

TRANSMITTAL LETTER



To:
Jeanne Schlaufman
Michigan Department of
Environment, Great Lakes &
Energy
27700 Donald Court
Warren, MI 48092

From:
Kris Hinskey

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Copies:

Date:
January 31, 2024

Subject:
ResAp-Interim Response
Activity Plan ZVI Injections
Quarterly Update Letter

Arcadis Project No.:
30195206

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SUBJECT

ResAP-Interim Response Activity Plan ZVI Injections
Quarterly Update Letter

TO

Ms. Jeanne Schlaufman, EGLE

DATE

January 31, 2024

OUR REF

30206169

COPIES TO

Mr. Todd Walton, Ford
Mr. Chuck Pinter, Ford

NAME

Kris Hinskey – Arcadis of Michigan, LLC

On behalf of Ford Motor Company (Ford), this letter has been prepared by Arcadis of Michigan, LLC (Arcadis) for the Livonia Transmission Plant (LTP) site (the site), located on **Figure 1**. This letter complies with the following Response Activity Plan (ResAP) and EGLE approval letter:

- ResAP for Interim Response Activities – Property Boundary Zero Valent Iron, date June 30, 2023
- *Notice of Conditional Approval of Response Activity Pan – Interim Response Activities for Zero Valent Iron Injections at the Ford – Livonia Transmission Plant*, dated July 20, 2023

The performance groundwater sampling outlined below was completed in accordance with the approved ResAP for Interim Response Activities (IRA).

Performance Groundwater Sampling

Quarterly zero valent iron (ZVI) performance groundwater sampling was completed on November 14, 2023, during the quarterly on-Site and off-Site groundwater sampling event. Groundwater samples were collected from monitoring wells MW-35, MW-43, MW-52, MW-211S, MW-212S, MW-213S, MW-234 and MW-235 (collectively referred to as the ZVI performance monitoring network; **Figure 2**)

Each monitoring well was sampled using a peristaltic pump and low-flow sampling techniques in accordance with the project Quality Assurance Project Plan. Groundwater samples were collected into laboratory-supplied bottles and were submitted on ice to Eurofins Laboratories (Eurofins) in Barberton, Ohio for laboratory analysis. All samples were analyzed for the seven constituents of concern (COCs) for the Site: 1,1-dichloroethene (DCE), cis-1,2-DCE, trans-1,2-DCE, tetrachloroethene (PCE), trichloroethene (TCE), vinyl chloride (VC), and 1,4-dioxane in accordance with United States Environmental Protection Agency (USEPA) Method 8260D and 1,4-dioxane via USEPA Method 8260D-SIM.

Groundwater analytical results and low-flow sampling parameters are provided in **Table 1**, with the data compared to Michigan Part 201 Non-Residential Generic Cleanup Criteria (EGLE 2018). Monitoring data collected from the ZVI performance monitoring well network during the third quarter groundwater sampling event were used for the baseline data which are included in **Table 1**. Low-flow groundwater sampling logs are included in **Attachment 1**. Vinyl chloride was detected at a concentration of 12 ug/L which exceeds Part 201 Non-residential

Ms. Jeanne Schlaufman
Michigan Department of Environment, Great Lakes, and Energy
January 31, 2024

Generic Cleanup Criteria at monitoring well MW-235, consistent with baseline results of 11 ug/L observed in 3Q2023. All other site-specific compounds (1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, TCE, and 1,4-dioxane) either were not detected at concentrations above the reporting limits or were detected at concentrations below Part 201 Non-Residential Generic Cleanup Criteria for 4Q 2023.

Proposed Schedule

Future performance monitoring will be completed in accordance with the ResAP IRA. The 1Q2024 performance monitoring event is scheduled to be completed in February 2024. The next quarterly update letter will summarize the results of the 1Q2024 sampling event and will be submitted by April 29, 2024.

