

MEMO

To: Gregory A. Rudloff, P.G., USEPA
From: Kevin Lund, PE
CC: Brendan Mullen, RACER Trust
David Favero, RACER Trust
Date: January 31, 2024

Project #: R2330031
Re: RACER Van Buren West Site – Fall 2023 Semi-Annual Groundwater Monitoring Results

Tables, Figures and Attachments Included in this Memo are:

- Table 1, Analytes for Semi-Annual Groundwater Monitoring
- Table 2, Monitoring Well Construction and Monitoring Data
- Table 3, Summary of Groundwater Sample Results (Non-Residential)
- Table 4, Summary of Groundwater Sample Results (Residential)
- Table 5, Total Depth to Bottom of Wells and Estimated Sediment Accumulation
- Figure 1, Site Location Map
- Figure 2, Monitoring Well Analytical Summary through November 2023 Semi-Annual Groundwater Monitoring (Exceedances Only)
- Attachment 1, Low Flow Groundwater Field Sampling Forms
- Attachment 2, Laboratory Analytical Data Reports

The Mannik & Smith Group, Inc. (MSG) has been performing groundwater sampling activities at the Van Buren West Property located northeast of the Ecorse Road / Michigan Avenue intersection in Van Buren Township, Wayne County, Michigan (Site) on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust. Figure 1, Site Location Map, depicts the location of the Site relative to nearby roads and major topographic features.

Previous phases of investigation and associated findings were documented in the following reports: Phase IA Site Investigation, dated February 19, 2013; *RACER Van Buren Landfill Site – Phase IB Site Investigation*, dated November 20, 2013; *Phase II Site Investigation*, dated March 12, 2014; *Phase III Site Investigation*, dated September 4, 2014; and *RACER Van Buren Landfill Site – Phase IV Site Investigation*, dated July 23, 2015. Previous Semi-Annual Groundwater Sampling reports for the Fall, 2015, Spring and Fall 2016, Spring and Fall 2017, Spring and Fall 2018, Spring and Fall 2019, Spring and Fall 2020, Spring and Fall 2021, Spring and Fall 2022, and Spring 2023 semi-annual groundwater sampling events were sent in 2016, 2017, 2018, 2019, 2020, 2021, 2022, and 2023 respectively (results for all other semi-annual sampling events were discussed in the corresponding investigation reports).

Since September 2012, MSG has conducted semi-annual groundwater monitoring in accordance with *USEPA Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* and the *Site Sampling Analysis Plan (SAP)*. Proposed modifications to the Semi-Annual Groundwater Sampling Plan were approved by the USEPA Project Manager, Christopher Black via email on November 10, 2015. Since October 2022, sampling has been completed pursuant to the groundwater monitoring plan in the USEPA-approved May 2022 Corrective Measures Implementation Plan, and the sampling is now also completed in accordance with the February 2023 Quality Assurance Project Plan (QAPP). The Fall sampling event includes fewer wells than the Spring event.

Per the access agreement with General Motors LLC (GM), the Fall 2023 Semi-Annual Groundwater Sampling activities completed on the General Motors Property are summarized in a separate memo.

FALL 2023 SEMI-ANNUAL GROUNDWATER MONITORING

The Fall 2023 Semi-Annual Groundwater Sampling event was completed between November 6, 2023, to November 9, 2023 and December 18, 2023, by Eric Robinson and Andrew Hildebrandt. *Table 1, Analytes for Semi-Annual Groundwater Monitoring* depicts the analyte and well depth to water gauging list utilized during sampling of the monitoring wells associated with the Site. Total well depths were also measured at every well to calculate the amount of sediment accumulation in each well.

Groundwater sampling field sheets can be found in *Attachment 1, Low Flow Groundwater Field Sampling Forms*. Groundwater sampling activities were conducted in general accordance with *USEPA Low-flow (Minimal Drawdown) Ground-Water Sampling Procedures* and the Site *SAP/QAPP*. Samples were analyzed for total and dissolved aluminum, iron, and manganese except for samples originating from MW-10 and MW-23, which were only analyzed for volatile organic compounds (VOCs).

GROUNDWATER ELEVATION

Depth to groundwater was measured in the approved set of existing monitoring wells located on the Van Buren West Site and associated adjacent properties. A total of 14 monitoring wells were gauged during this event to assess the groundwater elevation fluctuations at the Site. The fluctuations in the groundwater elevations are minor and appear to be relatively stable. A summary of the groundwater elevations from this sampling event and prior investigations is provided in *Table 2, Monitoring Well Construction and Monitoring Data*.

GROUNDWATER SAMPLE RESULTS

A summary of groundwater sample analytical results compared to Part 201 generic non-residential cleanup criteria is provided in *Table 3, Summary of Groundwater Sample Results (Non-Residential)*. Results compared to Part 201 generic residential cleanup criteria are summarized in *Table 4, Summary of Groundwater Sample Results (Residential)*. In addition, total well depths along with estimated sediment accumulation for each well monitored during this event are summarized in *Table 5, Total Depth to Bottom of Wells and Estimated Sediment Accumulation*. The laboratory reports can be found in *Attachment 2, Laboratory Analytical Data Reports*. The reported concentrations for the most recent five (5) monitoring events for the wells monitored during this event are depicted on *Figure 2, Monitoring Well Analytical Summary through Fall 2023 Semi-Annual Groundwater Monitoring*.

SUMMARY AND RECOMMENDATIONS

In summary, the groundwater sample analytical results from the Fall 2023 Semi-Annual Groundwater Monitoring Event were very similar to previous groundwater sampling results. There is a concern that the total metals results are being influenced by sediment build-up in the wells and in turn, by turbidity of the water as a result of the sampling activities. Therefore, it is believed that dissolved metal concentrations are more representative of groundwater quality compared to total metals. As such, the following discussion is based on dissolved metal concentrations.

The nine (9) monitoring wells are located offsite (MW-18, MW-19, MW-20, MW-21, MW-23, MW-25, MW-26, MW-29, and MW-30) and were compared to generic residential cleanup criteria. Four (4) offsite wells contained concentrations of dissolved iron above Residential Health-Based Water Value criteria (MW-18, MW-19, MW-20, and MW-29). Dissolved concentrations of aluminum and manganese were not detected above Residential Health-Based Water Value criteria in any of the offsite wells. MW-23 was only analyzed for VOCs; however, there were no detections above Part 201 criteria.

The four (4) monitoring wells located onsite were compared to generic non-residential cleanup criteria (MW-5, MW-7, MW-9, and MW-10). Two (2) of the four (4) wells onsite contained concentrations of dissolved iron above Non-Residential Health-Based Drinking Water Value criteria (MW-5 and MW-9). Dissolved concentrations of aluminum and manganese were not detected above Non-residential Health-Based Drinking Water Value criteria in any of the onsite wells. MW-10 was only analyzed for VOCs; however, there were no detections above Part 201 criteria.

Based on the dissolved concentrations of aluminum, iron, and manganese over time, and in conjunction with the length of time that the Site has been closed (approximately 48 years), the contaminants related to the Site appear to be stable.

Total well depths were compared to previous well depths and the amount of sediment accumulation in each well was calculated. The amount of sediment accumulation was calculated for each well by comparing the total well depths to the well depths from previous testing. As a result, it was determined MW-25 accumulated over 1.0 foot of sediment (4.82). No other wells had sediment accumulation of greater than one foot. All subsequent monitoring events will include measurement and recording of sediment volume within each monitoring well and purging of water to attempt to lower turbidity to less than 10 NTU before a water sample is collected. Redevelopment of monitoring well MW-25 will be completed before the Spring 2024 sampling event.

TABLES



Table 1
Proposed Analytes for Semi-Annual Groundwater Monitoring
Van Buren West Site
Van Buren Township, Wayne County, Michigan

Monitoring Well	Location	Purpose of MW ¹	Sampling Event 1 (Yearly- Spring)			Sampling Event 2 (Yearly- Autumn)		
			VOCs	Total Metals ²	Dissolved Metals ²	VOCs	Total Metals ²	Dissolved Metals ²
USEPA Testing Method			8260	6020A/7470		8260	6020A/7470	
MW-1R ³	North Perimeter of Site	Hydro Assessment, Metals		✓	✓			
MW-3	East Perimeter of Site	Hydro Assessment, Metals		✓	✓			
MW-4	On-Site	Hydro Assessment, Metals		✓	✓			
MW-5	North West Perimeter of Site	Hydro Assessment, Metals		✓	✓		✓	✓
MW-6	On-Site	Hydro Assessment, Metals		✓	✓			
MW-7	South West Perimeter of Site	Hydro Assessment, Metals		✓	✓		✓	✓
MW-8	Ecorse Rd (Westbound) ROW	Hydro Assessment, Metals		✓	✓			
MW-9	West Perimeter of Site	Hydro Assessment, Metals		✓	✓		✓	✓
MW-10	North Perimeter of Site	Hydro Assessment, VOCs, Metals	✓	✓	✓	✓		
MW-11	North East Perimeter of Site	Hydro Assessment, Metals		✓	✓			
MW-12	On-Site	Hydro Assessment, Metals		✓	✓			
MW-13	On-Site	Hydro Assessment						
MW-14	On-Site	Hydro Assessment						
MW-15	On-Site	Hydro Assessment						
MW-16	On-Site	Hydro Assessment						
MW-17	South East Perimeter of Site	Hydro Assessment, Metals		✓	✓			
MW-18	Ecorse Rd (Eastbound) ROW	Hydro Assessment, Metals		✓	✓		✓	✓
MW-19	Ecorse Rd (Eastbound) ROW	Hydro Assessment, Metals		✓	✓		✓	✓
MW-20	Ecorse Rd (Eastbound) ROW	Hydro Assessment, Metals		✓	✓		✓	✓
MW-21	North of Site (Subaru Property)	Hydro Assessment, Metals		✓	✓		✓	✓
MW-22	North of Site (Subaru Property)	Hydro Assessment, Metals		✓	✓			
MW-23	North of Site (Subaru Property)	Hydro Assessment, VOCs, Metals	✓	✓	✓	✓		
MW-24	North of Site (Subaru Property)							
MW-25	North of Site (Subaru Property)	Hydro Assessment, Metals		✓	✓		✓	✓
MW-26	North of Site (Subaru Property)	Hydro Assessment, Metals		✓	✓		✓	✓
MW-27	East Perimeter of Site	Hydro Assessment, Metals		✓	✓			
MW-28	On-Site	Hydro Assessment						
MW-29	Michigan Ave (Westbound) ROW	Hydro Assessment, Metals		✓	✓		✓	✓
MW-30	Michigan Ave (Westbound) ROW	Hydro Assessment, Metals		✓	✓		✓	✓
MW-31	GM Property	Hydro Assessment, Metals		✓	✓			
MW-32	GM Property	Hydro Assessment, Metals		✓	✓		✓	✓
MW-33	GM Property	Hydro Assessment, Metals		✓	✓			
MW-34	Rawsonville Rd/Michigan Ave	Hydro Assessment, Metals		✓	✓			
Total Number of Samples			2	28	28	2	12	12

Notes:

¹ = Constituents historically and/or currently detected in monitoring well exceeding applicable Michigan Part 201 Generic Cleanup Criteria

² = Al, Fe, Mn (Method 6020A)

³ = MW was redeveloped

Gray shading indicates MW was abandoned

Green shading indicates MWs included in monitoring events; check mark indicates analytical parameter

