ZF Active Safety US Inc.
12001 Tech Center Drive, Livonia, Michigan 48150-2122

Department Health Safety andEnvironmental
From Robert Bleazard
Phone +1 480 722-4866
Email Robert.Bleazard@zf.com
Date April 13, 2022

VIA E-MAIL TO: WojchiechowskiK@Michigan.gov

Kevin Wojciechowski, Project Manager
Warren District Office Remediation and Redevelopment Division
Michigan Department of Environment, Great Lakes, and Energy
27700 Donald Court
Warren, Michigan 48092

RE: ZF Active Safety US Inc. Additional Information for Consideration by Michigan Department of Environment, Great Lakes, and Energy Related to Administrative Order for Response Activity; EGLE Docket No. AO-RRD-22-001.

Dear Mr. Wojciechowski,

ZF Active Safety US Inc. (ZF) is submitting the following information and attachment to the Department of Environment, Great Lakes, and Energy (EGLE) with respect to the Administrative Order for Response Activity (AO) issued by EGLE to ZF, with respect to the former Kelsey-Hayes site in Milford, Michigan (the "Site").

As noted in the letter that ZF sent to EGLE on April 8, 2022, Arcadis recently began redevelopment activities on monitoring well OW-16D2 on April 1st and subsequently collected samples from the well on April 4th and April 8th. The sample collected on April 8th was submitted to Fibertec and 48-hour turn-around-time was again requested. The groundwater sample result from OW-16D2 is again non-detect (less than 1 microgram per liter) for vinyl chloride. See attached Laboratory Report.

Our April 8th letter details the reasons why ZF and Arcadis suspected OW-16D2 may be compromised and describes the measures we took to further examine and redevelop the well on April 1st. The April 8th sample results collected one week following the redevelopment of OW-16D2 are consistent with, and further support our understanding that, OW-16D2 had become compromised and sample results obtained from the well prior to the redevelopment are not reliable because they were not representative of groundwater conditions. Specifically, the non-detect vinyl chloride results for now two consecutive post-redevelopment sampling events, coupled with the other chlorinated volatile organic compounds (CVOCs) that were detected in OW-16D2 below drinking water criteria at concentrations consistent with previous results, confirms that dissolved CVOCs present in groundwater in the vicinity of OW-16D2 are stable and not degrading to vinyl chloride, which is consistent with the sampling results throughout ZF's monitoring well network over the past 25 years.

The hydraulic observations presented in our April 8th letter clearly show that the well was unable to sustain low-flow purging. Stagnant water was removed during the redevelopment work and the resultant recharge into the well was inflow from the surrounding formation. In addition to the CVOC analytical results and hydraulic observations, it was noted during the April 8th sampling that drawdown was improved versus pre-redevelopment conditions and other parameters (i.e., dissolved oxygen, oxidation-reduction potential) were stable. Collectively, these multiple lines of evidence are indicating the well is now producing more representative groundwater samples than it was prior to the redevelopment. ZF and Arcadis believe that the initial redevelopment work completed on OW-16D2 meets the objective of improving hydraulic communication between the well and the formation and the well conditions are currently producing more accurate groundwater samples.

Based on these observations and the April 8th sample that detected no vinyl chloride, it appears that the vinyl chloride that had been detected in OW-16D2 prior to the recent well redevelopment action was the result of stagnant water within the well and not representative of true groundwater conditions. At this point, there is an objectively reasonable basis and enough technical evidence to say that EGLE should not rely on the samples collected from OW-16D2 prior to redevelopment of the well to make a determination that this well poses an imminent and substantial endangerment to the Village of Milford municipal wells. More work is necessary to further evaluate OW-16D2, including additional redevelopment activities, and this work will require additional time beyond the current April 15th compliance date in the AO.

Given that the sole basis for the corrective action work set forth in the AO is the detection of vinyl chloride in recent samples now understood to be consisting of stagnant water collected from OW-16D2 in a compromised condition, it would be reasonable and consistent with applicable laws and regulations for EGLE to provide ZF an extension of the compliance date in the AO in order to submit a work plan for additional well redevelopment activities, allow ZF time to implement the work plan, and further evaluate and discuss the work plan results and any necessary corrective actions with EGLE. Therefore, ZF will submit a detailed work plan to EGLE by **no later than April 22nd**, which will include plans for routine additional sampling of OW-16D2, and information regarding further mechanical and additive techniques to rehabilitate OW-16D2 or replace it.