Enclosures:

Table 1 – ZVI Performance Monitoring Groundwater Analytical Data

Figure 1 – Site Location Map

Figure 2 – Site Layout

Attachment 1 – Groundwater Sampling Logs

Table

Location:	Unit	Michigan Non-Residential Drinking Water Criteria	MW-35		MW-43		MW-52		MW-211S		MW-212S		MW-213S		MW-234		MW-235	
			8/15/2023	11/14/2023	8/15/2023	11/14/2023	8/15/2023	11/14/2023	8/15/2023	11/14/2023	8/15/2023	11/14/2023	8/15/2023	11/14/2023	9/18/2023	11/14/2023	9/18/2023	11/14/2023
Semi-volatile Organic Compounds (SVOCs)																		
1,4-Dioxane	µg/L	350	3.4	4.0	2.5	3.4	1.8 J	2.6	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 2.0	0.89 J
Volatile Organic Compounds (VOCs)																		
1,1-Dichloroethene	µg/L	7.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-Dichloroethene	µg/L	70	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.6	2.8	0.58 J	1.0	< 1.0	< 1.0	1.6	2.0
Tetrachloroethene	µg/L	5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	µg/L	100	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.53 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/L	5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.52 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl chloride	µg/L	2.0	1.6	1.5	< 1.0	< 1.0	1.5	1.5	< 1.0	< 1.0	0.82 J	1.0	0.48 J	1.1	< 1.0	< 1.0	11	12

Location:		MW-35		MW-43		MW-52		MW-211S		MW-212S		MW-213S		MW-234		MW-235	
Date:	Unit	8/15/2023	11/14/2023	8/15/2023	11/14/2023	8/15/2023	11/14/2023	8/15/2023	11/14/2023	8/15/2023	11/14/2023	8/15/2023	11/14/2023	9/18/2023	11/14/2023	9/18/2023	11/14/2023
Low Flow Sampling Parameters																	
Dissolved Oxygen	mg/L	0.15	3.30	1.19	0.10	0.00	0.26	0.14	0.25	1.48	0.16	0.18	0.36	0.06	0.06	0.14	5.00
ORP	mV	-243.9	-168.3	-152.7	-142.4	-132.1	-120.7	31.3	64.8	-2.2	-167.3	-20.7	-201.0	-255.2	-323.3	-61.9	-119.6
pH	s.u.	7.73	7.61	7.62	7.74	7.22	7.27	7.40	7.34	7.19	7.12	7.12	7.11	10.04	10.03	7.10	7.16
Temperature	°C	16.7	14.0	17.0	16.1	16.5	16.1	19.4	16.2	19.4	15.8	20.4	17.6	18.7	17.2	17.6	17.2
Specific Conductivity	mS/cm	4.74	2.95	9.62	7.52	7.00	6.14	7.29	5.56	7.48	8.32	7.76	7.05	8.09	8.12	7.86	7.32
Turbidity	NTU	11.28	8.93	8.30	21.30	4.06	3.23	2.28	2.99	0.02	1.67	0.40	3.86	5.21	2.30	1.22	62.10

Notes:

Results are compared to EGLE Part 201 Generic Cleanup Criteria, June 2018.

Bold Result denotes exceedance of EGLE Non-Residential Drinking Water Criteria.

< Denotes not detected above reporting limit.

Abbreviations:

