

Memo

**SUBJECT**

Utility Corridor Response Activity Plan
Progress Update – 30 Day Response
Ford Livonia Transmission Plant
36200 Plymouth Road, Wayne County, Michigan
EGLE Site ID No.: 82002970

TO

Paul Owens, District Supervisor
EGLE Warren District Office
27700 Donald Court
Warren, Michigan 48092-2793
owensp@michigan.gov

DATE

July 2, 2021

OUR REF

30080642

DEPARTMENT
ENVIRONMENT

NAME

Kris Hinskey
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COPIES TO

Ms. Beth Vens, EGLE
Mr. Brandon Alger, EGLE
Mr. Todd Walton, Ford
Mr. Chuck Pinter, Ford

On behalf of Ford Motor Company (Ford), this memo has been prepared by Arcadis of Michigan, LLC for the Livonia Transmission Plant (LTP) site (Site) in response to EGLE's request in their letter June 2, 2021, to provide an update on current/future activities within 30 days of receiving the letter. In the letter, EGLE requested Ford continue to characterize the extent of impacts identified in the sanitary sewer corridor in all locations where vapor concentrations exceed applicable criteria. Additionally, the letter requested that Ford evaluate all lateral pipes to structures along the sanitary sewer corridor and assess if the Plymouth Road sanitary sewer continues east beyond Stark Road.

All work was performed under the guidance of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) in compliance with the Consent Decree filed on July 27, 2017 (No: 2:1712372-GAD-RSW) and in accordance with the following approved Response Activity Plans (RespAPs):

- Response Activity Plan – Utility Corridor Evaluation Revised, dated February 11, 2020;
- Response Activity Plan – Utility Corridor Evaluation Revised Addendum, dated December 4, 2020;
- Response Activity Plan – Utility Corridor Evaluation Revised Addendum #2, dated January 27, 2021.

This memo documents the analytical results for samples that have been collected both onsite and along Stark Road within the sanitary sewers during the June 2021 sampling event 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.

Sampling Methodology

All samples were collected in accordance with the sampling methodology detailed in the approved utility corridor RespAPs for all media collected.

Paul Owens, District Supervisor
EGLE Warren District Office
July 2, 2021

Grab vapor samples were collected from the sanitary sewers via tubing connected to a SUMMA® canister and analyzed for site-related COCs via United States Environmental Protection Agency (USEPA) Method TO-15. All samples were submitted to Test America (formerly Eurofins), located in Folsom, California.

Grab liquid samples were collected under base flow conditions and analyzed for site-related COCs via USEPA SW-846 Method 8260B and 8260B SIM. All samples were submitted to Test America, located in North Canton, Ohio.

Onsite and Stark Road Sampling

On June 4, 2021, Arcadis contacted the City of Livonia to request traffic control support and to coordinate the start time to collect the samples. On June 4, 2021, Arcadis met with Brandon Alger to review the initial response actions.

On June 10, 2021, Arcadis collected vapor samples from four (4) locations onsite (MH-1233, MH-1234, MH-1252, and MH-1261) and five (5) locations offsite along Stark Road (SL-5, SL-6, SL-7, SL-8, and SL-9) (**Figures 1 through 4**) in order to determine the extent of vapor impacts identified in the onsite and Stark Road sanitary sewer. Five (5) liquid samples were also collected from the locations along Stark Road (SL-5, SL-6, SL-7, SL-8, and SL-9).

Results of the vapor samples collected onsite during the June 10, 2021 event were compared to the EGLE restricted Nonresidential 12-hour workday exposure Site-Specific Volatilization to Indoor Air Criteria (SSVIAC) (**Table 1**). The results of the vapor samples collected showed an exceedance of the SSVIAC at one onsite location (MH-1233). Results of the vapor samples collected along Stark Road were compared to both the EGLE unrestricted residential SSVIAC and the restricted Nonresidential 12-hour workday exposure SSVIAC (**Table 2**). The results of the vapor samples collected showed exceedances of SSVIAC in all samples collected. Results from the liquid samples collected are provided in **Table 3**.

In addition, Arcadis reviewed the sanitary sewer maps provided by the City of Livonia as well as Geographic information System (GIS) files to add onto current figures. The drawings and GIS files indicated that the Plymouth Road sanitary sewer does not continue along Plymouth Road east of Stark Road. In order to confirm the City of Livonia records, on June 9, 2021, Arcadis assessed the potential for the sanitary sewer along Plymouth Road to continue east of Stark Road. The field team opened the nearest sanitary sewer manhole east of SL-5 at the intersection of Plymouth and Stark. The field team determined that this manhole did not connect to SL-5 and was not connected to the Plymouth Road sanitary sewer.

Additional Field Activities

From June 16 through July 1, 2021, Arcadis oversaw Michels Corporation clean and Closed-Circuit Televis (CCTV) the sanitary sewer along Plymouth Road up to Stark Road. The CCTV will assist in evaluating the potential for lateral pipes entering into the Plymouth Road sanitary sewer.

