Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

Location ID:	Units	CMS-MW-001			CMS-MW-002		CMS-MW-012	
Date Collected:		6/11/2021	10/26/2021	3/22/2022	10/25/2021	3/24/2022	10/19/2021	3/22/2022
Field								
Conductivity	mS/cm	2.325	1.993	1.78	6.98	5.38	4.271	3.03
Dissolved oxygen (DO)	mg/L	0.4	2.6	0.44	0.22	0.57	-0.05	0.03
Oxidation reduction potential (ORP)	millivolts	-24.3	241.9	44.2	-264	-193	-421	-276.3
pH	s.u.	- - *	7.25	7.47	12.64	12.44	8.42**	8.5
Temperature	Deg C	15.3	15.9	8.8	16.7	10.4	19.36	6.4
Turbidity	NTU	2.91	3.01	3.94	4.94	2.22	3.14	0.25
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,1,2,2-Tetrachloroethane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,1,2-Trichloroethane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,1-Dichloroethane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,1-Dichloroethene	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,2,3-Trichlorobenzene	µg/l	< 1.0	--	--	--	--	--	--
1,2,4-Trichlorobenzene	µg/l	--	--	--	< 1.0	--	< 5.0	--
1,2,4-Trimethylbenzene	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,2-Dibromo-3-chloropropane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,2-Dibromoethane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,2-Dichlorobenzene	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,2-Dichloroethane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,2-Dichloropropane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,3,5-Trimethylbenzene	µg/l	--	--	--	< 1.0	--	< 5.0	--
1,3-Dichlorobenzene	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
1,4-Dichlorobenzene	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
2-Butanone (MEK)	µg/l	< 5.0	--	--	**2.5 J**	--	< 50	--
4-Methyl-2-Pentanone	µg/l	< 1.0	--	--	< 10	--	< 50	--
Acetone	µg/l	< 10	--	--	**21 J**	--	< 100	--
Benzene	µg/l	< 1.0	--	--	**20**	--	**5.7**	--
Bromochloromethane	µg/l	< 1.0	--	--	--	--	--	--
Bromodichloromethane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
Bromoform	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
Bromomethane	µg/l	< 1.0	--	--	< 2.0	--	< 10	--
Carbon Disulfide	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
Carbon Tetrachloride	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
CFC-11	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
CFC-12	µg/l	< 1.0	--	--	< 2.0	--	< 10	--
Chlorobenzene	µg/l	< 1.0	--	--	**1.8**	--	< 5.0	--
Chlorodibromomethane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
Chloroethane	µg/l	< 1.0	--	--	< 2.0	--	< 10	--
Chloroform	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
Chloromethane	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
cis-1,2-Dichloroethene	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
cis-1,3-Dichloropropene	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--
Cyclohexane	µg/l	< 2.0	--	--	< 1.0	--	< 5.0	--
Dichloromethane	µg/l	< 5.0	--	--	< 1.0	--	< 5.0	--
Ethylbenzene	µg/l	< 1.0	--	--	< 1.0	--	< 5.0	--

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ARCADIS

Location ID:	Units		CMS-MW-001			CMS-MW-002		CMS-MW-012	
Date Collected:			6/11/2021	10/26/2021	3/22/2022	10/25/2021	3/24/2022	10/19/2021	3/22/2022
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	--	--	< 1.0	--	< 5.0	--
m&p-Xylenes	µg/l		< 2.0	--	--	--	--	--	--
Methyl Acetate	µg/l		< 2.0	--	--	< 1.0	--	< 5.0	--
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		< 5.0	--	--	< 10	--	< 50	--
Methylcyclohexane	µg/l		< 1.0	--	--	< 5.0	--	< 25	--
Methyl-tert-butylether	µg/l		< 1.0	--	--	< 1.0	--	< 5.0	--
Naphthalene	µg/l		--	--	--	**3.3**	--	< 5.0	--
o-Xylene	µg/l		< 1.0	--	--	--	--	--	--
Styrene (Monomer)	µg/l		< 1.0	--	--	< 1.0	--	< 5.0	--
Tetrachloroethene	µg/l		< 1.0	--	--	< 1.0	--	< 5.0	--
Toluene	µg/l		< 1.0	--	--	**1.2**	--	< 5.0	--
Total Xylenes	µg/l		--	--	--	< 1.0	--	< 5.0	--
trans-1,2-Dichloroethene	µg/l		< 1.0	--	--	< 1.0	--	< 5.0	--
trans-1,3-Dichloropropene	µg/l		< 1.0	--	--	< 1.0	--	< 5.0	--
Trichloroethene	µg/l		< 1.0	--	--	< 1.0	--	< 5.0	--
Vinyl acetate	µg/l		--	--	--	< 5.0	--	< 25	--
Vinyl chloride	µg/l		< 1.0	--	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs)									
1,1-Biphenyl	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
1,2,4,5-Tetrachlorobenzene	µg/l		< 5.0	--	--	--	< 5.7	--	< 5.5
1,4-Dioxane	µg/l		< 5.0	--	--	< 10	< 5.7	< 10	< 5.5
2,2-Oxybis(1-Chloropropane)	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
2,3,4,6-Tetrachlorphenol	µg/l		< 1.0	--	--	--	< 1.1	--	< 1.1
2,4,5-Trichlorophenol	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
2,4,6-Trichlorophenol	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
2,4-Dichlorophenol	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
2,4-Dimethylphenol	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
2,4-Dinitrophenol	µg/l		< 5.0	--	--	< 4.0	< 5.7	< 4.0	< 5.5
2,4-Dinitrotoluene	µg/l		< 1.0	--	--	< 1.6	< 1.1	< 1.6	< 1.1
2,6-Dinitrotoluene	µg/l		< 1.0	--	--	< 1.6	< 1.1	< 1.6	< 1.1
2-Chloronaphthalene	µg/l		< 0.10	--	--	< 0.80	< 0.11	< 0.80	< 0.11
2-Chlorophenol	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
2-Methyl-4,6-dinitrophenol	µg/l		< 1.0	--	--	< 4.0	< 1.1	< 4.0	< 1.1
2-Methylnaphthalene	µg/l		< 0.10	--	--	**0.47**	**0.43**	< 0.16	< 0.11
2-Methylphenol	µg/l		< 1.0	--	--	**0.24 J**	< 1.1	< 0.80	< 1.1
2-Nitroaniline	µg/l		< 1.0	--	--	< 1.6	< 1.1	< 1.6	< 1.1
2-Nitrophenol	µg/l		< 1.0	--	--	< 1.6	< 1.1	< 1.6	< 1.1
3,3-Dichlorobenzidine	µg/l		< 5.0	--	--	< 4.0	< 5.7	R	< 5.5
3-Methylphenol, 4-Methylphenol	µg/l		< 1.0	--	--	**0.73 J**	< 1.1	< 1.6	< 1.1
3-Nitroaniline	µg/l		< 1.0	--	--	< 1.6	< 1.1	< 1.6 J	< 1.1
4-Bromophenyl phenyl ether	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
4-Chloro-3-Methylphenol	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
4-Chlorophenyl phenyl ether	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
4-Nitroaniline	µg/l		< 1.0	--	--	< 1.6	< 1.1	< 1.6 J	< 1.1
4-Nitrophenol	µg/l		< 5.0	--	--	< 4.0	< 5.7	< 4.0	< 5.5
Acenaphthene	µg/l		< 0.10	--	--	< 0.16	< 0.11	< 0.16	< 0.11
Acenaphthylene	µg/l		< 0.10	--	--	**0.084 J**	< 0.11	< 0.16	< 0.11

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Location ID:	Units		CMS-MW-001			CMS-MW-002		CMS-MW-012	
Date Collected:			6/11/2021	10/26/2021	3/22/2022	10/25/2021	3/24/2022	10/19/2021	3/22/2022
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	--	--	**0.45 J**	< 1.1	< 0.80	< 1.1
Anthracene	µg/l		< 0.10	--	--	**0.23**	**0.40**	< 0.16	< 0.11
Atrazine	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80 J	< 1.1
Benz(a)anthracene	µg/l		< 0.10	--	--	< 0.16	< 0.11	< 0.16	< 0.11
Benzaldehyde	µg/l		< 1.0	--	--	**0.83 J**	< 1.1	< 4.0 J	< 1.1
Benzo(a)pyrene	µg/l		< 0.10	--	--	< 0.16	< 0.11	< 0.16	< 0.11
Benzo(b)fluoranthene	µg/l		< 0.10	--	--	< 0.16	< 0.11	< 0.16	< 0.11
Benzo(g,h,i)perylene	µg/l		< 0.10	--	--	< 0.16	< 0.11	< 0.16	< 0.11
Benzo(k)fluoranthene	µg/l		< 0.10	--	--	< 0.16	< 0.11	< 0.16	< 0.11
bis(2-Chloroethoxy)methane	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
bis(2-Chloroethyl)ether	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
bis(2-Ethylhexyl)phthalate	µg/l		< 1.0	--	--	< 4.0	< 1.1	< 4.0 J	< 1.1
Butyl benzyl phthalate	µg/l		< 1.0	--	--	< 4.0	< 1.1	< 4.0	< 1.1
Caprolactam	µg/l		< 5.0	--	--	< 4.0	< 5.7	**1.4 J**	< 5.5
Carbazole	µg/l		< 1.0	--	--	**0.32 J**	< 1.1	< 0.80	< 1.1
Chrysene	µg/l		< 0.10	--	--	< 0.16	< 0.11	< 0.16	< 0.11
Dibenz(a,h)anthracene	µg/l		< 0.10	--	--	< 0.16	< 0.11	< 0.16	< 0.11
Dibenzofuran	µg/l		< 1.0	--	--	**0.55 J**	**0.63 J**	< 0.80	< 1.1
Diethyl phthalate	µg/l		< 1.0	--	--	< 4.0	< 1.1	< 4.0	< 1.1
Dimethyl phthalate	µg/l		< 1.0	--	--	< 4.0	< 1.1	< 4.0	< 1.1
Di-n-butyl phthalate	µg/l		< 1.0	--	--	< 4.0	< 1.1	< 4.0	< 1.1
Di-n-octyl phthalate	µg/l		< 1.0	--	--	< 4.0	< 1.1	< 4.0 J	< 1.1
Fluoranthene	µg/l		< 0.10	--	--	**0.065 J**	**0.16**	< 0.16	< 0.11
Fluorene	µg/l		< 0.10	--	--	**0.19**	**0.18**	< 0.16	< 0.11
Hexachloro-1,3-butadiene	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
Hexachlorobenzene	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
Hexachlorocyclopentadiene	µg/l		< 5.0	--	--	< 4.0	< 5.7	< 4.0	< 5.5
Hexachloroethane	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
Indeno(1,2,3-cd)pyrene	µg/l		< 0.10	--	--	< 0.16	< 0.11	< 0.16	< 0.11
Isophorone	µg/l		< 5.0	--	--	< 0.80	< 5.7	< 0.80	< 5.5
Naphthalene	µg/l		< 0.10	--	--	**2.8**	**1.6**	**0.17**	< 0.11
Nitrobenzene	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
N-Nitrosodi-n-propylamine	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
N-Nitrosodiphenylamine	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
p-Chloroaniline	µg/l		< 1.0	--	--	< 0.80	< 1.1	< 0.80	< 1.1
Pentachlorophenol	µg/l		< 5.0	--	--	< 4.0	< 5.7	< 4.0	< 5.5
Phenanthrene	µg/l		< 0.10	--	--	**2.5**	**2.9**	< 0.16	< 0.11
Phenol	µg/l		< 1.0	--	--	**21**	**5.0**	< 0.80	< 1.1
Pyrene	µg/l		< 0.10	--	--	**0.047 J**	< 0.11	< 0.16	< 0.11
Inorganics - Total Metals									
Aluminum	mg/l		--	--	< 0.010	**0.58**	--	**0.58**	--
Antimony	mg/l		--	--	< 0.0050	< 0.01	--	< 0.01	--
Arsenic	mg/l		< 0.0050	--	**0.0026 J**	**0.0035**	--	**0.0035**	--
Barium	mg/l		**0.11**	--	**0.089**	**0.40**	--	**0.40**	--
Beryllium	mg/l		--	--	< 0.0020	< 0.002	--	< 0.002	--
Boron	mg/l		--	--	--	< 0.25 UB	--	< 0.25 UB	--
Cadmium	mg/l		< 0.0020	--	< 0.0020	< 0.0005	--	< 0.0005	--

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Date Collected:			6/11/2021	10/26/2021	3/22/2022	10/25/2021	3/24/2022	10/19/2021	3/22/2022
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**230**	--	**200**	**420**	--	**420**	--
Chromium	mg/l		< 0.0050	--	**0.0023 J**	**0.022**	--	**0.022**	--
Chromium VI	mg/l		< 0.0050	--	--	< 0.02 J	--	< 0.02 J	--
Cobalt	mg/l		--	--	**0.0015 J**	< 0.005	--	< 0.005	--
Copper	mg/l		< 0.0050	--	< 0.0050	**0.0035 J**	--	**0.0035 J**	--
Iron	mg/l		**0.55**	**0.25**	**0.43**	**0.79**	< 0.080	**0.79**	**0.53**
Lead	mg/l		< 0.0050	--	< 0.0050	**0.0018 J**	--	**0.0018 J**	--
Magnesium	mg/l		--	--	**7.8**	**0.24 J**	--	**0.24 J**	--
Manganese	mg/l		< 0.050	--	**0.038**	**0.0047 J**	--	**0.0047 J**	--
Mercury	mg/l		< 0.00020	--	< 0.00020	--	--	--	--
Methylmercury	mg/l		--	--	--	--	--	--	--
Molybdenum	mg/l		--	--	--	**0.023 J**	--	**0.023 J**	--
Nickel	mg/l		< 0.0050	--	**0.0022 J**	**0.013**	--	**0.013**	--
Potassium	mg/l		--	--	**33**	**52**	--	**52**	--
Selenium	mg/l		< 0.0050	--	**0.0011 J**	**0.0018 J**	--	**0.0018 J**	--
Silver	mg/l		< 0.0050	--	< 0.0050	< 0.001	--	< 0.001	--
Sodium	mg/l		--	--	**220**	**350**	--	**350**	--
Thallium	mg/l		--	--	--	< 0.0025	--	< 0.0025	--
Tin	mg/l		--	--	< 0.0020	< 0.1	--	<0.1	--
Titanium	mg/l		--	--	--	**0.28**	--	**0.28**	--
Vanadium	mg/l		--	--	**0.0021 J**	**0.06**	--	**0.06**	--
Volatile Mercury	mg/l		--	--	--	--	--	--	--
Zinc	mg/l		< 0.010	--	< 0.010	**0.013**	--	**0.013**	--
Inorganics - Dissolved Metals (Filtered)									
Aluminum	mg/l		< 0.0050	--	< 0.010	**0.15**	--	**0.15**	--
Antimony	mg/l		**0.11**	--	< 0.0050	< 0.002	--	< 0.002	--
Arsenic	mg/l		< 0.0050	--	**0.0026 J**	**0.0018 J**	--	**0.0018 J**	--
Barium	mg/l		**0.11**	--	**0.090**	**0.34**	--	**0.34**	--
Beryllium	mg/l		--	--	< 0.0020	< 0.002	--	< 0.002	--
Boron	mg/l		--	--	--	< 0.25	--	< 0.25	--
Cadmium	mg/l		< 0.0020	--	< 0.0020	< 0.0005	--	< 0.0005	--
Calcium	mg/l		**200**	--	**200**	**400**	--	**400**	--
Chromium	mg/l		< 0.0050	--	< 0.0050	**0.0054**	--	**0.0054**	--
Cobalt	mg/l		--	--	**0.0014 J**	< 0.005	--	< 0.005	--
Copper	mg/l		< 0.0050	--	**0.012**	< 0.005	--	< 0.005	--
Iron	mg/l		**0.52**	**0.23**	**0.42**	**0.13**	< 0.080	**0.13**	**0.56**
Lead	mg/l		< 0.0050	--	< 0.0050	< 0.001	--	< 0.001	--
Magnesium	mg/l		--	--	**8.0**	**0.057 J**	--	**0.057 J**	--
Manganese	mg/l		< 0.050	--	**0.041**	< 0.005	--	< 0.005	--
Mercury	mg/l		< 0.00020	--	< 0.00020	--	--	--	--
Molybdenum	mg/l		--	--	--	**0.022**	--	**0.022**	--
Nickel	mg/l		< 0.0050	--	**0.0017 J**	**0.0048 J**	--	**0.0048 J**	--
Potassium	mg/l		--	--	**34**	**51**	--	**51**	--
Selenium	mg/l		< 0.0050	--	**0.00056 J**	**0.0013 J**	--	**0.0013 J**	--
Silver	mg/l		< 0.0050	--	< 0.0050	< 0.001	--	< 0.001	--
Sodium	mg/l		--	--	**260**	**300**	--	**300**	--
Thallium	mg/l		--	--	--	< 0.0005	--	< 0.0005	--

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Date Collected:			6/11/2021	10/26/2021	3/22/2022	10/25/2021	3/24/2022	10/19/2021	3/22/2022
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	--	--	< 0.0020	< 0.02	--	< 0.02	--
Titanium	mg/l		--	--	--	**0.017**	--	**0.017**	--
Vanadium	mg/l		--	--	**0.0021 J**	**0.031**	--	**0.031**	--
Zinc	mg/l		< 0.010	--	< 0.010	< 0.01	--	< 0.01	--
Mercury, Low-Level									
Mercury	ng/l		**8.2**	**20.6**	**7.4**	**1000**	**550**	**8.54**	**9.4**
Dissolved Mercury	ng/l		--	**1.48**	**5.7**	**6.09**	**590**	**0.535**	**4.0**
Inorganics									
Chloride	mg/l		**400**	--	--	**460**	--	**880**	--
Cyanide	mg/l		**0.44**	--	--	**0.017**	--	**2.2**	--
Cyanide, amenable	mg/l		**0.21**	--	--	< 0.010	--	**0.38**	--
Fluoride (F-, Anion)	mg/l		< 0.25	--	--	**0.27 J**	--	**0.32 J**	--
Nitrate-N	mg/l		**1.4 J**	--	--	**2.5 J**	--	< 0.10	--
Nitrite	mg/l		< 0.25 J	--	--	**0.082 J**	--	< 0.10	--
Silica, reactive	mg/l		**28**	--	--	--	**3.1**	--	**13**
Sulfate	mg/l		**430**	--	--	**99**	--	**480**	--
Sulfide	mg/l		< 1.0	--	--	< 1.0	--	**13**	--
Silica, dissolved	mg/l		**27**	--	--	--	**3.1**	--	**13**
General Chemistry									
Alkalinity	mg CaCO3/L		**200**	--	--	**1200**	--	**1100**	--
Alkalinity, Bicarbonate	mg/l		--	--	--	--	--	--	--
Alkalinity, Carbonate	mg/l		--	--	--	--	--	--	--
Biological Oxygen Demand	mg/l		< 2.0	--	--	R	**4.7 J**	**31 J**	--
Chemical Oxygen Demand	mg/l		**16**	--	--	**400**	--	**190**	--
pH	SU		--	--	**7.25 J**	--	**11.9 J**	**8.3**	**5.89 J**
Temperature	SU		--	--	**17.3 J**	--	**20.2**	--	**18.0 J**
Total Dissolved Solids	mg/l		**1500**	--	--	**2100**	--	**3000**	--
Total Hardness	mg/l		**750**	--	--	**1100**	--	**450**	--
Total Organic Carbon	mg/l		**4.7**	**4.7**	**4.3**	**23**	**6.1**	**25**	**28**
Total Suspended Solids	mg/l		**1.02**	--	--	**190**	--	< 2.5	--
Per- and Polyfluoroalkyl Substances (PFAS)									
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 7.1	< 7.6	< 8.0	< 800	< 8.8	< 80	< 8.3
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 7.1	< 7.6	< 8.0	< 800	< 8.8	< 80	< 8.3
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 7.1	< 7.6	< 8.0	< 800	< 8.8	< 80	< 8.3
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 7.1	< 7.6	< 8.0	< 800	< 8.8	< 80	< 8.3
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		< 7.1	< 7.6	< 8.0	< 800	< 8.8	**41 J**	< 8.3
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 7.1	< 7.6	< 8.0	< 800	**2.0 J**	< 80	< 8.3
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 7.1	< 7.6	< 8.0	< 800	< 8.8	< 80	< 8.3
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 7.1	< 7.6	< 8.0	< 800	< 8.8	< 80	< 8.3
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 7.1	< 7.6	< 8.0	< 800	< 8.8	< 80	< 8.3
Perfluorobutane sulfonic acid (PFBS)	ng/l		**9.8**	**2.4 J**	**2.9 J**	< 400	**11**	**4.6 J**	**4.0 J**
Perfluorobutanoic acid (PFBA)	ng/l		**6.5 J**	**2.8 J**	**6.0**	< 400	**17 J**	**11 J**	**10**
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 3.6	< 3.8	< 4.0	< 400	< 4.4	< 40	< 4.2
Perfluorodecanoic acid (PFDA)	ng/l		< 3.6	< 3.8	< 4.0	< 400	< 4.4	< 40	< 4.2
Perfluorododecanoic acid (PFDoA)	ng/l		< 3.6	< 3.8	< 4.0	< 400	< 4.4	< 40	< 4.2
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		< 3.6	< 3.8	< 4.0	< 400	**10**	< 40	**0.53 J**
Perfluoroheptanoic acid (PFHpA)	ng/l		**1.7 J**	**0.90 J**	**1.5 J**	< 400	**12**	< 40	**2.1 J**

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		CMS-MW-001			CMS-MW-002		CMS-MW-012	
Date Collected:			6/11/2021	10/26/2021	3/22/2022	10/25/2021	3/24/2022	10/19/2021	3/22/2022
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**8**	**4.4**	**6.7**	**190 J**	**150**	**29 J**	**14**
Perfluorohexanoic acid (PFHxA)	ng/l		**4.1**	**1.3 J**	**2.2 J**	< 400	**20**	< 40	**4.6**
Perfluorononane sulfonic acid (PFNS)	ng/l		< 3.6	< 3.8	< 4.0	< 400	< 4.4	< 40	< 4.2
Perfluorononanoic acid (PFNA)	ng/l		< 3.6	< 3.8	< 4.0	< 400	**3.1 J**	< 40	**0.93 J**
Perfluorooctane sulfonamide (PFOSA)	ng/l		< 3.6	< 3.8	< 4.0	< 400	< 4.4	< 40	**1.5 J**
Perfluorooctane sulfonic acid (PFOS)	ng/l		**4.7**	**4.0**	**3.7 J**	**540**	**730 D**	**39 J**	**20**
Perfluorooctanoic acid (PFOA)	ng/l		**4.8**	**3.5 J**	**4.6**	< 400	**19**	< 40	**6.5**
Perfluoropentane sulfonate (PFPeS)	ng/l		**2.1 J**	**0.71 J**	**0.99 J**	< 400	**15**	< 40	**2.3 J**
Perfluoropentanoic acid (PFPeA)	ng/l		**2.9 J**	**0.78 J**	**2.4 J**	< 400	**11**	< 40	**4.0 J**
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 3.6	< 3.8	< 4.0	< 400	< 4.4	< 40	< 4.2
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 3.6	< 3.8	< 4.0	< 400	< 4.4	< 40	< 4.2
Perfluoroundecanoic acid (PFUdA)	ng/l		< 3.6	< 3.8	< 4.0	< 400	< 4.4	< 40	< 4.2

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		CMS-MW-013F		CMS-MW-013S			
Date Collected:			10/19/2021	3/23/2022	6/7/2021	10/26/2021	3/25/2022	DUP-03 3/25/2022
Field								
Conductivity	mS/cm		3.56	2.71	5.791	3.71	3.16	3.16
Dissolved oxygen (DO)	mg/L		-0.12	0.05	0.13	0.1	0.1	0.1
Oxidation reduction potential (ORP)	millivolts		-263.2	-181	-386.7	-275	-316	-316
pH	s.u.		8.47	8.7	8.76	8.59	8.77	8.77
Temperature	Deg C		18.7	6	14	12.9	7.3	7.3
Turbidity	NTU		0.46	1.11	1.07	2.43	2.78	2.78
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	µg/l		< 5.0	--	< 5.0	--	--	--
1,1,2,2-Tetrachloroethane	µg/l		< 5.0	--	< 5.0	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l		< 5.0	--	< 5.0	--	--	--
1,1,2-Trichloroethane	µg/l		< 5.0	--	< 5.0	--	--	--
1,1-Dichloroethane	µg/l		< 5.0	--	< 5.0	--	--	--
1,1-Dichloroethene	µg/l		< 5.0	--	< 5.0	--	--	--
1,2,3-Trichlorobenzene	µg/l		--	--	< 5.0	--	--	--
1,2,4-Trichlorobenzene	µg/l		< 5.0	--	--	--	--	--
1,2,4-Trimethylbenzene	µg/l		**11**	--	< 5.0	--	--	--
1,2-Dibromo-3-chloropropane	µg/l		< 5.0	--	< 5.0	--	--	--
1,2-Dibromoethane	µg/l		< 5.0	--	< 5.0	--	--	--
1,2-Dichlorobenzene	µg/l		< 5.0	--	< 5.0	--	--	--
1,2-Dichloroethane	µg/l		< 5.0	--	< 5.0	--	--	--
1,2-Dichloropropane	µg/l		< 5.0	--	< 5.0	--	--	--
1,3,5-Trimethylbenzene	µg/l		**2.7 J**	--	--	--	--	--
1,3-Dichlorobenzene	µg/l		< 5.0	--	< 5.0	--	--	--
1,4-Dichlorobenzene	µg/l		< 5.0	--	< 5.0	--	--	--
2-Butanone (MEK)	µg/l		< 50	--	< 25	--	--	--
4-Methyl-2-Pentanone	µg/l		< 50	--	< 5.0	--	--	--
Acetone	µg/l		< 100	--	< 50 J	--	--	--
Benzene	µg/l		**310**	--	**180**	--	--	--
Bromochloromethane	µg/l		--	--	< 5.0	--	--	--
Bromodichloromethane	µg/l		< 5.0	--	< 5.0	--	--	--
Bromoform	µg/l		< 5.0	--	< 5.0	--	--	--
Bromomethane	µg/l		< 10	--	< 5.0	--	--	--
Carbon Disulfide	µg/l		< 5.0	--	< 5.0	--	--	--
Carbon Tetrachloride	µg/l		< 5.0	--	< 5.0	--	--	--
CFC-11	µg/l		< 5.0	--	< 5.0	--	--	--
CFC-12	µg/l		< 10	--	< 5.0	--	--	--
Chlorobenzene	µg/l		< 5.0	--	< 5.0	--	--	--
Chlorodibromomethane	µg/l		< 5.0	--	< 5.0	--	--	--
Chloroethane	µg/l		< 10	--	< 5.0	--	--	--
Chloroform	µg/l		< 5.0	--	< 5.0	--	--	--
Chloromethane	µg/l		< 5.0	--	< 5.0	--	--	--
cis-1,2-Dichloroethene	µg/l		< 5.0	--	< 5.0	--	--	--
cis-1,3-Dichloropropene	µg/l		< 5.0	--	< 5.0	--	--	--
Cyclohexane	µg/l		< 5.0	--	< 10	--	--	--
Dichloromethane	µg/l		< 5.0	--	< 25	--	--	--
Ethylbenzene	µg/l		**4.0 J**	--	< 5.0	--	--	--

Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

See Notes on last page.