°C degrees Celsius

µg/L micrograms per liter

EGLE Michigan Department of Environment, Great Lakes, and Energy

J estimated result

mg/L milligrams per liter

MW monitoring well

mS/cm millisiemens per centimeter

mV millivolts

NTU nephelometric turbidity units

s.u. standard units

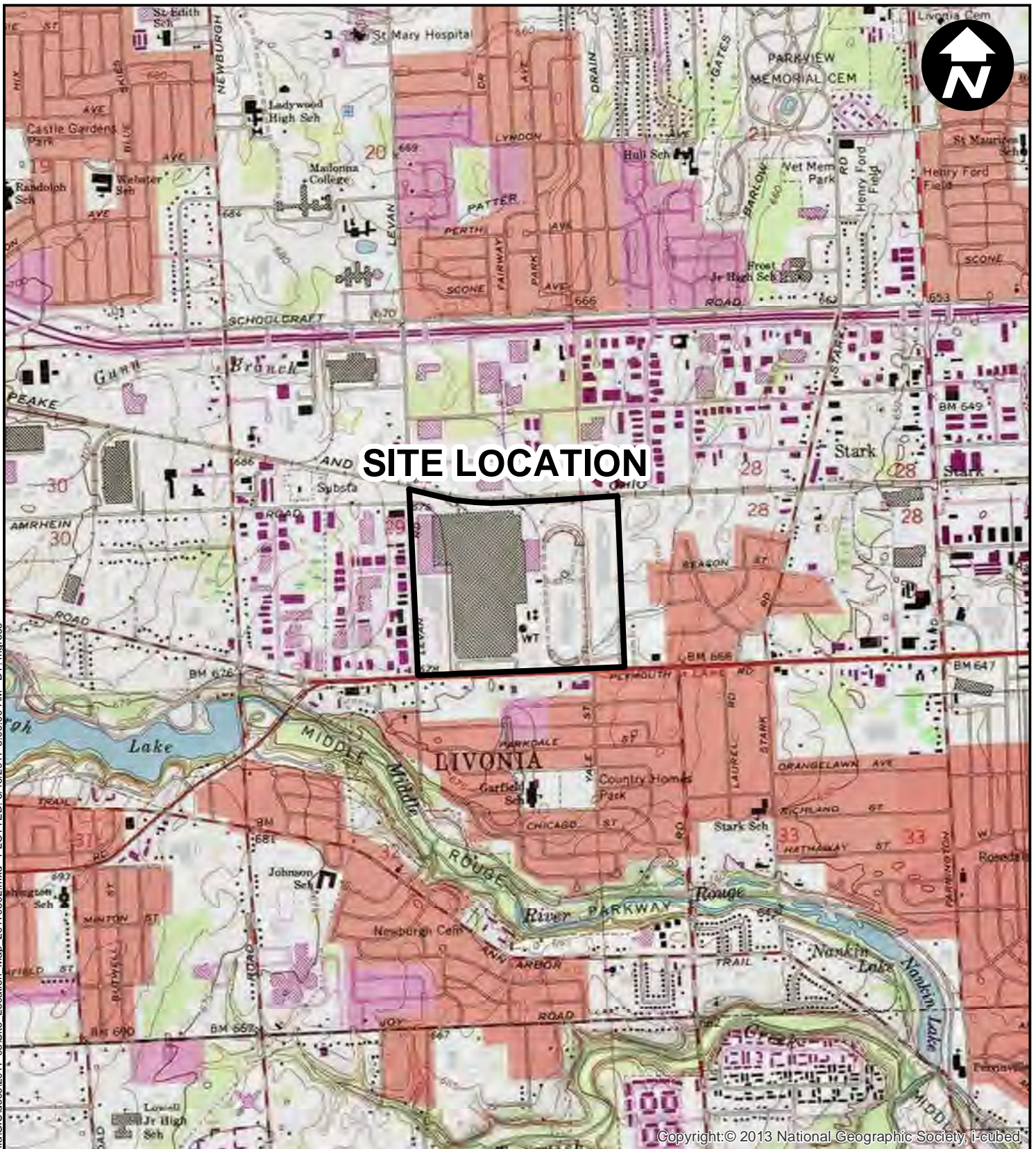
Analytical Methods:

8260B for Volatile Organic Compounds (VOCs)

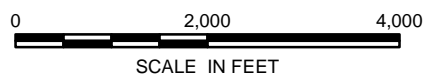
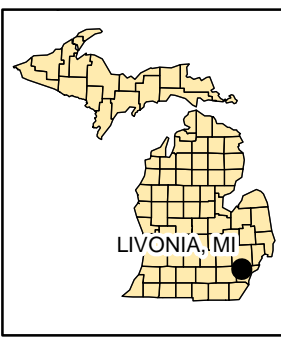
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Figures

CITY: Novi DIV: ENV DB: MG PROJECT NUMBER: MI001322.0001 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet
Z: GISProjects\ENVA\Novi\Brighton_MLFordLivonia\GIS\docs\2017-08\Site_Location_Map_20170802.mxd PLOTTED: 8/16/2017 8:00:00 AM BY: mgatress



