	1
1,1,1-Trichloroethane	**26**		1.0	0.38	ug/L			08/09/18 14:54	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/09/18 14:54	1
Trichloroethene	**18**		0.50	0.16	ug/L			08/09/18 14:54	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			08/09/18 14:54	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			08/09/18 14:54	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			08/09/18 14:54	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			08/09/18 14:54	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/09/18 14:54	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/09/18 14:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*72 - 124*		*08/09/18 14:54*	*1*
Dibromofluoromethane	*87*		*75 - 120*		*08/09/18 14:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 126*		*08/09/18 14:54*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*08/09/18 14:54*	*1*

Client Sample ID: D-25R

Lab Sample ID: 500-149315-2
Date Collected: 07/30/18 11:00
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/09/18 15:21	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/09/18 15:21	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/09/18 15:21	1
Trichloroethene	**0.55**		0.50	0.16	ug/L			08/09/18 15:21	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/09/18 15:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*		*08/09/18 15:21*	*1*
Dibromofluoromethane	*84*		*75 - 120*		*08/09/18 15:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 126*		*08/09/18 15:21*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*08/09/18 15:21*	*1*

Client Sample ID: MW-1026

Lab Sample ID: 500-149315-3
Date Collected: 07/30/18 01:15
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/09/18 15:48	1
1,1,1-Trichloroethane	**11**		1.0	0.38	ug/L			08/09/18 15:48	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/09/18 15:48	1
Trichloroethene	**2.7**		0.50	0.16	ug/L			08/09/18 15:48	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/09/18 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*		*08/09/18 15:48*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*08/09/18 15:48*	*1*

Client Sample ID: MW-1026

Date Collected: 07/30/18 01:15
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-3
Matrix: Ground Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 126*		*08/09/18 15:48*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*08/09/18 15:48*	*1*

Client Sample ID: MW-1027

Date Collected: 07/30/18 03:45
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-4
Matrix: Ground Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/09/18 16:16	1
1,1,1-Trichloroethane	**4.9**		1.0	0.38	ug/L			08/09/18 16:16	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/09/18 16:16	1
Trichloroethene	**27**		0.50	0.16	ug/L			08/09/18 16:16	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/09/18 16:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*		*08/09/18 16:16*	*1*
Dibromofluoromethane	*96*		*75 - 120*		*08/09/18 16:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*08/09/18 16:16*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*08/09/18 16:16*	*1*

Client Sample ID: MW-2005R

Date Collected: 07/30/18 13:35
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-5
Matrix: Ground Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/09/18 16:43	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/09/18 16:43	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/09/18 16:43	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/09/18 16:43	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/09/18 16:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*		*08/09/18 16:43*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*08/09/18 16:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 126*		*08/09/18 16:43*	*1*
Toluene-d8 (Surr)	*87*		*75 - 120*		*08/09/18 16:43*	*1*

Client Sample ID: MW-2011

Date Collected: 07/30/18 16:20
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-6
Matrix: Ground Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/09/18 17:10	1
1,1,1-Trichloroethane	**1.2**		1.0	0.38	ug/L			08/09/18 17:10	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/09/18 17:10	1
Trichloroethene	**7.6**		0.50	0.16	ug/L			08/09/18 17:10	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/09/18 17:10	1

Client Sample ID: MW-2011

Date Collected: 07/30/18 16:20
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-6

Matrix: Ground Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*		*08/09/18 17:10*	*1*
Dibromofluoromethane	*88*		*75 - 120*		*08/09/18 17:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 126*		*08/09/18 17:10*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/09/18 17:10*	*1*

Client Sample ID: TW-3

Date Collected: 07/30/18 15:30
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-7

Matrix: Ground Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/10/18 13:36	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/10/18 13:36	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/10/18 13:36	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/10/18 13:36	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/10/18 13:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*		*08/10/18 13:36*	*1*
Dibromofluoromethane	*95*		*75 - 120*		*08/10/18 13:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*08/10/18 13:36*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*08/10/18 13:36*	*1*

Client Sample ID: MW-2004

Date Collected: 07/30/18 11:50
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-8

Matrix: Ground Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/10/18 14:03	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/10/18 14:03	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/10/18 14:03	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/10/18 14:03	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/10/18 14:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*72 - 124*		*08/10/18 14:03*	*1*
Dibromofluoromethane	*86*		*75 - 120*		*08/10/18 14:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 126*		*08/10/18 14:03*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*08/10/18 14:03*	*1*

Client Sample ID: TW-1

Date Collected: 07/30/18 12:45
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-9

Matrix: Ground Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/10/18 14:30	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/10/18 14:30	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/10/18 14:30	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/10/18 14:30	1

Client Sample ID: TW-1

Lab Sample ID: 500-149315-9
Date Collected: 07/30/18 12:45
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/10/18 14:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*		*08/10/18 14:30*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*08/10/18 14:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 126*		*08/10/18 14:30*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*08/10/18 14:30*	*1*

Client Sample ID: D-18

Lab Sample ID: 500-149315-10
Date Collected: 07/30/18 14:30
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/10/18 14:57	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/10/18 14:57	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/10/18 14:57	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/10/18 14:57	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/10/18 14:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*72 - 124*		*08/10/18 14:57*	*1*
Dibromofluoromethane	*91*		*75 - 120*		*08/10/18 14:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 126*		*08/10/18 14:57*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*08/10/18 14:57*	*1*

Client Sample ID: D-15

Lab Sample ID: 500-149315-11
Date Collected: 07/31/18 08:10
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	**6.3**		1.0	0.37	ug/L			08/10/18 15:24	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/10/18 15:24	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/10/18 15:24	1
Trichloroethene	**7.0**		0.50	0.16	ug/L			08/10/18 15:24	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/10/18 15:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*08/10/18 15:24*	*1*
Dibromofluoromethane	*85*		*75 - 120*		*08/10/18 15:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*85*		*75 - 126*		*08/10/18 15:24*	*1*
Toluene-d8 (Surr)	*83*		*75 - 120*		*08/10/18 15:24*	*1*

Client Sample ID: EX-1

Lab Sample ID: 500-149315-12
Date Collected: 07/31/18 09:10
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	**0.60**	**J**	1.0	0.37	ug/L			08/10/18 15:52	1

Client Sample ID: EX-1

Lab Sample ID: 500-149315-12
Date Collected: 07/31/18 09:10
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/10/18 15:52	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/10/18 15:52	1
Trichloroethene	**0.30**	**J**	0.50	0.16	ug/L			08/10/18 15:52	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/10/18 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*72 - 124*		*08/10/18 15:52*	*1*
Dibromofluoromethane	*84*		*75 - 120*		*08/10/18 15:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*85*		*75 - 126*		*08/10/18 15:52*	*1*
Toluene-d8 (Surr)	*104*		*75 - 120*		*08/10/18 15:52*	*1*

Client Sample ID: EX-2R

Lab Sample ID: 500-149315-13
Date Collected: 07/31/18 09:40
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/10/18 16:19	1
1,1,1-Trichloroethane	**1.7**		1.0	0.38	ug/L			08/10/18 16:19	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/10/18 16:19	1
Trichloroethene	**3.6**		0.50	0.16	ug/L			08/10/18 16:19	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/10/18 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*72 - 124*		*08/10/18 16:19*	*1*
Dibromofluoromethane	*88*		*75 - 120*		*08/10/18 16:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 126*		*08/10/18 16:19*	*1*
Toluene-d8 (Surr)	*104*		*75 - 120*		*08/10/18 16:19*	*1*

Client Sample ID: EX-3

Lab Sample ID: 500-149315-14
Date Collected: 07/31/18 10:00
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/10/18 16:46	1
1,1,1-Trichloroethane	**2.4**		1.0	0.38	ug/L			08/10/18 16:46	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/10/18 16:46	1
Trichloroethene	**2.4**		0.50	0.16	ug/L			08/10/18 16:46	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/10/18 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*		*08/10/18 16:46*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*08/10/18 16:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 126*		*08/10/18 16:46*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*08/10/18 16:46*	*1*

Client Sample ID: EX-7

Lab Sample ID: 500-149315-15
Date Collected: 07/31/18 08:30
Matrix: Ground Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	4.7		1.0	0.37	ug/L			08/10/18 17:13	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/10/18 17:13	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/10/18 17:13	1
Trichloroethene	2.4		0.50	0.16	ug/L			08/10/18 17:13	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/10/18 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*72 - 124*		*08/10/18 17:13*	*1*
Dibromofluoromethane	*103*		*75 - 120*		*08/10/18 17:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*08/10/18 17:13*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*08/10/18 17:13*	*1*

Client Sample ID: Trip Blank

Lab Sample ID: 500-149315-16
Date Collected: 07/31/18 00:00
Matrix: Water
Date Received: 08/02/18 09:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			08/13/18 13:56	1
Bromobenzene	<0.36		1.0	0.36	ug/L			08/13/18 13:56	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			08/13/18 13:56	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			08/13/18 13:56	1
Bromoform	<0.48		1.0	0.48	ug/L			08/13/18 13:56	1
Bromomethane	<0.80		2.0	0.80	ug/L			08/13/18 13:56	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/13/18 13:56	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			08/13/18 13:56	1
Chloroethane	<0.51		1.0	0.51	ug/L			08/13/18 13:56	1
Chloroform	<0.37		2.0	0.37	ug/L			08/13/18 13:56	1
Chloromethane	<0.32		1.0	0.32	ug/L			08/13/18 13:56	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			08/13/18 13:56	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			08/13/18 13:56	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			08/13/18 13:56	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			08/13/18 13:56	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			08/13/18 13:56	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			08/13/18 13:56	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			08/13/18 13:56	1
Dibromomethane	<0.27		1.0	0.27	ug/L			08/13/18 13:56	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			08/13/18 13:56	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			08/13/18 13:56	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			08/13/18 13:56	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			08/13/18 13:56	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			08/13/18 13:56	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			08/13/18 13:56	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			08/13/18 13:56	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			08/13/18 13:56	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			08/13/18 13:56	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			08/13/18 13:56	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			08/13/18 13:56	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/13/18 13:56	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			08/13/18 13:56	1

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Client Sample ID: Trip Blank
Date Collected: 07/31/18 00:00
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-16
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	<0.39		1.0	0.39	ug/L			08/13/18 13:56	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			08/13/18 13:56	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/13/18 13:56	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			08/13/18 13:56	1
Naphthalene	<0.34		1.0	0.34	ug/L			08/13/18 13:56	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			08/13/18 13:56	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			08/13/18 13:56	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			08/13/18 13:56	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			08/13/18 13:56	1
Styrene	<0.39		1.0	0.39	ug/L			08/13/18 13:56	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			08/13/18 13:56	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			08/13/18 13:56	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			08/13/18 13:56	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/13/18 13:56	1
Toluene	<0.15		0.50	0.15	ug/L			08/13/18 13:56	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			08/13/18 13:56	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			08/13/18 13:56	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			08/13/18 13:56	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			08/13/18 13:56	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/13/18 13:56	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/13/18 13:56	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/13/18 13:56	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			08/13/18 13:56	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			08/13/18 13:56	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			08/13/18 13:56	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			08/13/18 13:56	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/13/18 13:56	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/13/18 13:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*08/13/18 13:56*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*08/13/18 13:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*08/13/18 13:56*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*08/13/18 13:56*	*1*

Definitions/Glossary

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

GC/MS VOA

Analysis Batch: 444688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-149315-1	TW-4	Total/NA	Ground Water	8260B	
500-149315-2	D-25R	Total/NA	Ground Water	8260B	
500-149315-3	MW-1026	Total/NA	Ground Water	8260B	
500-149315-4	MW-1027	Total/NA	Ground Water	8260B	
500-149315-5	MW-2005R	Total/NA	Ground Water	8260B	
500-149315-6	MW-2011	Total/NA	Ground Water	8260B	
MB 500-444688/5	Method Blank	Total/NA	Water	8260B	
LCS 500-444688/28	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 444855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-149315-7	TW-3	Total/NA	Ground Water	8260B	
500-149315-8	MW-2004	Total/NA	Ground Water	8260B	
500-149315-9	TW-1	Total/NA	Ground Water	8260B	
500-149315-10	D-18	Total/NA	Ground Water	8260B	
500-149315-11	D-15	Total/NA	Ground Water	8260B	
500-149315-12	EX-1	Total/NA	Ground Water	8260B	
500-149315-13	EX-2R	Total/NA	Ground Water	8260B	
500-149315-14	EX-3	Total/NA	Ground Water	8260B	
500-149315-15	EX-7	Total/NA	Ground Water	8260B	
MB 500-444855/6	Method Blank	Total/NA	Water	8260B	
LCS 500-444855/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 445063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-149315-16	Trip Blank	Total/NA	Water	8260B	
MB 500-445063/6	Method Blank	Total/NA	Water	8260B	
LCS 500-445063/16	Lab Control Sample	Total/NA	Water	8260B	

Surrogate Summary

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(72-124)	(75-120)	(75-126)	(75-120)
500-149315-1	TW-4	100	87	87	101
500-149315-2	D-25R	102	84	86	101
500-149315-3	MW-1026	102	90	87	100
500-149315-4	MW-1027	101	96	96	102
500-149315-5	MW-2005R	102	97	88	87
500-149315-6	MW-2011	102	88	90	103
500-149315-7	TW-3	102	95	94	100
500-149315-8	MW-2004	107	86	87	101
500-149315-9	TW-1	101	97	89	100
500-149315-10	D-18	104	91	91	102
500-149315-11	D-15	105	85	85	83
500-149315-12	EX-1	110	84	85	104
500-149315-13	EX-2R	109	88	87	104
500-149315-14	EX-3	101	93	93	98
500-149315-15	EX-7	104	103	96	100

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(72-124)	(75-120)	(75-126)	(75-120)
500-149315-16	Trip Blank	90	93	94	93
LCS 500-444688/28	Lab Control Sample	98	86	83	97
LCS 500-444855/4	Lab Control Sample	97	90	87	101
LCS 500-445063/16	Lab Control Sample	92	96	90	92
MB 500-444688/5	Method Blank	101	93	89	99
MB 500-444855/6	Method Blank	105	89	89	101
MB 500-445063/6	Method Blank	91	93	90	90

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-444688/5
Matrix: Water
Analysis Batch: 444688