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-5	275074.96	13346833.88	719.62	719.80	10.00	-0.18	30.02	699.60	4/29/2013	9.81	709.81
									8/7/2013	11.08	708.54
									11/12/2013	12.02	707.60
									3/24/2014	9.74	709.88
									5/8/2014	9.55	710.07
									11/24/2014	11.42	708.20
									3/16/2015	11.09	708.53
									11/16/2015	12.02	707.60
									4/18/2016	11.33	708.29
									10/31/2016	11.66	707.96
									4/25/2017	8.91	710.71
									10/23/2017	11.90	707.72
									4/26/2018	8.89	710.73
									10/23/2018	11.04	708.58
									5/1/2019	6.80	712.82
									10/28/2019	10.55	709.07
									5/22/2020	7.94	711.68
11/3/2020	11.32	708.30									
4/16/2021	10.15	709.47									
4/26/2022	8.43	711.19									
10/27/2022	11.95	707.67									
4/18/2023	10.10	709.52									
11/7/2023	11.30	708.32									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-7	274,354.61	13,346,295.14	716.85	717.19	5	-0.34	8.81	713.04	4/29/2013	4.21	712.64
									8/7/2013	5.69	711.16
									11/13/2013	6.80	710.05
									3/24/2014	4.36	712.49
									5/8/2014	3.38	713.47
									11/24/2014	7.00	709.85
									3/16/2015	4.25	712.60
									11/16/2015	7.32	709.53
									4/18/2016	4.33	712.52
									10/31/2016	7.09	709.76
									4/25/2017	4.02	712.83
									10/23/2017	7.37	709.48
									4/23/2018	3.29	713.56
									10/22/2018	5.50	711.35
									4/29/2019	2.40	714.45
									10/28/2019	5.10	711.75
									5/19/2020	1.95	714.90
11/2/2020	6.25	710.60									
4/14/2021	4.50	712.35									
4/26/2022	2.95	713.90									
10/27/2022	7.50	709.35									
4/18/2023	4.25	712.60									
11/7/2023	6.30	710.55									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-9	274824.06	13346622.78	721.17	721.36	5.00	-0.19	14.81	711.43	4/29/2013	8.60	712.57
									8/7/2013	9.15	712.02
									11/14/2013	10.35	710.82
									3/24/2014	8.96	712.21
									5/8/2014	7.36	713.81
									11/24/2014	10.05	711.12
									3/16/2015	10.14	711.03
									11/16/2015	10.90	710.27
									4/18/2016	10.21	710.96
									10/31/2016	11.07	710.10
									4/25/2017	4.94	716.23
									10/23/2017	10.97	710.20
									4/26/2018	6.90	714.27
									10/23/2018	9.60	711.57
									5/1/2019	5.33	715.84
									10/28/2019	9.20	711.97
									5/22/2020	5.87	715.30
11/3/2020	9.95	711.22									
4/16/2021	9.50	711.67									
4/26/2022	7.09	714.08									
11/1/2022	11.00	710.17									
4/18/2023	8.98	712.193									
11/7/2023	10.15	711.023									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-10	275236.53	13347440.42	727.87	724.69	5.00	3.19	23.45	709.42	4/29/2013	14.86	713.01
									8/7/2013	15.60	712.27
									11/13/2013	16.68	711.19
									3/24/2014	15.28	712.59
									5/8/2014	13.95	713.92
									11/24/2014	16.68	711.19
									3/16/2015	16.51	711.36
									11/16/2015	17.54	710.33
									4/18/2016	15.24	712.63
									10/31/2016	17.34	710.53
									4/25/2017	13.50	714.37
									10/23/2017	17.25	710.62
									4/24/2018	13.47	714.40
									10/24/2018	15.91	711.96
									5/1/2019	11.60	716.27
									10/28/2019	15.50	712.37
									5/27/2020	12.29	715.58
11/2/2020	16.43	711.44									
4/15/2021	15.61	712.26									
4/26/2022	13.51	714.36									
10/27/2022	17.58	710.29									
4/19/2023	15.35	712.52									
11/8/2023	16.60	711.27									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-18	273936.45	13346254.36	714.87	715.21	10.00	-0.34	16.66	712.87	5/8/2014	1.15	713.72
									11/24/2014	2.66	712.21
									3/16/2015	2.31	712.56
									11/16/2015	5.02	709.85
									4/18/2016	1.11	713.76
									10/31/2016	4.14	710.73
									4/25/2017	1.75	713.12
									10/23/2017	5.80	709.07
									4/25/2018	1.91	712.96
									10/26/2018	3.81	711.06
									4/30/2019	0.60	714.27
									10/28/2019	1.99	712.88
									5/22/2020	1.46	713.41
									11/2/2020	2.75	712.12
									4/13/2021	1.06	713.81
4/26/2022	0.86	714.01									
10/27/2022	6.00	708.87									
4/17/2023	2.61	712.26									
11/6/2023	3.16	711.709									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-19	273883.36	13346717.38	715.36	715.72	10.00	-0.37	14.63	713.36	5/8/2014	2.12	713.24
									11/24/2014	3.50	711.86
									3/16/2015	2.19	713.17
									11/16/2015	5.51	709.85
									4/18/2016	2.54	712.82
									10/31/2016	4.79	710.57
									4/25/2017	2.23	713.13
									10/23/2017	6.10	709.26
									4/25/2018	2.23	713.13
									10/26/2018	3.21	712.15
									4/30/2019	1.70	713.66
									10/28/2019	2.39	712.97
									5/22/2020	1.92	713.44
									11/2/2020	4.24	711.12
									4/13/2021	2.32	713.04
4/26/2022	2.10	713.26									
10/27/2022	2.14	713.22									
4/17/2023	2.48	712.88									
11/6/2023	3.58	711.78									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-20	273489.18	13347561.66	716.51	717.04	10.00	-0.53	15.47	713.51	5/8/2014	4.92	711.59
									11/24/2014	6.00	710.51
									3/16/2015	5.54	710.97
									11/16/2015	7.42	709.09
									4/18/2016	5.36	711.15
									10/31/2016	6.69	709.82
									4/25/2017	4.80	711.71
									10/23/2017	7.70	708.81
									4/25/2018	5.08	711.43
									10/26/2018	6.18	710.33
									4/30/2019	4.60	711.91
									10/28/2019	5.42	711.09
									5/19/2020	4.23	712.28
									11/2/2020	6.60	709.91
									4/13/2021	5.20	711.31
4/26/2022	4.80	711.71									
10/26/2022	6.30	710.21									
4/17/2023	5.80	710.71									
11/6/2023	6.25	710.26									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-21	275616.09	13348561.80	717.59	714.73	5.00	2.86	15.36	709.59	5/8/2014	5.98	711.61
									11/24/2014	12.35	705.24
									3/16/2015	7.81	709.78
									11/16/2015	9.77	707.82
									4/18/2016	6.44	711.15
									10/31/2016	8.94	708.65
									4/25/2017	5.70	711.89
									10/23/2017	10.00	707.59
									4/24/2018	5.60	711.99
									10/28/2019	8.56	709.03
									5/20/2020	5.53	712.06
									11/3/2020	8.88	708.71
									4/14/2021	7.56	710.03
4/26/2022	6.06	711.53									
10/26/2022	10.40	707.19									
4/19/2023	6.78	710.81									
11/8/2023	8.50	709.09									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-23	275364.33	13347366.98	721.07	717.83	5.00	3.24	15.74	713.07	5/8/2014	7.39	713.68
									11/24/2014	10.02	711.05
									3/16/2015	7.11	713.96
									11/16/2015	11.04	710.03
									4/18/2016	8.52	712.55
									10/31/2016	10.71	710.36
									4/25/2017	7.00	714.07
									10/23/2017	10.75	710.32
									4/24/2018	6.83	714.24
									10/28/2019	8.85	712.22
									5/20/2020	5.65	715.42
									11/3/2020	9.95	711.12
									4/14/2021	11.04	710.03
									4/26/2022	6.86	714.21
10/28/2022	10.90	710.17									
4/20/2023	8.71	712.36									
11/8/2023	10.10	710.97									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-25	276091.12	13347801.85	717.19	714.16	5.00	3.02	16.52	709.19	5/8/2014	6.55	710.64
									11/24/2014	8.68	708.51
									3/16/2015	7.20	709.99
									11/16/2015	9.43	707.76
									4/18/2016	6.80	710.39
									10/31/2016	8.32	708.87
									4/25/2017	6.70	710.49
									10/23/2017	9.61	707.58
									4/24/2018	6.56	710.63
									11/1/2019	6.78	710.41
									5/22/2020	6.50	710.69
									11/3/2020	8.40	708.79
									4/13/2021	7.18	710.01
4/26/2022	6.57	710.62									
4/20/2023	3.45	713.74									
12/18/2023	3.75	713.44									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-26	275927.29	13348221.78	719.83	716.63	5.00	3.19	17.19	711.83	5/8/2014	6.73	713.10
									11/24/2014	15.79	704.04
									3/16/2015	9.27	710.56
									11/16/2015	11.10	708.73
									4/18/2016	7.31	712.52
									10/31/2016	9.67	710.16
									4/25/2017	6.60	713.23
									10/23/2017	11.30	708.53
									4/24/2018	6.52	713.31
									11/1/2019	8.63	711.20
									5/20/2020	6.15	713.68
									11/3/2020	9.79	710.04
									4/14/2021	8.71	711.12
									4/26/2022	6.80	713.03
10/28/2022	11.30	708.53									
4/20/2023	8.10	711.73									
11/8/2023	9.60	710.23									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-29	275,968.62	13,347,359.81	710.45	710.68	5.00	-0.23	12.22	703.50	3/16/2015	5.13	705.32
									11/16/2015	5.24	705.21
									4/18/2016	4.99	705.46
									10/31/2016	4.21	706.24
									4/25/2017	4.90	705.55
									10/23/2017	5.60	704.85
									4/25/2018	4.32	706.13
									10/23/2018	4.79	705.66
									4/30/2019	4.10	706.35
									10/31/2019	4.73	705.72
									5/19/2020	4.43	706.02
									11/2/2020	4.75	705.70
									4/13/2021	4.56	705.89
									4/26/2022	4.15	706.30
10/28/2022	5.25	705.20									
4/18/2023	4.80	705.65									
11/7/2023	4.85	705.60									

Table 2
Monitoring Well Construction and Monitoring Data

Table 2
Monitoring Well Construction and
Monitoring Data

Van Buren West Site
Van Buren Township, Wayne County, Michigan

Well ID	Northing (US State Plane - NAD83 ¹)	Easting (US State Plane - NAD83)	Top of Casing Elevation (feet above MSL ²)	Ground Surface Elevation (feet above MSL)	Screen Length (feet)	Stickup (feet)	Total Depth of Well from TOC ³ (feet)	Top of Screen Elevation (feet above MSL)	Date	Depth to Water (feet TOC)	Groundwater Elevation (feet above MSL)
MW-30	275813.90	13347231.54	708.54	708.68	5.00	-0.14	12.36	701.20	3/16/2015	4.56	703.98
									11/16/2015	4.31	704.23
									4/18/2016	5.01	703.53
									10/31/2016	4.73	703.81
									4/24/2017	3.67	704.87
									10/23/2017	4.60	703.94
									4/25/2018	3.89	704.65
									10/23/2018	3.90	704.64
									4/30/2019	3.40	705.14
									10/31/2019	4.12	704.42
									5/19/2020	3.65	704.89
									11/2/2020	3.85	704.69
									4/13/2021	3.87	704.67
									4/26/2022	3.28	705.26
10/31/2022	4.55	703.99									
4/18/2023	3.70	704.84									
11/7/2023	4.25	704.29									

Notes:

1. NAD83 = North American Datum 1983.
2. MSL = Mean Sea Level.
3. TOC = Feet from Top of Casing.

Table 3
Summary of Groundwater Sample Results (Non-Residential)

Van Buren West Site
 Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Non-residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Non-residential Health-Based Drinking Water Value (E)			4,100	5,600	2,500
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Draft Non-Residential Groundwater Screening Levels (GW _{IV} SL _(c,d))			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{VI,VI}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MONITORING WELL ID	SAMPLE ID	SAMPLE DATE			
MW-5 ^A	W-R2330027-041621-KRM-034	4/16/2021	150	7,000	100
MW-5	W-R2330027-041621-KRM-034	4/16/2021	<8.0	6,700	96
MW-5 ^A	W-R2330027-042622-ADH-011	4/26/2022	630	8,300	100
MW-5	W-R2330027-042622-ADH-011	4/26/2022	76	5,700	79
MW-5 ^A	W-R2330028-102722-ADH-006	10/27/2022	53	6,500	70
MW-5	W-R2330028-102722-ADH-006	10/27/2022	8.5	5,800	68
MW-5 ^A	W-R2330031-041823-ERR-004	4/18/2023	52	7,000	70
MW-5	W-R2330031-041823-ERR-004	4/18/2023	<10	6,700	69
MW-5 ^A	W-R2330031-110723-ADH-006	11/7/2023	31	6,500	62
MW-5	W-R2330031-110723-ADH-006	11/7/2023	<10	6,700	63
MW-7 ^A	W-R2330027-041321-KRM-018	4/14/2021	10	8,900	660
MW-7	W-R2330027-041321-KRM-018	4/14/2021	<8.0	8,800	690
MW-7 ^A	W-R2330027-042622-ADH-013	4/26/2022	27	2,000	880
MW-7	W-R2330027-042622-ADH-013	4/26/2022	8.1	1,900	880
MW-7 ^A	W-R2330028-102722-ADH-003	10/27/2022	31	7,000	520
MW-7	W-R2330028-102722-ADH-003	10/27/2022	6.7	4,000	490
MW-7 ^A (DUP)	W-R2330028-11/1/22-ADH-014	11/1/2022	18	7,000	540
MW-7 (DUP)	W-R2330028-11/1/22-ADH-014	11/1/2022	8.9	6,600	540
MW-7 ^A	W-R2330031-041823-ERR-005	4/18/2023	17	5,300	380
MW-7	W-R2330031-041823-ERR-005	4/18/2023	<10	5,400	390
MW-7 ^A	W-R2330031-110723-ADH-008	11/7/2023	64	3,000	370
MW-7	W-R2330031-110723-ADH-008	11/7/2023	11	210	360