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FORD MOTOR COMPANY
LIVONIA TRANSMISSION PLANT
LIVONIA, MICHIGAN

SITE LOCATION MAP

SOURCE:
USGS 7.5 MINUTE TOPOGRAPHIC MAP
NORTHVILLE AND WAYNE QUADRANGLES



FIGURE
1

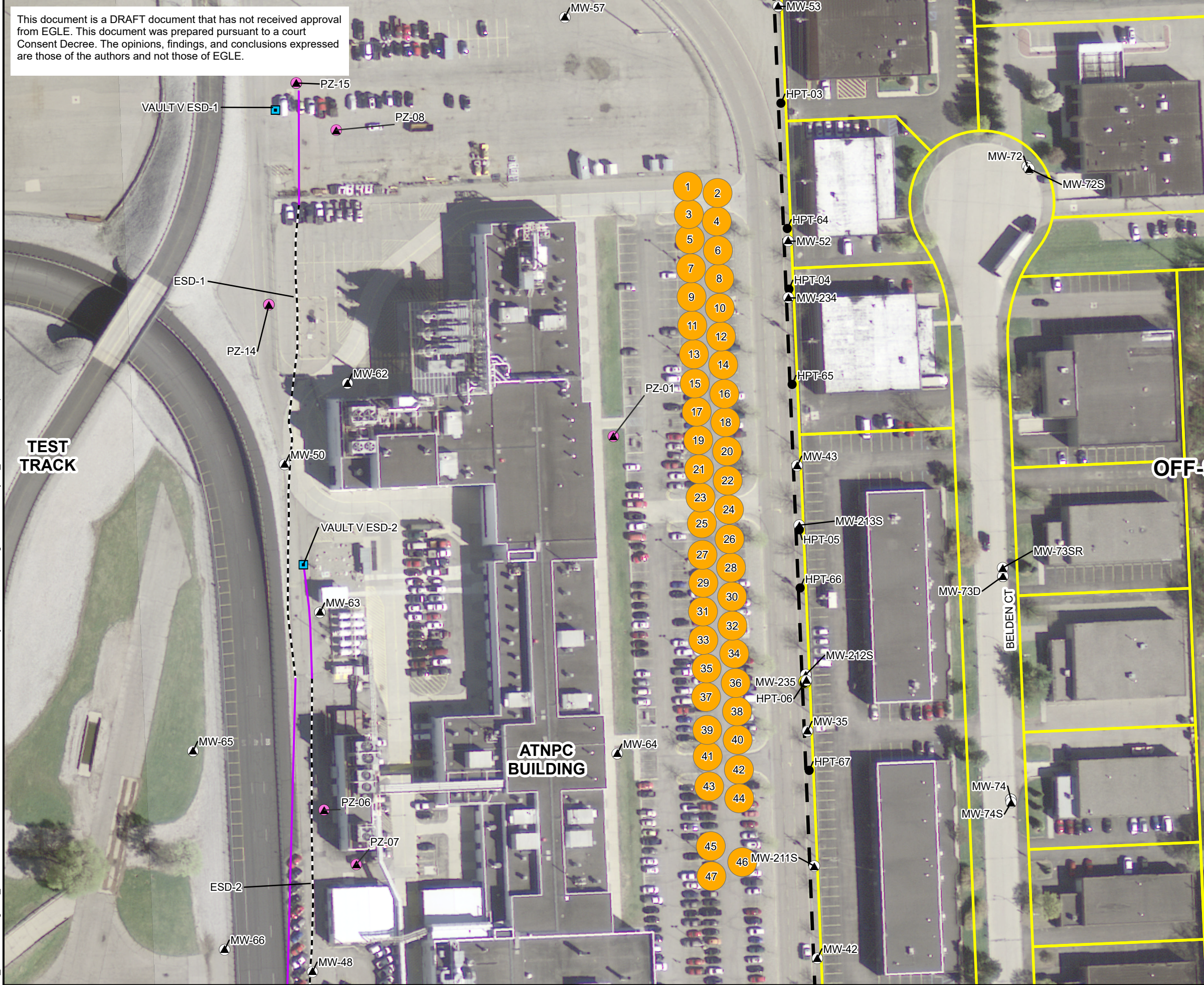
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LEGEND

- ▲ MONITORING WELL
- VAULT
- PIEZOMETER
- HYDRAULIC PROFILE TOOL-VERTICAL
- AQUIFER PROFILE BORING
- ZERO VALENCE IRON (ZVI)
- INJECTION POINTS
- - - HYDRAULIC CONTROL SYSTEM
- WELL SCREEN
- WELL BLANK CASING
- ▭ FORD PROPERTY BOUNDARY
- ▭ COMMERCIAL/RESIDENTIAL PROPERTY BOUNDARY

CITY: Novi; DIV: ENV; DB: MG; PIC: R. ELLIS; PM: K. HINSKEY; PROJECT NUMBER: 30080642; COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet; T.: ENV\Novi\Brighton_MIFord\Livonia\GIS\docs\GEC2024\Arc Pro\Ford LTP- ZVI Injection Locations\Figure 2 - Site Layout_LTP_RevDRA.aprx PLOTTED: 1/31/2024 10:05 AM BY: sbj01179