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			08/09/18 10:20	1
Bromobenzene	<0.36		1.0	0.36	ug/L			08/09/18 10:20	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			08/09/18 10:20	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			08/09/18 10:20	1
Bromoform	<0.48		1.0	0.48	ug/L			08/09/18 10:20	1
Bromomethane	<0.80		2.0	0.80	ug/L			08/09/18 10:20	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/09/18 10:20	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			08/09/18 10:20	1
Chloroethane	<0.51		1.0	0.51	ug/L			08/09/18 10:20	1
Chloroform	<0.37		2.0	0.37	ug/L			08/09/18 10:20	1
Chloromethane	<0.32		1.0	0.32	ug/L			08/09/18 10:20	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			08/09/18 10:20	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			08/09/18 10:20	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			08/09/18 10:20	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			08/09/18 10:20	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			08/09/18 10:20	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			08/09/18 10:20	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			08/09/18 10:20	1
Dibromomethane	<0.27		1.0	0.27	ug/L			08/09/18 10:20	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			08/09/18 10:20	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			08/09/18 10:20	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			08/09/18 10:20	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			08/09/18 10:20	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			08/09/18 10:20	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			08/09/18 10:20	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			08/09/18 10:20	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			08/09/18 10:20	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			08/09/18 10:20	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			08/09/18 10:20	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			08/09/18 10:20	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/09/18 10:20	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			08/09/18 10:20	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			08/09/18 10:20	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			08/09/18 10:20	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/09/18 10:20	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			08/09/18 10:20	1
Naphthalene	<0.34		1.0	0.34	ug/L			08/09/18 10:20	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			08/09/18 10:20	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			08/09/18 10:20	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			08/09/18 10:20	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			08/09/18 10:20	1
Styrene	<0.39		1.0	0.39	ug/L			08/09/18 10:20	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			08/09/18 10:20	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			08/09/18 10:20	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			08/09/18 10:20	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/09/18 10:20	1
Toluene	<0.15		0.50	0.15	ug/L			08/09/18 10:20	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			08/09/18 10:20	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-444688/5
Matrix: Water
Analysis Batch: 444688

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			08/09/18 10:20	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			08/09/18 10:20	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			08/09/18 10:20	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/09/18 10:20	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/09/18 10:20	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/09/18 10:20	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			08/09/18 10:20	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			08/09/18 10:20	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			08/09/18 10:20	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			08/09/18 10:20	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/09/18 10:20	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/09/18 10:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*		*08/09/18 10:20*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*08/09/18 10:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 126*		*08/09/18 10:20*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*08/09/18 10:20*	*1*

Lab Sample ID: LCS 500-444688/28
Matrix: Water
Analysis Batch: 444688

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	50.9		ug/L		102	70 - 120
Bromobenzene	50.0	51.2		ug/L		102	70 - 122
Bromochloromethane	50.0	48.0		ug/L		96	65 - 122
Bromodichloromethane	50.0	49.3		ug/L		99	69 - 120
Bromoform	50.0	47.0		ug/L		94	56 - 132
Bromomethane	50.0	63.6		ug/L		127	40 - 152
Carbon tetrachloride	50.0	52.3		ug/L		105	59 - 133
Chlorobenzene	50.0	52.4		ug/L		105	70 - 120
Chloroethane	50.0	65.7		ug/L		131	48 - 136
Chloroform	50.0	48.0		ug/L		96	70 - 120
Chloromethane	50.0	73.3		ug/L		147	56 - 152
2-Chlorotoluene	50.0	55.8		ug/L		112	70 - 125
4-Chlorotoluene	50.0	54.7		ug/L		109	68 - 124
cis-1,2-Dichloroethene	50.0	52.5		ug/L		105	70 - 125
cis-1,3-Dichloropropene	50.0	44.3		ug/L		89	64 - 127
Dibromochloromethane	50.0	50.2		ug/L		100	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	42.9		ug/L		86	56 - 123
1,2-Dibromoethane	50.0	52.7		ug/L		105	70 - 125
Dibromomethane	50.0	48.0		ug/L		96	70 - 120
1,2-Dichlorobenzene	50.0	48.8		ug/L		98	70 - 125
1,3-Dichlorobenzene	50.0	50.0		ug/L		100	70 - 125
1,4-Dichlorobenzene	50.0	48.5		ug/L		97	70 - 120
Dichlorodifluoromethane	50.0	79.3		ug/L		159	40 - 159
1,1-Dichloroethane	50.0	61.3		ug/L		123	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-444688/28
Matrix: Water
Analysis Batch: 444688

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane	50.0	47.4		ug/L		95	68 - 127
1,1-Dichloroethene	50.0	58.1		ug/L		116	67 - 122
1,2-Dichloropropane	50.0	53.4		ug/L		107	67 - 130
1,3-Dichloropropane	50.0	53.8		ug/L		108	62 - 136
2,2-Dichloropropane	50.0	56.9		ug/L		114	58 - 139
1,1-Dichloropropene	50.0	53.2		ug/L		106	70 - 121
Ethylbenzene	50.0	57.3		ug/L		115	70 - 123
Hexachlorobutadiene	50.0	53.1		ug/L		106	51 - 150
Isopropylbenzene	50.0	58.1		ug/L		116	70 - 126
Methylene Chloride	50.0	55.0		ug/L		110	69 - 125
Methyl tert-butyl ether	50.0	52.2		ug/L		104	55 - 123
Naphthalene	50.0	44.0		ug/L		88	53 - 144
n-Butylbenzene	50.0	61.8		ug/L		124	68 - 125
N-Propylbenzene	50.0	61.0		ug/L		122	69 - 127
p-Isopropyltoluene	50.0	56.6		ug/L		113	70 - 125
sec-Butylbenzene	50.0	60.0		ug/L		120	70 - 123
Styrene	50.0	53.6		ug/L		107	70 - 120
tert-Butylbenzene	50.0	55.2		ug/L		110	70 - 121
1,1,1,2-Tetrachloroethane	50.0	47.0		ug/L		94	70 - 125
1,1,2,2-Tetrachloroethane	50.0	58.1		ug/L		116	62 - 140
Tetrachloroethene	50.0	56.5		ug/L		113	70 - 128
Toluene	50.0	53.1		ug/L		106	70 - 125
trans-1,2-Dichloroethene	50.0	59.0		ug/L		118	70 - 125
trans-1,3-Dichloropropene	50.0	50.8		ug/L		102	62 - 128
1,2,3-Trichlorobenzene	50.0	42.0		ug/L		84	51 - 145
1,2,4-Trichlorobenzene	50.0	45.0		ug/L		90	57 - 137
1,1,1-Trichloroethane	50.0	54.1		ug/L		108	70 - 125
1,1,2-Trichloroethane	50.0	53.5		ug/L		107	71 - 130
Trichloroethene	50.0	51.0		ug/L		102	70 - 125
Trichlorofluoromethane	50.0	57.5		ug/L		115	55 - 128
1,2,3-Trichloropropane	50.0	50.8		ug/L		102	50 - 133
1,2,4-Trimethylbenzene	50.0	54.4		ug/L		109	70 - 123
1,3,5-Trimethylbenzene	50.0	55.8		ug/L		112	70 - 123
Vinyl chloride	50.0	57.5		ug/L		115	64 - 126
Xylenes, Total	100	106		ug/L		106	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*72 - 124*
Dibromofluoromethane	*86*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*83*		*75 - 126*
Toluene-d8 (Surr)	*97*		*75 - 120*

Lab Sample ID: MB 500-444855/6
Matrix: Water
Analysis Batch: 444855

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/10/18 09:58	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-444855/6
Matrix: Water
Analysis Batch: 444855

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/10/18 09:58	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/10/18 09:58	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/10/18 09:58	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/10/18 09:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*08/10/18 09:58*	*1*
Dibromofluoromethane	*89*		*75 - 120*		*08/10/18 09:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 126*		*08/10/18 09:58*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*08/10/18 09:58*	*1*

Lab Sample ID: LCS 500-444855/4
Matrix: Water
Analysis Batch: 444855

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tetrachloroethene	50.0	56.4		ug/L		113	70 - 128
1,1,1-Trichloroethane	50.0	54.9		ug/L		110	70 - 125
1,1,2-Trichloroethane	50.0	56.4		ug/L		113	71 - 130
Trichloroethene	50.0	57.7		ug/L		115	70 - 125
Vinyl chloride	50.0	52.8		ug/L		106	64 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*72 - 124*
Dibromofluoromethane	*90*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 126*
Toluene-d8 (Surr)	*101*		*75 - 120*

Lab Sample ID: MB 500-445063/6
Matrix: Water
Analysis Batch: 445063

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			08/13/18 09:09	1
Bromobenzene	<0.36		1.0	0.36	ug/L			08/13/18 09:09	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			08/13/18 09:09	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			08/13/18 09:09	1
Bromoform	<0.48		1.0	0.48	ug/L			08/13/18 09:09	1
Bromomethane	<0.80		2.0	0.80	ug/L			08/13/18 09:09	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			08/13/18 09:09	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			08/13/18 09:09	1
Chloroethane	<0.51		1.0	0.51	ug/L			08/13/18 09:09	1
Chloroform	<0.37		2.0	0.37	ug/L			08/13/18 09:09	1
Chloromethane	<0.32		1.0	0.32	ug/L			08/13/18 09:09	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			08/13/18 09:09	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			08/13/18 09:09	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			08/13/18 09:09	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			08/13/18 09:09	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-445063/6
Matrix: Water
Analysis Batch: 445063

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	<0.49		1.0	0.49	ug/L			08/13/18 09:09	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			08/13/18 09:09	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			08/13/18 09:09	1
Dibromomethane	<0.27		1.0	0.27	ug/L			08/13/18 09:09	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			08/13/18 09:09	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			08/13/18 09:09	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			08/13/18 09:09	1
Dichlorodifluoromethane	<0.67		2.0	0.67	ug/L			08/13/18 09:09	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			08/13/18 09:09	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			08/13/18 09:09	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			08/13/18 09:09	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			08/13/18 09:09	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			08/13/18 09:09	1
2,2-Dichloropropane	<0.44		1.0	0.44	ug/L			08/13/18 09:09	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			08/13/18 09:09	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			08/13/18 09:09	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			08/13/18 09:09	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			08/13/18 09:09	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			08/13/18 09:09	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			08/13/18 09:09	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			08/13/18 09:09	1
Naphthalene	<0.34		1.0	0.34	ug/L			08/13/18 09:09	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			08/13/18 09:09	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			08/13/18 09:09	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			08/13/18 09:09	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			08/13/18 09:09	1
Styrene	<0.39		1.0	0.39	ug/L			08/13/18 09:09	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			08/13/18 09:09	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			08/13/18 09:09	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			08/13/18 09:09	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			08/13/18 09:09	1
Toluene	<0.15		0.50	0.15	ug/L			08/13/18 09:09	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			08/13/18 09:09	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			08/13/18 09:09	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			08/13/18 09:09	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			08/13/18 09:09	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			08/13/18 09:09	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			08/13/18 09:09	1
Trichloroethene	<0.16		0.50	0.16	ug/L			08/13/18 09:09	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			08/13/18 09:09	1
1,2,3-Trichloropropane	<0.41		1.0	0.41	ug/L			08/13/18 09:09	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			08/13/18 09:09	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			08/13/18 09:09	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			08/13/18 09:09	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			08/13/18 09:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*		*08/13/18 09:09*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-445063/6
Matrix: Water
Analysis Batch: 445063

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	*93*		*75 - 120*		*08/13/18 09:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 126*		*08/13/18 09:09*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*08/13/18 09:09*	*1*

Lab Sample ID: LCS 500-445063/16
Matrix: Water
Analysis Batch: 445063

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	47.3		ug/L		95	70 - 120
Bromobenzene	50.0	47.0		ug/L		94	70 - 122
Bromochloromethane	50.0	47.7		ug/L		95	65 - 122
Bromodichloromethane	50.0	46.7		ug/L		93	69 - 120
Bromoform	50.0	45.2		ug/L		90	56 - 132
Bromomethane	50.0	44.0		ug/L		88	40 - 152
Carbon tetrachloride	50.0	48.9		ug/L		98	59 - 133
Chlorobenzene	50.0	45.6		ug/L		91	70 - 120
Chloroethane	50.0	53.2		ug/L		106	48 - 136
Chloroform	50.0	47.2		ug/L		94	70 - 120
Chloromethane	50.0	50.6		ug/L		101	56 - 152
2-Chlorotoluene	50.0	45.5		ug/L		91	70 - 125
4-Chlorotoluene	50.0	45.3		ug/L		91	68 - 124
cis-1,2-Dichloroethene	50.0	47.7		ug/L		95	70 - 125
cis-1,3-Dichloropropene	50.0	43.9		ug/L		88	64 - 127
Dibromochloromethane	50.0	44.5		ug/L		89	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	36.2		ug/L		72	56 - 123
1,2-Dibromoethane	50.0	45.4		ug/L		91	70 - 125
Dibromomethane	50.0	45.4		ug/L		91	70 - 120
1,2-Dichlorobenzene	50.0	44.5		ug/L		89	70 - 125
1,3-Dichlorobenzene	50.0	46.4		ug/L		93	70 - 125
1,4-Dichlorobenzene	50.0	45.4		ug/L		91	70 - 120
Dichlorodifluoromethane	50.0	39.4		ug/L		79	40 - 159
1,1-Dichloroethane	50.0	47.6		ug/L		95	70 - 125
1,2-Dichloroethane	50.0	45.7		ug/L		91	68 - 127
1,1-Dichloroethene	50.0	46.4		ug/L		93	67 - 122
1,2-Dichloropropane	50.0	48.2		ug/L		96	67 - 130
1,3-Dichloropropane	50.0	42.9		ug/L		86	62 - 136
2,2-Dichloropropane	50.0	46.7		ug/L		93	58 - 139
1,1-Dichloropropene	50.0	47.0		ug/L		94	70 - 121
Ethylbenzene	50.0	44.6		ug/L		89	70 - 123
Hexachlorobutadiene	50.0	47.6		ug/L		95	51 - 150
Isopropylbenzene	50.0	47.0		ug/L		94	70 - 126
Methylene Chloride	50.0	46.6		ug/L		93	69 - 125
Methyl tert-butyl ether	50.0	45.1		ug/L		90	55 - 123
Naphthalene	50.0	37.6		ug/L		75	53 - 144
n-Butylbenzene	50.0	46.7		ug/L		93	68 - 125
N-Propylbenzene	50.0	46.9		ug/L		94	69 - 127
p-Isopropyltoluene	50.0	47.6		ug/L		95	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-445063/16
Matrix: Water
Analysis Batch: 445063

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
sec-Butylbenzene	50.0	47.3		ug/L		95	70 - 123
Styrene	50.0	43.9		ug/L		88	70 - 120
tert-Butylbenzene	50.0	47.5		ug/L		95	70 - 121
1,1,1,2-Tetrachloroethane	50.0	46.7		ug/L		93	70 - 125
1,1,2,2-Tetrachloroethane	50.0	43.2		ug/L		86	62 - 140
Tetrachloroethene	50.0	48.0		ug/L		96	70 - 128
Toluene	50.0	44.6		ug/L		89	70 - 125
trans-1,2-Dichloroethene	50.0	47.7		ug/L		95	70 - 125
trans-1,3-Dichloropropene	50.0	43.7		ug/L		87	62 - 128
1,2,3-Trichlorobenzene	50.0	40.7		ug/L		81	51 - 145
1,2,4-Trichlorobenzene	50.0	43.4		ug/L		87	57 - 137
1,1,1-Trichloroethane	50.0	47.1		ug/L		94	70 - 125
1,1,2-Trichloroethane	50.0	44.3		ug/L		89	71 - 130
Trichloroethene	50.0	50.1		ug/L		100	70 - 125
Trichlorofluoromethane	50.0	52.7		ug/L		105	55 - 128
1,2,3-Trichloropropane	50.0	44.1		ug/L		88	50 - 133
1,2,4-Trimethylbenzene	50.0	45.7		ug/L		91	70 - 123
1,3,5-Trimethylbenzene	50.0	46.6		ug/L		93	70 - 123
Vinyl chloride	50.0	47.4		ug/L		95	64 - 126
Xylenes, Total	100	90.3		ug/L		90	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*72 - 124*
Dibromofluoromethane	*96*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 126*
Toluene-d8 (Surr)	*92*		*75 - 120*

