## **Investigation Summary (near and within Ross Township)**

As part of an effort to protect human health and efforts to extend municipal water, the Ross Township Supervisor that the State of Michigan Department of Environment, Great Lakes, and Energy (EGLE) provide a brief summary of the North 34<sup>th</sup> Street (Former Production Plated Plastics) PFAS investigation in and near Ross Township as well as information related to any additional investigation planned in the area.

## **Area Background Information:**

The area planned for municipal water extension is located within the current expanded study area and historic buffer zone which are related to the Part 201 Facility: Production Plated Plastics (PPP)/N. 34<sup>th</sup> Street. The current study area incorporates the entire area with known groundwater contamination. The following is a discussion of the data available as a result of ongoing groundwater monitoring using properly installed groundwater monitoring wells, using low-flow sampling methods, within the study area and in close proximity to the Property. The data provided was collected beginning in 2018 through August 2022. Please note that the most recent sampling event occurred in February and March 2023, however that data is not yet compiled and thus not incorporated into the area background information provided.

PPP was a plastics plating company that operated from approximately 1966 until they went bankrupt in 1991. In 1977 heavy metals were discovered in nearby residential wells and PPP paid for those residential drinking water wells to be replaced. In 1985 chlorinated volatile organic compounds (VOCs) were found in groundwater on the site. Shortly after that discovery, PPP began an environmental investigation to characterize and attempt to clean up groundwater. Heavy metals and VOCs were the primary contaminates of concern, specifically chromium-6 (Cr+6) and nickel (Ni). In 1988, it was found that Cr+6 and Ni contamination was offsite and a risk to those using the groundwater for drinking water, thus municipal water was extended to the area of impact at the time. As mentioning above, PPP went bankrupt in 1991 and the State of Michigan took over the response activities and remedial actions at the Facility. There is and has been a groundwater extraction system in operation at the Facility for many years as an attempt to mitigate the offsite migration of the heavy metals to an area where there were residential drinking water wells. The system has not been effective in eliminating that offsite migration of contaminated groundwater. Metals are still migrating offsite at concentrations exceeding one or more Part 201 Generic Cleanup Criteria, concentrations discussed below. In 2018, Per- and polyfluoroalkyl substances (PFAS) was identified in the groundwater extraction system effluent that was being discharged to the Gull Lake Sewer and Water Authority. EGLE added PFAS treatment to the groundwater extraction system and simultaneously began an extensive PFAS investigation, results discussed below.

According to and based on the current and historical groundwater monitoring, the general direction of groundwater flow in the area and south of the PPP Facility is to the south, southeast towards Ross Township.

The groundwater monitoring wells in close proximity to or within Ross Township that are included in the discussion below are MW-18-12, MW-18-13, MW-18-15, MW-18-16, MW-20-12, MW-20-17, MW-21-01, and MW-22-01. Figures with locations and color-coded detection summaries for PFAS as well as tables summarizing analytical results are attached to this Investigation Summary.

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### Metals and VOCs:

The investigation results indicate that metals, specifically chromium and nickel, have been defined west of the Ross Township border. A figure has been provided for reference.

The primary VOCs related to Facility are 1,1-dichloroethane, 1,1-dichloroethylene, tetrachloroethylene, and trichloroethylene. Upon reviewing the analytical results from the most recent four quarters of sampling none of the eight groundwater monitoring wells identified above were sampled. The VOCs compounds are found in near proximity to the North 34<sup>th</sup> Street property relative to the investigation study area.

#### PFAS:

EGLE has Part 201 Generic Drinking Water Cleanup Criteria for:

PFAS	CAS Registry	State Drinking Water Standard and Part 201 Criteria						
	Number	ng/L or ppt	ug/L					
Perfluorooctanoic acid (PFOA)	335-67-1	8	0.008					
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	16	0.016					
Perfluorononanoic acid (PFNA)	375-95-1	6	0.006					
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	51	0.051					
Perfluorohexanoic acid (PFHxA)	307-24-4	400,000	400					
Perfluorobutane sulfonic acid (PFBS)	375-73-5	420	0.420					
Hexafluoropropylene oxide dimer acid (HFPO-DA)	13252-13-6	370	0.370					

Upon reviewing the analytical data from three quarters of groundwater monitoring at the wells identified above, PFOS and PFOA exceed the Part 201 Generic Drinking Water Cleanup Criteria. Of the eight wells identified above, three have exceedances of the current criteria in the shallow, intermediate, and/or deep screened intervals.

MW-18-12A (shallow – screened 20-25 feet below ground surface (bgs)) has PFOS between 118 ppt and 179 ppt and PFOA between 2.27 ppt and 4 ppt; MW-18-12B (intermediate – screened 64-69 feet bgs) has PFOS 78 ppt and 97 ppt and PFOA between non-detect and 1.12 ppt; and MW-18-12C (deep – screened 102-107 feet bgs) has PFOS between non-detect and 72 ppt and PFOA between 4 and 4.6 ppt.

MW-18-16A (shallow – screened 30-35 feet bgs) has PFOS between 27 ppt and 58 ppt and PFOA between 1.6 ppt and 9.1 ppt; MW-18-16B (intermediate – screened 50-55 feet bgs) has PFOA between 2.6 ppt and 13.1 ppt.

MW-22-01A (shallow – screened 38-43 feet bgs) has PFOA between 4.69 ppt and 8.68 ppt.

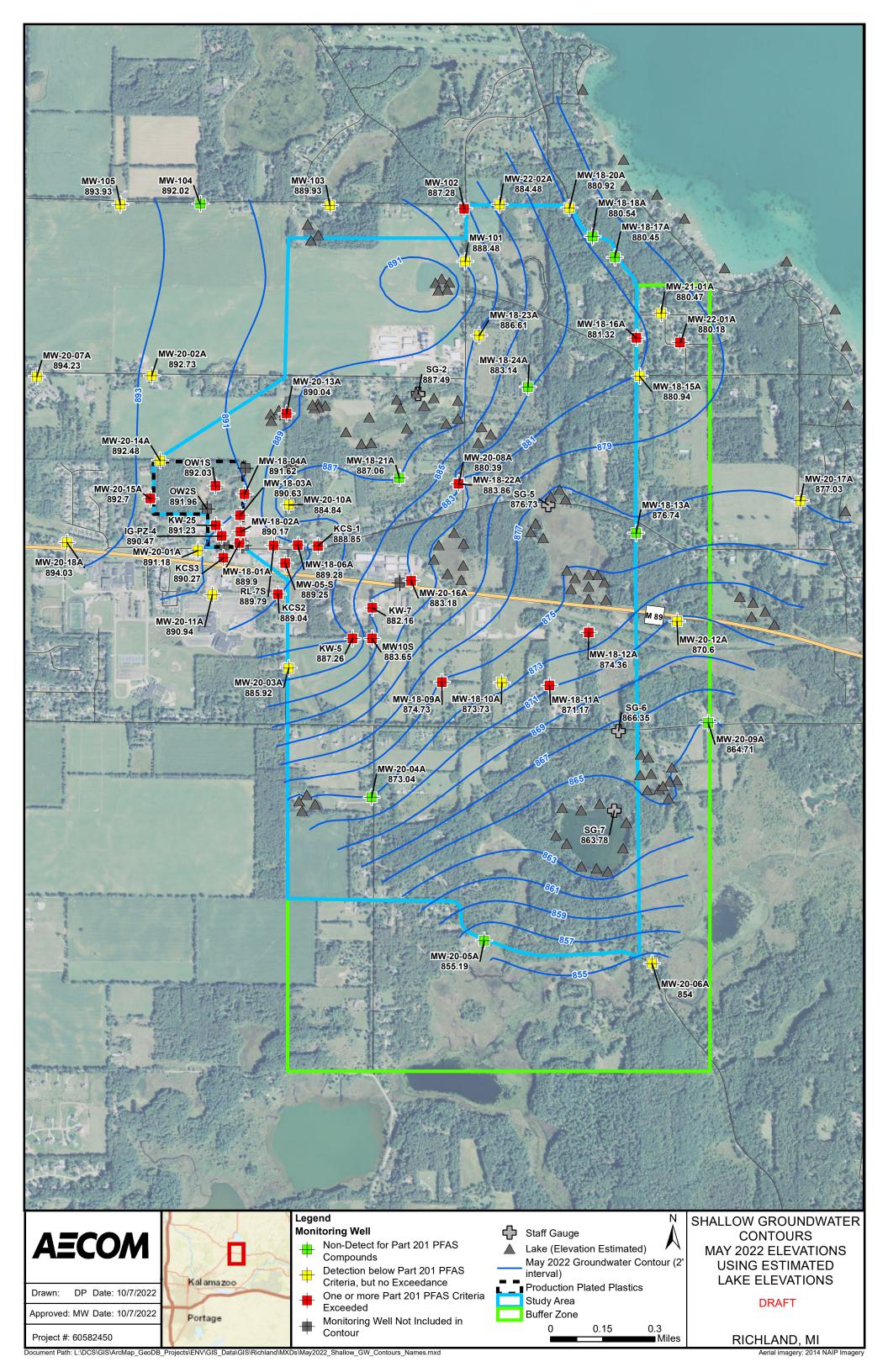
Also, while not included in this dataset, the former drinking water well at Kooper's Marine across the street from the property had concentrations of PFAS (total 178 ppt) exceeding the drinking water criteria PFOA at 13 ppt and PFOS at 130 ppt. According to the well log, the total depth of the well is 105 feet below ground surface. As a result, the property was connected to municipal water.

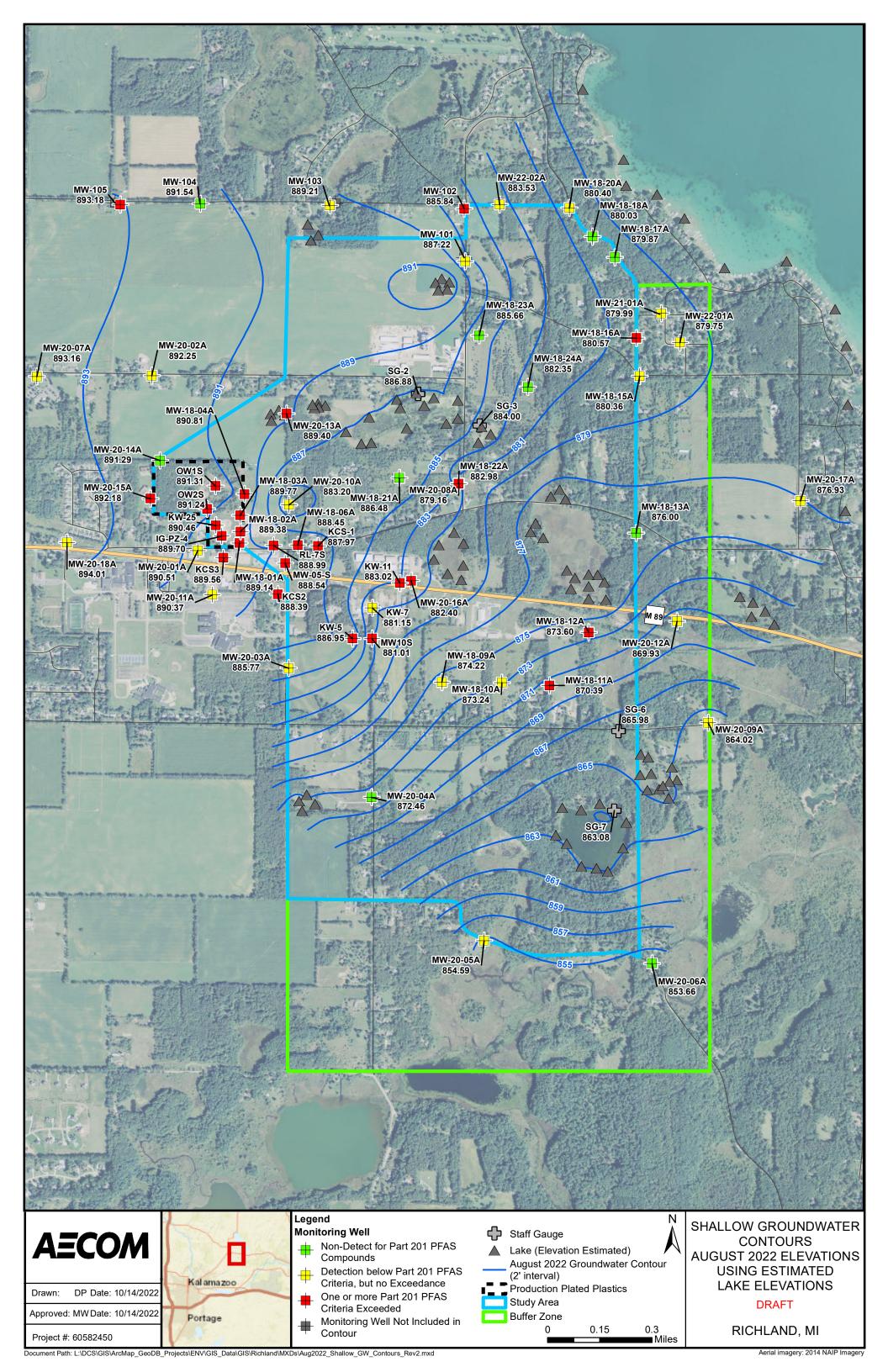
# North 34<sup>th</sup> Street Investigation Summary