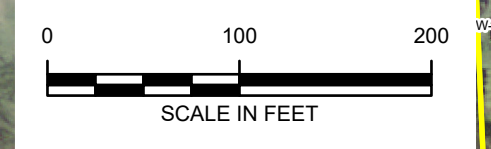
OFF-SITE AREA

ATNPC BUILDING

TEST TRACK

BELDEN CT

NOTES:
 THE RADIUS OF INFLUENCE (ROI) OF EACH POINT IS 15FT
 EACH INJECTION POINT ARE 30 FT AWAY
 ATNPC = AUTOMATIC TRANSMISSION NEW PRODUCT CENTER
 EGLE = MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
 ESD = EASTERN STORM DRAIN



FORD MOTOR COMPANY
 LIVONIA TRANSMISSION PLANT
 LIVONIA, MICHIGAN

SITE LAYOUT

Attachment 1

Groundwater Sampling Logs



SHALLOW LOW-FLOW GROUNDWATER SAMPLING FORM

Page 1 of 1

Project No. 30167538.401.01 Well ID _____ Date 11-14-2023
 Project Name/Location _____ Ford LTP _____ MW-35 _____
 Measuring Pt. Description _____ Top of Casing _____ Screen Setting (ft-bmp) 19.5-24.5 _____ Weather 64.0 degrees F and Mostly Cloudy. The wind is blowing S at 15.0 mph. _____ Well Material PVC _____
 Static Water Level (ft-bmp) 9.53 _____ Total Depth (ft-bmp) 24.10 _____ Casing Diameter (in.) 2 _____ Well Material PVC _____
 Pump Intake (ft-bmp) _____ Pump Intake (ft-bmp) 22.00 _____ Water Column (ft.) 14.57 _____ Gallons in Well 2.37 _____
 Purge Method _____ Purge Method Low-Flow _____ Sample Method Grab _____
 Well Volumes Purged _____ Well Volumes Purged 1.26 _____ _____
 Sample Time: Label 10:20 _____ Volume Purged 2.99 gallons _____ Replicate/Code No. _____ Sampled by _____
 Purge Start 09:10 _____
 Purge End 10:22 _____

Time	Minutes Elapsed between Readings	Flow Rate (mL/min) [100-300 mL/min]	Depth to Water (ft) [± 0.3]	Total Gallons Purged	pH [± 0.1]	Cond. (mS/cm) [± 3%]	Turbidity (NTU) [± 10%*]	DO (mg/L) [± 10%]	Temp. (°C) [± 3%]	Redox (mV) [± 10mV]	Appearance	
											Color	Odor
09:16	0	190	9.53	0.00	7.57	2.95	29.80	0.29	14.7	-97.9	Cloudy	No Odor
09:21	5	190	9.53	0.25	7.59	2.96	21.90	0.94	14.8	-121.6	Clear	No Odor
09:26	5	190	9.51	0.50	7.60	2.96	22.60	0.05	14.4	-138.1	Clear	No Odor
09:31	5	190	9.53	0.75	7.60	2.96	28.50	3.59	14.5	-149.4	Clear	No Odor
09:36	5	190	9.53	1.00	7.61	2.97	14.30	2.25	14.0	-155.5	Clear	No Odor
09:41	5	190	9.58	1.25	7.62	2.96	18.80	2.42	13.9	-160.9	Clear	No Odor
09:46	5	190	9.59	1.50	7.62	2.96	29.40	3.74	13.9	-160.1	Clear	No Odor
09:51	5	190	9.66	1.75	7.62	2.96	18.20	3.42	13.9	-164.2	Clear	No Odor
09:56	5	190	9.66	2.00	7.61	2.96	12.90	3.38	13.9	-167.3	Clear	No Odor
10:01	5	180	9.67	2.25	7.62	2.96	19.20	3.37	13.9	-161.6	Clear	No Odor
10:06	5	190	9.67	2.49	7.61	2.96	13.80	3.47	14.0	-169.0	Clear	No Odor
10:11	5	190	9.67	2.74	7.61	2.95	6.92	3.32	14.0	-172.2	Clear	No Odor
10:16	5	190	9.69	2.99	7.61	2.95	8.93	3.30	14.0	-168.3	Clear	No Odor
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* Turbidity < 50 NTU and ±10% for within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, TCE, VC	40 mL Glass	3	HCL
1,4-dioxane	40 mL Glass	3	HCL

Comments Bolts won't thread

Well Casing Volumes	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
Gallons/Foot	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information	Onsite, E	Well Locked at Arrival:	n/a
Well Location:	Fair	Well Locked at Departure:	n/a
Condition of Well:	Flush mount	Lock Functioning:	n/a