Table 3
Summary of Groundwater Sample Results (Non-Residential)

Van Buren West Site
 Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Non-residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Non-residential Health-Based Drinking Water Value (E)			4,100	5,600	2,500
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Draft Non-Residential Groundwater Screening Levels (GW _{IV} /SL _(c,d))			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{VI,m}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MW-9 ^A	W-R2330027-041621-SSR-035	4/16/2021	180	32,000	360
MW-9	W-R2330027-041621-SSR-035	4/16/2021	<8.0	28,000	330
MW-9 ^A	W-R2330027-042622-SSR-012	4/26/2022	910	65,000	590
MW-9	W-R2330027-042622-SSR-012	4/26/2022	<10	26,000	240
MW-9 ^A	W-R2330028-11122-ADH-013	11/1/2022	11	24,000	230
MW-9	W-R2330028-11122-ADH-013	11/1/2022	7.30	24,000	230
MW-9 ^A	W-R2330031-041823-ERR-006	4/18/2023	6.8 J	17,000	260
MW-9	W-R2330031-041823-ERR-006	4/18/2023	8.7 J	18,000	290
MW-9 ^A	W-R2330031-110723-ADH-007	11/7/2023	17	29,000	240
MW-9	W-R2330031-110723-ADH-007	11/7/2023	6.2 J	25,000	210
MW-10 ^A	W-R2330027-041521-SSR-027	4/15/2021	170	22,000	600
MW-10	W-R2330027-041521-SSR-027	4/15/2021	10	21,000	560
MW-10 ^A	W-R2330027-042622-ADP-010	4/26/2022	1,200	31,000	620
MW-10	W-R2330027-042622-ADP-010	4/26/2022	13	18,000	530
MW-10 ^A	W-R2330028-102722-ADH-007	10/27/2022	NS	NS	NS
MW-10	W-R2330028-102722-ADH-007	10/27/2022	NS	NS	NS
MW-10 ^A	W-R2330031-041923-ERR-013	4/19/2023	88	19,000	500
MW-10	W-R2330031-041923-ERR-013	4/19/2023	33	20,000	510
MW-10 ^A (DUP)	W-R2330031-042123-ERR-028	4/21/2023	450	19,000	550
MW-10 (DUP)	W-R2330031-042123-ERR-028	4/21/2023	8.2	21,000	670
MW-10 ^A	W-R2330031-110823-ERR-009	11/8/2023	NS	NS	NS
MW-10	W-R2330031-110823-ERR-009	11/8/2023	NS	NS	NS
MW-10 ^A (DUP)	DUP-01	11/8/2023	NS	NS	NS
MW-10 (DUP)	DUP-01	11/8/2023	NS	NS	NS

**Table 3
Summary of Groundwater Sample Results (Non-Residential)**

Van Buren West Site
Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Non-residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Non-residential Health-Based Drinking Water Value (E)			4,100	5,600	2,500
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Draft Non-Residential Groundwater Screening Levels (GW _{IV} SL _(c,d))			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{VI,VI'}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MW-18 ^A	W-R2330027-041321-SSR-009	4/13/2021	260	1,900	300
MW-18	W-R2330027-041321-SSR-009	4/13/2021	<8.0	1,100	290
MW-18 ^A	W-R2330027-042622-ADP-014	4/26/2022	1,500	9,200	550
MW-18	W-R2330027-042622-ADP-014	4/26/2022	22	370	220
MW-18 ^A	W-R2330028-102722-ADH-004	10/27/2022	410	6,300	290
MW-18	W-R2330028-102722-ADH-004	10/27/2022	13	4,100	290
MW-18 ^A	W-R23300310-41723-ERR-001	4/17/2023	220	1,200	290
MW-18	W-R23300310-41723-ERR-001	4/17/2023	11	580	310
MW-18 ^A	W-R2330031-110623-ERR-001	11/6/2023	69	1,100	240
MW-18	W-R2330031-110623-ERR-001	11/6/2023	<10	130	240
MW-18 ^A	DUP-02	11/6/2023	2,800	7,500	400
MW-18	DUP-02	11/6/2023	36	2,600	250
MW-19 ^A	W-R2330027-041321-SSR-011	4/13/2021	1,200	8,300	490
MW-19	W-R2330027-041321-SSR-011	4/13/2021	14	3,500	520
MW-19 ^A	W-R2330027-042622-SSR-030	4/26/2022	1,900	8,900	620
MW-19	W-R2330027-042622-SSR-030	4/26/2022	14	4,700	580
MW-19 ^A	W-R233028-102722-ADH-005	10/27/2022	270	3,800	450
MW-19	W-R233028-102722-ADH-005	10/27/2022	45	3,200	460
MW-19 ^A	W-R233031-041723-ERR-002	4/17/2023	490	2,200	460
MW-19	W-R233031-041723-ERR-002	4/17/2023	46	1,500	470
MW-19 ^A	W-R2330031-110623-ERR-002	11/6/2023	180	2,900	440
MW-19	W-R2330031-110623-ERR-002	11/6/2023	<10	2,600	400

**Table 3
Summary of Groundwater Sample Results (Non-Residential)**

Van Buren West Site
Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Non-residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Non-residential Health-Based Drinking Water Value (E)			4,100	5,600	2,500
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Draft Non-Residential Groundwater Screening Levels (GW _{iv} SL _(c,d))			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{vi,m}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MW-20 ^A	W-R2330027-041321-SSR-013	4/13/2021	3,000	14,000	400
MW-20	W-R2330027-041321-SSR-013	4/13/2021	36	6,700	240
MW-20 ^A	W-R2330027-042622-SSR-029	4/26/2022	2,600	12,000	410
MW-20	W-R2330027-042622-SSR-029	4/26/2022	150	4,200	180
MW-20 ^A	W-R2330028-10/26/22-ADH-001	10/26/2022	8,700	35,000	1,100
MW-20	W-R2330028-10/26/22-ADH-001	10/26/2022	43	91	150
MW-20 ^A	W-R2330031-041723-ERR-003	4/17/2023	270	5,600	200
MW-20	W-R2330031-041723-ERR-003	4/17/2023	11	5,000	180
MW-20 ^A	W-R2330031-110623-ERR-003	11/6/2023	220	4,300	180
MW-20	W-R2330031-110623-ERR-003	11/6/2023	11	3,600	160
MW-21 ^A	W-R2330027-041421-KRM-024	4/14/2021	84	370	210
MW-21	W-R2330027-041421-KRM-024	4/14/2021	<8.0	320	200
MW-21 ^A (DUP)	DUP 1	4/27/2022	16,000	19,000	1,200
MW-21 (DUP)	DUP 1	4/27/2022	130	83	60
MW-21 ^A	W-R2330027-042722-SSR-024	4/27/2022	18,000	21,000	1,000
MW-21	W-R2330027-042722-SSR-024	4/27/2022	46	82	53
MW-21 ^A	W-R2330028-102622-ADH-002	10/26/2022	850	4,900	610
MW-21	W-R2330028-102622-ADH-002	10/26/2022	32	250	60
MW-21 ^A	W-R2330031-041923-ERR-011	4/19/2023	470	3,200	520
MW-21	W-R2330031-041923-ERR-011	4/19/2023	30	240	110
MW-21 ^A	W-R2330031-110823-ERR-010	11/8/2023	55	440	190
MW-21	W-R2330031-110823-ERR-010	11/8/2023	<10	200	150

Table 3
Summary of Groundwater Sample Results (Non-Residential)

Van Buren West Site
 Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Non-residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Non-residential Health-Based Drinking Water Value (E)			4,100	5,600	2,500
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Draft Non-Residential Groundwater Screening Levels (GW _{iv} SL _(c,d))			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{vi,m}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MW-23 ^A	W-R2330027-041421-SSR-021	4/14/2021	410	14,000	110
MW-23	W-R2330027-041421-SSR-021	4/14/2021	<8.0	10,000	100
MW-23 ^A	W-R2330027-042722-SSR-021	4/27/2022	78	9,700	74
MW-23	W-R2330027-042722-SSR-021	4/27/2022	<10	8,000	74
MW-23 ^A	W-R2330028-1028/22-ADH-010	10/28/2022	NS	NS	NS
MW-23	W-R2330028-1028/22-ADH-010	10/28/2022	NS	NS	NS
MW-23 ^A	W-R2330031-042023-ERR-018	4/20/2023	130	13,000	95
MW-23	W-R2330031-042023-ERR-018	4/20/2023	13	13,000	88
MW-23 ^A	W-R2330031-110923-ERR-012	11/9/2023	NS	NS	NS
MW-23	W-R2330031-110923-ERR-012	11/9/2023	NS	NS	NS
MW-25 ^A	W-R2330026-052220-SSR-035	5/22/2020	1,500	3,500	2,600
MW-25	W-R2330026-052220-SSR-035	5/22/2020	<8.0	<50	170
MW-25 ^A	W-R2330026-110420-SSR-011	11/4/2020	220	700	990
MW-25	W-R2330026-110420-SSR-011	11/4/2020	<8.0	<50	580
MW-25 ^A	W-R2330027-041421-KRM-020	4/14/2021	120	410	580
MW-25	W-R2330027-041421-KRM-020	4/14/2021	<8.0	<50	380
MW-25 ^A	W-R2330027-042722-SRS-020	4/27/2022	61	1,200	570
MW-25	W-R2330027-042722-SRS-020	4/27/2022	<10	130	280
MW-25 ^A	W-R2330031-042023-ERR-017	4/20/2023	3,200	6,900	4,200
MW-25	W-R2330031-042023-ERR-017	4/20/2023	11	<80	200
MW-25 ^A	W-R2330031-121823-ERR-014	12/18/2023	420	890	440
MW-25	W-R2330031-121823-ERR-014	12/18/2023	<10	470	390

**Table 3
Summary of Groundwater Sample Results (Non-Residential)**

Van Buren West Site
Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Non-residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Non-residential Health-Based Drinking Water Value (E)			4,100	5,600	2,500
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Draft Non-Residential Groundwater Screening Levels (GW _{NSL(c,d)})			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{VI(m)}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MW-26 ^A	W-R2330027-041421-KRM-022	4/14/2021	85	170	6.6
MW-26	W-R2330027-041421-KRM-022	4/14/2021	<8.0	<50	<2.5
MW-26 ^A	W-R2330027-042722-SSR-022	4/27/2022	300	370	8.7
MW-26	W-R2330027-042722-SSR-022	4/27/2022	9.3	<80	<5
MW-26 ^A	W-R2330028-102822-ADH-009	10/28/2022	120	340	NS
MW-26	W-R2330028-102822-ADH-009	10/28/2022	16	<1.0	NS
MW-26 ^A	W-R2330031-042023-ERR-019	4/20/2023	15	61 J	<5.0
MW-26	W-R2330031-042023-ERR-019	4/20/2023	<10	<80	<5.0
MW-26 ^A	W-R230031-110823-ERR-011	11/8/2023	65	410	140
MW-26	W-R230031-110823-ERR-011	11/8/2023	<10	<80	45
MW-29 ^A	W-R2330027-041321-SSR-005	4/13/2021	19	2,400	160
MW-29	W-R2330027-041321-SSR-005	4/13/2021	<8.0	1,800	160
MW-29 ^A	W-R2330027-042822-SSR-027	4/28/2022	1,700	34,000	180
MW-29	W-R2330027-042822-SSR-027	4/28/2022	9.7	1,200	57
MW-29 ^A	W-R2330028-11/1/22-ADH-011	11/1/2022	18	3,000	170
MW-29	W-R2330028-11/1/22-ADH-011	11/1/2022	5.8	2,600	190
MW-29 ^A	W-R2330031-041823-ERR-008	4/18/2023	11	4,500	140
MW-29	W-R2330031-041823-ERR-008	4/18/2023	<10	4,300	140
MW-29 ^A	W-R2330031-110723-ERR-004	11/7/2023	<10	3,100	85
MW-29	W-R2330031-110723-ERR-004	11/7/2023	<10	2,600	89