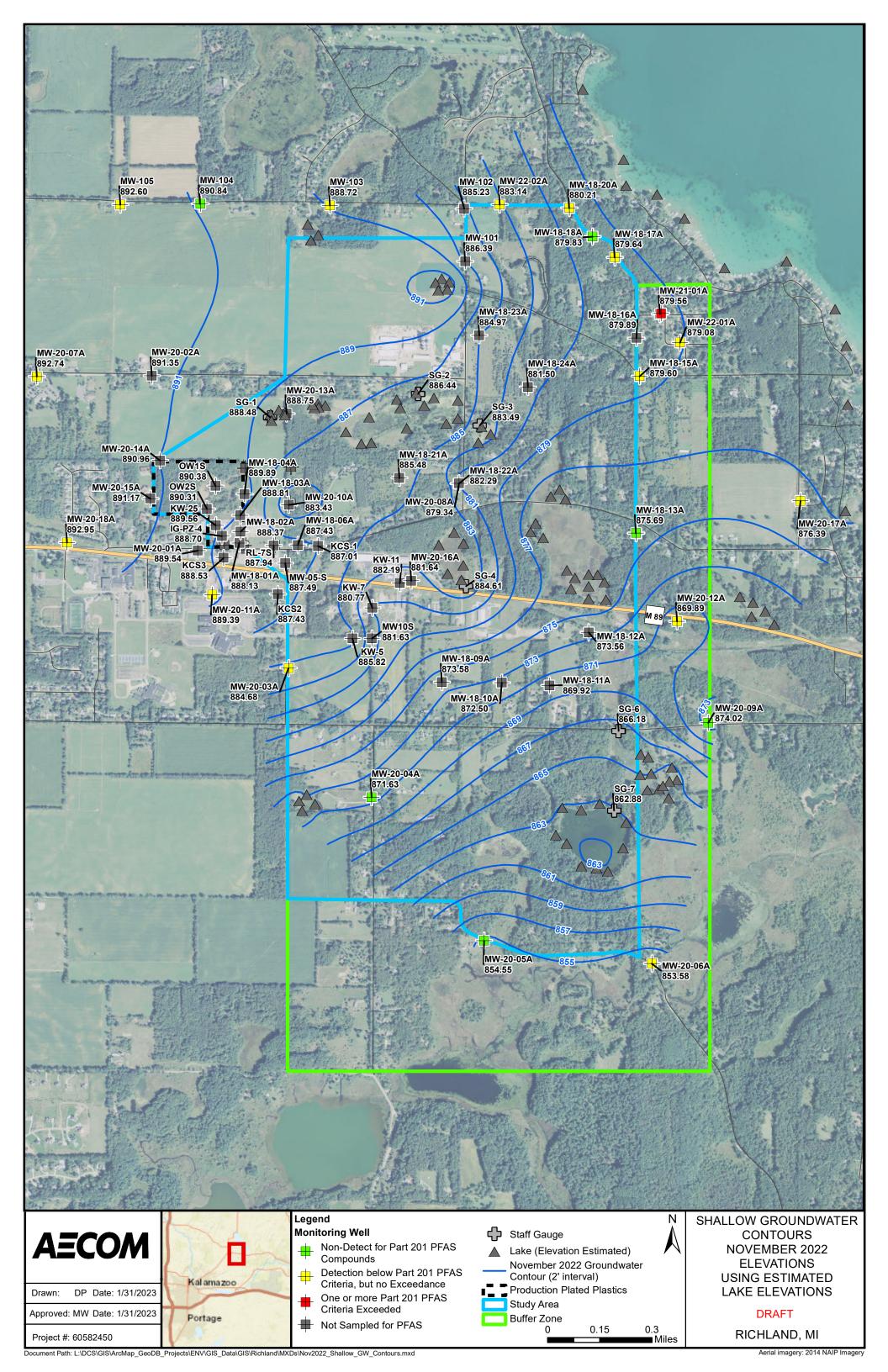
EGLE anticipates that sometime within the next 2 to 3 years the Part 201 Generic Drinking Water Cleanup Criteria will change as a result of a change in the Maximum Contaminant Level (MCL) as EPA currently in the process of establishing a national standard for PFAS in drinking water. While the final criteria/standard is not currently known, based on what is know it is likely that the criteria may be between 2 ppt and 4 ppt. Working under that assumption, in addition to the well results discussed above, the following groundwater monitoring wells may exceed the criteria: MW-18-13C, MW-18-15A, MW-20-12B, MW-20-17A, MW-12-01A and C, and MW-22-01B.

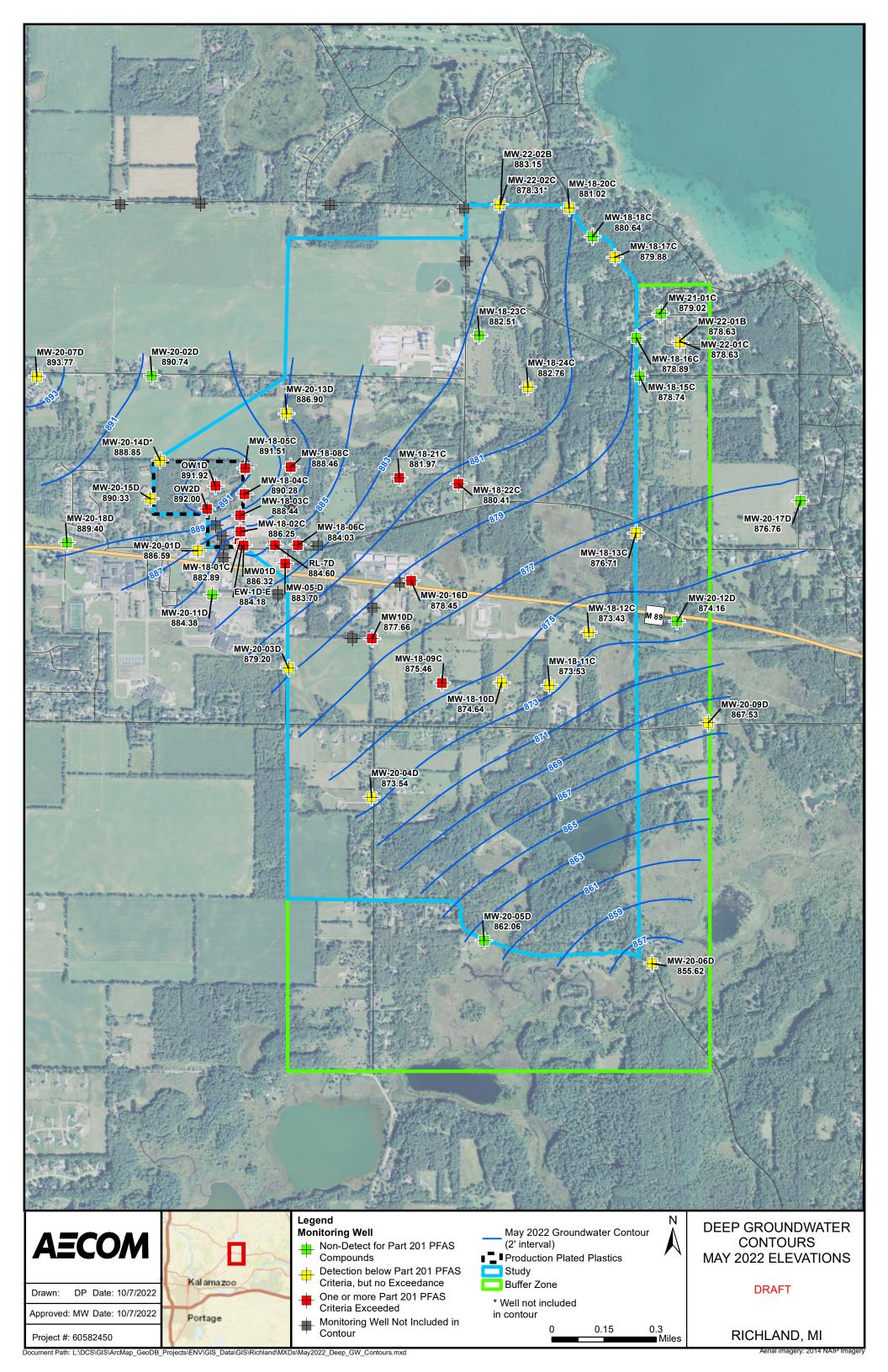
The investigation in the area is nearing completion and the offsite work is moving into long-term groundwater monitoring on a semi-annual and then annual schedule to track plume stability over time. There are no current plans to install additional groundwater monitoring wells, conduct additional investigation, nor remediate PFAS in the area.

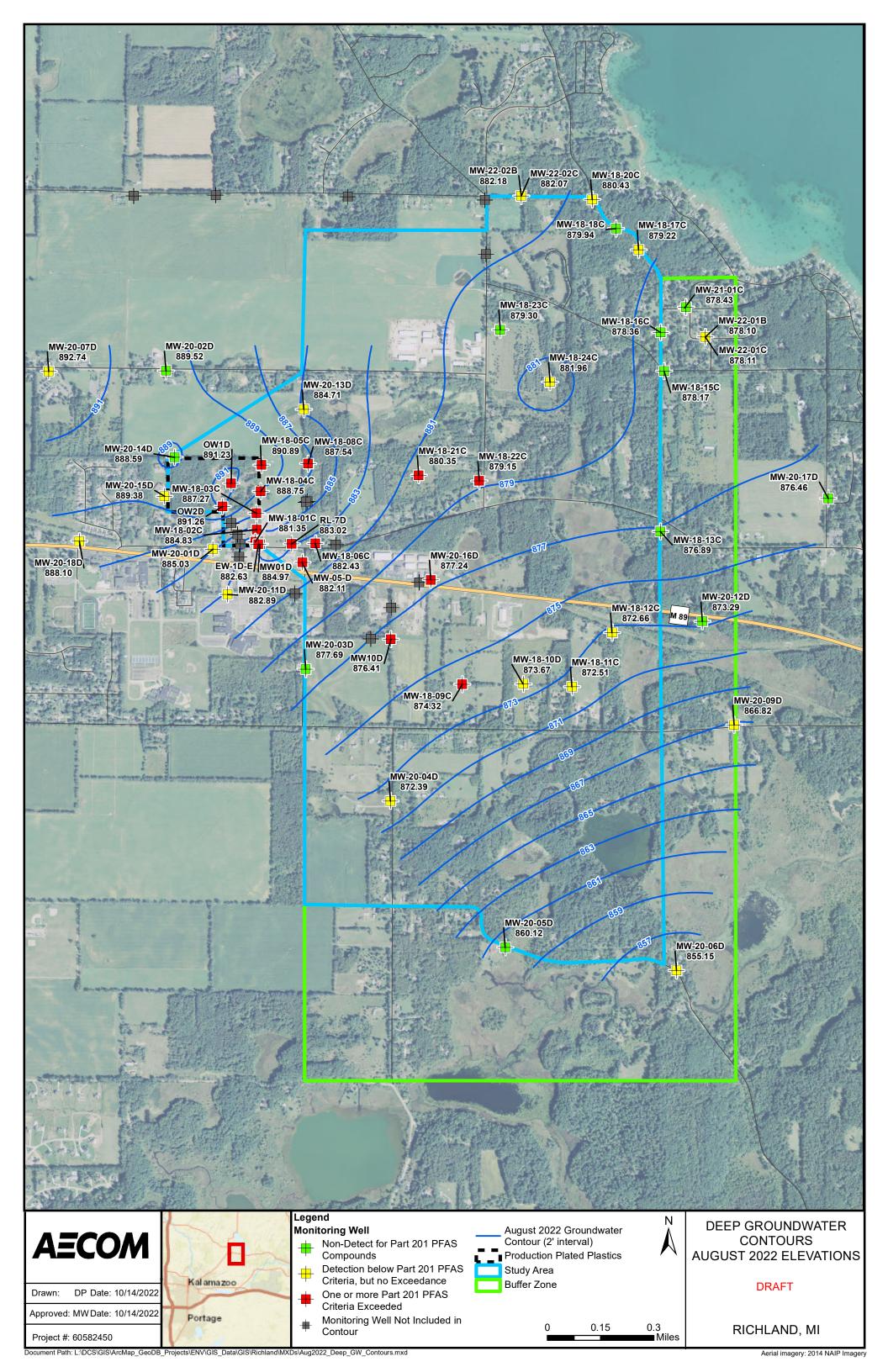
Based on the investigation results discussed above, the currently known human health risks, the anticipated change in criteria, and the amount of time it will take to extend municipal water to this area EGLE recommends Ross Township begin taking steps to eliminate potential exposure to PFAS as soon as possible. EGLE has also indicated that point of use filters and home filters are not a long-term solution and connection to a municipal water source is recommended.