SHALLOW LOW-FLOW GROUNDWATER SAMPLING FORM

Page 1 of 1

Project No.	30167538.401.01	Well ID	MW-212S	Date	11-14-2023
Project Name/Location	Ford LTP		Weather	50.0 degrees F and Partly Cloudy. The wind is blowing S at 3.4 mph.	
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	6.5-11.5	Casing Diameter (in.)	2
Static Water Level (ft-bmp)	8.94	Total Depth (ft-bmp)	11.19	Water Column (ft.)	2.25
		Pump Intake (ft-bmp)	10.44	Purge Method	Low-Flow
		Well Volumes Purged	4.38		
Sample Time:	Label	10:35	Volume Purged	1.62 gallons	Replicate/Code No.
	Purge Start	09:40			
	Purge End	10:38			
					Well Material: PVC
					Gallons in Well: 0.37
					Sample Method: Grab
					Sampled by: Samantha Szpaichler

Time	Minutes Elapsed between Readings	Flow Rate (mL/min) [100-300 mL/min]	Depth to Water (ft) [± 0.3]	Total Gallons Purged	pH [± 0.1]	Cond. (mS/cm) [± 3%]	Turbidity (NTU) [± 10%*]	DO (mg/L) [± 10%]	Temp. (°C) [± 3%]	Redox (mV) [± 10mV]	Appearance	
											Color	Odor
09:41	0	135	8.98	0.00	7.01	9.34	107.00	1.82	15.5	1.7	Clear, Small Orange Particulates, Turbid, Yellow	No Odor
09:46	5	135	8.97	0.18	7.01	9.25	51.10	1.18	15.7	-89.0	Clear, Turbid	No Odor
09:51	5	135	8.97	0.36	7.04	9.00	27.10	0.65	15.8	-122.3	Clear	No Odor
09:56	5	135	8.97	0.54	7.05	8.84	16.40	0.65	16.0	-140.9	Clear	No Odor
10:01	5	135	8.97	0.72	7.06	8.67	9.42	0.49	16.1	-152.4	Clear	No Odor
10:06	5	135	8.97	0.90	7.08	8.60	8.56	0.45	16.1	-160.0	Clear	No Odor
10:11	5	135	8.97	1.08	7.09	8.53	5.31	0.27	16.1	-163.6	Clear	No Odor
10:16	5	135	8.97	1.26	7.10	8.49	3.02	0.23	16.0	-167.1	Clear	No Odor
10:21	5	135	8.97	1.44	7.11	8.34	2.80	0.21	15.9	-166.0	Clear	No Odor
10:26	5	135	8.97	1.62	7.12	8.32	1.67	0.16	15.8	-167.3	Clear	No Odor
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* Turbidity < 50 NTU and ±10% for within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, TCE, VC	40 mL Glass	3	HCL
1,4-dioxane	40 mL Glass	3	HCL

Comments: none

Well Casing Volumes					
Gallons/Foot	1" = 0.04 1.25" = 0.06	1.5" = 0.09 2" = 0.16	2.5" = 0.26 3" = 0.37	3.5" = 0.50 4" = 0.65	6" = 1.47

Well Information			
Well Location:	Onsite, E	Well Locked at Arrival:	n/a
Condition of Well:	Good	Well Locked at Departure:	n/a
Well Completion:	Flush mount	Lock Functioning:	n/a



SHALLOW LOW-FLOW GROUNDWATER SAMPLING FORM

Page 1 of 1

Project No. 30167538.401.01 Well ID MW-2138 Date 11-14-2023

Project Name/Location Ford LTP Weather 52.0 degrees F and Mostly Clear. The wind is blowing S/SW at 4.7 mph.

Measuring Pt. Description Top of Casing 6.0-11.0 Casing Diameter (in.) 2 Well Material PVC

Static Water Level (ft-bmp) 8.67 Total Depth (ft-bmp) 10.85 Water Column (ft.) 2.18 Gallons in Well 0.35

Pump Intake (ft-bmp) 10.17 Purge Method Low-Flow Sample Method Grab

Well Volumes Purged 5.66

Volume Purged 1.98 gallons Replicate/Code No. MW-2138-MS_111423, MW-2138-MSD_111423 Sampled by Samantha Szpaichler

