ZF Active Safety US Inc.

PROGRESS REPORT NO. 9

Former Kelsey-Hayes Company Site, Milford, Michigan

Administrative Order for Response Activity, EGLE Docket No. AO-RRD-22-001

January 13, 2023

PROGRESS REPORT NO. 9
FORMER KELSEY-HAYES COMPANY
MILFORD, MICHIGAN
ADMINISTRATIVE ORDER FOR RESPONSE ACTIVITY EGLE
DOCKET NO. AO-RRD-22-001

This progress report has been prepared and is being submitted pursuant to Section XII of the Administrative Order for Response Activity, Docket No. AO-RRD-22-001 (AO) issued by the Department of Environment, Great Lakes, and Energy (EGLE) to ZF Active Safety US Inc. (ZF or Respondent) on March 16, 2022 (effective date), with respect to the former Kelsey-Hayes site in Milford, Michigan (the Site). This progress report provides information regarding response activities and other matters related to the AO that occurred from December 15, 2022 through January 12, 2023.

Chronological Description of Activities Conducted during the Specified Reporting Period:

- On December 19, 2022, additional comments were received from Tiffany Yusko-Kotimko (EGLE Drinking Water and Environmental Health Division, Warren District Office) via electronic mail (email) on ZF's Permit Application for Water Supply Systems pursuant to Act 399 for construction of the Village of Milford (VOM) treatment system improvements. A copy of the email is included in **Attachment 1**.
- On January 10, 2023, ZF received an email from EGLE regarding their review of ZF's Technical Summary Report, dated November 15, 2022. The email indicated that their review had been completed, and they concur that the conclusions are technically sound and protective of public health since there is not currently a threat to the VOM drinking water supply. However, as a result of the review, EGLE had two additional requests including the development of a cross section and removal of a sentence from the contingency plan section of the Technical Summary Report. ZF's intent is to provide the cross section and remove the sentence. A copy of the email is included in **Attachment 2**.
- Observation Wells OW-16D2, OW-16D2R1, and OW-16D2R2 were sampled on January 10, 2023. The samples were submitted to Eurofins Canton, Ohio (Eurofins) for analysis of volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Test Method 8260D. Laboratory analytical results will be submitted to EGLE and the VOM when available.

Results of Sampling and Tests and Other Data

- The laboratory analytical report for the samples collected on December 7, 2022, at Observation Wells OW-16D2, OW-16D2R1, and OW-16D2R2 was submitted to EGLE and VOM on December 21, 2022, and is included in **Attachment 3**. Vinyl chloride was not detected at or above the reporting limit of 1.0 microgram per liter (µg/L) in any of the December 7, 2022 samples.
- Observation Wells OW-16D2, OW-16D2R1, and OW-16D2R2 were sampled on January 10, 2023. The samples were submitted to Eurofins for analysis of VOCs using USEPA Test Method 8260D. Laboratory analytical results will be submitted to EGLE and the VOM when available.

Status of Access Issues

- There have been no issues with access during the reporting period.

Scheduled for the Next Reporting Period

- Submit laboratory analytical results from the samples collected on January 10, 2023, at Observation Wells OW-16D2, OW-16D2R1, and OW-16D2R2 to EGLE and the VOM.
- Conduct sampling at Observation Well OW-16D2 during the month of February 2023, with analysis conducted by Eurofins within 10 to 14 days.
- Conduct sampling at Observation Wells OW-16D2R1 and OW-16D2R2 during the month of February 2023, with analysis conducted by Eurofins within 10 to 14 days.
- Respond to comments received from Ms. Yusko-Kotimko (EGLE) on ZF's Permit Application for Water Supply Systems pursuant to Act 399 for construction of the VOM treatment system improvements.
- Provide the additional cross section and remove the sentence from the contingency plan section of the Technical Summary Report as requested in EGLE's January 10, 2022 email. A revised Technical Summary Report and the cross section will be submitted to EGLE.

Other Relevant Information

- No other relevant information was identified during this reporting period.

Attachments

1. Email from Tiffany Yusko-Kotimko (EGLE) RE: Comments on Permit Application
2. Email from Brandon Alger (EGLE) RE: Review of Technical Summary Report
3. Laboratory Analytical Report (Observation Wells OW-16D2, OW-16D2R1, and OW-16D2R2)

ATTACHMENT 1

Email from Tiffany Yusko-Kotimko (EGLE) RE: Comments on Permit Application

From: Yusko-Kotimko, Tiffany (EGLE) <YuskoKotimkoT@michigan.gov>
Sent: Monday, December 19, 2022 1:04 PM
To: Hitts, Brad
Cc: cwuerth; Detwiler Scott MSA HEEN; mkarll; McInnis, John; Bleazard Robert; Alger, Brandon (EGLE)
Subject: RE: Milford (4390) - Air Stripper Permit Comments

Hi Brad,

I have reviewed the additional information and documents provided by the Village of Milford air stripper permit. I have the following additional comments:

- For the NSF certification for Aluminum, this is the body of the stripper, correct? Is there a specific product(s) that will be specifically used on the list provided?
- For NSF certification for gaskets, are the certain products they intend to use off this list? Is it the EPDM Sheet Gasket Material (47501)?
- Can DeLoach provide a cross section of the general internal set up that shows the various components, where grates are located, where packing material is located, spray equipment, etc.?
- Provide calculations used to determine the height, diameter, package height, and determine removal rates (ex: formulas, assumptions, input values, etc.). This is needed because a pilot study was not conducted for this specific project. This requested has been made previously. Please provide the detailed calculations.
- Provide the revised sheet G-004, G-005, M-001, M-002 that reflects the changes to the specifications and plans. I may have additional comments following my review of the revised plan sheets.
- 5. For the propeller style meter, is the propeller material certified? Are there any other parts that are in contact with water and has that certification been verified? Please pass along the third-party certification for the parts of the meter in contact with potable water. Include in the specifications on sheet G-004, the information provided in the response, if appropriate. Alternatively, you may propose a meter that carries an NSF 61 certification.
- 15. Air stripper water distribution nozzles – Are the proposed nozzles made of the same material and is the material NSF61 certified? If not, then header lateral distribution system with NSF spray nozzles will likely be required. If this requires a modification in the pump, then please take this into account.
- 23. Overflow discharge line – If the blind flange at the base of the strippers is on (which would normally be off) and the wells are pumping, then the air strippers could overflow. The overflow would be out the top through the screen and run down the walls/roof of the plant. Correct? This would also likely cause a failure in the blowers. Would this trip any alarms associated with the stripper? Other alarms will likely be trigger such as the low water level in the detention basin.

Please contact me if you have any questions.

Regards,

Tiffany

Tiffany Yusko-Kotimko
Environmental Engineer / Acting District Supervisor
EGLE Drinking Water and Environmental Health Division | Warren District Office | 586-817-9120

From: Hitts, Brad <Brad.Hitts@arcadis.com>
Sent: Wednesday, September 14, 2022 3:15 PM
To: Yusko-Kotimko, Tiffany (EGLE) <YuskoKotimkoT@michigan.gov>
Cc: cwuerth <cwuerth@villageofmilford.org>; Detwiler Scott MSA HEEN <scott.detwiler@zf.com>; mkarll <mkarll@villageofmilford.org>; McInnis, John <John.McInnis@arcadis.com>; Bleazard Robert <Robert.Bleazard@zf.com>; Vant Erve, Joost (DHHS) <vantErveJ@michigan.gov>; Alger, Brandon (EGLE) <AlgerB@michigan.gov>
Subject: RE: Milford (4390) - Air Stripper Permit Comments

Tiffany,
Please see replies in red below. We have not yet made the revisions to the drawings and specifications. I want to first confirm the replies are generally acceptable. Or if not, make revisions as needed. Then we will make the changes to the drawings and specifications and submit for review.
Regards,
Brad.

1. The Design Memo in the fourth paragraph on page 1 stated that the manufacturer calculated removal efficiencies and preliminary layout drawing were attached to the memo, and on page 2, the last sentence states that a preliminary cut sheet and pump curve was provided with the memo. However, this was not the case. Please provide this important information.
   See attached.

2. Sheet G-004, under Process Pipe & Fittings A. 6 Gaskets – Typically, fluroelastomer gaskets are required where chlorinated compounds are present. Do you have documentation that nitrile gaskets will have the chemical resistance to the low-level chlorinated compounds?
   No. Specification revised to require fluroelastomer gaskets, NSF61.

3. Sheet G-004, under Process Pipe & Fittings B. 1 & B. 2 - PVC pipe must be certified to NSF 14 (which includes NSF 61).
   Certification to NSF14 added to specification.

4. Sheet G-004, under Process Pipe & Fittings B. 3 - Add “for potable water systems” after “for piping containing chlorine solution”.
   Added “for potable water systems”.