A subsequent post-cleaning vapor and liquid sampling event is scheduled for July 8, 2021, weather dependent, that will include eleven (11) sample locations along Stark Road (**Figure 5**). The sampling will occur at least 5 days post cleaning/CCTV in order to allow the sanitary sewers to equilibrate. These locations have been selected to further delineate vapor impacts north and south of Plymouth Road along Stark Road. Arcadis will submit all samples to Test America on July 9, 2021 on a 24-hour turn-around-time. Sample results are expected by July 14, 2021.

Paul Owens, District Supervisor
EGLE Warren District Office
July 2, 2021

In addition, Arcadis will be designing and overseeing the rehabilitation of manholes and sanitary sewers onsite. The tentative start date for that scope of work is to begin on July 12, 2021 after the vapor and liquid samples have been collected offsite.

Access Agreements

Ford and Arcadis are preparing access agreements for the commercial properties that are adjacent to the Plymouth Road sanitary sewer. The access agreements are scheduled to be sent out to the appropriate parties on June 29, 2021. Once the signed access agreements have been received, Arcadis will work with the property owners to complete the inspection of p-traps, wax rings, floor drains, and inline exterior vapor traps, if present, as requested by EGLE.

Regulatory Correspondence

Ford and Arcadis continue to provide EGLE with updates during the utility corridor assessment, with bi-weekly updates now scheduled to begin July 3, 2021.

Closing

All samples that have been collected are in accordance with the RespAPs approved by EGLE and the vapor and liquid data has been validated for quality assurance. Ford and Arcadis will continue to have discussions with EGLE to determine the next steps. If you have questions, please contact Kris Hinskey at 269-579-5402.

Figures

- Figure 1 – Onsite Vapor Results Trichloroethene
- Figure 2 – Onsite Vapor Results Vinyl Chloride
- Figure 3 – Offsite Vapor Results Trichloroethene
- Figure 4 – Offsite Vapor Results Vinyl Chloride
- Figure 5 – Offsite Proposed Sample Locations

Tables

- Table 1 – Utility Corridor Onsite Vapor Results
- Table 2 – Utility Corridor Offsite Vapor Results
- Table 3 – Utility Corridor Offsite Liquid Results

Figures



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LEGEND

- ON-SITE MANHOLE TRICHLOROETHENE $\leq 4.0 \mu\text{g}/\text{m}^3$
- ON-SITE MANHOLE TRICHLOROETHENE $> 4.0 \mu\text{g}/\text{m}^3$
- BLUE/BOLD TEXT** RESULT EXCEEDS THE EGLE NONRESIDENTIAL SSVIAC

SURVEY POINTS

- STORM CATCH BASIN
- CHAMBER
- SANITARY MANHOLE
- SANITARY MANHOLE / COULD NOT OPEN
- STORM MANHOLE

- PROPERTY BOUNDARY
- FORD PROPERTY BOUNDARY
- ▲ COMBINEDFLOWDIRECTIONPOINT
- STORM WATER LINE
- SANITARY SEWER LINE

NOTES:

FIGURE SHOWS THE MOST RECENT DATA. FULL SET OF DATA CAN BE FOUND IN THE CORRESPONDING TABLE.

> - GREATER THAN

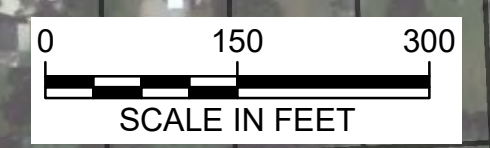
EDC = EASTERN DIVERSION CHAMBER
WDC = WESTERN DIVERSION CHAMBER
EGLE = DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY
SAMH = SANITARY MANHOLE
J = ESTIMATED RESULT

VAPOR RESULTS REPORTED IN MICROGRAMS PER CUBIC METER ($\mu\text{g}/\text{m}^3$). ANALYTICAL METHOD: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) TO-15.

ON-SITE RESULTS ARE COMPARED TO THE EGLE SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA (SSVIAC) RESTRICTED NONRESIDENTIAL 12-HOUR WORKDAY EXPOSURE FOR TRICHLOROETHENE OF $4.0 \mu\text{g}/\text{m}^3$.

A BLUE DOT INDICATES RESULTS EXCEED THE EGLE NONRESIDENTIAL SSVIAC ASSOCIATED WITH THE MOST RECENT SAMPLING EVENT.