Furthermore, a **60-day extension of the AO response deadline** will allow ZF time to implement the work plan and provide the parties time to review and discuss the work plan results. This additional information will enable the parties to reasonably act on an understanding based on representative data and objectively developed technical information about the integrity of OW-16D2, rather than presumptions about the recent appearance of vinyl chloride in only one well that has been determined to be compromised and was not yielding samples representative of the groundwater in that location before redevelopment. Furthermore, if EGLE is concerned about vinyl chloride appearing in the Village of Milford municipal well during the extension of the AO notice deadline, ZF's understanding based on the Focused Feasibility Study Report prepared by Wood for the Village of Milford is that the current Iron Removal System provides a feasible temporary response measure that could be utilized to remove vinyl chloride at the levels consistent with those previously reported in OW-16D2, if it were to be needed.

In light of the tight timing circumstances, we ask that EGLE please communicate to ZF prior to April 15th whether or not EGLE agrees with ZF's proposed submission of a work plan by no later than April 22nd and with a 60-day extension of the AO response deadline.

Thank you for your attention to these matters and please include this letter and its attachment in the administrative record for the AO and the Site.

If you have any questions, please feel free to contact me at the phone number listed in the header on the first page of this letter, Mr. Scott Detwiler – ZF Project Manager at 480-722-4139, or Mr. John McInnis of Arcadis at 248-994-2285.

Sincerely,

Robert A Bleazard

Robert Bleazard
Sr. EHS Manager – Environmental Remediation
ZF Health, Safety, and Environment

ZF Active Safety US Inc.
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USA
Phone: +1 734 855-2600
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Enclosure
cc by email only:

Mr. Scott Detwiler, ZF
Ms. Kelly Martorano, ZF
Mr. John McInnis, Arcadis
Mr. Troy Sclafani, Arcadis
Mr. Grant Gilezan, Dykema
Mr. Paul Stewart, Dykema
Mr. Christian Wuerth, Village Manager, Village of Milford
Ms. Polly Synk, Michigan Department of Attorney General
Ms. Danielle Allison-Yokom, Michigan Department of Attorney General
Mr. Aaron B. Keatley, EGLE - Chief Deputy Director, EGLE
Mr. Mike Neller, EGLE - Remediation and Redevelopment Director
Mr. Josh Mosher, EGLE – Remediation and Redevelopment Assistant Director
Mr. Dan Yordanich, EGLE
Ms. Mary Miller, EGLE
Mr. Darren Bowling, EGLE
Mr. Paul Owens, EGLE
Ms. Cheryl Wilson, EGLE
Ms. Lyndsey Hagy, EGLE
Ms. Katie Noetzel, EGLE

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ATTACHMENT

Fibertec
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services

Tuesday, April 12, 2022

Fibertec Project Number:	A07873
Project Identification:	TRW Milford ZF Active Safety (30046730) /30046730
Submittal Date:	04/08/2022

Mrs. Marina Samp
Arcadis U.S., Inc. - Novi
28550 Cabot Drive
Suite 500
Novi, MI 48377

Dear Mrs. Samp,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

Sue Ricketts

By Sue Ricketts at 1:11 PM, Apr 12, 2022

For Daryl P. Strandbergh
Laboratory Director

Enclosures

Fibertec environmental services

Analytical Laboratory Report
Laboratory Project Number: A07873
Laboratory Sample Number: A07873-001