5. Sheet G-004, under Process Specialties A – Why was a propeller style meter selected? I believe most of the meters at the plant are mag meters. What is the pressure loss across this meter? What are the requirements for straight length of pipe upstream and downstream and is this being met? Does it have a strainer that would requirement regular cleaning or maintenance? Does the meter meet AWWA standard C704? What is the flow rate range? Please provide the third-party certification to NSF 61. Are there any chemical compatibility issues for the polypropylene propellers?
   To match their existing raw and finished water meters. Based on photographs from site visit and our communication with vendor, we believe the existing meters at the plant are as we have specified here. Pressure loss across the meter is less than 0.1 psi at 1,400 gpm. Straight pipe length requirements are 5x the piping diameter upstream (60”), 1x the piping diameter downstream (12”). Straight pipe requirements are being met. The meter does not have a strainer. The meter meets AWWA C704. It has a standard flow rate range of 200-3,000 gpm for 12” diameter meter. These meters have a NSF61 certified internal lining, but the unit is not

NSF61 certified. If that is not acceptable, we will change to a mag meter with NSF61 liner. No known or expected chemical compatibility issues.

6. Sheet G-004, under Process Specialties B and C - The description for both refers to "Bunan NSF 61 Gaskets"; however, upgraded gaskets are being required. Therefore, these should be fluroelastomer gaskets as noted above. Specification revised to require fluroelastomer gaskets, NSF61.

7. Sheet G-004, under Process Specialties C - Is the "optional chlorine injection" referring to a fitting that would accept an injection quill? Please also specify the position of the tap on the pipe. The preferred injection location is typically in the lower half of the pipe at a 45-degree angle (4 or 8 o'clock positions) on a horizontal pipe. The location where this will be installed is not shown on the plans. Please identify the location on the plan sheets M-001 and M-002.
   The service saddle has a ¾" threaded connection. A plugged threaded PVC quill has been added to specification for future connection. Injection location and position (lower half of pipe at 45-degree angle) added to drawings.

8. Sheet G-004, under Process Piping Installation A - Please include additional information to this section. There are some typical processes that could be included here.
   Specification expanded to include additional installation detail.

9. Sheet G-004, under Disinfection G - This will need to state that (1) bacteriological samples are to be collected following the completion of disinfection and final flushing, (2) collect two samples 24-hours apart from each sampling point, and (3) samples are to be analyzed at a State-approved drinking water laboratory.
   Specification revised to include these requirements.

10. Sheet G-004, under Cleaning - Please include additional information to this section. There are some recommendations under C653-20 4.1 that should be incorporated into this section such as those related to what type of cleaning agents would be acceptable. The manufacture may also have some typical procedures for the packed tower.
    This heading has been deleted. Cleaning requirements have been included in the specification for piping and air stripping towers. For piping; thoroughly clean all piping in a manner approved by Owner prior to installation which complies with AWWA C651-14 4.8 Preventative and Corrective Measures during New Construction. For Air Stripping Tower; thoroughly clean wetted tower components in a manner approved by Owner prior to installation which complies with AWWA C653-20 4.1 Cleaning.

11. Sheet G-004, under Disinfection H - What is the 50 to 100 ppm and the 25 mg/L based on? The three AWWA standards, C651, C653 and C654, have different requirements for the concentration of the solution. For example, C653 requires 50 mg/L while C651 requires 25 mg/L and a minimum of 10 mg/L. Specification has been revised to reference chlorine solution concentrations and methods from relevant AWWA standards. For the wells and well pumps (AWWA C654), piping (AWWA C651), and air stripping tower (AWWA C653).

12. Sheet G-004, under Disinfection I - Is the phrase "closed drain line" correct? Is the highly chlorinated water being containerized prior to disposal? What is the likely disposal method? Depending on where the chlorinated water is being discharged to, it may require dichlorination (C655). There is also a NPDES General Permit that covers this type of discharge if discharging to surface waters of the state.
    Method of disposal or discharge to be determined by installing contractor. This paragraph has been revised to reflect the relevant AWWA standards. The environment to which the chlorinated water is to be discharged to shall be inspected. If there is any possibility that the chlorinated discharge will cause damage to the environment, a neutralizing chemical shall be applied to the water to be wasted to thoroughly neutralize the residual chlorine (see ANSI/AWWA C655 for neutralizing chemicals). Where necessary, federal, state, local, or provincial regulatory agencies should be contacted to determine special provisions for the disposal of heavily chlorinated water.

13. Sheet G-005, under Air Stripping Towers, Design Requirements, A.6. – Please list the air to water ratio for all flow scenarios. Does the removal rate for vinyl chloride change under the various scenarios?
    Air to water ratio added to specifications. See calculation datasheet for the removal rates under various scenarios.

14. Sheet G-005, under Air Stripping Towers, Design Requirements, A.7. – Please provide the range of water loading rate for the varying flow conditions (split flow (700 gpm), 1400 gpm, and 2100 gpm). Does the removal rate for vinyl chloride change under the various scenarios?
    Range of water loading rates added to specifications. See calculation datasheet for removal rates.

15. Is there any further information regarding NSF 61 certification for air stripping components - body, water distribution tray, packing support plates, etc.? Documents were provided for Wilsonart LLC (NSF51 certification), Specification Rubber Products, Inc. (NSF61 certification), EPDM Sheet Rubber Material (webpage noting NSF61 certification, but the certification), BETE Spray Technologies webpage (certification?), and Charlotte Pie & Foundry Company solvent cement (NSF-14 certification). Are these components of the tower? If so, please clarify what components these are in the tower. Please circle or identify the key information/applicable products.
    Labels added to the information (attached). For the water distribution nozzles, the intent is to match the existing aerator's pan type distributor nozzles make and model. However, we've determined they do not carry the NSF61 certification. A cut sheet is attached for general information. To date, the tower vendor has not been able to locate an alternate manufacturer of an equivalent nozzle that carriers the NSF61 certification. Can we request an exemption for the distribution nozzles if no certified suitable equivalent can be found? Otherwise, we would need to go to a header lateral distribution system with NSF spray nozzles. With this there is a higher inlet pressure requirement. We would need to increase the pump design point (TDH) to accommodate.

16. Sheet G-005, under Air Stripping Tower Description, F. - What is the material of construction for the tripack media? It is noted as polypropylene in the box 6 of the permit. Based on the NSF61 certification, only polypropylene material was approved. This needs to be stated in the description. Was the material's chemical compatibility with vinyl chloride, cis-1,2-DCE, or chlorine solutions (although not pre-chlorinating at this time) confirmed?
    Polypropylene is the material of construction. It has been added to the specifications. No believed chemical compatibility issues with low level volatile organic compounds in the raw water, or with chlorine concentrations associated with drinking water.

17. Sheet G-005, under Air Stripping Tower Description, H. - Please clarify that the mist eliminator is above the water distribution tray.
    Confirmed. Added to specifications.

18. Sheet G-005, under Air Stripping Tower Description - There is no mention of side wiper redistribution rings/devices that would prevent flow/short circuiting along the walls of the tower. Please explain why this was not included.
    Requirement for side wiper redistribution ring every 10 feet has been added to the specifications.

19. Sheet G-005, under Air Stripping Tower Description L - Will the air outlet have a shroud that extends over the screen to prevent rainwater, etc. from entering the screen and will there be a lip to prevent drainage from the tower roof from entering the tower?
    Yes. Indication added to specification.

20. Sheet G-005, under Air Stripping Tower Description – Is an effluent sump being provided?
    No. Effluent sump is existing concrete detention tank below.

21. Sheet G-005, under Air Stripping Tower Description – There is no mention of sample taps on the influent and effluent piping. Typically, these would be used to evaluate removal efficiency of each tower and are helpful when trouble shooting operational problems. Why were these taps not included?
Influent samples can be obtained from existing taps at well pump discharge lines. Effluent sample tap has been added to the base of each tower.

22. Sheet G-005, under Air Stripping Tower Description – There is no mention of a blow-off line that could be used to discharge water/cleaning solutions when cleaning the tower. Why wasn't this included?
A valved blow off/drain line at the base of the tower that could be used to discharge water/cleaning solutions will be included. Specifications have been revised to require.

23. Sheet G-005, under Air Stripping Tower Description – There is no mention of overflow discharge line. Please provide an explanation of what would happen if the tower overflows.
The existing sump (detention tank) has two 12" overflows. This would prevent the water level from backing up into the tower.

24. As proposed on plan sheet M-001 and M-002, there isn't a valve at the effluent of each tower. Therefore, if one tower has ben taken out of service it can't be fully isolated from the system. Therefore, any debris or cleaning solutions/rinsate would be able to enter the clear well. Valves should be added on the effluent piping. The existing aerators do not have isolation valves. A discharge valve would be difficult to access directly beneath the tower and would also require the tower to be elevated to accommodate. In lieu of a discharge valve, a flange on the top of the outlet pipe is being provided with a blind flange (supplied loose); along with an access hatch at the outlet. To isolate, the access hatch would need to be removed and the blind flange installed. This would direct cleaning solutions and rinsate to the blowoff/drain and isolate the unit from the detention tank below.

25. Sheet G-005, under Air Assembly – Is the air intake protected with 24-mesh screen and a louver or shroud? Is the screen accessible for maintenance and inspection? Yes. Indication added to specification.

26. Please clarify the method for cleaning media. I recalled that there was some discussion that the media would typically be removed and cleaned externally. How would build up on the interior surfaces of the tower by cleaned? It is recommended that the packing be removed and cleaned externally. Interior surfaces of the tower could be cleaned by powerwashing with the unit isolated from the detention tank below via installation of the blind flange on the outlet pipe.

27. The plans M-001 & M002 do not show a safety cage on the ladder. Please confirm whether a safety cage is required by OHSA. A ladder safety system has been included in the specification for the ladder. Safety cage is not required by OSHA.