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Client Sample ID: TW-4
Date Collected: 07/30/18 02:30
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444688	08/09/18 14:54	JJH	TAL CHI

Client Sample ID: D-25R
Date Collected: 07/30/18 11:00
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444688	08/09/18 15:21	JJH	TAL CHI

Client Sample ID: MW-1026
Date Collected: 07/30/18 01:15
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-3
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444688	08/09/18 15:48	JJH	TAL CHI

Client Sample ID: MW-1027
Date Collected: 07/30/18 03:45
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-4
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444688	08/09/18 16:16	JJH	TAL CHI

Client Sample ID: MW-2005R
Date Collected: 07/30/18 13:35
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-5
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444688	08/09/18 16:43	JJH	TAL CHI

Client Sample ID: MW-2011
Date Collected: 07/30/18 16:20
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-6
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444688	08/09/18 17:10	JJH	TAL CHI

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Client Sample ID: TW-3
Date Collected: 07/30/18 15:30
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-7
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444855	08/10/18 13:36	JJH	TAL CHI

Client Sample ID: MW-2004
Date Collected: 07/30/18 11:50
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-8
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444855	08/10/18 14:03	JJH	TAL CHI

Client Sample ID: TW-1
Date Collected: 07/30/18 12:45
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-9
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444855	08/10/18 14:30	JJH	TAL CHI

Client Sample ID: D-18
Date Collected: 07/30/18 14:30
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-10
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444855	08/10/18 14:57	JJH	TAL CHI

Client Sample ID: D-15
Date Collected: 07/31/18 08:10
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-11
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444855	08/10/18 15:24	JJH	TAL CHI

Client Sample ID: EX-1
Date Collected: 07/31/18 09:10
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-12
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444855	08/10/18 15:52	JJH	TAL CHI

Lab Chronicle

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Client Sample ID: EX-2R
Date Collected: 07/31/18 09:40
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-13
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444855	08/10/18 16:19	JJH	TAL CHI

Client Sample ID: EX-3
Date Collected: 07/31/18 10:00
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-14
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444855	08/10/18 16:46	JJH	TAL CHI

Client Sample ID: EX-7
Date Collected: 07/31/18 08:30
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-15
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	444855	08/10/18 17:13	JJH	TAL CHI

Client Sample ID: Trip Blank
Date Collected: 07/31/18 00:00
Date Received: 08/02/18 09:15

Lab Sample ID: 500-149315-16
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	445063	08/13/18 13:56	PMF	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Tetra Tech GEO
Project/Site: Pentair - Delavan, WI - 117-7469002-04

TestAmerica Job ID: 500-149315-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-19

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Report To (optional)
Contact: MARK MANTHEY
Company: TETRA TECH
Address: 175 N CORPORATE DR. SUITE 100
Address: BROOKFIELD, WI. 53045
Phone: (262) 792-1282
Fax:
E-Mail:

Bill To (optional)
Contact: SAME AS REPORT TO:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-149312
Chain of Custody Number: 149315
Page 1 of 2
Temperature °C of Cooler: 3.3

Client: TETRA TECH
Client Project #: 117-7469002.04
Project Name: PENTAIR FLOW TECHNOLOGIES
Project Location/State: DELAVAN, WI.
Lab Project #:
Sampler: TODD M. THOMSON
Lab PM: SANDIE FREDRICK

Lab ID	MS/MSD	Sample ID	Sampling Date (2018)	Sampling Time	# of Containers	Matrix	PCE (Pres. 1)	TCA (Pres. 1)	TCE (Pres. 1)	VINYL CHLORIDE (Pres. 1)	VOCs 8260 (Pres. 1)					Comments
1		TW-4	7-30	2:30	3	GW					✓					
2		D-25R	7-30	11:00	3		✓	✓	✓	✓						
3		MW-1026	7-30	1:15	3		✓	✓	✓	✓						
4		MW-1027	7-30	3:45	3		✓	✓	✓	✓						
5		MW-2005R	7-30	13:35	3		✓	✓	✓	✓						500-149315 COC
6		MW-2011	7-30	16:20	3		✓	✓	✓	✓						
7		TW-3	7-30	15:30	3		✓	✓	✓	✓						
8		MW-2004	7-30	11:50	3		✓	✓	✓	✓						
9		TW-1	7-30	12:45	3		✓	✓	✓	✓						
10		D-18	7-30	14:30	3	↓	✓	✓	✓	✓						

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Turnaround Time Required (Business Days) STANDARD
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days ___ Other
Requested Due Date ______

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	TETRA TECH	8-1-18	10:30	[signature]	TA	8-1-18	10:30
[signature]	TA	8-1-18	17:00	[signature]	TACHI	08/02/18	0915

Lab Courier:
Shipped: FX Priority
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1208)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Report To (optional)
Contact: MARK MANTHEY
Company: TETRA TECH
Address: 175 N. CORPORATE DR. SUITE 100
Address: BROOKFIELD WI. 53045
Phone: (262) 792-1282
Fax:
E-Mail:

Bill To (optional)
Contact: SAME AS REPORT TO:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-149312
Chain of Custody Number: 149315
Page 2 of 2
Temperature °C of Cooler: 3.3

Client: TETRA TECH
Client Project #: 117-7469002.04
Project Name: PETAIR FLOW TECHNOLOGIES
Project Location/State: DELAVAN, WI.
Lab Project #:
Sampler: TODD M. THOMSON
Lab PM: SANDIE FREDRICK

Lab ID	MS/MSD	Sample ID	Sampling Date (2018)	Sampling Time	# of Containers	Matrix	PCE (Pres. 1)	TCA (Pres. 1)	TCE (Pres. 1)	VINYL CHLORIDE (Pres. 1)	VOCs 8260 (Pres. 1)				Comments
11		D-15	7-31	08:10	3	GW	✓	✓	✓	✓					
12		EX-1	7-31	09:10	3	↓	✓	✓	✓	✓					
13		EX-2R	7-31	09:40	3	↓	✓	✓	✓	✓					
14		EX-3	7-31	10:00	3	↓	✓	✓	✓	✓					
15		EX-7	7-31	08:30	3	↓	✓	✓	✓	✓					
16		TRIP BLANK	—	—	1	DI					✓				LAB PREPARED

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Turnaround Time Required (Business Days) STANDARD
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days ___ Other
Requested Due Date ______

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ______ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	TETRA TECH	8-1-18	10:30	[signature]	TA	8-1-18	10:30
[signature]	TA	8-1-18	17:00	[signature]	TACHI	08/02/18	0915

Lab Courier:
Shipped: FX Priority
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments:

Lab Comments:

TAL-4124-600 (1209)

Te merica

THE LEA ENTAL TESTING

ORIGIN ID:RRLA (262) 202-59[illegible]
SHIPPING
TESTAMERICA
4125 N 124TH ST

BROOKFIELD, WI 53005
UNITED STATES US

SHIP DATE: 01AUG18
ACTWGT: 46.20 LB
CAD: 525155/CAFE3210

BILL RECIPIENT

TO SAMPLE RECEIPT
TESTAMERICA LABS
2417 BOND STREET

UNIVERSITY PARK IL 60484
(708) 534-5200 REF:
INV:
PO: DEPT:

FedEx Express

500-149315 Waybill

TRK# 0201 7125 4938 5428

THU - 02 AUG 10:30A
PRIORITY OVERNIGHT

79 JOTA

60484
IL-US ORD

Login Sample Receipt Checklist

Client: Tetra Tech GEO

Job Number: 500-149315-1

Login Number: 149315
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D
WASTEWATER DISCHARGE MONITORING REPORTS AND STORM SEWER OUTFALL SS-1 ANALYTICAL RESULTS

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 01/01/2018 - 01/31/2018
Form Due Date: 02/21/2018
Permit Number: 0055816

Date Received:	
DOC:	394259
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Cathy M Baerwald
Reviewer:	Andrew K Greer
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23					
	24					
	25	0.5734	39.56	3.5	0.13	0.622
	26					
	27					
	28					
	29					
	30					
	31					

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.5734	39.56	3.5	0.13	0.622
	Daily Max	0.5734	39.56	3.5	0.13	0.622
	Daily Min	0.5734	39.56	3.5	0.13	0.622
Limit(s) in Effect	**Monthly Avg**				0.24 / 0	
QA/QC Information	**LOD**			1.9	0.024	
	LOQ			5	0.05	
	QC Exceedance	N	N	Y	N	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24	<0.37	<0.16	<0.38	<0.20
	25				
	26				
	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		0		0		0	
	Daily Max	<0.37		<0.16		<0.38		<0.2	
	Daily Min	<0.37		<0.16		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		0.5	
	QC Exceedance	N		N		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rate was calculated from pumping rate measurements taken from the Delavan facility extraction wells by Pentair Flow Technologies Delavan facility personnel on September 22, 2017.

Laboratory Quality Control Comments

J = Result is less than the LOQ but greater than the LOD and the concentration is an approximate value.

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HI 98129
PROJECT NO.	Delavan Well #4 WPDES	Conductivity	HI 98129
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis Schwind	DO	

SAMPLE POINT	SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	01/25/18				
CLOCK TIME (Military)	0915				
DEPTH TO WATER (ft)*	NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*	NA	NA	NA	NA	NA
CASING VOLUME (gallons)	NA	NA	NA	NA	NA
PURGE VOLUME (gallons)	NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*	NA	NA	NA	NA	NA
SAMPLING DEVICE	HI 98129				
FIELD TEMPERATURE (°C)	4.2				
pH	7.85				
ELEC. COND. (uS/cm) Measured at 25° C	681				
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	Clear				
ODOR	None				
CLARITY	Clear				

SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	1/25/18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-140184-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Steve Scharinger

Authorized for release by:
2/1/2018 1:40:40 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140184-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140184-1

Job ID: 500-140184-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-140184-1

Comments
No additional comments.

Receipt
The sample was received on 1/26/2018 10:25 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.5º C.

Receipt Exceptions
One or more containers for the following sample was received broken or leaking: SS1 (500-140184-1). Trip blank sent with sample was received broken. no volume could be salvaged.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140184-1

Client Sample ID: SS1
Date Collected: 01/25/18 09:15
Date Received: 01/26/18 10:25

Lab Sample ID: 500-140184-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			01/31/18 18:05	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			01/31/18 18:05	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			01/31/18 18:05	1
Trichloroethene	<0.16		0.50	0.16	ug/L			01/31/18 18:05	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			01/31/18 18:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 126*		*01/31/18 18:05*	*1*
4-Bromofluorobenzene (Surr)	*97*		*72 - 124*		*01/31/18 18:05*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*01/31/18 18:05*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*01/31/18 18:05*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**3.5**	**J**	5.0	1.9	mg/L			01/31/18 12:57	1
Chloride	**130**		10	5.0	mg/L			01/26/18 15:19	5
Phosphorus as P	**0.13**		0.050	0.024	mg/L		01/29/18 10:23	01/30/18 14:14	1

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140184-1

Client Sample ID: SS1
Date Collected: 01/25/18 09:15
Date Received: 01/26/18 10:25

Lab Sample ID: 500-140184-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	418554	01/31/18 18:05	JDD	TAL CHI
Total/NA	Analysis	SM 2540D		1	418652		SMO	TAL CHI
					(Start)	01/31/18 12:57		
					(End)	01/31/18 12:59		
Total/NA	Analysis	SM 4500 Cl- E		5	418164	01/26/18 15:19	CCK	TAL CHI
Total/NA	Prep	SM 4500 P B			418304	01/29/18 10:23	RMP	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	418507		RMP	TAL CHI
					(Start)	01/30/18 14:14		
					(End)	01/30/18 14:14		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140184-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140184-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140184-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-140184-1	SS1	Water	01/25/18 09:15	01/26/18 10:25

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-140184

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: -1.0-0.5

Report To (optional)	Bill To (optional)
Contact: Steve Scharinger / Mark Marthey	Contact:
Company: Pentair	Company:
Address: 293 Wright St.	Address:
Address: Delavan WI 53115	Address:
Phone: 262-728-7408	Phone:
Fax:	Fax:
E-Mail:	PO#/Reference#

Client: Pentair Flow Technologies LLC

Client Project #:

Project Name: Delavan Well #4 WPDES

Project Location/State: Delavan WI

Lab Project #:

Sampler: Dennis

Lab PM:

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Preservative	HCl	HCl	HCl	HCl			H_2SO_4			Comments
							Parameter	TCE	TCA	PCE	Vinyl Chloride	Chloride	Total Suspended Solids	(T) Phosphorus			
1		SS1	01/25/18	0915	5	W		4	4	4	4	4	4	4			
2		Trip Blank			1												

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

500-140184 COC

Turnaround Time Required (Business Days)

___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other

Requested Due Date _____

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
				David Sauer	TALHL	01/26/18	1025

Lab Courier

Shipped FX STD

Hand Delivered

Matrix Key

WW – Wastewater	SE – Sediment
W – Water	SO – Soil
S – Soil	L – Leachate
SL – Sludge	WI – Wipe
MS – Miscellaneous	DW – Drinking Water
OL – Oil	O – Other
A – Air	

Client Comments

Lab Comments:

TB broke in transit, no volume could be salvaged

AS 01/26/18

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-140184-1

Login Number: 140184
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	COC not relinquished.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	TB broke in transit
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 02/01/2018 - 02/28/2018
Form Due Date: 03/21/2018
Permit Number: 0055816

Date Received:	
DOC:	394260
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Cathy M Baerwald
Reviewer:	Andrew K Greer
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14	0.5734	53.78	<1.9	0.052	0.249
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					
	31					

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.5734	53.78	0	0.052	0.249
	Daily Max	0.5734	53.78	<1.9	0.052	0.249
	Daily Min	0.5734	53.78	<1.9	0.052	0.249
Limit(s) in Effect	**Monthly Avg**				0.24 0	
QA/QC Information	**LOD**			1.9	0.024	
	LOQ			5	0.05	
	QC Exceedance	N	N	N	N	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14	<0.37	0.70	<0.38	<0.20
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		0.7		0		0	
	Daily Max	<0.37		0.7		<0.38		<0.2	
	Daily Min	<0.37		0.7		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		0.5	
	QC Exceedance	N		N		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rate was calculated from pumping rate measurements taken from the Delavan facility extraction wells by Pentair Flow Technologies Delavan facility personnel on September 22, 2017.

Laboratory Quality Control Comments

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	
PROJECT NO.	Delavan Well #4	Conductivity	
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis	DO	

SAMPLE POINT	SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	2/14/18				
CLOCK TIME (Military)	0840				
DEPTH TO WATER (ft)*	NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*	NA	NA	NA	NA	NA
CASING VOLUME (gallons)	NA	NA	NA	NA	NA
PURGE VOLUME (gallons)	NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*	NA	NA	NA	NA	NA
SAMPLING DEVICE	HI98129				
FIELD TEMPERATURE (°C)	12.1				
pH	7.67				
ELEC. COND. (uS/cm) Measured at 25° C	1169				
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	Clear				
ODOR	None				
CLARITY	Clear				

SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	2/14/18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

GeoTrans...