BLUE BOX INDICATES RESULT EXCEEDS THE EGLE NONRESIDENTIAL SSVIAC ASSOCIATED WITH THE MOST RECENT SAMPLING EVENT



CITY: Novi; DIV: ENV; DE: MG; PIC: R. ELLIS; PM: K. HINSKEY; PROJECT NUMBER: 30080642; COORDINATE SYSTEM: NAD 1983; StatePlane Michigan South FIPS 2113; Feet Intl; T1_ENV\Novi\Brighton_MifFordLivonia\GIS\docs\GEC10_2021\Figure_1_On-Site_Vapor_Trichloroethene.mxd; PLOTTED: 6/23/2021 3:23:04 PM; BY: PS01045

FORD MOTOR COMPANY
LIVONIA TRANSMISSION PLANT
LIVONIA, MICHIGAN

**ON-SITE VAPOR RESULTS
TRICHLOROETHENE**

ARCADIS

FIGURE
1



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LEGEND

- ON-SITE MANHOLE VINYL CHLORIDE $\leq 27 \mu\text{g}/\text{m}^3$
- ON-SITE MANHOLE VINYL CHLORIDE $> 27 \mu\text{g}/\text{m}^3$
- BLUE/BOLD TEXT** RESULT EXCEEDS THE EGLE NONRESIDENTIAL SSVIAC

SURVEY POINTS

- STORM CATCH BASIN
- CHAMBER
- SANITARY MANHOLE
- SANITARY MANHOLE / COULD NOT OPEN
- STORM MANHOLE

- PROPERTY BOUNDARY
- FORD PROPERTY BOUNDARY
- ▲ COMBINED FLOW DIRECTION POINT
- STORM WATER LINE
- SANITARY SEWER LINE

NOTES:

FIGURE SHOWS THE MOST RECENT DATA. FULL SET OF DATA CAN BE FOUND IN THE CORRESPONDING TABLE.

"ND", "<" – INDICATES THE VALUE IS BELOW THE LABORATORY REPORTING LIMIT

> – GREATER THAN

EDC = EASTERN DIVERSION CHAMBER

WDC = WESTERN DIVERSION CHAMBER

EGLE = DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY

SAMH = SANITARY MANHOLE

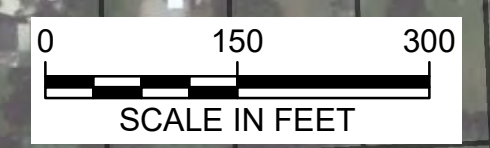
J = ESTIMATED RESULT

VAPOR RESULTS REPORTED IN MICROGRAMS PER CUBIC METER ($\mu\text{g}/\text{m}^3$). ANALYTICAL METHOD: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) TO-15.

ON-SITE RESULTS ARE COMPARED TO THE EGLE SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA (SSVIAC) RESTRICTED NONRESIDENTIAL 12-HOUR WORKDAY EXPOSURE FOR VINYL CHLORIDE OF $27 \mu\text{g}/\text{m}^3$.

A BLUE DOT INDICATES RESULTS EXCEED THE EGLE NONRESIDENTIAL SSVIAC ASSOCIATED WITH THE MOST RECENT SAMPLING EVENT.