28. Sheet G-005 under Well Pumps A 1 and 2 – Why is there a 2nd design point? Not required to be included in specification for this application. Deleted to avoid confusion.

Brad Hitts PE
Project Engineer
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ARCADIS

From: Yusko-Kotimko, Tiffany (EGLE) <YuskoKotimkoT@michigan.gov>
Sent: Tuesday, August 9, 2022 9:22 AM
To: Hitts, Brad <Brad.Hitts@arcadis.com>
Cc: cwuerth <cwuerth@villageofmilford.org>; Detwiler Scott MSA HEEN <scott.detwiler@zf.com>; mkarll <mkarll@villageofmilford.org>; McInnis, John <John.McInnis@arcadis.com>; Bleazard Robert <Robert.Bleazard@zf.com>; Vant Erve, Joost (DHHS) <vantErveJ@michigan.gov>; Alger, Brandon (EGLE) <algerb@michigan.gov>
Subject: Milford (4390) - Air Stripper Permit Comments

Hi Brad,

I have reviewed the permit application for the Groundwater Treatment System Improvements (upgrade to air strippers) for the Village of Milford to address vinyl chloride should it enter the drinking water wells. Below is a summary of my comments. Revised pages may be provided by email for my review. Hard copies will be requested as needed.

- The Design Memo in the fourth paragraph on page 1 stated that the manufacturer calculated removal efficiencies and preliminary layout drawing were attached to the memo, and on page 2, the last sentence states that a preliminary cut sheet and pump curve was provided with the memo. However, this was not the case. Please provide this important information.
- Sheet G-004, under Process Pipe & Fittings A. 6 Gaskets – Typically, fluroelastomer gaskets are required where chlorinated compounds are present. Do you have documentation that nitrile gaskets will have the chemical resistance to the low-level chlorinated compounds?
- Sheet G-004, under Process Pipe & Fittings B. 1 & B. 2 - PVC pipe must be certified to NSF 14 (which includes NSF 61).
- Sheet G-004, under Process Pipe & Fittings B. 3 - Add “for potable water systems” after “for piping containing chlorine solution”.
- Sheet G-004, under Process Specialties A – Why was a propeller style meter selected? I believe most of the meters at the plant are mag meters. What is the pressure loss across this meter? What are the requirements for straight length of pipe upstream and downstream and is this being met? Does it have a strainer that would requirement regular cleaning or maintenance? Does the meter meet AWWA standard C704? What is the flow rate range? Please provide the third-party certification to NSF 61. Are there any chemical compatibility issues for the polypropylene propellers?
- Sheet G-004, under Process Specialties B and C - The description for both refers to “Bunan NSF 61 Gaskets”; however, upgraded gaskets are being required. Therefore, these should be fluroelastomer gaskets as noted above.
- Sheet G-004, under Process Specialties C - Is the “optional chlorine injection” referring to a fitting that would accept an injection quil? Please also specify the position of the tap on the pipe. The preferred injection location is typically in the lower half of the pipe at a 45-degree angle (4 or 8 o’clock positions) on a horizontal pipe. The location where this will be installed is not shown on the plans. Please identify the location on the plan sheets M-001 and M-002.
- Sheet G-004, under Process Piping Installation A - Please include additional information to this section. There are some typical processes that could be included here.
- Sheet G-004, under Disinfection G - This will need to state that (1) bacteriological samples are to be collected following the completion of disinfection and final flushing, (2) collect two samples 24-hours apart from each sampling point, and (3) samples are to be analyzed at a State-approved drinking water laboratory.
- Sheet G-004, under Cleaning - Please include additional information to this section. There are some recommendations under C653-20 4.1 that should be incorporated into this section such as those related to what type of cleaning agents would be acceptable. The manufacture may also have some typical procedures for the packed tower.

- Sheet G-004, under Disinfection H - What is the 50 to 100 ppm and the 25 mg/L based on? The three AWWA standards, C651, C653 and C654, have different requirements for the concentration of the solution. For example, C653 requires 50 mg/L while C651 requires 25 mg/L and a minimum of 10 mg/L.
- Sheet G-004, under Disinfection I - Is the phrase "closed drain line" correct? Is the highly chlorinated water being containerized prior to disposal? What is the likely disposal method? Depending on where the chlorinated water is being discharged to, it may require dichlorination (C655). There is also a NPDES General Permit that covers this type of discharge if discharging to surface waters of the state.
- Sheet G-005, under Air Stripping Towers, Design Requirements, A.6. – Please list the air to water ratio for all flow scenarios. Does the removal rate for vinyl chloride change under the various scenarios?
- Sheet G-005, under Air Stripping Towers, Design Requirements, A.7. – Please provide the range of water loading rate for the varying flow conditions (split flow (700 gpm), 1400 gpm, and 2100 gpm). Does the removal rate for vinyl chloride change under the various scenarios?
- Is there any further information regarding NSF 61 certification for air stripping components - body, water distribution tray, packing support plates, etc.? Documents were provided for Wilsonart LLC (NSF51 certification), Specification Rubber Products, Inc. (NSF61 certification), EPDM Sheet Rubber Material (webpage noting NSF61 certification, but the certification), BETE Spray Technologies webpage (certification?), and Charlotte Pie & Foundry Company solvent cement (NSF-14 certification). Are these components of the tower? If so, please clarify what components these are in the tower. Please circle or identify the key information/applicable products.
- Sheet G-005, under Air Stripping Tower Description, F. - What is the material of construction for the tripack media? It is noted as polypropylene in the box 6 of the permit. Based on the NSF61 certification, only polypropylene material was approved. This needs to be stated in the description. Was the material's chemical compatibility with vinyl chloride, cis-1,2-DCE, or chlorine solutions (although not pre-chlorinating at this time) confirmed?
- Sheet G-005, under Air Stripping Tower Description, H. - Please clarify that the mist eliminator is above the water distribution tray.
- Sheet G-005, under Air Stripping Tower Description - There is no mention of side wiper redistribution rings/devices that would prevent flow/short circuiting along the walls of the tower. Please explain why this was not included.
- Sheet G-005, under Air Stripping Tower Description L - Will the air outlet have a shroud that extends over the screen to prevent rainwater, etc. from entering the screen and will there be a lip to prevent drainage from the tower roof from entering the tower?
- Sheet G-005, under Air Stripping Tower Description – Is an effluent sump being provided?
- Sheet G-005, under Air Stripping Tower Description – There is no mention of sample taps on the influent and effluent piping. Typically, these would be used to evaluate removal efficiency of each tower and are helpful when trouble shooting operational problems. Why were these taps not included?
- Sheet G-005, under Air Stripping Tower Description – There is no mention of a blow-off line that could be used to discharge water/cleaning solutions when cleaning the tower. Why wasn't this included?
- Sheet G-005, under Air Stripping Tower Description – There is no mention of overflow discharge line. Please provide an explanation of what would happen if the tower overflows.
- As proposed on plan sheet M-001 and M-002, there isn't a valve at the effluent of each tower. Therefore, if one tower has ben taken out of service it can't be fully isolated from the system. Therefore, any debris or cleaning solutions/rinsate would be able to enter the clear well. Valves should be added on the effluent piping.
- Sheet G-005, under Air Assembly – Is the air intake protected with 24-mesh screen and a louver or shroud? Is the screen accessible for maintenance and inspection?
- Please clarify the method for cleaning media. I recalled that there was some discussion that the media would typically be removed and cleaned externally. How would build up on the interior surfaces of the tower by cleaned?
- The plans M-001 & M002 do not show a safety cage on the ladder. Please confirm whether a safety cage is required by OHSA.
- Sheet G-005 under Well Pumps A 1 and 2 – Why is there a 2nd design point?

Please contact me if you have any questions.

Regards,

Tiffany

Tiffany Yusko-Kotimko
Environmental Engineer
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes & Energy
Warren District Office | 27700 Donald Court | Warren, MI 48092
586-817-9120 | YuskoKotimkoT@michigan.gov

****ATTENTION: Our office is closed to the public, but we are receiving deliveries.****

ATTACHMENT 2

Email from Brandon Alger (EGLE) RE: Review of Technical Summary Report

From: Alger, Brandon (EGLE) <AlgerB@michigan.gov>
Sent: Tuesday, January 10, 2023 9:40 AM
To: Detwiler Scott MSA HEEN <Scott.Detwiler@zf.com>
Cc: Bleazard Robert MSA HEEM <Robert.Bleazard@zf.com>; Wilson, Cheryl (EGLE) <WILSONC3@michigan.gov>
Subject: Technical Summary Report - Follow Up

Scott,

Happy New Year. I am following up on the Kelsey-Hayes property technical report. My team has completed its review of the report and concur that the conclusions are technically sound and protective of public health indicating there is not currently a threat to the Village of Milford drinking water supply. As this has moved up through our management team and received final review from the AG, they had a two additional requests:

1. EGLE would like to see a Cross Section of the VAP wells and their relationship to the problematic well (OW-16D2) and the village water supply.
2. On page 9/10, remove the sentence which reads, "*…If the additional information indicates that the former Kelsey Hayes site is a valid potential source of vinyl chloride in the area of the Observation Wells, then ZF will continue its obligations under this Contingency Plan.*"

My understanding is that our enforcement division has been in the process of drafting a replacement document for the AOC to be discussed with ZF once we can get buyoff from our Director, which requires the above adjustments. If this makes sense feel welcome to go ahead with this and get back to me; if you have any questions, I'm happy to discuss and can invite others should you wish to have their presence.