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-140962-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Steve Scharinger

Authorized for release by:
2/26/2018 12:27:54 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140962-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140962-1

Job ID: 500-140962-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-140962-1

Comments
No additional comments.

Receipt
The samples were received on 2/15/2018 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140962-1

Client Sample ID: SS1

Lab Sample ID: 500-140962-1
Date Collected: 02/14/18 08:40
Matrix: Water
Date Received: 02/15/18 09:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			02/23/18 16:44	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			02/23/18 16:44	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			02/23/18 16:44	1
Trichloroethene	**0.70**		0.50	0.16	ug/L			02/23/18 16:44	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			02/23/18 16:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*02/23/18 16:44*	*1*
4-Bromofluorobenzene (Surr)	*96*		*72 - 124*		*02/23/18 16:44*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*02/23/18 16:44*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*02/23/18 16:44*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.9		5.0	1.9	mg/L			02/20/18 10:54	1
Chloride	**200**		10	5.0	mg/L			02/16/18 01:42	5
Phosphorus as P	**0.052**		0.050	0.024	mg/L		02/21/18 09:15	02/22/18 14:41	1

Client Sample ID: Trip Blank

Lab Sample ID: 500-140962-2
Date Collected: 02/14/18 00:00
Matrix: Water
Date Received: 02/15/18 09:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			02/23/18 17:14	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			02/23/18 17:14	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			02/23/18 17:14	1
Trichloroethene	**0.34**	**J**	0.50	0.16	ug/L			02/23/18 17:14	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			02/23/18 17:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*02/23/18 17:14*	*1*
4-Bromofluorobenzene (Surr)	*96*		*72 - 124*		*02/23/18 17:14*	*1*
Dibromofluoromethane	*118*		*75 - 120*		*02/23/18 17:14*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*02/23/18 17:14*	*1*

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140962-1

Client Sample ID: SS1

Lab Sample ID: 500-140962-1

Date Collected: 02/14/18 08:40

Matrix: Water

Date Received: 02/15/18 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	421205	02/23/18 16:44	PMF	TAL CHI
Total/NA	Analysis	SM 2540D		1	420803		SMO	TAL CHI
					(Start)	02/20/18 10:54		
					(End)	02/20/18 10:56		
Total/NA	Analysis	SM 4500 Cl- E		5	420483	02/16/18 01:42	HMW	TAL CHI
Total/NA	Prep	SM 4500 P B			420913	02/21/18 09:15	RMP	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	421196		RMP	TAL CHI
					(Start)	02/22/18 14:41		
					(End)	02/22/18 14:41		

Client Sample ID: Trip Blank

Lab Sample ID: 500-140962-2

Date Collected: 02/14/18 00:00

Matrix: Water

Date Received: 02/15/18 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	421205	02/23/18 17:14	PMF	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140962-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140962-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-140962-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-140962-1	SS1	Water	02/14/18 08:40	02/15/18 09:40
500-140962-2	Trip Blank	Water	02/14/18 00:00	02/15/18 09:40

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Report To (optional) Mark Manthey
Contact: Steve Scharinger
Company: Pentair Flow Technologies
Address: 293 Wright St
Address: Delavan WI 53115
Phone: 262-728-5551
Fax:
E-Mail:

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-140962
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: -0.4 7 / 1.1

Client: Pentair
Client Project #:
Project Name: Delavan Well #4 WPDES
Project Location/State: Delavan WI
Lab Project #:
Sampler: Dennis
Lab PM:

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	TCE (HCl)	TCA (HCl)	PCE (HCl)	Vinyl Chloride (HCl)	Chloride	Total Suspended Solids	Phosphorus (H_2SO_4)			Comments
1		SS 1	2/14/18	0840	5	W	X	X	X	X	X	X	X			
2		Trip Blank			1											

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

500-140962 COC

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days ___ Other
Requested Due Date ______

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Dennis Schumm	Pentair	2/14/18	1200	[signature]	TALU	02/15/18	0940

Lab Courier:
Shipped: FX STD
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments:

Lab Comments:

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-140962-1

Login Number: 140962
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 03/01/2018 - 03/31/2018
Form Due Date: 04/21/2018
Permit Number: 0055816

Date Received:	
DOC:	394261
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Cathy M Baerwald
Reviewer:	Andrew K Greer
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19		53.78	<1.9	0.052	0.170
	20					
	21					
	22					
	23					
	24					
	25					
	26	0.3929				
	27					
	28					
	29					
	30					
	31					

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.3929	53.78	0	0.052	0.17
	Daily Max	0.3929	53.78	<1.9	0.052	0.17
	Daily Min	0.3929	53.78	<1.9	0.052	0.17
Limit(s) in Effect	**Monthly Avg**				0.24 0	
QA/QC Information	**LOD**			1.9	0.024	
	LOQ			5	0.05	
	QC Exceedance	N	N	N	N	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19	0.41	0.69	<0.38	<0.20
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0.41		0.69		0		0	
	Daily Max	0.41		0.69		<0.38		<0.2	
	Daily Min	0.41		0.69		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		0.5	
	QC Exceedance	Y		N		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rate was calculated from pumping rate measurements taken from the Delavan facility extraction wells by Pentair Flow Technologies Delavan facility personnel on March 26, 2018.

Laboratory Quality Control Comments

J = Result is less than the LOQ but greater than the LOD and the concentration is an approximate value.

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HI 98129
PROJECT NO.	Delavan Well #4	Conductivity	HI 98129
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis Schwind	DO	

SAMPLE POINT	SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	03/19/18				
CLOCK TIME (Military)	0920				
DEPTH TO WATER (ft)*	NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*	NA	NA	NA	NA	NA
CASING VOLUME (gallons)	NA	NA	NA	NA	NA
PURGE VOLUME (gallons)	NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*	NA	NA	NA	NA	NA
SAMPLING DEVICE	HI 98129				
FIELD TEMPERATURE (°C)	12.1				
pH	7.69				
ELEC. COND. (uS/cm) Measured at 25° C	1175				
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	Clear				
ODOR	None				
CLARITY	Clear				

SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	3/19/18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-142484-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Steve Scharinger

Therese Hargraves

Authorized for release by:
3/30/2018 8:11:56 AM
Therese Hargraves, Project Manager I
therese.hargraves@testamericainc.com

Designee for

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-142484-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-142484-1

Job ID: 500-142484-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-142484-1

Comments
No additional comments.

Receipt
The samples were received on 3/20/2018 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: SS1

Date Collected: 03/19/18 09:20
Date Received: 03/20/18 09:25

Lab Sample ID: 500-142484-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			03/23/18 02:53	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			03/23/18 02:53	1
Tetrachloroethene	**0.41**	**J**	1.0	0.37	ug/L			03/23/18 02:53	1
Trichloroethene	**0.69**		0.50	0.16	ug/L			03/23/18 02:53	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			03/23/18 02:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*		*03/23/18 02:53*	*1*
4-Bromofluorobenzene (Surr)	*106*		*72 - 124*		*03/23/18 02:53*	*1*
Dibromofluoromethane	*94*		*75 - 120*		*03/23/18 02:53*	*1*
Toluene-d8 (Surr)	*104*		*75 - 120*		*03/23/18 02:53*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.9		5.0	1.9	mg/L			03/21/18 12:43	1
Chloride	**190**		10	5.0	mg/L			03/23/18 19:04	5
Phosphorus as P	**0.052**		0.050	0.024	mg/L		03/21/18 08:05	03/22/18 14:39	1

Client Sample ID: Trip Blank

Date Collected: 03/19/18 00:00
Date Received: 03/20/18 09:25

Lab Sample ID: 500-142484-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			03/23/18 03:19	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			03/23/18 03:19	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			03/23/18 03:19	1
Trichloroethene	<0.16		0.50	0.16	ug/L			03/23/18 03:19	1
Vinyl chloride	<0.20		0.50	0.20	ug/L			03/23/18 03:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*		*03/23/18 03:19*	*1*
4-Bromofluorobenzene (Surr)	*103*		*72 - 124*		*03/23/18 03:19*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*03/23/18 03:19*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*03/23/18 03:19*	*1*

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-142484-1

Client Sample ID: SS1

Lab Sample ID: 500-142484-1

Date Collected: 03/19/18 09:20

Matrix: Water

Date Received: 03/20/18 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	424635	03/23/18 02:53	JDD	TAL CHI
Total/NA	Analysis	SM 2540D		1	424432		SMO	TAL CHI
					(Start)	03/21/18 12:43		
					(End)	03/21/18 12:44		
Total/NA	Analysis	SM 4500 Cl- E		5	424889	03/23/18 19:04	HMW	TAL CHI
Total/NA	Prep	SM 4500 P B			424354	03/21/18 08:05	RMP	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	424673		RMP	TAL CHI
					(Start)	03/22/18 14:39		
					(End)	03/22/18 14:39		

Client Sample ID: Trip Blank

Lab Sample ID: 500-142484-2

Date Collected: 03/19/18 00:00

Matrix: Water

Date Received: 03/20/18 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	424635	03/23/18 03:19	JDD	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-142484-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-142484-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-142484-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-142484-1	SS1	Water	03/19/18 09:20	03/20/18 09:25
500-142484-2	Trip Blank	Water	03/19/18 00:00	03/20/18 09:25

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 6
Phone: 708.534.5200 Fax: 708.53

500-142484 COC

(optional)

Report To
Contact: Mark Manthey
Company: Steve Scharinger
Dennis Schwind
Address:
Address:
Phone:
Fax:
E-Mail:

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-142484

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 0.5 → 2.0

Client: Pentair Flow Technologies
Client Project #:
Project Name: Delavan Well #4 WPDES
Project Location/State: Delavan, WI
Lab Project #:
Sampler: Dennis Schwind
Lab PM:

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Preservative	HCl	HCl	HCl	HCl	H_2SO_4				Comments
							Parameter	TCE	TCA	PCE	Vinyl Chloride	Total Suspended Solids	Phosphorus			
1		SS1	3/19/18	0920	5	W										
2		Trip blank			1											

Preservative Key
1. HCL, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. $NaHSO_4$
7. Cool to 4°
8. None
9. Other

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Dennis Schwind	Pentair	3/19/18	0945	Mark Scott	TA-CHI	3/20/18	0925
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier
Shipped Fed-X
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-142484-1

Login Number: 142484
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 04/01/2018 - 04/30/2018
Form Due Date: 05/21/2018
Permit Number: 0055816

Date Received:	
DOC:	401170
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Cathy M Baerwald
Reviewer:	Andrew K Greer
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23	0.3929	53.96	<1.9	0.036	0.118
	24					
	25					
	26					
	27					
	28					
	29					
	30					
	31					

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.3929	53.96	0	0.036	0.118
	Daily Max	0.3929	53.96	<1.9	0.036	0.118
	Daily Min	0.3929	53.96	<1.9	0.036	0.118
Limit(s) in Effect	**Monthly Avg**				0.24 0	
QA/QC Information	**LOD**			1.9	0.024	
	LOQ			5	0.05	
	QC Exceedance	N	N	N	Y	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22	<0.37	1.4	<0.38	<0.20
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		1.4		0		0	
	Daily Max	<0.37		1.4		<0.38		<0.2	
	Daily Min	<0.37		1.4		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		1	
	QC Exceedance	N		N		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rate was calculated from pumping rate measurements taken from the Delavan facility extraction wells by Pentair Flow Technologies Delavan facility personnel on March 26, 2018.

Laboratory Quality Control Comments

J = Result is less than the LOQ but greater than the LOD and the concentration is an approximate value.

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HI98129
PROJECT NO.	Delavan Well #4 WPDES	Conductivity	HI98129
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis	DO	

SAMPLE POINT	SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	04/23/18				
CLOCK TIME (Military)	1000				
DEPTH TO WATER (ft)*	NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*	NA	NA	NA	NA	NA
CASING VOLUME (gallons)	NA	NA	NA	NA	NA
PURGE VOLUME (gallons)	NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*	NA	NA	NA	NA	NA
SAMPLING DEVICE	HI98129				
FIELD TEMPERATURE (°C)	12.2				
pH	7.65				
ELEC. COND. (uS/cm) Measured	1259				
ELEC. COND. (uS/cm) at 25° C					
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	Clear				
ODOR	None				
CLARITY	Clear				
SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	4/28/18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-144238-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Dennis Schwind

Authorized for release by:
5/7/2018 1:12:49 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-144238-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-144238-1

Job ID: 500-144238-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-144238-1

Comments
No additional comments.

Receipt
The samples were received on 4/24/2018 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: SS1

Lab Sample ID: 500-144238-1
Date Collected: 04/23/18 10:00
Matrix: Water
Date Received: 04/24/18 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			05/03/18 20:45	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/03/18 20:45	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/03/18 20:45	1
Trichloroethene	**1.4**		0.50	0.16	ug/L			05/03/18 20:45	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/03/18 20:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 126*		*05/03/18 20:45*	*1*
4-Bromofluorobenzene (Surr)	*116*		*72 - 124*		*05/03/18 20:45*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*05/03/18 20:45*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/03/18 20:45*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.9		5.0	1.9	mg/L			04/30/18 12:44	1
Chloride	**240**		10	5.0	mg/L			04/27/18 00:38	5
Phosphorus as P	**0.036**	**J**	0.050	0.024	mg/L		04/27/18 08:10	05/02/18 11:54	1

Client Sample ID: Trip Blank

Lab Sample ID: 500-144238-2
Date Collected: 04/23/18 00:00
Matrix: Water
Date Received: 04/24/18 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			05/03/18 13:50	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/03/18 13:50	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/03/18 13:50	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/03/18 13:50	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/03/18 13:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*75 - 126*		*05/03/18 13:50*	*1*
4-Bromofluorobenzene (Surr)	*114*		*72 - 124*		*05/03/18 13:50*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*05/03/18 13:50*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*05/03/18 13:50*	*1*

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-144238-1

Client Sample ID: SS1

Lab Sample ID: 500-144238-1

Date Collected: 04/23/18 10:00

Matrix: Water

Date Received: 04/24/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	430483	05/03/18 20:45	PMF	TAL CHI
Total/NA	Analysis	SM 2540D		1	429989		SMO	TAL CHI
					(Start)	04/30/18 12:44		
					(End)	04/30/18 12:46		
Total/NA	Analysis	SM 4500 Cl- E		5	429628	04/27/18 00:38	HMW	TAL CHI
Total/NA	Prep	SM 4500 P B			429665	04/27/18 08:10	IEL	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	430363		MTB	TAL CHI
					(Start)	05/02/18 11:54		
					(End)	05/02/18 11:55		

Client Sample ID: Trip Blank

Lab Sample ID: 500-144238-2

Date Collected: 04/23/18 00:00

Matrix: Water

Date Received: 04/24/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	430483	05/03/18 13:50	PMF	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-144238-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-144238-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
SM 4500 P B	Phosphorous, Total and Ortho	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-144238-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-144238-1	SS1	Water	04/23/18 10:00	04/24/18 09:00
500-144238-2	Trip Blank	Water	04/23/18 00:00	04/24/18 09:00