Table 1
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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		CMS-MW-013F		CMS-MW-013S			
Date Collected:			10/19/2021	3/23/2022	6/7/2021	10/26/2021	3/25/2022	DUP-03 3/25/2022
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 5.0	--	< 5.0	--	--	--
m&p-Xylenes	µg/l		--	--	< 10	--	--	--
Methyl Acetate	µg/l		< 5.0	--	< 10	--	--	--
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		< 50	--	< 25	--	--	--
Methylcyclohexane	µg/l		< 25	--	< 5.0	--	--	--
Methyl-tert-butylether	µg/l		< 5.0	--	< 5.0	--	--	--
Naphthalene	µg/l		**3200 DJ**	--	--	--	--	--
o-Xylene	µg/l		--	--	**13**	--	--	--
Styrene (Monomer)	µg/l		< 5.0	--	< 5.0	--	--	--
Tetrachloroethene	µg/l		< 5.0	--	< 5.0	--	--	--
Toluene	µg/l		**9.1**	--	< 5.0	--	--	--
Total Xylenes	µg/l		**37**	--	--	--	--	--
trans-1,2-Dichloroethene	µg/l		< 5.0	--	< 5.0	--	--	--
trans-1,3-Dichloropropene	µg/l		< 5.0	--	< 5.0	--	--	--
Trichloroethene	µg/l		< 5.0	--	< 5.0	--	--	--
Vinyl acetate	µg/l		< 25	--	--	--	--	--
Vinyl chloride	µg/l		--	--	< 5.0	--	--	--
Semi-Volatile Organic Compounds (SVOCs)								
1,1-Biphenyl	µg/l		< 40	**6.5**	**1.5**	--	--	--
1,2,4,5-Tetrachlorobenzene	µg/l		--	< 5.2	< 5.0	--	--	--
1,4-Dioxane	µg/l		< 500	< 5.2	< 5.0	--	--	--
2,2-Oxybis(1-Chloropropane)	µg/l		< 40	< 1.0	< 1.0	--	--	--
2,3,4,6-Tetrachlorphenol	µg/l		--	R	< 1.0	--	--	--
2,4,5-Trichlorophenol	µg/l		< 40	R	< 1.0	--	--	--
2,4,6-Trichlorophenol	µg/l		< 40	R	< 1.0	--	--	--
2,4-Dichlorophenol	µg/l		< 40	R	< 1.0	--	--	--
2,4-Dimethylphenol	µg/l		**11 J**	**23 J**	**6.5**	--	--	--
2,4-Dinitrophenol	µg/l		< 200	R	< 5.0	--	--	--
2,4-Dinitrotoluene	µg/l		< 80	< 1.0	< 1.0	--	--	--
2,6-Dinitrotoluene	µg/l		< 80	< 1.0	< 1.0	--	--	--
2-Chloronaphthalene	µg/l		< 40	< 0.10	< 0.10	--	--	--
2-Chlorophenol	µg/l		< 40	R	< 1.0	--	--	--
2-Methyl-4,6-dinitrophenol	µg/l		< 200	R	< 1.0	--	--	--
2-Methylnaphthalene	µg/l		**15**	**19**	**0.59**	--	--	--
2-Methylphenol	µg/l		< 40	**20 J**	< 1.0	--	--	--
2-Nitroaniline	µg/l		< 80	< 1.0	< 1.0	--	--	--
2-Nitrophenol	µg/l		< 80	R	< 1.0	--	--	--
3,3-Dichlorobenzidine	µg/l		< 200	< 5.2	< 5.0	--	--	--
3-Methylphenol, 4-Methylphenol	µg/l		< 80	**19 J**	< 1.0	--	--	--
3-Nitroaniline	µg/l		< 80 J	< 1.0	< 1.0	--	--	--
4-Bromophenyl phenyl ether	µg/l		< 40	< 1.0	< 1.0	--	--	--
4-Chloro-3-Methylphenol	µg/l		< 40	R	< 1.0	--	--	--
4-Chlorophenyl phenyl ether	µg/l		< 40	< 1.0	< 1.0	--	--	--
4-Nitroaniline	µg/l		< 80	< 1.0	< 1.0	--	--	--
4-Nitrophenol	µg/l		< 200	R	< 5.0	--	--	--
Acenaphthene	µg/l		**6.1 J**	**6.1**	**1.5**	--	--	--
Acenaphthylene	µg/l		**35**	**34**	**9.9**	--	--	--

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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		CMS-MW-013F		CMS-MW-013S			
Date Collected:			10/19/2021	3/23/2022	6/7/2021	10/26/2021	3/25/2022	DUP-03 3/25/2022
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 40	< 1.0	< 1.0	--	--	--
Anthracene	µg/l		**3.6 J**	**1.8**	**0.46**	--	--	--
Atrazine	µg/l		< 40	< 1.0	< 1.0	--	--	--
Benz(a)anthracene	µg/l		< 8.0	**0.61**	< 0.10	--	--	--
Benzaldehyde	µg/l		< 200	< 1.0	< 1.0	--	--	--
Benzo(a)pyrene	µg/l		< 8.0	**0.34**	< 0.10	--	--	--
Benzo(b)fluoranthene	µg/l		< 8.0	**0.40**	< 0.10	--	--	--
Benzo(g,h,i)perylene	µg/l		< 8.0	**0.16**	< 0.10	--	--	--
Benzo(k)fluoranthene	µg/l		< 8.0	**0.19**	< 0.10	--	--	--
bis(2-Chloroethoxy)methane	µg/l		< 40	< 1.0	< 1.0	--	--	--
bis(2-Chloroethyl)ether	µg/l		< 40	< 1.0	< 1.0	--	--	--
bis(2-Ethylhexyl)phthalate	µg/l		< 200	< 1.0	< 1.0	--	--	--
Butyl benzyl phthalate	µg/l		< 200	< 1.0	< 1.0	--	--	--
Caprolactam	µg/l		< 200	< 5.2	< 5.0	--	--	--
Carbazole	µg/l		**50**	**33**	**13**	--	--	--
Chrysene	µg/l		< 8.0	**0.32**	< 0.10	--	--	--
Dibenz(a,h)anthracene	µg/l		< 8.0	< 0.10	< 0.10	--	--	--
Dibenzofuran	µg/l		**20 J**	**16**	**4.7**	--	--	--
Diethyl phthalate	µg/l		< 200	< 1.0	< 1.0	--	--	--
Dimethyl phthalate	µg/l		< 200	< 1.0	< 1.0	--	--	--
Di-n-butyl phthalate	µg/l		< 200	< 1.0	< 1.0	--	--	--
Di-n-octyl phthalate	µg/l		< 200	< 1.0	< 1.0	--	--	--
Fluoranthene	µg/l		**4.1 J**	**3.5**	**0.51**	--	--	--
Fluorene	µg/l		**22**	**19**	**5.5**	--	--	--
Hexachloro-1,3-butadiene	µg/l		< 40	< 1.0	< 1.0	--	--	--
Hexachlorobenzene	µg/l		< 40	< 1.0	< 1.0	--	--	--
Hexachlorocyclopentadiene	µg/l		< 200	< 5.2	< 5.0	--	--	--
Hexachloroethane	µg/l		< 40	< 1.0	< 1.0	--	--	--
Indeno(1,2,3-cd)pyrene	µg/l		< 8.0	**0.17**	< 0.10	--	--	--
Isophorone	µg/l		< 40	< 5.2	< 5.0	--	--	--
Naphthalene	µg/l		**950**	< 0.10	**320 D**	--	--	--
Nitrobenzene	µg/l		< 40	< 1.0	< 1.0	--	--	--
N-Nitrosodi-n-propylamine	µg/l		< 40	< 1.0	< 1.0	--	--	--
N-Nitrosodiphenylamine	µg/l		< 40	< 1.0	< 1.0	--	--	--
p-Chloroaniline	µg/l		< 40	< 1.0	< 1.0	--	--	--
Pentachlorophenol	µg/l		< 200	R	< 5.0	--	--	--
Phenanthrene	µg/l		**25**	**17**	**4.7**	--	--	--
Phenol	µg/l		< 40	**1.8 J**	< 1.0	--	--	--
Pyrene	µg/l		**2.8 J**	**2.3**	**0.37**	--	--	--
Inorganics - Total Metals								
Aluminum	mg/l		**0.37**	--	--	--	**0.41**	**0.40**
Antimony	mg/l		< 0.002	--	--	--	< 0.050	< 0.050
Arsenic	mg/l		**0.019**	--	**0.03**	--	**0.019 J**	**0.019 J**
Barium	mg/l		**0.077**	--	**0.053**	--	**0.044 J**	**0.044 J**
Beryllium	mg/l		**0.00025 J**	--	--	--	< 0.020	< 0.020
Boron	mg/l		**0.54**	--	--	--	--	--
Cadmium	mg/l		< 0.0005	--	< 0.0020	--	< 0.020	< 0.020

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BASF Corporation
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DRAFT

ARCADIS

Location ID:	Units		CMS-MW-013F		CMS-MW-013S			
Date Collected:			10/19/2021	3/23/2022	6/7/2021	10/26/2021	3/25/2022	DUP-03 3/25/2022
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**18 J**	--	**20**	--	**21**	**21**
Chromium	mg/l		**0.0094**	--	**0.037**	--	**0.025 J**	**0.025 J**
Chromium VI	mg/l		**0.0087 J**	--	< 0.0050	--	--	--
Cobalt	mg/l		< 0.005	--	--	--	< 0.050	< 0.050
Copper	mg/l		< 0.005	--	< 0.0050	--	< 0.050	< 0.050
Iron	mg/l		**0.47**	< 0.80	**0.78**	**0.63**	**0.66 J**	**0.64 J**
Lead	mg/l		< 0.001	--	< 0.0050	--	< 0.050	< 0.050
Magnesium	mg/l		**92**	--	--	--	**100**	**100**
Manganese	mg/l		**0.014**	--	**0.0055**	--	< 0.050	< 0.050
Mercury	mg/l		--	--	< 0.00020	--	< 0.00020	< 0.00020
Methylmercury	mg/l		--	--	--	--	--	--
Molybdenum	mg/l		**0.0037 J**	--	--	--	--	--
Nickel	mg/l		**0.011**	--	**0.014**	--	**0.0094 J**	**0.0092 J**
Potassium	mg/l		**16**	--	--	--	**16**	**17**
Selenium	mg/l		< 0.005 J	--	< 0.0050	--	< 0.050	< 0.050
Silver	mg/l		< 0.001	--	< 0.0050	--	< 0.050	< 0.050
Sodium	mg/l		**700 J**	--	--	--	**920**	**930**
Thallium	mg/l		< 0.0005	--	--	--	--	--
Tin	mg/l		**0.0067 J**	--	--	--	< 0.020	< 0.020
Titanium	mg/l		**0.20**	--	--	--	--	--
Vanadium	mg/l		**0.028**	--	**0.065 J**	--	**0.057**	**0.059**
Volatile Mercury	mg/l		--	--	--	--	--	--
Zinc	mg/l		**0.0066 J**	--	< 0.010	--	< 0.10	< 0.10
Inorganics - Dissolved Metals (Filtered)								
Aluminum	mg/l		**0.43**	--	--	--	**0.42**	**0.43**
Antimony	mg/l		**0.00054 J**	--	--	--	< 0.050	< 0.050
Arsenic	mg/l		**0.019**	--	**0.03**	--	**0.020 J**	**0.020 J**
Barium	mg/l		**0.073**	--	**0.052**	--	**0.046 J**	**0.044 J**
Beryllium	mg/l		**0.00035 J**	--	--	--	< 0.020	< 0.020
Boron	mg/l		**0.60**	--	--	--	--	--
Cadmium	mg/l		< 0.0005	--	< 0.0020	--	< 0.020	< 0.020
Calcium	mg/l		**24 J**	--	**20**	--	**21**	**20**
Chromium	mg/l		**0.01**	--	**0.037**	--	**0.028 J**	**0.028 J**
Cobalt	mg/l		< 0.005	--	--	--	< 0.050	< 0.050
Copper	mg/l		< 0.005	--	< 0.0050	--	< 0.050	< 0.050
Iron	mg/l		**0.47**	< 0.80	**0.81**	**0.64**	**0.69 J**	**0.82**
Lead	mg/l		< 0.001	--	< 0.0050	--	< 0.050	< 0.050
Magnesium	mg/l		**94**	--	--	--	**110**	**110**
Manganese	mg/l		**0.014**	--	< 0.0050	--	< 0.050	< 0.050
Mercury	mg/l		--	--	< 0.00020	--	< 0.00020	< 0.00020
Molybdenum	mg/l		**0.0042 J**	--	--	--	--	--
Nickel	mg/l		**0.01**	--	**0.014**	--	**0.010 J**	**0.011 J**
Potassium	mg/l		**15**	--	--	--	**17**	**17**
Selenium	mg/l		< 0.005	--	< 0.0050	--	< 0.050	**0.0080 J**
Silver	mg/l		< 0.001	--	< 0.0050	--	< 0.050	< 0.050
Sodium	mg/l		**730**	--	--	--	**980**	**1100**
Thallium	mg/l		< 0.0005	--	--	--	--	--

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		CMS-MW-013F		CMS-MW-013S			
Date Collected:			10/19/2021	3/23/2022	6/7/2021	10/26/2021	3/25/2022	DUP-03 3/25/2022
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**0.0064 J**	--	--	--	< 0.020	< 0.020
Titanium	mg/l		**0.21**	--	--	--	--	--
Vanadium	mg/l		**0.026**	--	**0.057**	--	**0.065**	**0.061**
Zinc	mg/l		**0.0046 J**	--	< 0.010	--	< 0.10	< 0.10
Mercury, Low-Level								
Mercury	ng/l		**50.1**	**36**	**14**	**23.7**	**17 J**	**22**
Dissolved Mercury	ng/l		**3.3**	**36**	--	**2.17**	**21 J**	**21**
Inorganics								
Chloride	mg/l		**340**	--	**660**	--	--	--
Cyanide	mg/l		**1.00**	--	**1.2**	--	--	--
Cyanide, amenable	mg/l		**0.15**	--	**0.24**	--	--	--
Fluoride (F-, Anion)	mg/l		**0.67**	--	< 0.50	--	--	--
Nitrate-N	mg/l		< 0.10	--	< 0.50	--	--	--
Nitrite	mg/l		< 0.10	--	< 0.50 J	--	--	--
Silica, reactive	mg/l		--	**14**	**11**	--	--	--
Sulfate	mg/l		**280**	--	**840**	--	--	--
Sulfide	mg/l		**6.5**	--	**41**	--	--	--
Silica, dissolved	mg/l		--	**14**	**9.4**	--	--	--
General Chemistry								
Alkalinity	mg CaCO3/L		**1300**	--	**1100**	--	--	--
Alkalinity, Bicarbonate	mg/l		--	--	--	--	--	--
Alkalinity, Carbonate	mg/l		--	--	--	--	--	--
Biological Oxygen Demand	mg/l		**12 J**	--	**49**	--	--	--
Chemical Oxygen Demand	mg/l		**420**	--	**560**	--	--	--
pH	SU		**8.3**	**8.58 J**	--	--	**8.66 J**	**8.77 J**
Temperature	SU		--	**19.6 J**	--	--	**14.8**	**13.7**
Total Dissolved Solids	mg/l		**2600**	--	**4600**	--	--	--
Total Hardness	mg/l		**470**	--	**600**	--	--	--
Total Organic Carbon	mg/l		**40**	**110**	**130**	**60**	**44**	**64**
Total Suspended Solids	mg/l		< 2.5	--	**0.7**	--	--	--
Per- and Polyfluoroalkyl Substances (PFAS)								
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 80	< 80	< 71 D	< 80	< 80	< 80
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 80	< 80	< 36	< 80	< 80	< 80
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 80	< 80	< 36	< 80	< 80	< 80
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 80	< 80	< 36	< 80	< 80	< 80
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		< 80	< 80	< 36	< 80	< 80	< 80
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 80	< 80	< 36	< 80	< 80	< 80
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 80	< 80	< 36	< 80	< 80	< 80
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 80	< 80	< 71 DJ	< 80	< 80	< 80
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 80	< 80	< 71 D	< 80	< 80	< 80
Perfluorobutane sulfonic acid (PFBS)	ng/l		< 40	< 40	< 18	< 40	< 40	< 40
Perfluorobutanoic acid (PFBA)	ng/l		**14 J**	**11 J**	**102 DJ+**	**20 J**	**9.2 J**	**11 J**
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 40	< 40	< 36 D	< 40	< 40	< 40
Perfluorodecanoic acid (PFDA)	ng/l		< 40	< 40	< 18	< 40	< 40	< 40
Perfluorododecanoic acid (PFDoA)	ng/l		< 40	< 40	< 36 D	< 40	< 40	< 40
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		< 40	< 40	< 18	< 40	< 40	< 40
Perfluoroheptanoic acid (PFHpA)	ng/l		< 40	< 40	< 18	< 40	< 40	< 40

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Table 1
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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		CMS-MW-013F		CMS-MW-013S			
Date Collected:			10/19/2021	3/23/2022	6/7/2021	10/26/2021	3/25/2022	DUP-03 3/25/2022
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 40	**7.0 J**	< 18	**13 J**	**7.6 J**	**6.6 J**
Perfluorohexanoic acid (PFHxA)	ng/l		< 40	< 40	< 18	< 40	< 40	< 40
Perfluorononane sulfonic acid (PFNS)	ng/l		< 40	< 40	< 18	< 40	< 40	< 40
Perfluorononanoic acid (PFNA)	ng/l		< 40	< 40	< 18	< 40	< 40	< 40
Perfluorooctane sulfonamide (PFOSA)	ng/l		< 40	< 40	< 36 D	< 40	< 40	< 40
Perfluorooctane sulfonic acid (PFOS)	ng/l		< 40	< 40	**8.0 J**	< 40	< 40	< 40
Perfluorooctanoic acid (PFOA)	ng/l		< 40	< 40	< 18	< 40	< 40	< 40
Perfluoropentane sulfonate (PFPeS)	ng/l		< 40	< 40	< 18	< 40	< 40	< 40
Perfluoropentanoic acid (PFPeA)	ng/l		< 40	< 40	< 18	< 40	< 40	**5.4 J**
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 40	< 40	< 18	< 40	< 40	< 40
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 40	< 40	< 36 D	< 40	< 40	< 40
Perfluoroundecanoic acid (PFUdA)	ng/l		< 40	< 40	< 36 D	< 40	< 40	< 40

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Table 1
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BASF Corporation
North Works
Wyandotte, MI

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Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

Location ID:	Units	CMS-MW-015		MW-060-20			
Date Collected:		10/22/2021	3/23/2022	6/9/2021	DUP-02 6/9/2021	10/18/2021	3/22/2022
Field							
Conductivity	mS/cm	2.522	1.14	1.442	- -	1.451	1.04
Dissolved oxygen (DO)	mg/L	0.03	0.75	0.21	- -	0.76	0.16
Oxidation reduction potential (ORP)	millivolts	-158.9	-8.3	-227.3	- -	-392.3	-120.2
pH	s.u.	11.46	10.53	9.02	- -	8.32**	8.62
Temperature	Deg C	14.9	6.3	13.6	- -	19.5	5.6
Turbidity	NTU	9.46	2.83	12.1	- -	9.82	0.68
Volatile Organic Compounds (VOCs)							
1,1,1-Trichloroethane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,1,2,2-Tetrachloroethane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,1,2-Trichloroethane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,1-Dichloroethane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,1-Dichloroethene	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,2,3-Trichlorobenzene	µg/l	--	--	< 1.0	< 1.0	--	--
1,2,4-Trichlorobenzene	µg/l	< 1.0	--	--	--	--	--
1,2,4-Trimethylbenzene	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,2-Dibromo-3-chloropropane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,2-Dibromoethane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,2-Dichlorobenzene	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,2-Dichloroethane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,2-Dichloropropane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,3,5-Trimethylbenzene	µg/l	< 1.0	--	--	--	--	--
1,3-Dichlorobenzene	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
1,4-Dichlorobenzene	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
2-Butanone (MEK)	µg/l	< 10	--	< 5.0	< 5.0	--	--
4-Methyl-2-Pentanone	µg/l	< 10	--	< 1.0	< 1.0	--	--
Acetone	µg/l	**6.4 J**	--	< 10	< 10	--	--
Benzene	µg/l	**1.1**	--	< 1.0	< 1.0	--	--
Bromochloromethane	µg/l	--	--	< 1.0	< 1.0	--	--
Bromodichloromethane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
Bromoform	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
Bromomethane	µg/l	< 2.0	--	< 1.0	< 1.0	--	--
Carbon Disulfide	µg/l	< 1.0 J	--	< 1.0	< 1.0	--	--
Carbon Tetrachloride	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
CFC-11	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
CFC-12	µg/l	< 2.0	--	< 1.0	< 1.0	--	--
Chlorobenzene	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
Chlorodibromomethane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
Chloroethane	µg/l	< 2.0 J	--	< 1.0	< 1.0	--	--
Chloroform	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
Chloromethane	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
cis-1,2-Dichloroethene	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
cis-1,3-Dichloropropene	µg/l	< 1.0	--	< 1.0	< 1.0	--	--
Cyclohexane	µg/l	< 1.0	--	< 2.0	< 2.0	--	--
Dichloromethane	µg/l	< 1.0	--	< 5.0	< 5.0	--	--
Ethylbenzene	µg/l	**1.7**	--	< 1.0	< 1.0	--	--

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Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

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Location ID:	Units		CMS-MW-015		MW-060-20			
Date Collected:			10/22/2021	3/23/2022	6/9/2021	DUP-02 6/9/2021	10/18/2021	3/22/2022
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	--	< 1.0	< 1.0	--	--
m&p-Xylenes	µg/l		--	--	< 2.0	< 2.0	--	--
Methyl Acetate	µg/l		< 1.0	--	< 2.0	< 2.0	--	--
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		< 10	--	< 5.0	< 5.0	--	--
Methylcyclohexane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Methyl-tert-butylether	µg/l		< 1.0	--	< 1.0	< 1.0	--	--
Naphthalene	µg/l		**1.1**	--	--	--	--	--
o-Xylene	µg/l		--	--	< 1.0	< 1.0	--	--
Styrene (Monomer)	µg/l		**2.0**	--	< 1.0	< 1.0	--	--
Tetrachloroethene	µg/l		< 1.0	--	< 1.0	< 1.0	--	--
Toluene	µg/l		**7.6**	--	< 1.0	< 1.0	--	--
Total Xylenes	µg/l		< 1.0	--			--	--
trans-1,2-Dichloroethene	µg/l		< 1.0	--	< 1.0	< 1.0	--	--
trans-1,3-Dichloropropene	µg/l		< 1.0	--	< 1.0	< 1.0	--	--
Trichloroethene	µg/l		< 1.0	--	< 1.0	< 1.0	--	--
Vinyl acetate	µg/l		< 5.0	--	--	--	--	--
Vinyl chloride	µg/l		--	--	< 1.0	< 1.0	--	--
Semi-Volatile Organic Compounds (SVOCs)								
1,1-Biphenyl	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
1,2,4,5-Tetrachlorobenzene	µg/l		--	< 6.7 J	< 5.0	< 5.0	--	--
1,4-Dioxane	µg/l		**6.0 J**	**2.4 J**	< 5.0	< 5.0	--	--
2,2-Oxybis(1-Chloropropane)	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
2,3,4,6-Tetrachlorphenol	µg/l		--	< 1.3 J	< 1.0	< 1.0	--	--
2,4,5-Trichlorophenol	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
2,4,6-Trichlorophenol	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
2,4-Dichlorophenol	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
2,4-Dimethylphenol	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
2,4-Dinitrophenol	µg/l		< 4.0	< 6.7 J	< 5.0	< 5.0	--	--
2,4-Dinitrotoluene	µg/l		< 1.6	< 1.3 J	< 1.0	< 1.0	--	--
2,6-Dinitrotoluene	µg/l		< 1.6	< 1.3 J	< 1.0	< 1.0	--	--
2-Chloronaphthalene	µg/l		< 0.80	< 0.13 J	< 0.10	< 0.10	--	--
2-Chlorophenol	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
2-Methyl-4,6-dinitrophenol	µg/l		< 4.0	< 1.3 J	< 1.0	< 1.0	--	--
2-Methylnaphthalene	µg/l		**0.18**	< 0.13 J	< 0.10	< 0.10	--	--
2-Methylphenol	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
2-Nitroaniline	µg/l		< 1.6	< 1.3 J	< 1.0	< 1.0	--	--
2-Nitrophenol	µg/l		< 1.6	< 1.3 J	< 1.0	< 1.0	--	--
3,3-Dichlorobenzidine	µg/l		< 4.0	R	< 5.0	< 5.0	--	--
3-Methylphenol, 4-Methylphenol	µg/l		< 1.6	< 1.3 J	< 1.0	< 1.0	--	--
3-Nitroaniline	µg/l		< 1.6	< 1.3 J	< 1.0	< 1.0	--	--
4-Bromophenyl phenyl ether	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
4-Chloro-3-Methylphenol	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
4-Chlorophenyl phenyl ether	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
4-Nitroaniline	µg/l		< 1.6	< 1.3 J	< 1.0	< 1.0	--	--
4-Nitrophenol	µg/l		< 4.0	< 6.7 J	< 5.0	< 5.0	--	--
Acenaphthene	µg/l		< 0.16	< 0.13 J	< 0.10	< 0.10	--	--
Acenaphthylene	µg/l		< 0.16	< 0.13 J	< 0.10	< 0.10	--	--

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Table 1
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BASF Corporation
North Works
Wyandotte, MI

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ARCADIS

Location ID:	Units		CMS-MW-015		MW-060-20			
Date Collected:			10/22/2021	3/23/2022	6/9/2021	DUP-02 6/9/2021	10/18/2021	3/22/2022
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
Anthracene	µg/l		**0.045 J**	< 0.13	< 0.10	< 0.10	--	--
Atrazine	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
Benz(a)anthracene	µg/l		< 0.16	< 0.13	< 0.10	< 0.10	--	--
Benzaldehyde	µg/l		< 4.0	< 1.3 J	< 1.0	< 1.0	--	--
Benzo(a)pyrene	µg/l		< 0.16	< 0.13	< 0.10	< 0.10	--	--
Benzo(b)fluoranthene	µg/l		< 0.16	< 0.13 J	< 0.10	< 0.10	--	--
Benzo(g,h,i)perylene	µg/l		< 0.16	< 0.13	< 0.10	< 0.10	--	--
Benzo(k)fluoranthene	µg/l		< 0.16	< 0.13 J	< 0.10	< 0.10	--	--
bis(2-Chloroethoxy)methane	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
bis(2-Chloroethyl)ether	µg/l		< 0.80	R	< 1.0	< 1.0	--	--
bis(2-Ethylhexyl)phthalate	µg/l		**7.0**	< 1.3 J	< 1.0	< 1.0	--	--
Butyl benzyl phthalate	µg/l		< 4.0	< 1.3 J	< 1.0	< 1.0	--	--
Caprolactam	µg/l		< 4.0	< 6.7	< 5.0	< 5.0	--	--
Carbazole	µg/l		< 0.80	< 1.3	< 1.0	< 1.0	--	--
Chrysene	µg/l		< 0.16	< 0.13	< 0.10	< 0.10	--	--
Dibenz(a,h)anthracene	µg/l		< 0.16	< 0.13	< 0.10	< 0.10	--	--
Dibenzofuran	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
Diethyl phthalate	µg/l		< 4.0	< 1.3 J	< 1.0	< 1.0	--	--
Dimethyl phthalate	µg/l		< 4.0	< 1.3 J	< 1.0	< 1.0	--	--
Di-n-butyl phthalate	µg/l		< 4.0	< 1.3 J	< 1.0	< 1.0	--	--
Di-n-octyl phthalate	µg/l		< 4.0	< 1.3 J	< 1.0	< 1.0	--	--
Fluoranthene	µg/l		**0.070 J**	< 0.13	< 0.10	< 0.10	--	--
Fluorene	µg/l		**0.049 J**	< 0.13 J	< 0.10	< 0.10	--	--
Hexachloro-1,3-butadiene	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
Hexachlorobenzene	µg/l		< 0.80	< 1.3	< 1.0	< 1.0	--	--
Hexachlorocyclopentadiene	µg/l		< 4.0	< 6.7 J	< 5.0	< 5.0	--	--
Hexachloroethane	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
Indeno(1,2,3-cd)pyrene	µg/l		< 0.16	< 0.13	< 0.10	< 0.10	--	--
Isophorone	µg/l		< 0.80	< 6.7 J	< 5.0	< 5.0	--	--
Naphthalene	µg/l		**0.99**	**0.50 J**	< 0.10	< 0.10	--	--
Nitrobenzene	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
N-Nitrosodi-n-propylamine	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
N-Nitrosodiphenylamine	µg/l		< 0.80	< 1.3	< 1.0	< 1.0	--	--
p-Chloroaniline	µg/l		< 0.80	R	< 1.0	< 1.0	--	--
Pentachlorophenol	µg/l		< 4.0	< 6.7 J	< 5.0	< 5.0	--	--
Phenanthrene	µg/l		**0.25**	< 0.13 J	< 0.10	< 0.10	--	--
Phenol	µg/l		< 0.80	< 1.3 J	< 1.0	< 1.0	--	--
Pyrene	µg/l		**0.062 J**	< 0.13 J	< 0.10	< 0.10	--	--
Inorganics - Total Metals								
Aluminum	mg/l		**2.4**	--	--	--	--	**0.012**
Antimony	mg/l		< 0.002	--	--	--	--	< 0.0050
Arsenic	mg/l		**0.0062**	--	**0.013**	**0.013**	--	**0.014**
Barium	mg/l		**0.099**	--	**0.024**	**0.024**	--	**0.042**
Beryllium	mg/l		< 0.0004	--	--	--	--	< 0.0020
Boron	mg/l		< 0.093 UB		--	--	--	--
Cadmium	mg/l		**0.00013 J**	--	< 0.0020	< 0.0020	--	< 0.0020

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Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		CMS-MW-015		MW-060-20			
Date Collected:			10/22/2021	3/23/2022	6/9/2021	DUP-02 6/9/2021	10/18/2021	3/22/2022
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**200**	--	**24**	**24**	--	**45**
Chromium	mg/l		**0.15**	--	< 0.0050	< 0.0050	--	< 0.0050
Chromium VI	mg/l		< 0.02 J	--	< 0.0050	< 0.0050	--	--
Cobalt	mg/l		**0.0045 J**	--	--	--	--	< 0.0050
Copper	mg/l		**0.0026 J**	--	< 0.0050	< 0.0050	--	< 0.0050
Iron	mg/l		**4.2**	**1.3**	< 0.080	< 0.080	**0.091**	**0.066 J**
Lead	mg/l		**0.007**	--	< 0.0050	**0.0064**	--	< 0.0050
Magnesium	mg/l		**7.1**	--	--	--	--	**56**
Manganese	mg/l		**0.15**	--	< 0.0050	< 0.0050	--	< 0.0050
Mercury	mg/l		--	--	< 0.00020	< 0.00020	--	< 0.00020
Methylmercury	mg/l		--	--	--	--	--	--
Molybdenum	mg/l		**0.0051 J**	--	--	--	--	--
Nickel	mg/l		**0.22**	--	< 0.0050	< 0.0050	--	< 0.0050
Potassium	mg/l		**24**	--	--	--	--	**16**
Selenium	mg/l		< 0.005	--	< 0.0050 J	< 0.0050 J	--	< 0.0050
Silver	mg/l		< 0.001	--	< 0.0050	< 0.0050	--	< 0.0050
Sodium	mg/l		**400**	--	--	--	--	**180**
Thallium	mg/l		< 0.0005		--	--	--	--
Tin	mg/l		< 0.02	--	--	--	--	< 0.0020
Titanium	mg/l		**0.048**	--	--	--	--	--
Vanadium	mg/l		**0.017**	--	< 0.0050	< 0.0050	--	< 0.0050
Volatile Mercury	mg/l		--	--	--	--	--	--
Zinc	mg/l		**0.047**	--	< 0.010	< 0.010	--	< 0.010
Inorganics - Dissolved Metals (Filtered)								
Aluminum	mg/l		**0.57**	--	--	--	--	< 0.010
Antimony	mg/l		**0.00099 J**	--	--	--	--	< 0.0050
Arsenic	mg/l		**0.0036**	--	**0.014**	**0.014**	--	**0.014**
Barium	mg/l		**0.055**	--	**0.024**	**0.024**	--	**0.041**
Beryllium	mg/l		< 0.0004	--	--	--	--	< 0.0020
Boron	mg/l		**0.089**		--	--	--	--
Cadmium	mg/l		< 0.0005	--	< 0.0020	< 0.0020	--	< 0.0020
Calcium	mg/l		**150**	--	**24**	**24**	--	**45**
Chromium	mg/l		< 0.005	--	< 0.0050	< 0.0050	--	< 0.0050
Cobalt	mg/l		< 0.005	--	--	--	--	< 0.0050
Copper	mg/l		< 0.005	--	< 0.0050	< 0.0050	--	< 0.0050
Iron	mg/l		**0.052**	< 0.080	< 0.080	< 0.080	**0.049 J**	**0.11**
Lead	mg/l		< 0.001	--	< 0.0050	< 0.0050	--	< 0.0050
Magnesium	mg/l		**0.19 J**	--	--	--	--	**56**
Manganese	mg/l		< 0.005	--	< 0.0050	< 0.0050	--	< 0.0050
Mercury	mg/l		--	--	< 0.00020	< 0.00020	--	< 0.00020
Molybdenum	mg/l		**0.0098 J**		--	--	--	--
Nickel	mg/l		**0.0019 J**	--	< 0.0050	< 0.0050	--	< 0.0050
Potassium	mg/l		**20**	--	--	--	--	**16**
Selenium	mg/l		< 0.005	--	< 0.0050	< 0.0050	--	< 0.0050
Silver	mg/l		< 0.001	--	< 0.0050	< 0.0050	--	< 0.0050
Sodium	mg/l		**370**	--	--	--	--	**180**
Thallium	mg/l		< 0.0005		--	--	--	--