Thanks,
Brandon Alger | Senior Geologist
Remediation and Redevelopment Division | Warren District Office
Michigan Department of Environment, Great Lakes, and Energy
586-623-2839 | AlgerB@Michigan.gov
Follow Us | Michigan.gov/EGLE

ATTACHMENT 3

Laboratory Analytical Report (Observation Wells OW-16D2, OW-16D2R1, and OW-16D2R2)

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Scott Detwiler
ZF Active Safety and Electronics LLC
Tech 2
12025 Tech Center Drive
Livonia, Michigan 48150

Generated 12/21/2022 10:17:04 AM Revision 1

JOB DESCRIPTION

TRW Milford

JOB NUMBER

240-177639-1

Eurofins Canton
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

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Authorization

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Table of Contents

Definitions/Glossary

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Job ID: 240-177639-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-177639-1

Receipt
The samples were received on 12/8/2022 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.3° C.

GC/MS VOA
Method 8260D: The MSD for batch 555983 was analyzed outside of the tune time, due to an instrument fault. This is a batch QC sample; therefore, the data have been reported: (240-177639-C-2 MSD).

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

Method Summary

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN

Protocol References:

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

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-177639-1	OW-16D2	Water	12/07/22 09:25	12/08/22 08:00
240-177639-2	OW-16D2R1	Water	12/07/22 10:20	12/08/22 08:00
240-177639-3	OW-16D2R2	Water	12/07/22 11:10	12/08/22 08:00
240-177639-4	TRIP BLANK	Water	12/07/22 00:00	12/08/22 08:00
240-177639-5	EQUIPMENT BLANK	Water	12/07/22 11:30	12/08/22 08:00
240-177639-6	FIELD BLANK	Water	12/07/22 00:00	12/08/22 08:00

Detection Summary

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: OW-16D2 — Lab Sample ID: 240-177639-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	3.3		1.0		ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	17		1.0		ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	1.4		1.0		ug/L	1		8260D	Total/NA

Client Sample ID: OW-16D2R1 — Lab Sample ID: 240-177639-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.1		1.0		ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	19		1.0		ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	1.2		1.0		ug/L	1		8260D	Total/NA

Client Sample ID: OW-16D2R2 — Lab Sample ID: 240-177639-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	9.2		1.0		ug/L	1		8260D	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-177639-4

No Detections.

Client Sample ID: EQUIPMENT BLANK — Lab Sample ID: 240-177639-5

No Detections.

Client Sample ID: FIELD BLANK — Lab Sample ID: 240-177639-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: OW-16D2

Date Collected: 12/07/22 09:25
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-1

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
1,1-Dichloroethane	**3.3**		1.0		ug/L			12/15/22 15:59	1
cis-1,2-Dichloroethene	**17**		1.0		ug/L			12/15/22 15:59	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/15/22 15:59	1
trans-1,2-Dichloroethene	**1.4**		1.0		ug/L			12/15/22 15:59	1
Trichloroethene	1.0	U	1.0		ug/L			12/15/22 15:59	1
Benzene	1.0	U	1.0		ug/L			12/15/22 15:59	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 15:59	1
Carbon disulfide	1.0	U	1.0		ug/L			12/15/22 15:59	1
Bromoform	1.0	U	1.0		ug/L			12/15/22 15:59	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/15/22 15:59	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
Acetone	10	U	10		ug/L			12/15/22 15:59	1
Methyl acetate	10	U	10		ug/L			12/15/22 15:59	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
4-Methyl-2-pentanone (MIBK)	10	U	10		ug/L			12/15/22 15:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
Methylene Chloride	5.0	U	5.0		ug/L			12/15/22 15:59	1
Chloromethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
Bromomethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
Chlorodibromomethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
Toluene	1.0	U	1.0		ug/L			12/15/22 15:59	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:59	1
o-Xylene	1.0	U	1.0		ug/L			12/15/22 15:59	1
Chlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:59	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0		ug/L			12/15/22 15:59	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:59	1
Methyl tert-butyl ether	1.0	U	1.0		ug/L			12/15/22 15:59	1
Styrene	1.0	U	1.0		ug/L			12/15/22 15:59	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
Chloroethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 15:59	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:59	1
2-Hexanone	10	U	10		ug/L			12/15/22 15:59	1
2-Butanone (MEK)	10	U	10		ug/L			12/15/22 15:59	1
Ethylbenzene	1.0	U	1.0		ug/L			12/15/22 15:59	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/15/22 15:59	1
Methylcyclohexane	1.0	U	1.0		ug/L			12/15/22 15:59	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/15/22 15:59	1
Xylenes, Total	2.0	U	2.0		ug/L			12/15/22 15:59	1
Cyclohexane	1.0	U	1.0		ug/L			12/15/22 15:59	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 15:59	1
Chloroform	1.0	U	1.0		ug/L			12/15/22 15:59	1
m-Xylene & p-Xylene	2.0	U	2.0		ug/L			12/15/22 15:59	1
Vinyl chloride	1.0	U	1.0		ug/L			12/15/22 15:59	1
Ethylene Dibromide	1.0	U	1.0		ug/L			12/15/22 15:59	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/15/22 15:59	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:59	1

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: OW-16D2
Date Collected: 12/07/22 09:25
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	1.0	U	1.0		ug/L			12/15/22 15:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*78 - 122*		*12/15/22 15:59*	*1*
Dibromofluoromethane (Surr)	*88*		*73 - 120*		*12/15/22 15:59*	*1*
4-Bromofluorobenzene (Surr)	*84*		*56 - 136*		*12/15/22 15:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*		*12/15/22 15:59*	*1*

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: OW-16D2R1

Date Collected: 12/07/22 10:20
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-2

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
1,1-Dichloroethane	**2.1**		1.0		ug/L			12/15/22 14:43	1
cis-1,2-Dichloroethene	**19**		1.0		ug/L			12/15/22 14:43	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/15/22 14:43	1
trans-1,2-Dichloroethene	**1.2**		1.0		ug/L			12/15/22 14:43	1
Trichloroethene	1.0	U	1.0		ug/L			12/15/22 14:43	1
Benzene	1.0	U	1.0		ug/L			12/15/22 14:43	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 14:43	1
Carbon disulfide	1.0	U	1.0		ug/L			12/15/22 14:43	1
Bromoform	1.0	U	1.0		ug/L			12/15/22 14:43	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/15/22 14:43	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
Acetone	10	U	10		ug/L			12/15/22 14:43	1
Methyl acetate	10	U	10		ug/L			12/15/22 14:43	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
4-Methyl-2-pentanone (MIBK)	10	U	10		ug/L			12/15/22 14:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
Methylene Chloride	5.0	U	5.0		ug/L			12/15/22 14:43	1
Chloromethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
Bromomethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
Chlorodibromomethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
Toluene	1.0	U	1.0		ug/L			12/15/22 14:43	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			12/15/22 14:43	1
o-Xylene	1.0	U	1.0		ug/L			12/15/22 14:43	1
Chlorobenzene	1.0	U	1.0		ug/L			12/15/22 14:43	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0		ug/L			12/15/22 14:43	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 14:43	1
Methyl tert-butyl ether	1.0	U	1.0		ug/L			12/15/22 14:43	1
Styrene	1.0	U	1.0		ug/L			12/15/22 14:43	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
Chloroethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 14:43	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 14:43	1
2-Hexanone	10	U	10		ug/L			12/15/22 14:43	1
2-Butanone (MEK)	10	U	10		ug/L			12/15/22 14:43	1
Ethylbenzene	1.0	U	1.0		ug/L			12/15/22 14:43	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/15/22 14:43	1
Methylcyclohexane	1.0	U	1.0		ug/L			12/15/22 14:43	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/15/22 14:43	1
Xylenes, Total	2.0	U	2.0		ug/L			12/15/22 14:43	1
Cyclohexane	1.0	U	1.0		ug/L			12/15/22 14:43	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 14:43	1
Chloroform	1.0	U	1.0		ug/L			12/15/22 14:43	1
m-Xylene & p-Xylene	2.0	U	2.0		ug/L			12/15/22 14:43	1
Vinyl chloride	1.0	U	1.0		ug/L			12/15/22 14:43	1
Ethylene Dibromide	1.0	U	1.0		ug/L			12/15/22 14:43	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/15/22 14:43	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 14:43	1

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: OW-16D2R1
Date Collected: 12/07/22 10:20
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-2
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	1.0	U	1.0		ug/L			12/15/22 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*78 - 122*		*12/15/22 14:43*	*1*
Dibromofluoromethane (Surr)	*90*		*73 - 120*		*12/15/22 14:43*	*1*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*12/15/22 14:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*62 - 137*		*12/15/22 14:43*	*1*