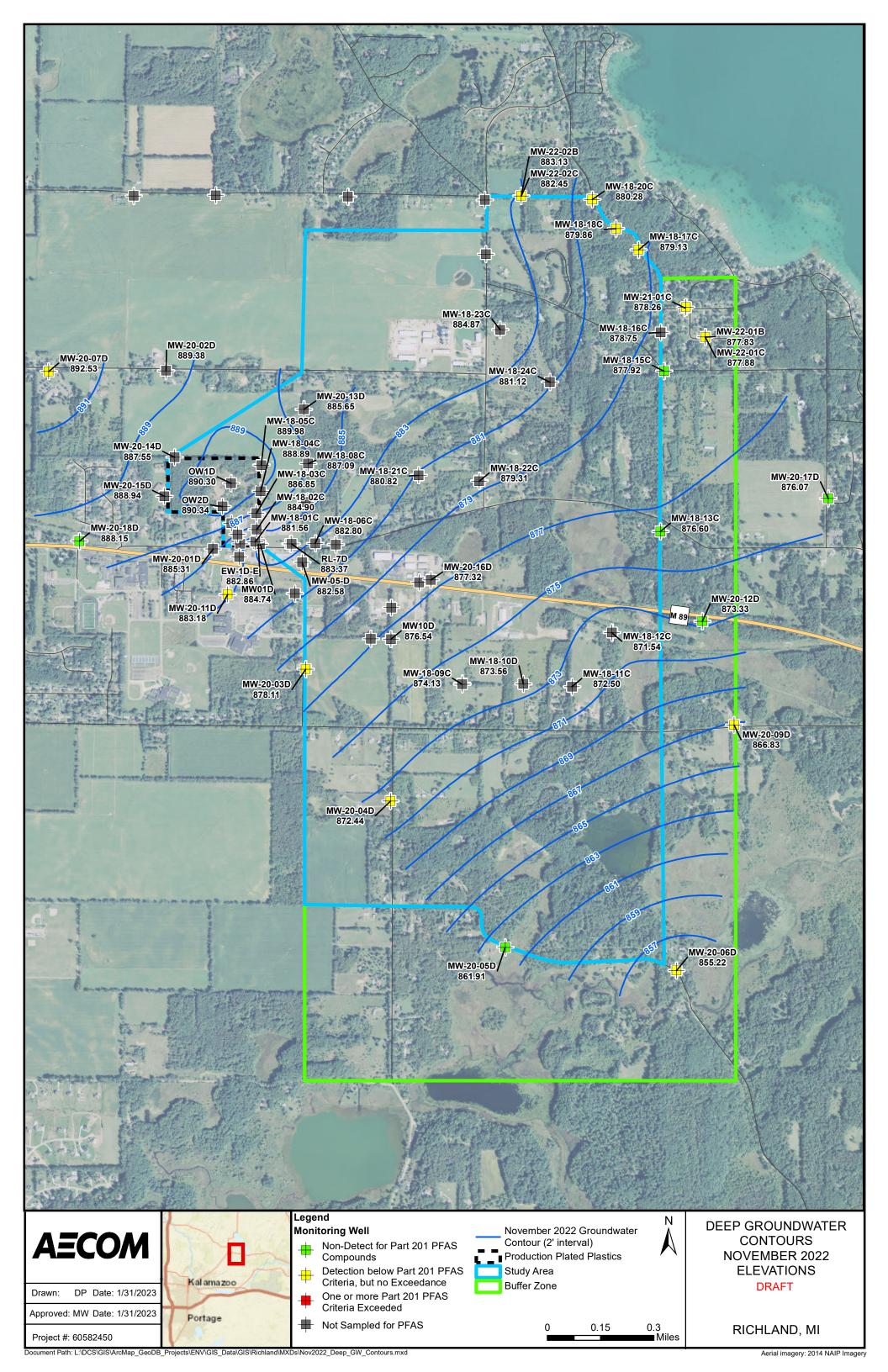


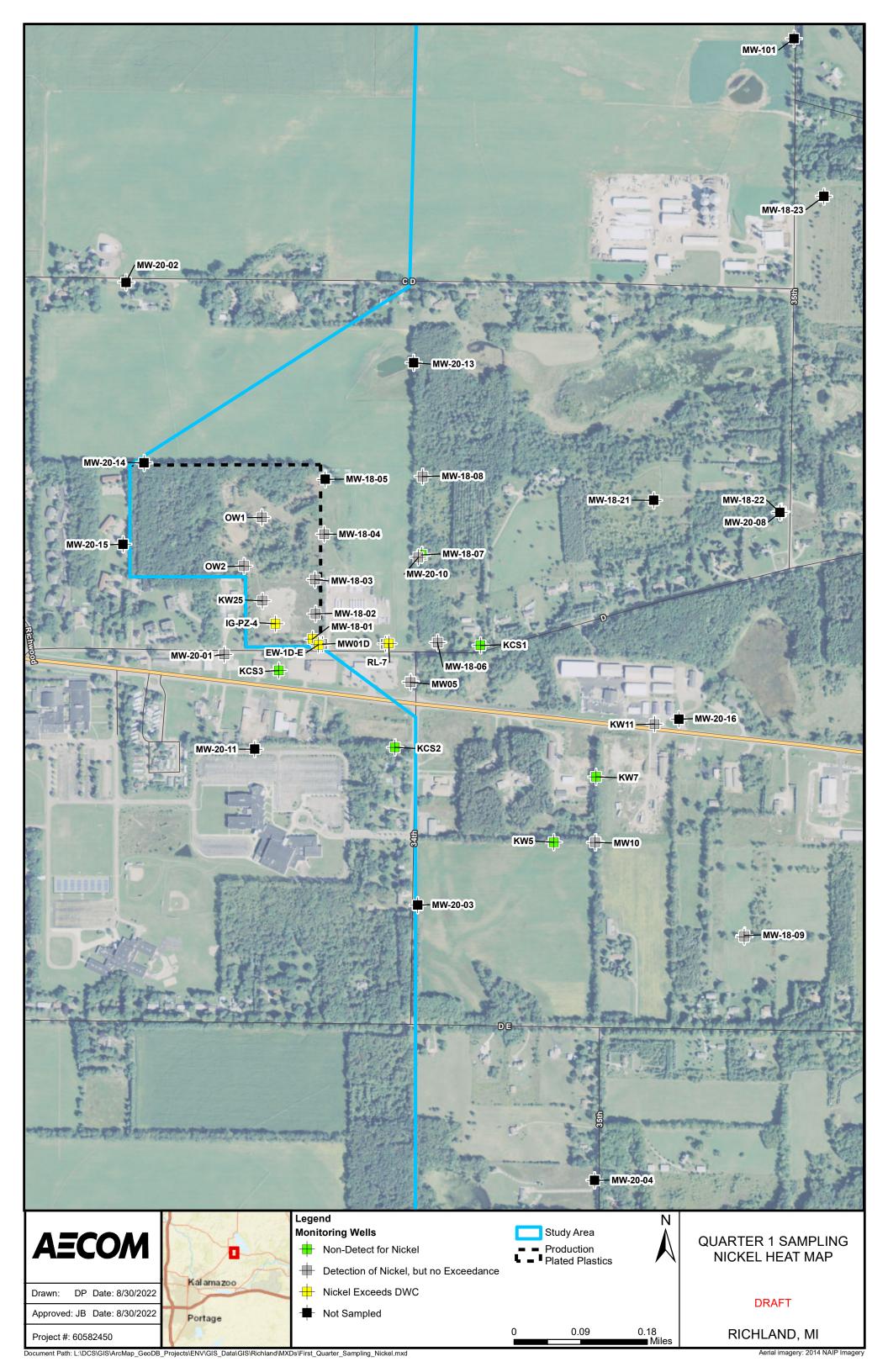


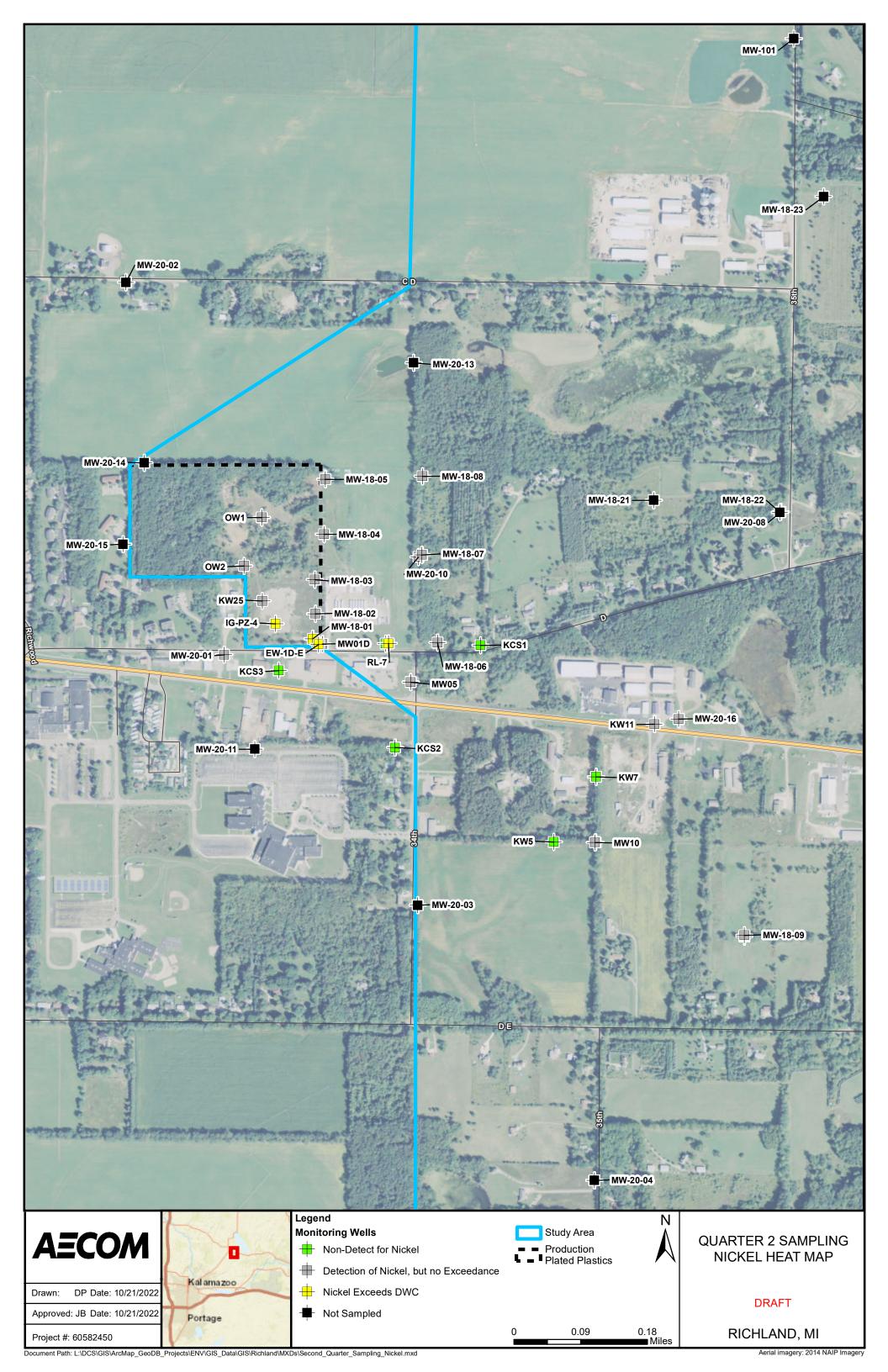


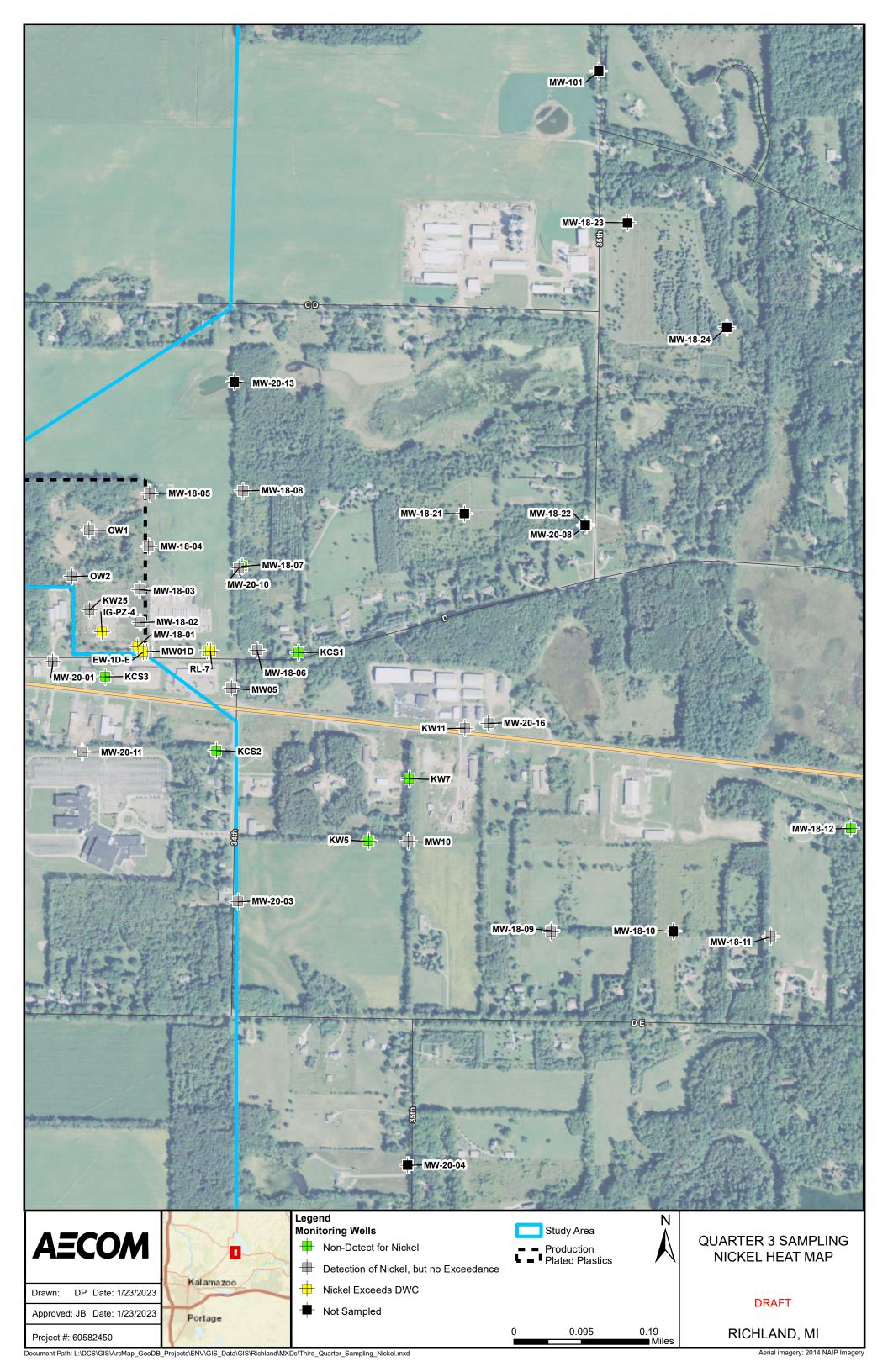


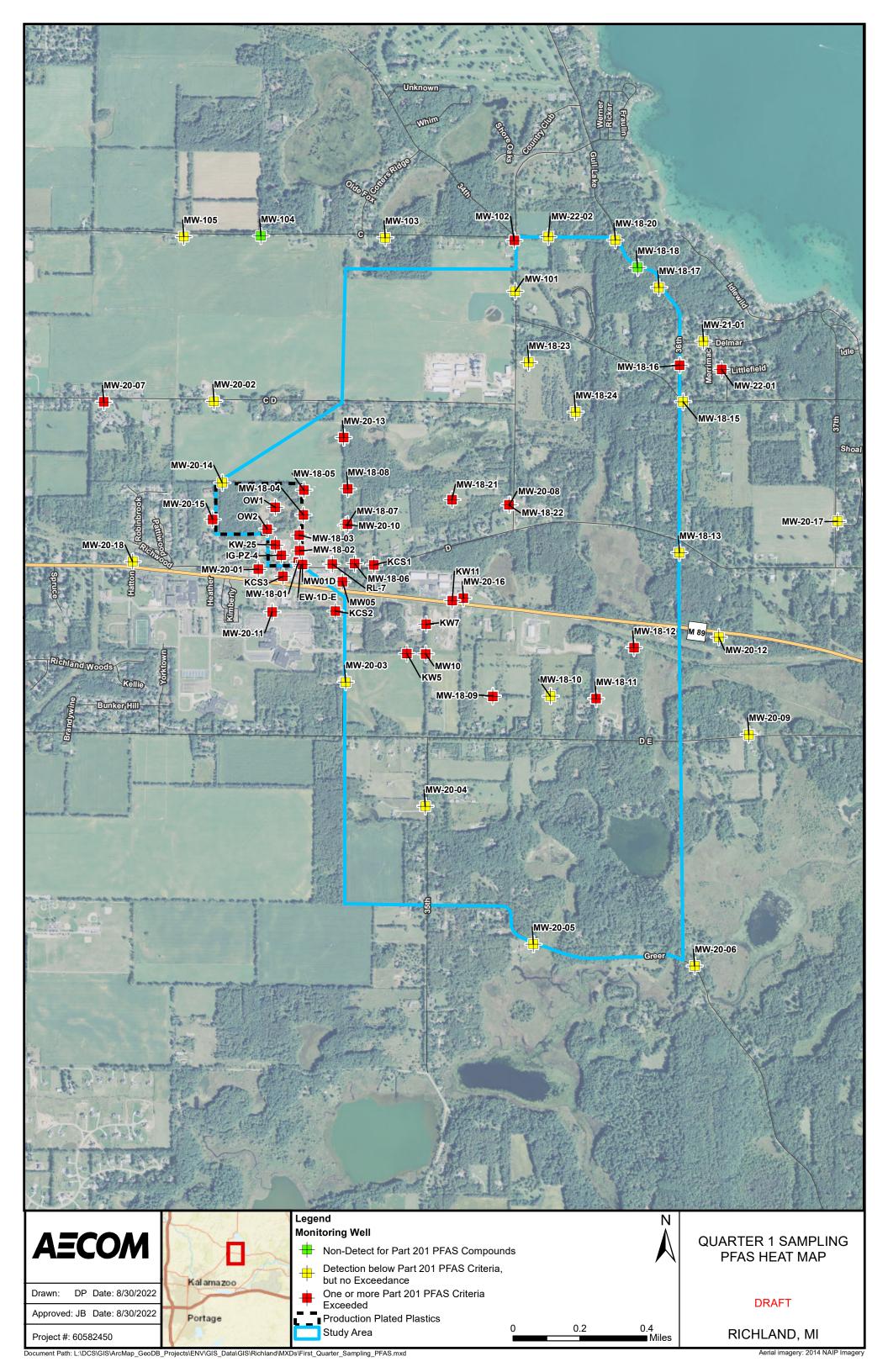


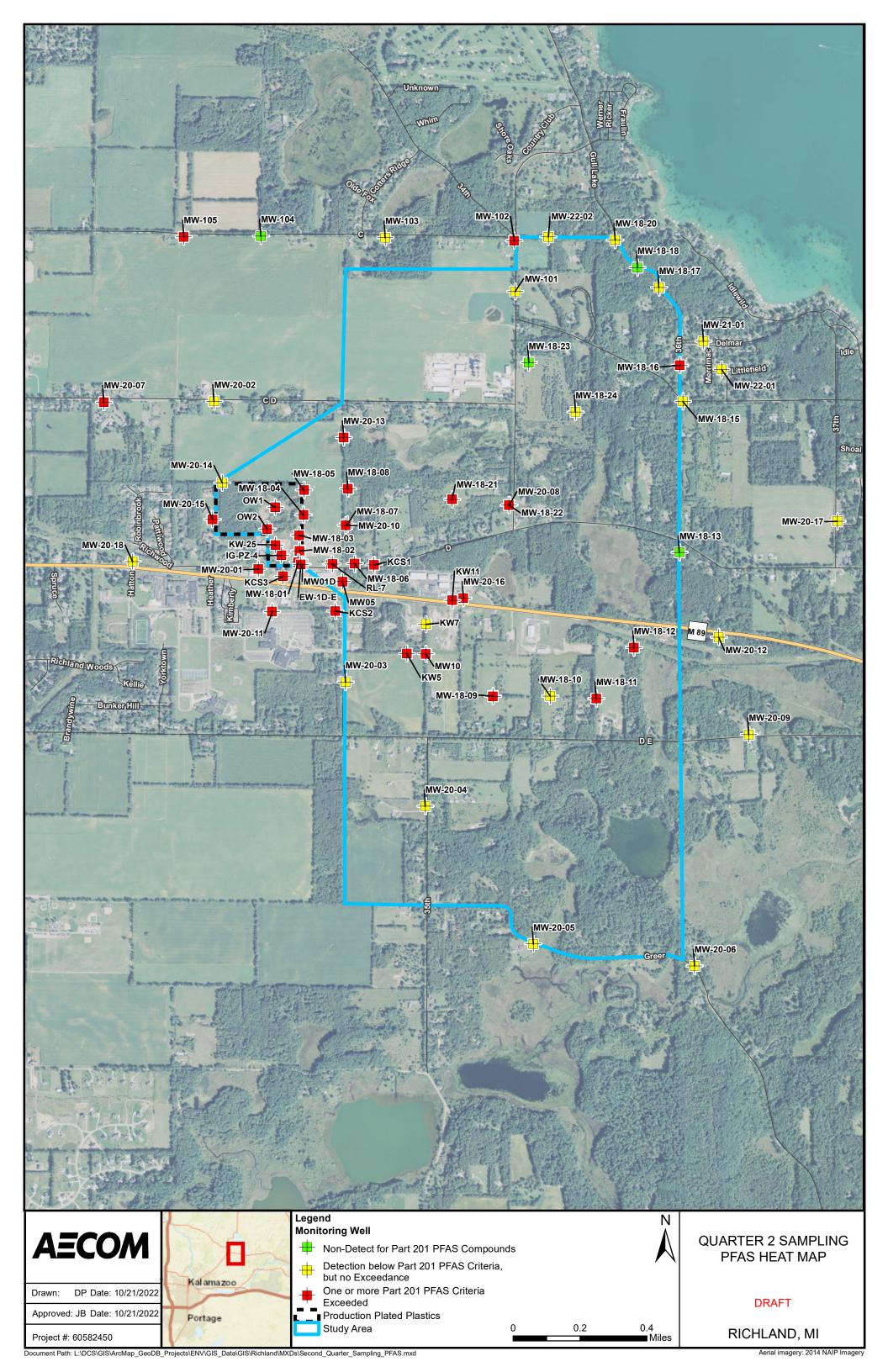


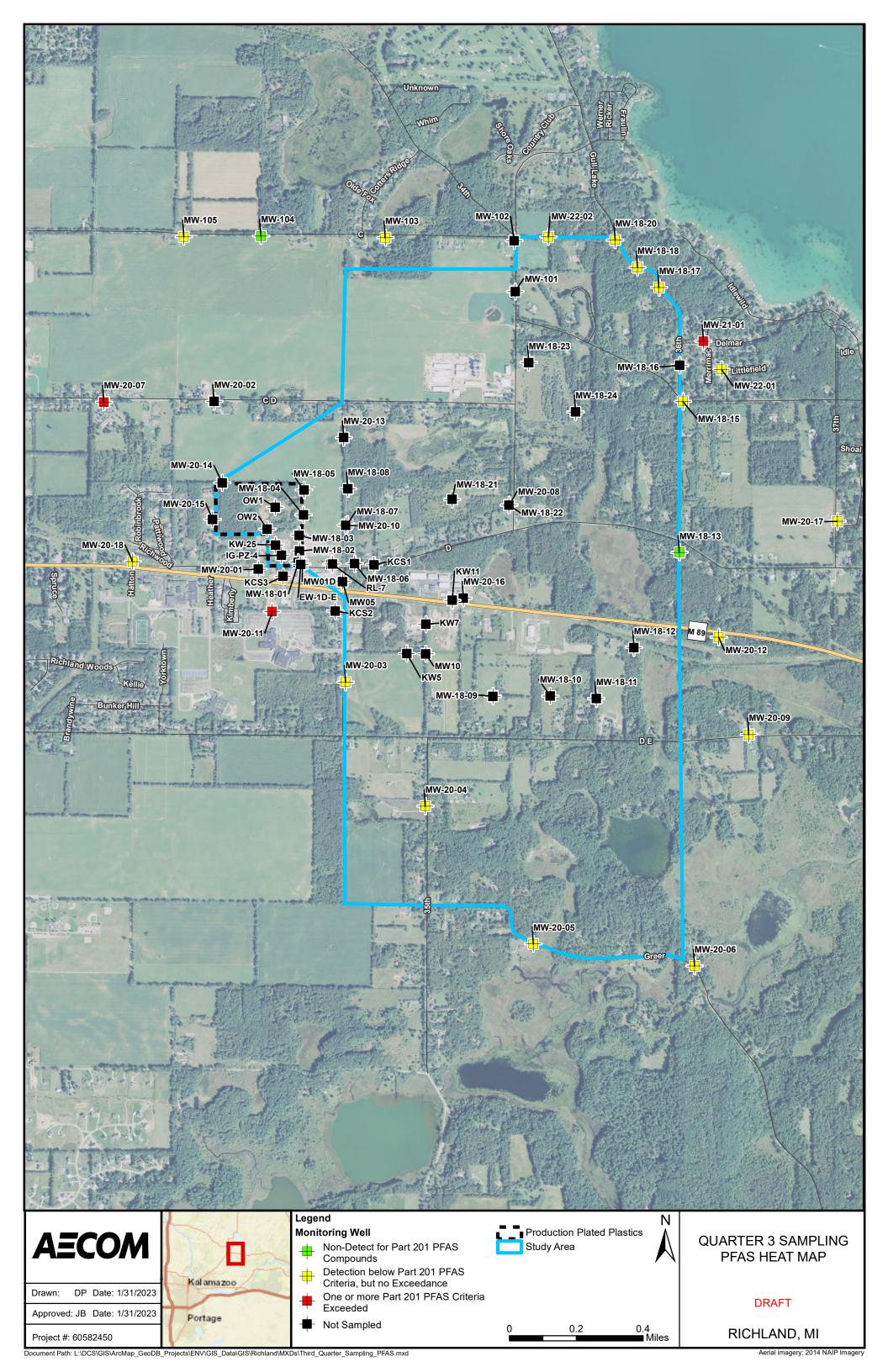


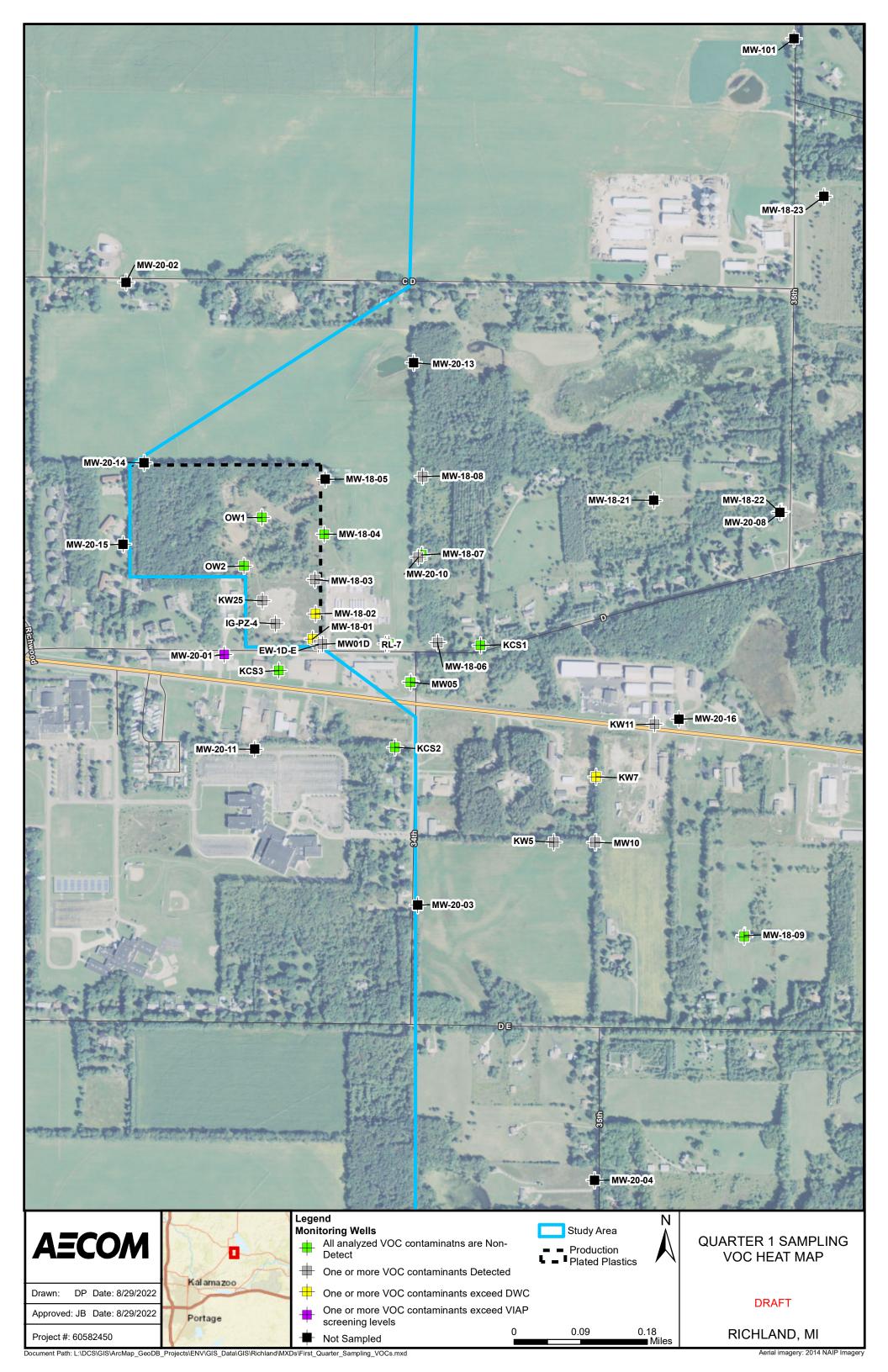


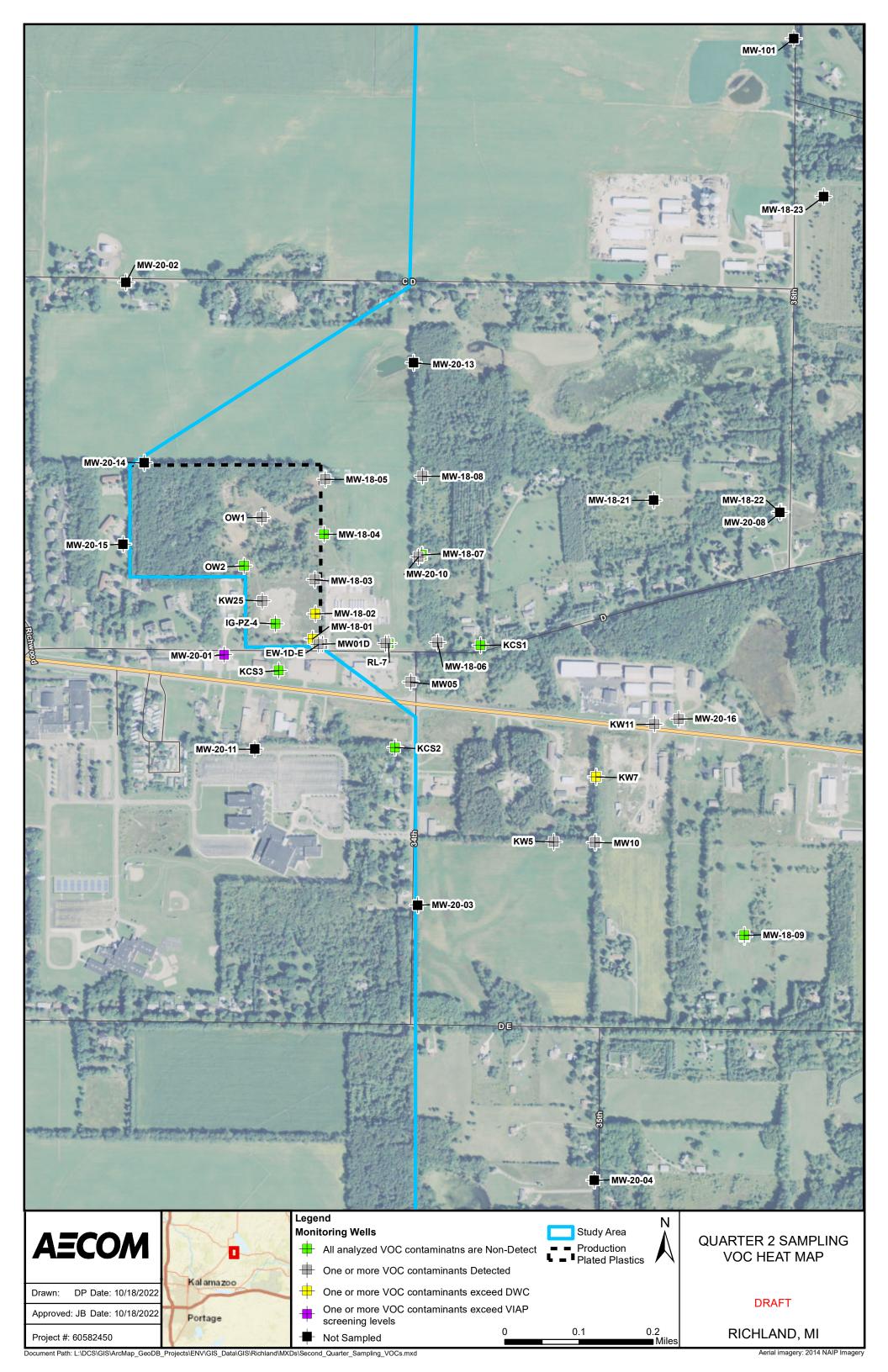


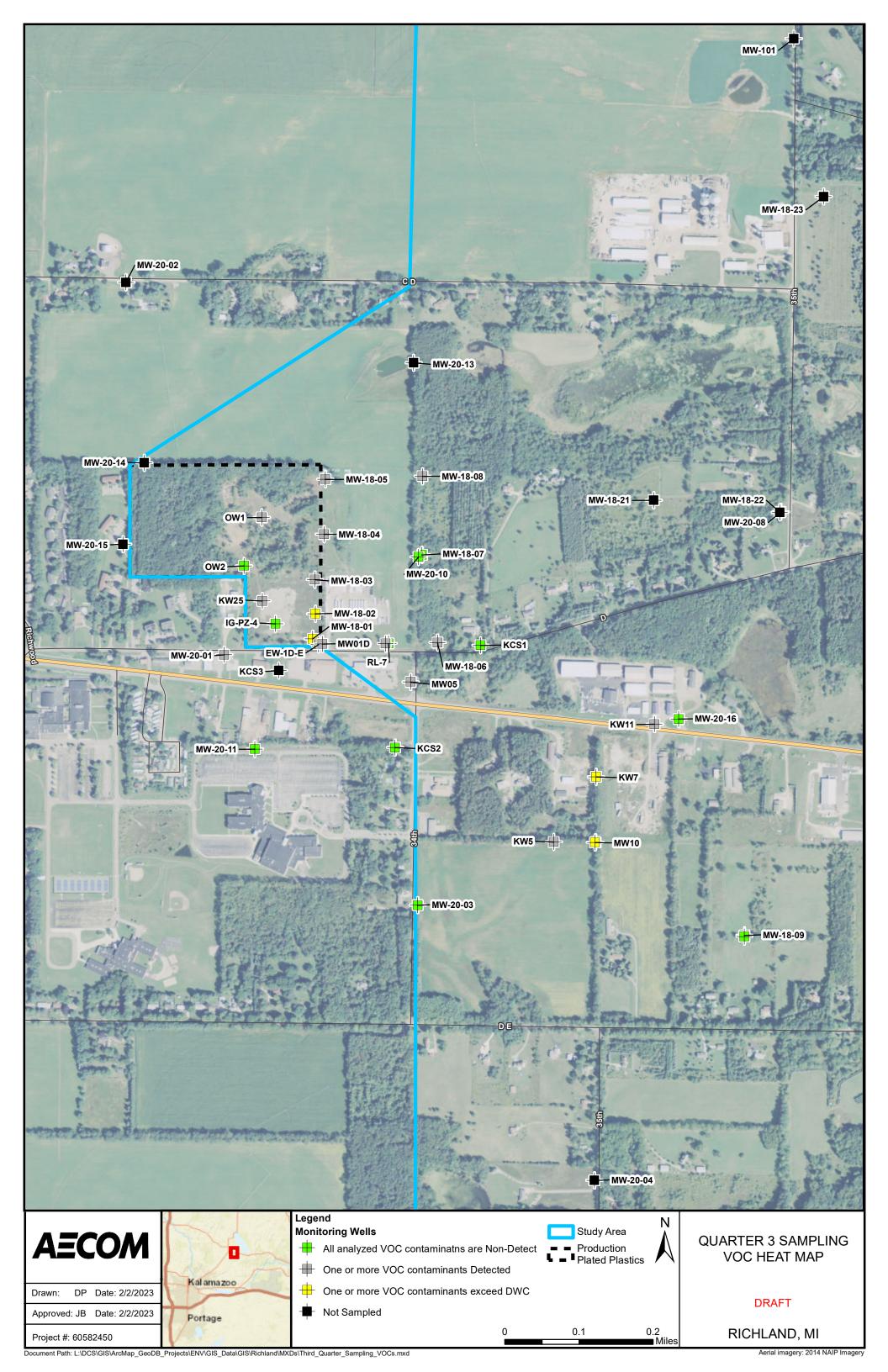


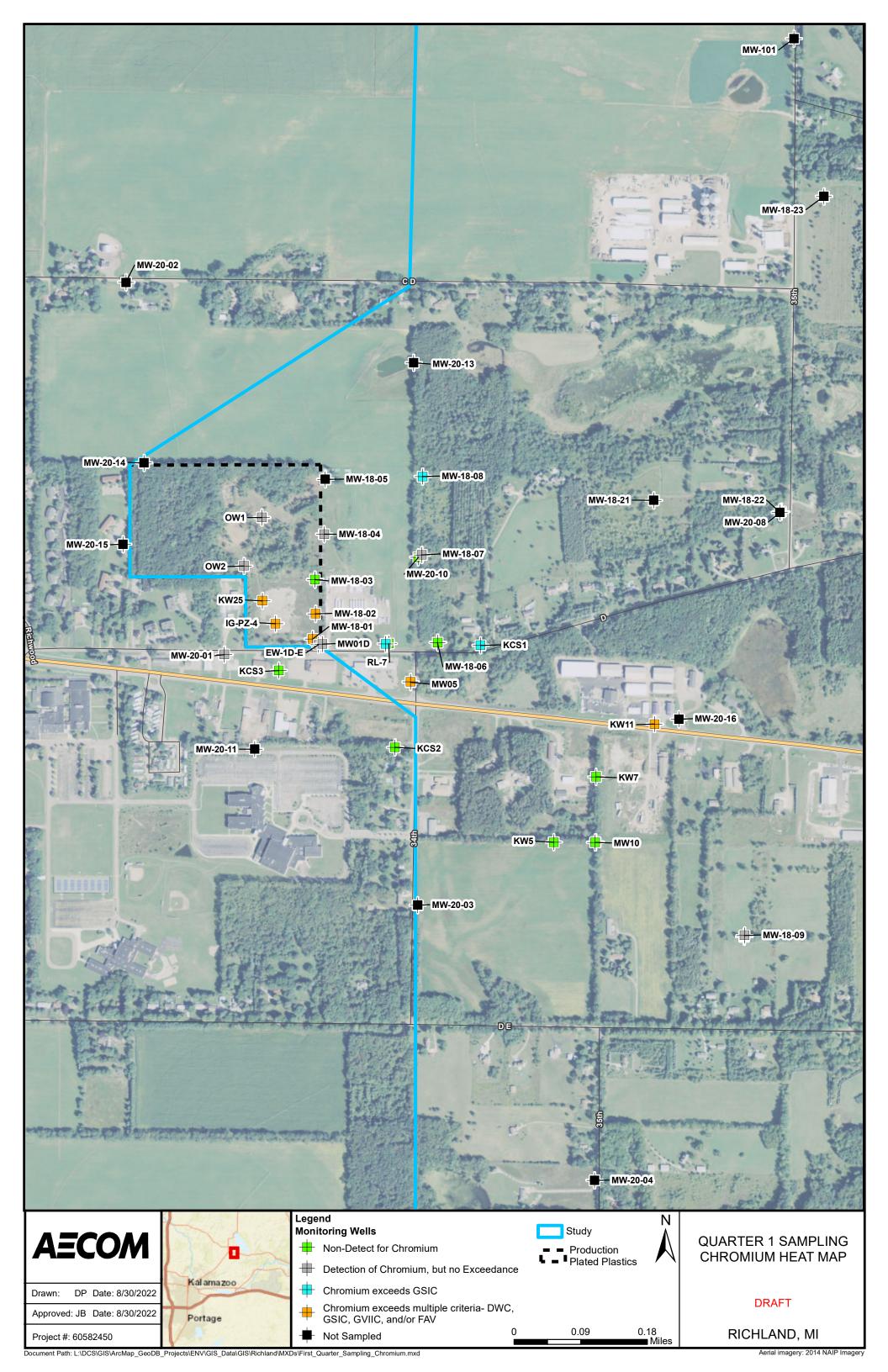


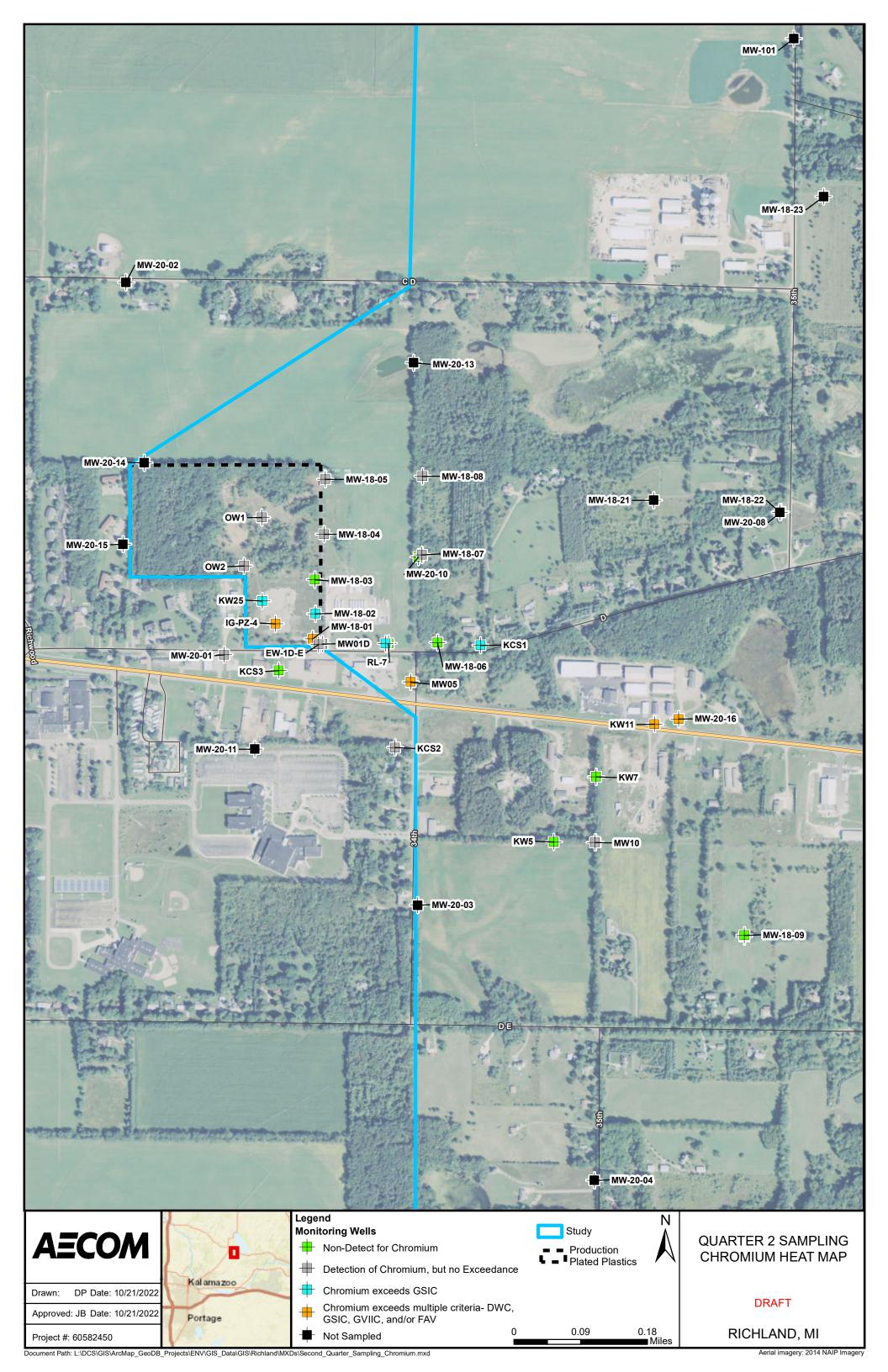


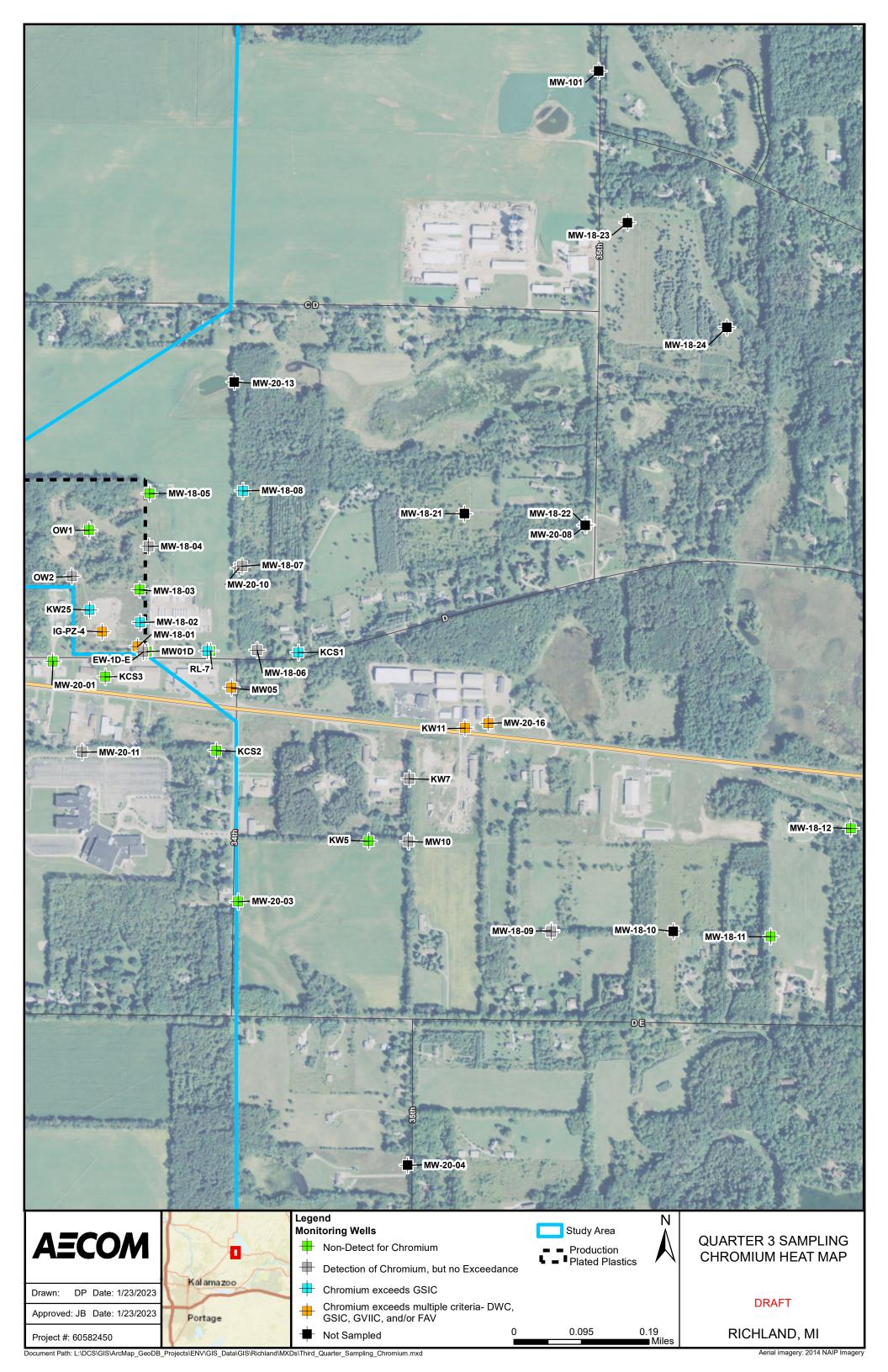












Sample ID	Location ID	Sample Type	Sample Date	Report #	Total PFAS	PFBA	PFPeA	PFHxA	PFHpA	PFOA I		PFDA PFUnD		PFTrDA	PFTeDA	PFBS F	PFPeS P	FHxS PFHpS	PFOS	PFNS PFI	OS 4:2 F	FTS 6:2 FT	S 8:2 FTS	PFOSA MeFO	OSAA EtFOSAA
GW0200251902251550KER	MW-18-12A	Ground Water	2/25/2019	1900378	132	5.70	ND	ND	ND	3.21	ND	ND ND	ND	ND	ND	2.38	ND 2	2.30 ND	118	ND NI			ND	ND N	D ND
GW0190242012011325RG	MW-18-12A	Ground Water	12/1/2020	320-67610	189	6.3	1.3	1.7	1.1	4.0	ND	ND ND	ND	ND	ND	1.9		1.6 1.2	170	ND NI	_		ND	ND N	
MW-18-12A-220609WB	MW-18-12A	Ground Water	6/9/2022	2206133	177	2.68	ND	ND	ND	2.8	ND	ND ND	ND	ND	ND	1.61		1.3 ND	169	ND NI			ND	ND N	
MW-18-12A-220809JSJ GW0640691902261005KER	MW-18-12A MW-18-12B	Ground Water Ground Water	8/9/2022 2/26/2019	2208246 1900378	187 85.9	<b>2.21</b> ND	ND ND	ND ND	ND ND	<b>2.27</b> ND	ND ND	ND ND	ND ND	ND ND	ND ND	2.84		1.14 ND 5.70 ND	179 77.6	ND NI			ND ND	ND N	
GW0650702012011250RG	MW-18-12B	Ground Water	12/1/2020	320-67610	109	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND			6.0 1.9	97	ND NI				ND N	
MW-18-12B-220609WB	MW-18-12B	Ground Water	6/9/2022	2206133	86.8	1.54	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	3.30		3.8 ND	78	ND NI			ND	ND N	
MW-18-12B-220809JSJ	MW-18-12B	Ground Water	8/9/2022	2208246	104	2.41	ND	ND	ND	1.12	ND	ND ND	ND	ND	ND	3.71	ND 4	1.48 1.41	90.7	ND NI	D NE	O ND	ND	ND N	D ND
GW1021071902261100GGA	MW-18-12C	Ground Water	2/26/2019	1900378	80.4	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	2.91		5.47 ND	72.0	ND NI			ND	ND N	
GW1041092012011205RG MW-18-12C-220609WB	MW-18-12C MW-18-12C	Ground Water	12/1/2020	320-67610 2206133	52.4 41.3	3.2 2.21	1.7	8.0 4.99	1.23	4.1	ND ND	ND ND	ND ND	ND ND	ND ND	8.9 6.74		14 ND 13.1 ND	2.3	ND NI	_		ND ND	ND N	