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Table 1
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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		CMS-MW-015		MW-060-20			
Date Collected:			10/22/2021	3/23/2022	6/9/2021	DUP-02 6/9/2021	10/18/2021	3/22/2022
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 0.02	--	--	--	--	< 0.0020
Titanium	mg/l		**0.0024 J**		--	--	--	--
Vanadium	mg/l		**0.012**	--	< 0.0050	< 0.0050	--	< 0.0050
Zinc	mg/l		< 0.01	--	< 0.010	< 0.010	--	< 0.010
Mercury, Low-Level								
Mercury	ng/l		**767**	**780**	**250**	**9.7**	**19.5**	**2.4**
Dissolved Mercury	ng/l		**507**	**440**	--	--	**0.954**	**1.1**
Inorganics								
Chloride	mg/l		**790**	--	**110**	**110**	--	--
Cyanide	mg/l		**0.045**	--	**0.071**	**0.069**	--	--
Cyanide, amenable	mg/l		**0.0049 J**	--	**0.071**	**0.068**	--	--
Fluoride (F-, Anion)	mg/l		**0.25 J**	--	**0.37**	**0.37**	--	--
Nitrate-N	mg/l		< 0.10	--	< 0.25	< 0.25	--	--
Nitrite	mg/l		< 0.10	--	< 0.25	< 0.25	--	--
Silica, reactive	mg/l		--	**14**	**13**	**13**	--	--
Sulfate	mg/l		**140**	--	**400**	**390**	--	--
Sulfide	mg/l		**1.5**	--	< 1.0	< 1.0	--	--
Silica, dissolved	mg/l		--	**14**	**15**	**15**	--	--
General Chemistry								
Alkalinity	mg CaCO3/L		**110**	--	**210**	**200**	--	--
Alkalinity, Bicarbonate	mg/l		--	--	--	--	--	--
Alkalinity, Carbonate	mg/l		--	--	--	--	--	--
Biological Oxygen Demand	mg/l		**2.3 J**	--	< 2.0	< 2.0	--	--
Chemical Oxygen Demand	mg/l		**120**	--	< 7.0	**11**	--	--
pH	SU		--	**10.7 J**	--	--	--	**8.34 J**
Temperature	SU		--	**19.2 J**	--	--	--	**17.1 J**
Total Dissolved Solids	mg/l		**1500**	--	**880**	**870**	--	--
Total Hardness	mg/l		**500**	--	**400**	**340**	--	--
Total Organic Carbon	mg/l		**6.9**	**3.3**	**2.9**	**2.9**	**3.2**	**2.6**
Total Suspended Solids	mg/l		**26**	--	**3.5**	**2.86**	--	--
Per- and Polyfluoroalkyl Substances (PFAS)								
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 7.5	< 8.1	< 7.1	< 7.1	< 7.6	< 8.1
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 7.5	< 8.1	< 7.1	< 7.1	< 7.6	< 8.1
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 7.5	< 8.1	< 7.1	< 7.1	< 7.6	< 8.1
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 7.5	< 8.1	< 7.1	< 7.1	< 7.6	< 8.1
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		< 7.5	< 8.1	< 7.1	< 7.1	< 7.6	< 8.1
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 7.5	< 8.1	< 7.1	< 7.1	< 7.6	< 8.1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 7.5	< 8.1	< 7.1	< 7.1	< 7.6	< 8.1
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 7.5	< 8.1	< 7.1	< 7.1	< 7.6	< 8.1
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 7.5	< 8.1	< 7.1	< 7.1	< 7.6	< 8.1
Perfluorobutane sulfonic acid (PFBS)	ng/l		**5.8**	**3.7 J**	**8.4**	**6.8**	**8.7**	**5.5**
Perfluorobutanoic acid (PFBA)	ng/l		**14**	**14**	**6.5 J**	**6.5 J**	**7.2**	**7.1**
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 3.8	< 4.1	< 3.6	< 3.6	< 3.8	< 4.1
Perfluorodecanoic acid (PFDA)	ng/l		< 3.8	< 4.1	< 3.6	< 3.6	< 3.8	< 4.1
Perfluorododecanoic acid (PFDoA)	ng/l		< 3.8	< 4.1	< 3.6	< 3.6	< 3.8	< 4.1
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		**3.0 J**	**1.8 J**	**1.1 J**	**1.2 J**	**1.7 J**	**0.69 J**
Perfluoroheptanoic acid (PFHpA)	ng/l		**4.2**	**3.1 J**	**1.3 J**	**1.3 J**	**1.9 J**	**1.3 J**

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BASF Corporation
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Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		CMS-MW-015		MW-060-20			
Date Collected:			10/22/2021	3/23/2022	6/9/2021	DUP-02 6/9/2021	10/18/2021	3/22/2022
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**61**	**34**	**35.9**	**36.2**	**73**	**31**
Perfluorohexanoic acid (PFHxA)	ng/l		**11**	**6.4**	**4.1**	**4.1**	**8.6**	**4.2**
Perfluorononane sulfonic acid (PFNS)	ng/l		< 3.8	< 4.1	< 3.6	< 3.6	< 3.8	< 4.1
Perfluorononanoic acid (PFNA)	ng/l		**1.5 J**	**1.2 J**	**3.1 J**	**3.3 J**	**2.1 J**	**1.5 J**
Perfluorooctane sulfonamide (PFOSA)	ng/l		< 3.8	< 4.1	< 3.6	< 3.6	< 3.8	< 4.1
Perfluorooctane sulfonic acid (PFOS)	ng/l		**140**	**78**	**69.3**	**71.7**	**98**	**49**
Perfluorooctanoic acid (PFOA)	ng/l		**14**	**8.3**	**4**	**4.1**	**8.0**	**4.3**
Perfluoropentane sulfonate (PFPeS)	ng/l		**5.9**	**3.1 J**	**5.4**	**6**	**8.6**	**4.2**
Perfluoropentanoic acid (PFPeA)	ng/l		**6.4**	**4.9**	**2.5 J**	**2.9 J**	**3.2 J**	**2.3 J**
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 3.8	< 4.1	< 3.6	< 3.6	< 3.8	< 4.1
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 3.8	< 4.1	< 3.6	< 3.6	< 3.8	< 4.1
Perfluoroundecanoic acid (PFUdA)	ng/l		< 3.8	< 4.1	**4.1**	**4.1**	**3.5 J**	**2.2 J**

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Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

Location ID:	Units	MW-063-20				MW-066-20			RFI-MW01
Date Collected:		6/9/2021	DUP-01 6/9/2021	10/18/2021	3/22/2022	6/8/2021	10/26/2021	3/24/2022	6/8/2021
Field									
Conductivity	mS/cm	3.729	- -	3.79	2.34	3.567	3.1	2.71	21.422
Dissolved oxygen (DO)	mg/L	0.25	- -	--	0.11	0.21	0.1	0.53	0.38
Oxidation reduction potential (ORP)	millivolts	-279.9	- -	-116.8	-218.6	-172.8	-139	-108.9	-64.6
pH	s.u.	9.45	- -	9.32	9.5	7.77	7.45	7.49	7.14
Temperature	Deg C	14.2	- -	17.1	5.5	12.5	12.8	7.7	13.8
Turbidity	NTU	11.5	- -	20	3.95	18.7	2.25	20.7	13.5
Volatile Organic Compounds (VOCs)									
1,1,1-Trichloroethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,1,2-Trichloroethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,1-Dichloroethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,1-Dichloroethene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,2,3-Trichlorobenzene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,2,4-Trichlorobenzene	µg/l	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,2-Dibromoethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,2-Dichlorobenzene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,2-Dichloroethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,2-Dichloropropane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,3,5-Trimethylbenzene	µg/l	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,4-Dichlorobenzene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2-Butanone (MEK)	µg/l	< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
4-Methyl-2-Pentanone	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Acetone	µg/l	< 10	< 10	--	--	< 10	--	--	< 10
Benzene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Bromochloromethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Bromodichloromethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Bromoform	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Bromomethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Carbon Disulfide	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Carbon Tetrachloride	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
CFC-11	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
CFC-12	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Chlorobenzene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Chlorodibromomethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Chloroethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Chloroform	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Chloromethane	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
cis-1,2-Dichloroethene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
cis-1,3-Dichloropropene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Cyclohexane	µg/l	< 2.0	< 2.0	--	--	< 2.0	--	--	< 2.0
Dichloromethane	µg/l	< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
Ethylbenzene	µg/l	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0

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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		MW-063-20				MW-066-20			RFI-MW01
Date Collected:			6/9/2021	DUP-01 6/9/2021	10/18/2021	3/22/2022	6/8/2021	10/26/2021	3/24/2022	6/8/2021
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
m&p-Xylenes	µg/l		< 2.0	< 2.0	--	--	< 2.0	--	--	< 2.0
Methyl Acetate	µg/l		< 2.0	< 2.0	--	--	< 2.0	--	--	< 2.0
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
Methylcyclohexane	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Methyl-tert-butylether	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Naphthalene	µg/l		--	--	--	--	--	--	--	--
o-Xylene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Styrene (Monomer)	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Tetrachloroethene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Toluene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Total Xylenes	µg/l		--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
trans-1,3-Dichloropropene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Trichloroethene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Vinyl acetate	µg/l		--	--	--	--	--	--	--	--
Vinyl chloride	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Semi-Volatile Organic Compounds (SVOCs)										
1,1-Biphenyl	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
1,2,4,5-Tetrachlorobenzene	µg/l		< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
1,4-Dioxane	µg/l		< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
2,2-Oxybis(1-Chloropropane)	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2,3,4,6-Tetrachlorphenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2,4,5-Trichlorophenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2,4,6-Trichlorophenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2,4-Dichlorophenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2,4-Dimethylphenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2,4-Dinitrophenol	µg/l		< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
2,4-Dinitrotoluene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2,6-Dinitrotoluene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2-Chloronaphthalene	µg/l		< 0.10	< 0.10	--	--	< 0.10	--	--	< 0.10
2-Chlorophenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2-Methyl-4,6-dinitrophenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2-Methylnaphthalene	µg/l		< 0.10	< 0.10	--	--	**1.4**	--	--	< 0.10
2-Methylphenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2-Nitroaniline	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
2-Nitrophenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
3,3-Dichlorobenzidine	µg/l		< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
3-Methylphenol, 4-Methylphenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
3-Nitroaniline	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
4-Bromophenyl phenyl ether	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
4-Chloro-3-Methylphenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
4-Chlorophenyl phenyl ether	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
4-Nitroaniline	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
4-Nitrophenol	µg/l		< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
Acenaphthene	µg/l		< 0.10	< 0.10	--	--	**4.2**	--	--	< 0.10
Acenaphthylene	µg/l		< 0.10	< 0.10	--	--	**1.9**	--	--	< 0.10

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Table 1
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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		MW-063-20				MW-066-20			RFI-MW01
Date Collected:			6/9/2021	DUP-01 6/9/2021	10/18/2021	3/22/2022	6/8/2021	10/26/2021	3/24/2022	6/8/2021
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Anthracene	µg/l		< 0.10	< 0.10	--	--	**2.3**	--	--	< 0.10
Atrazine	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Benz(a)anthracene	µg/l		**0.12**	< 0.10	--	--	**0.65**	--	--	< 0.10
Benzaldehyde	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Benzo(a)pyrene	µg/l		**0.11**	< 0.10	--	--	**0.35**	--	--	< 0.10
Benzo(b)fluoranthene	µg/l		**0.14**	< 0.10	--	--	**0.47**	--	--	< 0.10
Benzo(g,h,i)perylene	µg/l		< 0.10	< 0.10	--	--	**0.19**	--	--	< 0.10
Benzo(k)fluoranthene	µg/l		< 0.10	< 0.10	--	--	**0.17**	--	--	< 0.10
bis(2-Chloroethoxy)methane	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
bis(2-Chloroethyl)ether	µg/l		< 1.0	< 1.0	--	--	**23**	--	--	< 1.0
bis(2-Ethylhexyl)phthalate	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Butyl benzyl phthalate	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Caprolactam	µg/l		< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
Carbazole	µg/l		< 1.0	< 1.0	--	--	**2.5**	--	--	< 1.0
Chrysene	µg/l		< 0.10	< 0.10	--	--	**0.53**	--	--	< 0.10
Dibenz(a,h)anthracene	µg/l		< 0.10	< 0.10	--	--	< 0.10	--	--	< 0.10
Dibenzofuran	µg/l		< 1.0	< 1.0	--	--	**5.1**	--	--	< 1.0
Diethyl phthalate	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Dimethyl phthalate	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Di-n-butyl phthalate	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Di-n-octyl phthalate	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Fluoranthene	µg/l		**0.34**	**0.22**	--	--	**2.7**	--	--	< 0.10
Fluorene	µg/l		**0.14**	**0.12**	--	--	**4.8**	--	--	< 0.10
Hexachloro-1,3-butadiene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Hexachlorobenzene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Hexachlorocyclopentadiene	µg/l		< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
Hexachloroethane	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Indeno(1,2,3-cd)pyrene	µg/l		< 0.10	< 0.10	--	--	**0.25**	--	--	< 0.10
Isophorone	µg/l		< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
Naphthalene	µg/l		< 0.10	< 0.10	--	--	**12**	--	--	< 0.10
Nitrobenzene	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
N-Nitrosodi-n-propylamine	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
N-Nitrosodiphenylamine	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
p-Chloroaniline	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Pentachlorophenol	µg/l		< 5.0	< 5.0	--	--	< 5.0	--	--	< 5.0
Phenanthrene	µg/l		**0.28**	**0.2**	--	--	**9**	--	--	< 0.10
Phenol	µg/l		< 1.0	< 1.0	--	--	< 1.0	--	--	< 1.0
Pyrene	µg/l		**0.27**	**0.17**	--	--	**1.9**	--	--	< 0.10
Inorganics - Total Metals										
Aluminum	mg/l		--	--	--	< 0.027 UB	--	--	**0.22**	--
Antimony	mg/l		--	--	--	< 0.0050	--	--	< 0.0050	--
Arsenic	mg/l		**0.03**	**0.029**	--	**0.029**	**0.01**	--	**0.011**	**0.0055**
Barium	mg/l		**0.015**	**0.015**	--	**0.011**	**0.093**	--	**0.061**	**0.32**
Beryllium	mg/l		--	--	--	< 0.0020	--	--	< 0.0020	--
Boron	mg/l		--	--	--	--	--	--	--	--
Cadmium	mg/l		< 0.0020	< 0.0020	--	< 0.0020	< 0.0020	--	< 0.0020	< 0.0020

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Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		MW-063-20				MW-066-20			RFI-MW01
Date Collected:			6/9/2021	DUP-01 6/9/2021	10/18/2021	3/22/2022	6/8/2021	10/26/2021	3/24/2022	6/8/2021
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**23**	**23**	--	**20**	**140**	--	**96**	**390**
Chromium	mg/l		< 0.0050	< 0.0050	--	< 0.0050	< 0.0050	--	< 0.0050	**0.0068**
Chromium VI	mg/l		< 0.0050 J	< 0.0050	--	--	< 0.0050	--	--	< 0.0050
Cobalt	mg/l		--	--	--	< 0.0050	--	--	**0.00078 J**	--
Copper	mg/l		< 0.0050	< 0.0050	--	< 0.0050	< 0.0050	--	< 0.0050	< 0.0050
Iron	mg/l		**0.15**	**0.16**	**0.44**	**0.16**	**5.5**	**2.9**	**2.0**	**11**
Lead	mg/l		< 0.0050	< 0.0050	--	**0.00090 J**	< 0.0050	--	**0.0011 J**	< 0.0050
Magnesium	mg/l		--	--	--	**3.4**	--	--	**18**	--
Manganese	mg/l		< 0.0050	< 0.0050	--	**0.0030 J**	**0.24**	--	**0.15**	**0.35**
Mercury	mg/l		< 0.00020	< 0.00020	--	< 0.00020	< 0.00020	--	< 0.00020	< 0.00020
Methylmercury	mg/l		--	--	--	--	--	--	--	--
Molybdenum	mg/l		--	--	--	--	--	--	--	--
Nickel	mg/l		< 0.0050	< 0.0050	--	**0.0010 J**	< 0.0050	--	**0.0020 J**	< 0.0050
Potassium	mg/l		--	--	--	**17**	--	--	**14**	--
Selenium	mg/l		< 0.0050 J	< 0.0050 J	--	< 0.0050	< 0.0050	--	**0.0010 J**	< 0.0050
Silver	mg/l		< 0.0050	< 0.0050	--	< 0.0050	< 0.0050	--	< 0.0050	< 0.0050
Sodium	mg/l		--	--	--	**690**	--	--	**460**	--
Thallium	mg/l		--	--	--	--	--	--	--	--
Tin	mg/l		--	--	--	< 0.0020	--	--	< 0.0020	--
Titanium	mg/l		--	--	--	--	--	--	--	--
Vanadium	mg/l		< 0.0050	< 0.0050	--	**0.0012 J**	< 0.0050	--	**0.0014 J**	**0.0098**
Volatile Mercury	mg/l		--	--	--	--	--	--	--	--
Zinc	mg/l		< 0.010	< 0.010	--	< 0.010	< 0.010	--	**0.0051 J**	**0.01**
Inorganics - Dissolved Metals (Filtered)										
Aluminum	mg/l		--	--	--	< 0.010	--	--	**0.013**	--
Antimony	mg/l		--	--	--	< 0.0050	--	--	< 0.0050	--
Arsenic	mg/l		**0.03**	**0.028**	--	**0.029**	**0.01**	--	**0.0093**	**0.0054**
Barium	mg/l		**0.015**	**0.015**	--	**0.011**	**0.093**	--	**0.061**	**0.31**
Beryllium	mg/l		--	--	--	< 0.0020	--	--	< 0.0020	--
Boron	mg/l		--	--	--	--	--	--	--	--
Cadmium	mg/l		< 0.0020	< 0.0020	--	< 0.0020	< 0.0020	--	< 0.0020	< 0.0020
Calcium	mg/l		**22**	**22**	--	**19**	**140**	--	**100**	**410**
Chromium	mg/l		< 0.0050	< 0.0050	--	< 0.0050	< 0.0050	--	< 0.0050	**0.01**
Cobalt	mg/l		--	--	--	< 0.0050	--	--	**0.00097 J**	--
Copper	mg/l		< 0.0050	< 0.0050	--	< 0.0050	< 0.0050	--	< 0.0050	< 0.0050
Iron	mg/l		< 0.080	< 0.080	**0.044 J**	**0.084**	**5.4**	**2.1**	**2.0**	**11.0**
Lead	mg/l		< 0.0050	< 0.0050	--	< 0.0050	< 0.0050	--	< 0.0050	< 0.0050
Magnesium	mg/l		--	--	--	**3.4**	--	--	**20**	--
Manganese	mg/l		< 0.0050	< 0.0050	--	< 0.0050	**0.23**	--	**0.15**	**0.36**
Mercury	mg/l		< 0.00020	< 0.00020	--	< 0.00020	< 0.00020	--	< 0.00020	< 0.00020
Molybdenum	mg/l		--	--	--		--	--	--	--
Nickel	mg/l		< 0.0050	< 0.0050	--	**0.00091 J**	< 0.0050	--	**0.0011 J**	< 0.0050
Potassium	mg/l		--	--	--	**17**	--	--	**15**	--
Selenium	mg/l		< 0.0050	< 0.0050	--	< 0.0050	< 0.0050	--	**0.00094 J**	< 0.0050
Silver	mg/l		< 0.0050	< 0.0050	--	< 0.0050	< 0.0050	--	< 0.0050 J	< 0.0050
Sodium	mg/l		--	--	--	**680**	--	--	**500**	--
Thallium	mg/l		--	--	--	--	--	--	--	--

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DRAFT

ARCADIS

Location ID:	Units		MW-063-20				MW-066-20			RFI-MW01
Date Collected:			6/9/2021	DUP-01 6/9/2021	10/18/2021	3/22/2022	6/8/2021	10/26/2021	3/24/2022	6/8/2021
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	--	--	--	< 0.0020	--	--	< 0.0020	--
Titanium	mg/l		--	--	--	--	--	--	--	--
Vanadium	mg/l		< 0.0050	< 0.0050	--	**0.0011 J**	< 0.0050	--	**0.00078 J**	**0.0093**
Zinc	mg/l		< 0.010	< 0.010	--	< 0.010	< 0.010	--	< 0.010	**0.012**
Mercury, Low-Level										
Mercury	ng/l		**24**	**13**	**63.1**	**9.8**	**5.8**	**6.48**	**7.6**	**22**
Dissolved Mercury	ng/l		--	--	**4.23**	**5.3**	--	**0.275 J**	< 1.2 UB	--
Inorganics										
Chloride	mg/l		**1100**	**1100**	--	--	**1100**	--	--	**10000**
Cyanide	mg/l		**0.14**	**0.13**	--	--	**0.019**	--	--	**0.039**
Cyanide, amenable	mg/l		**0.14**	**0.13**	--	--	**0.019**	--	--	**0.38**
Fluoride (F-, Anion)	mg/l		**0.41**	**0.43**	--	--	**1.5**	--	--	< 2.0
Nitrate-N	mg/l		< 0.20	< 0.20	--	--	< 0.40	--	--	< 2.0
Nitrite	mg/l		< 0.20	< 0.20	--	--	< 0.40	--	--	< 2.0
Silica, reactive	mg/l		**36**	**35**	--	--	**23**	--	--	**14**
Sulfate	mg/l		**180**	**190**	--	--	**4.6**	--	--	**520**
Sulfide	mg/l		**1.8**	**1.9**	--	--	< 1.0	--	--	< 1.0
Silica, dissolved	mg/l		**39**	**36**	--	--	**25**	--	--	**13**
General Chemistry										
Alkalinity	mg CaCO3/L		**86**	**82**	--	--	**330**	--	--	**550**
Alkalinity, Bicarbonate	mg/l		--	--	--	--	--	--	--	--
Alkalinity, Carbonate	mg/l		--	--	--	--	--	--	--	--
Biological Oxygen Demand	mg/l		**4**	**3.5**	--	--	**11**	--	--	**15**
Chemical Oxygen Demand	mg/l		**19**	**20**	--	--	**31**	--	--	**400**
pH	SU		--	--	--	**9.13 J**	--	--	**7.95 J**	--
Temperature	SU		--	--	--	**17.1 J**	--	--	**19.9**	--
Total Dissolved Solids	mg/l		**2000**	**2100**	--	--	**2100**	--	--	**20000**
Total Hardness	mg/l		**80**	**80**	--	--	**500**	--	--	**1700**
Total Organic Carbon	mg/l		**3.9**	**3.9**	**3.7**	**3.7**	**6.8**	**9.5**	**9.6**	**110**
Total Suspended Solids	mg/l		**3.9**	**1.75**	--	--	**22.5**	--	--	**38.5**
Per- and Polyfluoroalkyl Substances (PFAS)										
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 7.1	< 7.1	< 8.1	< 8.8	< 7.1	< 8.0	< 9.2	< 7.4
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 7.1	< 7.1	< 8.1	< 8.8	< 7.1	< 8.0	< 9.2	< 7.4
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 7.1	< 7.1	< 8.1	< 8.8	< 7.1	< 8.0	< 9.2	< 7.4
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 7.1	< 7.1	< 8.1	< 8.8	< 7.1	< 8.0	< 9.2	< 7.4
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		< 7.1	< 7.1	< 8.1	< 8.8	< 7.1	< 8.0	< 9.0	< 7.4
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 7.1	< 7.1	< 8.1	< 8.8	< 7.1	< 8.0	< 9.2	< 7.4
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 7.1	< 7.1	< 8.1	< 8.8	< 7.1	< 8.0	< 9.2	< 7.4
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 7.1	< 7.1	< 8.1	< 8.8	< 7.1	< 8.0	< 9.2	< 7.4
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 7.1	< 7.1	< 8.1	< 8.8	< 7.1	< 8.0	< 9.2	< 7.4
Perfluorobutane sulfonic acid (PFBS)	ng/l		**27**	**32.1**	**21**	**17**	**7.1**	**9.2**	**8.0**	**73.1**
Perfluorobutanoic acid (PFBA)	ng/l		**13.8**	**13.2**	**13**	**13**	**8.8**	**9.9**	**8.3**	**45.2 J+**
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 3.6	< 3.6	< 4.0	< 4.4	< 3.6	< 4.0	< 4.6	< 3.7
Perfluorodecanoic acid (PFDA)	ng/l		< 3.6	< 3.6	< 4.0	< 4.4	< 3.6	< 4.0	< 4.6	< 3.7
Perfluorododecanoic acid (PFDoA)	ng/l		< 3.6	< 3.6	< 4.0	< 4.4	< 3.6	< 4.0	< 4.6	< 3.7
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		**6**	**7.2**	**5.7**	**3.7 J**	< 3.6	**1.2 J**	**0.90 J**	< 3.7
Perfluoroheptanoic acid (PFHpA)	ng/l		**4.5**	**4.6**	**5.0**	**3.6 J**	**4.2**	**5.4**	**4.3 J**	**10.6 J+**

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DRAFT

ARCADIS

Location ID:	Units		MW-063-20				MW-066-20			RFI-MW01
Date Collected:			6/9/2021	DUP-01 6/9/2021	10/18/2021	3/22/2022	6/8/2021	10/26/2021	3/24/2022	6/8/2021
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**151**	**156**	**190**	**130**	**45.2**	**59**	**64**	**135 J+**
Perfluorohexanoic acid (PFHxA)	ng/l		**23.3**	**23.8**	**26**	**20**	**6.8**	**9.7**	**8.6**	**54.4 J+**
Perfluorononane sulfonic acid (PFNS)	ng/l		< 3.6	< 3.6	< 4.0	< 4.4	< 3.6	< 4.0	< 4.6	< 3.7
Perfluorononanoic acid (PFNA)	ng/l		**1.5 J**	**1.4 J**	**1.7 J**	**1.1 J**	**2.9 J**	**5.1**	**5.7**	**1.8 J**
Perfluorooctane sulfonamide (PFOSA)	ng/l		< 3.6	< 3.6	< 4.0	< 4.4	< 18 D	< 4.0	< 4.6	< 3.7 J
Perfluorooctane sulfonic acid (PFOS)	ng/l		**359 D**	**363 D**	**370**	**240**	**13.7**	**25**	**24**	**3.3 J**
Perfluorooctanoic acid (PFOA)	ng/l		**7.1**	**7.3**	**9.2**	**6.3**	**7.8**	**11**	**11**	**18.9**
Perfluoropentane sulfonate (PFPeS)	ng/l		**26.2**	**25**	**24**	**18**	**9.2**	**8.5**	**9.8**	**73.6 J+**
Perfluoropentanoic acid (PFPeA)	ng/l		**11.1**	**11.4**	**8.1**	**6.8**	**6.4**	**6.9**	**7.6**	**23.8 J+**
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 3.6	< 3.6	< 4.0	< 4.4	< 3.6	< 4.0	< 4.6	< 3.7 J
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 3.6	< 3.6	< 4.0	< 4.4	< 3.6	< 4.0	< 4.6	< 3.7
Perfluoroundecanoic acid (PFUdA)	ng/l		< 3.6	< 3.6	< 4.0	< 4.4	< 3.6	< 4.0	< 4.6	< 3.7

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

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Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

Location ID:	Units	RFI-MW05		RFI-MW06			RFI-MW07F	
Date Collected:		10/20/2021	3/25/2022	6/11/2021	10/25/2021	3/24/2022	10/20/2021	3/23/2022
Field								
Conductivity	mS/cm	17.79	21.25	1633.69	10.7	11.8	5.757	6.03
Dissolved oxygen (DO)	mg/L	0.28	0.88	0.32	0.09	0.2	0.09	1.05
Oxidation reduction potential (ORP)	millivolts	-124	-176	-171.4	-148	-50.2	-385.2	-71.3
pH	s.u.	12.32	12.34	12.21	12.06	12.19	12.26**	12.62
Temperature	Deg C	15.9	9.8	12.9	15.5	8.6	16.54	8.2
Turbidity	NTU	7.1	5.45	1.39	2.29	2.47	3.81	3.18
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,1,2,2-Tetrachloroethane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,1,2-Trichloroethane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,1-Dichloroethane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,1-Dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,2,3-Trichlorobenzene	µg/l	--	< 1.0	< 1.0	--	--	--	--
1,2,4-Trichlorobenzene	µg/l	< 1.0	--	--	--	--	< 1.0	--
1,2,4-Trimethylbenzene	µg/l	**0.44 J**	< 1.0	< 1.0	--	--	< 1.0	--
1,2-Dibromo-3-chloropropane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,2-Dibromoethane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,2-Dichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,2-Dichloroethane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,2-Dichloropropane	µg/l	< 1.0	< 1.0	**6.7**	--	--	< 1.0	--
1,3,5-Trimethylbenzene	µg/l	< 1.0	--	--	--	--	< 1.0	--
1,3-Dichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
1,4-Dichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
2-Butanone (MEK)	µg/l	**3.1 J**	**3.6 J**	< 5.0	--	--	< 10	--
4-Methyl-2-Pentanone	µg/l	< 10	< 1.0	< 1.0	--	--	< 10	--
Acetone	µg/l	**22 J**	**23**	**34**	--	--	**15 J**	--
Benzene	µg/l	**0.73 J**	**0.62 J**	< 1.0	--	--	< 1.0	--
Bromochloromethane	µg/l	--	< 1.0	< 1.0	--	--	--	--
Bromodichloromethane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Bromoform	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Bromomethane	µg/l	< 2.0	< 1.0	< 1.0	--	--	< 2.0	--
Carbon Disulfide	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Carbon Tetrachloride	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
CFC-11	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
CFC-12	µg/l	< 2.0	< 1.0	< 1.0	--	--	< 2.0	--
Chlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Chlorodibromomethane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Chloroethane	µg/l	< 2.0	< 1.0	< 1.0	--	--	< 2.0	--
Chloroform	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Chloromethane	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
cis-1,2-Dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
cis-1,3-Dichloropropene	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Cyclohexane	µg/l	< 1.0	< 2.0	< 2.0	--	--	< 1.0	--
Dichloromethane	µg/l	< 1.0	< 5.0	< 5.0	--	--	< 1.0	--
Ethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--