BLUE BOX INDICATES RESULT EXCEEDS THE EGLE NONRESIDENTIAL SSVIAC ASSOCIATED WITH THE MOST RECENT SAMPLING EVENT



FORD MOTOR COMPANY
LIVONIA TRANSMISSION PLANT
LIVONIA, MICHIGAN

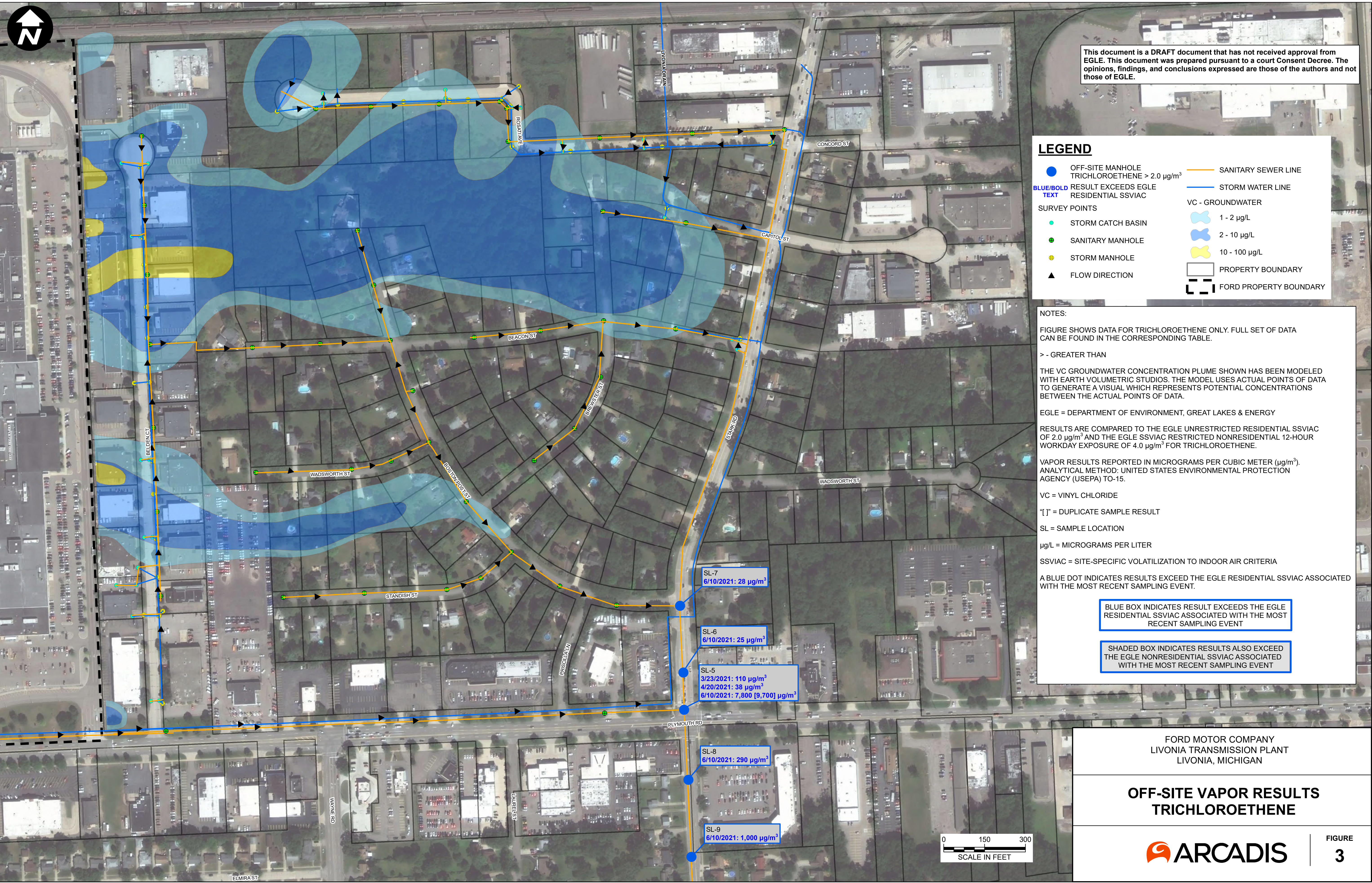
**ON-SITE VAPOR RESULTS
VINYL CHLORIDE**



CITY: Novi; DIV: ENV DE; MG: PIC: R. ELLIS; PM: K. HINSKEY; PROJECT NUMBER: 30080642; COORDINATE SYSTEM: NAD 1983; StatePlane Michigan South FIPS 2113; Feet Intl; T1_ENV\Novi\Brighton_MifFord\Livonia\GIS\docs\GEC10_2021\Figure_2_On-Site_Vapor_Vinyl_Chloride.mxd PLOTTED: 6/23/2021 3:54:20 PM BY: PS010945



CITY: Novi; DIV: ENV DE; MG: PIC: R. ELLIS; PM: K. HINSKEY; PROJECT NUMBER: 30080642; COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl; TITLE: ENV\Novi\Brighton_MilFord\GIS\Docs\GEC\10_2021\Utility_Corridor\June_2021\Figure_3_Off-Site_Vapor_Trichloroethene.mxd; PLOTTED: 6/25/2021 12:53:16 PM; BY: PJS101045



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LEGEND

- OFF-SITE MANHOLE TRICHLOROETHENE > 2.0 µg/m³
- BLUE/BOLD TEXT RESULT EXCEEDS EGLE RESIDENTIAL SSVIAC
- SURVEY POINTS
- STORM CATCH BASIN
- SANITARY MANHOLE
- STORM MANHOLE
- ▲ FLOW DIRECTION
- SANITARY SEWER LINE
- STORM WATER LINE
- VC - GROUNDWATER
- 1 - 2 µg/L
- 2 - 10 µg/L
- 10 - 100 µg/L
- PROPERTY BOUNDARY
- FORD PROPERTY BOUNDARY

NOTES:

FIGURE SHOWS DATA FOR TRICHLOROETHENE ONLY. FULL SET OF DATA CAN BE FOUND IN THE CORRESPONDING TABLE.

> - GREATER THAN

THE VC GROUNDWATER CONCENTRATION PLUME SHOWN HAS BEEN MODELED WITH EARTH VOLUMETRIC STUDIOS. THE MODEL USES ACTUAL POINTS OF DATA TO GENERATE A VISUAL WHICH REPRESENTS POTENTIAL CONCENTRATIONS BETWEEN THE ACTUAL POINTS OF DATA.

EGLE = DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY

RESULTS ARE COMPARED TO THE EGLE UNRESTRICTED RESIDENTIAL SSVIAC OF 2.0 µg/m³ AND THE EGLE SSVIAC RESTRICTED NONRESIDENTIAL 12-HOUR WORKDAY EXPOSURE OF 4.0 µg/m³ FOR TRICHLOROETHENE.

VAPOR RESULTS REPORTED IN MICROGRAMS PER CUBIC METER (µg/m³). ANALYTICAL METHOD: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) TO-15.