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: OW-16D2R2
Date Collected: 12/07/22 11:10
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-3
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
cis-1,2-Dichloroethene	**9.2**		1.0		ug/L			12/15/22 16:24	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/15/22 16:24	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 16:24	1
Trichloroethene	1.0	U	1.0		ug/L			12/15/22 16:24	1
Benzene	1.0	U	1.0		ug/L			12/15/22 16:24	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 16:24	1
Carbon disulfide	1.0	U	1.0		ug/L			12/15/22 16:24	1
Bromoform	1.0	U	1.0		ug/L			12/15/22 16:24	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/15/22 16:24	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
Acetone	10	U	10		ug/L			12/15/22 16:24	1
Methyl acetate	10	U	10		ug/L			12/15/22 16:24	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
4-Methyl-2-pentanone (MIBK)	10	U	10		ug/L			12/15/22 16:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
Methylene Chloride	5.0	U	5.0		ug/L			12/15/22 16:24	1
Chloromethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
Bromomethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
Chlorodibromomethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
Toluene	1.0	U	1.0		ug/L			12/15/22 16:24	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			12/15/22 16:24	1
o-Xylene	1.0	U	1.0		ug/L			12/15/22 16:24	1
Chlorobenzene	1.0	U	1.0		ug/L			12/15/22 16:24	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0		ug/L			12/15/22 16:24	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 16:24	1
Methyl tert-butyl ether	1.0	U	1.0		ug/L			12/15/22 16:24	1
Styrene	1.0	U	1.0		ug/L			12/15/22 16:24	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
Chloroethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 16:24	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 16:24	1
2-Hexanone	10	U	10		ug/L			12/15/22 16:24	1
2-Butanone (MEK)	10	U	10		ug/L			12/15/22 16:24	1
Ethylbenzene	1.0	U	1.0		ug/L			12/15/22 16:24	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/15/22 16:24	1
Methylcyclohexane	1.0	U	1.0		ug/L			12/15/22 16:24	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/15/22 16:24	1
Xylenes, Total	2.0	U	2.0		ug/L			12/15/22 16:24	1
Cyclohexane	1.0	U	1.0		ug/L			12/15/22 16:24	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 16:24	1
Chloroform	1.0	U	1.0		ug/L			12/15/22 16:24	1
m-Xylene & p-Xylene	2.0	U	2.0		ug/L			12/15/22 16:24	1
Vinyl chloride	1.0	U	1.0		ug/L			12/15/22 16:24	1
Ethylene Dibromide	1.0	U	1.0		ug/L			12/15/22 16:24	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/15/22 16:24	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 16:24	1

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: OW-16D2R2
Date Collected: 12/07/22 11:10
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-3
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	1.0	U	1.0		ug/L			12/15/22 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*78 - 122*		*12/15/22 16:24*	*1*
Dibromofluoromethane (Surr)	*88*		*73 - 120*		*12/15/22 16:24*	*1*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*		*12/15/22 16:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*62 - 137*		*12/15/22 16:24*	*1*

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: TRIP BLANK

Date Collected: 12/07/22 00:00
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-4

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 12:41	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/15/22 12:41	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 12:41	1
Trichloroethene	1.0	U	1.0		ug/L			12/15/22 12:41	1
Benzene	1.0	U	1.0		ug/L			12/15/22 12:41	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 12:41	1
Carbon disulfide	1.0	U	1.0		ug/L			12/15/22 12:41	1
Bromoform	1.0	U	1.0		ug/L			12/15/22 12:41	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/15/22 12:41	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
Acetone	10	U	10		ug/L			12/15/22 12:41	1
Methyl acetate	10	U	10		ug/L			12/15/22 12:41	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
4-Methyl-2-pentanone (MIBK)	10	U	10		ug/L			12/15/22 12:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
Methylene Chloride	5.0	U	5.0		ug/L			12/15/22 12:41	1
Chloromethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
Bromomethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
Chlorodibromomethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
Toluene	1.0	U	1.0		ug/L			12/15/22 12:41	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			12/15/22 12:41	1
o-Xylene	1.0	U	1.0		ug/L			12/15/22 12:41	1
Chlorobenzene	1.0	U	1.0		ug/L			12/15/22 12:41	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0		ug/L			12/15/22 12:41	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 12:41	1
Methyl tert-butyl ether	1.0	U	1.0		ug/L			12/15/22 12:41	1
Styrene	1.0	U	1.0		ug/L			12/15/22 12:41	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
Chloroethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 12:41	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 12:41	1
2-Hexanone	10	U	10		ug/L			12/15/22 12:41	1
2-Butanone (MEK)	10	U	10		ug/L			12/15/22 12:41	1
Ethylbenzene	1.0	U	1.0		ug/L			12/15/22 12:41	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/15/22 12:41	1
Methylcyclohexane	1.0	U	1.0		ug/L			12/15/22 12:41	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/15/22 12:41	1
Xylenes, Total	2.0	U	2.0		ug/L			12/15/22 12:41	1
Cyclohexane	1.0	U	1.0		ug/L			12/15/22 12:41	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 12:41	1
Chloroform	1.0	U	1.0		ug/L			12/15/22 12:41	1
m-Xylene & p-Xylene	2.0	U	2.0		ug/L			12/15/22 12:41	1
Vinyl chloride	1.0	U	1.0		ug/L			12/15/22 12:41	1
Ethylene Dibromide	1.0	U	1.0		ug/L			12/15/22 12:41	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/15/22 12:41	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 12:41	1

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: TRIP BLANK
Date Collected: 12/07/22 00:00
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-4
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	1.0	U	1.0		ug/L			12/15/22 12:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*78 - 122*		*12/15/22 12:41*	*1*
Dibromofluoromethane (Surr)	*88*		*73 - 120*		*12/15/22 12:41*	*1*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*		*12/15/22 12:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*		*12/15/22 12:41*	*1*

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 240-177639-5

Date Collected: 12/07/22 11:30
Date Received: 12/08/22 08:00

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 15:34	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/15/22 15:34	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 15:34	1
Trichloroethene	1.0	U	1.0		ug/L			12/15/22 15:34	1
Benzene	1.0	U	1.0		ug/L			12/15/22 15:34	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 15:34	1
Carbon disulfide	1.0	U	1.0		ug/L			12/15/22 15:34	1
Bromoform	1.0	U	1.0		ug/L			12/15/22 15:34	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/15/22 15:34	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
Acetone	10	U	10		ug/L			12/15/22 15:34	1
Methyl acetate	10	U	10		ug/L			12/15/22 15:34	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
4-Methyl-2-pentanone (MIBK)	10	U	10		ug/L			12/15/22 15:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
Methylene Chloride	5.0	U	5.0		ug/L			12/15/22 15:34	1
Chloromethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
Bromomethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
Chlorodibromomethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
Toluene	1.0	U	1.0		ug/L			12/15/22 15:34	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:34	1
o-Xylene	1.0	U	1.0		ug/L			12/15/22 15:34	1
Chlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:34	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0		ug/L			12/15/22 15:34	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:34	1
Methyl tert-butyl ether	1.0	U	1.0		ug/L			12/15/22 15:34	1
Styrene	1.0	U	1.0		ug/L			12/15/22 15:34	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
Chloroethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 15:34	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:34	1
2-Hexanone	10	U	10		ug/L			12/15/22 15:34	1
2-Butanone (MEK)	10	U	10		ug/L			12/15/22 15:34	1
Ethylbenzene	1.0	U	1.0		ug/L			12/15/22 15:34	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/15/22 15:34	1
Methylcyclohexane	1.0	U	1.0		ug/L			12/15/22 15:34	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/15/22 15:34	1
Xylenes, Total	2.0	U	2.0		ug/L			12/15/22 15:34	1
Cyclohexane	1.0	U	1.0		ug/L			12/15/22 15:34	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 15:34	1
Chloroform	1.0	U	1.0		ug/L			12/15/22 15:34	1
m-Xylene & p-Xylene	2.0	U	2.0		ug/L			12/15/22 15:34	1
Vinyl chloride	1.0	U	1.0		ug/L			12/15/22 15:34	1
Ethylene Dibromide	1.0	U	1.0		ug/L			12/15/22 15:34	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/15/22 15:34	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:34	1

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: EQUIPMENT BLANK
Date Collected: 12/07/22 11:30
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-5
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	1.0	U	1.0		ug/L			12/15/22 15:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*78 - 122*		*12/15/22 15:34*	*1*
Dibromofluoromethane (Surr)	*87*		*73 - 120*		*12/15/22 15:34*	*1*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*		*12/15/22 15:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*		*12/15/22 15:34*	*1*

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: FIELD BLANK
Date Collected: 12/07/22 00:00
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-6
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 15:09	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/15/22 15:09	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 15:09	1
Trichloroethene	1.0	U	1.0		ug/L			12/15/22 15:09	1
Benzene	1.0	U	1.0		ug/L			12/15/22 15:09	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 15:09	1
Carbon disulfide	1.0	U	1.0		ug/L			12/15/22 15:09	1
Bromoform	1.0	U	1.0		ug/L			12/15/22 15:09	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/15/22 15:09	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
Acetone	10	U	10		ug/L			12/15/22 15:09	1
Methyl acetate	10	U	10		ug/L			12/15/22 15:09	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
4-Methyl-2-pentanone (MIBK)	10	U	10		ug/L			12/15/22 15:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
Methylene Chloride	5.0	U	5.0		ug/L			12/15/22 15:09	1
Chloromethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
Bromomethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
Chlorodibromomethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
Toluene	1.0	U	1.0		ug/L			12/15/22 15:09	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:09	1
o-Xylene	1.0	U	1.0		ug/L			12/15/22 15:09	1
Chlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:09	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0		ug/L			12/15/22 15:09	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:09	1
Methyl tert-butyl ether	1.0	U	1.0		ug/L			12/15/22 15:09	1
Styrene	1.0	U	1.0		ug/L			12/15/22 15:09	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
Chloroethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 15:09	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:09	1
2-Hexanone	10	U	10		ug/L			12/15/22 15:09	1
2-Butanone (MEK)	10	U	10		ug/L			12/15/22 15:09	1
Ethylbenzene	1.0	U	1.0		ug/L			12/15/22 15:09	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/15/22 15:09	1
Methylcyclohexane	1.0	U	1.0		ug/L			12/15/22 15:09	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/15/22 15:09	1
Xylenes, Total	2.0	U	2.0		ug/L			12/15/22 15:09	1
Cyclohexane	1.0	U	1.0		ug/L			12/15/22 15:09	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 15:09	1
Chloroform	1.0	U	1.0		ug/L			12/15/22 15:09	1
m-Xylene & p-Xylene	2.0	U	2.0		ug/L			12/15/22 15:09	1
Vinyl chloride	1.0	U	1.0		ug/L			12/15/22 15:09	1
Ethylene Dibromide	1.0	U	1.0		ug/L			12/15/22 15:09	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/15/22 15:09	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 15:09	1