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Table 1
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BASF Corporation
North Works
Wyandotte, MI

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Location ID:	Units		RFI-MW05		RFI-MW06			RFI-MW07F	
Date Collected:			10/20/2021	3/25/2022	6/11/2021	10/25/2021	3/24/2022	10/20/2021	3/23/2022
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
m&p-Xylenes	µg/l		--	< 2.0	< 2.0	--	--	--	--
Methyl Acetate	µg/l		< 1.0	< 2.0	< 2.0	--	--	< 1.0	--
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		< 10	< 5.0	< 5.0	--	--	< 10	--
Methylcyclohexane	µg/l		< 5.0	< 1.0	< 1.0	--	--	< 5.0	--
Methyl-tert-butylether	µg/l		< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Naphthalene	µg/l		**9.9**	--	--	--	--	**0.59 J**	--
o-Xylene	µg/l		--	**0.32 J**	< 1.0	--	--	--	--
Styrene (Monomer)	µg/l		< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Tetrachloroethene	µg/l		< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Toluene	µg/l		**0.44 J**	< 1.0	< 1.0	--	--	< 1.0	--
Total Xylenes	µg/l		**0.51 J**	--	--	--	--	< 1.0	--
trans-1,2-Dichloroethene	µg/l		< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
trans-1,3-Dichloropropene	µg/l		< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Trichloroethene	µg/l		< 1.0	< 1.0	< 1.0	--	--	< 1.0	--
Vinyl acetate	µg/l		< 5.0	--	--	--	--	< 5.0	--
Vinyl chloride	µg/l		--	< 1.0	< 1.0	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs)									
1,1-Biphenyl	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
1,2,4,5-Tetrachlorobenzene	µg/l		--	< 5.4	< 5.0	--	--	--	< 5.0
1,4-Dioxane	µg/l		< 10	< 5.4	< 5.0	--	--	< 10	< 5.0
2,2-Oxybis(1-Chloropropane)	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
2,3,4,6-Tetrachlorphenol	µg/l		--	< 1.1	**1.1**	--	--	--	< 1.0
2,4,5-Trichlorophenol	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
2,4,6-Trichlorophenol	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
2,4-Dichlorophenol	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
2,4-Dimethylphenol	µg/l		< 0.80	**0.85 J**	< 1.0	--	--	< 0.80	< 1.0
2,4-Dinitrophenol	µg/l		< 4.0	< 5.4	< 5.0	--	--	< 4.0	< 5.0
2,4-Dinitrotoluene	µg/l		< 1.6	< 1.1	< 1.0	--	--	< 1.6	< 1.0
2,6-Dinitrotoluene	µg/l		< 1.6	< 1.1	< 1.0	--	--	< 1.6	< 1.0
2-Chloronaphthalene	µg/l		< 0.80	< 0.11	< 0.10	--	--	< 0.80	< 0.10
2-Chlorophenol	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
2-Methyl-4,6-dinitrophenol	µg/l		< 4.0	< 1.1	< 1.0	--	--	< 4.0	< 1.0
2-Methylnaphthalene	µg/l		**0.64**	**0.3**	**0.22**	--	--	**0.074 J**	< 0.10
2-Methylphenol	µg/l		**1.2**	**1.5**	**1.2**	--	--	< 0.80	< 1.0
2-Nitroaniline	µg/l		< 1.6	< 1.1	< 1.0	--	--	< 1.6	< 1.0
2-Nitrophenol	µg/l		< 1.6	< 1.1	< 1.0	--	--	< 1.6	< 1.0
3,3-Dichlorobenzidine	µg/l		< 4.0	< 5.4	< 5.0	--	--	< 4.0	< 5.0
3-Methylphenol, 4-Methylphenol	µg/l		**24**	**21**	**25**	--	--	< 1.6	**1.0**
3-Nitroaniline	µg/l		< 1.6	< 1.1	< 1.0	--	--	< 1.6	< 1.0
4-Bromophenyl phenyl ether	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
4-Chloro-3-Methylphenol	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
4-Chlorophenyl phenyl ether	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
4-Nitroaniline	µg/l		< 1.6	< 1.1	< 1.0	--	--	< 1.6	< 1.0
4-Nitrophenol	µg/l		< 4.0	< 5.4	< 5.0	--	--	< 4.0	< 5.0
Acenaphthene	µg/l		**0.21**	**0.21**	< 0.10	--	--	< 0.16	< 0.10
Acenaphthylene	µg/l		**0.26**	**0.21**	< 0.10	--	--	< 0.16	< 0.10

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Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW05		RFI-MW06			RFI-MW07F	
Date Collected:			10/20/2021	3/25/2022	6/11/2021	10/25/2021	3/24/2022	10/20/2021	3/23/2022
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
Anthracene	µg/l		**0.055 J**	< 0.11	< 0.10	--	--	< 0.16	< 0.10
Atrazine	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
Benz(a)anthracene	µg/l		< 0.16	< 0.11	< 0.10	--	--	< 0.16	< 0.10
Benzaldehyde	µg/l		< 4.0	< 1.1	< 1.0	--	--	< 4.0	< 1.0
Benzo(a)pyrene	µg/l		< 0.16	< 0.11	< 0.10	--	--	< 0.16	< 0.10
Benzo(b)fluoranthene	µg/l		< 0.16	< 0.11	< 0.10	--	--	< 0.16	< 0.10
Benzo(g,h,i)perylene	µg/l		< 0.16	< 0.11	< 0.10	--	--	< 0.16	< 0.10
Benzo(k)fluoranthene	µg/l		< 0.16	< 0.11	< 0.10	--	--	< 0.16	< 0.10
bis(2-Chloroethoxy)methane	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
bis(2-Chloroethyl)ether	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
bis(2-Ethylhexyl)phthalate	µg/l		< 4.0	< 1.1	< 1.0	--	--	< 4.0	< 1.0
Butyl benzyl phthalate	µg/l		< 4.0	< 1.1	< 1.0	--	--	< 4.0	< 1.0
Caprolactam	µg/l		< 4.0	< 5.4	< 5.0	--	--	< 4.0	< 5.0
Carbazole	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
Chrysene	µg/l		< 0.16	< 0.11	< 0.10	--	--	< 0.16	< 0.10
Dibenz(a,h)anthracene	µg/l		< 0.16	< 0.11	< 0.10	--	--	< 0.16	< 0.10
Dibenzofuran	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
Diethyl phthalate	µg/l		< 4.0	< 1.1	< 1.0	--	--	< 4.0	< 1.0
Dimethyl phthalate	µg/l		< 4.0	< 1.1	< 1.0	--	--	< 4.0	< 1.0
Di-n-butyl phthalate	µg/l		< 4.0	< 1.1	< 1.0	--	--	< 4.0	< 1.0
Di-n-octyl phthalate	µg/l		< 4.0	< 1.1	< 1.0	--	--	< 4.0	< 1.0
Fluoranthene	µg/l		**0.073 J**	< 0.11	**0.10**	--	--	**0.052 J**	< 0.10
Fluorene	µg/l		**0.14 J**	**0.16**	< 0.10	--	--	< 0.16	< 0.10
Hexachloro-1,3-butadiene	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
Hexachlorobenzene	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
Hexachlorocyclopentadiene	µg/l		< 4.0	< 5.4	< 5.0	--	--	< 4.0	< 5.0
Hexachloroethane	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
Indeno(1,2,3-cd)pyrene	µg/l		< 0.16	< 0.11	< 0.10	--	--	< 0.16	< 0.10
Isophorone	µg/l		< 0.80	< 5.4	< 5.0	--	--	< 0.80	< 5.0
Naphthalene	µg/l		**6.0**	**4.2**	**2.6**	--	--	**0.17**	**0.11**
Nitrobenzene	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
N-Nitrosodi-n-propylamine	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
N-Nitrosodiphenylamine	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
p-Chloroaniline	µg/l		< 0.80	< 1.1	< 1.0	--	--	< 0.80	< 1.0
Pentachlorophenol	µg/l		< 4.0	< 5.4	< 5.0	--	--	< 4.0	< 5.0
Phenanthrene	µg/l		**0.26**	**0.32**	**0.47**	--	--	**0.43**	**0.59**
Phenol	µg/l		**18**	**12**	**7.9**	--	--	**0.67 J**	**0.59 J**
Pyrene	µg/l		**0.076 J**	< 0.11	< 0.10	--	--	< 0.16	< 0.10
Inorganics - Total Metals									
Aluminum	mg/l		**0.039 J**	--	--	--	**0.011**	< 0.04	--
Antimony	mg/l		< 0.002	--	--	--	< 0.0050	< 0.002	--
Arsenic	mg/l		< 0.002	--	< 0.0050	--	**0.00075 J**	< 0.002	--
Barium	mg/l		**0.69**	--	**0.33**	--	**0.29**	**0.16**	--
Beryllium	mg/l		< 0.0004	--	--	--	< 0.0020	< 0.0004	--
Boron	mg/l		< 0.25 UB		--	--	--	**0.13**	--
Cadmium	mg/l		< 0.0005	--	< 0.0020	--	< 0.0020	< 0.0005	--

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Table 1
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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW05		RFI-MW06			RFI-MW07F	
Date Collected:			10/20/2021	3/25/2022	6/11/2021	10/25/2021	3/24/2022	10/20/2021	3/23/2022
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**1,900**	--	**2100**	--	**2000**	**810**	--
Chromium	mg/l		**0.003 J**	--	**0.016**	--	**0.0097**	**0.012**	--
Chromium VI	mg/l		R	< 0.0050	< 0.0050	--	--	**0.011 J**	--
Cobalt	mg/l		< 0.005	--	--	--	**0.00098 J**	< 0.005	--
Copper	mg/l		**0.0013 J**	--	< 0.0050	--	< 0.0050	< 0.005	--
Iron	mg/l		**0.65**	< 0.080	**0.14**	**0.34**	**0.080**	**0.025 J**	**0.065 J**
Lead	mg/l		< 0.001	--	< 0.0050	--	< 0.0050	< 0.001	--
Magnesium	mg/l		**9.9**	--	--	--	**0.12 J**	**1.6**	--
Manganese	mg/l		**0.065**	--	< 0.0050	--	**0.0038 J**	< 0.005	--
Mercury	mg/l		--	--	**0.00026**	--	**0.00019 J**	--	--
Methylmercury	mg/l		--	--	--	--	--	--	--
Molybdenum	mg/l		**0.0044 J**	--	--	--	--	**0.0088 J**	--
Nickel	mg/l		**0.0074**	--	**0.016**	--	**0.016**	**0.0014 J**	--
Potassium	mg/l		**23**	--	--	--	**50**	**18 J**	--
Selenium	mg/l		**0.009**	--	**0.0076**	--	**0.0070**	**0.013**	--
Silver	mg/l		< 0.001	--	< 0.0050	--	< 0.0050	< 0.001	--
Sodium	mg/l		**1,500**	--	--	--	**1300**	**270**	--
Thallium	mg/l		< 0.0005	--	--	--	--	< 0.0005	--
Tin	mg/l		< 0.02	--	--	--	< 0.0020	< 0.02	--
Titanium	mg/l		< 0.005	--	--	--	--	< 0.005	--
Vanadium	mg/l		< 0.005	--	--	--	< 0.0050	**0.0042 J**	--
Volatile Mercury	mg/l		--	--	--	--	--	--	--
Zinc	mg/l		< 0.01	--	< 0.010	--	**0.0058 J**	< 0.01	--
Inorganics - Dissolved Metals (Filtered)									
Aluminum	mg/l		**0.046**	--	--	--	< 0.010	< 0.04	--
Antimony	mg/l		< 0.002	--	--	--	< 0.0050	< 0.002	--
Arsenic	mg/l		< 0.002	--	< 0.0050	--	**0.00080 J**	< 0.002	--
Barium	mg/l		**0.65**	--	**0.33**	--	**0.29**	**0.16**	--
Beryllium	mg/l		< 0.0004	--	--	--	< 0.0020	< 0.004	--
Boron	mg/l		**0.023 J**	--	--	--	--	**0.16 J**	--
Cadmium	mg/l		< 0.0005	--	< 0.0020	--	< 0.0020	< 0.0005	--
Calcium	mg/l		**1,900**	--	**2000**	--	**2000**	**850**	--
Chromium	mg/l		**0.0027 J**	--	< 0.0050	--	< 0.0050	**0.012**	--
Cobalt	mg/l		< 0.005	--	--	--	**0.00094 J**	< 0.005	--
Copper	mg/l		< 0.005	--	< 0.0050	--	< 0.0050	< 0.005	--
Iron	mg/l		**0.74**	< 0.080	< 0.080	**0.25**	< 0.080	**0.10**	< 0.080
Lead	mg/l		< 0.001	--	< 0.0050	--	< 0.0050	< 0.001	--
Magnesium	mg/l		**11**	--	--	--	**0.066 J**	**1.7 J**	--
Manganese	mg/l		**0.06**	--	< 0.0050	--	< 0.0050	< 0.005	--
Mercury	mg/l		--	--	< 0.00020	--	< 0.00020	--	--
Molybdenum	mg/l		**0.0043 J**	--	--	--	--	**0.009 J**	--
Nickel	mg/l		**0.0052**	--	**0.0078**	--	**0.0088**	**0.0013 J**	--
Potassium	mg/l		**25**	--	--	--	**52**	**22 J**	--
Selenium	mg/l		**0.008**	--	**0.0076**	--	**0.0072**	**0.013**	--
Silver	mg/l		< 0.001	--	< 0.0050	--	< 0.0050 J	< 0.001	--
Sodium	mg/l		**1,300**	--	--	--	**1400**	**260**	--
Thallium	mg/l		< 0.0005	--	--	--	--	< 0.0005	--

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW05		RFI-MW06			RFI-MW07F	
Date Collected:			10/20/2021	3/25/2022	6/11/2021	10/25/2021	3/24/2022	10/20/2021	3/23/2022
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 0.02	--	--	--	< 0.0020	< 0.02	--
Titanium	mg/l		< 0.005	--	--	--	--	< 0.005	--
Vanadium	mg/l		< 0.005	--	--	--	< 0.0050	**0.0041 J**	--
Zinc	mg/l		< 0.01	--	< 0.010	--	< 0.010	< 0.01	--
Mercury, Low-Level									
Mercury	ng/l		**20.5**	**300**	**490**	**373**	**370**	**0.232 J**	**1.6**
Dissolved Mercury	ng/l		**15.3**	**300**	--	**33**	**380**	< 0.500	**1.7**
Inorganics									
Chloride	mg/l		**4700**	--	**6800**	--	--	**1400**	--
Cyanide	mg/l		< 0.010	< 0.0050	**0.033**	--	--	**0.0096 J**	--
Cyanide, amenable	mg/l		< 0.010	< 0.0050	**0.033**	--	--	< 0.010	--
Fluoride (F-, Anion)	mg/l		**0.41 J**	--	**6.5**	--	--	**0.13**	--
Nitrate-N	mg/l		< 0.020 J	< 0.10 J	< 0.80 J	--	--	**0.29 J**	**0.21**
Nitrite	mg/l		R	< 0.10 J	< 2.0 J	--	--	R	R
Silica, reactive	mg/l		--	**0.75**	**1.3**	--	--	--	**6.2**
Sulfate	mg/l		**16**	--	**200**	--	--	**350**	--
Sulfide	mg/l		< 1.0	--	< 1.0	--	--	< 1.0	--
Silica, dissolved	mg/l		--	**0.46**	**1.3**	--	--	--	**1.9**
General Chemistry									
Alkalinity	mg CaCO3/L		**790**	--	**420**	--	--	**1100**	--
Alkalinity, Bicarbonate	mg/l		--	--	--	--	--	--	--
Alkalinity, Carbonate	mg/l		--	--	--	--	--	--	--
Biological Oxygen Demand	mg/l		R	**9.4 J**	**9.4**	--	--	R	**1.7 J**
Chemical Oxygen Demand	mg/l		**56**	--	**350**	--	--	**35**	--
pH	SU		--	**11.9 J**	--	--	**11.4 J**	--	**12.1 J**
Temperature	SU		--	**17.7**	--	--	**19.5**	--	**19.0 J**
Total Dissolved Solids	mg/l		**9100**	--	**11000**	--	--	**3100 J**	--
Total Hardness	mg/l		**4700**	--	**5000**	--	--	**2000**	--
Total Organic Carbon	mg/l		**4.6 J**	**5.4**	**4.4**	**5.2**	**7.8**	**7.4**	**4.9**
Total Suspended Solids	mg/l		**30**	--	**4.1**	--	--	**56**	--
Per- and Polyfluoroalkyl Substances (PFAS)									
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 8.1	< 8.7	< 7.4	< 6.9	< 7.5	< 9.8	< 7.9
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 8.1	< 8.7	< 7.4	< 6.9	< 7.5	< 9.8	< 7.9
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 8.1	< 8.7	< 7.4	< 6.9	< 7.5	< 9.8	< 7.9
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 8.1	< 8.7	< 7.4	< 6.9	< 7.5	< 9.8	< 7.9
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		< 8.1	< 8.7	< 7.4	< 6.9	**2.4 J**	< 9.8	< 7.9
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 8.1	< 8.7	< 7.4	< 6.9	< 7.5	< 9.8	< 7.9
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 8.1	< 8.7	< 7.4	< 6.9	< 7.5	< 9.8	< 7.9
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 8.1	< 8.7	< 37 D	**1.5 J**	**1.8 J**	< 9.8	< 7.9
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 8.1	< 8.7	< 7.4	< 6.9	< 7.5	< 9.8	< 7.9
Perfluorobutane sulfonic acid (PFBS)	ng/l		**1.6 J**	**1.5 J**	**2.1 J**	**2.3 J**	**2.1 J**	**3.0 J**	**2.0 J**
Perfluorobutanoic acid (PFBA)	ng/l		**5.8**	**8.7 J**	**8.8**	**20 J+**	**9.4 J**	**10**	**5.6 J**
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 4.1	< 4.3	< 3.7	< 3.5	< 3.8	< 4.9	< 4.0
Perfluorodecanoic acid (PFDA)	ng/l		< 4.1	< 4.3	< 3.7	< 3.5	< 3.8	< 4.9	< 4.0
Perfluorododecanoic acid (PFDoA)	ng/l		< 4.1	< 4.3	< 3.7	< 3.5	< 3.8	< 4.9	< 4.0
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		< 4.1	< 4.3	< 3.7	**0.90 J**	**0.73 J**	< 4.9	< 4.0
Perfluoroheptanoic acid (PFHpA)	ng/l		**1.8 J**	**1.8 J**	**4.8**	**7.2**	**6.3**	**3.0 J**	**1.3 J**

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW05		RFI-MW06			RFI-MW07F	
Date Collected:			10/20/2021	3/25/2022	6/11/2021	10/25/2021	3/24/2022	10/20/2021	3/23/2022
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**3.1 J**	**3.5 J**	**3.3 J**	**7.3**	**6.6 J**	**3.5 J**	**2.3 J**
Perfluorohexanoic acid (PFHxA)	ng/l		**3.4 J**	**3.3 J**	**5.9**	**11**	**9.5 J**	**5.5**	**2.4 J**
Perfluorononane sulfonic acid (PFNS)	ng/l		< 4.1	< 4.3	< 3.7	< 3.5	< 3.8	< 4.9	< 4.0
Perfluorononanoic acid (PFNA)	ng/l		**0.92 J**	**0.94 J**	**1.3 J**	**2.3 J**	**2.4 J**	< 4.9	< 4.0
Perfluorooctane sulfonamide (PFOSA)	ng/l		< 4.1	< 4.3	< 3.7	< 3.5	< 3.8	< 4.9	< 4.0
Perfluorooctane sulfonic acid (PFOS)	ng/l		**3.6 J**	**3.5 J**	**18.8**	**42**	**40 J**	**5.5**	**2.8 J**
Perfluorooctanoic acid (PFOA)	ng/l		**4.5**	**4.2 J**	**14.3**	**24**	**23 J**	**11**	**7.0**
Perfluoropentane sulfonate (PFPeS)	ng/l		< 4.1	< 4.3	< 3.7	**1.2 J**	**1.4 J**	**1.1 J**	< 4.0
Perfluoropentanoic acid (PFPeA)	ng/l		**3.8 J**	**3.7 J**	**22.3**	**10**	**10 J**	**4.2 J**	**2.5 J**
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 4.1	< 4.3	< 3.7	< 3.5	< 3.8	< 4.9	< 4.0
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 4.1	< 4.3	< 3.7	< 3.5	< 3.8	< 4.9	< 4.0
Perfluoroundecanoic acid (PFUdA)	ng/l		< 4.1	< 4.3	< 3.7	< 3.5	< 3.8	< 4.9	< 4.0

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Table 1
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BASF Corporation
North Works
Wyandotte, MI

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Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

Location ID:	Units	RFI-MW07I			RFI-MW08F			
Date Collected:		10/22/2021	2/9/2022	3/23/2022	10/20/2021	DUP-02 10/20/2021	3/24/2022	DUP-02 3/24/2022
Field								
Conductivity	mS/cm	58.81	39.85	46.5	1.579	1.579	1.87	1.87
Dissolved oxygen (DO)	mg/L	0.09	0.15	0.4	0.69	0.69	0.24	0.24
Oxidation reduction potential (ORP)	millivolts	-46.4	-27	-57.4	-385.3	-385.3	-185	-185
pH	s.u.	6.08	6.39	6.51	11.79**	10.98	12.09	12.09
Temperature	Deg C	11.3	10	10.1	16.37	16.37	8.7	8.7
Turbidity	NTU	54.8	5.61	6.33	3.8	3.8	1.93	1.93
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,1,2,2-Tetrachloroethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,1,2-Trichloroethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,1-Dichloroethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,1-Dichloroethene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,2,3-Trichlorobenzene	µg/l	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,2,4-Trimethylbenzene	µg/l	< 1.0	--	--	< 1.0	**0.51 J**	--	--
1,2-Dibromo-3-chloropropane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,2-Dibromoethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,2-Dichlorobenzene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,2-Dichloroethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,2-Dichloropropane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,3,5-Trimethylbenzene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,3-Dichlorobenzene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
1,4-Dichlorobenzene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
2-Butanone (MEK)	µg/l	< 10	--	--	< 10	< 10	--	--
4-Methyl-2-Pentanone	µg/l	< 10	--	--	< 10	< 10	--	--
Acetone	µg/l	< 20	--	--	< 20	< 20	--	--
Benzene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
Bromochloromethane	µg/l	--	--	--	--	--	--	--
Bromodichloromethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
Bromoform	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
Bromomethane	µg/l	< 2.0	--	--	< 2.0	< 2.0	--	--
Carbon Disulfide	µg/l	< 1.0	--	--	**1.0**	< 1.0	--	--
Carbon Tetrachloride	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
CFC-11	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
CFC-12	µg/l	< 2.0	--	--	< 2.0	< 2.0	--	--
Chlorobenzene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
Chlorodibromomethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
Chloroethane	µg/l	< 2.0	--	--	< 2.0	< 2.0	--	--
Chloroform	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
Chloromethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
cis-1,2-Dichloroethene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
cis-1,3-Dichloropropene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
Cyclohexane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
Dichloromethane	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--
Ethylbenzene	µg/l	< 1.0	--	--	< 1.0	< 1.0	--	--

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Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW07I			RFI-MW08F			
Date Collected:			10/22/2021	2/9/2022	3/23/2022	10/20/2021	DUP-02 10/20/2021	3/24/2022	DUP-02 3/24/2022
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	--	--	< 1.0	< 1.0	--	--
m&p-Xylenes	µg/l		--	--	--	--	--	--	--
Methyl Acetate	µg/l		< 1.0	--	--	< 1.0	< 1.0	--	--
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		< 10	--	--	< 10	< 10	--	--
Methylcyclohexane	µg/l		< 5.0	--	--	< 5.0	< 5.0	--	--
Methyl-tert-butylether	µg/l		< 1.0	--	--	< 1.0	< 1.0	--	--
Naphthalene	µg/l		< 1.0	--	--	**0.58 J**	**1.6**	--	--
o-Xylene	µg/l		--	--	--	--	--	--	--
Styrene (Monomer)	µg/l		< 1.0	--	--	< 1.0	< 1.0	--	--
Tetrachloroethene	µg/l		< 1.0	--	--	< 1.0	< 1.0	--	--
Toluene	µg/l		< 1.0	--	--	< 1.0	**0.52 J**	--	--
Total Xylenes	µg/l		< 1.0	--	--	< 1.0	**0.53 J**	--	--
trans-1,2-Dichloroethene	µg/l		< 1.0	--	--	< 1.0	< 1.0	--	--
trans-1,3-Dichloropropene	µg/l		< 1.0	--	--	< 1.0	< 1.0	--	--
Trichloroethene	µg/l		< 1.0	--	--	< 1.0	< 1.0	--	--
Vinyl acetate	µg/l		< 5.0	--	--	< 5.0	< 5.0	--	--
Vinyl chloride	µg/l		--	--	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs)									
1,1-Biphenyl	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
1,2,4,5-Tetrachlorobenzene	µg/l		--	--	< 5.0	--	--	< 5.3	< 5.2
1,4-Dioxane	µg/l		< 10	--	< 5.0	**0.30 J**	**0.60 J**	< 5.3	< 5.2
2,2-Oxybis(1-Chloropropane)	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
2,3,4,6-Tetrachlorphenol	µg/l		--	--	< 1.0	--	--	< 1.1	< 1.0
2,4,5-Trichlorophenol	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
2,4,6-Trichlorophenol	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
2,4-Dichlorophenol	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
2,4-Dimethylphenol	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
2,4-Dinitrophenol	µg/l		< 4.0	--	< 5.0	< 4.0	< 4.0	< 5.3	< 5.2
2,4-Dinitrotoluene	µg/l		< 1.6	--	< 1.0	< 1.6	< 1.6	< 1.1	< 1.0
2,6-Dinitrotoluene	µg/l		< 1.6	--	< 1.0	< 1.6	< 1.6	< 1.1	< 1.0
2-Chloronaphthalene	µg/l		< 0.80	--	< 0.10	< 0.80	< 0.80	< 0.11	< 0.10
2-Chlorophenol	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
2-Methyl-4,6-dinitrophenol	µg/l		< 4.0	--	< 1.0	< 4.0	< 4.0	< 1.1	< 1.0
2-Methylnaphthalene	µg/l		< 0.16	--	< 0.10	< 0.16	**0.18**	**0.24**	**0.21**
2-Methylphenol	µg/l		< 0.80	--	< 1.0	< 0.80	**0.24 J**	< 1.1	< 1.0
2-Nitroaniline	µg/l		< 1.6	--	< 1.0	< 1.6	< 1.6	< 1.1	< 1.0
2-Nitrophenol	µg/l		< 1.6	--	< 1.0	< 1.6	< 1.6	< 1.1	< 1.0
3,3-Dichlorobenzidine	µg/l		R	--	< 5.0	< 4.0	< 4.0	< 5.3	< 5.2
3-Methylphenol, 4-Methylphenol	µg/l		< 1.6	--	< 1.0	**0.59 J**	**2.7**	**1.3**	**1.3**
3-Nitroaniline	µg/l		< 1.6	--	< 1.0	< 1.6	< 1.6	< 1.1	< 1.0
4-Bromophenyl phenyl ether	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
4-Chloro-3-Methylphenol	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
4-Chlorophenyl phenyl ether	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
4-Nitroaniline	µg/l		< 1.6 J	--	< 1.0	< 1.6	< 1.6	< 1.1	< 1.0
4-Nitrophenol	µg/l		< 4.0	--	< 5.0	< 4.0	< 4.0	< 5.3	< 5.2
Acenaphthene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Acenaphthylene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10

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Table 1
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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW07I			RFI-MW08F			
Date Collected:			10/22/2021	2/9/2022	3/23/2022	10/20/2021	DUP-02 10/20/2021	3/24/2022	DUP-02 3/24/2022
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
Anthracene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Atrazine	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
Benz(a)anthracene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Benzaldehyde	µg/l		< 4.0	--	< 1.0	< 4.0	**1.3 J**	< 1.1	< 1.0
Benzo(a)pyrene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Benzo(b)fluoranthene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Benzo(g,h,i)perylene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Benzo(k)fluoranthene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
bis(2-Chloroethoxy)methane	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
bis(2-Chloroethyl)ether	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
bis(2-Ethylhexyl)phthalate	µg/l		< 4.0	--	< 1.0	< 4.0	< 4.0	< 1.1	< 1.0
Butyl benzyl phthalate	µg/l		< 4.0	--	< 1.0	< 4.0	< 4.0	< 1.1	< 1.0
Caprolactam	µg/l		**0.96 J**	--	< 5.0	**6.9**	**3.2 J**	< 5.3	< 5.2
Carbazole	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
Chrysene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Dibenz(a,h)anthracene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Dibenzofuran	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
Diethyl phthalate	µg/l		< 4.0	--	< 1.0	< 4.0	< 4.0	< 1.1	< 1.0
Dimethyl phthalate	µg/l		< 4.0	--	< 1.0	< 4.0	< 4.0	< 1.1	< 1.0
Di-n-butyl phthalate	µg/l		< 4.0	--	< 1.0	< 4.0	< 4.0	< 1.1	< 1.0
Di-n-octyl phthalate	µg/l		< 4.0	--	< 1.0	< 4.0	< 4.0	< 1.1	< 1.0
Fluoranthene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Fluorene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Hexachloro-1,3-butadiene	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
Hexachlorobenzene	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
Hexachlorocyclopentadiene	µg/l		< 4.0	--	< 5.0	< 4.0	< 4.0	< 5.3	< 5.2
Hexachloroethane	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
Indeno(1,2,3-cd)pyrene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Isophorone	µg/l		< 0.80	--	< 5.0	< 0.80	< 0.80	< 5.3	< 5.2
Naphthalene	µg/l		**0.041 J**	--	< 0.10	**0.16 J**	**0.76 J**	**0.76**	< 0.63 UB
Nitrobenzene	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
N-Nitrosodi-n-propylamine	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
N-Nitrosodiphenylamine	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
p-Chloroaniline	µg/l		R	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
Pentachlorophenol	µg/l		< 4.0	--	< 5.0	< 4.0	< 4.0	**2.6 J**	**2.9 J**
Phenanthrene	µg/l		**0.042 J**	--	< 0.10	< 0.16	**0.11 J**	< 0.11	< 0.10
Phenol	µg/l		< 0.80	--	< 1.0	< 0.80	< 0.80	< 1.1	< 1.0
Pyrene	µg/l		< 0.16	--	< 0.10	< 0.16	< 0.16	< 0.11	< 0.10
Inorganics - Total Metals									
Aluminum	mg/l		**0.014 J**	--	**0.042**	**1.5 J**	**2.1**	--	--
Antimony	mg/l		**0.00075 J**	--	< 0.0050	**0.00078 J**	**0.00054 J**	--	--
Arsenic	mg/l		**0.0025**	--	**0.0039 J**	**0.0032**	**0.0018 J**	--	--
Barium	mg/l		**1.2**	--	**1.2**	**0.016 J**	**0.033**	--	--
Beryllium	mg/l		< 0.0004	--	< 0.020	< 0.0004	< 0.0004	--	--
Boron	mg/l		**0.39**	--	--	**0.12 B**	< 0.082 UB	--	
Cadmium	mg/l		< 0.0005	--	< 0.0020	< 0.0005	< 0.0005	--	--