VC = VINYL CHLORIDE

"["] = DUPLICATE SAMPLE RESULT

SL = SAMPLE LOCATION

µg/L = MICROGRAMS PER LITER

SSVIAC = SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA

A BLUE DOT INDICATES RESULTS EXCEED THE EGLE RESIDENTIAL SSVIAC ASSOCIATED WITH THE MOST RECENT SAMPLING EVENT.

BLUE BOX INDICATES RESULT EXCEEDS THE EGLE RESIDENTIAL SSVIAC ASSOCIATED WITH THE MOST RECENT SAMPLING EVENT

SHADED BOX INDICATES RESULTS ALSO EXCEED THE EGLE NONRESIDENTIAL SSVIAC ASSOCIATED WITH THE MOST RECENT SAMPLING EVENT

- SL-7
6/10/2021: 28 µg/m³
- SL-6
6/10/2021: 25 µg/m³
- SL-5
3/23/2021: 110 µg/m³
4/20/2021: 38 µg/m³
6/10/2021: 7,800 [9,700] µg/m³
- SL-8
6/10/2021: 290 µg/m³
- SL-9
6/10/2021: 1,000 µg/m³

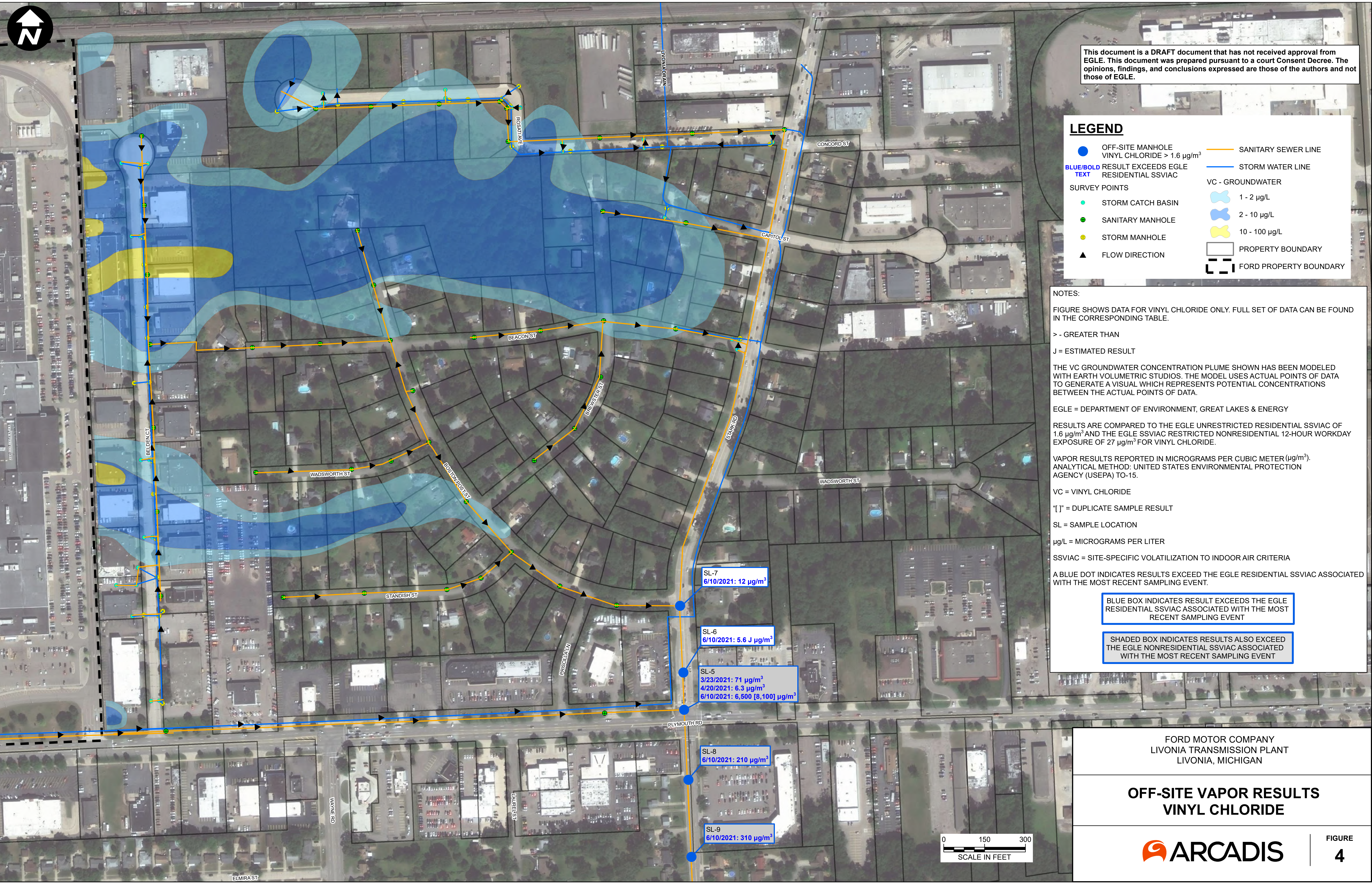


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LIVONIA, MICHIGAN

**OFF-SITE VAPOR RESULTS
TRICHLOROETHENE**



CITY: Novi; DIV: ENV; DE: MG; PIC: R. ELLIS; PM: K. HINSKEY; PROJECT NUMBER: 30080642; COORDINATE SYSTEM: NAD 1983; StatePlane Michigan South FIPS 2113; Feet Intl; T1_ENV\Novi\Brighton_MilFord\GIS\Docs\GEC10_2021\Figure 4_Off-Site_Vapor_Vinyl Chloride.mxd; PLOTTED: 6/25/2021 6:51:27 PM; BY: PSJ01045



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LEGEND

● OFF-SITE MANHOLE VINYL CHLORIDE > 1.6 µg/m ³	— SANITARY SEWER LINE