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: FIELD BLANK
Date Collected: 12/07/22 00:00
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-6
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	1.0	U	1.0		ug/L			12/15/22 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*78 - 122*		*12/15/22 15:09*	*1*
Dibromofluoromethane (Surr)	*88*		*73 - 120*		*12/15/22 15:09*	*1*
4-Bromofluorobenzene (Surr)	*86*		*56 - 136*		*12/15/22 15:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*		*12/15/22 15:09*	*1*

Surrogate Summary

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DBFM	BFB	DCA
Lab Sample ID	Client Sample ID	(78-122)	(73-120)	(56-136)	(62-137)
240-177639-1	OW-16D2	105	88	84	101
240-177639-2	OW-16D2R1	106	90	88	102
240-177639-2 MS	OW-16D2R1	104	92	90	97
240-177639-2 MSD	OW-16D2R1	105	92	92	96
240-177639-3	OW-16D2R2	106	88	86	102
240-177639-4	TRIP BLANK	104	88	86	101
240-177639-5	EQUIPMENT BLANK	106	87	86	101
240-177639-6	FIELD BLANK	106	88	86	101
LCS 240-555983/4	Lab Control Sample	104	94	94	97
MB 240-555983/7	Method Blank	106	91	88	102

Surrogate Legend

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

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-555983/7
Matrix: Water
Analysis Batch: 555983

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
1,1-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
cis-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 12:16	1
Tetrachloroethene	1.0	U	1.0		ug/L			12/15/22 12:16	1
trans-1,2-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 12:16	1
Trichloroethene	1.0	U	1.0		ug/L			12/15/22 12:16	1
Benzene	1.0	U	1.0		ug/L			12/15/22 12:16	1
cis-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 12:16	1
Carbon disulfide	1.0	U	1.0		ug/L			12/15/22 12:16	1
Bromoform	1.0	U	1.0		ug/L			12/15/22 12:16	1
1,2-Dichloroethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
1,2-Dichloropropane	1.0	U	1.0		ug/L			12/15/22 12:16	1
1,1,2-Trichloroethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
Acetone	10	U	10		ug/L			12/15/22 12:16	1
Methyl acetate	10	U	10		ug/L			12/15/22 12:16	1
Dichlorodifluoromethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
4-Methyl-2-pentanone (MIBK)	10	U	10		ug/L			12/15/22 12:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
Methylene Chloride	5.0	U	5.0		ug/L			12/15/22 12:16	1
Chloromethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
Bromomethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
Chlorodibromomethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
Toluene	1.0	U	1.0		ug/L			12/15/22 12:16	1
1,2,4-Trichlorobenzene	1.0	U	1.0		ug/L			12/15/22 12:16	1
o-Xylene	1.0	U	1.0		ug/L			12/15/22 12:16	1
Chlorobenzene	1.0	U	1.0		ug/L			12/15/22 12:16	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0		ug/L			12/15/22 12:16	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 12:16	1
Methyl tert-butyl ether	1.0	U	1.0		ug/L			12/15/22 12:16	1
Styrene	1.0	U	1.0		ug/L			12/15/22 12:16	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
Chloroethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
1,1-Dichloroethene	1.0	U	1.0		ug/L			12/15/22 12:16	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 12:16	1
2-Hexanone	10	U	10		ug/L			12/15/22 12:16	1
2-Butanone (MEK)	10	U	10		ug/L			12/15/22 12:16	1
Ethylbenzene	1.0	U	1.0		ug/L			12/15/22 12:16	1
Isopropylbenzene	1.0	U	1.0		ug/L			12/15/22 12:16	1
Methylcyclohexane	1.0	U	1.0		ug/L			12/15/22 12:16	1
Trichlorofluoromethane	1.0	U	1.0		ug/L			12/15/22 12:16	1
Xylenes, Total	2.0	U	2.0		ug/L			12/15/22 12:16	1
Cyclohexane	1.0	U	1.0		ug/L			12/15/22 12:16	1
trans-1,3-Dichloropropene	1.0	U	1.0		ug/L			12/15/22 12:16	1
Chloroform	1.0	U	1.0		ug/L			12/15/22 12:16	1
m-Xylene & p-Xylene	2.0	U	2.0		ug/L			12/15/22 12:16	1
Vinyl chloride	1.0	U	1.0		ug/L			12/15/22 12:16	1
Ethylene Dibromide	1.0	U	1.0		ug/L			12/15/22 12:16	1
Carbon tetrachloride	1.0	U	1.0		ug/L			12/15/22 12:16	1

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

Lab Sample ID: MB 240-555983/7
Matrix: Water
Analysis Batch: 555983

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			12/15/22 12:16	1
Dichlorobromomethane	1.0	U	1.0		ug/L			12/15/22 12:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*78 - 122*		*12/15/22 12:16*	*1*
Dibromofluoromethane (Surr)	*91*		*73 - 120*		*12/15/22 12:16*	*1*
4-Bromofluorobenzene (Surr)	*88*		*56 - 136*		*12/15/22 12:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*62 - 137*		*12/15/22 12:16*	*1*

Lab Sample ID: LCS 240-555983/4
Matrix: Water
Analysis Batch: 555983

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	25.0	23.7		ug/L		95	64 - 131
1,1-Dichloroethane	25.0	24.1		ug/L		96	72 - 127
cis-1,2-Dichloroethene	25.0	23.9		ug/L		95	77 - 123
Tetrachloroethene	25.0	25.2		ug/L		101	76 - 123
trans-1,2-Dichloroethene	25.0	24.6		ug/L		99	75 - 124
Trichloroethene	25.0	23.3		ug/L		93	70 - 122
Benzene	25.0	23.8		ug/L		95	77 - 123
cis-1,3-Dichloropropene	25.0	22.9		ug/L		91	64 - 130
Carbon disulfide	25.0	21.4		ug/L		86	43 - 140
Bromoform	25.0	24.4		ug/L		98	57 - 129
1,2-Dichloroethane	25.0	25.0		ug/L		100	66 - 128
1,2-Dichloropropane	25.0	24.7		ug/L		99	75 - 133
1,1,2-Trichloroethane	25.0	25.9		ug/L		104	70 - 138
Acetone	50.0	59.5		ug/L		119	50 - 149
Methyl acetate	50.0	43.2		ug/L		86	42 - 169
Dichlorodifluoromethane	12.5	9.99		ug/L		80	34 - 153
4-Methyl-2-pentanone (MIBK)	50.0	44.3		ug/L		89	46 - 158
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	27.2		ug/L		109	51 - 146
Methylene Chloride	25.0	24.9		ug/L		100	71 - 125
Chloromethane	12.5	11.2		ug/L		89	47 - 143
Bromomethane	12.5	12.8		ug/L		103	36 - 142
Chlorodibromomethane	25.0	25.0		ug/L		100	70 - 124
Toluene	25.0	25.7		ug/L		103	80 - 123
1,2,4-Trichlorobenzene	25.0	24.4		ug/L		97	44 - 147
o-Xylene	25.0	24.5		ug/L		98	80 - 123
Chlorobenzene	25.0	24.9		ug/L		99	80 - 121
1,2-Dibromo-3-Chloropropane	25.0	22.1		ug/L		89	53 - 135
1,3-Dichlorobenzene	25.0	23.8		ug/L		95	80 - 120
Methyl tert-butyl ether	25.0	24.3		ug/L		97	65 - 126
Styrene	25.0	24.1		ug/L		96	80 - 135
1,1,2,2-Tetrachloroethane	25.0	24.2		ug/L		97	58 - 157
Chloroethane	12.5	13.0		ug/L		104	38 - 152
1,1-Dichloroethene	25.0	26.1		ug/L		105	63 - 134
1,2-Dichlorobenzene	25.0	24.0		ug/L		96	78 - 120