MW-18-12C-220809WB	MW-18-12C	Ground Water Ground Water	6/9/2022 8/9/2022	2208133	49.8	2.74	ND	5.58	1.73	4.61	ND	ND ND	ND	ND	ND			20.5 ND	ND ND	ND NI			ND	ND N	
GW0400451902261300GGA	MW-18-13A	Ground Water	2/26/2019	1900378	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI			ND	ND N	
GW0390442012091350JSJ	MW-18-13A	Ground Water	12/9/2020	320-67881	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND ND	ND	ND NI	D NE	O ND	ND	ND N	D ND
MW-18-13A-220610WB	MW-18-13A	Ground Water	6/10/2022	2206133	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI			ND	ND N	
MW-18-13A-220809JSJ	MW-18-13A	Ground Water	8/9/2022	2208247	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI	_	_	ND	ND N	
MW-18-13A-221110GSC MW-18-13A-230221JW	MW-18-13A MW-18-13A	Ground Water Ground Water	11/10/2022 2/21/2023	2211180 2303012	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND		ND ND	ND ND	ND NI ND NI			ND ND	ND N	
GW0650701902261350GGA	MW-18-13B	Ground Water	2/26/2019	1900378	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND			ND ND	ND	ND NI	_		ND	ND N	
GW0650701902261355GGA-DUP	MW-18-13B	Ground Water	2/26/2019	1900378	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI	_		ND	ND N	
GW0640692012091440JSJ	MW-18-13B	Ground Water	12/9/2020	320-67881	0.780	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND ND	0.780	ND NI	D NE	O ND	ND	ND N	D ND
MW-18-13B-220610WB	MW-18-13B	Ground Water	6/10/2022	2206134	1.73	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND			ND ND	1.73	ND NI			ND	ND N	
MW-18-13B-220809JSJ MW-18-13B-221110GSC	MW-18-13B MW-18-13B	Ground Water	8/9/2022 11/10/2022	2208247	ND ND	ND	ND	ND ND	ND	ND ND	ND	ND ND	ND ND	ND ND	ND ND	ND ND		ND ND	ND ND	ND NI			ND ND	ND N	
MW-18-13B-230221JW	MW-18-13B MW-18-13B	Ground Water Ground Water	2/21/2023	2211180 2303012	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND		ND ND	ND ND	ND NI	_		ND ND	ND N	
GW0900951902261440GGA	MW-18-13C	Ground Water	2/26/2019	1900378	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI	_		ND	ND N	
GW0890942012091530JSJ	MW-18-13C	Ground Water	12/9/2020	320-67881	0.810	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND			ND ND	0.600	ND NI			ND	ND N	
MW-18-13C-220610WB	MW-18-13C	Ground Water	6/10/2022	2206134	2.09	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	2.09	ND NI			ND	ND N	
MW-18-13C-220809JSJ	MW-18-13C	Ground Water	8/9/2022	2208247	ND	ND	ND	ND	ND	ND ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND ND	ND NI			ND	ND N	