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Table 1
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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW07I			RFI-MW08F			
Date Collected:			10/22/2021	2/9/2022	3/23/2022	10/20/2021	DUP-02 10/20/2021	3/24/2022	DUP-02 3/24/2022
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**7,900**	--	**7100**	**41 J**	**99**	--	--
Chromium	mg/l		< 0.005	--	**0.0025 J**	< 0.005	< 0.005	--	--
Chromium VI	mg/l		**0.15*** J**	**0.003 J**	--	R	R	< 0.0050	< 0.0050
Cobalt	mg/l		< 0.005	--	**0.0036 J**	< 0.005	< 0.005	--	--
Copper	mg/l		< 0.005	--	< 0.0050	< 0.005	< 0.005	--	--
Iron	mg/l		**44**	--	**31**	< 0.05	< 0.05	< 0.080	**0.073 J**
Lead	mg/l		< 0.001	--	< 0.0050	< 0.001	< 0.001	--	--
Magnesium	mg/l		**790**	--	**690**	< 0.4	< 0.4	--	--
Manganese	mg/l		**18**	--	**15**	< 0.005	< 0.005	--	--
Mercury	mg/l		--	--	< 0.00020	--	--	--	--
Methylmercury	mg/l		--	--	--	--	--	--	--
Molybdenum	mg/l		< 0.01	--	--	**0.0095 J**	**0.01**	--	--
Nickel	mg/l		< 0.005	--	**0.0046 J**	**0.0029 J**	**0.0032 J**	--	--
Potassium	mg/l		**9.7**	--	**11**	**67**	**65**	--	--
Selenium	mg/l		**0.0044 J**	--	< 0.0050 UB	< 0.005	**0.0014 J**	--	--
Silver	mg/l		< 0.001	--	< 0.0050	< 0.001	< 0.001	--	--
Sodium	mg/l		**5,500**	--	**4900**	**270**	**260**	--	--
Thallium	mg/l		< 0.0005	--	--	< 0.0005	< 0.0005	--	--
Tin	mg/l		< 0.02	--	< 0.0020	< 0.02	< 0.02	--	--
Titanium	mg/l		< 0.005	--	--	< 0.005	< 0.005	--	--
Vanadium	mg/l		< 0.005	--	**0.00078 J**	< 0.005	< 0.005	--	--
Volatile Mercury	mg/l		--	--	--	--	--	--	--
Zinc	mg/l		< 0.01	--	**0.0066 J**	< 0.01	< 0.01	--	--
Inorganics - Dissolved Metals (Filtered)									
Aluminum	mg/l		< 40	--	< 0.010	**1.5 J**	**2.2 J**	--	--
Antimony	mg/l		< 2	--	**0.0044 J**	**0.00073 J**	**0.00051 J**	--	--
Arsenic	mg/l		< 2	--	**0.0032 J**	**0.0031**	**0.0018 J**	--	--
Barium	mg/l		< 5	--	**1.2**	**0.015 J**	**0.031 J**	--	--
Beryllium	mg/l		< 0.4	--	< 0.020	< 0.004	< 0.004	--	--
Boron	mg/l		< 50	--	--	**0.12**	**0.075**	--	--
Cadmium	mg/l		< 0.5	--	< 0.0020	< 0.0005	< 0.0005	--	--
Calcium	mg/l		**7,700**	--	**6900**	**43 J**	**93 J**	--	--
Chromium	mg/l		< 5	--	**0.0019 J**	< 0.005	< 0.005	--	--
Cobalt	mg/l		< 5	--	**0.0038 J**	< 0.005	< 0.005	--	--
Copper	mg/l		< 5	--	< 0.0050	< 0.005	< 0.005	--	--
Iron	mg/l		< 50	--	**28**	**0.013 J**	**0.019 J**	< 0.080	< 0.080
Lead	mg/l		< 1	--	< 0.0050	< 0.001	< 0.001	--	--
Magnesium	mg/l		**770**	--	**660**	< 0.4	< 0.4	--	--
Manganese	mg/l		**17**	--	**15**	< 0.005	< 0.005	--	--
Mercury	mg/l		--	--	< 0.00020	--	--	--	--
Molybdenum	mg/l		< 10	--	--	**0.0094 J**	**0.01**	--	--
Nickel	mg/l		< 5	--	**0.0037 J**	**0.0028 J**	**0.0031 J**	--	--
Potassium	mg/l		< 400	--	**12**	**72**	**65**	--	--
Selenium	mg/l		< 5	--	< 0.0050 UB	< 0.005	**0.0016 J**	--	--
Silver	mg/l		< 1	--	< 0.0050	< 0.001	< 0.001	--	--
Sodium	mg/l		**4,800**	--	**4700**	**260**	**240**	--	--
Thallium	mg/l		< 0.5	--	--	< 0.0005	< 0.0005	--	--

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BASF Corporation
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Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW07I			RFI-MW08F			
Date Collected:			10/22/2021	2/9/2022	3/23/2022	10/20/2021	DUP-02 10/20/2021	3/24/2022	DUP-02 3/24/2022
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	R	--	**0.0018 J**	< 0.02	< 0.02	--	--
Titanium	mg/l		< 5	--	--	< 0.005	< 0.005	--	--
Vanadium	mg/l		R	--	< 0.0050	< 0.005	< 0.005	--	--
Zinc	mg/l		< 10	--	**0.0053 J**	< 0.01	< 0.01	--	--
Mercury, Low-Level									
Mercury	ng/l		**0.415 J**	--	< 1.3 UB	R	**13.2**	**220 J**	**220 J**
Dissolved Mercury	ng/l		< 0.500	--	< 0.83 UB	R	**11.5**	**270 J**	**270 J**
Inorganics									
Chloride	mg/l		**22000**	--	--	**340**	**380**	--	--
Cyanide	mg/l		**0.086**	--	--	**0.0054 J**	**0.0064 J**	--	--
Cyanide, amenable	mg/l		**0.077**	--	--	< 0.010	< 0.010	--	--
Fluoride (F-, Anion)	mg/l		< 1.0	--	--	**0.45 J**	**0.19 J**	--	--
Nitrate-N	mg/l		< 0.20	--	R	< 0.020 J	< 0.020 J	--	--
Nitrite	mg/l		R	--	R	< 0.020 J	< 0.020 J	--	--
Silica, reactive	mg/l		--	--	**18**	--	--	**24**	--
Sulfate	mg/l		**710**	--	--	**67**	**81**	--	--
Sulfide	mg/l		**2.3**	--	--	**1.6**	**1.5**	--	--
Silica, dissolved	mg/l		--	--	**17**	--	--	**25**	--
General Chemistry									
Alkalinity	mg CaCO3/L		**250**	--	--	< 20 J	**120 J**	--	--
Alkalinity, Bicarbonate	mg/l		--	--	--	--	--	--	--
Alkalinity, Carbonate	mg/l		--	--	--	--	--	--	--
Biological Oxygen Demand	mg/l		< 2.0 J	--	--	**4.4 J**	**5.0 J**	--	--
Chemical Oxygen Demand	mg/l		**910 J**	--	--	**21**	**26**	--	--
pH	SU		--	--	**6.36 J**	--	--	**11.6 J**	**11.5 J**
Temperature	SU		--	--	**18.9 J**	--	--	**20.1**	**20.8**
Total Dissolved Solids	mg/l		**63000 J**	--	--	**1000**	**1000**	--	--
Total Hardness	mg/l		**20000**	--	--	**110 J**	**250 J**	--	--
Total Organic Carbon	mg/l		**2.3**	--	**1.9**	**5.9 J**	**8.4 J**	**7.3**	--
Total Suspended Solids	mg/l		**180**	--	--	< 2.5	< 2.5	--	--
Per- and Polyfluoroalkyl Substances (PFAS)									
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 7.1	--	< 7.1	< 7.5	< 7.2	< 7.8	< 8.0
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 7.1	--	< 7.1	< 7.5	< 7.2	< 7.8	< 8.0
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 7.1	--	< 7.1	< 7.5	< 7.2	< 7.8	< 8.0
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 7.1	--	< 7.1	< 7.5	< 7.2	< 7.8	< 8.0
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		**4.8 J**	--	**2.9 J**	< 7.5	< 7.2	< 7.8	< 8.0
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 7.1	--	< 7.1	< 7.5	< 7.2	< 7.8	< 8.0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 7.1	--	< 7.1	< 7.5	< 7.2	< 7.8	< 8.0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 7.1	--	< 7.1	< 7.5	< 7.2	< 7.8	< 8.0
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 7.1	--	< 7.1	< 7.5	< 7.2	< 7.8	< 8.0
Perfluorobutane sulfonic acid (PFBS)	ng/l		< 3.5	--	< 3.6	**13**	**12**	**14**	**15**
Perfluorobutanoic acid (PFBA)	ng/l		< 3.5	--	< 3.6	**14**	**13**	**19 J**	**19 J**
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 3.5	--	< 3.6	< 3.7	< 3.6	< 3.9	< 4.0
Perfluorodecanoic acid (PFDA)	ng/l		< 3.5	--	< 3.6	< 3.7	< 3.6	< 3.9	< 4.0
Perfluorododecanoic acid (PFDoA)	ng/l		< 3.5	--	< 3.6	< 3.7	< 3.6	< 3.9	< 4.0
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		< 3.5	--	< 3.6	**1.5 J**	**2.1 J**	**1.6 J**	**1.8 J**
Perfluoroheptanoic acid (PFHpA)	ng/l		< 3.5	--	< 3.6	**9.3**	**10**	**12**	**12**

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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW07I			RFI-MW08F			
Date Collected:			10/22/2021	2/9/2022	3/23/2022	10/20/2021	DUP-02 10/20/2021	3/24/2022	DUP-02 3/24/2022
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 3.5	--	< 3.6	**83**	**100**	**100**	**110**
Perfluorohexanoic acid (PFHxA)	ng/l		< 3.5	--	< 3.6	**15**	**16**	**16**	**16**
Perfluorononane sulfonic acid (PFNS)	ng/l		< 3.5	--	< 3.6	< 3.7	< 3.6	< 3.9	< 4.0
Perfluorononanoic acid (PFNA)	ng/l		< 3.5	--	< 3.6	**2.4 J**	**2.6 J**	**2.2 J**	**2.0 J**
Perfluorooctane sulfonamide (PFOSA)	ng/l		< 3.5	--	**1.8 J**	< 3.7	< 3.6	< 3.9	< 4.0
Perfluorooctane sulfonic acid (PFOS)	ng/l		< 3.5	--	< 3.6	**69**	**71**	**51**	**48**
Perfluorooctanoic acid (PFOA)	ng/l		< 3.5	--	< 3.6	**22**	**20**	**19**	**18**
Perfluoropentane sulfonate (PFPeS)	ng/l		< 3.5	--	< 3.6	**11**	**13**	**14**	**16**
Perfluoropentanoic acid (PFPeA)	ng/l		< 3.5	--	< 3.6	**13**	**14**	**14**	**14**
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 3.5	--	< 3.6	< 3.7	< 3.6	< 3.9	< 4.0
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 3.5	--	< 3.6	< 3.7	< 3.6	< 3.9	< 4.0
Perfluoroundecanoic acid (PFUdA)	ng/l		< 3.5	--	< 3.6	< 3.7	< 3.6	< 3.9	< 4.0

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ARCADIS

Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

Location ID:	Units		RFI-MW08I				RFI-MW09F	
Date Collected:			6/7/2021	10/25/2021	3/24/2022	DUP-01 3/24/2022	10/19/2021	3/24/2022
Field								
Conductivity	mS/cm		9.077	8.806	8.05	8.05	4.622	1.51
Dissolved oxygen (DO)	mg/L		0.54	-0.03	0.21	0.21	0.56	0.24
Oxidation reduction potential (ORP)	millivolts		-335.8	-385.2	-289	-289	-408.9	-131
pH	s.u.		12.84	12.81	12.97	12.97	9.18**	11.1
Temperature	Deg C		15.9	13.9	8.7	8.7	19.79	7.8
Turbidity	NTU		1.91	4.5	2.27	2.27	3.28	1.78
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	µg/l		< 1.0	--	--	--	< 1.0	--
1,1,2,2-Tetrachloroethane	µg/l		< 1.0	--	--	--	< 1.0	--
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l		< 1.0	--	--	--	< 1.0	--
1,1,2-Trichloroethane	µg/l		< 1.0	--	--	--	< 1.0	--
1,1-Dichloroethane	µg/l		**14**	--	--	--	< 1.0	--
1,1-Dichloroethene	µg/l		**2.2**	--	--	--	< 1.0	--
1,2,3-Trichlorobenzene	µg/l		< 1.0	--	--	--	--	--
1,2,4-Trichlorobenzene	µg/l		--	--	--	--	< 1.0	--
1,2,4-Trimethylbenzene	µg/l		< 1.0	--	--	--	< 1.0	--
1,2-Dibromo-3-chloropropane	µg/l		< 1.0	--	--	--	< 1.0	--
1,2-Dibromoethane	µg/l		< 1.0	--	--	--	< 1.0	--
1,2-Dichlorobenzene	µg/l		< 1.0	--	--	--	< 1.0	--
1,2-Dichloroethane	µg/l		< 1.0	--	--	--	< 1.0	--
1,2-Dichloropropane	µg/l		< 1.0	--	--	--	< 1.0	--
1,3,5-Trimethylbenzene	µg/l		--	--	--	--	< 1.0	--
1,3-Dichlorobenzene	µg/l		< 1.0	--	--	--	< 1.0	--
1,4-Dichlorobenzene	µg/l		< 1.0	--	--	--	< 1.0	--
2-Butanone (MEK)	µg/l		< 5.0	--	--	--	< 10	--
4-Methyl-2-Pentanone	µg/l		< 1.0	--	--	--	< 10	--
Acetone	µg/l		**23 J**	--	--	--	< 20	--
Benzene	µg/l		**1.5**	--	--	--	< 1.0	--
Bromochloromethane	µg/l		< 1.0	--	--	--	--	--
Bromodichloromethane	µg/l		< 1.0	--	--	--	< 1.0	--
Bromoform	µg/l		< 1.0	--	--	--	< 1.0	--
Bromomethane	µg/l		< 1.0	--	--	--	< 2.0	--
Carbon Disulfide	µg/l		< 1.0	--	--	--	< 1.0	--
Carbon Tetrachloride	µg/l		< 1.0	--	--	--	< 1.0	--
CFC-11	µg/l		< 1.0	--	--	--	< 1.0	--
CFC-12	µg/l		< 1.0	--	--	--	< 2.0	--
Chlorobenzene	µg/l		< 1.0	--	--	--	< 1.0	--
Chlorodibromomethane	µg/l		< 1.0	--	--	--	< 1.0	--
Chloroethane	µg/l		< 1.0	--	--	--	< 2.0	--
Chloroform	µg/l		< 1.0	--	--	--	< 1.0	--
Chloromethane	µg/l		< 1.0	--	--	--	< 1.0	--
cis-1,2-Dichloroethene	µg/l		< 1.0	--	--	--	< 1.0	--
cis-1,3-Dichloropropene	µg/l		< 1.0	--	--	--	< 1.0	--
Cyclohexane	µg/l		< 2.0	--	--	--	< 1.0	--
Dichloromethane	µg/l		< 5.0	--	--	--	< 1.0	--
Ethylbenzene	µg/l		**16**	--	--	--	< 1.0	--

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Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW08I				RFI-MW09F	
Date Collected:			6/7/2021	10/25/2021	3/24/2022	DUP-01 3/24/2022	10/19/2021	3/24/2022
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**6.8**	--	--	--	< 1.0	--
m&p-Xylenes	µg/l		**39**	--	--	--	--	--
Methyl Acetate	µg/l		< 2.0	--	--	--	< 1.0	--
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		< 5.0	--	--	--	< 10	--
Methylcyclohexane	µg/l		**1.6**	--	--	--	< 5.0	--
Methyl-tert-butylether	µg/l		< 1.0	--	--	--	< 1.0	--
Naphthalene	µg/l		--	--	--	--	**1.6**	--
o-Xylene	µg/l		**29**	--	--	--	--	--
Styrene (Monomer)	µg/l		< 1.0	--	--	--	< 1.0	--
Tetrachloroethene	µg/l		< 1.0	--	--	--	**1.2**	--
Toluene	µg/l		**16**	--	--	--	< 1.0	--
Total Xylenes	µg/l		--	--	--	--	< 1.0	--
trans-1,2-Dichloroethene	µg/l		< 1.0	--	--	--	< 1.0	--
trans-1,3-Dichloropropene	µg/l		< 1.0	--	--	--	< 1.0	--
Trichloroethene	µg/l		< 1.0	--	--	--	**0.79 J**	--
Vinyl acetate	µg/l		--	--	--	--	< 5.0	--
Vinyl chloride	µg/l		< 1.0	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs)								
1,1-Biphenyl	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
1,2,4,5-Tetrachlorobenzene	µg/l		< 5.0	--	--	--	--	< 5.2
1,4-Dioxane	µg/l		< 5.0	--	--	--	< 10	< 5.2
2,2-Oxybis(1-Chloropropane)	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
2,3,4,6-Tetrachlorphenol	µg/l		< 1.0	--	--	--	--	R
2,4,5-Trichlorophenol	µg/l		< 1.0	--	--	--	< 0.80	R
2,4,6-Trichlorophenol	µg/l		< 1.0	--	--	--	< 0.80	R
2,4-Dichlorophenol	µg/l		< 1.0	--	--	--	< 0.80	R
2,4-Dimethylphenol	µg/l		< 1.0	--	--	--	< 0.80	R
2,4-Dinitrophenol	µg/l		< 5.0	--	--	--	< 4.0	R
2,4-Dinitrotoluene	µg/l		< 1.0	--	--	--	< 1.6	< 1.0
2,6-Dinitrotoluene	µg/l		< 1.0	--	--	--	< 1.6	< 1.0
2-Chloronaphthalene	µg/l		< 0.10	--	--	--	< 0.80	< 0.10
2-Chlorophenol	µg/l		< 1.0	--	--	--	< 0.80	R
2-Methyl-4,6-dinitrophenol	µg/l		< 1.0	--	--	--	< 4.0	R
2-Methylnaphthalene	µg/l		**18**	--	--	--	**0.18**	< 0.10
2-Methylphenol	µg/l		< 1.0	--	--	--	< 0.80	R
2-Nitroaniline	µg/l		< 1.0	--	--	--	< 1.6	< 1.0
2-Nitrophenol	µg/l		< 1.0	--	--	--	< 1.6	R
3,3-Dichlorobenzidine	µg/l		< 5.0	--	--	--	< 4.0	< 5.2
3-Methylphenol, 4-Methylphenol	µg/l		**11**	--	--	--	< 1.6 J	R
3-Nitroaniline	µg/l		< 1.0	--	--	--	< 1.6 J	< 1.0
4-Bromophenyl phenyl ether	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
4-Chloro-3-Methylphenol	µg/l		< 1.0	--	--	--	< 0.80	R
4-Chlorophenyl phenyl ether	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
4-Nitroaniline	µg/l		< 1.0	--	--	--	< 1.6	< 1.0
4-Nitrophenol	µg/l		< 5.0	--	--	--	< 4.0	R
Acenaphthene	µg/l		**1.2**	--	--	--	**0.094 J**	< 0.10
Acenaphthylene	µg/l		**2.0**	--	--	--	**0.043 J**	< 0.10

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ARCADIS

Location ID:	Units		RFI-MW08I				RFI-MW09F	
Date Collected:			6/7/2021	10/25/2021	3/24/2022	DUP-01 3/24/2022	10/19/2021	3/24/2022
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	--	--	--	< 0.80	< 1.0
Anthracene	µg/l		**0.99**	--	--	--	**0.077 J**	< 0.10
Atrazine	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
Benz(a)anthracene	µg/l		< 0.10	--	--	--	< 0.16	< 0.10
Benzaldehyde	µg/l		< 1.0	--	--	--	< 4.0	< 1.0
Benzo(a)pyrene	µg/l		< 0.10	--	--	--	< 0.16	< 0.10
Benzo(b)fluoranthene	µg/l		< 0.10	--	--	--	< 0.16	< 0.10
Benzo(g,h,i)perylene	µg/l		< 0.10	--	--	--	< 0.16	< 0.10
Benzo(k)fluoranthene	µg/l		< 0.10	--	--	--	< 0.16	< 0.10
bis(2-Chloroethoxy)methane	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
bis(2-Chloroethyl)ether	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
bis(2-Ethylhexyl)phthalate	µg/l		< 1.0	--	--	--	**1.4 J**	< 1.0
Butyl benzyl phthalate	µg/l		< 1.0	--	--	--	< 4.0	< 1.0
Caprolactam	µg/l		< 5.0	--	--	--	< 4.0	< 5.2
Carbazole	µg/l		**2.9**	--	--	--	< 0.80	< 1.0
Chrysene	µg/l		< 0.10	--	--	--	< 0.16	< 0.10
Dibenz(a,h)anthracene	µg/l		< 0.10	--	--	--	< 0.16	< 0.10
Dibenzofuran	µg/l		**2.2**	--	--	--	< 0.80	< 1.0
Diethyl phthalate	µg/l		< 1.0	--	--	--	< 4.0	< 1.0
Dimethyl phthalate	µg/l		< 1.0	--	--	--	< 4.0	< 1.0
Di-n-butyl phthalate	µg/l		< 1.0	--	--	--	< 4.0	< 1.0
Di-n-octyl phthalate	µg/l		< 1.0	--	--	--	< 4.0	< 1.0
Fluoranthene	µg/l		**0.52**	--	--	--	**0.11 J**	< 0.10
Fluorene	µg/l		**1.8**	--	--	--	**0.14 J**	< 0.10
Hexachloro-1,3-butadiene	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
Hexachlorobenzene	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
Hexachlorocyclopentadiene	µg/l		< 5.0	--	--	--	< 4.0	< 5.2
Hexachloroethane	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
Indeno(1,2,3-cd)pyrene	µg/l		< 0.10	--	--	--	< 0.16	< 0.10
Isophorone	µg/l		< 5.0	--	--	--	< 0.80	< 5.2
Naphthalene	µg/l		**89 D**	--	--	--	**0.75**	< 0.10
Nitrobenzene	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
N-Nitrosodi-n-propylamine	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
N-Nitrosodiphenylamine	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
p-Chloroaniline	µg/l		< 1.0	--	--	--	< 0.80	< 1.0
Pentachlorophenol	µg/l		< 5.0	--	--	--	< 4.0	R
Phenanthrene	µg/l		**2.9**	--	--	--	**0.43**	**0.17**
Phenol	µg/l		**18**	--	--	--	< 0.80	R
Pyrene	µg/l		**0.49**	--	--	--	**0.089 J**	< 0.10
Inorganics - Total Metals								
Aluminum	mg/l		--	--	**0.14**	**0.13**	**0.35**	--
Antimony	mg/l		--	--	< 0.0050	< 0.0050	**0.00055 J**	--
Arsenic	mg/l		< 0.0050	--	**0.00080 J**	**0.00077 J**	**0.0049**	--
Barium	mg/l		**0.74**	--	**0.79**	**0.79**	**0.0089**	--
Beryllium	mg/l		--	--	< 0.0020	< 0.0020	< 0.0004	--
Boron	mg/l		--	--	--	--	**0.13**	
Cadmium	mg/l		< 0.0020	--	< 0.0020	< 0.0020	< 0.0005	--

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ARCADIS

Location ID:	Units		RFI-MW08I				RFI-MW09F	
Date Collected:			6/7/2021	10/25/2021	3/24/2022	DUP-01 3/24/2022	10/19/2021	3/24/2022
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**780**	--	**880**	**900**	**10**	--
Chromium	mg/l		< 0.0050	--	< 0.0050	< 0.0050	< 0.005	--
Chromium VI	mg/l		< 0.0050 J	--	--	--	< 0.02 J	--
Cobalt	mg/l		--	--	**0.00036 J**	**0.00037 J**	< 0.005	--
Copper	mg/l		< 0.0050	--	< 0.0050	< 0.0050	< 0.005	--
Iron	mg/l		< 0.080	**0.091**	< 0.080	< 0.080	**0.015 J**	< 0.080
Lead	mg/l		< 0.0050	--	< 0.0050	< 0.0050	< 0.001	--
Magnesium	mg/l		--	--	< 0.20	< 0.20	**0.25 J**	--
Manganese	mg/l		< 0.0050	--	< 0.0050	< 0.0050	**0.0017 J**	--
Mercury	mg/l		**0.0018**	--	**0.0017**	**0.0018**	--	--
Methylmercury	mg/l		--	--	--	--	--	--
Molybdenum	mg/l		--	--	--	--	**0.011**	--
Nickel	mg/l		**0.011**	--	**0.0089**	**0.0095**	< 0.005	--
Potassium	mg/l		--	--	**75**	**73**	**29 J**	--
Selenium	mg/l		< 0.0050	--	**0.0013 J**	**0.0011 J**	< 0.005	--
Silver	mg/l		< 0.0050	--	< 0.0050	< 0.0050	< 0.001	--
Sodium	mg/l		--	--	**210**	**210**	**720**	--
Thallium	mg/l		--	--	--	--	< 0.0005	
Tin	mg/l		--	--	< 0.0020	< 0.0020	< 0.02	--
Titanium	mg/l		--	--	--	--	< 0.005	--
Vanadium	mg/l		< 0.0050	--	< 0.0050	< 0.0050	< 0.005	--
Volatile Mercury	mg/l		--	--	--	--	--	--
Zinc	mg/l		< 0.010	--	< 0.010	< 0.010	< 0.01	--
Inorganics - Dissolved Metals (Filtered)								
Aluminum	mg/l		--	--	**0.12**	**0.14**	**0.24**	--
Antimony	mg/l		--	--	< 0.0050	< 0.0050	**0.00056 J**	--
Arsenic	mg/l		< 0.0050	--	**0.00074 J**	**0.00076 J**	**0.0046**	--
Barium	mg/l		**0.74**	--	**0.78**	**0.78**	**0.008**	--
Beryllium	mg/l		--	--	< 0.0020	< 0.0020	< 0.0004	--
Boron	mg/l		--	--	--	--	**0.12**	
Cadmium	mg/l		< 0.0020	--	< 0.0020	< 0.0020	< 0.0005	--
Calcium	mg/l		**780**	--	**870**	**890**	**11**	--
Chromium	mg/l		< 0.0050	--	< 0.0050	< 0.0050	< 0.005	--
Cobalt	mg/l		--	--	**0.00036 J**	**0.00040 J**	< 0.005	--
Copper	mg/l		< 0.0050	--	< 0.0050	< 0.0050	< 0.005	--
Iron	mg/l		**0.083**	**0.073 J**	< 0.080	< 0.080	< 0.05	< 0.080
Lead	mg/l		< 0.0050	--	< 0.0050	< 0.0050	< 0.001	--
Magnesium	mg/l		--	--	< 0.20	**0.055 J**	**0.24 J**	--
Manganese	mg/l		< 0.0050	--	< 0.0050	< 0.0050	< 0.005	--
Mercury	mg/l		**0.0018**	--	**0.0018**	**0.0016**	--	--
Molybdenum	mg/l		--	--	--	--	**0.0096 J**	--
Nickel	mg/l		**0.01**	--	**0.0086**	**0.012**	< 0.005	--
Potassium	mg/l		--	--	**74**	**70**	**24**	--
Selenium	mg/l		< 0.0050	--	**0.0011 J**	**0.0015 J**	< 0.005	--
Silver	mg/l		< 0.0050	--	< 0.0050 J	< 0.0050 J	< 0.001	--
Sodium	mg/l		--	--	**200**	**210**	**570**	--
Thallium	mg/l		--	--	--	--	< 0.0005	--

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ARCADIS

Location ID:	Units		RFI-MW08I				RFI-MW09F	
Date Collected:			6/7/2021	10/25/2021	3/24/2022	DUP-01 3/24/2022	10/19/2021	3/24/2022
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	--	--	< 0.0020	< 0.0020	< 0.02	--
Titanium	mg/l		--	--	--	--	< 0.005	--
Vanadium	mg/l		< 0.0050	--	< 0.0050	< 0.0050	< 0.005	--
Zinc	mg/l		< 0.010	--	< 0.010	< 0.010	< 0.01	--
Mercury, Low-Level								
Mercury	ng/l		**1800**	**1060**	**1700**	**1800**	**42.5**	**23**
Dissolved Mercury	ng/l		--	**12.6**	**1700**	**1800**	**38.6**	**18**
Inorganics								
Chloride	mg/l		**330**	--	--	--	**910**	--
Cyanide	mg/l		**0.0058**	--	--	--	**0.012**	--
Cyanide, amenable	mg/l		**0.0058**	--	--	--	< 0.010	--
Fluoride (F-, Anion)	mg/l		**9.9**	--	--	--	**0.71**	--
Nitrate-N	mg/l		< 0.10	--	--	--	< 0.10	--
Nitrite	mg/l		< 0.10 J	--	--	--	< 0.10	--
Silica, reactive	mg/l		**0.26**	--	--	--	--	**25**
Sulfate	mg/l		**2**	--	--	--	**84**	--
Sulfide	mg/l		**5.8**	--	--	--	**1.2**	--
Silica, dissolved	mg/l		**0.26**	--	--	--	--	**26**
General Chemistry								
Alkalinity	mg CaCO3/L		**1900**	--	--	--	**200**	--
Alkalinity, Bicarbonate	mg/l		--	--	--	--	--	--
Alkalinity, Carbonate	mg/l		--	--	--	--	--	--
Biological Oxygen Demand	mg/l		< 2.0	--	--	--	< 2.0 J	--
Chemical Oxygen Demand	mg/l		**93**	--	--	--	**24**	--
pH	SU		--	--	**12.2 J**	**12.2 J**	**10.4**	**10.4 J**
Temperature	SU		--	--	**20.2**	**20.2**	--	**20**
Total Dissolved Solids	mg/l		**3000**	--	--	--	**2000**	--
Total Hardness	mg/l		**2000**	--	--	--	**26**	--
Total Organic Carbon	mg/l		**13**	**24**	**20**	--	**5.1**	**3.6**
Total Suspended Solids	mg/l		**1.11**	--	--	--	< 2.5	--
Per- and Polyfluoroalkyl Substances (PFAS)								
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 7.1	< 7.3	< 8.1	< 9.9	< 7.2	< 7.6
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 7.1	< 7.3	< 8.1	< 9.9	< 7.2	< 7.6
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 7.1	< 7.3	< 8.1	< 9.9	< 7.2	< 7.6
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 7.1	< 7.3	< 8.1	< 9.9	< 7.2	< 7.6
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		< 7.1	< 7.3	**19 J**	< 9.9	< 7.2	< 7.6
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 7.1	< 7.3	< 8.1	< 9.9	< 7.2	< 7.6
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 7.1	< 7.3	< 8.1	< 9.9	< 7.2	< 7.6
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 7.1	< 7.3	< 8.1	< 9.9	< 7.2	< 7.6
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 7.1	< 7.3	< 8.1	< 9.9	< 7.2	< 7.6
Perfluorobutane sulfonic acid (PFBS)	ng/l		**1.7 J**	**3.5 J**	< 4.0 J	**16 J**	**2.3 J**	< 3.8
Perfluorobutanoic acid (PFBA)	ng/l		**6.9 J**	R	R	**73 J**	**12**	**8.7 J**
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 3.6	< 3.7	< 4.0	< 4.9	< 3.6	< 3.8
Perfluorodecanoic acid (PFDA)	ng/l		< 3.6	< 3.7	< 4.0	< 4.9	**0.95 J**	**0.67 J**
Perfluorododecanoic acid (PFDoA)	ng/l		< 3.6	< 3.7	< 4.0	< 4.9	< 3.6	< 3.8
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		**1.1 J**	**1.3 J**	**1.3 J**	**1.3 J**	**0.89 J**	**0.54 J**
Perfluoroheptanoic acid (PFHpA)	ng/l		**3.4 J**	**2.2 J**	**2.0 J**	**2.5 J**	**2.9 J**	**2.8 J**