Table 3
Summary of Groundwater Sample Results (Non-Residential)

Van Buren West Site
 Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Non-residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Non-residential Health-Based Drinking Water Value (E)			4,100	5,600	2,500
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Draft Non-Residential Groundwater Screening Levels (GW _{IV} SL _(c,d))			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{VIT}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MW-30 ^A	W-R2330027-041321-SSR-007	4/13/2021	130	180	79
MW-30	W-R2330027-041321-SSR-007	4/13/2021	<8.0	<50	65
MW-30 ^A	W-R2330027-042822-SSR-028	4/28/2022	1,400	3,600	250
MW-30	W-R2330027-042822-SSR-028	4/28/2022	8.8	67	29
MW-30 ^A	W-R2330028-11122-ADH-012	11/1/2022	13	210	41
MW-30	W-R2330028-11122-ADH-012	11/1/2022	20	230	50
MW-30 ^A	W-R2330031-041823-ERR-009	4/18/2023	360	670	100
MW-30	W-R2330031-041823-ERR-009	4/18/2023	17	300	65
MW-30 ^A	W-R2330031-110723-ERR-005	11/7/2023	55	630	26
MW-30	W-R2330031-110723-ERR-005	11/7/2023	<10	70 J	17

E = Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of NREPA.

G = Calculated value based on a hardness of 150 mg/L.

H = Analyzed outside of holding time.

J = Analyte detected below quantitation limit.

NS = Not Sampled or Not Analyzed.

Exceeds Generic Drinking Water Cleanup Criteria (II)

Exceeds Generic Drinking Water Cleanup Criteria (II) and the Generic Health-Based Drinking Water Value (E)

Exceeds Generic Ground Water Surface Water Interface Criteria (III)

Exceeds Two or More DW (II), GSI (III) and/or Generic Health-Based Drinking Water Value (E)

Exceeds GSI Final Acute Value (FAV), also exceeds others

**Table 4
Summary of Groundwater Sample Results (Residential)**

Van Buren West Site
Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Residential Health-Based Drinking Water Value (E)			300	2,000	860
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{Vires}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MONITORING WELL ID	SAMPLE ID	SAMPLE DATE			
MW-5 ^A	W-R2330027-041621-KRM-034	4/16/2021	150	7,000	100
MW-5	W-R2330027-041621-KRM-034	4/16/2021	<8.0	6,700	96
MW-5 ^A	W-R2330027-042622-ADH-011	4/26/2022	630	8,300	100
MW-5	W-R2330027-042622-ADH-011	4/26/2022	76	5,700	79
MW-5 ^A	W-R2330028-102722-ADH-006	10/27/2022	53	6,500	70
MW-5	W-R2330028-102722-ADH-006	10/27/2022	8.5	5,800	68
MW-5 ^A	W-R2330031-041823-ERR-004	4/18/2023	52	7,000	70
MW-5	W-R2330031-041823-ERR-004	4/18/2023	<10.0	6,700	69
MW-5 ^A	W-R2330031-110723-ADH-006	11/7/2023	31	6,500	62
MW-5	W-R2330031-110723-ADH-006	11/7/2023	<10.0	6,700	63
MW-7 ^A	W-R2330027-041321-KRM-018	4/14/2021	10	8,900	660
MW-7	W-R2330027-041321-KRM-018	4/14/2021	<8.0	8,800	690
MW-7 ^A	W-R2330027-042622-ADH-013	4/26/2022	27	2,000	880
MW-7	W-R2330027-042622-ADH-013	4/26/2022	8.10	1,900	880
MW-7 ^A	W-R2330028-102722-ADH-003	10/27/2022	31	7,000	520
MW-7	W-R2330028-102722-ADH-003	10/27/2022	6.7	4,000	490
MW-7 ^A (DUP)	W-R2330028-11/1/22-ADH-014	11/1/2022	18	7,000	540
MW-7 (DUP)	W-R2330028-11/1/22-ADH-014	11/1/2022	8.9	6,600	540
MW-7 ^A	W-R2330031-041823-ERR-005	4/18/2023	17	5,300	380
MW-7	W-R2330031-041823-ERR-005	4/18/2023	<10	5,400	390
MW-7 ^A	W-R2330031-110723-ADH-008	11/7/2023	64	3,000	370
MW-7	W-R2330031-110723-ADH-008	11/7/2023	11	210	360

**Table 4
Summary of Groundwater Sample Results (Residential)**

Van Buren West Site
Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Residential Health-Based Drinking Water Value (E)			300	2,000	860
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{Vires}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MONITORING WELL ID	SAMPLE ID	SAMPLE DATE			
MW-9 ^A	W-R2330027-041621-SSR-035	4/16/2021	180	32,000	360
MW-9	W-R2330027-041621-SSR-035	4/16/2021	<8.0	28,000	330
MW-9 ^A	W-R2330027-042622-SSR-012	4/26/2022	910	65,000	590
MW-9	W-R2330027-042622-SSR-012	4/26/2022	<10	26,000	240
MW-9 ^A	W-R2330028-11122-ADH-013	11/1/2022	11	24,000	230
MW-9	W-R2330028-11122-ADH-013	11/1/2022	7.30	24,000	230
MW-9 ^A	W-R2330031-041823-ERR-006	4/18/2023	6.8 J	17,000	260
MW-9	W-R2330031-041823-ERR-006	4/18/2023	8.7 J	18,000	290
MW-9 ^A	W-R2330031-110723-ADH-007	11/7/2023	17	29,000	240
MW-9	W-R2330031-110723-ADH-007	11/7/2023	6.2 J	25,000	210
MW-10 ^A	W-R2330027-041521-SSR-027	4/15/2021	170	22,000	600
MW-10	W-R2330027-041521-SSR-027	4/15/2021	10	21,000	560
MW-10 ^A	W-R2330027-042622-ADP-010	4/26/2022	1,200	31,000	620
MW-10	W-R2330027-042622-ADP-010	4/26/2022	13	18,000	530
MW-10 ^A	W-R2330028-102722-ADH-007	10/27/2022	NS	NS	NS
MW-10	W-R2330028-102722-ADH-007	10/27/2022	NS	NS	NS
MW-10 ^A	W-R2330031-041923-ERR-013	4/19/2023	88	19,000	500
MW-10	W-R2330031-041923-ERR-013	4/19/2023	33	20,000	510
MW-10 ^A (DUP)	W-R2330031-042123-ERR-028	4/21/2023	450	19,000	550
MW-10 (DUP)	W-R2330031-042123-ERR-028	4/21/2023	8.2	21,000	670
MW-10 ^A	W-R2330031-110823-ERR-009	11/8/2023	NS	NS	NS
MW-10	W-R2330031-110823-ERR-009	11/8/2023	NS	NS	NS
MW-10 ^A (DUP)	DUP-01	11/8/2023	NS	NS	NS
MW-10 (DUP)	DUP-01	11/8/2023	NS	NS	NS

**Table 4
Summary of Groundwater Sample Results (Residential)**

Van Buren West Site
Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Residential Health-Based Drinking Water Value (E)			300	2,000	860
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{V.I.ES}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MONITORING WELL ID	SAMPLE ID	SAMPLE DATE			
MW-18 ^A	W-R2330027-041321-SSR-009	4/13/2021	260	1,900	300
MW-18	W-R2330027-041321-SSR-009	4/13/2021	<8.0	1,100	290
MW-18 ^A	W-R2330027-042622-ADP-014	4/26/2022	1,500	9,200	550
MW-18	W-R2330027-042622-ADP-014	4/26/2022	22	370	220
MW-18 ^A	W-R2330028-102722-ADH-004	10/27/2022	410	6,300	290
MW-18	W-R2330028-102722-ADH-004	10/27/2022	13	4,100	290
MW-18 ^A	W-R23300310-41723-ERR-001	4/17/2023	220	1,200	290
MW-18	W-R23300310-41723-ERR-001	4/17/2023	11	580	310
MW-18 ^A	W-R2330031-110623-ERR-001	11/6/2023	69	1,100	240
MW-18	W-R2330031-110623-ERR-001	11/6/2023	<10	130	240
MW-18 ^A	DUP-02	11/6/2023	2,800	7,500	400
MW-18	DUP-02	11/6/2023	36	2,600	250
MW-19 ^A	W-R2330027-041321-SSR-011	4/13/2021	1,200	8,300	490
MW-19	W-R2330027-041321-SSR-011	4/13/2021	14	3,500	520
MW-19 ^A	W-R2330027-042622-SSR-030	4/26/2022	1,900	8,900	620
MW-19	W-R2330027-042622-SSR-030	4/26/2022	14	4,700	580
MW-19 ^A	W-R233028-102722-ADH-005	10/27/2022	270	3,800	450
MW-19	W-R233028-102722-ADH-005	10/27/2022	45	3,200	460
MW-19 ^A	W-R233031-041723-ERR-002	4/17/2023	490	2,200	460
MW-19	W-R233031-041723-ERR-002	4/17/2023	46	1,500	470
MW-19 ^A	W-R2330031-110623-ERR-002	11/6/2023	180	2,900	440
MW-19	W-R2330031-110623-ERR-002	11/6/2023	<10	2,600	400

**Table 4
Summary of Groundwater Sample Results (Residential)**

Van Buren West Site
Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Residential Health-Based Drinking Water Value (E)			300	2,000	860
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{Vires}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MONITORING WELL ID	SAMPLE ID	SAMPLE DATE			
MW-20 ^A	W-R2330027-041321-SSR-013	4/13/2021	3,000	14,000	400
MW-20	W-R2330027-041321-SSR-013	4/13/2021	36	6,700	240
MW-20 ^A	W-R2330027-042622-SSR-029	4/26/2022	2,600	12,000	410
MW-20	W-R2330027-042622-SSR-029	4/26/2022	150	4,200	180
MW-20 ^A	W-R2330028-10/26/22-ADH-001	10/26/2022	8,700	35,000	1,100
MW-20	W-R2330028-10/26/22-ADH-001	10/26/2022	43	91	150
MW-20 ^A	W-R2330031-041723-ERR-003	4/17/2023	270	5,600	200
MW-20	W-R2330031-041723-ERR-003	4/17/2023	11	5,000	180
MW-20 ^A	W-R2330031-110623-ERR-003	11/6/2023	220	4,300	180
MW-20	W-R2330031-110623-ERR-003	11/6/2023	11	3,600	160
MW-21 ^A	W-R2330027-041421-KRM-024	4/14/2021	84	370	210
MW-21	W-R2330027-041421-KRM-024	4/14/2021	<8.0	320	200
MW-21 ^A (DUP)	DUP 1	4/27/2022	16,000	19,000	1,200
MW-21 (DUP)	DUP 1	4/27/2022	130	83	60
MW-21 ^A	W-R2330027-042722-SSR-024	4/27/2022	18,000	21,000	1,000
MW-21	W-R2330027-042722-SSR-024	4/27/2022	46	82	53
MW-21 ^A	W-R2330028-102622-ADH-002	10/26/2022	850	4,900	610
MW-21	W-R2330028-102622-ADH-002	10/26/2022	32	250	60
MW-21 ^A	W-R2330031-041923-ERR-011	4/19/2023	470	3,200	520
MW-21	W-R2330031-041923-ERR-011	4/19/2023	30	240	110
MW-21 ^A	W-R2330031-110823-ERR-010	11/8/2023	55	440	190
MW-21	W-R2330031-110823-ERR-010	11/8/2023	<10	200	150