MW-18-13C-221110GSC MW-18-13C-230221JW	MW-18-13C MW-18-13C	Ground Water Ground Water	11/10/2022 2/21/2023	2211180 2303012	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND		ND ND	ND ND	ND NI	_		ND ND	ND N	
GW0350401903271210KE	MW-18-13C MW-18-15A	Ground Water (MS/MSD)	3/27/2019	1900566	17.4	ND ND	ND	ND ND	ND ND	ND ND	ND	ND ND	ND ND	ND ND	ND ND			5.91 ND	ND ND	ND NI	_		ND ND	ND N	
GW0350402012071810RG	MW-18-15A	Ground Water	12/7/2020	320-67881	41.8	ND	0.820	0.850	0.600	2.50	ND	ND ND	ND	ND	ND	31.0		3.50 ND	2.50	ND NI			ND	ND N	
FD0350402012071810RG	MW-18-15A Dup	Ground Water	12/7/2020	320-67881	41.5	ND	0.840	0.780	0.710	2.20	ND	ND ND	ND	ND	ND	31.0	ND 3	<b>3.40</b> ND	2.60	ND NI	D NE	O ND	ND	ND N	D ND
MW-18-15A-220601JCW	MW-18-15A	Ground Water	6/1/2022	2206108	13.4	ND	ND	ND	ND	1.08	ND	ND ND	ND	ND	ND	7.95		<b>1.36</b> ND	ND	ND NI	_		ND	ND N	
MW-18-15A-220804JSJ	MW-18-15A	Ground Water	8/4/2022	2208166	12.6	ND	ND	ND	ND	ND 1.67	ND	ND ND	ND	ND	ND	8.57		3.99 ND	ND	ND NI			ND	ND N	
MW-18-15A-221108JW MW-18-15A-230215WS	MW-18-15A MW-18-15A	Ground Water Ground Water	11/8/2022 2/15/2023	2211178 2302197	17.2 41.5	ND 1.39	ND ND	ND ND	ND ND	1.67	ND ND	ND ND	ND ND	ND ND	ND ND	11.7 34.1		3.87 ND 4.28 ND	ND ND	ND NI	_		ND ND	ND N	
GW0660711903271050KE	MW-18-15B	Ground Water	3/27/2019	1900565	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI			ND	ND N	
GW0660712012080935RG	MW-18-15B	Ground Water	12/8/2020	320-67881	0.200	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	0.200		ND ND	ND	ND NI	_		ND	ND N	
MW-18-15B-220601JCW	MW-18-15B	Ground Water	6/1/2022	2206108	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI			ND	ND N	
MW-18-15B-220804JSJ	MW-18-15B	Ground Water	8/4/2022	2208166	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI	_		ND	ND N	
MW-18-15B-221108AA MW-18-15B-230215WS	MW-18-15B MW-18-15B	Ground Water Ground Water	11/8/2022 2/15/2023	2211178 2302197	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND		ND ND	ND ND	ND NI			ND ND	ND N	
GW1051101903271000KE	MW-18-15C	Ground Water	3/27/2019	1900565	ND	ND	ND	ND	ND	ND ND	ND	ND ND	ND ND	ND ND	ND ND	ND		ND ND	ND	ND NI	_		ND	ND N	
GW1061112012071705RG	MW-18-15C	Ground Water	12/7/2020	320-67881	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI	_		ND	ND N	
MW-18-15C-220601JCW	MW-18-15C	Ground Water	6/1/2022	2206108	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI			ND	ND N	