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Location ID:	Units		RFI-MW08I				RFI-MW09F	
Date Collected:			6/7/2021	10/25/2021	3/24/2022	DUP-01 3/24/2022	10/19/2021	3/24/2022
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**27.6**	**20**	**19**	**21**	**8.6**	**5.5**
Perfluorohexanoic acid (PFHxA)	ng/l		**3.3 J**	**3.7**	**3.1 J**	**3.7 J**	**5.0**	**4.0**
Perfluorononane sulfonic acid (PFNS)	ng/l		< 3.6	< 3.7	< 4.0	< 4.9	< 3.6	< 3.8
Perfluorononanoic acid (PFNA)	ng/l		< 3.6	**0.65 J**	**0.55 J**	**0.71 J**	**1.6 J**	**1.4 J**
Perfluorooctane sulfonamide (PFOSA)	ng/l		< 3.6 J	< 3.7	< 4.0	**0.77 J**	< 3.6	< 3.8
Perfluorooctane sulfonic acid (PFOS)	ng/l		**61.3**	**67**	**78**	**88**	**56**	**42**
Perfluorooctanoic acid (PFOA)	ng/l		**12.4**	**16**	**13**	**15**	**7.2**	**5.5**
Perfluoropentane sulfonate (PFPeS)	ng/l		**2.9 J**	**2.9 J**	**1.8 J**	**4.1 J**	< 3.6	< 3.8
Perfluoropentanoic acid (PFPeA)	ng/l		**25.1**	< 3.7	< 4.0	**5.1**	**5.7**	**4.8**
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 3.6	< 3.7	< 4.0	< 4.9	< 3.6	< 3.8
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 3.6	< 3.7	< 4.0	< 4.9	< 3.6	< 3.8
Perfluoroundecanoic acid (PFUdA)	ng/l		< 3.6	< 3.7	< 4.0	< 4.9	< 3.6	< 3.8

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Wyandotte, MI

DRAFT

ARCADIS

Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

Location ID:	Units		RFI-MW09I			RFI-MW10F		
Date Collected:			6/10/2021	10/25/2021	3/25/2022	10/19/2021	3/25/2022	DUP-04 3/25/2022
Field								
Conductivity	mS/cm		12.531	11.781	9.22	2.58	1.89	1.89
Dissolved oxygen (DO)	mg/L		0.18	-0.11	0.11	-0.02	0.25	0.25
Oxidation reduction potential (ORP)	millivolts		-280.6	-463.6	-275	-71.7	-180	-180
pH	s.u.		12.74	12.66	12.7	11.52	11.65	11.65
Temperature	Deg C		17.5	12.7	7.6	18.4	7.3	7.3
Turbidity	NTU		15	15.2	3.79	1.58	2.08	2.08
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,1,2,2-Tetrachloroethane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,1,2-Trichloroethane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,1-Dichloroethane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,1-Dichloroethene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,2,3-Trichlorobenzene	µg/l		< 5.0	--	< 1.0	--	--	--
1,2,4-Trichlorobenzene	µg/l		--	--	--	< 1.0	--	--
1,2,4-Trimethylbenzene	µg/l		< 5.0	--	< 1.0	**0.52 J**	--	--
1,2-Dibromo-3-chloropropane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,2-Dibromoethane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,2-Dichlorobenzene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,2-Dichloroethane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,2-Dichloropropane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,3,5-Trimethylbenzene	µg/l		--	--	--	< 1.0	--	--
1,3-Dichlorobenzene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
1,4-Dichlorobenzene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
2-Butanone (MEK)	µg/l		< 25	--	**2.0 J**	< 10	--	--
4-Methyl-2-Pentanone	µg/l		< 5.0	--	< 1.0	< 10	--	--
Acetone	µg/l		< 50	--	< 10	< 20	--	--
Benzene	µg/l		< 5.0	--	**1.0**	**9.8**	--	--
Bromochloromethane	µg/l		< 5.0	--	< 1.0	--	--	--
Bromodichloromethane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Bromoform	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Bromomethane	µg/l		< 5.0	--	< 1.0	< 2.0	--	--
Carbon Disulfide	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Carbon Tetrachloride	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
CFC-11	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
CFC-12	µg/l		< 5.0	--	< 1.0	< 2.0	--	--
Chlorobenzene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Chlorodibromomethane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Chloroethane	µg/l		< 5.0	--	< 1.0	< 2.0	--	--
Chloroform	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Chloromethane	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
cis-1,2-Dichloroethene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
cis-1,3-Dichloropropene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Cyclohexane	µg/l		< 10	--	< 2.0	< 1.0	--	--
Dichloromethane	µg/l		< 25	--	**1.9 J**	< 1.0	--	--
Ethylbenzene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW09I			RFI-MW10F		
Date Collected:			6/10/2021	10/25/2021	3/25/2022	10/19/2021	3/25/2022	DUP-04 3/25/2022
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 5.0	--	< 1.0	< 1.0	--	--
m&p-Xylenes	µg/l		< 10	--	< 2.0	--	--	--
Methyl Acetate	µg/l		< 10	--	**0.87 J**	< 1.0	--	--
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		< 25	--	< 5.0	< 10	--	--
Methylcyclohexane	µg/l		< 5.0	--	**0.57 J**	< 5.0	--	--
Methyl-tert-butylether	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Naphthalene	µg/l		--	--	--	**630 EJ**	--	--
o-Xylene	µg/l		< 5.0	--	**0.51 J**	--	--	--
Styrene (Monomer)	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Tetrachloroethene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Toluene	µg/l		< 5.0	--	**4.1**	**3.3**	--	--
Total Xylenes	µg/l		--	--	--	**2.1**	--	--
trans-1,2-Dichloroethene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
trans-1,3-Dichloropropene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Trichloroethene	µg/l		< 5.0	--	< 1.0	< 1.0	--	--
Vinyl acetate	µg/l		--	--	--	< 5.0	--	--
Vinyl chloride	µg/l		< 5.0	--	< 1.0	--	--	--
Semi-Volatile Organic Compounds (SVOCs)								
1,1-Biphenyl	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.100
1,2,4,5-Tetrachlorobenzene	µg/l		< 5.0	--	< 4.8	--	< 5.0	< 5.0
1,4-Dioxane	µg/l		< 5.0	--	< 4.8	< 10 J	< 5.0	< 5.0
2,2-Oxybis(1-Chloropropane)	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
2,3,4,6-Tetrachlorphenol	µg/l		< 1.0	--	< 0.96	--	< 0.99	< 0.99
2,4,5-Trichlorophenol	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
2,4,6-Trichlorophenol	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
2,4-Dichlorophenol	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
2,4-Dimethylphenol	µg/l		**1.2**	--	**0.96 J**	< 0.80 J	< 0.99	< 0.99
2,4-Dinitrophenol	µg/l		< 5.0	--	< 4.8	< 4.0 J	< 5.0	< 5.1
2,4-Dinitrotoluene	µg/l		< 1.0	--	< 0.96	< 1.6 J	< 0.99	< 0.99
2,6-Dinitrotoluene	µg/l		< 1.0	--	< 0.96	< 1.6 J	< 0.99	< 0.99
2-Chloronaphthalene	µg/l		< 0.10	--	< 0.096	< 0.80 J	< 0.099	< 0.099
2-Chlorophenol	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
2-Methyl-4,6-dinitrophenol	µg/l		< 1.0	--	< 0.96	< 4.0 J	< 0.99	< 0.99
2-Methylnaphthalene	µg/l		**1.3**	--	**0.82**	< 0.16 J	< 0.099	< 0.099
2-Methylphenol	µg/l		**1.7**	--	**0.99**	< 0.80 J	< 0.99	< 0.99
2-Nitroaniline	µg/l		< 1.0	--	< 0.96	< 1.6 J	< 0.99	< 0.99
2-Nitrophenol	µg/l		< 1.0	--	< 0.96	< 1.6 J	< 0.99	< 0.99
3,3-Dichlorobenzidine	µg/l		< 5.0	--	< 4.8	< 4.0 J	< 5.0	< 5.1
3-Methylphenol, 4-Methylphenol	µg/l		**46**	--	**31**	**0.63 J**	< 0.99	< 0.99
3-Nitroaniline	µg/l		< 1.0	--	< 0.96	< 1.6 J	< 0.99	< 0.99
4-Bromophenyl phenyl ether	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
4-Chloro-3-Methylphenol	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
4-Chlorophenyl phenyl ether	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
4-Nitroaniline	µg/l		< 1.0	--	< 0.96	< 1.6 J	< 0.99	< 0.99
4-Nitrophenol	µg/l		< 5.0	--	< 4.8	< 4.0 J	< 5.0	< 5.1
Acenaphthene	µg/l		**0.55**	--	**0.35**	< 0.16 J	< 0.099	< 0.099
Acenaphthylene	µg/l		< 0.10	--	< 0.096	< 0.16 J	< 0.099	< 0.099

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ARCADIS

Location ID:	Units		RFI-MW09I			RFI-MW10F		
Date Collected:			6/10/2021	10/25/2021	3/25/2022	10/19/2021	3/25/2022	DUP-04 3/25/2022
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
Anthracene	µg/l		**0.88**	--	**0.45**	< 0.16 J	< 0.099	< 0.099
Atrazine	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
Benz(a)anthracene	µg/l		< 0.10	--	< 0.096	< 0.16 J	< 0.099	< 0.099
Benzaldehyde	µg/l		< 1.0	--	< 0.96	< 4.0 J	< 0.99	< 0.99
Benzo(a)pyrene	µg/l		< 0.10	--	< 0.096	< 0.16 J	< 0.099	< 0.099
Benzo(b)fluoranthene	µg/l		< 0.10	--	< 0.096	< 0.16 J	< 0.099	< 0.099
Benzo(g,h,i)perylene	µg/l		< 0.10	--	< 0.096	< 0.16 J	< 0.099	< 0.099
Benzo(k)fluoranthene	µg/l		< 0.10	--	< 0.096	< 0.16 J	< 0.099	< 0.099
bis(2-Chloroethoxy)methane	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
bis(2-Chloroethyl)ether	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
bis(2-Ethylhexyl)phthalate	µg/l		< 1.0	--	< 0.96	< 4.0 J	< 0.99	< 0.99
Butyl benzyl phthalate	µg/l		< 1.0	--	< 0.96	< 4.0 J	< 0.99	< 0.99
Caprolactam	µg/l		< 5.0	--	< 4.8	**0.72 J**	< 5.0	< 5.1
Carbazole	µg/l		**1.1**	--	**0.90 J**	< 0.80 J	< 0.99	< 0.99
Chrysene	µg/l		< 0.10	--	< 0.096	< 0.16 J	< 0.099	< 0.099
Dibenz(a,h)anthracene	µg/l		< 0.10	--	< 0.096	< 0.16 J	< 0.099	< 0.099
Dibenzofuran	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
Diethyl phthalate	µg/l		< 1.0	--	< 0.96	< 4.0 J	< 0.99	< 0.99
Dimethyl phthalate	µg/l		< 1.0	--	< 0.96	< 4.0 J	< 0.99	< 0.99
Di-n-butyl phthalate	µg/l		< 1.0	--	< 0.96	< 4.0 J	< 0.99	< 0.99
Di-n-octyl phthalate	µg/l		< 1.0	--	< 0.96	< 4.0 J	< 0.99	< 0.99
Fluoranthene	µg/l		**1**	--	**0.61**	**0.069 J**	< 0.099	< 0.099
Fluorene	µg/l		**1.5**	--	**1.0**	< 0.16 J	< 0.099	< 0.099
Hexachloro-1,3-butadiene	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
Hexachlorobenzene	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
Hexachlorocyclopentadiene	µg/l		< 5.0	--	< 4.8	< 4.0 J	< 5.0	< 5.1
Hexachloroethane	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
Indeno(1,2,3-cd)pyrene	µg/l		< 0.10	--	< 0.096	< 0.16 J	< 0.099	< 0.099
Isophorone	µg/l		< 5.0	--	< 4.8	< 0.80 J	< 5.0	< 5.1
Naphthalene	µg/l		**10**	--	**3.6**	< 0.16 J	< 0.099	< 0.099
Nitrobenzene	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
N-Nitrosodi-n-propylamine	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
N-Nitrosodiphenylamine	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
p-Chloroaniline	µg/l		< 1.0	--	< 0.96	< 0.80 J	< 0.99	< 0.99
Pentachlorophenol	µg/l		< 5.0	--	< 4.8	< 4.0 J	< 5.0	< 5.1
Phenanthrene	µg/l		**2.6**	--	**1.7**	< 0.16 J	< 0.099	< 0.099
Phenol	µg/l		**150 J**	--	**86 D**	**0.32 J**	< 0.99	< 0.99
Pyrene	µg/l		**0.88**	--	**0.46**	< 0.16 J	< 0.099	< 0.099
Inorganics - Total Metals								
Aluminum	mg/l		--	--	**1.3**	**0.52**	--	--
Antimony	mg/l		--	--	< 0.0050	**0.005**	--	--
Arsenic	mg/l		**0.0076**	--	**0.0046 J**	**0.059**	--	--
Barium	mg/l		**0.092**	--	**0.078**	**0.004 J**	--	--
Beryllium	mg/l		--	--	< 0.0020	< 0.0004	--	--
Boron	mg/l		--	--	--	**0.38 J**	--	--
Cadmium	mg/l		< 0.0020	--	< 0.0020	< 0.0005	--	--

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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW09I			RFI-MW10F		
Date Collected:			6/10/2021	10/25/2021	3/25/2022	10/19/2021	3/25/2022	DUP-04 3/25/2022
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**93**	--	**85**	**6.3**	--	--
Chromium	mg/l		**0.0056**	--	**0.0021 J**	< 0.005	--	--
Chromium VI	mg/l		< 0.0050 J	--	--	R	< 0.0050	< 0.0051
Cobalt	mg/l		--	--	**0.00028 J**	< 0.005	--	--
Copper	mg/l		< 0.0050	--	< 0.0050	**0.0037 J**	--	--
Iron	mg/l		**0.60**	**0.51**	**0.21**	**0.051**	**0.056 J**	**0.057 J**
Lead	mg/l		< 0.0050	--	**0.0016 J**	**0.0015**	--	--
Magnesium	mg/l		--	--	**0.099 J**	< 0.4	--	--
Manganese	mg/l		**0.012**	--	**0.0034 J**	< 0.005	--	--
Mercury	mg/l		< 0.00020	--	**0.00018 J**	--	--	--
Methylmercury	mg/l		--	--	--	--	--	--
Molybdenum	mg/l		--	--	--	**0.013**	--	--
Nickel	mg/l		**0.025**	--	**0.015**	**0.0017 J**	--	--
Potassium	mg/l		--	--	**77**	**18**	--	--
Selenium	mg/l		< 0.0050	--	**0.00060 J**	**0.0013 J**	--	--
Silver	mg/l		< 0.0050	--	< 0.0050	< 0.001	--	--
Sodium	mg/l		--	--	**2000**	**460**	--	--
Thallium	mg/l		--	--	--	< 0.0005	--	--
Tin	mg/l		--	--	< 0.0020	< 0.02	--	--
Titanium	mg/l		--	--	--	**0.0013 J**	--	
Vanadium	mg/l		**0.017**	--	**0.0066**	**0.0094**	--	--
Volatile Mercury	mg/l		--	--	--	--	--	--
Zinc	mg/l		**0.023**	--	**0.0077 J**	< 0.01	--	--
Inorganics - Dissolved Metals (Filtered)								
Aluminum	mg/l		--	--	**1.2**	**0.51**	--	--
Antimony	mg/l		--	--	< 0.0050	**0.0049**	--	--
Arsenic	mg/l		**0.0076**	--	**0.0042 J**	**0.059**	--	--
Barium	mg/l		**0.089**	--	**0.076**	**0.0037 J**	--	--
Beryllium	mg/l		--	--	< 0.0020	< 0.0004	--	--
Boron	mg/l		--	--	--	**0.38 J**		
Cadmium	mg/l		< 0.0020	--	< 0.0020	< 0.0005	--	--
Calcium	mg/l		**89**	--	**84**	**6.1**	--	--
Chromium	mg/l		< 0.0050	--	**0.0014 J**	< 0.005	--	--
Cobalt	mg/l		--	--	**0.00032 J**	< 0.005	--	--
Copper	mg/l		< 0.0050	--	< 0.0050	< 0.005	--	--
Iron	mg/l		**0.16**	**0.15**	**0.059 J**	**0.039 J**	< 0.080	< 0.081
Lead	mg/l		< 0.0050	--	< 0.0050	< 0.001	--	--
Magnesium	mg/l		--	--	< 0.20	< 0.4	--	--
Manganese	mg/l		< 0.0050	--	< 0.0050	< 0.005	--	--
Mercury	mg/l		< 0.00020	--	< 0.00020	--	--	--
Molybdenum	mg/l		--	--	--	**0.013**		
Nickel	mg/l		**0.023**	--	**0.014**	**0.0014 J**	--	--
Potassium	mg/l		--	--	**77**	**18**	--	--
Selenium	mg/l		< 0.0050	--	**0.00058 J**	< 0.005	--	--
Silver	mg/l		< 0.0050	--	< 0.0050	< 0.001	--	--
Sodium	mg/l		--	--	**2000**	**460**	--	--
Thallium	mg/l		--	--	--	< 0.0005		

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DRAFT

ARCADIS

Location ID:	Units		RFI-MW09I			RFI-MW10F		
Date Collected:			6/10/2021	10/25/2021	3/25/2022	10/19/2021	3/25/2022	DUP-04 3/25/2022
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	--	--	< 0.0020	< 0.02	--	--
Titanium	mg/l		--	--	--	< 0.005		
Vanadium	mg/l		**0.016**	--	**0.0065**	**0.009**	--	--
Zinc	mg/l		< 0.010	--	< 0.010	< 0.01	--	--
Mercury, Low-Level								
Mercury	ng/l		**180**	**125**	**180**	**109**	**520**	**540**
Dissolved Mercury	ng/l		--	**10.9**	**160**	**4.65**	**560**	--
Inorganics								
Chloride	mg/l		**2700**	--	--	**390**	--	--
Cyanide	mg/l		**0.19**	--	**0.074**	**0.093**	--	--
Cyanide, amenable	mg/l		**0.15**	--	**0.074**	**0.013**	--	--
Fluoride (F-, Anion)	mg/l		**26**	--	--	**1.1**	--	--
Nitrate-N	mg/l		R	--	< 0.10 J	R	< 0.10 J	--
Nitrite	mg/l		R	--	< 0.10 J	R	< 0.10 J	--
Silica, reactive	mg/l		**15**	--	--	--	**85**	--
Sulfate	mg/l		**160**	--	--	**240**	--	--
Sulfide	mg/l		**6.5**	--	--	< 1.0 J	--	--
Silica, dissolved	mg/l		**14**	--	--	--	**87**	--
General Chemistry								
Alkalinity	mg CaCO3/L		**1000**	--	--	**340**	--	--
Alkalinity, Bicarbonate	mg/l		--	--	--	--	--	--
Alkalinity, Carbonate	mg/l		--	--	--	--	--	--
Biological Oxygen Demand	mg/l		**110**	--	--	R	**2.0 J**	--
Chemical Oxygen Demand	mg/l		**400**	--	--	**26**	--	--
pH	SU		--	--	**12.3 J**	--	**11.1 J**	--
Temperature	SU		--	--	**13.6**	--	**18**	--
Total Dissolved Solids	mg/l		**6000**	--	--	**1400**	--	--
Total Hardness	mg/l		**240**	--	--	**16**	--	--
Total Organic Carbon	mg/l		**79**	**80**	**69**	**7.7**	**7.0**	--
Total Suspended Solids	mg/l		**20.2 J**	--	--	< 1.0	--	--
Per- and Polyfluoroalkyl Substances (PFAS)								
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 37 D	< 7.5	< 8.0	< 8.6	< 7.8	--
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 37 D	< 7.5	< 8.0	< 8.6	< 7.8	--
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 7.4	< 7.5	< 8.0	< 8.6	< 7.8	--
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 37 D	< 7.5	< 8.0	< 8.6	< 7.8	--
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		< 7.4	< 7.5	< 8.0	< 8.6	< 7.8	--
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 7.4	< 7.5	< 8.0	< 8.6	< 7.8	--
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 7.4	< 7.5	< 8.0	< 8.6	< 7.8	--
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 37 D	**2.8 J**	**3.4 J**	< 8.6	< 7.8	--
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 37 D	< 7.5	< 8.0	< 8.6	< 7.8	--
Perfluorobutane sulfonic acid (PFBS)	ng/l		< 19 D	< 3.8	< 4.0	**5.3**	**6.1**	--
Perfluorobutanoic acid (PFBA)	ng/l		**9.3**	**34 J+**	**9.9 J**	**9.3**	**13 J**	--
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 19 D	< 3.8	< 4.0	< 4.3	< 3.9	--
Perfluorodecanoic acid (PFDA)	ng/l		< 3.7	< 3.8	< 4.0	< 4.3	< 3.9	--
Perfluorododecanoic acid (PFDoA)	ng/l		< 19 DJ	< 3.8	< 4.0	< 4.3	< 3.9	--
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		**1.2 J**	< 3.8	< 4.0	**1.6 J**	**1.5 J**	--
Perfluoroheptanoic acid (PFHpA)	ng/l		**23.1 D**	**2.5 J**	**2.9 J**	**1.9 J**	**1.9 J**	--

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW09I			RFI-MW10F		
Date Collected:			6/10/2021	10/25/2021	3/25/2022	10/19/2021	3/25/2022	DUP-04 3/25/2022
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**7.5**	**3.6 J**	**4.6**	**33**	**37**	--
Perfluorohexanoic acid (PFHxA)	ng/l		**33.8 D**	**4.7**	**4.8**	**4.4**	**5.1**	--
Perfluorononane sulfonic acid (PFNS)	ng/l		< 3.7	< 3.8	< 4.0	< 4.3	< 3.9	--
Perfluorononanoic acid (PFNA)	ng/l		**1.3 J**	**1.0 J**	**1.1 J**	**0.92 J**	**0.74 J**	--
Perfluorooctane sulfonamide (PFOSA)	ng/l		< 19 DJ	**0.82 J**	**0.94 J**	< 4.3	< 3.9	--
Perfluorooctane sulfonic acid (PFOS)	ng/l		**8.1**	**6.7**	**8.0**	**50**	**48**	--
Perfluorooctanoic acid (PFOA)	ng/l		**9.9**	**12**	**10**	**6.8**	**5.3**	--
Perfluoropentane sulfonate (PFPeS)	ng/l		< 19 D	< 3.8	< 4.0	**3.2 J**	**4.5**	--
Perfluoropentanoic acid (PFPeA)	ng/l		**9.7**	**5.3**	**6.2**	**3.5 J**	**3.2 J**	--
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 19 D	< 3.8	< 4.0	< 4.3	< 3.9	--
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 19 D	< 3.8	< 4.0	< 4.3	< 3.9	--
Perfluoroundecanoic acid (PFUdA)	ng/l		< 19 DJ	< 3.8	< 4.0	< 4.3	< 3.9	--

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

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Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

Location ID:	Units	RFI-MW10I			RFI-MW12F			WHI-5-1S	
Date Collected:		6/10/2021	10/25/2021	3/25/2022	6/7/2021	10/18/2021	3/25/2022	10/19/2021	3/22/2022
Field									
Conductivity	mS/cm	5.378	5.393	5.47	15.402	17.08	17.8	6.25	4.81
Dissolved oxygen (DO)	mg/L	0.17	-0.14	0.35	0.36	1.04	1.5	--	0.15
Oxidation reduction potential (ORP)	millivolts	-532.5	-458.7	-348.1	-246.1	-405.4	-187	-77.4	-87.4
pH	s.u.	- - *	12.23	12.28	13.22	12.57**	12.52	6.69	6.92
Temperature	Deg C	15.8	12.6	7.3	13.3	17.11	7	13.6	10.3
Turbidity	NTU	40.1	15.7	16.99	0.49	2.1	2.67	207	18
Volatile Organic Compounds (VOCs)									
1,1,1-Trichloroethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,1,2,2-Tetrachloroethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,1,2-Trichloroethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,1-Dichloroethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,1-Dichloroethene	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,2,3-Trichlorobenzene	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	--	--
1,2,4-Trichlorobenzene	µg/l	--	--	--	--	--	--	< 1.0	--
1,2,4-Trimethylbenzene	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,2-Dibromo-3-chloropropane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,2-Dibromoethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,2-Dichlorobenzene	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,2-Dichloroethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,2-Dichloropropane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,3,5-Trimethylbenzene	µg/l	--	--	--	--	--	--	< 1.0	--
1,3-Dichlorobenzene	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
1,4-Dichlorobenzene	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
2-Butanone (MEK)	µg/l	< 25	--	< 5.0	**7.8**	--	**14**	< 10	--
4-Methyl-2-Pentanone	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 10	--
Acetone	µg/l	< 50	--	< 10	**55 J**	--	**140 D**	< 20	--
Benzene	µg/l	< 5.0	--	**5.5 J**	< 1.0	--	**0.59 J**	< 1.0	--
Bromochloromethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	--	--
Bromodichloromethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
Bromoform	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
Bromomethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 2.0	--
Carbon Disulfide	µg/l	< 5.0	--	**0.73 J**	< 1.0	--	< 1.0	< 1.0	--
Carbon Tetrachloride	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
CFC-11	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
CFC-12	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 2.0	--
Chlorobenzene	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
Chlorodibromomethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
Chloroethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 2.0	--
Chloroform	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
Chloromethane	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
cis-1,2-Dichloroethene	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
cis-1,3-Dichloropropene	µg/l	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
Cyclohexane	µg/l	< 10	--	< 2.0	< 2.0	--	**2.6**	< 1.0	--
Dichloromethane	µg/l	< 25	--	< 5.0	< 5.0	--	< 5.0	< 1.0	--
Ethylbenzene	µg/l	< 5.0	--	**0.41 J**	< 1.0	--	< 1.0	< 1.0	--

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW10I			RFI-MW12F			WHI-5-1S	
Date Collected:			6/10/2021	10/25/2021	3/25/2022	6/7/2021	10/18/2021	3/25/2022	10/19/2021	3/22/2022
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
m&p-Xylenes	µg/l		< 10	--	**1.4 J**	< 2.0	--	**0.90 J**	--	--
Methyl Acetate	µg/l		< 10	--	< 2.0	< 2.0	--	< 2.0	< 1.0	--
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		< 25	--	< 5.0	< 5.0	--	**0.67 J**	< 10	--
Methylcyclohexane	µg/l		< 5.0	--	< 1.0	**2.4**	--	**2.7**	< 5.0	--
Methyl-tert-butylether	µg/l		< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
Naphthalene	µg/l		--	--	--	--	--	--	< 1.0	--
o-Xylene	µg/l		< 5.0	--	**1.0 J**	< 1.0	--	**1.1**	--	--
Styrene (Monomer)	µg/l		< 5.0	--	**0.63 J**	< 1.0	--	< 1.0	< 1.0	--
Tetrachloroethene	µg/l		< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
Toluene	µg/l		**6.8**	--	**8.5 J**	**1.4**	--	**2.2**	< 1.0	--
Total Xylenes	µg/l		--	--	--	--	--	--	< 1.0	--
trans-1,2-Dichloroethene	µg/l		< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
trans-1,3-Dichloropropene	µg/l		< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
Trichloroethene	µg/l		< 5.0	--	< 1.0	< 1.0	--	< 1.0	< 1.0	--
Vinyl acetate	µg/l		--	--	--	--	--	--	< 5.0	--
Vinyl chloride	µg/l		< 5.0	--	< 1.0	< 1.0	--	< 1.0	--	--
Semi-Volatile Organic Compounds (SVOCs)										
1,1-Biphenyl	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
1,2,4,5-Tetrachlorobenzene	µg/l		< 100	--	< 5.3	< 5.0	--	< 4.8	--	< 5.3
1,4-Dioxane	µg/l		< 100	--	< 5.3	< 5.0	--	< 4.8	< 10	< 5.3
2,2-Oxybis(1-Chloropropane)	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
2,3,4,6-Tetrachlorphenol	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	--	< 1.1
2,4,5-Trichlorophenol	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
2,4,6-Trichlorophenol	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
2,4-Dichlorophenol	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
2,4-Dimethylphenol	µg/l		< 20	--	< 1.1	< 1.0	--	**1.9**	< 0.80	< 1.1
2,4-Dinitrophenol	µg/l		< 100	--	< 5.3	< 5.0	--	< 4.8	< 4.0	< 5.3
2,4-Dinitrotoluene	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 1.6	< 1.1
2,6-Dinitrotoluene	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 1.6	< 1.1
2-Chloronaphthalene	µg/l		< 2.0	--	< 0.11	< 0.10	--	< 0.095	< 0.80	< 0.11
2-Chlorophenol	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
2-Methyl-4,6-dinitrophenol	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 4.0	< 1.1
2-Methylnaphthalene	µg/l		**8.0 J**	--	**6.5**	**0.57**	--	**0.77**	< 0.16	< 0.11
2-Methylphenol	µg/l		< 20	--	**1.7**	< 1.0	--	**1.5**	< 0.80	< 1.1
2-Nitroaniline	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 1.6	< 1.1
2-Nitrophenol	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 1.6	< 1.1
3,3-Dichlorobenzidine	µg/l		< 100	--	< 5.3	< 5.0	--	< 4.8	< 4.0	< 5.3
3-Methylphenol, 4-Methylphenol	µg/l		**59**	--	**62**	**6.9**	--	**28**	< 1.6	< 1.1
3-Nitroaniline	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 1.6 J	< 1.1
4-Bromophenyl phenyl ether	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
4-Chloro-3-Methylphenol	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
4-Chlorophenyl phenyl ether	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
4-Nitroaniline	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 1.6	< 1.1
4-Nitrophenol	µg/l		< 100	--	< 5.3	< 5.0	--	< 4.8	< 4.0	< 5.3
Acenaphthene	µg/l		< 2.0	--	**1.3**	< 0.10	--	< 0.095	< 0.16	< 0.11
Acenaphthylene	µg/l		< 2.0	--	< 0.11	< 0.10	--	< 0.095	< 0.16	< 0.11