Table 4
Summary of Groundwater Sample Results (Residential)

Van Buren West Site
 Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Residential Health-Based Drinking Water Value (E)			300	2,000	860
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{Vires}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MONITORING WELL ID	SAMPLE ID	SAMPLE DATE			
MW-23 ^A	W-R2330027-041421-SSR-021	4/14/2021	410	14,000	110
MW-23	W-R2330027-041421-SSR-021	4/14/2021	<8.0	10,000	100
MW-23 ^A	W-R2330027-042722-SSR-021	4/27/2022	78	9,700	74
MW-23	W-R2330027-042722-SSR-021	4/27/2022	<10	8,000	74
MW-23 ^A	W-R2330028-1028/22-ADH-010	10/28/2022	NS	NS	NS
MW-23	W-R2330028-1028/22-ADH-010	10/28/2022	NS	NS	NS
MW-23 ^A	W-R2330031-042023-ERR-018	4/20/2023	130	13,000	95
MW-23	W-R2330031-042023-ERR-018	4/20/2023	13	13,000	88
MW-23 ^A	W-R2330031-110923-ERR-012	11/9/2023	NS	NS	NS
MW-23	W-R2330031-110923-ERR-012	11/9/2023	NS	NS	NS
MW-25 ^A	W-R2330026-052220-SSR-035	5/22/2020	1,500	3,500	2,600
MW-25	W-R2330026-052220-SSR-035	5/22/2020	<8.0	<50	170
MW-25 ^A	W-R2330026-110420-SSR-011	11/4/2020	220	700	990
MW-25	W-R2330026-110420-SSR-011	11/4/2020	<8.0	<50	580
MW-25 ^A	W-R2330027-041421-KRM-020	4/14/2021	120	410	580
MW-25	W-R2330027-041421-KRM-020	4/14/2021	<8.0	<50	380
MW-25 ^A	W-R2330027-042722-SRS-020	4/27/2022	61	1,200	570
MW-25	W-R2330027-042722-SRS-020	4/27/2022	<10	130	280
MW-25 ^A	W-R2330031-042023-ERR-017	4/20/2023	3,200	6,900	4,200
MW-25	W-R2330031-042023-ERR-017	4/20/2023	11	<80	200
MW-25 ^A	W-R2330031-121823-ERR-014	12/18/2023	420	890	440
MW-25	W-R2330031-121823-ERR-014	12/18/2023	<10	470	390

Table 4
Summary of Groundwater Sample Results (Residential)

Van Buren West Site
 Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Residential Health-Based Drinking Water Value (E)			300	2,000	860
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW _{V.I.P.S.}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MONITORING WELL ID	SAMPLE ID	SAMPLE DATE			
MW-26 ^A	W-R2330027-041421-KRM-022	4/14/2021	85	170	6.6
MW-26	W-R2330027-041421-KRM-022	4/14/2021	<8.0	<50	<2.5
MW-26 ^A	W-R2330027-042722-SSR-022	4/27/2022	300	370	8.7
MW-26	W-R2330027-042722-SSR-022	4/27/2022	9.3	<80	<5
MW-26 ^A	W-R2330028-102822-ADH-009	10/28/2022	120	340	NS
MW-26	W-R2330028-102822-ADH-009	10/28/2022	16	<1.0	NS
MW-26 ^A	W-R2330031-042023-ERR-019	4/20/2023	15	61 J	<5.0
MW-26	W-R2330031-042023-ERR-019	4/20/2023	<10	<80	<5.0
MW-26 ^A	W-R2330031-110823-ERR-011	11/8/2023	65	410	140
MW-26	W-R2330031-110823-ERR-011	11/8/2023	<10	<80	45
MW-29 ^A	W-R2330027-041321-SSR-005	4/13/2021	19	2,400	160
MW-29	W-R2330027-041321-SSR-005	4/13/2021	<8.0	1,800	160
MW-29 ^A	W-R2330027-042822-SSR-027	4/28/2022	1,700	34,000	180
MW-29	W-R2330027-042822-SSR-027	4/28/2022	9.7	1,200	57
MW-29 ^A	W-R2330028-11/1/22-ADH-011	11/1/2022	18	3,000	170
MW-29	W-R2330028-11/1/22-ADH-011	11/1/2022	5.8	2,600	190
MW-29 ^A	W-R2330031-041823-ERR-008	4/18/2023	11	4,500	140
MW-29	W-R2330031-041823-ERR-008	4/18/2023	<10	4,300	140
MW-29 ^A	W-R2330031-110723-ERR-004	11/7/2023	<10	3,100	85
MW-29	W-R2330031-110723-ERR-004	11/7/2023	<10	2,600	89

**Table 4
Summary of Groundwater Sample Results (Residential)**

Van Buren West Site
Van Buren Township, Wayne County, Michigan

GROUNDWATER: Part 201/213 Generic Residential Cleanup Criteria Revised December 30, 2013 and Guidance Document for the Vapor Intrusion Pathway May 2013 Units: µg/L			Metals		
			Aluminum	Iron (B)	Manganese (B)
Residential Drinking Water Criteria (II)			50 (E)(V)	300 (E)	50 (E)
Residential Health-Based Drinking Water Value (E)			300	2,000	860
Ground Water Surface Water Interface Criteria (GSI) (III)			NA	NA	2,800 (G)
GSI Final Acute Value (FAV)			NA	NA	12,112 (G)
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)			NLV	NLV	NLV
Groundwater Concentration for Vapor Intrusion (GW_{VIRES}) (a)			NLV	NLV	NLV
Water Solubility (VII)			NA	NA	NA
Flammability & Explosivity Screening Level (VIII)			ID	ID	ID
MONITORING WELL ID	SAMPLE ID	SAMPLE DATE			
MW-30 ^A	W-R2330027-041321-SSR-007	4/13/2021	130	180	79
MW-30	W-R2330027-041321-SSR-007	4/13/2021	<8.0	<50	65
MW-30 ^A	W-R2330027-042822-SSR-028	4/28/2022	1,400	3,600	250
MW-30	W-R2330027-042822-SSR-028	4/28/2022	8.8	67	29
MW-30 ^A	W-R2330028-11122-ADH-012	11/1/2022	13	210	41
MW-30	W-R2330028-11122-ADH-012	11/1/2022	20	230	50
MW-30 ^A	W-R2330031-041823-ERR-009	4/18/2023	360	670	100
MW-30	W-R2330031-041823-ERR-009	4/18/2023	17	300	65
MW-30 ^A	W-R2330031-110723-ERR-005	11/7/2023	55	630	26
MW-30	W-R2330031-110723-ERR-005	11/7/2023	<10	70 J	17

E = Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of NREPA.

G = Calculated value based on a hardness of 150 mg/L.

H = Analyzed outside of holding time.

J = Analyte detected below quantitation limit.

NS = Not Sampled or Not Analyzed.

Exceeds Generic Drinking Water Cleanup Criteria (II)

Exceeds Generic Drinking Water Cleanup Criteria (II) and the Generic Health-Based Drinking Water Value (E)

Exceeds Generic Ground Water Surface Water Interface Criteria (III)

Exceeds Two or More DW (II), GSI (III) and/or Generic Health-Based Drinking Water Value (E)

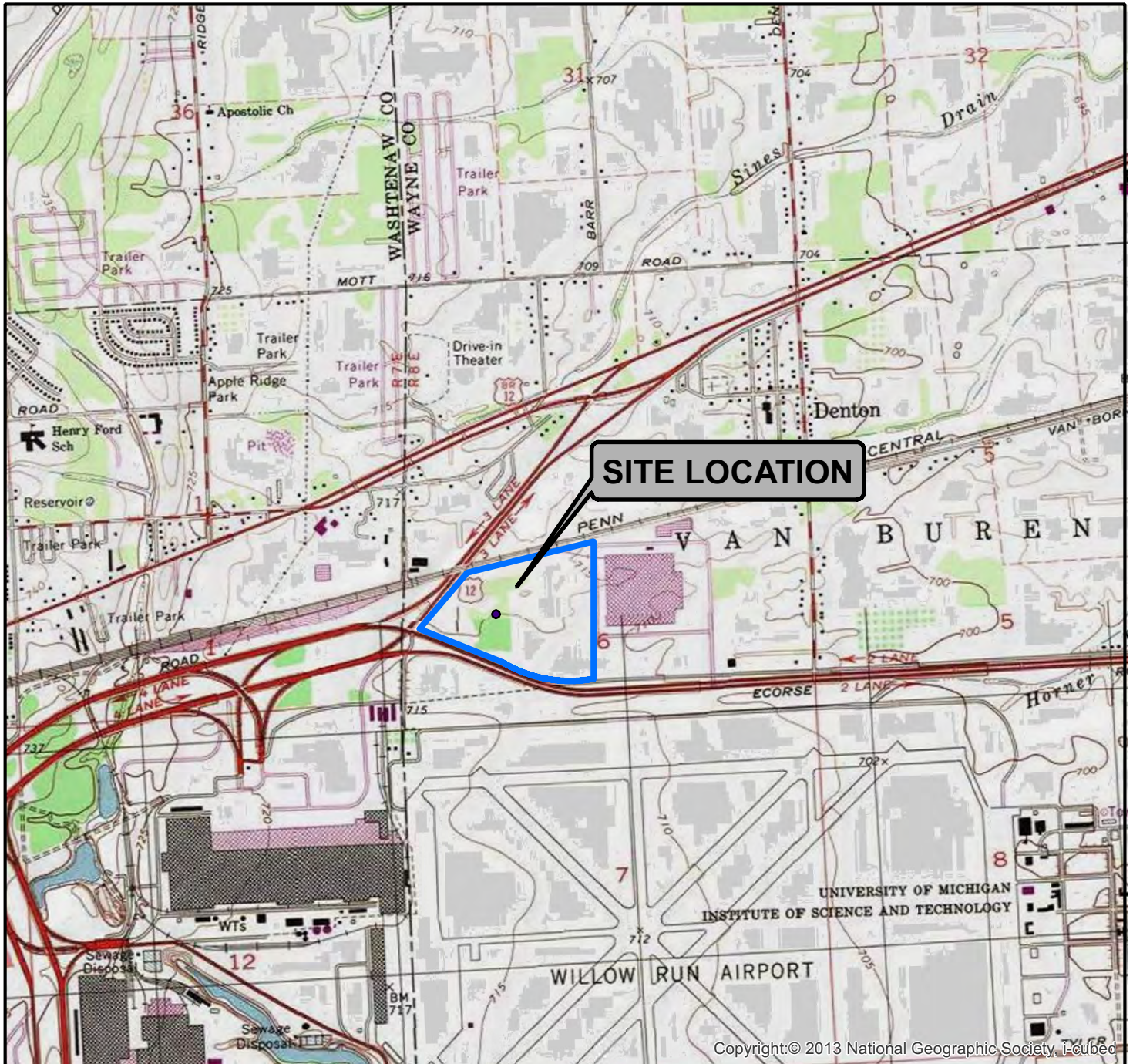
Exceeds GSI Final Acute Value (FAV), also exceeds others

Table 5

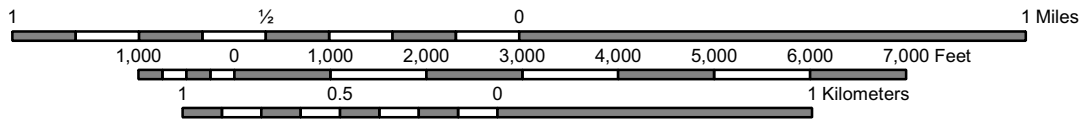
Total Depth to Bottom of Wells and Estimated Sediment Accumulation			
Well ID	Total Depth of Well from TOC ³ (feet)	Total Depth of Well from TOC ³ (feet) 11/06/2023-11/09/2023	Estimated Sediment Accumulation
MW-5	30.02	29.7	0.32
MW-7	8.81	8.8	0.01
MW-9	14.81	14.65	0.16
MW-10	23.45	23.30	0.15
MW-18	16.66	16.66	0.00
MW-19	14.63	14.16	0.47
MW-20	15.47	14.80	0.67
MW-21	15.36	14.80	0.56
MW-23	15.74	14.95	0.79
MW-25	16.52	11.70	4.82
MW-26	17.19	16.20	0.99
MW-29	12.22	11.60	0.62
MW-30	12.36	12.40	-0.04

FIGURES

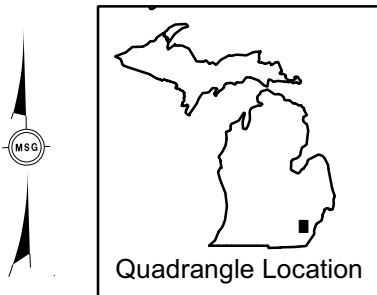




SCALE 1:24000



Contour Interval 10 Feet
 National Geodetic Vertical Datum of 1929



NOTE: Map adapted from National Geographic TOPO! seamless, scanned images of USGS Topographic Maps, Denton and Ypsilanti East, MI (7.5 minute series).