● RESULT EXCEEDS EGLE RESIDENTIAL SSVIAC	— STORM WATER LINE
● SURVEY POINTS	VC - GROUNDWATER
● STORM CATCH BASIN	■ 1 - 2 µg/L
● SANITARY MANHOLE	■ 2 - 10 µg/L
● STORM MANHOLE	■ 10 - 100 µg/L
▲ FLOW DIRECTION	 PROPERTY BOUNDARY
	 FORD PROPERTY BOUNDARY

NOTES:

FIGURE SHOWS DATA FOR VINYL CHLORIDE ONLY. FULL SET OF DATA CAN BE FOUND IN THE CORRESPONDING TABLE.

> - GREATER THAN

J = ESTIMATED RESULT

THE VC GROUNDWATER CONCENTRATION PLUME SHOWN HAS BEEN MODELED WITH EARTH VOLUMETRIC STUDIOS. THE MODEL USES ACTUAL POINTS OF DATA TO GENERATE A VISUAL WHICH REPRESENTS POTENTIAL CONCENTRATIONS BETWEEN THE ACTUAL POINTS OF DATA.

EGLE = DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY

RESULTS ARE COMPARED TO THE EGLE UNRESTRICTED RESIDENTIAL SSVIAC OF 1.6 µg/m³ AND THE EGLE SSVIAC RESTRICTED NONRESIDENTIAL 12-HOUR WORKDAY EXPOSURE OF 27 µg/m³ FOR VINYL CHLORIDE.

VAPOR RESULTS REPORTED IN MICROGRAMS PER CUBIC METER (µg/m³). ANALYTICAL METHOD: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) TO-15.

VC = VINYL CHLORIDE

[] = DUPLICATE SAMPLE RESULT

SL = SAMPLE LOCATION

µg/L = MICROGRAMS PER LITER

SSVIAC = SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA

A BLUE DOT INDICATES RESULTS EXCEED THE EGLE RESIDENTIAL SSVIAC ASSOCIATED WITH THE MOST RECENT SAMPLING EVENT.