MW-18-15C-220804JSJ	MW-18-15C	Ground Water	8/4/2022	2208166	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI			ND	ND N	
MW-18-15C-221108GSC MW-18-15C-230215WS	MW-18-15C MW-18-15C	Ground Water Ground Water	11/8/2022 2/15/2023	2211178 2302197	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND		ND ND	ND ND	ND NI			ND ND	ND N	
GW0300351902261540KER	MW-18-16A	Ground Water	2/26/2019	1900378	63.2	ND	2.68	3.71	1.70	9.10	ND	ND ND	ND	ND	ND ND	10.4		3.61 ND	27.0	ND NI	_		ND	ND N	
GW0300352012041610RG	MW-18-16A	Ground Water	12/4/2020	320-67881	86.2	ND	1.20	1.80	1.10		1.20	ND ND	ND	ND	ND			9.80 ND	58	ND NI			ND	ND N	
MW-18-16A-220601GSC	MW-18-16A	Ground Water	6/1/2022	2206108	44.6	ND	ND	ND	ND	1.89	ND	ND ND	ND	ND	ND	8.78	ND 3	3.05 ND	31	ND NI	D NE	D ND	ND	ND N	D ND
MW-18-16A-220809JMA	MW-18-16A	Ground Water	8/9/2022	2208247	46	ND	ND	ND	ND	1.60	ND	ND ND	ND	ND	ND	10.1		3.47 ND	31.2	ND NI	_		ND	ND N	
GW0500551902271020KER GW0510562012041530RG	MW-18-16B MW-18-16B	Ground Water Ground Water	2/27/2019 12/4/2020	1900380 320-67881	64.1 25.2	ND ND	5.73 1.30	8.61 1.50	5.75 0.82	2.80	ND ND	ND ND	ND ND	ND ND	ND ND	6.00		12.7 ND 5.90 ND	3.82 5.80	ND NI	_		ND ND	ND N	
MW-18-16B-220601GSC	MW-18-16B MW-18-16B	Ground Water Ground Water	6/1/2022	2206108	13.6	2.48	1.42	1.50 ND	ND	2.64	ND	ND ND	ND ND	ND ND	ND ND	1.63		1.27 ND	1.12	ND NI	_		ND ND	ND N	
MW-18-16B-220809JMA	MW-18-16B	Ground Water	8/9/2022	2208246	20.4	1.52	1.54	1.34	ND	4.74	ND	ND ND	ND	ND	ND	1.32		5.66 ND	3.31	ND NI	_		ND	ND N	
GW1051101902271105GGA	MW-18-16C	Ground Water	2/27/2019	1900380	1.79	1.79	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI			ND	ND N	
GW1051102012041445RG	MW-18-16C	Ground Water	12/4/2020	320-67881	ND	ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND		ND ND	ND	ND NI			ND	ND N	
MW-18-16C-220601GSC MW-18-16C-220809JMA	MW-18-16C MW-18-16C	Ground Water Ground Water	6/1/2022 8/9/2022	2206108 2208246	ND 1.40	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND		ND ND	ND ND	ND NI	_		ND ND	ND N	
GW0320372101221400ADB	MW-20-12A	Ground Water	1/22/2021	240-143592	12.7	3.60	1.00	0.820	0.58	1.60	ND	ND ND	ND	ND ND	ND ND	2.40		1.30 ND	1.40	ND NI		_	ND	ND N	
MW-20-12A-220526GSC	MW-20-12A	Ground Water	5/26/2022	2206028	5.65	1.90	ND	ND	ND	1.32	ND	ND ND	ND	ND	ND	2.43		ND ND	ND	ND NI			ND	ND N	
MW-20-12A-220804GSC	MW-20-12A	Ground Water	8/4/2022	2208165	5.61	2.13	ND	ND	ND	1.22	ND	ND ND	ND	ND	ND	2.26		ND ND	ND	ND NI			ND	ND N	