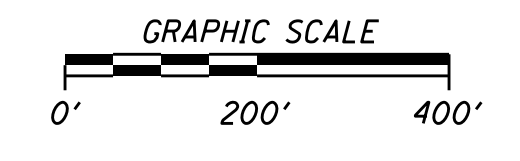
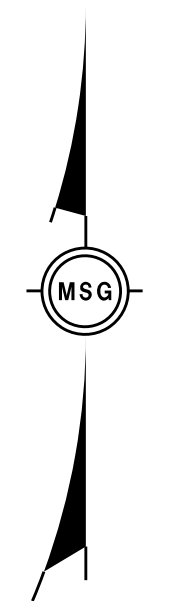
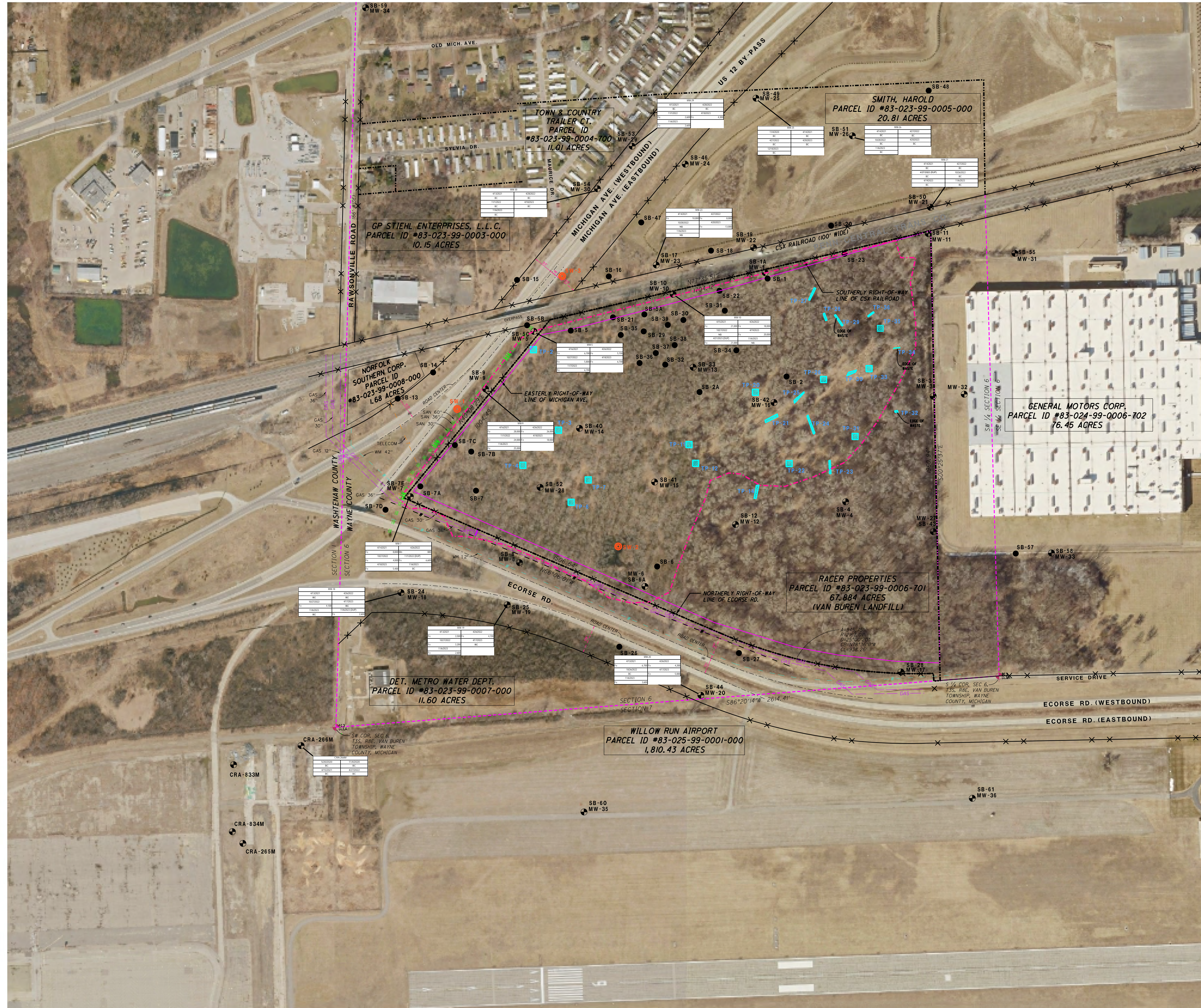


FIGURE 1
SITE LOCATION MAP

VAN BUREN LANDFILL SITE (11070)
 Michigan Avenue & Ecorse Road
 Van Buren Twp., Wayne County, MI

DATE 1/3/2024	DRAWN BY CJB	DESIGNED BY CJB	PROJECT NO. 401.R2330031
------------------	-----------------	--------------------	-----------------------------



EGL Part 201 Non-Residential Health Based Drinking Water Value
 Al = 4,100 ug/l
 Fe = 5,600 ug/l
 Mn = 2,500 ug/l

EGL Part 201 Residential Health Based Drinking Water Value
 Al = 300 ug/l
 Fe = 2,000 ug/l
 Mn = 860 ug/l

CHEMICAL ABBREVIATIONS
 Fe = Iron
 Mn = Manganese
 BC = Below Applicable Criteria
 NS = Not Sampled

LEGEND

- PROPERTY LINE
- X-X- R/W LINE
- FENCE
- - - EXTENT OF EARTH DISTURBANCE BASED ON APRIL 26, 1970 AERIAL PHOTO
- GAS --- EXISTING GAS MAIN
- FO --- EXISTING FIBER OPTIC CABLE
- EXISTING FIRE WATER
- EXISTING WATER MAIN
- EXISTING STORM
- ST (3) THREE EX. PARALLEL STORM SEWERS
- SURFACE WATER SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- TP-32 TEST PIT LOCATION

- GENERAL NOTES:
1. AERIAL PHOTO FROM SEMCOG DATED 2010.
 2. UTILITY LOCATIONS BASED ON INFORMATION FROM SAP/OAPP AND MISS DIG UTILITY MARKINGS.
 3. OFF-SITE LOCATIONS COMPARED TO RESIDENTIAL CRITERIA. ON-SITE LOCATIONS COMPARED TO NON-RESIDENTIAL CRITERIA.
 4. ALL RESULTS EXPRESSED IN MICROGRAMS PER LITER.
 5. ONLY EXCEEDENCES OF NON-RESIDENTIAL HEALTH-BASED DRINKING WATER CRITERIA AND RESIDENTIAL HEALTH-BASED DRINKING WATER CRITERIA ARE SHOWN.
 6. ONLY EXCEEDENCES OF DISSOLVED METALS ARE SHOWN. THERE ARE EXCEEDENCES OF TOTAL METALS NOT DISPLAYED IN THE FIGURE (REFER TO TABLE).

NO.	DATE	BY	DESCRIPTION
1	7/17/24	CJB	PHASE III SITE INVESTIGATION SAMPLING LOCATIONS

Environmental Response Trust

VAN BUREN LANDFILL SITE (11070)
 MICHIGAN AVE. & ECORSE RD.
 VAN BUREN TWP., WAYNE CO. MICHIGAN

FIGURE 2
 MONITORING WELL ANALYTICAL SUMMARY THROUGH NOVEMBER 2023 SEMI-ANNUAL GROUNDWATER MONITORING (EXCEEDENCES ONLY)

ATTACHMENT 1

LOW FLOW GROUNDWATER FIELD SAMPLING FORMS



LOW FLOW GROUNDWATER SAMPLING FORM



SAMPLE LOCATION: MW 19

PROJECT #: R2330031

SITE NAME: RACER

SITE ADDRESS: _____

SITE CONDITIONS: _____

DATE: 11-6-23

PERSONNEL: ERR

OBSERVERS: _____

DEPTH TO WATER LEVEL FROM TOP OF CASING: 3'7"

DEPTH OF WELL: 14' 2"

SCREEN LENGTH: _____

WELL DIAMETER: 2-inch

TUBING TYPE: _____

CASING TYPE: PVC

MONITORING EQUIPMENT: _____

TIME	WATER LEVEL (<0.3 feet once stabilized)	TEMP. (°F/°C)	COND. (µS/cm)	DO (mg/L) ¹	Ph	ORP (mV)	TURB. (NTU) ²	VOLUME PURGED (Gallons)	PUMP RATE (ml/min)	NOTES
		+/- 3%	+/- 3%	+/- 10%	+/- 0.1	+/- 10 mV	+/- 10%			
1410	3'7"	57.8°	2.02	71.6	7.24	200	729	0.25		
1415		57.9°	3.08	62.3	7.30	181	711	1.0		
1420		57.9°	3.22	83.1	7.32	177	722	1.50		
1425		57.9°	3.39	68.3	7.35	173	701	2.25		
1430		57.9°	3.18	69.1	7.32	215	751	3.0		
1435		58.0°	2.99	72.2	7.38	166	729	3.75		
1440		58.0°	3.09	68.1	7.40	163	789	4.25		

SAMPLE ID: U-R2330031-110623-ERR-002
 SAMPLE DATE: 11-6-23
 SAMPLE TIME: 1445

Notes: _____

¹ - 10% for values greater than 0.5 mg/L, if three DO values are less than 0.5 mg/L, consider the values as stabilized
² - 10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized

ATTACHMENT 2

LABORATORY ANALYTICAL DATA REPORTS





30-Nov-2023

Eric Robinson
The Mannik & Smith Group, Inc.
2365 Haggerty Road South
Suite 100
Canton, MI 48188

Re: **Racer**

Work Order: **23111062**

Dear Eric,

ALS Environmental received 15 samples on 10-Nov-2023 10:00 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 45.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Bill Carey

Bill Carey
Project Manager

Report of Laboratory Analysis

Certificate No: FL E871106

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Client: The Mannik & Smith Group, Inc.
Project: Racer
Work Order: 23111062

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
23111062-01	WR2330031110823 ERR 011	Water		11/8/2023 12:20	11/10/2023 22:00	<input type="checkbox"/>
23111062-02	WR2330031110823 ERR 012	Water		11/8/2023 12:55	11/10/2023 22:00	<input type="checkbox"/>
23111062-03	WR2330031 ERR 013	Water		11/9/2023 13:50	11/10/2023 22:00	<input type="checkbox"/>
23111062-04	DUP-01	Water		11/8/2023	11/10/2023 22:00	<input type="checkbox"/>
23111062-05	DUP-02	Water		11/6/2023	11/10/2023 22:00	<input type="checkbox"/>
23111062-06	WR2330031 110623 ERR 001	Water		11/6/2023 13:15	11/10/2023 22:00	<input type="checkbox"/>
23111062-07	WR2330031 110623 ERR 002	Water		11/6/2023 14:45	11/10/2023 22:00	<input type="checkbox"/>
23111062-08	WR2330031 110623 ERR 003	Water		11/6/2023 15:45	11/10/2023 22:00	<input type="checkbox"/>
23111062-09	WR2330031 110723 ERR 004	Water		11/7/2023 10:55	11/10/2023 22:00	<input type="checkbox"/>
23111062-10	WR2330031 110723 ERR 005	Water		11/7/2023 11:35	11/10/2023 22:00	<input type="checkbox"/>
23111062-11	WR2330031 110723 ADH 006	Water		11/7/2023 10:34	11/10/2023 22:00	<input type="checkbox"/>
23111062-12	WR2330031 110723 ADH 007	Water		11/7/2023 11:15	11/10/2023 22:00	<input type="checkbox"/>
23111062-13	WR2330031 110723 ADH 008	Water		11/7/2023 12:25	11/10/2023 22:00	<input type="checkbox"/>
23111062-14	WR2330031 110823 ERR 009	Water		11/8/2023 11:00	11/10/2023 22:00	<input type="checkbox"/>
23111062-15	WR23300311 10823 ERR 010	Water		11/8/2023 11:45	11/10/2023 22:00	<input type="checkbox"/>

Client: The Mannik & Smith Group, Inc.
Project: Racer
WorkOrder: 23111062

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter

Client: The Mannik & Smith Group, Inc.
Project: Racer
Work Order: 23111062

Case Narrative

The attached "Sample Receipt Checklist" documents the date of receipt, status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. A copy of the laboratory's scope of accreditation is available upon request.

Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

Any flags on MS/MSD samples not addressed in this narrative are unrelated to samples in this report.

With the following exceptions, all sample analyses achieved analytical criteria.

Batch 229311, Method SW6020B, Sample 23111062-05BMS: The MS recovery was above the upper control limit. The corresponding result in the parent sample may be biased high for this analyte: Al

Batch 229311, Method SW6020B, Sample 23111062-05BMSD: The RPD between the MS and MSD was outside of the control limit. The corresponding result should be considered estimated for this compound: Al

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031110823 ERR 011
Collection Date: 11/8/2023 12:20 PM

Work Order: 23111062
Lab ID: 23111062-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.065		0.0057	0.010	mg/L	1	11/16/2023 19:10
Iron	0.41		0.047	0.080	mg/L	1	11/16/2023 19:10
Manganese	0.14		0.0017	0.0050	mg/L	1	11/16/2023 19:10
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum		U	0.0057	0.010	mg/L	1	11/16/2023 19:11
Iron		U	0.047	0.080	mg/L	1	11/16/2023 19:11
Manganese	0.045		0.0017	0.0050	mg/L	1	11/16/2023 19:11

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031110823 ERR 012
Collection Date: 11/8/2023 12:55 PM

Work Order: 23111062
Lab ID: 23111062-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260D			Analyst: BAM	
<u>BatchID: R389729</u>							
1,1,1-Trichloroethane	U		0.46	1.0	µg/L	1	11/22/2023 16:29
1,1,2,2-Tetrachloroethane	U		0.40	1.0	µg/L	1	11/22/2023 16:29
1,1,2-Trichloroethane	U		0.46	1.0	µg/L	1	11/22/2023 16:29
1,1,2-Trichlorotrifluoroethane	U		0.52	1.0	µg/L	1	11/22/2023 16:29
1,1-Dichloroethane	U		0.44	1.0	µg/L	1	11/22/2023 16:29
1,1-Dichloroethene	U		0.40	1.0	µg/L	1	11/22/2023 16:29
1,2,4-Trichlorobenzene	U		0.94	5.0	µg/L	1	11/22/2023 16:29
1,2-Dibromo-3-chloropropane	U		0.43	1.0	µg/L	1	11/22/2023 16:29
1,2-Dibromoethane	U		0.41	1.0	µg/L	1	11/22/2023 16:29
1,2-Dichlorobenzene	U		0.32	1.0	µg/L	1	11/22/2023 16:29
1,2-Dichloroethane	U		0.44	1.0	µg/L	1	11/22/2023 16:29
1,2-Dichloropropane	U		0.48	1.0	µg/L	1	11/22/2023 16:29
1,3-Dichlorobenzene	U		0.33	1.0	µg/L	1	11/22/2023 16:29
1,4-Dichlorobenzene	U		0.35	1.0	µg/L	1	11/22/2023 16:29
2-Butanone	U		2.4	25	µg/L	1	11/22/2023 16:29
2-Hexanone	U		0.59	50	µg/L	1	11/22/2023 16:29
4-Methyl-2-pentanone	U		0.52	50	µg/L	1	11/22/2023 16:29
Acetone	17	J	4.5	50	µg/L	1	11/22/2023 16:29
Benzene	0.93	J	0.46	1.0	µg/L	1	11/22/2023 16:29
Bromodichloromethane	U		0.49	1.0	µg/L	1	11/22/2023 16:29
Bromoform	U		0.56	1.0	µg/L	1	11/22/2023 16:29
Bromomethane	U		0.90	5.0	µg/L	1	11/22/2023 16:29
Carbon disulfide	U		0.49	5.0	µg/L	1	11/22/2023 16:29
Carbon tetrachloride	U		0.40	1.0	µg/L	1	11/22/2023 16:29
Chlorobenzene	2.1		0.40	1.0	µg/L	1	11/22/2023 16:29
Chloroethane	U		0.68	5.0	µg/L	1	11/22/2023 16:29
Chloroform	U		0.46	1.0	µg/L	1	11/22/2023 16:29
Chloromethane	U		0.83	5.0	µg/L	1	11/22/2023 16:29
cis-1,2-Dichloroethene	U		0.42	1.0	µg/L	1	11/22/2023 16:29
cis-1,3-Dichloropropene	U		0.57	1.0	µg/L	1	11/22/2023 16:29
Cyclohexane	U		0.63	1.0	µg/L	1	11/22/2023 16:29
Dibromochloromethane	U		0.40	5.0	µg/L	1	11/22/2023 16:29
Dichlorodifluoromethane	U		0.68	5.0	µg/L	1	11/22/2023 16:29
Ethylbenzene	U		0.34	1.0	µg/L	1	11/22/2023 16:29
Isopropylbenzene	U		0.35	5.0	µg/L	1	11/22/2023 16:29
Methyl acetate	U		0.59	10	µg/L	1	11/22/2023 16:29
Methyl tert-butyl ether	U		0.45	5.0	µg/L	1	11/22/2023 16:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031110823 ERR 012
Collection Date: 11/8/2023 12:55 PM

Work Order: 23111062
Lab ID: 23111062-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Methylcyclohexane	U		0.35	1.0	µg/L	1	11/22/2023 16:29
Methylene chloride	U		0.86	5.0	µg/L	1	11/22/2023 16:29
Styrene	U		0.33	1.0	µg/L	1	11/22/2023 16:29
Tetrachloroethene	U		0.39	1.0	µg/L	1	11/22/2023 16:29
Toluene	U		0.45	1.0	µg/L	1	11/22/2023 16:29
trans-1,2-Dichloroethene	0.78	J	0.48	1.0	µg/L	1	11/22/2023 16:29
trans-1,3-Dichloropropene	U		0.38	1.0	µg/L	1	11/22/2023 16:29
Trichloroethene	U		0.43	1.0	µg/L	1	11/22/2023 16:29
Trichlorofluoromethane	U		0.52	1.0	µg/L	1	11/22/2023 16:29
Vinyl chloride	U		0.53	1.0	µg/L	1	11/22/2023 16:29
Xylenes, Total	U		0.81	3.0	µg/L	1	11/22/2023 16:29
Surr: 1,2-Dichloroethane-d4	105			80-120	%REC	1	11/22/2023 16:29
Surr: 4-Bromofluorobenzene	96.4			80-120	%REC	1	11/22/2023 16:29
Surr: Dibromofluoromethane	100			80-120	%REC	1	11/22/2023 16:29
Surr: Toluene-d8	98.6			80-120	%REC	1	11/22/2023 16:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031 ERR 013
Collection Date: 11/9/2023 01:50 PM

Work Order: 23111062
Lab ID: 23111062-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.015		0.0057	0.010	mg/L	1	11/16/2023 19:16
Iron	4.9		0.047	0.080	mg/L	1	11/16/2023 19:16
Manganese	0.054		0.0017	0.0050	mg/L	1	11/16/2023 19:16
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum		U	0.0057	0.010	mg/L	1	11/16/2023 19:18
Iron	4.8		0.047	0.080	mg/L	1	11/16/2023 19:18
Manganese	0.052		0.0017	0.0050	mg/L	1	11/16/2023 19:18

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: DUP-01
Collection Date: 11/8/2023

Work Order: 23111062
Lab ID: 23111062-04
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260D			Analyst: EZH	
<u>BatchID: R389720</u>							
1,1,1-Trichloroethane	U		0.46	1.0	µg/L	1	11/22/2023 02:23
1,1,2,2-Tetrachloroethane	U		0.40	1.0	µg/L	1	11/22/2023 02:23
1,1,2-Trichloroethane	U		0.46	1.0	µg/L	1	11/22/2023 02:23
1,1,2-Trichlorotrifluoroethane	U		0.52	1.0	µg/L	1	11/22/2023 02:23
1,1-Dichloroethane	U		0.44	1.0	µg/L	1	11/22/2023 02:23
1,1-Dichloroethene	U		0.40	1.0	µg/L	1	11/22/2023 02:23
1,2,4-Trichlorobenzene	U		0.94	5.0	µg/L	1	11/22/2023 02:23
1,2-Dibromo-3-chloropropane	U		0.43	1.0	µg/L	1	11/22/2023 02:23
1,2-Dibromoethane	U		0.41	1.0	µg/L	1	11/22/2023 02:23
1,2-Dichlorobenzene	U		0.32	1.0	µg/L	1	11/22/2023 02:23
1,2-Dichloroethane	U		0.44	1.0	µg/L	1	11/22/2023 02:23
1,2-Dichloropropane	U		0.48	1.0	µg/L	1	11/22/2023 02:23
1,3-Dichlorobenzene	U		0.33	1.0	µg/L	1	11/22/2023 02:23
1,4-Dichlorobenzene	U		0.35	1.0	µg/L	1	11/22/2023 02:23
2-Butanone	U		2.4	25	µg/L	1	11/22/2023 02:23
2-Hexanone	U		0.59	50	µg/L	1	11/22/2023 02:23
4-Methyl-2-pentanone	U		0.52	50	µg/L	1	11/22/2023 02:23
Acetone	50	J	4.5	50	µg/L	1	11/22/2023 02:23
Benzene	0.47	J	0.46	1.0	µg/L	1	11/22/2023 02:23
Bromodichloromethane	U		0.49	1.0	µg/L	1	11/22/2023 02:23
Bromoform	U		0.56	1.0	µg/L	1	11/22/2023 02:23
Bromomethane	U		0.90	5.0	µg/L	1	11/22/2023 02:23
Carbon disulfide	U		0.49	5.0	µg/L	1	11/22/2023 02:23
Carbon tetrachloride	U		0.40	1.0	µg/L	1	11/22/2023 02:23
Chlorobenzene	U		0.40	1.0	µg/L	1	11/22/2023 02:23
Chloroethane	U		0.68	5.0	µg/L	1	11/22/2023 02:23
Chloroform	U		0.46	1.0	µg/L	1	11/22/2023 02:23
Chloromethane	U		0.83	5.0	µg/L	1	11/22/2023 02:23
cis-1,2-Dichloroethene	U		0.42	1.0	µg/L	1	11/22/2023 02:23
cis-1,3-Dichloropropene	U		0.57	1.0	µg/L	1	11/22/2023 02:23
Cyclohexane	U		0.63	1.0	µg/L	1	11/22/2023 02:23
Dibromochloromethane	U		0.40	5.0	µg/L	1	11/22/2023 02:23
Dichlorodifluoromethane	U		0.68	5.0	µg/L	1	11/22/2023 02:23
Ethylbenzene	U		0.34	1.0	µg/L	1	11/22/2023 02:23
Isopropylbenzene	U		0.35	5.0	µg/L	1	11/22/2023 02:23
Methyl acetate	U		0.59	10	µg/L	1	11/22/2023 02:23
Methyl tert-butyl ether	U		0.45	5.0	µg/L	1	11/22/2023 02:23

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.