BLUE BOX INDICATES RESULT EXCEEDS THE EGLE RESIDENTIAL SSVIAC ASSOCIATED WITH THE MOST RECENT SAMPLING EVENT

SHADED BOX INDICATES RESULTS ALSO EXCEED THE EGLE NONRESIDENTIAL SSVIAC ASSOCIATED WITH THE MOST RECENT SAMPLING EVENT

SL-7
6/10/2021: 12 µg/m³

SL-6
6/10/2021: 5.6 J µg/m³

SL-5
3/23/2021: 71 µg/m³
4/20/2021: 6.3 µg/m³
6/10/2021: 6,500 [8,100] µg/m³

SL-8
6/10/2021: 210 µg/m³

SL-9
6/10/2021: 310 µg/m³

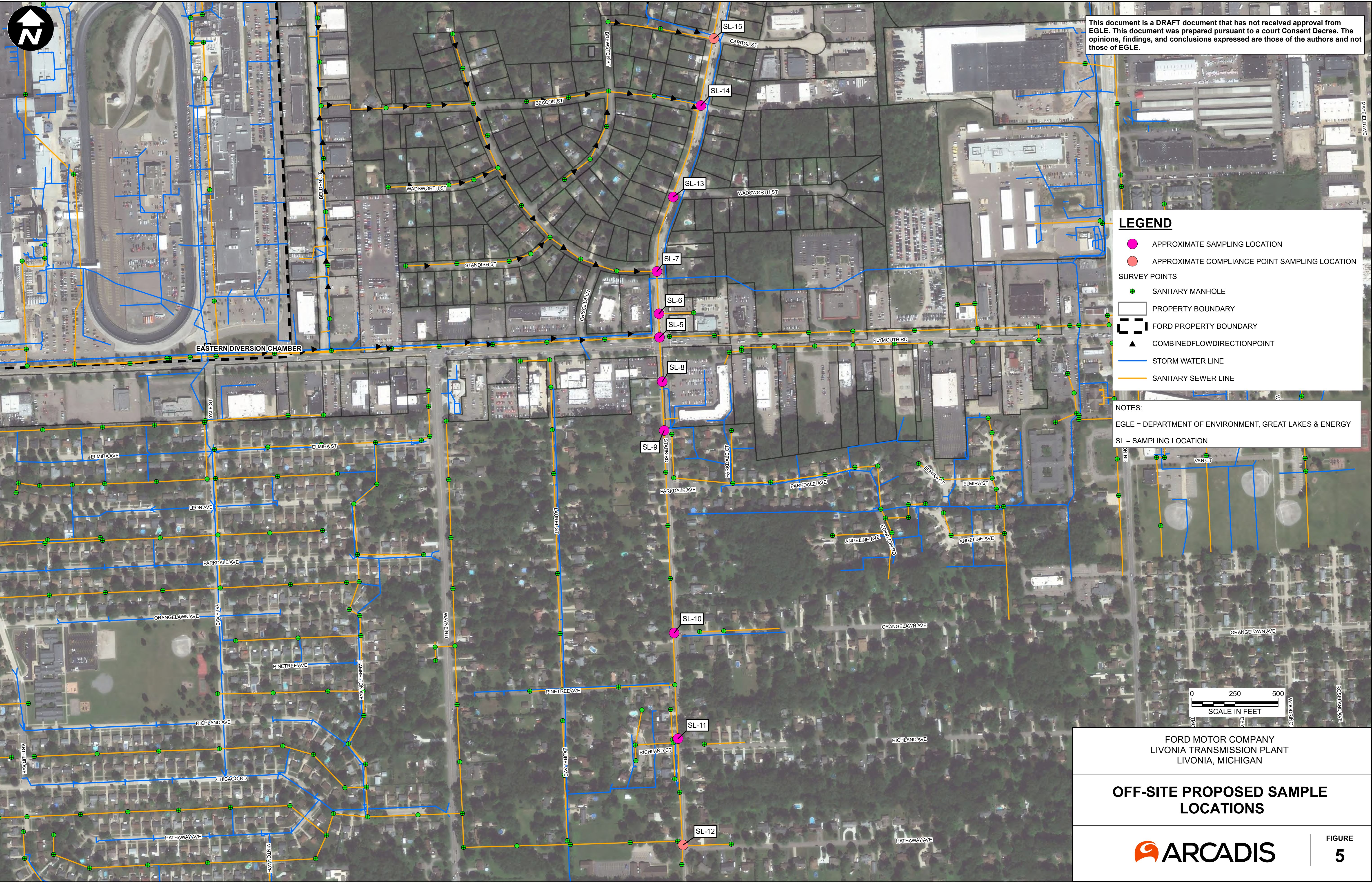


FORD MOTOR COMPANY
LIVONIA TRANSMISSION PLANT
LIVONIA, MICHIGAN

OFF-SITE VAPOR RESULTS VINYL CHLORIDE



CITY: Novi, DIV: ENV, DE: MG, PIC: R. ELLIS, PM: K. HINSKEY, PROJECT NUMBER: 30080642, COORDINATE SYSTEM: NAD 1983, StatePlane Michigan South FIPS 2113, Feet Intl, T1_ENV\Novi\Brighton_MilFord\Livonia\GIS\Docs\GEC\10_2021\Utility Corridor\June_2021\Figure 5_Off-site_Proposed_Sample_Locations.mxd, PLOTTED: 6/25/2021 12:29:31 PM, BY: PS010045



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LEGEND

- APPROXIMATE SAMPLING LOCATION
- APPROXIMATE COMPLIANCE POINT SAMPLING LOCATION
- SURVEY POINTS**
- SANITARY MANHOLE
- PROPERTY BOUNDARY
- FORD PROPERTY BOUNDARY
- ▲ COMBINED FLOW DIRECTION POINT
- STORM WATER LINE
- SANITARY SEWER LINE

NOTES:
EGLE = DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY
SL = SAMPLING LOCATION



FORD MOTOR COMPANY
LIVONIA TRANSMISSION PLANT
LIVONIA, MICHIGAN

OFF-SITE PROPOSED SAMPLE LOCATIONS

Tables

Table 1
Utility Corridor Onsite Vapor Analytical Results
Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Location: Survey ID: Sample Date:	EGLE Nonresidential SSVIAC 12 hour exposure	MH-1233 SAMH-1233 6/10/2021	MH-1234 SAMH-1234 6/10/2021	MH-1252 SAMH-1252 6/10/2021	MH-1261 SAMH-1261 6/10/2021
Volatile Organic Compounds (VOCs)					
1,1-Dichloroethene	610	< 4.6	< 4.2	< 4.0	< 4.5
1,4-Dioxane	24	< 17	< 15	< 14	< 16
cis-1,2-Dichloroethene	25	5.7	1.9 J	2.8 J	2.0 J
Tetrachloroethene	82	< 7.9	< 7.2	< 6.8	< 7.7
trans-1,2-Dichloroethene	250	< 4.6	1.9 J	< 4.0	< 4.5
Trichloroethene	4.0	8.2	3.8 J	3.2 J	2.9 J
Vinyl chloride	27	< 3.0	< 2.7	0.88 J	< 2.9

Notes:

All results reported in $\mu\text{g}/\text{m}^3$.