MW-20-12A-221109GSC	MW-20-12A	Ground Water	11/9/2022	2211179	6.90	2.39	ND	ND	ND		ND	ND ND	ND	ND	ND	1.96		1.36 ND	ND ND	ND NI	_		ND	ND N	
MW-20-12A-230221GSC GW0600652101221310ADB	MW-20-12A MW-20-12B	Ground Water Ground Water	2/21/2023 1/22/2021	2303013 240-143592	5.47 33.9	1.93 7.40	ND 8.50	ND 8.60	ND 3.10	1.20 ND	ND ND	ND ND	ND ND	ND ND	ND ND			2.40 ND	ND 1.20	ND NI				ND N	D ND
MW-20-12B-220526GSC	MW-20-12B	Ground Water	5/26/2022	2206028	15.3	3.12	2.02	2.05	1.18		ND	ND ND	ND ND	ND	ND			1.54 ND	ND	ND NI	_			ND N	
MW-20-12B-220803GSC	MW-20-12B	Ground Water	8/3/2022	2208165	11.1	2.68	2.03	1.66	ND		ND	ND ND	ND	ND	ND			ND ND	ND	ND NI				ND N	
MW-20-12B-221109GSC	MW-20-12B	Ground Water	11/9/2022	2211179	10.8	2.09	1.45	1.39	ND	2.86	ND	ND ND	ND	ND	ND	1.51		1.53 ND	ND	ND NI	D NE	O ND	ND	ND N	D ND
MW-20-12B-230221GSC	MW-20-12B	Ground Water	2/21/2023	2303013	7.5	1.47	1.10	ND	ND		ND	ND ND	ND	ND				1.45 ND	ND	ND NI				ND N	
GW0900952101221155ADB	MW-20-12C	Ground Water	1/22/2021	240-143592	0.930	ND ND	0.480	ND	ND		ND	ND ND	ND	ND				ND ND	ND ND	ND NI				ND N	
MW-20-12C-220526GSC MW-20-12C-220803GSC	MW-20-12C MW-20-12C	Ground Water Ground Water	5/26/2022 8/3/2022	2206029 2208165	ND 2.16	ND 2.16	ND ND	ND ND	ND ND		ND ND	ND ND	ND ND	ND ND	ND ND			ND ND	ND ND	ND NI				ND N	
MW-20-12C-221109GSC	MW-20-12C	Ground Water	11/9/2022	2211179	ND	ND	ND	ND	ND		ND	ND ND		ND	ND			ND ND	ND	ND NI				ND N	
MW-20-12C-230221GSC	MW-20-12C	Ground Water	2/21/2023	2303013	ND	ND	ND	ND	ND		ND	ND ND	_	ND	ND			ND ND	ND	ND NI	_				D ND
GW1181232101221030ADB	MW-20-12D	Ground Water	1/22/2021	240-143592	1.12	ND	0.510	ND	ND	ND	ND	ND ND	ND	ND	ND	0.610	ND	ND ND	ND	ND NI	D NI	O ND	ND	ND N	D ND
MW-20-12D-220526GSC	MW-20-12D	Ground Water	5/26/2022	2206029	ND	ND	ND	ND	ND		ND	ND ND	ND	ND	ND			ND ND	ND	ND NI				ND N	
MW-20-12D-220803GSC MW-20-12D-221109GSC	MW-20-12D MW-20-12D	Ground Water Ground Water	8/3/2022 11/9/2022	2208165 2211179	ND 2.14	ND 2.14	ND ND	ND ND	ND ND		ND ND	ND ND	ND ND	ND ND	ND ND			ND ND	ND ND	ND NI				ND N	
MW-20-12D-221109GSC MW-20-12D-230221GSC	MW-20-12D MW-20-12D	Ground Water Ground Water	2/21/2023	2303013	ND	ND	ND	ND	ND		ND	ND ND	ND ND	ND ND	ND ND			ND ND	ND ND	ND NI	_			ND N	
GW0480532102041130JSJ	MW-20-17A	Ground Water	2/4/2021	240-144108		2.90	1.80	1.70	1.60		0.720			ND ND				1.20 ND	0.660	ND NI				ND N	
	-													•								-	1		