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

Lab Sample ID: LCS 240-555983/4
Matrix: Water
Analysis Batch: 555983

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Hexanone	50.0	45.3		ug/L		91	43 - 167
2-Butanone (MEK)	50.0	53.6		ug/L		107	54 - 156
Ethylbenzene	25.0	24.2		ug/L		97	80 - 121
Isopropylbenzene	25.0	25.0		ug/L		100	74 - 128
Methylcyclohexane	25.0	22.7		ug/L		91	62 - 136
Trichlorofluoromethane	12.5	11.5		ug/L		92	30 - 170
Xylenes, Total	50.0	48.9		ug/L		98	80 - 121
Cyclohexane	25.0	22.2		ug/L		89	58 - 146
trans-1,3-Dichloropropene	25.0	25.1		ug/L		101	57 - 129
Chloroform	25.0	24.6		ug/L		99	74 - 122
m-Xylene & p-Xylene	25.0	24.4		ug/L		98	80 - 120
Vinyl chloride	12.5	11.1		ug/L		89	60 - 144
Ethylene Dibromide	25.0	24.6		ug/L		99	71 - 134
Carbon tetrachloride	25.0	22.7		ug/L		91	55 - 137
1,4-Dichlorobenzene	25.0	23.8		ug/L		95	80 - 120
Dichlorobromomethane	25.0	23.6		ug/L		94	69 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*78 - 122*
Dibromofluoromethane (Surr)	*94*		*73 - 120*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*

Lab Sample ID: 240-177639-2 MS
Matrix: Water
Analysis Batch: 555983

Client Sample ID: OW-16D2R1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	1.0	U	25.0	21.6		ug/L		86	60 - 130
1,1-Dichloroethane	2.1		25.0	24.4		ug/L		89	68 - 125
cis-1,2-Dichloroethene	19		25.0	40.6		ug/L		86	66 - 128
Tetrachloroethene	1.0	U	25.0	22.6		ug/L		90	62 - 131
trans-1,2-Dichloroethene	1.2		25.0	23.1		ug/L		88	56 - 136
Trichloroethene	1.0	U	25.0	20.7		ug/L		83	61 - 124
Benzene	1.0	U	25.0	22.4		ug/L		90	64 - 128
cis-1,3-Dichloropropene	1.0	U	25.0	20.0		ug/L		80	47 - 125
Carbon disulfide	1.0	U	25.0	18.4		ug/L		74	38 - 140
Bromoform	1.0	U	25.0	20.3		ug/L		81	47 - 125
1,2-Dichloroethane	1.0	U	25.0	23.7		ug/L		95	63 - 126
1,2-Dichloropropane	1.0	U	25.0	24.3		ug/L		97	69 - 130
1,1,2-Trichloroethane	1.0	U	25.0	25.3		ug/L		101	69 - 131
Acetone	10	U	50.0	49.1		ug/L		98	33 - 149
Methyl acetate	10	U	50.0	38.6		ug/L		77	37 - 155
Dichlorodifluoromethane	1.0	U	12.5	8.38		ug/L		67	38 - 139
4-Methyl-2-pentanone (MIBK)	10	U	50.0	44.3		ug/L		89	31 - 153
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	25.0	24.4		ug/L		98	41 - 147
Methylene Chloride	5.0	U	25.0	21.9		ug/L		88	62 - 129
Chloromethane	1.0	U	12.5	7.32		ug/L		59	32 - 149

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

Lab Sample ID: 240-177639-2 MS
Matrix: Water
Analysis Batch: 555983

Client Sample ID: OW-16D2R1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	1.0	U	12.5	8.78		ug/L		70	28 - 150
Chlorodibromomethane	1.0	U	25.0	22.6		ug/L		90	65 - 120
Toluene	1.0	U	25.0	24.1		ug/L		96	58 - 135
1,2,4-Trichlorobenzene	1.0	U	25.0	17.0		ug/L		68	29 - 156
o-Xylene	1.0	U	25.0	21.2		ug/L		85	70 - 125
Chlorobenzene	1.0	U	25.0	22.8		ug/L		91	74 - 121
1,2-Dibromo-3-Chloropropane	2.0	U	25.0	18.3		ug/L		73	41 - 129
1,3-Dichlorobenzene	1.0	U	25.0	21.4		ug/L		86	73 - 120
Methyl tert-butyl ether	1.0	U	25.0	20.9		ug/L		83	47 - 134
Styrene	1.0	U	25.0	21.7		ug/L		87	70 - 139
1,1,2,2-Tetrachloroethane	1.0	U	25.0	25.0		ug/L		100	54 - 145
Chloroethane	1.0	U	12.5	10.4		ug/L		83	10 - 199
1,1-Dichloroethene	1.0	U	25.0	24.9		ug/L		99	56 - 135
1,2-Dichlorobenzene	1.0	U	25.0	20.9		ug/L		84	73 - 120
2-Hexanone	10	U	50.0	47.0		ug/L		94	35 - 156
2-Butanone (MEK)	10	U	50.0	47.6		ug/L		95	40 - 151
Ethylbenzene	1.0	U	25.0	21.9		ug/L		88	67 - 127
Isopropylbenzene	1.0	U	25.0	21.2		ug/L		85	64 - 129
Methylcyclohexane	1.0	U	25.0	20.8		ug/L		83	39 - 144
Trichlorofluoromethane	1.0	U	12.5	10.5		ug/L		84	24 - 177
Xylenes, Total	2.0	U	50.0	43.4		ug/L		87	71 - 123
Cyclohexane	1.0	U	25.0	20.8		ug/L		83	42 - 147
trans-1,3-Dichloropropene	1.0	U	25.0	22.5		ug/L		90	47 - 120
Chloroform	1.0	U	25.0	22.9		ug/L		92	70 - 122
m-Xylene & p-Xylene	2.0	U	25.0	22.2		ug/L		89	71 - 123
Vinyl chloride	1.0	U	12.5	9.55		ug/L		76	43 - 157
Ethylene Dibromide	1.0	U	25.0	23.2		ug/L		93	69 - 125
Carbon tetrachloride	1.0	U	25.0	20.3		ug/L		81	51 - 133
1,4-Dichlorobenzene	1.0	U	25.0	21.5		ug/L		86	74 - 120
Dichlorobromomethane	1.0	U	25.0	22.3		ug/L		89	62 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*78 - 122*
Dibromofluoromethane (Surr)	*92*		*73 - 120*
4-Bromofluorobenzene (Surr)	*90*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*

Lab Sample ID: 240-177639-2 MSD
Matrix: Water
Analysis Batch: 555983

Client Sample ID: OW-16D2R1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	1.0	U	25.0	21.3		ug/L		85	60 - 130	1	17
1,1-Dichloroethane	2.1		25.0	24.6		ug/L		90	68 - 125	1	13
cis-1,2-Dichloroethene	19		25.0	40.4		ug/L		85	66 - 128	0	14
Tetrachloroethene	1.0	U	25.0	22.5		ug/L		90	62 - 131	1	20
trans-1,2-Dichloroethene	1.2		25.0	23.4		ug/L		89	56 - 136	1	15
Trichloroethene	1.0	U	25.0	20.9		ug/L		84	61 - 124	1	15

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

Lab Sample ID: 240-177639-2 MSD
Matrix: Water
Analysis Batch: 555983

Client Sample ID: OW-16D2R1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	1.0	U	25.0	22.6		ug/L		90	64 - 128	1	14
cis-1,3-Dichloropropene	1.0	U	25.0	20.4		ug/L		81	47 - 125	2	13
Carbon disulfide	1.0	U	25.0	19.7		ug/L		79	38 - 140	7	23
Bromoform	1.0	U	25.0	21.1		ug/L		85	47 - 125	4	15
1,2-Dichloroethane	1.0	U	25.0	24.1		ug/L		96	63 - 126	2	12
1,2-Dichloropropane	1.0	U	25.0	24.3		ug/L		97	69 - 130	0	13
1,1,2-Trichloroethane	1.0	U	25.0	25.3		ug/L		101	69 - 131	0	14
Acetone	10	U	50.0	49.7		ug/L		99	33 - 149	1	34
Methyl acetate	10	U	50.0	37.5		ug/L		75	37 - 155	3	18
Dichlorodifluoromethane	1.0	U	12.5	8.11		ug/L		65	38 - 139	3	35
4-Methyl-2-pentanone (MIBK)	10	U	50.0	42.8		ug/L		86	31 - 153	3	15
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	25.0	23.9		ug/L		96	41 - 147	2	35
Methylene Chloride	5.0	U	25.0	22.8		ug/L		91	62 - 129	4	17
Chloromethane	1.0	U	12.5	7.49		ug/L		60	32 - 149	2	27
Bromomethane	1.0	U	12.5	10.5		ug/L		84	28 - 150	18	26
Chlorodibromomethane	1.0	U	25.0	23.1		ug/L		92	65 - 120	2	13
Toluene	1.0	U	25.0	23.7		ug/L		95	58 - 135	1	14
1,2,4-Trichlorobenzene	1.0	U	25.0	18.4		ug/L		73	29 - 156	8	19
o-Xylene	1.0	U	25.0	21.3		ug/L		85	70 - 125	0	15
Chlorobenzene	1.0	U	25.0	23.1		ug/L		93	74 - 121	1	14
1,2-Dibromo-3-Chloropropane	2.0	U	25.0	18.2		ug/L		73	41 - 129	1	22
1,3-Dichlorobenzene	1.0	U	25.0	21.3		ug/L		85	73 - 120	1	14
Methyl tert-butyl ether	1.0	U	25.0	21.2		ug/L		85	47 - 134	2	16
Styrene	1.0	U	25.0	22.1		ug/L		88	70 - 139	1	18
1,1,2,2-Tetrachloroethane	1.0	U	25.0	24.4		ug/L		98	54 - 145	3	15
Chloroethane	1.0	U	12.5	10.8		ug/L		86	10 - 199	3	30
1,1-Dichloroethene	1.0	U	25.0	24.7		ug/L		99	56 - 135	1	26
1,2-Dichlorobenzene	1.0	U	25.0	21.1		ug/L		84	73 - 120	1	14
2-Hexanone	10	U	50.0	45.1		ug/L		90	35 - 156	4	17
2-Butanone (MEK)	10	U	50.0	47.5		ug/L		95	40 - 151	0	20
Ethylbenzene	1.0	U	25.0	22.1		ug/L		88	67 - 127	1	15
Isopropylbenzene	1.0	U	25.0	21.4		ug/L		85	64 - 129	1	18
Methylcyclohexane	1.0	U	25.0	19.9		ug/L		80	39 - 144	5	35
Trichlorofluoromethane	1.0	U	12.5	10.5		ug/L		84	24 - 177	0	34
Xylenes, Total	2.0	U	50.0	43.2		ug/L		86	71 - 123	0	15
Cyclohexane	1.0	U	25.0	19.7		ug/L		79	42 - 147	6	35
trans-1,3-Dichloropropene	1.0	U	25.0	23.0		ug/L		92	47 - 120	2	14
Chloroform	1.0	U	25.0	23.2		ug/L		93	70 - 122	1	14
m-Xylene & p-Xylene	2.0	U	25.0	21.9		ug/L		88	71 - 123	2	16
Vinyl chloride	1.0	U	12.5	10.1		ug/L		81	43 - 157	6	24
Ethylene Dibromide	1.0	U	25.0	24.0		ug/L		96	69 - 125	3	14
Carbon tetrachloride	1.0	U	25.0	19.8		ug/L		79	51 - 133	3	24
1,4-Dichlorobenzene	1.0	U	25.0	21.8		ug/L		87	74 - 120	2	15
Dichlorobromomethane	1.0	U	25.0	22.7		ug/L		91	62 - 125	2	13