Sample Time: Label 14:20 Purge Start 13:22 Purge End 14:38

Time	Minutes Elapsed between Readings	Flow Rate (mL/min) [100-300 mL/min]	Depth to Water (ft) [± 0.3]	Total Gallons Purged	pH [± 0.1]	Cond. (mS/cm) [± 3%]	Turbidity (NTU) [± 10%*]	DO (mg/L) [± 10%]	Temp. (°C) [± 3%]	Redox (mV) [± 10mV]	Appearance	
											Color	Odor
13:24	0	140	8.71	0.00	6.98	6.74	94.00	8.76	17.9	-166.6	Clear, Cloudy, Small Orange Particulates, Yellow	No Odor
13:29	5	140	8.71	0.18	7.00	6.76	88.70	1.22	17.0	-203.2	Clear, Cloudy	No Odor
13:34	5	140	8.71	0.36	7.02	6.80	64.00	0.76	17.3	-214.1	Clear	No Odor
13:39	5	140	8.71	0.54	7.05	6.89	26.50	0.57	17.6	-210.7	Clear	No Odor
13:44	5	140	8.71	0.72	7.07	6.96	22.50	0.39	17.3	-209.5	Clear	No Odor
13:49	5	140	8.71	0.90	7.08	7.00	11.70	0.37	17.4	-209.5	Clear	No Odor
13:54	5	140	8.71	1.08	7.09	7.00	10.60	0.35	17.4	-210.1	Clear	No Odor
13:59	5	140	8.71	1.26	7.10	7.03	7.73	0.35	17.4	-207.3	Clear	No Odor
14:04	5	140	8.71	1.44	7.10	7.07	6.42	0.31	17.5	-201.1	Clear	No Odor
14:09	5	140	8.71	1.62	7.11	7.04	4.86	0.28	17.5	-207.6	Clear	No Odor
14:14	5	140	8.71	1.80	7.11	7.05	4.50	0.31	17.6	-210.7	Clear	No Odor
14:19	5	140	8.71	1.98	7.11	7.05	3.86	0.36	17.6	-201.0	Clear	No Odor
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* Turbidity < 50 NTU and ±10% for within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, TCE, VC	40 mL Glass	9	HCL
1,4-dioxane	40 mL Glass	9	HCL

Comments none

Well Casing Volumes	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
Gallons/Foot	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information	Onsite, E	Well Locked at Arrival:	n/a
Well Location:	Good	Well Locked at Departure:	n/a
Condition of Well:	Flush mount	Lock Functioning:	n/a

SHALLOW LOW-FLOW GROUNDWATER SAMPLING FORM

Page 1 of 1

Project No. 30167538.401.01 Well ID Ford LTP MW-234 Date 11-14-2023
 Project Name/Location _____ Weather 52.0 degrees F and Mostly Clear. The wind is blowing S/SW at 4.7 mph.
 Measuring Pt. Description Top of Casing Screen Setting (ft-bmp) 12.0-17.0 Casing Diameter (in.) 2 Well Material PVC
 Static Water Level (ft-bmp) 8.51 Total Depth (ft-bmp) 15.85 Water Column (ft.) 7.34 Gallons in Well 1.19
 Pump Intake (ft-bmp) 14.50 Purge Method Low-Flow Sample Method Grab
 Well Volumes Purged 1.20 Replicate/Code No. _____ Sampled by Samantha Szpaichler
 Label 15:45 Volume Purged 1.43 gallons
 Purge Start 14:56
 Purge End 15:50

Time	Minutes Elapsed between Readings	Flow Rate (mL/min) [100-300 mL/min]	Depth to Water (ft) [± 0.3]	Total Gallons Purged	pH [± 0.1]	Cond. (mS/cm) [± 3%]	Turbidity (NTU) [± 10%*]	DO (mg/L) [± 10%]	Temp. (°C) [± 3%]	Redox (mV) [± 10mV]	Appearance	
											Color	Odor
14:58	0	130	8.58	0.00	7.68	11.85	13.70	1.07	17.8	-117.7	Clear	No Odor
15:03	5	140	8.58	0.17	7.59	12.02	14.20	0.81	17.1	-189.8	Clear	No Odor
15:08	5	140	8.54	0.35	8.67	9.57	15.20	0.03	17.8	-303.0	Black, Brown, Clear, Gray	No Odor
15:13	5	140	8.54	0.53	9.51	9.06	14.10	0.08	17.6	-297.3	Clear, Gray	No Odor
15:18	5	140	8.54	0.71	9.75	8.54	13.50	0.05	17.8	-308.5	Clear, Gray	No Odor
15:23	5	140	8.54	0.89	9.97	8.32	11.85	0.05	17.4	-322.7	Clear	No Odor
15:28	5	140	8.54	1.07	9.98	8.26	4.87	0.05	17.3	-318.3	Clear, Gray	No Odor
15:33	5	140	8.54	1.25	10.02	8.20	3.42	0.05	17.2	-321.9	Clear, Gray	No Odor
15:38	5	140	8.54	1.43	10.03	8.12	2.30	0.06	17.2	-323.3	Clear, Gray	No Odor
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* Turbidity < 50 NTU and ±10% for within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, TCE, VC	40 mL Glass	3	HCL
1,4-dioxane	40 mL Glass	3	HCL