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-144238

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 0.9724

(optional)		(optional)	
Report To	Tom Samuel Mark Manthey	Bill To	
Contact:	Dennis Schwind	Contact:	
Company	Pentair Flow Technologies	Company:	
Address:	293 Wright St	Address:	
Address:	Delavan WI 53115	Address:	
Phone:	262-728-5551	Phone:	
Fax:		Fax:	
E-Mail:		PO#/Reference#	

Client	Pentair Flow Technologies	Client Project #		Preservative	HCl	HCl	HCl	HCl	H_2SO_4					Preservative Key
Project Name	WPDES Delavan Well #4			Parameter	TCE	TCA	PCE	Vinyl chloride	P	TSS	Chloride			1. HCL, Cool to 4° 2. H2SO4, Cool to 4° 3. HNO3, Cool to 4° 4. NaOH, Cool to 4° 5. NaOH/Zn, Cool to 4° 6. NaHSO4 7. Cool to 4° 8. None 9. Other
Project Location/State	Delavan WI	Lab Project #												
Sampler	Dennis	Lab PM												

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix									Comments
1		351	4/23/18	1000	5	1	X	X	X	X	X	X	X		
2		Trip Blank			1										

500-144238 COC

Turnaround Time Required (Business Days)

___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other

Requested Due Date _____

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Dennis Schwind	Pentair	4/23/18	1050	Aird Sandy	TALTL	04/24/18	0900
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier

Shipped FX Priority

Hand Delivered

Matrix Key

WW – Wastewater	SE – Sediment
W – Water	SO – Soil
S – Soil	L – Leachate
SL – Sludge	WI – Wipe
MS – Miscellaneous	DW – Drinking Water
OL – Oil	O – Other
A – Air	

Client Comments

Lab Comments:

ORIGIN ID:JVLA (888) 472-0884
CUSTOMER SERVICE
PENTAIR FLOW TECHNOLOGIES
293 SOUTH WRIGHT STREET

DELAVAN, WI 53115
UNITED STATES US

SHIP DATE: 23APR18
ACTWGT: 11.00 LB
CAD: 583065/CAFE3111

BILL SENDER

TO TEST AMERICA

2417 BOND ST

UNIVERSITY PARK IL 60484

INV:
PO:
REF:
DEPT:

FedEx Express

TRK# 0201 4215 2706 3530

TUE - 24 APR 10:30A
PRIORITY OVERNIGHT

79 JOTA

60484
IL-US ORD

Part # 158148-434 RIT2 05/10

500-144238 Waybill

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-144238-1

Login Number: 144238
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 05/01/2018 - 05/31/2018
Form Due Date: 06/21/2018
Permit Number: 0055816

Date Received:	
DOC:	401171
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Cathy M Baerwald
Reviewer:	Andrew K Greer
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8	0.3929	55.76	<1.9	0.048	0.157
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
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	30					
	31					

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.3929	55.76	0	0.048	0.157
	Daily Max	0.3929	55.76	<1.9	0.048	0.157
	Daily Min	0.3929	55.76	<1.9	0.048	0.157
Limit(s) in Effect	**Monthly Avg**				0.24 / 0	
QA/QC Information	**LOD**			1.9	0.024	
	LOQ			5	0.05	
	QC Exceedance	N	N	N	Y	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8	<0.37	0.51	<0.38	<0.20
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		0.51		0		0	
	Daily Max	<0.37		0.51		<0.38		<0.2	
	Daily Min	<0.37		0.51		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		1	
	QC Exceedance	N		N		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rate was calculated from pumping rate measurements taken from the Delavan facility extraction wells by Pentair Flow Technologies Delavan facility personnel on March 26, 2018.

Laboratory Quality Control Comments

J = Result is less than the LOQ but greater than the LOD and the concentration is an approximate value.

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HI 98129
PROJECT NO.	Delavan Well #4 WPDES	Conductivity	HI 98129
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis	DO	

SAMPLE POINT		SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)		05/08/18				
CLOCK TIME (Military)		0945				
DEPTH TO WATER (ft)*		NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*		NA	NA	NA	NA	NA
CASING VOLUME (gallons)		NA	NA	NA	NA	NA
PURGE VOLUME (gallons)		NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*		NA	NA	NA	NA	NA
SAMPLING DEVICE		HI98129				
FIELD TEMPERATURE (°C)		13.2				
pH		7.58				
ELEC. COND. (uS/cm)	Measured	1222				
	at 25° C					
ORP (mV)		NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)		NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)		NA	NA	NA	NA	NA
COLOR		Clear				
ODOR		None				
CLARITY		Clear				

SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	5/8/18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

GeoTrans

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-145148-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Dennis Schwind

Authorized for release by:
5/22/2018 1:37:10 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-145148-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-145148-1

Job ID: 500-145148-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-145148-1

Comments
No additional comments.

Receipt
The samples were received on 5/9/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 7.4° C.

Receipt Exceptions
The following samples were received at the laboratory outside the required temperature criteria: SS1 (500-145148-1) and Trip Blank (500-145148-2). On ice.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: SS1

Lab Sample ID: 500-145148-1
Date Collected: 05/08/18 09:45
Matrix: Water
Date Received: 05/09/18 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			05/19/18 05:15	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/19/18 05:15	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/19/18 05:15	1
Trichloroethene	**0.51**		0.50	0.16	ug/L			05/19/18 05:15	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/19/18 05:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*05/19/18 05:15*	*1*
4-Bromofluorobenzene (Surr)	*100*		*72 - 124*		*05/19/18 05:15*	*1*
Dibromofluoromethane	*104*		*75 - 120*		*05/19/18 05:15*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*05/19/18 05:15*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.9		5.0	1.9	mg/L			05/15/18 10:44	1
Chloride	**170**		10	5.0	mg/L			05/13/18 19:49	5
Phosphorus as P	**0.048**	**J**	0.050	0.024	mg/L		05/17/18 12:05	05/18/18 13:23	1

Client Sample ID: Trip Blank

Lab Sample ID: 500-145148-2
Date Collected: 05/08/18 00:00
Matrix: Water
Date Received: 05/09/18 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			05/19/18 05:45	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			05/19/18 05:45	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			05/19/18 05:45	1
Trichloroethene	<0.16		0.50	0.16	ug/L			05/19/18 05:45	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			05/19/18 05:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 126*		*05/19/18 05:45*	*1*
4-Bromofluorobenzene (Surr)	*99*		*72 - 124*		*05/19/18 05:45*	*1*
Dibromofluoromethane	*105*		*75 - 120*		*05/19/18 05:45*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*05/19/18 05:45*	*1*

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-145148-1

Client Sample ID: SS1

Lab Sample ID: 500-145148-1

Date Collected: 05/08/18 09:45

Matrix: Water

Date Received: 05/09/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	433008	05/19/18 05:15	EMA	TAL CHI
Total/NA	Analysis	SM 2540D		1	432321		SMO	TAL CHI
					(Start)	05/15/18 10:44		
					(End)	05/15/18 10:45		
Total/NA	Analysis	SM 4500 Cl- E		5	432035	05/13/18 19:49	HMW	TAL CHI
Total/NA	Prep	SM 4500 P B			432774	05/17/18 12:05	IEL	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	433015		MTB	TAL CHI
					(Start)	05/18/18 13:23		
					(End)	05/18/18 13:23		

Client Sample ID: Trip Blank

Lab Sample ID: 500-145148-2

Date Collected: 05/08/18 00:00

Matrix: Water

Date Received: 05/09/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	433008	05/19/18 05:45	EMA	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-145148-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-145148-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
SM 4500 P B	Phosphorous, Total and Ortho	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-145148-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-145148-1	SS1	Water	05/08/18 09:45	05/09/18 09:30
500-145148-2	Trip Blank	Water	05/08/18 00:00	05/09/18 09:30

TestAmerica

THE LEADER IN ENVIRONMENTAL T

2417 Bond Street, University Park, IL 6048
Phone: 708.534.5200 Fax: 708.534.5

500-145148 COC

Report To Mark Monthey (optional)
Contact: Tom Samuel Dennis Schwind
Company: Pentair Flow Technologies
Address: 293 Wright St.
Address: Delavan WI 53115
Phone: 262-728-5551
Fax:
E-Mail:

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-145148
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 7.4

Client: Pentair Flow Technologies LLC
Client Project #:
Project Name: Delavan Well #4 WPDES
Project Location/State: Delavan WI
Lab Project #:
Sampler: Dennis Schwind
Lab PM:

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Preservative	HCl	HCl	HCl	HCl	H_2SO_4					
							Parameter	TCE	TCA	PCE	Vinyl Chloride	Phosphorus	TSS	Chloride			
1		SS1	5/8/18	0945	5	W		X	X	X	X	X	X	X			
2		Trip Blank			1												

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Comments

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Dennis Schwind	Pentair	5/8/18	1000	Sherri Scott	TA-CHL	5/9/18	0930

Lab Courier
Shipped Fed-Ex
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-506 (1208)

5/22/2018

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-145148-1

Login Number: 145148
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	On ice
Cooler Temperature is recorded.	True	7.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 06/01/2018 - 06/30/2018
Form Due Date: 07/21/2018
Permit Number: 0055816

Date Received:	
DOC:	401172
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Cathy M Baerwald
Reviewer:	Andrew K Greer
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23					
	24					
	25		69.08	5.5	0.079	0.387
	26					
	27					
	28					
	29	0.5871				
	30					
	31					

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.5871	69.08	5.5	0.079	0.387
	Daily Max	0.5871	69.08	5.5	0.079	0.387
	Daily Min	0.5871	69.08	5.5	0.079	0.387
Limit(s) in Effect	**Monthly Avg**				0.24 0	
QA/QC Information	**LOD**			1.9	0.024	
	LOQ			5	0.05	
	QC Exceedance	N	N	N	N	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25	<0.37	<0.16	<0.38	<0.20
	26				
	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		0		0		0	
	Daily Max	<0.37		<0.16		<0.38		<0.2	
	Daily Min	<0.37		<0.16		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		1	
	QC Exceedance	N		N		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rate was calculated from pumping rate measurements taken from the Delavan facility extraction wells by Pentair Flow Technologies Delavan facility personnel on June 29, 2018.

Laboratory Quality Control Comments

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	~~HI~~ HI 98129
PROJECT NO.	Delavan Well #4 WPDES	Conductivity	HI 98129
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis Schwind	DO	

SAMPLE POINT	SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	06/25/18				
CLOCK TIME (Military)	0850				
DEPTH TO WATER (ft)*	NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*	NA	NA	NA	NA	NA
CASING VOLUME (gallons)	NA	NA	NA	NA	NA
PURGE VOLUME (gallons)	NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*	NA	NA	NA	NA	NA
SAMPLING DEVICE	HI 98129				
FIELD TEMPERATURE (°C)	20.6				
pH	7.71				
ELEC. COND. (uS/cm) Measured at 25° C	983				
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	Clear				
ODOR	None				
CLARITY	Clear				
SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	6/25/18				
SAMPLER'S NAME	Dennis Schwind				

*Measured from top of well casing.

P:\StaRite\Delavan\SS-1_Fld_Water_Form.doc

GeoTrans

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-147528-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Dennis Schwind

Authorized for release by:
7/11/2018 1:25:23 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-147528-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-147528-1

Job ID: 500-147528-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-147528-1

Comments
No additional comments.

Receipt
The samples were received on 6/26/2018 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: SS1

Lab Sample ID: 500-147528-1

Date Collected: 06/25/18 08:50

Matrix: Water

Date Received: 06/26/18 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			06/29/18 15:21	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			06/29/18 15:21	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			06/29/18 15:21	1
Trichloroethene	<0.16		0.50	0.16	ug/L			06/29/18 15:21	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			06/29/18 15:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 126*		*06/29/18 15:21*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 124*		*06/29/18 15:21*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*06/29/18 15:21*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*06/29/18 15:21*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**5.5**		5.0	1.9	mg/L			06/30/18 12:43	1
Chloride	**210**		10	5.0	mg/L			07/02/18 18:06	5
Phosphorus as P	**0.079**		0.050	0.024	mg/L		07/05/18 11:15	07/09/18 11:55	1

Client Sample ID: Trip Blank

Lab Sample ID: 500-147528-2

Date Collected: 06/25/18 00:00

Matrix: Water

Date Received: 06/26/18 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			06/29/18 14:51	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			06/29/18 14:51	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			06/29/18 14:51	1
Trichloroethene	<0.16		0.50	0.16	ug/L			06/29/18 14:51	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			06/29/18 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 126*		*06/29/18 14:51*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 124*		*06/29/18 14:51*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*06/29/18 14:51*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*06/29/18 14:51*	*1*

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-147528-1

Client Sample ID: SS1

Lab Sample ID: 500-147528-1

Date Collected: 06/25/18 08:50

Matrix: Water

Date Received: 06/26/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	439200	06/29/18 15:21	JDD	TAL CHI
Total/NA	Analysis	SM 2540D		1	439306		SMO	TAL CHI
					(Start)	06/30/18 12:43		
					(End)	06/30/18 12:44		
Total/NA	Analysis	SM 4500 Cl- E		5	439856	07/02/18 18:06	HMW	TAL CHI
Total/NA	Prep	SM 4500 P B			439776	07/05/18 11:15	IEL	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	440378		IEL	TAL CHI
					(Start)	07/09/18 11:55		
					(End)	07/09/18 11:55		

Client Sample ID: Trip Blank

Lab Sample ID: 500-147528-2

Date Collected: 06/25/18 00:00

Matrix: Water

Date Received: 06/26/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	439200	06/29/18 14:51	JDD	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-147528-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-147528-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
SM 4500 P B	Phosphorous, Total and Ortho	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-147528-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-147528-1	SS1	Water	06/25/18 08:50	06/26/18 09:00
500-147528-2	Trip Blank	Water	06/25/18 00:00	06/26/18 09:00

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-147528

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 3-6

(optional)		(optional)	
Report To	Tom Samuel / Dennis Schwind	Bill To	
Contact	Mark Manthey	Contact:	
Company:	Pentair Flow Technologies LLC	Company:	
Address:	293 Wright St.	Address:	
Address:	Delavan WI 53115	Address:	
Phone:	262-728-5551	Phone:	
Fax:		Fax:	
E-Mail:		PO#/Reference#	

Client	Pentair Flow Technologies LLC
Project Name	Delavan Well #4 WPDES
Project Location/State	Delavan WI
Sampler	Dennis Schwind
Client Project #	
Lab Project #	
Lab PM	

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Preservative	HCl	NCl	HCl	HCl	H_2SO_4				Comments
							Parameter	TCE	TCA	PCE	Vinyl Chloride	P	TSS	Chloride		
1		SS1	6/25/18	0850	5	W		X	X	X	X	X	X	X		
2		Trip Blank			1											

Turnaround Time Required (Business Days)

___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other

Requested Due Date _____

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

	Company	Date	Time		Company	Date	Time
Relinquished By	Pentair	6/25/18	0910	Received By	TA	06/26/18	0900
Relinquished By				Received By			
Relinquished By				Received By			

Lab Courier ☐

Shipped ✓

Hand Delivered ☐

Matrix Key

WW – Wastewater	SE – Sediment
W – Water	SO – Soil
S – Soil	L – Leachate
SL – Sludge	WI – Wipe
MS – Miscellaneous	DW – Drinking Water
OL – Oil	O – Other
A – Air	

Client Comments

500-147528 COC

ORIGIN ID:JVLA (888) 472-0884
CUSTOMER SERVICE
PENTAIR FLOW TECHNOLOGIES
293 SOUTH WRIGHT STREET

DELAVAN, WI 53115
UNITED STATES US

SHIP DATE: 25JUN18
ACTWGT: 23.10 LB MAN
CAD: 583065/CAFE3111

BILL SENDER

TO

TEST AMERICA
2417 BOND STR.