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*105*		*78 - 122*

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

Lab Sample ID: 240-177639-2 MSD
Matrix: Water
Analysis Batch: 555983

Client Sample ID: OW-16D2R1
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Dibromofluoromethane (Surr)	*92*		*73 - 120*
4-Bromofluorobenzene (Surr)	*92*		*56 - 136*
1,2-Dichloroethane-d4 (Surr)	*96*		*62 - 137*

QC Association Summary

Client: ZF Active Safety and Electronics LLC
Job ID: 240-177639-1
Project/Site: TRW Milford

GC/MS VOA

Analysis Batch: 555983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177639-1	OW-16D2	Total/NA	Water	8260D	
240-177639-2	OW-16D2R1	Total/NA	Water	8260D	
240-177639-3	OW-16D2R2	Total/NA	Water	8260D	
240-177639-4	TRIP BLANK	Total/NA	Water	8260D	
240-177639-5	EQUIPMENT BLANK	Total/NA	Water	8260D	
240-177639-6	FIELD BLANK	Total/NA	Water	8260D	
MB 240-555983/7	Method Blank	Total/NA	Water	8260D	
LCS 240-555983/4	Lab Control Sample	Total/NA	Water	8260D	
240-177639-2 MS	OW-16D2R1	Total/NA	Water	8260D	
240-177639-2 MSD	OW-16D2R1	Total/NA	Water	8260D	

Lab Chronicle

Client: ZF Active Safety and Electronics LLC
Project/Site: TRW Milford

Job ID: 240-177639-1

Client Sample ID: OW-16D2
Date Collected: 12/07/22 09:25
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	555983	SAM	EET CAN	12/15/22 15:59

Client Sample ID: OW-16D2R1
Date Collected: 12/07/22 10:20
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	555983	SAM	EET CAN	12/15/22 14:43

Client Sample ID: OW-16D2R2
Date Collected: 12/07/22 11:10
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	555983	SAM	EET CAN	12/15/22 16:24

Client Sample ID: TRIP BLANK
Date Collected: 12/07/22 00:00
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	555983	SAM	EET CAN	12/15/22 12:41

Client Sample ID: EQUIPMENT BLANK
Date Collected: 12/07/22 11:30
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	555983	SAM	EET CAN	12/15/22 15:34

Client Sample ID: FIELD BLANK
Date Collected: 12/07/22 00:00
Date Received: 12/08/22 08:00

Lab Sample ID: 240-177639-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	555983	SAM	EET CAN	12/15/22 15:09

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: ZF Active Safety and Electronics LLC
Job ID: 240-177639-1
Project/Site: TRW Milford

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Michigan	State	9135	02-27-23
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

0.4/03

MICHIGAN
190

STL North Canton
4101 Shuffel Drive NW
North Canton, OH 44720
Attn: Michael DelMonico

TRW Chain Of Custody / Analysis Request

LAB USE ONLY
Laboratory ID No. (Lot No.)

Project Type:	Groundwater Sampling - IZ	Privileged & Confidential	Yes
TRW PM: (name, company, address, e-mail)		TRW PO No.	30126485.0001Z
Bob Bleazard		Database Manager: (name, company, address, E-mail)	
11202 East Germann Road		Marina Samp and Sharon Clouse	
Mesa, AZ 85212		28550 Cabot Drive, Suite 500	
bob.bleazard@trw.com		Novi, MI 48377	
		christina.weaver@arcadis.com; john.mennis@arcadis.com; sclouse@arcadis-us.com	
Analysis Level	Level 1 (Routine Report)	Sampler	SCOT FILIPIAK
TAT	10 Business Days (Standard - Level 1)	Deliverable	EDD/PDF (e-mail)

Site Name: Milford
Site Location: Milford, Michigan

Sample Identification and Information

	Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	No. of Cont.	Grab or Composite	Field Filtered	Preservatives Code (see below) 1 VOC 8260	Lab Sample Numbers
1	OW-16D2	--	--	OW-16D2_12072022	0925		GW	WATER	REG	3	G		X	
2	OW-16D2R1	--	--	OW-16D2R1_12072022	1020		GW	WATER	REG	3	G		X	
3	OW-16D2R2	--	--	OW-16D2R2_12072022	1110		GW	WATER	REG	3	G		X	
4	TRIP_BLANK	--	--	TRIP_BLANK_12072022	—		QC	WATER	REG	1	G		X	
5	EQUIPMENTBLANK	—	—	EQUIPMENTBLANK_12072022	1130		GW	WATER	REG	3	G		X	
6	FIELDBLANK	—	—	FIELDBLANK_12072022			GW	WATER	REG	3	G		X	
7														
8														
9														
10														

240-177639 Chain of Custody

Special Instructions:

Relinquished by: Scott Filipiak	Company: Arcadis		Received by:	Company: FEDEX		Condition	Custody Seals Intact
	Date/Time: 12/9/22 1225			Date/Time: 12/12/22 1230		Cooler Temp.	
Relinquished by:	Company: FEDEX		Received by: Tammy Boyce	Company: EETNC		Condition	Custody Seals Intact
	Date/Time: 12/12/22 1300			Date/Time: 12-8-22 800		Cooler Temp.	
Relinquished by:	Company:		Received by:	Company:		Condition	Custody Seals Intact
	Date/Time:			Date/Time:		Cooler Temp.	
Relinquished by:	Company:		Received by:	Company:		Condition	Custody Seals Intact
	Date/Time:			Date/Time:		Cooler Temp.	

Preservatives Code: 0 = None; 1 = HCL; 2 = HNO3; 3 = H2SO4; 4 = NaOH; 5 = Zn. Acetate; 6 = MeOH; 7 = NaHSO4; 8 = Other (specify):

Eurofins - Canton Sample Receipt Form/Narrative Login # : 177639
Barberton Facility

Client TRW Site Name

Cooler Received on 12-8-22 Opened on 12-8-22 Cooler unpacked by: Nancy Boyle

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

Eurofins Cooler # 1A ~~Foam Box~~ Client Cooler Box Other

Packing material used: ~~Bubble Wrap~~ Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN # IR-13 (CF -0.2 °C) Observed Cooler Temp. 0.4 °C Corrected Cooler Temp. 0.3 °C
   IR GUN # IR-16 (CF -0.1°C) Observed Cooler Temp. 0.4 °C Corrected Cooler Temp. 0.3 °C
   IR GUN # IR-17 (CF -0.3°C) Observed Cooler Temp. ____ °C Corrected Cooler Temp. ____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?		
10. Were correct bottle(s) used for the test(s) indicated?	Yes	No
11. Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC286797
14. Were VOAs on the COC?	Yes	No
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # ____	Yes	No
17. Was a LL Hg or Me Hg trip blank present? ____	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM ____ Date ____ by ____ via Verbal Voice Mail Other

Concerning ____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

2-Trip blanks

19. SAMPLE CONDITION

Sample(s) ____ were received after the recommended holding time had expired.
Sample(s) ____ were received in a broken container.
Sample(s) ____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) ____ were further preserved in the laboratory.
Time preserved: ____ Preservative(s) added/Lot number(s): ____

VOA Sample Preservation - Date/Time VOAs Frozen: ____

Arcadis U.S., Inc.
28550 Cabot Drive, Suite 500
Novi
Michigan 48377
Phone: 248 994 2240

www.arcadis.com