Comments _____ none

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information

Well Location:	Onsite, E	Well Locked at Arrival:	n/a
Condition of Well:	Good	Well Locked at Departure:	n/a
Well Completion:	Flush mount	Lock Functioning:	n/a



SHALLOW LOW-FLOW GROUNDWATER SAMPLING FORM

Page 1 of 1

Project No.	30167538.401.01	Well ID	MW-235	Date	11-14-2023	
Project Name/Location	Ford LTP		Weather	50.0 degrees F and Partly Cloudy. The wind is blowing S at 3.4 mph.		
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	14.0-19.0	Casing Diameter (in.)	2	
Static Water Level (ft-bmp)	8.89	Total Depth (ft-bmp)	17.82	Water Column (ft.)	8.93	
		Pump Intake (ft-bmp)	14.50	Purge Method	Low-Flow	
		Well Volumes Purged	1.66			
Sample Time:	Label	13:33	Volume Purged	2.40 gallons	Replicate/Code No.	--
	Purge Start	12:25				Sampled by
	Purge End	13:36				Nolan Schendel

Time	Minutes Elapsed between Readings	Flow Rate (mL/min) [100-300 mL/min]	Depth to Water (ft) [± 0.3]	Total Gallons Purged	pH [± 0.1]	Cond. (mS/cm) [± 3%]	Turbidity (NTU) [± 10%*]	DO (mg/L) [± 10%]	Temp. (°C) [± 3%]	Redox (mV) [± 10mV]	Appearance	
											Color	Odor
12:28	0	150	8.89	0.00	7.16	6.89	75.40	7.89	17.0	5.2	Cloudy	No Odor
12:33	5	150	8.89	0.20	7.17	6.84	185.00	7.57	17.0	-14.3	Small Black Particulates	No Odor
12:38	5	150	8.89	0.40	7.15	7.06	125.00	7.42	16.7	-38.7	Cloudy	Faint Odor
12:43	5	150	8.89	0.60	7.15	7.13	87.40	6.97	16.7	-53.4	Clear	No Odor
12:48	5	150	8.89	0.80	7.16	7.11	80.20	6.75	17.0	-66.8	Clear	No Odor
12:53	5	150	8.89	1.00	7.15	7.11	66.90	6.84	16.7	-83.3	Cloudy	No Odor
12:58	5	150	8.89	1.20	7.18	7.12	67.30	6.56	17.0	-97.8	Cloudy	Faint Odor
13:03	5	150	8.89	1.40	7.15	7.10	64.30	6.62	17.2	-104.3	Clear	No Odor
13:08	5	150	8.89	1.60	7.16	7.14	91.30	6.40	16.9	-109.0	Cloudy	No Odor
13:13	5	150	8.89	1.80	7.16	7.15	79.80	4.99	16.6	-114.0	Clear	No Odor
13:18	5	150	8.89	2.00	7.16	7.31	69.50	5.12	17.0	-116.5	Cloudy	No Odor
13:23	5	150	8.89	2.20	7.15	7.32	67.10	5.05	17.1	-119.5	Clear	No Odor
13:28	5	150	8.89	2.40	7.16	7.32	62.10	5.00	17.2	-119.6	Clear	No Odor
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* Turbidity < 50 NTU and ±10% for within 1 NTU of a previous reading when <10 NTU		
Constituents Sampled	Container	Number
1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, PCE, TCE, VC	40 mL Glass	3
1,4-dioxane	40 mL Glass	3
Preservative	HCL	

Comments: none

Well Casing Volumes					
Gallons/Foot	1" = 0.04 1.25" = 0.06	1.5" = 0.09 2" = 0.16	2.5" = 0.26 3" = 0.37	3.5" = 0.50 4" = 0.65	6" = 1.47

Well Information			
Well Location:	On-site, E	Well Locked at Arrival:	n/a
Condition of Well:	Good	Well Locked at Departure:	n/a
Well Completion:	Flush mount	Lock Functioning:	n/a