FD0480532102041130JSJ MW-20-17A Ground Water 2/4/2021 240-144108 14.7 3.00 1.60 1.60 1.50 2.20 0.660 0.500 ND ND ND ND ND	2.50	ND	1.10	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17A-220526JCW MW-20-17A Ground Water 5/26/2022 2206029 7.85 2.22 ND	4.28	ND	1.35	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17A-220804JSJ MW-20-17A Ground Water 8/4/2022 2208166 5.84 1.81 ND	2.67	ND	1.36	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17A-221110JW MW-20-17A Ground Water 11/10/2022 2211179 7.98 2.07 ND	4.36	ND	1.55	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17A-230221GSC MW-20-17A Ground Water 2/21/2023 2303012 4.83 1.28 ND	2.23	ND	1.32	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
GW0910962102041255JSJ MW-20-17B Ground Water 2/4/2021 240-144108 9.50 2.80 1.90 1.60 0.720 ND 0.380 ND ND ND ND ND ND	1.00	ND	1.10	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17B-220527JCW MW-20-17B Ground Water 5/27/2022 2206029 11.6 2.12 ND	7.11	ND	2.40	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17B-220804JSJ MW-20-17B Ground Water 8/4/2022 2208166 11.6 2.17 ND	7.12	ND	2.30	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17B-221110JW MW-20-17B Ground Water 11/10/2022 2211179 20.5 2.68 2.23 2.40 1.16 ND ND ND ND ND ND ND ND ND	9.38	ND	2.68	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17B-230221GSC MW-20-17B Ground Water 2/21/2023 2303012 17.4 1.94 1.90 2.36 1.35 ND ND ND ND ND ND ND ND ND	7.93	ND	1.94	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
GW1251302102041350JSJ MW-20-17C Ground Water 2/4/2021 240-144108 19.7 7.50 3.00 1.90 1.50 1.50 1.20 1.00 ND ND ND ND	0.870	ND	0.630	ND	0.64	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17C 220527JCW MW-20-17C Ground Water 5/27/2022 2206029 5.04 3.00 1.00 ND ND 1.04 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17C-220804JSJ MW-20-17C Ground Water 8/4/2022 2208166 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17C-221109JW MW-20-17C Ground Water 11/9/2022 2211179 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17C 230221GSC MW-20-17C Ground Water 2/21/2023 2303012 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
GW1731782102041445JSJ MW-20-17D Ground Water 2/4/2021 240-144108 15.5 6.00 2.40 1.40 1.20 0.950 0.840 0.670 ND ND ND ND	0.810	ND	0.580	ND	0.660	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17D Ground Water 5/26/2022 2206029 ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17D-220804JSJ MW-20-17D Ground Water 8/4/2022 2208166 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17D Ground Water 11/9/2022 2211179 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17D-230221GSC MW-20-17D Ground Water 2/21/2023 2303012 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-20-17D	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
GW28332112101300JLB MW-21-01A Ground Water 12/9/2021 2112097 24.7 2.0 1.4 2.3 ND 3.9 ND ND ND ND ND ND ND	6.73	ND	1.50	ND	6.88	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01A-220601GSC MW-21-01A Ground Water 6/1/2022 2206107 34.8 2.8 2.7 4.1 ND 4.0 ND ND ND ND ND ND ND ND	9.0	ND	1.3	ND	10.9	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01A-220809WPS MW-21-01A Ground Water 8/9/2022 2208246 34.0 1.19 2.45 3.79 ND 3.85 ND ND ND ND ND ND ND	10.0	ND	ND	ND	12.8	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01A	12	ND	2.03	ND	12.3	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01A-230214WS MW-21-01A Ground Water 2/14/2023 2302199 35.2 1.14 1.40 3.32 ND 3.91 ND ND ND ND ND ND ND ND	10.4	ND	1.86	ND	13.2	ND ND	ND	ND	ND	ND	ND	ND
GW49542112101200JLB MW-21-01B Ground Water 12/9/2021 2112097 15.6 1.4 ND	13.0	ND	1.19	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01B-220602GSC MW-21-01B Ground Water 6/2/2022 2206107 19.4 ND	18.3	ND	1.1	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01B-220809WPS MW-21-01B Ground Water 8/9/2022 2208246 17.1 ND	16.0	ND	1.14	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01B Ground Water 11/10/2022 2211180 16.3 ND	14.6	ND	1.68	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01B-230214WS MW-21-01B Ground Water 2/14/2023 2302199 19.7 ND ND ND ND ND 1.08 ND	16.6	ND	1.98	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
GW1041092112101040JLB MW-21-01C Ground Water 12/9/2021 2112097 1.05 1.1 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01C		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01C-220809WPS MW-21-01C Ground Water 8/9/2022 2208246 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01C-220809WPS-DUP MW-21-01C Ground Water 8/9/2022 2208246 ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01C Ground Water 11/10/2022 2211180 17.5 3.19 2.3 2.05 1.71 1.96 1.26 ND ND ND ND ND ND ND		ND	ND	ND	4.01	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01C		ND	ND	ND	4.53	ND ND	ND	ND	ND	ND	ND	ND
MW-21-01C-230214WS MW-21-01C Ground Water 2/14/2023 2302199 ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01A-220608GSC MW-22-01A Ground Water 6/8/2022 2206132 20.8 1.9 2.2 3.3 2.0 8.68 ND		ND	1.1	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01A-220808GSC MW-22-01A Ground Water 8/8/2022 2208246 12.2 ND ND ND 1.04 7.49 ND	1.80	ND	ND	ND	1.87	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01A-221111W MW-22-01A Ground Water 11/11/2022 2211180 10.6 ND ND 1.17 1.43 4.78 ND		ND	ND	ND	2.05	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01A-230215WS MW-22-01A Ground Water 2/15/2023 2302199 8.9 ND ND 1.09 1.19 4.69 ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-018-206969SC MW-22-018 Ground Water 6/8/2022 2206132 25.2 6.7 3.7 4.9 2.8 3.46 1.5 1.1 1.0 ND ND ND ND ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-018-2080865C MW-22-018 Ground Water 8/8/2022 2208245 5.58 1.95 ND 1.19 ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01B Ground Water 11/11/2022 2211180 2.81 1.50 ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01B Ground Water 2/15/2023 2302199 1.96 ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01C Ground Water 6/8/2022 2206132 12.9 4.2 2.6 2.0 1.2 1.59 1.3 ND ND ND ND ND ND ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01C-220608GSC-DUP MW-22-01C Ground Water 6/8/2022 2206132 12.1 3.6 2.4 1.7 1.7 1.53 1.2 ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01C-220808GSC MW-22-01C Groundwater 8/8/2022 2208245 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01C-22111101W MW-22-01C Groundwater 11/11/2022 2211180 ND		ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND
MW-22-01C Groundwater 2/15/2023 2302199 ND	ND	ND	ND	ND	ND	ND ND	ND	ND	ND	ND	ND	ND

ND = Non Detect

Concentrations are reported as ppt

Empty cells in the above indicate that the results have not yet been reported

-- = Analyte not Sampled

Contaminant exceeds DWC Contaminant exceeds GSIC Contaminant exceeds both DWC and GSIC

Contaminant exceeds FAV

Shaded values indicate criteria exceedance

Emboldened values indicate analyte detection

DWC =Drinking Water Criteria (\*70ppt combined or individual PFOA + PFOS)

GSIC = Groundwater Surface Water Interface Criteria

FAV = Final Acute Value

PFBA = Perfluorobutanoic acid PFUnDA = Perfluoroundecanoic acid PFPeA = Perfluoropentanoic acid PFDoDA = Perfluorododecanoic acid PFPeS = Perfluoropentane sulfonic acic PFTrDA = Perfluorotridecanoic acid PFHxA = Perfluorohexanoic acid PFTeDA = Perfluorotetradecanoic acid PFHpA = Perfluoroheptanoic acid PFBS = Perfluorobutane sulfonic acid PFOA = Perfluorooctanoic acid PFHxS = Perfluorohexane sulfonic acid PFNA = Perfluorononanoic acid PFHpS = Perfluoroheptane sulfonic acid PFDA = Perfluorodecanoic acid PFNS = Pefluorononane sulfonic acid

PFOS = Perfluorooctane sulfonic acid PFDS = Perfluorodecane sulfonic acid 4:2 FTSA = 4:2 Fluorotelomer sulfonic acid 6:2 FTSA = 6:2 Fluorotelomer sulfonic acid 8:2 FTSA = 8:2 Fluorotelomer sulfonic acid PFOSA = Perfluorooctane sulfonamide EtFOSAA - N-Ethyl Perfluorooctane sulfonamindoacetic acid MeFOSAA = N-Methyl Perfluorooctane sulfonamide

Criteria (ppt)	PFOS	PFOA	PFNA	PFHxS	PFHxA	PFBS	HFPO-DA
DWC	16	8	6	51	400,000	420	370
GSIC	12	12,000	NA	NA	NA	NA	NA
FAV	1,600,000	15,000,000	NA	NA	NA	NA	NA