UNIVERSITY PARK IL 60484

INV:
PO:
REF:
DEPT:

546C2/93DF/53C1

FedEx Express

J17101610200luv

ST

RT5 4215 2706 6481

TUE - 26 JUN 10:30A
PRIORITY OVERNIGHT

19 JOTA

60484
IL-US ORD

Part # 156148-434 RIT EXP 08/18

12qt

500-147528 Waybill

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-147528-1

Login Number: 147528
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.6c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 07/01/2018 - 07/31/2018
Form Due Date: 08/21/2018
Permit Number: 0055816

Date Received:	
DOC:	406247
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Cathy M Baerwald
Reviewer:	Andrew K Greer
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11		60.26	<1.9	0.045	0.182
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					
	31	0.4839				

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.4839	60.26	0	0.045	0.182
	Daily Max	0.4839	60.26	<1.9	0.045	0.182
	Daily Min	0.4839	60.26	<1.9	0.045	0.182
Limit(s) in Effect	**Monthly Avg**				0.24 0	
QA/QC Information	**LOD**			1.9	0.024	
	LOQ			5	0.05	
	QC Exceedance	N	N	N	Y	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11	<0.37	0.51	<0.38	<0.20
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		0.51		0		0	
	Daily Max	<0.37		0.51		<0.38		<0.2	
	Daily Min	<0.37		0.51		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		1	
	QC Exceedance	N		N		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rate was calculated from pumping rate measurements taken from Delavan facility extraction wells EX-6 and EX-7R by Pentair Flow Technologies Delavan facility and Tetra Tech personnel on July 31, 2018 and the July 31, 2018 daily flow readings recorded by the Badger U500w ultrasonic meters installed on the discharge lines of extraction wells EX-1, EX-2R, EX-3R, EX-4R and EX-5.

Laboratory Quality Control Comments

J = Result is less than the LOQ but greater than the LOD and the concentration is an approximate value.

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HI98129
PROJECT NO.	[illegible]	Conductivity	HI98129
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis [illegible]	DO	

SAMPLE POINT	SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	07/11/18				
CLOCK TIME (Military)	0937				
DEPTH TO WATER (ft)*	NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*	NA	NA	NA	NA	NA
CASING VOLUME (gallons)	NA	NA	NA	NA	NA
PURGE VOLUME (gallons)	NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*	NA	NA	NA	NA	NA
SAMPLING DEVICE	HI98129				
FIELD TEMPERATURE (°C)	15.7				
pH	7.48				
ELEC. COND. (uS/cm) Measured	1326				
ELEC. COND. (uS/cm) at 25° C					
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	Clear				
ODOR	None				
CLARITY	Clear				
SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	7-11-18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-148298-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Dennis Schwind

Authorized for release by:
7/25/2018 5:36:18 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-148298-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-148298-1

Job ID: 500-148298-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-148298-1

Comments
No additional comments.

Receipt
The samples were received on 7/12/2018 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.4° C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: SS1

Date Collected: 07/11/18 09:37
Date Received: 07/12/18 09:15

Lab Sample ID: 500-148298-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			07/19/18 22:19	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			07/19/18 22:19	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			07/19/18 22:19	1
Trichloroethene	**0.51**		0.50	0.16	ug/L			07/19/18 22:19	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			07/19/18 22:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 126*		*07/19/18 22:19*	*1*
4-Bromofluorobenzene (Surr)	*98*		*72 - 124*		*07/19/18 22:19*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*07/19/18 22:19*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*07/19/18 22:19*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.9		5.0	1.9	mg/L			07/13/18 12:34	1
Chloride	**200**		10	5.0	mg/L			07/15/18 12:48	5
Phosphorus as P	**0.045**	**J**	0.050	0.024	mg/L		07/24/18 15:20	07/25/18 16:08	1

Client Sample ID: Trip Blank

Date Collected: 07/11/18 00:00
Date Received: 07/12/18 09:15

Lab Sample ID: 500-148298-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			07/19/18 22:48	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			07/19/18 22:48	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			07/19/18 22:48	1
Trichloroethene	<0.16		0.50	0.16	ug/L			07/19/18 22:48	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			07/19/18 22:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*75 - 126*		*07/19/18 22:48*	*1*
4-Bromofluorobenzene (Surr)	*96*		*72 - 124*		*07/19/18 22:48*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*07/19/18 22:48*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*07/19/18 22:48*	*1*

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-148298-1

Client Sample ID: SS1

Lab Sample ID: 500-148298-1

Date Collected: 07/11/18 09:37

Matrix: Water

Date Received: 07/12/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	441583	07/19/18 22:19	JDD	TAL CHI
Total/NA	Analysis	SM 2540D		1	440844		SMO	TAL CHI
					(Start)	07/13/18 12:34		
					(End)	07/13/18 12:36		
Total/NA	Analysis	SM 4500 Cl- E		5	440956	07/15/18 12:48	HMW	TAL CHI
Total/NA	Prep	SM 4500 P B			442258	07/24/18 15:20	BRS	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	442501		BRS	TAL CHI
					(Start)	07/25/18 16:08		
					(End)	07/25/18 16:09		

Client Sample ID: Trip Blank

Lab Sample ID: 500-148298-2

Date Collected: 07/11/18 00:00

Matrix: Water

Date Received: 07/12/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	441583	07/19/18 22:48	JDD	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-148298-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-148298-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
SM 4500 P B	Phosphorous, Total and Ortho	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-148298-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-148298-1	SS1	Water	07/11/18 09:37	07/12/18 09:15
500-148298-2	Trip Blank	Water	07/11/18 00:00	07/12/18 09:15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60...
Phone: 708.534.5200 Fax: 708.534...

500-148298 COC

Report To (optional)
Contact: Mark Manthey / Tom Samuel / Dennis Schwind
Company: Pentair Flow Technologies
Address: 293 Wright St.
Address: Delavan WI 53115
Phone:
Fax:
E-Mail:

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-148298
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 5.4

Client: Pentair Flow Technologies LLC
Client Project #:
Project Name: Delavan Well #4 WPDES
Project Location/State: Delavan WI
Lab Project #:
Sampler: Dennis
Lab PM:

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	TCE (HCl)	TCA (HCl)	PCE (HCl)	Vinyl Chloride (HCl)	Phosphorus (H_2SO_4)	TSS	Chloride			Comments
1		SS1	7/11/18	0937	5	W	X	X	X	X	X	X	X			
2		Trip Blank			1											

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days ______ Other
Requested Due Date ______

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Dennis Schwind	Pentair	7/11/18	0947	Shawn Scott	TA-Chi	7/12/18	0915

Lab Courier:
Shipped: Fed-X
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments:

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-148298-1

Login Number: 148298
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 08/01/2018 - 08/31/2018
Form Due Date: 09/21/2018
Permit Number: 0055816

Date Received:	
DOC:	406248
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Cathy M Baerwald
Reviewer:	Andrew K Greer
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					
	31	0.444597	59.18	<1.9	0.037	0.137

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.444597	59.18	0	0.037	0.137
	Daily Max	0.444597	59.18	<1.9	0.037	0.137
	Daily Min	0.444597	59.18	<1.9	0.037	0.137
Limit(s) in Effect	**Monthly Avg**				0.24 0	
QA/QC Information	**LOD**			1.9	0.024	
	LOQ			5	0.05	
	QC Exceedance	N	N	N	Y	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31	<0.37	0.48	<0.38	<0.20

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		0.48		0		0	
	Daily Max	<0.37		0.48		<0.38		<0.2	
	Daily Min	<0.37		0.48		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		1	
	QC Exceedance	N		Y		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rate was calculated from pumping rate measurements taken from Delavan facility extraction well EX-7R by Pentair Flow Technologies Delavan facility and Tetra Tech personnel on July 31, 2018 and the August 31, 2018 daily flow readings recorded by the Badger U500w ultrasonic meters installed on the discharge lines of extraction wells EX-1, EX-2R, EX-3R, EX-4R, EX-5R and EX-6.

Laboratory Quality Control Comments

J = Result is less than the LOQ but greater than the LOD and the concentration is an approximate value.

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HI 98:20
PROJECT NO.	Delavan Well #4 WPDES	Conductivity	HI 98:20
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis	DO	

SAMPLE POINT		SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)		08/31/18				
CLOCK TIME (Military)						
DEPTH TO WATER (ft)*		NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*		NA	NA	NA	NA	NA
CASING VOLUME (gallons)		NA	NA	NA	NA	NA
PURGE VOLUME (gallons)		NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*		NA	NA	NA	NA	NA
SAMPLING DEVICE		HI 9820				
FIELD TEMPERATURE (°C)		15.1				
pH		7.49				
ELEC. COND. (uS/cm)	Measured	1577				
	at 25° C					
ORP (mV)		NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)		NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)		NA	NA	NA	NA	NA
COLOR						
ODOR						
CLARITY						
SAMPLING PARAMETERS		# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)		3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	8/31/18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-150871-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Dennis Schwind

Authorized for release by:
9/18/2018 12:15:22 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-150871-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-150871-1

Job ID: 500-150871-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-150871-1

Comments
No additional comments.

Receipt
The samples were received on 9/1/2018 10:28 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.7º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: SS1

Lab Sample ID: 500-150871-1
Date Collected: 08/31/18 08:40
Matrix: Water
Date Received: 09/01/18 10:28

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			09/08/18 16:34	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			09/08/18 16:34	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			09/08/18 16:34	1
Trichloroethene	**0.48**	**J**	0.50	0.16	ug/L			09/08/18 16:34	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			09/08/18 16:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 126*		*09/08/18 16:34*	*1*
4-Bromofluorobenzene (Surr)	*93*		*72 - 124*		*09/08/18 16:34*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*09/08/18 16:34*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*09/08/18 16:34*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.9		5.0	1.9	mg/L			09/07/18 13:16	1
Chloride	**210**		10	5.0	mg/L			09/02/18 19:42	5
Phosphorus as P	**0.037**	**J**	0.050	0.024	mg/L		09/11/18 09:47	09/17/18 15:48	1

Client Sample ID: Trip Blank

Lab Sample ID: 500-150871-2
Date Collected: 08/31/18 00:00
Matrix: Water
Date Received: 09/01/18 10:28

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			09/08/18 14:51	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			09/08/18 14:51	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			09/08/18 14:51	1
Trichloroethene	<0.16		0.50	0.16	ug/L			09/08/18 14:51	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			09/08/18 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 126*		*09/08/18 14:51*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 124*		*09/08/18 14:51*	*1*
Dibromofluoromethane	*95*		*75 - 120*		*09/08/18 14:51*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*09/08/18 14:51*	*1*

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-150871-1

Client Sample ID: SS1

Lab Sample ID: 500-150871-1

Date Collected: 08/31/18 08:40

Matrix: Water

Date Received: 09/01/18 10:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448821	09/08/18 16:34	PMF	TAL CHI
Total/NA	Analysis	SM 2540D		1	448707		SMO	TAL CHI
					(Start)	09/07/18 13:16		
					(End)	09/07/18 13:18		
Total/NA	Analysis	SM 4500 Cl- E		5	448227	09/02/18 19:42	HMW	TAL CHI
Total/NA	Prep	SM 4500 P B			449156	09/11/18 09:47	BRS	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	450408		BRS	TAL CHI
					(Start)	09/17/18 15:48		
					(End)	09/17/18 15:48		

Client Sample ID: Trip Blank

Lab Sample ID: 500-150871-2

Date Collected: 08/31/18 00:00

Matrix: Water

Date Received: 09/01/18 10:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	448821	09/08/18 14:51	PMF	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-150871-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-19

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-150871-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
SM 4500 P B	Phosphorous, Total and Ortho	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-150871-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-150871-1	SS1	Water	08/31/18 08:40	09/01/18 10:28
500-150871-2	Trip Blank	Water	08/31/18 00:00	09/01/18 10:28

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Report To (optional): Tam Samuel, Max Geyer
Contact: Mark Manthey Dennis Schwind
Company: Pentair Flow Technologies
Address: 293 Wright St
Address: Delavan WI 53115
Phone: 262-728-5551
Fax:
E-Mail:

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-150871
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.7

9/18/2018

Client: Pentair Flow Technologies
Client Project #:
Project Name: Delavan Well #4 WPDES
Project Location/State: Delavan WI
Lab Project #:
Sampler: Dennis
Lab PM:

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	TCE (HCl)	TCA (HCl)	PCE (HCl)	Vinyl Chloride (HCl)	Phosphorus (H_2SO_4)	TSS	Chloride			Comments
1		SS1	8/31/18	0940	5	W	X	X	X	X	X	X	X			
2		Trip Blank			1											
		Seal Broken on Bottle (Empty)			1											

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

500-150871 COC

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date ________

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Dennis Schwind	Pentair	8/31/18	0900	Ariel Salinas	TA-Chi	09/01/18	1028

Lab Courier:
Shipped: FX SATURDAY
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

500-150871 Waybill

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-150871-1

Login Number: 150871
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 09/01/2018 - 09/30/2018
Form Due Date: 10/21/2018
Permit Number: 0055816

Date Received:	
DOC:	406249
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Cathy M Baerwald
Reviewer:	Andrew K Greer
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12	0.41566	67.82	18	0.19	0.658
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					
	31					

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.41566	67.82	18	0.19	0.658
	Daily Max	0.41566	67.82	18	0.19	0.658
	Daily Min	0.41566	67.82	18	0.19	0.658
Limit(s) in Effect	**Monthly Avg**				0.24 / 0	
QA/QC Information	**LOD**			1.9	0.048	
	LOQ			5	0.1	
	QC Exceedance	N	N	N	N	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12	<0.37	<0.16	<0.38	<0.20
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		0		0		0	
	Daily Max	<0.37		<0.16		<0.38		<0.2	
	Daily Min	<0.37		<0.16		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		1	
	QC Exceedance	N		N		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rate was calculated from pumping rate measurements taken from Delavan facility extraction well EX-7R by Pentair Flow Technologies Delavan facility and Tetra Tech personnel on July 31, 2018 and the September 12, 2018 daily flow readings recorded by the Badger U500w ultrasonic meters installed on the discharge lines of extraction wells EX-1, EX-2R, EX-3R, EX-4R, EX-5R and EX-6.

Laboratory Quality Control Comments

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HI98129
PROJECT NO.	Delavan Well #4 WADES	Conductivity	HI98129
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis	DO	

SAMPLE POINT		SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)		9/12/18				
CLOCK TIME (Military)		0940				
DEPTH TO WATER (ft)*		NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*		NA	NA	NA	NA	NA
CASING VOLUME (gallons)		NA	NA	NA	NA	NA
PURGE VOLUME (gallons)		NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*		NA	NA	NA	NA	NA
SAMPLING DEVICE		HI 98129				
FIELD TEMPERATURE (°C)		19.9				
pH		7.68				
ELEC. COND. (uS/cm)	Measured	611				
	at 25° C					
ORP (mV)		NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)		NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)		NA	NA	NA	NA	NA
COLOR		Cloudy				
ODOR		None				
CLARITY		Cloudy				

SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	9/12/18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

GeoTrans

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-151416-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Dennis Schwind

Authorized for release by:
9/27/2018 6:50:54 AM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-151416-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-151416-1

Job ID: 500-151416-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-151416-1

Comments
No additional comments.