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW10I			RFI-MW12F			WHI-5-1S	
Date Collected:			6/10/2021	10/25/2021	3/25/2022	6/7/2021	10/18/2021	3/25/2022	10/19/2021	3/22/2022
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
Anthracene	µg/l		< 2.0	--	**0.47**	< 0.10	--	< 0.095	< 0.16	< 0.11
Atrazine	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
Benz(a)anthracene	µg/l		< 2.0	--	< 0.11	< 0.10	--	< 0.095	< 0.16	< 0.11
Benzaldehyde	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 4.0	< 1.1
Benzo(a)pyrene	µg/l		< 2.0	--	< 0.11	< 0.10	--	< 0.095	< 0.16	< 0.11
Benzo(b)fluoranthene	µg/l		< 2.0	--	< 0.11	< 0.10	--	< 0.095	< 0.16	< 0.11
Benzo(g,h,i)perylene	µg/l		< 2.0	--	< 0.11	< 0.10	--	< 0.095	< 0.16	< 0.11
Benzo(k)fluoranthene	µg/l		< 2.0	--	< 0.11	< 0.10	--	< 0.095	< 0.16	< 0.11
bis(2-Chloroethoxy)methane	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
bis(2-Chloroethyl)ether	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
bis(2-Ethylhexyl)phthalate	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	**0.82 J**	< 1.1
Butyl benzyl phthalate	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 4.0	< 1.1
Caprolactam	µg/l		< 100	--	< 5.3	< 5.0	--	< 4.8	**2.1 J**	< 5.3
Carbazole	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
Chrysene	µg/l		< 2.0	--	< 0.11	< 0.10	--	< 0.095	< 0.16	< 0.11
Dibenz(a,h)anthracene	µg/l		< 2.0	--	< 0.11	< 0.10	--	< 0.095	< 0.16	< 0.11
Dibenzofuran	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
Diethyl phthalate	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 4.0	< 1.1
Dimethyl phthalate	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 4.0	< 1.1
Di-n-butyl phthalate	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 4.0	< 1.1
Di-n-octyl phthalate	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 4.0	< 1.1
Fluoranthene	µg/l		< 2.0	--	**0.28**	< 0.10	--	< 0.095	< 0.16	**0.12**
Fluorene	µg/l		< 2.0	--	**1.9**	< 0.10	--	< 0.095	< 0.16	< 0.11
Hexachloro-1,3-butadiene	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
Hexachlorobenzene	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
Hexachlorocyclopentadiene	µg/l		< 100	--	< 5.3	< 5.0	--	< 4.8	< 4.0	< 5.3
Hexachloroethane	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
Indeno(1,2,3-cd)pyrene	µg/l		< 2.0	--	< 0.11	< 0.10	--	< 0.095	< 0.16	< 0.11
Isophorone	µg/l		< 100	--	< 5.3	< 5.0	--	< 4.8	< 0.80	< 5.3
Naphthalene	µg/l		**64 J**	--	**28**	**0.67**	--	< 0.095	< 0.16	< 0.11
Nitrobenzene	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
N-Nitrosodi-n-propylamine	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
N-Nitrosodiphenylamine	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
p-Chloroaniline	µg/l		< 20	--	< 1.1	< 1.0	--	< 0.95	< 0.80	< 1.1
Pentachlorophenol	µg/l		< 100	--	< 5.3	< 5.0	--	< 4.8	< 4.0	< 5.3
Phenanthrene	µg/l		**2.8 J**	--	**2.4**	**0.17**	--	**0.17**	< 0.16	< 0.11
Phenol	µg/l		**76 J**	--	**79 D**	**21**	--	**88 D**	< 0.80	< 1.1
Pyrene	µg/l		< 2.0	--	**0.42**	< 0.10	--	< 0.095	< 0.16	< 0.11
Inorganics - Total Metals										
Aluminum	mg/l		--	--	**0.90**	--	--	**0.039**	**2.8**	--
Antimony	mg/l		--	--	< 0.0050	--	--	< 0.0050	< 0.002	--
Arsenic	mg/l		**0.027**	--	**0.029**	< 0.0050	--	**0.0012 J**	< 0.01	--
Barium	mg/l		**0.0092**	--	**0.0086**	**0.55**	--	**0.52**	**0.44**	--
Beryllium	mg/l		--	--	< 0.0020	--	--	< 0.0020	**0.00033 J**	--
Boron	mg/l		--	--	--	--	--	--	**0.23**	--
Cadmium	mg/l		< 0.0020	--	< 0.0020	< 0.0020	--	< 0.0020	**0.00024 J**	--

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW10I			RFI-MW12F			WHI-5-1S	
Date Collected:			6/10/2021	10/25/2021	3/25/2022	6/7/2021	10/18/2021	3/25/2022	10/19/2021	3/22/2022
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**4.5**	--	**4.2**	**450**	--	**380**	**570**	--
Chromium	mg/l		< 0.0050	--	**0.0022 J**	< 0.0050	--	< 0.0050	**0.011**	--
Chromium VI	mg/l		< 0.0050	--	--	< 0.0050	--	--	< 0.02 J	--
Cobalt	mg/l		--	--	**0.00045 J**	--	--	**0.00026 J**	**0.0025 J**	--
Copper	mg/l		< 0.0050	--	< 0.0050	< 0.0050	--	**0.0044 J**	**0.0034 J**	--
Iron	mg/l		**0.34**	**0.33**	**0.41**	< 0.080	**0.017 J**	< 0.080	**15**	**9.5**
Lead	mg/l		< 0.0050	--	**0.0028 J**	< 0.0050	--	**0.0025 J**	**0.028**	--
Magnesium	mg/l		--	--	**0.31**	--	--	< 0.20	**250**	--
Manganese	mg/l		**0.0063**	--	**0.0071**	< 0.0050	--	< 0.0050	**1.3**	--
Mercury	mg/l		< 0.00020	--	**0.00035**	**0.0015**	--	**0.00091**	--	--
Methylmercury	mg/l		--	--	--	--	--	--	--	--
Molybdenum	mg/l		--	--	--	--	--	--	< 0.05	--
Nickel	mg/l		**0.018**	--	**0.015**	**0.016**	--	**0.051**	**0.0074**	--
Potassium	mg/l		--	--	**37**	--	--	**240**	**7.1**	--
Selenium	mg/l		< 0.0050	--	**0.0012 J**	< 0.0050	--	**0.0015 J**	< 0.005	--
Silver	mg/l		< 0.0050	--	**0.0037 J**	< 0.0050	--	< 0.0050	< 0.005	--
Sodium	mg/l		--	--	**1200**	--	--	**1800**	**430**	--
Thallium	mg/l		--	--	--	--	--	--	< 0.0005	--
Tin	mg/l		--	--	**0.0010 J**	--	--	< 0.0020	< 0.02	--
Titanium	mg/l		--	--	--	--	--	--	**0.056**	--
Vanadium	mg/l		**0.022**	--	**0.017**	< 0.0050	--	< 0.0050	**0.013**	--
Volatile Mercury	mg/l		--	--	--	--	--	--	--	--
Zinc	mg/l		< 0.010	--	**0.026**	< 0.010	--	< 0.010	**0.069**	--
Inorganics - Dissolved Metals (Filtered)										
Aluminum	mg/l		--	--	**0.74**	--	--	**0.034**	< 0.04	--
Antimony	mg/l		--	--	< 0.0050	--	--	< 0.0050	< 0.002	--
Arsenic	mg/l		**0.028**	--	**0.028**	< 0.0050	--	**0.0010 J**	< 0.002	--
Barium	mg/l		**0.0078**	--	**0.0073**	**0.55**	--	**0.51**	**0.4**	--
Beryllium	mg/l		--	--	< 0.0020	--	--	< 0.0020	< 0.0004	--
Boron	mg/l		--	--	--	--	--	--	**0.23**	--
Cadmium	mg/l		< 0.0020	--	< 0.0020	< 0.0020	--	< 0.0020	< 0.0005	--
Calcium	mg/l		**3.2**	--	**2.6**	**460**	--	**390**	**540**	--
Chromium	mg/l		< 0.0050	--	**0.0017 J**	< 0.0050	--	< 0.0050	< 0.005	--
Cobalt	mg/l		--	--	**0.00053 J**	--	--	**0.00028 J**	< 0.005	--
Copper	mg/l		< 0.0050	--	< 0.0050	< 0.0050	--	**0.0026 J**	< 0.005	--
Iron	mg/l		**0.21**	**0.20**	**0.21**	< 0.080	**0.015 J**	< 0.080	**8.2**	**5.8**
Lead	mg/l		< 0.0050	--	**0.0021 J**	< 0.0050	--	**0.00090 J**	< 0.001	--
Magnesium	mg/l		--	--	< 0.20	--	--	< 0.20	**220**	--
Manganese	mg/l		< 0.0050	--	< 0.0050	< 0.0050	--	< 0.0050	**1.1**	--
Mercury	mg/l		< 0.00020	--	**0.00021**	**0.0015**	--	**0.0012**	--	--
Molybdenum	mg/l		--	--	--	--	--	--	< 0.01	--
Nickel	mg/l		**0.017**	--	**0.014**	**0.016**	--	**0.042**	< 0.005	--
Potassium	mg/l		--	--	**37**	--	--	**220**	**6.8**	--
Selenium	mg/l		< 0.0050	--	**0.00096 J**	< 0.0050	--	**0.0022 J**	< 0.005	--
Silver	mg/l		< 0.0050	--	< 0.0050	< 0.0050	--	< 0.0050	< 0.001	--
Sodium	mg/l		--	--	**1100**	--	--	**1600**	**410**	--
Thallium	mg/l		--	--	--	--	--	--	< 0.0005	--

See Notes on last page.

Table 1
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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW10I			RFI-MW12F			WHI-5-1S	
Date Collected:			6/10/2021	10/25/2021	3/25/2022	6/7/2021	10/18/2021	3/25/2022	10/19/2021	3/22/2022
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	--	--	< 0.0020	--	--	< 0.0020	< 0.02	--
Titanium	mg/l		--	--	--	--	--	--	< 0.005	--
Vanadium	mg/l		**0.021**	--	**0.017**	< 0.0050	--	< 0.0050	< 0.005	--
Zinc	mg/l		< 0.010	--	**0.0067 J**	< 0.010	--	< 0.010	< 0.01	--
Mercury, Low-Level										
Mercury	ng/l		**280**	**142**	**290**	**1500**	**1150**	**1200**	**494**	**85**
Dissolved Mercury	ng/l		--	**9.57**	**220**	--	**1140**	**1400**	< 0.500	**0.68**
Inorganics										
Chloride	mg/l		**700**	--	--	**680 J**	--	--	**2100**	--
Cyanide	mg/l		**0.22**	--	**0.3**	**0.0078**	--	**0.0065**	**0.018**	--
Cyanide, amenable	mg/l		**0.22**	--	**0.3**	**0.0078**	--	**0.0059**	< 0.010	--
Fluoride (F-, Anion)	mg/l		**17**	--	--	**11**	--	--	**0.18 J**	--
Nitrate-N	mg/l		R	--	< 0.10 J	**0.37**	--	--	< 0.10	--
Nitrite	mg/l		R	--	< 0.10 J	< 0.20 J	--	--	< 0.10	--
Silica, reactive	mg/l		**140**	--	--	**0.38**	--	--	--	**30**
Sulfate	mg/l		**320**	--	--	**38**	--	--	**32**	--
Sulfide	mg/l		**30**	--	--	**4.7**	--	--	**1.0**	--
Silica, dissolved	mg/l		**140**	--	--	**0.37**	--	--	--	**30**
General Chemistry										
Alkalinity	mg CaCO3/L		**920**	--	--	**2400**	--	--	**570**	--
Alkalinity, Bicarbonate	mg/l		--	--	--	--	--	--	--	--
Alkalinity, Carbonate	mg/l		--	--	--	--	--	--	--	--
Biological Oxygen Demand	mg/l		**110**	--	--	< 2.0	--	--	< 2.0 J	--
Chemical Oxygen Demand	mg/l		**380**	--	--	**39**	--	--	**120**	--
pH	SU		--	--	**12.1 J**	--	--	**12.8 J**	**6.8**	**6.82 J**
Temperature	SU		--	--	**13.5**	--	--	**13.6**	--	**16.2 J**
Total Dissolved Solids	mg/l		**2900**	--	--	**4200**	--	--	**3700 J**	--
Total Hardness	mg/l		**10**	--	--	**1200**	--	--	**2600**	--
Total Organic Carbon	mg/l		**98**	**82**	**67**	**10**	**32**	**32**	**7.1**	**5.7**
Total Suspended Solids	mg/l		**9.18 J**	--	--	**1.5**	--	--	**1900**	--
Per- and Polyfluoroalkyl Substances (PFAS)										
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 7.1	< 7.5	< 14	< 7.4	< 7.1	< 7.6	< 8.4	< 7.6
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 36 D	< 7.5	< 14 J	< 7.4	< 7.1	< 7.6	< 8.4	< 7.6
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 7.1	< 7.5	< 14	< 7.4	< 7.1	< 7.6	< 8.4	< 7.6
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 36 D	< 7.5	< 14	< 7.4	< 7.1	< 7.6	< 8.4	< 7.6
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		< 7.1	< 7.5	< 14	< 7.4	< 7.1	< 7.6	< 8.4	< 7.6
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 7.1	< 7.5	< 14	< 7.4	< 7.1	< 7.6	< 8.4	< 7.6
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 36 D	< 7.5	< 14	< 7.4	< 7.1	< 7.6	< 8.4	< 7.6
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 36 D	< 7.5	< 14	< 7.4	< 7.1	< 7.6	< 8.4	< 7.6
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 36 D	< 7.5	< 14	< 7.4	< 7.1	< 7.6	< 8.4	< 7.6
Perfluorobutane sulfonic acid (PFBS)	ng/l		< 18 DJ	< 3.8	**8.5**	**117**	**29**	**27**	**0.66 J**	< 3.8
Perfluorobutanoic acid (PFBA)	ng/l		R	R	**7.5 J**	**20.1**	**33 J+**	**22 J**	**2.4 J**	**2.3 J**
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 3.6	< 3.8	< 7.2	< 3.7	< 3.5	< 3.8	< 4.2	< 3.8
Perfluorodecanoic acid (PFDA)	ng/l		< 18 D	< 3.8	< 7.2	< 3.7	< 3.5	< 3.8	< 4.2	< 3.8
Perfluorododecanoic acid (PFDoA)	ng/l		< 3.6	< 3.8	< 7.2	< 3.7	< 3.5	< 3.8	< 4.2	< 3.8
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		< 3.6	< 3.8	< 7.2	**8.8**	**7.1**	**6.8**	< 4.2	< 3.8
Perfluoroheptanoic acid (PFHpA)	ng/l		< 18 D	< 3.8	**3.5 J**	**11.3**	**9.7**	**8.3**	**0.94 J**	**0.68 J**

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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		RFI-MW10I			RFI-MW12F			WHI-5-1S	
Date Collected:			6/10/2021	10/25/2021	3/25/2022	6/7/2021	10/18/2021	3/25/2022	10/19/2021	3/22/2022
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 3.6	< 3.8	**230**	**368**	**410**	**340 D**	**2.5 J**	**1.3 J**
Perfluorohexanoic acid (PFHxA)	ng/l		**5.1 DJ**	**6.8**	**11 J**	**42.3**	**55**	**50**	**2.0 J**	**1.0 J**
Perfluorononane sulfonic acid (PFNS)	ng/l		< 3.6	< 3.8	< 7.2	< 3.7	< 3.5	< 3.8	< 4.2	< 3.8
Perfluorononanoic acid (PFNA)	ng/l		< 3.6	< 3.8	< 7.2	**1.7 J**	**1.9 J**	**1.8 J**	< 4.2	< 3.8
Perfluorooctane sulfonamide (PFOSA)	ng/l		< 18 DJ	< 3.8	< 7.2 J	< 19 DJ	< 3.5	< 3.8	< 4.2	< 3.8
Perfluorooctane sulfonic acid (PFOS)	ng/l		< 3.6	**8.4**	**16**	**345**	**370**	**310**	**4.1 J**	**2.1 J**
Perfluorooctanoic acid (PFOA)	ng/l		**6.5**	**11**	**17**	**13**	**18**	**16**	< 4.2	**0.97 J**
Perfluoropentane sulfonate (PFPeS)	ng/l		< 18 D	**4.3**	< 7.2	**50.5**	**47**	**48**	< 4.2	< 3.8
Perfluoropentanoic acid (PFPeA)	ng/l		R	**7.4**	**11 J**	**12.2**	**17**	**16 J**	**1.4 J**	**1.2 J**
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 3.6	< 3.8	< 7.2 J	< 3.7	< 3.5	< 3.8	< 4.2	R
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 3.6	< 3.8	< 7.2	< 3.7	< 3.5	< 3.8	< 4.2	< 3.8
Perfluoroundecanoic acid (PFUdA)	ng/l		< 3.6	< 3.8	< 7.2	< 3.7	< 3.5	< 3.8	< 4.2	< 3.8

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		MW-042-16 +	WHI5-1F	WHI6-4F			
Date Collected:			10/19/2021	3/22/2022	6/8/2021	10/22/2021	DUP-01 10/22/2021	3/21/2022
Field								
Conductivity	mS/cm		5.44	3.59	2.58	2.65	2.65	1.68
Dissolved oxygen (DO)	mg/L		0.7	0.21	0.16	0.01	0.01	0.12
Oxidation reduction potential (ORP)	millivolts		-402.9	-116	-222.9	-143.6	-143.6	-95.4
pH	s.u.		7.03**	7.92	7.73	7.42	7.42	7.6
Temperature	Deg C		18.32	5.2	12.8	16	16	8.5
Turbidity	NTU		4.1	2.75	4.03	2.32	2.32	3.82
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	µg/l		--	< 1.0	< 1.0	--	--	--
1,1,2,2-Tetrachloroethane	µg/l		--	< 1.0	< 1.0	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l		--	< 1.0	< 1.0	--	--	--
1,1,2-Trichloroethane	µg/l		--	< 1.0	< 1.0	--	--	--
1,1-Dichloroethane	µg/l		--	< 1.0	< 1.0	--	--	--
1,1-Dichloroethene	µg/l		--	< 1.0	< 1.0	--	--	--
1,2,3-Trichlorobenzene	µg/l		--	< 1.0	< 1.0	--	--	--
1,2,4-Trichlorobenzene	µg/l		--	--	--	--	--	--
1,2,4-Trimethylbenzene	µg/l		--	< 1.0	< 1.0	--	--	--
1,2-Dibromo-3-chloropropane	µg/l		--	< 1.0	< 1.0	--	--	--
1,2-Dibromoethane	µg/l		--	< 1.0	< 1.0	--	--	--
1,2-Dichlorobenzene	µg/l		--	< 1.0	< 1.0	--	--	--
1,2-Dichloroethane	µg/l		--	< 1.0	< 1.0	--	--	--
1,2-Dichloropropane	µg/l		--	< 1.0	< 1.0	--	--	--
1,3,5-Trimethylbenzene	µg/l		--	--	--	--	--	--
1,3-Dichlorobenzene	µg/l		--	< 1.0	< 1.0	--	--	--
1,4-Dichlorobenzene	µg/l		--	< 1.0	< 1.0	--	--	--
2-Butanone (MEK)	µg/l		--	< 5.0	< 5.0	--	--	--
4-Methyl-2-Pentanone	µg/l		--	< 1.0	< 1.0	--	--	--
Acetone	µg/l		--	< 10	< 10	--	--	--
Benzene	µg/l		--	< 1.0	< 1.0	--	--	--
Bromochloromethane	µg/l		--	< 1.0	< 1.0	--	--	--
Bromodichloromethane	µg/l		--	< 1.0	< 1.0	--	--	--
Bromoform	µg/l		--	< 1.0	< 1.0	--	--	--
Bromomethane	µg/l		--	< 1.0	< 1.0	--	--	--
Carbon Disulfide	µg/l		--	< 1.0	< 1.0	--	--	--
Carbon Tetrachloride	µg/l		--	< 1.0	< 1.0	--	--	--
CFC-11	µg/l		--	< 1.0	< 1.0	--	--	--
CFC-12	µg/l		--	< 1.0	< 1.0	--	--	--
Chlorobenzene	µg/l		--	< 1.0	< 1.0	--	--	--
Chlorodibromomethane	µg/l		--	< 1.0	< 1.0	--	--	--
Chloroethane	µg/l		--	< 1.0	< 1.0	--	--	--
Chloroform	µg/l		--	< 1.0	< 1.0	--	--	--
Chloromethane	µg/l		--	< 1.0	< 1.0	--	--	--
cis-1,2-Dichloroethene	µg/l		--	< 1.0	< 1.0	--	--	--
cis-1,3-Dichloropropene	µg/l		--	< 1.0	< 1.0	--	--	--
Cyclohexane	µg/l		--	< 2.0	< 2.0	--	--	--
Dichloromethane	µg/l		--	< 5.0	< 5.0	--	--	--
Ethylbenzene	µg/l		--	< 1.0	< 1.0	--	--	--

Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		MW-042-16 +	WHI5-1F	WHI6-4F			
Date Collected:			10/19/2021	3/22/2022	6/8/2021	10/22/2021	DUP-01 10/22/2021	3/21/2022
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	--	< 1.0	< 1.0	--	--	--
m&p-Xylenes	µg/l		--	< 2.0	< 2.0	--	--	--
Methyl Acetate	µg/l		--	< 2.0	< 2.0	--	--	--
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		--	< 5.0	< 5.0	--	--	--
Methylcyclohexane	µg/l		--	< 1.0	< 1.0	--	--	--
Methyl-tert-butylether	µg/l		--	< 1.0	< 1.0	--	--	--
Naphthalene	µg/l		--	--	--	--	--	--
o-Xylene	µg/l		--	< 1.0	< 1.0	--	--	--
Styrene (Monomer)	µg/l		--	< 1.0	< 1.0	--	--	--
Tetrachloroethene	µg/l		--	< 1.0	< 1.0	--	--	--
Toluene	µg/l		--	< 1.0	< 1.0	--	--	--
Total Xylenes	µg/l		--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/l		--	< 1.0	< 1.0	--	--	--
trans-1,3-Dichloropropene	µg/l		--	< 1.0	< 1.0	--	--	--
Trichloroethene	µg/l		--	< 1.0	< 1.0	--	--	--
Vinyl acetate	µg/l		--	--	--	--	--	--
Vinyl chloride	µg/l		--	< 1.0	< 1.0	--	--	--
Semi-Volatile Organic Compounds (SVOCs)								
1,1-Biphenyl	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
1,2,4,5-Tetrachlorobenzene	µg/l		--	< 5.2	< 5.0	--	--	--
1,4-Dioxane	µg/l		< 10	< 5.2	< 5.0	--	--	--
2,2-Oxybis(1-Chloropropane)	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
2,3,4,6-Tetrachlorphenol	µg/l		--	< 1.0	< 1.0	--	--	--
2,4,5-Trichlorophenol	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
2,4,6-Trichlorophenol	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
2,4-Dichlorophenol	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
2,4-Dimethylphenol	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
2,4-Dinitrophenol	µg/l		< 4.0	< 5.2	< 5.0	--	--	--
2,4-Dinitrotoluene	µg/l		< 1.6	< 1.0	< 1.0	--	--	--
2,6-Dinitrotoluene	µg/l		< 1.6	< 1.0	< 1.0	--	--	--
2-Chloronaphthalene	µg/l		< 0.80	< 0.10	< 0.10	--	--	--
2-Chlorophenol	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
2-Methyl-4,6-dinitrophenol	µg/l		< 4.0	< 1.0	< 1.0	--	--	--
2-Methylnaphthalene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
2-Methylphenol	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
2-Nitroaniline	µg/l		< 1.6	< 1.0	< 1.0	--	--	--
2-Nitrophenol	µg/l		< 1.6	< 1.0	< 1.0	--	--	--
3,3-Dichlorobenzidine	µg/l		< 4.0	< 5.2	< 5.0	--	--	--
3-Methylphenol, 4-Methylphenol	µg/l		< 1.6	< 1.0	< 1.0	--	--	--
3-Nitroaniline	µg/l		< 1.6 J	< 1.0	< 1.0	--	--	--
4-Bromophenyl phenyl ether	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
4-Chloro-3-Methylphenol	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
4-Chlorophenyl phenyl ether	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
4-Nitroaniline	µg/l		< 1.6	< 1.0	< 1.0	--	--	--
4-Nitrophenol	µg/l		< 4.0	< 5.2	< 5.0	--	--	--
Acenaphthene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Acenaphthylene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--

See Notes on last page.

Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		MW-042-16 +	WHI5-1F	WHI6-4F			
Date Collected:			10/19/2021	3/22/2022	6/8/2021	10/22/2021	DUP-01 10/22/2021	3/21/2022
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 0.80	< 1.0	< 1.0	--	--	--
Anthracene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Atrazine	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
Benz(a)anthracene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Benzaldehyde	µg/l		< 4.0	< 1.0	< 1.0	--	--	--
Benzo(a)pyrene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Benzo(b)fluoranthene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Benzo(g,h,i)perylene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Benzo(k)fluoranthene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
bis(2-Chloroethoxy)methane	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
bis(2-Chloroethyl)ether	µg/l		< 0.80	< 1.0	**3.4**	--	--	--
bis(2-Ethylhexyl)phthalate	µg/l		**0.51 J**	< 1.0	< 1.0	--	--	--
Butyl benzyl phthalate	µg/l		< 4.0	< 1.0	< 1.0	--	--	--
Caprolactam	µg/l		< 4.0	< 5.2	< 5.0	--	--	--
Carbazole	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
Chrysene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Dibenz(a,h)anthracene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Dibenzofuran	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
Diethyl phthalate	µg/l		< 4.0	< 1.0	< 1.0	--	--	--
Dimethyl phthalate	µg/l		< 4.0	< 1.0	< 1.0	--	--	--
Di-n-butyl phthalate	µg/l		< 4.0	< 1.0	< 1.0	--	--	--
Di-n-octyl phthalate	µg/l		< 4.0	< 1.0	< 1.0	--	--	--
Fluoranthene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Fluorene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Hexachloro-1,3-butadiene	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
Hexachlorobenzene	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
Hexachlorocyclopentadiene	µg/l		< 4.0	< 5.2	< 5.0	--	--	--
Hexachloroethane	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
Indeno(1,2,3-cd)pyrene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Isophorone	µg/l		< 0.80	< 5.2	< 5.0	--	--	--
Naphthalene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Nitrobenzene	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
N-Nitrosodi-n-propylamine	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
N-Nitrosodiphenylamine	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
p-Chloroaniline	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
Pentachlorophenol	µg/l		< 4.0	< 5.2	< 5.0	--	--	--
Phenanthrene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Phenol	µg/l		< 0.80	< 1.0	< 1.0	--	--	--
Pyrene	µg/l		< 0.16	< 0.10	< 0.10	--	--	--
Inorganics - Total Metals								
Aluminum	mg/l		**0.016 J**	**0.024**	--	--	--	< 0.039 UB
Antimony	mg/l		< 0.002	< 0.0050	--	--	--	< 0.0050
Arsenic	mg/l		**0.20**	**0.019**	**0.019**	--	--	**0.010**
Barium	mg/l		**0.063**	**0.034**	**0.083**	--	--	**0.076**
Beryllium	mg/l		< 0.0004	< 0.0020	--	--	--	< 0.0020
Boron	mg/l		**0.14**	--	--	--	--	--
Cadmium	mg/l		< 0.0005	< 0.0020	< 0.0020	--	--	< 0.0020

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DRAFT

ARCADIS

Location ID:	Units		MW-042-16 +	WHI5-1F	WHI6-4F			
Date Collected:			10/19/2021	3/22/2022	6/8/2021	10/22/2021	DUP-01 10/22/2021	3/21/2022
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**120**	**89**	**130**	--	--	**120**
Chromium	mg/l		< 0.005	< 0.0050	< 0.0050	--	--	< 0.0050 UB
Chromium VI	mg/l		< 0.02 J	< 0.0050	< 0.0050	--	--	--
Cobalt	mg/l		< 0.005	< 0.0050	--	--	--	< 0.0050
Copper	mg/l		**0.0013 J**	< 0.0050	< 0.0050	--	--	< 0.0050
Iron	mg/l		**2.8**	**0.41**	**0.24**	**0.60**	**0.67**	**0.75**
Lead	mg/l		< 0.001	< 0.0050	< 0.0050	--	--	< 0.0050
Magnesium	mg/l		**19**	**23**	--	--	--	**21**
Manganese	mg/l		**0.10**	**0.027**	**0.088**	--	--	**0.11**
Mercury	mg/l		--	< 0.00020	< 0.00020	--	--	< 0.00020
Methylmercury	mg/l		--	--	--	--	--	--
Molybdenum	mg/l		**0.0048 J**	--	--	--	--	--
Nickel	mg/l		< 0.005	< 0.0050	< 0.0050	--	--	< 0.0050
Potassium	mg/l		**21**	**11**	--	--	--	**9.8**
Selenium	mg/l		< 0.005	< 0.0050	< 0.0050	--	--	< 0.0050
Silver	mg/l		< 0.001	< 0.0050	< 0.0050	--	--	< 0.0050
Sodium	mg/l		**1,200**	**920**	--	--	--	**310**
Thallium	mg/l		< 0.0005	--	--	--	--	--
Tin	mg/l		< 0.02	< 0.0020	--	--	--	< 0.0020
Titanium	mg/l		**0.0053**	--	--	--	--	--
Vanadium	mg/l		< 0.005	**0.0014 J**	< 0.0050	--	--	**0.00088 J**
Volatile Mercury	mg/l		--	--	--	--	--	--
Zinc	mg/l		< 0.01	< 0.010	< 0.010	--	--	< 0.010
Inorganics - Dissolved Metals (Filtered)								
Aluminum	mg/l		**0.012 J**	**0.012**	--	--	--	< 0.010
Antimony	mg/l		< 0.002	< 0.0050	--	--	--	< 0.0050
Arsenic	mg/l		**0.20**	**0.019**	**0.018**	--	--	**0.0098**
Barium	mg/l		**0.063**	**0.034**	**0.083**	--	--	**0.073**
Beryllium	mg/l		< 0.0004	< 0.0020	--	--	--	< 0.0020
Boron	mg/l		**0.13**	--	--	--	--	--
Cadmium	mg/l		< 0.0005	< 0.0020	< 0.0020	--	--	< 0.0020
Calcium	mg/l		**120**	**88**	**130**	--	--	**120**
Chromium	mg/l		< 0.005	< 0.0050	< 0.0050	--	--	< 0.0050 UB
Cobalt	mg/l		< 0.005	< 0.0050	--	--	--	< 0.0050
Copper	mg/l		< 0.005	< 0.0050	< 0.0050	--	--	< 0.0050
Iron	mg/l		**2.8**	**0.31**	**0.23**	**0.53**	**0.56**	**0.7**
Lead	mg/l		< 0.001	< 0.0050	< 0.0050	--	--	< 0.0050
Magnesium	mg/l		**22**	**23**	--	--	--	**20**
Manganese	mg/l		**0.10**	**0.026**	**0.087**	--	--	**0.11**
Mercury	mg/l		--	< 0.00020	< 0.00020	--	--	< 0.00020
Molybdenum	mg/l		**0.0048 J**	--	--	--	--	--
Nickel	mg/l		< 0.005	< 0.0050	< 0.0050	--	--	< 0.0050
Potassium	mg/l		**23**	**11**	--	--	--	**9.7**
Selenium	mg/l		< 0.005	< 0.0050	< 0.0050	--	--	< 0.0050
Silver	mg/l		< 0.001	< 0.0050	< 0.0050	--	--	< 0.0050
Sodium	mg/l		**1,300**	**960**	--	--	--	**310**
Thallium	mg/l		< 0.0005	--	--	--	--	--

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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		MW-042-16 +	WHI5-1F	WHI6-4F			
Date Collected:			10/19/2021	3/22/2022	6/8/2021	10/22/2021	DUP-01 10/22/2021	3/21/2022
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 0.02	< 0.0020	--	--	--	< 0.0020
Titanium	mg/l		**0.0044 J**	--	--	--	--	--
Vanadium	mg/l		< 0.005	**0.0013 J**	< 0.0050	--	--	**0.00075 J**
Zinc	mg/l		< 0.01	< 0.010	< 0.010	--	--	**0.0052 J**
Mercury, Low-Level								
Mercury	ng/l		**2.32**	**2.8**	**0.53**	**0.549**	**0.447 J**	**0.29 J**
Dissolved Mercury	ng/l		**1.09**	**1.6**	--	**0.369 J**	**0.307 J**	**0.29 J**
Inorganics								
Chloride	mg/l		**2200**	**1800**	**660**	--	--	--
Cyanide	mg/l		**0.16**	**0.17**	**0.027**	--	--	--
Cyanide, amenable	mg/l		**0.015**	**0.17**	**0.26**	--	--	--
Fluoride (F-, Anion)	mg/l		**1.2**	**0.17**	**1.2**	--	--	--
Nitrate-N	mg/l		< 0.10	< 0.10	< 0.20	--	--	--
Nitrite	mg/l		< 0.10	< 0.10	< 0.20	--	--	--
Silica, reactive	mg/l		--	**18**	**18**	--	--	--
Sulfate	mg/l		**63**	**60**	**2.4**	--	--	--
Sulfide	mg/l		< 1.0	< 4.0	< 1.0	--	--	--
Silica, dissolved	mg/l		--	**18**	**21**	--	--	--
General Chemistry								
Alkalinity	mg CaCO3/L		**430**	**370**	**320**	--	--	--
Alkalinity, Bicarbonate	mg/l		--	**370**	--	--	--	--
Alkalinity, Carbonate	mg/l		--	< 10	--	--	--	--
Biological Oxygen Demand	mg/l		< 2.0 J	**1.9 J**	**6.8**	--	--	--
Chemical Oxygen Demand	mg/l		**42**	**130**	**15**	--	--	--
pH	SU		**7.6**	**7.80 J**	--	--	--	**7.73 J**
Temperature	SU		--	**16.7 J**	--	--	--	**19.2 J**
Total Dissolved Solids	mg/l		**3600**	**2200**	**1500**	--	--	--
Total Hardness	mg/l		**380**	**400**	**400**	--	--	--
Total Organic Carbon	mg/l		**8.4**	**4.8**	**3.9**	**3.7**	**3.7**	**4.1**
Total Suspended Solids	mg/l		**7.5**	**2.13**	**1.34**	--	--	--
Per- and Polyfluoroalkyl Substances (PFAS)								
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 7.2	< 7.7	< 7.1	< 7.9	< 7.8	< 8.7
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 7.2	< 7.7	< 7.1	< 7.9	< 7.8	< 8.7
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 7.2	< 7.7	< 7.1	< 7.9	< 7.8	< 8.7
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 7.2	< 7.7	< 7.1	< 7.9	< 7.8	< 8.7
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		< 7.2	< 7.7	< 7.1	< 7.9	< 7.8	< 8.7
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 7.2	< 7.7	< 7.1	< 7.9	< 7.8	< 8.7
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 7.2	< 7.7	< 7.1	< 7.9	< 7.8	< 8.7
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 7.2	< 7.7	< 7.1	< 7.9	< 7.8	< 8.7
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 7.2	< 7.7	< 7.1	< 7.9	< 7.8	< 8.7
Perfluorobutane sulfonic acid (PFBS)	ng/l		< 3.6	**2.2 J**	**2.9 J**	**2.2 J**	**2.3 J**	**2.7 J**
Perfluorobutanoic acid (PFBA)	ng/l		**6.8**	**6.0**	**6.3 J**	**5.7**	**5.6**	**6.7**
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 3.6	< 3.9	< 3.6	< 3.9	< 3.9	< 4.4
Perfluorodecanoic acid (PFDA)	ng/l		**1.9 J**	**1.6 J**	< 3.6	< 3.9	< 3.9	< 4.4
Perfluorododecanoic acid (PFDoA)	ng/l		< 3.6	< 3.9	< 3.6	< 3.9	< 3.9	< 4.4
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		**0.65 J**	**1.1 J**	< 3.6	< 3.9	< 3.9	< 4.4
Perfluoroheptanoic acid (PFHpA)	ng/l		**2.8 J**	**1.9 J**	**1.9 J**	**1.9 J**	**2.0 J**	**1.7 J**

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BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID:	Units		MW-042-16 +	WHI5-1F	WHI6-4F			
Date Collected:			10/19/2021	3/22/2022	6/8/2021	10/22/2021	DUP-01 10/22/2021	3/21/2022
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**12**	**18**	**12.7**	**9.4**	**9.5**	**12**
Perfluorohexanoic acid (PFHxA)	ng/l		**4.3**	**3.4 J**	**3.0 J**	**2.7 J**	**3.1 J**	**3.6 J**
Perfluorononane sulfonic acid (PFNS)	ng/l		< 3.6	< 3.9	< 3.6	< 3.9	< 3.9	< 4.4
Perfluorononanoic acid (PFNA)	ng/l		**2.0 J**	**1.8 J**	**0.98 J**	**0.85 J**	**1.0 J**	**1.0 J**
Perfluorooctane sulfonamide (PFOSA)	ng/l		**0.75 J**	< 3.9	< 18 D	< 3.9	< 3.9	< 4.4
Perfluorooctane sulfonic acid (PFOS)	ng/l		**100 J**	**140**	**12.7**	**11**	**11**	**11**
Perfluorooctanoic acid (PFOA)	ng/l		**6.1**	**4.6**	**3.9**	**4.0**	**4.0**	**4.2 J**
Perfluoropentane sulfonate (PFPeS)	ng/l		< 3.6	**1.3 J**	**3.1 J**	**1.6 J**	**1.3 J**	**2.1 J**
Perfluoropentanoic acid (PFPeA)	ng/l		**4.3**	**3.4 J**	**4.7**	**3.3 J**	**3.4 J**	**3.9 J**
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 3.6	< 3.9	< 3.6	< 3.9	< 3.9	< 4.4
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 3.6	< 3.9	< 3.6	< 3.9	< 3.9	< 4.4
Perfluoroundecanoic acid (PFUdA)	ng/l		< 3.6	< 3.9	< 3.6	< 3.9	< 3.9	< 4.4

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Table 1
Summary of June 2021 through March 2022 Perimeter Groundwater Analytical Results
BASF Corporation
North Works
Wyandotte, MI

DRAFT

ARCADIS

Location ID: / Date Collected:	Units		WHI6-4S		
			6/10/2021	10/22/2021	3/21/2022
Field					
Conductivity	mS/cm		6.418	7.604	4.65
Dissolved oxygen (DO)	mg/L		0.23	-0.07	0.11
Oxidation reduction potential (ORP)	millivolts		-36.9	-111	-72.3
pH	s.u.		6.84	6.39	6.77
Temperature	Deg C		14.3	13.8	11.7
Turbidity	NTU		34.5	13.5	4.99
Volatile Organic Compounds (VOCs)					
1,1,1-Trichloroethane	µg/l		< 1.0	--	--
1,1,2,2-Tetrachloroethane	µg/l		< 1.0	--	--
1,1,2-trichloro-1,2,2-trifluoroethane	µg/l		< 1.0	--	--
1,1,2-Trichloroethane	µg/l		< 1.0	--	--
1,1-Dichloroethane	µg/l		< 1.0	--	--
1,1-Dichloroethene	µg/l		< 1.0	--	--
1,2,3-Trichlorobenzene	µg/l		< 1.0	--	--
1,2,4-Trichlorobenzene	µg/l		--	--	--
1,2,4-Trimethylbenzene	µg/l		< 1.0	--	--
1,2-Dibromo-3-chloropropane	µg/l		< 1.0	--	--
1,2-Dibromoethane	µg/l		< 1.0	--	--
1,2-Dichlorobenzene	µg/l		< 1.0	--	--
1,2-Dichloroethane	µg/l		< 1.0	--	--
1,2-Dichloropropane	µg/l		< 1.0	--	--
1,3,5-Trimethylbenzene	µg/l		--	--	--
1,3-Dichlorobenzene	µg/l		< 1.0	--	--
1,4-Dichlorobenzene	µg/l		< 1.0	--	--
2-Butanone (MEK)	µg/l		< 5.0	--	--
4-Methyl-2-Pentanone	µg/l		< 1.0	--	--
Acetone	µg/l		< 10	--	--
Benzene	µg/l		< 1.0	--	--
Bromochloromethane	µg/l		< 1.0	--	--
Bromodichloromethane	µg/l		< 1.0	--	--
Bromoform	µg/l		< 1.0	--	--
Bromomethane	µg/l		< 1.0	--	--
Carbon Disulfide	µg/l		< 1.0	--	--
Carbon Tetrachloride	µg/l		< 1.0	--	--
CFC-11	µg/l		< 1.0	--	--
CFC-12	µg/l		< 1.0	--	--
Chlorobenzene	µg/l		< 1.0	--	--
Chlorodibromomethane	µg/l		< 1.0	--	--
Chloroethane	µg/l		< 1.0	--	--
Chloroform	µg/l		< 1.0	--	--
Chloromethane	µg/l		< 1.0	--	--
cis-1,2-Dichloroethene	µg/l		< 1.0	--	--
cis-1,3-Dichloropropene	µg/l		< 1.0	--	--
Cyclohexane	µg/l		< 2.0	--	--
Dichloromethane	µg/l		< 5.0	--	--
Ethylbenzene	µg/l		< 1.0	--	--

Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).

See Notes on last page.

Table 1
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BASF Corporation
North Works
Wyandotte, MI

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Location ID:	Units		WHI6-4S		
Date Collected:			6/10/2021	10/22/2021	3/21/2022
Isopropylbenzene	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	--	--
m&p-Xylenes	µg/l		< 2.0	--	--
Methyl Acetate	µg/l		< 2.0	--	--
Methyl N-Butyl Ketone (2-Hexanone)	µg/l		< 5.0	--	--
Methylcyclohexane	µg/l		< 1.0	--	--
Methyl-tert-butylether	µg/l		< 1.0	--	--
Naphthalene	µg/l		--	--	--
o-Xylene	µg/l		< 1.0	--	--
Styrene (Monomer)	µg/l		< 1.0	--	--
Tetrachloroethene	µg/l		< 1.0	--	--
Toluene	µg/l		< 1.0	--	--
Total Xylenes	µg/l		--	--	--
trans-1,2-Dichloroethene	µg/l		< 1.0	--	--
trans-1,3-Dichloropropene	µg/l		< 1.0	--	--
Trichloroethene	µg/l		< 1.0	--	--
Vinyl acetate	µg/l		--	--	--
Vinyl chloride	µg/l		< 1.0	--	--
Semi-Volatile Organic Compounds (SVOCs)					
1,1-Biphenyl	µg/l		< 1.0	--	--
1,2,4,5-Tetrachlorobenzene	µg/l		< 5.0	--	--
1,4-Dioxane	µg/l		< 5.0	--	--
2,2-Oxybis(1-Chloropropane)	µg/l		< 1.0	--	--
2,3,4,6-Tetrachlorphenol	µg/l		< 1.0	--	--
2,4,5-Trichlorophenol	µg/l		< 1.0	--	--
2,4,6-Trichlorophenol	µg/l		< 1.0	--	--
2,4-Dichlorophenol	µg/l		< 1.0	--	--
2,4-Dimethylphenol	µg/l		< 1.0	--	--
2,4-Dinitrophenol	µg/l		< 5.0	--	--
2,4-Dinitrotoluene	µg/l		< 1.0	--	--
2,6-Dinitrotoluene	µg/l		< 1.0	--	--
2-Chloronaphthalene	µg/l		< 0.10	--	--
2-Chlorophenol	µg/l		< 1.0	--	--
2-Methyl-4,6-dinitrophenol	µg/l		< 1.0	--	--
2-Methylnaphthalene	µg/l		< 0.10	--	--
2-Methylphenol	µg/l		< 1.0	--	--
2-Nitroaniline	µg/l		< 1.0	--	--
2-Nitrophenol	µg/l		< 1.0	--	--
3,3-Dichlorobenzidine	µg/l		< 5.0	--	--
3-Methylphenol, 4-Methylphenol	µg/l		< 1.0	--	--
3-Nitroaniline	µg/l		< 1.0	--	--
4-Bromophenyl phenyl ether	µg/l		< 1.0	--	--
4-Chloro-3-Methylphenol	µg/l		< 1.0	--	--
4-Chlorophenyl phenyl ether	µg/l		< 1.0	--	--
4-Nitroaniline	µg/l		< 1.0	--	--
4-Nitrophenol	µg/l		< 5.0	--	--
Acenaphthene	µg/l		**0.89**	--	--
Acenaphthylene	µg/l		< 0.10	--	--

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Date Collected:			6/10/2021	10/22/2021	3/21/2022
Acetophenone	µg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	< 1.0	--	--
Anthracene	µg/l		< 0.10	--	--
Atrazine	µg/l		< 1.0	--	--
Benz(a)anthracene	µg/l		< 0.10	--	--
Benzaldehyde	µg/l		< 1.0	--	--
Benzo(a)pyrene	µg/l		< 0.10	--	--
Benzo(b)fluoranthene	µg/l		< 0.10	--	--
Benzo(g,h,i)perylene	µg/l		< 0.10	--	--
Benzo(k)fluoranthene	µg/l		< 0.10	--	--
bis(2-Chloroethoxy)methane	µg/l		< 1.0	--	--
bis(2-Chloroethyl)ether	µg/l		**2.7**	--	--
bis(2-Ethylhexyl)phthalate	µg/l		< 1.0	--	--
Butyl benzyl phthalate	µg/l		< 1.0	--	--
Caprolactam	µg/l		< 5.0	--	--
Carbazole	µg/l		< 1.0	--	--
Chrysene	µg/l		< 0.10	--	--
Dibenz(a,h)anthracene	µg/l		< 0.10	--	--
Dibenzofuran	µg/l		< 1.0	--	--
Diethyl phthalate	µg/l		< 1.0	--	--
Dimethyl phthalate	µg/l		< 1.0	--	--
Di-n-butyl phthalate	µg/l		< 1.0	--	--
Di-n-octyl phthalate	µg/l		< 1.0	--	--
Fluoranthene	µg/l		< 0.10	--	--
Fluorene	µg/l		< 0.10	--	--
Hexachloro-1,3-butadiene	µg/l		< 1.0	--	--
Hexachlorobenzene	µg/l		< 1.0	--	--
Hexachlorocyclopentadiene	µg/l		< 5.0	--	--
Hexachloroethane	µg/l		< 1.0	--	--
Indeno(1,2,3-cd)pyrene	µg/l		< 0.10	--	--
Isophorone	µg/l		< 5.0	--	--
Naphthalene	µg/l		< 0.10	--	--
Nitrobenzene	µg/l		< 1.0	--	--
N-Nitrosodi-n-propylamine	µg/l		< 1.0	--	--
N-Nitrosodiphenylamine	µg/l		< 1.0	--	--
p-Chloroaniline	µg/l		< 1.0	--	--
Pentachlorophenol	µg/l		< 5.0	--	--
Phenanthrene	µg/l		**0.19**	--	--
Phenol	µg/l		< 1.0	--	--
Pyrene	µg/l		< 0.10	--	--
Inorganics - Total Metals					
Aluminum	mg/l		--	--	**0.18**
Antimony	mg/l		--	--	< 0.0050
Arsenic	mg/l		< 0.0050	--	< 0.0050 UB
Barium	mg/l		**0.90**	--	**0.85**
Beryllium	mg/l		--	--	< 0.0020
Boron	mg/l		--	--	--
Cadmium	mg/l		< 0.0020	--	< 0.0020

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Location ID:	Units		WHI6-4S		
Date Collected:			6/10/2021	10/22/2021	3/21/2022
Calcium	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**310**	--	**280**
Chromium	mg/l		< 0.0050	--	< 0.0050 UB
Chromium VI	mg/l		< 0.0050	--	--
Cobalt	mg/l		--	--	**0.00027 J**
Copper	mg/l		< 0.0050	--	**0.0079**
Iron	mg/l		**17**	**18**	**13**
Lead	mg/l		< 0.0050	--	< 0.0050
Magnesium	mg/l		--	--	**150**
Manganese	mg/l		**0.20**	--	**0.14**
Mercury	mg/l		--	--	< 0.00020
Methylmercury	mg/l		--	--	--
Molybdenum	mg/l		--	--	--
Nickel	mg/l		< 0.0050	--	**0.0077**
Potassium	mg/l		--	--	**12**
Selenium	mg/l		< 0.0050	--	< 0.0050
Silver	mg/l		< 0.0050	--	< 0.0050
Sodium	mg/l		--	--	**590**
Thallium	mg/l		--	--	--
Tin	mg/l		--	--	< 0.0020
Titanium	mg/l		--	--	--
Vanadium	mg/l		< 0.0050	--	**0.0013 J**
Volatile Mercury	mg/l		--	--	--
Zinc	mg/l		< 0.010	--	**0.0055 J**
Inorganics - Dissolved Metals (Filtered)					
Aluminum	mg/l		--	--	< 0.010
Antimony	mg/l		--	--	< 0.0050
Arsenic	mg/l		< 0.0050	--	< 0.0050 UB
Barium	mg/l		**0.93**	--	**0.74**
Beryllium	mg/l		--	--	< 0.0020
Boron	mg/l		--	--	--
Cadmium	mg/l		< 0.0020	--	< 0.0020
Calcium	mg/l		**310**	--	**240**
Chromium	mg/l		< 0.0050	--	< 0.0050 UB
Cobalt	mg/l		--	--	**0.00016 J**
Copper	mg/l		< 0.0050	--	< 0.0050
Iron	mg/l		**17**	**16**	**10**
Lead	mg/l		< 0.0050	--	< 0.0050
Magnesium	mg/l		--	--	**130**
Manganese	mg/l		**0.19**	--	**0.11**
Mercury	mg/l		< 0.00020	--	< 0.00020
Molybdenum	mg/l		--	--	--
Nickel	mg/l		< 0.0050	--	**0.00098 J**
Potassium	mg/l		--	--	**12**
Selenium	mg/l		< 0.0050	--	< 0.0050
Silver	mg/l		< 0.0050	--	< 0.0050
Sodium	mg/l		--	--	**530**
Thallium	mg/l		--	--	--

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Location ID: / Date Collected:	Units		WHI6-4S		
			6/10/2021	10/22/2021	3/21/2022
Tin	mg/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	--	--	< 0.0020
Titanium	mg/l		--	--	--
Vanadium	mg/l		< 0.0050	--	**0.00087 J**
Zinc	mg/l		< 0.010	--	**0.0050 J**
Mercury, Low-Level					
Mercury	ng/l		**32**	**5.8**	**4.3**
Dissolved Mercury	ng/l		--	< 0.500	**0.26 J**
Inorganics					
Chloride	mg/l		**1800**	--	--
Cyanide	mg/l		**0.0054**	--	--
Cyanide, amenable	mg/l		**0.0054**	--	--
Fluoride (F-, Anion)	mg/l		**2.4**	--	--
Nitrate-N	mg/l		R	--	< 0.10
Nitrite	mg/l		R	--	< 0.10
Silica, reactive	mg/l		**26**	--	--
Sulfate	mg/l		< 5.0	--	--
Sulfide	mg/l		< 1.0	--	--
Silica, dissolved	mg/l		**28**	--	--
General Chemistry					
Alkalinity	mg CaCO3/L		**480**	--	--
Alkalinity, Bicarbonate	mg/l		--	--	--
Alkalinity, Carbonate	mg/l		--	--	--
Biological Oxygen Demand	mg/l		**9.2**	--	--
Chemical Oxygen Demand	mg/l		< 22 UB	--	--
pH	SU		--	--	**6.79 J**
Temperature	SU		--	--	**18.5 J**
Total Dissolved Solids	mg/l		**3500**	--	--
Total Hardness	mg/l		**1500**	--	--
Total Organic Carbon	mg/l		**3.3**	**2.8**	**2.5**
Total Suspended Solids	mg/l		**105 J**	--	--
Per- and Polyfluoroalkyl Substances (PFAS)					
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	ng/l		< 7.1	< 7.5	< 7.8
2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoic acid (HFPO-DA)	ng/l		< 7.1	< 7.5	< 7.8
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	ng/l		< 7.1	< 7.5	< 7.8
4:2 Fluorotelomer sulfonate (4:2 FTS)	ng/l		< 7.1	< 7.5	< 7.8
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ng/l		< 7.1	< 7.5	< 7.8
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ng/l		< 7.1	< 7.5	< 7.8
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CL-PF3ONS)	ng/l		< 7.1	< 7.5	< 7.8
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	ng/l		< 7.1	< 7.5	< 7.8
N-Methylperfluoroocatane sulfonamidoacetic acid (MeFOSAA)	ng/l		< 7.1	< 7.5	< 7.8
Perfluorobutane sulfonic acid (PFBS)	ng/l		**1.5 J**	**2.0 J**	**2.2 J**
Perfluorobutanoic acid (PFBA)	ng/l		**5.1 J**	**4.1**	**4.6**
Perfluorodecane sulfonic acid (PFDS)	ng/l		< 3.6	< 3.8	< 3.9
Perfluorodecanoic acid (PFDA)	ng/l		< 3.6	< 3.8	< 3.9
Perfluorododecanoic acid (PFDoA)	ng/l		< 3.6	< 3.8	< 3.9
Perfluoroheptane sulfonic acid (PFHpS)	ng/l		< 3.6	< 3.8	< 3.9
Perfluoroheptanoic acid (PFHpA)	ng/l		**1.1 J**	**1.0 J**	**1.4 J**

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			6/10/2021	10/22/2021	3/21/2022
Perfluorohexane sulfonic acid (PFHxS)	ng/l	Data presented in this table was collected at upland monitoring wells for design purposes. To date - no samples have been collected at the groundwater surface water interface (GSI).	**5.5**	**4.7**	**7.1**
Perfluorohexanoic acid (PFHxA)	ng/l		**2.3 J**	**2.4 J**	**2.8 J**
Perfluorononane sulfonic acid (PFNS)	ng/l		< 3.6	< 3.8	< 3.9
Perfluorononanoic acid (PFNA)	ng/l		< 3.6	**0.55 J**	**0.59 J**
Perfluorooctane sulfonamide (PFOSA)	ng/l		< 3.6	< 3.8	< 3.9
Perfluorooctane sulfonic acid (PFOS)	ng/l		**3.8**	**2.8 J**	**3.8 J**
Perfluorooctanoic acid (PFOA)	ng/l		**2.2 J**	**2.1 J**	**3.1 J**
Perfluoropentane sulfonate (PFPeS)	ng/l		**1.1 J**	**0.98 J**	**1.6 J**
Perfluoropentanoic acid (PFPeA)	ng/l		**4.9**	**2.3 J**	**2.9 J**
Perfluorotetradecanoic acid (PFTeDA)	ng/l		< 3.6	< 3.8	< 3.9
Perfluorotridecanoic acid (PFTrDA)	ng/l		< 3.6	< 3.8	< 3.9
Perfluoroundecanoic acid (PFUdA)	ng/l		< 3.6	< 3.8	< 3.9

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Data Flagging:
Bold font represents data where detections were noted above the laboratory method detection limit.

Notes:
1. For PFAS compounds, the limit of quantitation (LOQ) is used for reporting non-detect values.
2. < denotes less than laboratory reporting limits
3. * assumed meter error, data outside acceptable range.
4. + MW-042-16 VOC data not available due to lab error.
5. *** RFI-MW07I was resampled for Chromium VI on 2/9/2022 due to anomalous result during the October 2021 sampling event.
6. ** pH reading is from 10/21/2021 due to a known pH meter calibration error on original sampling date

Analytical Methods:
Volatile organic compounds (VOCs) via USEPA Method 8260D
Semi-volatile organic compounds (SVOCs) via USEPA Method 8270E
Total and dissolved metals via USEPA Method SW6020B
Hexavalent chromium via USEPA Method 7196A
Total and Dissolved Low-Level Mercury via USEPA Method 1631E
Alkalinity via Standard Method 2320B
Biochemical oxygen demand (BOD) via SM 5210B
Chemical oxygen demand (COD) via SM 5220D
Anions (chloride, fluoride, nitrate, nitrite, and sulfate) via USEPA Method 300
Total and amenable cyanide via USEPA Method 9012B
Sulfide via Standard Method 4500-S2-F
Reactive and dissolved Silica via A4500-SI D-11
Total dissolved solids (TDS) via Standard Method 2540C
Total hardness via Standard Method 2340C
Total organic carbon (TOC) via SM 5310C
Total suspended solids (TSS) via Method SM 2540D
pH and temperature via SM 4500-H-B
PFAS analyzed for 28 analytes using method 537M in accordance with the Department of Defense (DoD) Quality Systems Manual (QSM) 5.1 and 5.3 Table B-15.

Abbreviations:
Deg C = degrees Celsius
DUP = duplicate sample
mg/L = milligrams per liter
mg CaCO3/L = milligrams calcium carbonate per liter
ng/L = nanograms per liter
µg/L = micrograms per liter
mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
s.u. = standard unit
-- = no data

Lab and Validation Data Qualifiers:
D = Concentration is based on diluted sample analysis.
DJ = Concentration is based on diluted sample analysis. The compound was positively identified; however, the associated numerical value is an estimated concentration only.
DJ+ = Concentration is based on diluted sample analysis. The result was an estimated quantity, but the result may be biased high.
EJ = Original sample result greater than the calibration range.
J = When an analyte is positivey identified, the associated numerical value is an estimated concentration only. When an analyte was not detected, the reported limit is approximate and may or may not represent the actual limit of detection
J+ = The compound was positively identified and biased high.
R = The sample results are rejected.
June 2021 Rejections:
RFI-MW-9I, RFI-MW-10I , and WHI-6-4S: Nitrate-N and Nitraite rejected due to exceeding hold time
RFI-MW-10I: PFBA compound rejected due to low extracted internal standard (EIS) (<20% recovery)

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October 2021 Rejections:

CMS-MW-002, RFI-MW05, RFI-MW07F, RFI-MW07I (Nitrite), RFI-MW08F (Chromium VI), RFI-MW08F DUP, and RFI-MW10F: analytes were rejected due to exceeding hold time
CMS-MW-012 (BOD) and RFI-MW07I (3,3-Dichlorobenzene, p-Chloroaniline, Tin, and Vanadium): rejected due to low matrix spike and/or matrix spike duplicate recoveries
RFI-MW08F: mercury (total and dissolved) rejected due to ratio between total and dissolved concentrations percent difference (>50%). The dissolved was greater than the total by >50% difference.
RFI-MW08I and RFI-MW10I: PFBA compound rejected due to low extracted internal standard (EIS) (<20% recovery)

March 2022 Rejections:

RFI-MW-7I (Nitrate-N and Nitraite) and RFI-MW-7F (Nitrite): rejected due to exceeding hold time
CMS-MW-15 (3,3-Dichlorobenzidine, bis(2-Chloroethyl)ether, and p-Chloroaniline): rejected due to low matrix spike and/or matrix spike duplicate recoveries
CMS-MW-13F and RFI-MW-9F (Phenol): rejected due to surrogates exhibiting recoveris outside of the control limits (<10%)
WHI-5-1S (PFTeDA) and RFI-MW-8I (PFBA): compound rejected due to low extracted internal standard (EIS) (<20% recovery)

UB = Analyte considered non-detect at the listed value due to associated blank contamination.

See Notes on last page.