Order: A07873
Date: 04/12/22

Client Identification:	**Arcadis U.S., Inc. - Novi**	Sample Description:	**Field Blank-040822**	Chain of Custody:	**207003**
Client Project Name:	**TRW Milford ZF Active Safety (30046730)**	Sample No:		Collect Date:	**04/08/22**
Client Project No:	**30046730**	Sample Matrix:	**Blank: Field**	Collect Time:	**10:35**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A07873-001** **Matrix: Blank: Field**
Method: EPA 5030C/EPA 8260D **Description: Field Blank-040822**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
3. Benzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
4. Bromobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
5. Bromochloromethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
6. Bromodichloromethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
7. Bromoform	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
8. Bromomethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
9. 2-Butanone	U		µg/L	25	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
10. n-Butylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
11. sec-Butylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
12. tert-Butylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
13. Carbon Disulfide	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
15. Chlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
16. Chloroethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
17. Chloroform	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
18. Chloromethane	U	V+ L+	µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
21. Dibromochloromethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
22. Dibromomethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
27. 1,1-Dichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
29. 1,1-Dichloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
30. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
31. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
35. Ethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
36. Ethylene Dibromide	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM

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Fibertec environmental services

Analytical Laboratory Report
Laboratory Project Number: A07873
Laboratory Sample Number: A07873-001

Order: A07873
Date: 04/12/22

Client Identification:	**Arcadis U.S., Inc. - Novi**	Sample Description:	**Field Blank-040822**	Chain of Custody:	**207003**
Client Project Name:	**TRW Milford ZF Active Safety (30046730)**	Sample No:		Collect Date:	**04/08/22**
Client Project No:	**30046730**	Sample Matrix:	**Blank: Field**	Collect Time:	**10:35**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A07873-001** **Matrix: Blank: Field**
Method: EPA 5030C/EPA 8260D **Description: Field Blank-040822**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
37. 2-Hexanone	U		µg/L	50	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
38. Isopropylbenzene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
39. 4-Methyl-2-pentanone	U		µg/L	50	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
40. Methylene Chloride	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
‡ 41. 2-Methylnaphthalene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
42. MTBE	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
43. Naphthalene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
44. n-Propylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
45. Styrene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
46. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
47. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
48. Tetrachloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
49. Toluene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
50. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
51. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
‡ 52. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
53. Trichloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
54. Trichlorofluoromethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
55. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
57. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
58. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
59. Vinyl Chloride	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
60. m&p-Xylene	U		µg/L	2.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
61. o-Xylene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM
‡ 62. Xylenes	U		µg/L	3.0	1.0	04/11/22	VB22D11B	04/11/22 19:06	VB22D11B	KCM

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lab@fibertec.us

Fibertec environmental services

Analytical Laboratory Report
Laboratory Project Number: A07873
Laboratory Sample Number: A07873-002

Order: A07873
Date: 04/12/22

Client Identification:	**Arcadis U.S., Inc. - Novi**	Sample Description:	**OW-16D2-040822**	Chain of Custody:	**207003**
Client Project Name:	**TRW Milford ZF Active Safety (30046730)**	Sample No:		Collect Date:	**04/08/22**
Client Project No:	**30046730**	Sample Matrix:	**Ground Water**	Collect Time:	**11:35**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A07873-002** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: OW-16D2-040822**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
3. Benzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
4. Bromobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
5. Bromochloromethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
6. Bromodichloromethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
7. Bromoform	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
8. Bromomethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
9. 2-Butanone	U		µg/L	25	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
10. n-Butylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
11. sec-Butylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
12. tert-Butylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
13. Carbon Disulfide	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
15. Chlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
16. Chloroethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
17. Chloroform	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
18. Chloromethane	U	V- L-	µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
21. Dibromochloromethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
22. Dibromomethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
27. 1,1-Dichloroethane	**3.5**		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
29. 1,1-Dichloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
30. cis-1,2-Dichloroethene	**20**		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
31. trans-1,2-Dichloroethene	**1.5**		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
35. Ethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
36. Ethylene Dibromide	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM

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Analytical Laboratory Report
Laboratory Project Number: A07873
Laboratory Sample Number: A07873-002