Bold Result exceeds the EGLE site-specific volatilization to indoor air criteria (SSVIAC) to evaluate vapor migration in preferential pathways developed for restricted nonresidential 12-hour workday exposure.

< Denotes not detected above reporting limit or method detection limit.

Abbreviations:

$\mu\text{g}/\text{m}^3$ micrograms per cubic meter

EGLE Michigan Department of Environment, Great Lakes, and Energy

ID identification

J estimated result

MH manhole

Analytical Methods:

United States Environmental Protection Agency (USEPA) Method TO-15

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Location: Survey ID: Sample Date:	EGLE Residential SSVIAC	EGLE Nonresidential SSVIAC 12 hour exposure	SL-5 NA 3/23/2021	SL-5 NA 4/20/2021	SL-5 NA 6/10/2021	SL-6 NA 6/10/2021	SL-7 NA 6/10/2021	SL-8 NA 6/10/2021	SL-9 NA 6/10/2021
Volatile Organic Compounds (VOCs)									
1,1-Dichloroethene	210	610	< 3.9	< 4.2	55 [64]	< 12	< 17	1.5 J	7.4
1,4-Dioxane	5.1	24	< 14	< 15	< 150 [< 190]	< 44	< 61	< 15	< 17
cis-1,2-Dichloroethene	8.3	25	230	50	13,000 [17,000]	27	20	550	1,400
Tetrachloroethene	41	82	< 6.6	< 7.2	< 70 [< 89]	2.9 J	< 29	< 7.0	< 7.9
trans-1,2-Dichloroethene	83	250	3.5 J	< 4.2	140 [170]	< 12	< 17	4.3	13
Trichloroethene	2.0	4.0	110	38	7,800 [9,700]	25	28	290	1,000
Vinyl chloride	1.6	27	71	6.3	6,500 [8,100]	5.6 J	12	210	310

Notes:

All results reported in µg/m³.

Bolded Result exceeds the EGLE unrestricted residential exposure.

Bold and shaded Result exceeds the EGLE unrestricted residential exposure and the EGLE site-specific volatilization to indoor air criteria (SSVIAC) to evaluate vapor migration in preferential pathways developed for restricted nonresidential 12-hour workday

< Denotes not detected above reporting limit or method detection limit.

Abbreviations:

- [] duplicate sample result
- µg/m³ micrograms per cubic meter
- EGLE Michigan Department of Environment, Great Lakes, and Energy
- ID identification
- J estimated result
- SL Sampling Location

Analytical Methods:

United States Environmental Protection Agency (USEPA) Method TO-15

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Location:	SL-5	SL-5	SL-6	SL-7	SL-8	SL-9
Survey ID:	NA	NA	NA	NA	NA	NA
Sample Date:	4/20/2021	6/10/2021	6/10/2021	6/10/2021	6/10/2021	6/10/2021
Semi-Volatile Organic Compounds (SVOCs)						
1,4-Dioxane	5.8	6.6 [5.8]	< 2.0 U	< 2.0 U	5.4	2.8
Volatile Organic Compounds (VOCs)						
1,1-Dichloroethene	< 5.0	< 10 [< 5.0]	< 1.0 U	< 1.0 U	< 8.0 U	< 5.0 U
cis-1,2-Dichloroethene	160	210 [160]	1.3	< 1.0 U	180	110
Tetrachloroethene	< 5.0	< 10 [< 5.0]	< 1.0 U	< 1.0 U	< 8.0 U	< 5.0 U
trans-1,2-Dichloroethene	< 5.0	< 10 [< 5.0]	< 1.0 U	< 1.0 U	< 8.0 U	< 5.0 U
Trichloroethene	34	56 [34]	0.73 J	< 1.0 U	47	26
Vinyl chloride	14	26 [14]	< 1.0 U	< 1.0 U	26	12

Notes:

All results are reported in µg/L.
 < Denotes not detected above reporting limit.

Abbreviations:

- [] duplicate sample results
- µg/L micrograms per liter
- EGLE Michigan Department of Environment, Great Lakes, and Energy
- ID identification
- NA not available
- J estimated result
- SL sample location
- U Indicates that the analyte/compound was analyzed for, but not detected

Analytical Methods:

United States Environmental Protection Agency (USEPA) Method 8260B Selected Ion Monitoring (SIM) for SVOCs
 USEPA Method 8260B for VOCs

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