Receipt
The samples were received on 9/13/2018 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.8º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: SS1

Lab Sample ID: 500-151416-1

Date Collected: 09/12/18 09:40

Matrix: Water

Date Received: 09/13/18 09:10

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			09/19/18 00:21	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			09/19/18 00:21	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			09/19/18 00:21	1
Trichloroethene	<0.16		0.50	0.16	ug/L			09/19/18 00:21	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			09/19/18 00:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 126*		*09/19/18 00:21*	*1*
4-Bromofluorobenzene (Surr)	*87*		*72 - 124*		*09/19/18 00:21*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*09/19/18 00:21*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*09/19/18 00:21*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**18**		5.0	1.9	mg/L			09/19/18 17:33	1
Chloride	**110**		10	5.0	mg/L			09/16/18 16:41	5
Phosphorus as P	**0.19**		0.10	0.048	mg/L		09/20/18 11:49	09/25/18 15:24	1

Client Sample ID: Trip Blank

Lab Sample ID: 500-151416-2

Date Collected: 09/12/18 00:00

Matrix: Water

Date Received: 09/13/18 09:10

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			09/18/18 23:04	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			09/18/18 23:04	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			09/18/18 23:04	1
Trichloroethene	<0.16		0.50	0.16	ug/L			09/18/18 23:04	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			09/18/18 23:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 126*		*09/18/18 23:04*	*1*
4-Bromofluorobenzene (Surr)	*87*		*72 - 124*		*09/18/18 23:04*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*09/18/18 23:04*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*09/18/18 23:04*	*1*

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-151416-1

Client Sample ID: SS1

Lab Sample ID: 500-151416-1

Date Collected: 09/12/18 09:40

Matrix: Water

Date Received: 09/13/18 09:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	450537	09/19/18 00:21	PMF	TAL CHI
Total/NA	Analysis	SM 2540D		1	450777		SMO	TAL CHI
					(Start)	09/19/18 17:33		
					(End)	09/19/18 17:34		
Total/NA	Analysis	SM 4500 Cl- E		5	450900	09/16/18 16:41	HMW	TAL CHI
Total/NA	Prep	SM 4500 P B			450954	09/20/18 11:49	BRS	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	451809		BRS	TAL CHI
					(Start)	09/25/18 15:24		
					(End)	09/25/18 15:25		

Client Sample ID: Trip Blank

Lab Sample ID: 500-151416-2

Date Collected: 09/12/18 00:00

Matrix: Water

Date Received: 09/13/18 09:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	450537	09/18/18 23:04	PMF	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-151416-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-19

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-151416-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
SM 4500 P B	Phosphorous, Total and Ortho	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-151416-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-151416-1	SS1	Water	09/12/18 09:40	09/13/18 09:10
500-151416-2	Trip Blank	Water	09/12/18 00:00	09/13/18 09:10

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)		(optional)	
Report To	Mar Geyer Tom Samuel	Bill To	
Contact:	Mark Manthey	Contact:	
Company:	Pentair Flow Technologies	Company:	
Address:	293 Wright St.	Address:	
Address:	Delavan WI 53115	Address:	
Phone:	262-728-5551	Phone:	
Fax:		Fax:	
E-Mail:		PO#/Reference#	

Chain of Custody Record

Lab Job #: 500-151416

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 4.8

Client	PENTAIR FLOW TECHNOLOGIES LLC
Client Project #	
Project Name	Delavan Well #4 WPDES
Project Location/State	Delavan WI
Lab Project #	
Sampler	Dennis
Lab PM	

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	TCE (HCl)	TCA (HCl)	PCE (HCl)	Vinyl Chloride (HCl)	Phosphorus (H_2SO_4)	TSS	Chloride			Comments
1		SS1	9/12/18	0940	5	W	X	X	X	X	X	X	X			
2		Trip Blank			1											

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

500-151416 COC

Turnaround Time Required (Business Days)

___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days ______ Other

Requested Due Date ______

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ______ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Pentair	9/12/18	1000	[signature]	TALUE	09/13/18	0910

Lab Courier:

Shipped: FX Priority

Hand Delivered:

Matrix Key

WW – Wastewater	SE – Sediment
W – Water	SO – Soil
S – Soil	L – Leachate
SL – Sludge	WI – Wipe
MS – Miscellaneous	DW – Drinking Water
OL – Oil	O – Other
A – Air	

Client Comments

Lab Comments:

TAL-4124-500 (1208)

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-151416-1

Login Number: 151416
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 10/01/2018 - 10/31/2018
Form Due Date: 11/21/2018
Permit Number: 0055816

Date Received:	
DOC:	413230
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Bryan D Hartsook
Reviewer:	Bryan D Hartsook
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17		53.42	<1.9	0.034	0.146
	18	0.514805				
	19					
	20					
	21					
	22					
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					
	31					

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.514805	53.42	0	0.034	0.146
	Daily Max	0.514805	53.42	<1.9	0.034	0.146
	Daily Min	0.514805	53.42	<1.9	0.034	0.146
Limit(s) in Effect	**Monthly Avg**				0.24 / 0	
QA/QC Information	**LOD**			1.9	0.024	
	LOQ			5	0.05	
	QC Exceedance	N	N	N	Y	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17	<0.37	<0.16	<0.38	<0.20
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		0		0		0	
	Daily Max	<0.37		<0.16		<0.38		<0.2	
	Daily Min	<0.37		<0.16		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		1	
	QC Exceedance	N		N		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rate was calculated from pumping rate measurements taken from Delavan facility extraction well EX-7R by Pentair Flow Technologies Delavan facility and Tetra Tech personnel on July 31, 2018 and the October 18, 2018 daily flow readings recorded by the Badger U500w ultrasonic meters installed on the discharge lines of extraction wells EX-1, EX-2R, EX-3R, EX-4R, EX-5R and EX-6.

Laboratory Quality Control Comments

J = Result is less than the LOQ but greater than the LOD and the concentration is an approximate value.

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HI 98129
PROJECT NO.	Delavan Well #4 WPDES	Conductivity	HI98129
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis	DO	

SAMPLE POINT	SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	10/17/18				
CLOCK TIME (Military)	1000				
DEPTH TO WATER (ft)*	NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*	NA	NA	NA	NA	NA
CASING VOLUME (gallons)	NA	NA	NA	NA	NA
PURGE VOLUME (gallons)	NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*	NA	NA	NA	NA	NA
SAMPLING DEVICE	HI98129				
FIELD TEMPERATURE (°C)	11.9				
pH	7.55				
ELEC. COND. (uS/cm) Measured	1336				
ELEC. COND. (uS/cm) at 25° C					
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	Clear				
ODOR	None				
CLARITY	Clear				

SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	10-17-18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

GeoTrans

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-153381-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Dennis Schwind

Authorized for release by:
11/1/2018 4:02:07 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-153381-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-153381-1

Job ID: 500-153381-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-153381-1

Comments
No additional comments.

Receipt
The samples were received on 10/18/2018 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.5º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: SS1

Lab Sample ID: 500-153381-1

Date Collected: 10/17/18 10:00
Matrix: Water
Date Received: 10/18/18 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			10/27/18 23:07	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/27/18 23:07	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/27/18 23:07	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/27/18 23:07	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			10/27/18 23:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*75 - 126*		*10/27/18 23:07*	*1*
4-Bromofluorobenzene (Surr)	*104*		*72 - 124*		*10/27/18 23:07*	*1*
Dibromofluoromethane	*96*		*75 - 120*		*10/27/18 23:07*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/27/18 23:07*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<1.9		5.0	1.9	mg/L			10/24/18 12:25	1
Chloride	**220**		10	5.0	mg/L			11/01/18 11:58	5
Phosphorus as P	**0.034**	**J**	0.050	0.024	mg/L		10/29/18 09:58	11/01/18 14:13	1

Client Sample ID: Trip Blank

Lab Sample ID: 500-153381-2

Date Collected: 10/17/18 00:00
Matrix: Water
Date Received: 10/18/18 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			10/27/18 21:47	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			10/27/18 21:47	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			10/27/18 21:47	1
Trichloroethene	<0.16		0.50	0.16	ug/L			10/27/18 21:47	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			10/27/18 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 126*		*10/27/18 21:47*	*1*
4-Bromofluorobenzene (Surr)	*104*		*72 - 124*		*10/27/18 21:47*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*10/27/18 21:47*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/27/18 21:47*	*1*

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-153381-1

Client Sample ID: SS1

Lab Sample ID: 500-153381-1

Date Collected: 10/17/18 10:00

Matrix: Water

Date Received: 10/18/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	457154	10/27/18 23:07	PMF	TAL CHI
Total/NA	Analysis	SM 2540D		1	456585		SMO	TAL CHI
					(Start)	10/24/18 12:25		
					(End)	10/24/18 12:27		
Total/NA	Analysis	SM 4500 Cl- E		5	457936	11/01/18 11:58	EAT	TAL CHI
Total/NA	Prep	SM 4500 P B			457323	10/29/18 09:58	BRS	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	457988		BRS	TAL CHI
					(Start)	11/01/18 14:13		
					(End)	11/01/18 14:14		

Client Sample ID: Trip Blank

Lab Sample ID: 500-153381-2

Date Collected: 10/17/18 00:00

Matrix: Water

Date Received: 10/18/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	457154	10/27/18 21:47	PMF	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-153381-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-19

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-153381-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
SM 4500 P B	Phosphorous, Total and Ortho	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-153381-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-153381-1	SS1	Water	10/17/18 10:00	10/18/18 09:00
500-153381-2	Trip Blank	Water	10/17/18 00:00	10/18/18 09:00

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Report To (optional) Mark Manthey Max
Contact: Geyer Dennis Schwind
Company: Pentair Flow Technologies LLC
Address: 293 Wright St.
Address: Delavan WI 53115
Phone: 262 728 5551
Fax:
E-Mail:

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-153381
Chain of Custody Number:
Page ___ of ___
Temperature °C of Cooler: 4.5

Client: PENTAIR FLOW TECHNOLOGIES LLC
Client Project #:
Project Name: Delavan Well #4 WPDES
Project Location/State: Delavan WI
Lab Project #:
Sampler: Dennis
Lab PM:

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	TCE (HCl)	TCA (HCl)	PCE (HCl)	Vinyl Chloride (HCl)	Phosphorous (H_2SO_4)	TSS	Chloride			Comments
1		SS1	10/17/18	1000	5	W	X	X	X	X	X	X	X			
2		Trip Blank			1											

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

500-153381 COC

Turnaround Time Required (Business Days)
__ 1 Day __ 2 Days __ 5 Days __ 7 Days __ 10 Days __ 15 Days ____ Other
Requested Due Date ________

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Dennis Schwind	Pentair	10-17-18	1020	[signature]	TAL	10/18/18	0900

Lab Courier:
Shipped: FX STD
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124 580 (1209)


ORIGIN ID:JVLA (888) 472-0884
CUSTOMER SERVICE
PENTAIR FLOW TECHNOLOGIES
4293 SOUTH WRIGHT STREET
DELAVAN, WI 53115
UNITED STATES US
SHIP DATE: 17OCT18
ACTWGT: 0.20 LB MAN
CAD: 583085/CAFE3111
BILL SENDER
TO
TEST AMERICA
2417 BOND STR.
UNIVERSITY PARK IL 60484
REF:
INV:
PO:
DEPT:
FedEx
Express
THU - 18 OCT 3:00P
STANDARD OVERNIGHT
TRK#
0201
4215 2707 7055
79 JOTA
60484
IL-US ORD
Part # 156148-434 RIT EXP 01/19
500-153381 Waybill

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-153381-1

Login Number: 153381
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 11/01/2018 - 11/30/2018
Form Due Date: 12/21/2018
Permit Number: 0055816

Date Received:	
DOC:	413231
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Bryan D Hartsook
Reviewer:	Bryan D Hartsook
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13	0.430477				
	14	0.431054	53.24	2.5	0.049	0.175
	15	0.431200				
	16	0.430359				
	17	0.428280				
	18	0.428716				
	19	0.428702				
	20	0.427932				
	21	0.427916				
	22	0.428033				
	23	0.428533				
	24	0.428306				
	25	0.428236				
	26	0.426324				
	27	0.428562				
	28	0.427477				
	29	0.427278				
	30	0.429216				
	31					

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.428700056	53.24	2.5	0.049	0.175
	Daily Max	0.4312	53.24	2.5	0.049	0.175
	Daily Min	0.426324	53.24	2.5	0.049	0.175
Limit(s) in Effect	**Monthly Avg**				0.24 0	
QA/QC Information	**LOD**			1.9	0.048	
	LOQ			5	0.1	
	QC Exceedance	N	N	Y	Y	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14	<0.37	<0.16	<0.38	<0.20
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	23				
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	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		0		0		0	
	Daily Max	<0.37		<0.16		<0.38		<0.2	
	Daily Min	<0.37		<0.16		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		1	
	QC Exceedance	N		N		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rates were calculated from daily flow readings recorded by the Badger U500w ultrasonic meters installed on the discharge lines of Delavan facility extraction wells.

Laboratory Quality Control Comments

J = Result is less than the LOQ but greater than the LOD and the concentration is an approximate value.

Submitted by Mark Manthey(mmanthey) on 12/10/2018 9:17:32 AM

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HI98129
PROJECT NO.	Delavan Well #4 WPDES	Conductivity	HI98129
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis	DO	

SAMPLE POINT		SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)		11-14-18				
CLOCK TIME (Military)		0945				
DEPTH TO WATER (ft)*		NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*		NA	NA	NA	NA	NA
CASING VOLUME (gallons)		NA	NA	NA	NA	NA
PURGE VOLUME (gallons)		NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*		NA	NA	NA	NA	NA
SAMPLING DEVICE		HI98129				
FIELD TEMPERATURE (°C)		11.8				
pH		7.61				
ELEC. COND. (uS/cm)	Measured	1331				
	at 25° C					
ORP (mV)		NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)		NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)		NA	NA	NA	NA	NA
COLOR		Clear				
ODOR		None				
CLARITY		Clear				

SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	11-14-18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-154845-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Dennis Schwind

Authorized for release by:
12/6/2018 5:22:08 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-154845-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-154845-1

Job ID: 500-154845-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-154845-1

Comments
No additional comments.