Order: A07873
Date: 04/12/22

Client Identification:	**Arcadis U.S., Inc. - Novi**	Sample Description:	**OW-16D2-040822**	Chain of Custody:	**207003**
Client Project Name:	**TRW Milford ZF Active Safety (30046730)**	Sample No:		Collect Date:	**04/08/22**
Client Project No:	**30046730**	Sample Matrix:	**Ground Water**	Collect Time:	**11:35**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A07873-002** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: OW-16D2-040822**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
37. 2-Hexanone	U		µg/L	50	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
38. Isopropylbenzene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
39. 4-Methyl-2-pentanone	U		µg/L	50	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
40. Methylene Chloride	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
‡ 41. 2-Methylnaphthalene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
42. MTBE	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
43. Naphthalene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
44. n-Propylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
45. Styrene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
46. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
47. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
48. Tetrachloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
49. Toluene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
50. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
51. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
‡ 52. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
53. Trichloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
54. Trichlorofluoromethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
55. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
57. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
58. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
59. Vinyl Chloride	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
60. m&p-Xylene	U		µg/L	2.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
61. o-Xylene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM
‡ 62. Xylenes	U		µg/L	3.0	1.0	04/11/22	VB22D11B	04/11/22 20:00	VB22D11B	KCM

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Analytical Laboratory Report
Laboratory Project Number: A07873
Laboratory Sample Number: A07873-003

Order: A07873
Date: 04/12/22

Client Identification:	**Arcadis U.S., Inc. - Novi**	Sample Description:	**Trip Blank**	Chain of Custody:	**207003**
Client Project Name:	**TRW Milford ZF Active Safety (30046730)**	Sample No:		Collect Date:	**04/08/22**
Client Project No:	**30046730**	Sample Matrix:	**Blank: Trip**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A07873-003** **Matrix: Blank: Trip**
Method: EPA 5030C/EPA 8260D **Description: Trip Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
3. Benzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
4. Bromobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
5. Bromochloromethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
6. Bromodichloromethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
7. Bromoform	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
8. Bromomethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
9. 2-Butanone	U		µg/L	25	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
10. n-Butylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
11. sec-Butylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
12. tert-Butylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
13. Carbon Disulfide	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
15. Chlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
16. Chloroethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
17. Chloroform	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
18. Chloromethane	U	V- L-	µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
21. Dibromochloromethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
22. Dibromomethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
27. 1,1-Dichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
29. 1,1-Dichloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
30. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
31. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
35. Ethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
36. Ethylene Dibromide	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM

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Analytical Laboratory Report
Laboratory Project Number: A07873
Laboratory Sample Number: A07873-003

Order: A07873
Date: 04/12/22

Client Identification:	**Arcadis U.S., Inc. - Novi**	Sample Description:	**Trip Blank**	Chain of Custody:	**207003**
Client Project Name:	**TRW Milford ZF Active Safety (30046730)**	Sample No:		Collect Date:	**04/09/22**
Client Project No:	**30046730**	Sample Matrix:	**Blank: Trip**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A07873-003** **Matrix: Blank: Trip**
Method: EPA 5030C/EPA 8260D **Description: Trip Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
37. 2-Hexanone	U		µg/L	50	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
38. Isopropylbenzene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
39. 4-Methyl-2-pentanone	U		µg/L	50	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
40. Methylene Chloride	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
‡ 41. 2-Methylnaphthalene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
42. MTBE	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
43. Naphthalene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
44. n-Propylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
45. Styrene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
46. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
47. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
48. Tetrachloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
49. Toluene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
50. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
51. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
‡ 52. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
53. Trichloroethene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
54. Trichlorofluoromethane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
55. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
57. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
58. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
59. Vinyl Chloride	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
60. m&p-Xylene	U		µg/L	2.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
61. o-Xylene	U		µg/L	1.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM
‡ 62. Xylenes	U		µg/L	3.0	1.0	04/11/22	VB22D11B	04/11/22 19:33	VB22D11B	KCM

Definitions/ Qualifiers:

A: Spike recovery or precision unusable due to dilution.
B: The analyte was detected in the associated method blank.
E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
J: The concentration is an estimated value.
M: Modified Method
U: The analyte was not detected at or above the reporting limit.
X: Matrix interference has resulted in a raised reporting limit or distorted result.
W: Results reported on a wet-weight basis.
***:** Value reported is outside QC limits

Exception Summary:

L+ : Recovery in the associated laboratory sample (LCS) exceeds the upper control limit. Results may be biased high.
V+ : Recovery in the associated continuing calibration verification sample (CCV) exceeds the upper control limit. Results may be biased high.

Analysis Locations:

All analyses performed in Holt.

Accreditation Number(s):

T104704518-19-8 (TX)