Receipt
The samples were received on 11/15/2018 11:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.4º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: Trip Blank

Lab Sample ID: 500-154845-1
Date Collected: 11/14/18 00:00
Matrix: Water
Date Received: 11/15/18 11:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/28/18 02:51	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 02:51	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 02:51	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 02:51	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 02:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 126*		*11/28/18 02:51*	*1*
4-Bromofluorobenzene (Surr)	*93*		*72 - 124*		*11/28/18 02:51*	*1*
Dibromofluoromethane	*84*		*75 - 120*		*11/28/18 02:51*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*11/28/18 02:51*	*1*

Client Sample ID: SS1

Lab Sample ID: 500-154845-2
Date Collected: 11/14/18 09:45
Matrix: Water
Date Received: 11/15/18 11:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			11/28/18 05:49	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			11/28/18 05:49	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			11/28/18 05:49	1
Trichloroethene	<0.16		0.50	0.16	ug/L			11/28/18 05:49	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			11/28/18 05:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 126*		*11/28/18 05:49*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 124*		*11/28/18 05:49*	*1*
Dibromofluoromethane	*86*		*75 - 120*		*11/28/18 05:49*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*11/28/18 05:49*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**2.5**	**J**	5.0	1.9	mg/L			11/21/18 13:48	1
Chloride	**210**		10	5.0	mg/L			12/04/18 15:49	5
Phosphorus as P	**0.049**	**J**	0.10	0.048	mg/L		11/29/18 20:24	11/30/18 15:18	1

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-154845-1

Client Sample ID: Trip Blank
Lab Sample ID: 500-154845-1
Date Collected: 11/14/18 00:00
Matrix: Water
Date Received: 11/15/18 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461974	11/28/18 02:51	JJH	TAL CHI

Client Sample ID: SS1
Lab Sample ID: 500-154845-2
Date Collected: 11/14/18 09:45
Matrix: Water
Date Received: 11/15/18 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	461974	11/28/18 05:49	JJH	TAL CHI
Total/NA	Analysis	SM 2540D		1	461283		SMO	TAL CHI
					(Start)	11/21/18 13:48		
					(End)	11/21/18 13:49		
Total/NA	Analysis	SM 4500 Cl- E		5	463047	12/04/18 15:49	EAT	TAL CHI
Total/NA	Prep	SM 4500 P B			462390	11/29/18 20:24	PFK	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	462594		BRS	TAL CHI
					(Start)	11/30/18 15:18		
					(End)	11/30/18 15:19		

Laboratory References:
TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-154845-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-19

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-154845-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
SM 4500 P B	Phosphorous, Total and Ortho	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-154845-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-154845-1	Trip Blank	Water	11/14/18 00:00	11/15/18 11:30
500-154845-2	SS1	Water	11/14/18 09:45	11/15/18 11:30

TestAmerica

THE LEADER IN ENVIRONMENTA

2417 Bond Street, University Park, IL
Phone: 708.534.5200 Fax: 708.

500-154845 COC

Report To (optional)		Bill To (optional)	
Contact:	Mark Manthey / Dave Geyer / Dennis Schwind	Contact:	
Company:	Pentair Flow Technologies LLC	Company:	
Address:	293 Wright St.	Address:	
Address:	Delavan WI 53115	Address:	
Phone:	262-728-5551	Phone:	
Fax:		Fax:	
E-Mail:		PO#/Reference#	

Chain of Custody Record

Lab Job #: 500-154845

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 1.9 → 0.4

Client: PENTAIR FLOW TECHNOLOGIES LLC
Client Project #:
Project Name: Delavan Well #4 WPDES
Project Location/State: Delavan/WI
Lab Project #:
Sampler: Dennis Schwind
Lab PM:

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	TCE (HCl)	TCA (HCl)	PCE (HCl)	Vinyl Chloride (HCl)	Phosphorous (H_2SO_4)	TSS	Chloride			Comments
1		Trip Blank	11-14-18	0945	1		(									
2		SS1			5	W	X	X	X	X	X	X	X			

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Turnaround Time Required (Business Days)
__ 1 Day __ 2 Days __ 5 Days __ 7 Days __ 10 Days __ 15 Days ______ Other
Requested Due Date ________

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Dennis Schwind	Pentair	Nov/14/2018	1000	[signature]	TA-CHI	11/15/18	1130

Lab Courier:
Shipped: FedEx
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1208)

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-154845-1

Login Number: 154845
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	-0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Wastewater Discharge Monitoring Long Report

For DNR Use Only

Facility Name: PENTAIR FLOW TECHNOLOGIES LLC
Contact Address: 293 S. Wright St
Delavan, WI 53115
Facility Contact: Dennis Schwind, Env. Tech
Phone Number: 262-728-7225
Reporting Period: 12/01/2018 - 12/31/2018
Form Due Date: 01/21/2019
Permit Number: 0055816

Date Received:	
DOC:	413232
FIN:	7072
FID:	265010900
Region:	Southeast Region
Permit Drafter:	Bryan D Hartsook
Reviewer:	Bryan D Hartsook
Office:	Milwaukee

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
	Sample Type	TOT DAILY	GRAB	GRAB	GRAB	CALCULATED
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	Day 1	0.427380				
	2	0.428456				
	3	0.429384				
	4	0.427355				
	5	0.427489				
	6	0.428315				
	7	0.427884				
	8	0.426956				
	9	0.426981				
	10	0.426992				
	11	0.427364	52.88	2.0	<0.024	0
	12	0.428577				
	13	0.428479				
	14	0.428045				
	15	0.427402				
	16	0.428274				
	17	0.428319				
	18	0.429587				
	19	0.428699				
	20	0.428998				
	21	0.429668				
	22	0.430716				
	23	0.430061				
	24	0.429373				
	25	0.428147				
	26	0.429787				
	27	0.429220				
	28	0.432412				
	29	0.431253				
	30	0.431834				
	31	0.432356				

	Sample Point	001	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	211	487	457	388	388
	Description	Flow Rate	Temperature	Suspended Solids, Total	Phosphorus, Total	Phosphorus, Total
	Units	MGD	degF	mg/L	mg/L	lbs/day
Summary Values	**Monthly Avg**	0.428895581	52.88	2	0	0
	Daily Max	0.432412	52.88	2	<0.024	0
	Daily Min	0.426956	52.88	2	<0.024	0
Limit(s) in Effect	**Monthly Avg**				0.24 0	
QA/QC Information	**LOD**			1.9	0.024	
	LOQ			5	0.05	
	QC Exceedance	N	N	Y	N	N
	Lab Certification			999580010	999580010	

	Sample Point	001	001	001	001
	Description	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole	Storm sewer manhole
	Parameter	490	508	561	517
	Description	Tetrachloroethylene	Trichloro- ethylene	1,1,1-Trichloro- ethane	Vinyl chloride
	Units	ug/L	ug/L	ug/L	ug/L
	Sample Type	GRAB	GRAB	GRAB	GRAB
	Frequency	MONTHLY	MONTHLY	MONTHLY	MONTHLY
Sample Results	**Day 1**				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11	<0.37	0.48	<0.38	<0.20
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				

	Sample Point	001		001		001		001	
	Description	Storm sewer manhole		Storm sewer manhole		Storm sewer manhole		Storm sewer manhole	
	Parameter	490		508		561		517	
	Description	Tetrachloroethylene		Trichloro- ethylene		1,1,1-Trichloro- ethane		Vinyl chloride	
	Units	ug/L		ug/L		ug/L		ug/L	
Summary Values	**Monthly Avg**	0		0.48		0		0	
	Daily Max	<0.37		0.48		<0.38		<0.2	
	Daily Min	<0.37		0.48		<0.38		<0.2	
Limit(s) in Effect	**Monthly Avg**	50	0	50	0	50	0	10	0
QA/QC Information	**LOD**	0.37		0.16		0.38		0.2	
	LOQ	1		0.5		1		1	
	QC Exceedance	N		Y		N		N	
	Lab Certification	999580010		999580010		999580010		999580010	

Footnotes (DNR Use Only; Instructions for completing this form that are unique for your facility may be displayed here.)

General Remarks

The total flow rates were calculated from daily flow readings recorded by the Badger U500w ultrasonic meters installed on the discharge lines of Delavan facility extraction wells.

Laboratory Quality Control Comments

J = Result is less than the LOQ but greater than the LOD and the concentration is an approximate value.

GEOTRANS, INC. FIELD WATER QUALITY SAMPLING AND ANALYSIS FORM

PROJECT INFORMATION		INSTRUMENTS	
PROJECT	Delavan Facility Remedial Action	Temp. & pH	HI98129
PROJECT NO.	Delavan Well #4 WPDES	Conductivity	HI98129
LOCATION	Delavan, WI	ORP	
PERSONNEL	Dennis	DO	

SAMPLE POINT	SS-1	SS-1	SS-1	SS-1	SS-1
WATER TYPE	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
DATE (month/day/year)	12/11/18				
CLOCK TIME (Military)	0938				
DEPTH TO WATER (ft)*	NA	NA	NA	NA	NA
MEASURED WELL DEPTH (ft)*	NA	NA	NA	NA	NA
CASING VOLUME (gallons)	NA	NA	NA	NA	NA
PURGE VOLUME (gallons)	NA	NA	NA	NA	NA
DEPTH SAMPLE TAKEN (ft)*	NA	NA	NA	NA	NA
SAMPLING DEVICE	HI98129				
FIELD TEMPERATURE (°C)	11.6				
pH	7.62				
ELEC. COND. (uS/cm) Measured	1328				
ELEC. COND. (uS/cm) at 25° C					
ORP (mV)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (ppm)	NA	NA	NA	NA	NA
DISSOLVED OXYGEN (% Sat.)	NA	NA	NA	NA	NA
COLOR	CLEAR				
ODOR	NONE				
CLARITY	CLEAR				

SAMPLING PARAMETERS	# OF CONTAINERS & VOLUME; CONTAINER TYPE (A = AMBER GLASS; G = GLASS; P = PLASTIC); PRESERVATIVE TYPE (L = LAB ADDED; F = FIELD ADDED) OR NEUTRAL; FILTERED (YES or NO)				
TCE, 1,1,1-TCA, 1,1,2-TCA, PCE, Vinyl Chloride (EPA Method SW 8260B)	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.	3 – 40 ml; G; HCl – L; No.

Comments: TCE = Trichloroethene. TCA = Trichloroethane. PCE = Tetrachloroethene.

NAME OF LABORATORY	Test America	Test America	Test America	Test America	Test America
DATE SENT TO LAB	12-11-18				
SAMPLER'S NAME	Dennis				

*Measured from top of well casing.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-156064-1
Client Project/Site: Delavan Well #4 WPDES

For:
Pentair Water
293 Wright Street
Delavan, Wisconsin 53115

Attn: Dennis Schwind

Authorized for release by:
12/28/2018 12:13:50 PM
Jim Knapp, Project Manager II
(630)758-0262
jim.knapp@testamericainc.com

Designee for

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-156064-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-156064-1

Job ID: 500-156064-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-156064-1

Comments
No additional comments.

Receipt
The samples were received on 12/12/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: SS1

Date Collected: 12/11/18 09:38
Date Received: 12/12/18 09:30

Lab Sample ID: 500-156064-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			12/22/18 01:11	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			12/22/18 01:11	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			12/22/18 01:11	1
Trichloroethene	**0.48**	**J**	0.50	0.16	ug/L			12/22/18 01:11	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			12/22/18 01:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 126*		*12/22/18 01:11*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*12/22/18 01:11*	*1*
Dibromofluoromethane	*96*		*75 - 120*		*12/22/18 01:11*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*12/22/18 01:11*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**2.0**	**J**	5.0	1.9	mg/L			12/13/18 13:59	1
Chloride	**210**		10	5.0	mg/L			12/27/18 14:11	5
Phosphorus as P	<0.024		0.050	0.024	mg/L		12/26/18 11:21	12/27/18 14:58	1

Client Sample ID: Trip Blank

Date Collected: 12/11/18 00:00
Date Received: 12/12/18 09:30

Lab Sample ID: 500-156064-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			12/22/18 00:12	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			12/22/18 00:12	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			12/22/18 00:12	1
Trichloroethene	<0.16		0.50	0.16	ug/L			12/22/18 00:12	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			12/22/18 00:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 126*		*12/22/18 00:12*	*1*
4-Bromofluorobenzene (Surr)	*106*		*72 - 124*		*12/22/18 00:12*	*1*
Dibromofluoromethane	*95*		*75 - 120*		*12/22/18 00:12*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*12/22/18 00:12*	*1*

Lab Chronicle

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-156064-1

Client Sample ID: SS1

Lab Sample ID: 500-156064-1

Date Collected: 12/11/18 09:38

Matrix: Water

Date Received: 12/12/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	465920	12/22/18 01:11	PMF	TAL CHI
Total/NA	Analysis	SM 2540D		1	464596		SMO	TAL CHI
					(Start)	12/13/18 13:59		
					(End)	12/13/18 14:00		
Total/NA	Analysis	SM 4500 Cl- E		5	466603	12/27/18 14:11	EAT	TAL CHI
Total/NA	Prep	SM 4500 P B			466368	12/26/18 11:21	BRS	TAL CHI
Total/NA	Analysis	SM 4500 P E		1	466632		BRS	TAL CHI
					(Start)	12/27/18 14:58		
					(End)	12/27/18 14:58		

Client Sample ID: Trip Blank

Lab Sample ID: 500-156064-2

Date Collected: 12/11/18 00:00

Matrix: Water

Date Received: 12/12/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	465920	12/22/18 00:12	PMF	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-156064-1

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-19

Method Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-156064-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 P E	Phosphorus	SM	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
SM 4500 P B	Phosphorous, Total and Ortho	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Pentair Water
Project/Site: Delavan Well #4 WPDES

TestAmerica Job ID: 500-156064-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-156064-1	SS1	Water	12/11/18 09:38	12/12/18 09:30
500-156064-2	Trip Blank	Water	12/11/18 00:00	12/12/18 09:30

TestAmerica

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2417 Bond Street, University Park, IL 6048
Phone: 708.534.5200 Fax: 708.534.5

500-156064 COC

Chain of Custody Record

Lab Job #: 500-156064

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 2.4

(optional) Report To		(optional) Bill To	
Contact:	Max Geyer Mark Manthey Dennis Schaving	Contact:	
Company:	Pentair Flow Technologies LLC	Company:	
Address:	293 Wright St	Address:	
Address:	Delavan WI 53115	Address:	
Phone:	262-728-5551	Phone:	
Fax:		Fax:	
E-Mail:		PO#/Reference#	

Client	Client Project #
PENTAIR FLOW TECHNOLOGIES LLC	
Project Name	
Delavan Well #4 / WPDES	
Project Location/State	Lab Project #
Delavan WI	
Sampler	Lab PM
Dennis	

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Preservative	HCl	HCl	HCl	HCl	H_2SO_4					Comments
							Parameter	TCE	TCA	PCE	Vinyl Chloride	Phosphorus	TSS	Chloride			
1		BS1	12/11/18	0938	5	W		X	X	X	X	X	X	X			
2		Trip Blank			1												

Turnaround Time Required (Business Days)

___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other

Requested Due Date _____

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Dennis Schaving	PENTAIR	12-11-18	0955	[illegible]	TA-ERL	12/12/18	0930
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier

Shipped Fed-X

Hand Delivered

Matrix Key

WW – Wastewater	SE – Sediment
W – Water	SO – Soil
S – Soil	L – Leachate
SL – Sludge	WI – Wipe
MS – Miscellaneous	DW – Drinking Water
OL – Oil	O – Other
A – Air	

Client Comments

Lab Comments:

12/28/2018

Login Sample Receipt Checklist

Client: Pentair Water

Job Number: 500-156064-1

Login Number: 156064
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	