Project: Racer

Sample ID: DUP-01

Collection Date: 11/8/2023

Work Order: 23111062

Lab ID: 23111062-04

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Methylcyclohexane	U		0.35	1.0	µg/L	1	11/22/2023 02:23
Methylene chloride	U		0.86	5.0	µg/L	1	11/22/2023 02:23
Styrene	U		0.33	1.0	µg/L	1	11/22/2023 02:23
Tetrachloroethene	U		0.39	1.0	µg/L	1	11/22/2023 02:23
Toluene	U		0.45	1.0	µg/L	1	11/22/2023 02:23
trans-1,2-Dichloroethene	0.76	J	0.48	1.0	µg/L	1	11/22/2023 02:23
trans-1,3-Dichloropropene	U		0.38	1.0	µg/L	1	11/22/2023 02:23
Trichloroethene	U		0.43	1.0	µg/L	1	11/22/2023 02:23
Trichlorofluoromethane	U		0.52	1.0	µg/L	1	11/22/2023 02:23
Vinyl chloride	U		0.53	1.0	µg/L	1	11/22/2023 02:23
Xylenes, Total	U		0.81	3.0	µg/L	1	11/22/2023 02:23
Surr: 1,2-Dichloroethane-d4	100			80-120	%REC	1	11/22/2023 02:23
Surr: 4-Bromofluorobenzene	101			80-120	%REC	1	11/22/2023 02:23
Surr: Dibromofluoromethane	99.1			80-120	%REC	1	11/22/2023 02:23
Surr: Toluene-d8	99.8			80-120	%REC	1	11/22/2023 02:23

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
 Project: Racer
 Sample ID: DUP-02
 Collection Date: 11/6/2023

Work Order: 23111062
 Lab ID: 23111062-05
 Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/28/23	Analyst: STP
<u>BatchID: 229912</u>							
Iron	7.5		0.047	0.080	mg/L	1	11/28/2023 20:10
<u>BatchID: 229912</u>							
Aluminum	2.8		0.057	0.10	mg/L	10	11/29/2023 15:31
Manganese	0.40		0.017	0.050	mg/L	10	11/29/2023 15:31
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/28/23	Analyst: STP
<u>BatchID: 229912</u>							
Aluminum	0.036		0.0057	0.010	mg/L	1	11/28/2023 20:11
Iron	2.6		0.047	0.080	mg/L	1	11/28/2023 20:11
Manganese	0.25		0.0017	0.0050	mg/L	1	11/29/2023 15:32

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031 110623 ERR 001
Collection Date: 11/6/2023 01:15 PM

Work Order: 23111062
Lab ID: 23111062-06
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.069		0.0057	0.010	mg/L	1	11/16/2023 19:20
Iron	1.1		0.047	0.080	mg/L	1	11/16/2023 19:20
Manganese	0.24		0.0017	0.0050	mg/L	1	11/16/2023 19:20
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	U		0.0057	0.010	mg/L	1	11/16/2023 19:22
Iron	0.13		0.047	0.080	mg/L	1	11/16/2023 19:22
Manganese	0.24		0.0017	0.0050	mg/L	1	11/16/2023 19:22

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031 110623 ERR 002
Collection Date: 11/6/2023 02:45 PM

Work Order: 23111062
Lab ID: 23111062-07
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.18		0.0057	0.010	mg/L	1	11/16/2023 19:23
Iron	2.9		0.047	0.080	mg/L	1	11/16/2023 19:23
Manganese	0.44		0.0017	0.0050	mg/L	1	11/16/2023 19:23
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	U		0.0057	0.010	mg/L	1	11/16/2023 19:25
Iron	2.6		0.047	0.080	mg/L	1	11/16/2023 19:25
Manganese	0.40		0.0017	0.0050	mg/L	1	11/16/2023 19:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
 Project: Racer
 Sample ID: WR2330031 110623 ERR 003
 Collection Date: 11/6/2023 03:45 PM

Work Order: 23111062
 Lab ID: 23111062-08
 Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.22		0.0057	0.010	mg/L	1	11/16/2023 19:27
Iron	4.3		0.047	0.080	mg/L	1	11/16/2023 19:27
Manganese	0.18		0.0017	0.0050	mg/L	1	11/16/2023 19:27
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.011		0.0057	0.010	mg/L	1	11/16/2023 19:29
Iron	3.6		0.047	0.080	mg/L	1	11/16/2023 19:29
Manganese	0.16		0.0017	0.0050	mg/L	1	11/16/2023 19:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031 110723 ERR 004
Collection Date: 11/7/2023 10:55 AM

Work Order: 23111062
Lab ID: 23111062-09
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum		U	0.0057	0.010	mg/L	1	11/16/2023 19:30
Iron	3.1		0.047	0.080	mg/L	1	11/16/2023 19:30
Manganese	0.085		0.0017	0.0050	mg/L	1	11/16/2023 19:30
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum		U	0.0057	0.010	mg/L	1	11/16/2023 19:32
Iron	2.6		0.047	0.080	mg/L	1	11/16/2023 19:32
Manganese	0.089		0.0017	0.0050	mg/L	1	11/16/2023 19:32

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031 110723 ERR 005
Collection Date: 11/7/2023 11:35 AM

Work Order: 23111062
Lab ID: 23111062-10
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.055		0.0057	0.010	mg/L	1	11/16/2023 19:37
Iron	0.63		0.047	0.080	mg/L	1	11/16/2023 19:37
Manganese	0.026		0.0017	0.0050	mg/L	1	11/16/2023 19:37
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum		U	0.0057	0.010	mg/L	1	11/16/2023 19:39
Iron	0.070	J	0.047	0.080	mg/L	1	11/16/2023 19:39
Manganese	0.017		0.0017	0.0050	mg/L	1	11/16/2023 19:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031 110723 ADH 006
Collection Date: 11/7/2023 10:34 AM

Work Order: 23111062
Lab ID: 23111062-11
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.031		0.0057	0.010	mg/L	1	11/16/2023 19:40
Iron	6.5		0.047	0.080	mg/L	1	11/16/2023 19:40
Manganese	0.062		0.0017	0.0050	mg/L	1	11/16/2023 19:40
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum		U	0.0057	0.010	mg/L	1	11/16/2023 19:42
Iron	6.7		0.047	0.080	mg/L	1	11/16/2023 19:42
Manganese	0.063		0.0017	0.0050	mg/L	1	11/16/2023 19:42

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
 Project: Racer
 Sample ID: WR2330031 110723 ADH 007
 Collection Date: 11/7/2023 11:15 AM

Work Order: 23111062
 Lab ID: 23111062-12
 Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.017		0.0057	0.010	mg/L	1	11/16/2023 19:44
Iron	29		0.047	0.080	mg/L	1	11/16/2023 19:44
Manganese	0.24		0.0017	0.0050	mg/L	1	11/16/2023 19:44
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.0062	J	0.0057	0.010	mg/L	1	11/16/2023 19:46
Iron	25		0.047	0.080	mg/L	1	11/16/2023 19:46
Manganese	0.21		0.0017	0.0050	mg/L	1	11/16/2023 19:46

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
 Project: Racer
 Sample ID: WR2330031 110723 ADH 008
 Collection Date: 11/7/2023 12:25 PM

Work Order: 23111062
 Lab ID: 23111062-13
 Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.064		0.0057	0.010	mg/L	1	11/16/2023 19:48
Iron	3.0		0.047	0.080	mg/L	1	11/16/2023 19:48
Manganese	0.37		0.0017	0.0050	mg/L	1	11/16/2023 19:48
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229367</u>							
Aluminum	0.011		0.0057	0.010	mg/L	1	11/16/2023 19:50
Iron	0.21		0.047	0.080	mg/L	1	11/16/2023 19:50
Manganese	0.36		0.0017	0.0050	mg/L	1	11/16/2023 19:50

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031 110823 ERR 009
Collection Date: 11/8/2023 11:00 AM

Work Order: 23111062
Lab ID: 23111062-14
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260D			Analyst: BAM	
<u>BatchID: R389729</u>							
1,1,1-Trichloroethane	U		0.46	1.0	µg/L	1	11/22/2023 16:12
1,1,2,2-Tetrachloroethane	U		0.40	1.0	µg/L	1	11/22/2023 16:12
1,1,2-Trichloroethane	U		0.46	1.0	µg/L	1	11/22/2023 16:12
1,1,2-Trichlorotrifluoroethane	U		0.52	1.0	µg/L	1	11/22/2023 16:12
1,1-Dichloroethane	U		0.44	1.0	µg/L	1	11/22/2023 16:12
1,1-Dichloroethene	U		0.40	1.0	µg/L	1	11/22/2023 16:12
1,2,4-Trichlorobenzene	U		0.94	5.0	µg/L	1	11/22/2023 16:12
1,2-Dibromo-3-chloropropane	U		0.43	1.0	µg/L	1	11/22/2023 16:12
1,2-Dibromoethane	U		0.41	1.0	µg/L	1	11/22/2023 16:12
1,2-Dichlorobenzene	U		0.32	1.0	µg/L	1	11/22/2023 16:12
1,2-Dichloroethane	U		0.44	1.0	µg/L	1	11/22/2023 16:12
1,2-Dichloropropane	U		0.48	1.0	µg/L	1	11/22/2023 16:12
1,3-Dichlorobenzene	U		0.33	1.0	µg/L	1	11/22/2023 16:12
1,4-Dichlorobenzene	U		0.35	1.0	µg/L	1	11/22/2023 16:12
2-Butanone	U		2.4	25	µg/L	1	11/22/2023 16:12
2-Hexanone	U		0.59	50	µg/L	1	11/22/2023 16:12
4-Methyl-2-pentanone	U		0.52	50	µg/L	1	11/22/2023 16:12
Acetone	32	J	4.5	50	µg/L	1	11/22/2023 16:12
Benzene	0.48	J	0.46	1.0	µg/L	1	11/22/2023 16:12
Bromodichloromethane	U		0.49	1.0	µg/L	1	11/22/2023 16:12
Bromoform	U		0.56	1.0	µg/L	1	11/22/2023 16:12
Bromomethane	U		0.90	5.0	µg/L	1	11/22/2023 16:12
Carbon disulfide	U		0.49	5.0	µg/L	1	11/22/2023 16:12
Carbon tetrachloride	U		0.40	1.0	µg/L	1	11/22/2023 16:12
Chlorobenzene	U		0.40	1.0	µg/L	1	11/22/2023 16:12
Chloroethane	U		0.68	5.0	µg/L	1	11/22/2023 16:12
Chloroform	U		0.46	1.0	µg/L	1	11/22/2023 16:12
Chloromethane	U		0.83	5.0	µg/L	1	11/22/2023 16:12
cis-1,2-Dichloroethene	U		0.42	1.0	µg/L	1	11/22/2023 16:12
cis-1,3-Dichloropropene	U		0.57	1.0	µg/L	1	11/22/2023 16:12
Cyclohexane	U		0.63	1.0	µg/L	1	11/22/2023 16:12
Dibromochloromethane	U		0.40	5.0	µg/L	1	11/22/2023 16:12
Dichlorodifluoromethane	U		0.68	5.0	µg/L	1	11/22/2023 16:12
Ethylbenzene	U		0.34	1.0	µg/L	1	11/22/2023 16:12
Isopropylbenzene	U		0.35	5.0	µg/L	1	11/22/2023 16:12
Methyl acetate	U		0.59	10	µg/L	1	11/22/2023 16:12
Methyl tert-butyl ether	U		0.45	5.0	µg/L	1	11/22/2023 16:12

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031 110823 ERR 009
Collection Date: 11/8/2023 11:00 AM

Work Order: 23111062
Lab ID: 23111062-14
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Methylcyclohexane	U		0.35	1.0	µg/L	1	11/22/2023 16:12
Methylene chloride	U		0.86	5.0	µg/L	1	11/22/2023 16:12
Styrene	U		0.33	1.0	µg/L	1	11/22/2023 16:12
Tetrachloroethene	U		0.39	1.0	µg/L	1	11/22/2023 16:12
Toluene	U		0.45	1.0	µg/L	1	11/22/2023 16:12
trans-1,2-Dichloroethene	U		0.48	1.0	µg/L	1	11/22/2023 16:12
trans-1,3-Dichloropropene	U		0.38	1.0	µg/L	1	11/22/2023 16:12
Trichloroethene	U		0.43	1.0	µg/L	1	11/22/2023 16:12
Trichlorofluoromethane	U		0.52	1.0	µg/L	1	11/22/2023 16:12
Vinyl chloride	U		0.53	1.0	µg/L	1	11/22/2023 16:12
Xylenes, Total	U		0.81	3.0	µg/L	1	11/22/2023 16:12
Surr: 1,2-Dichloroethane-d4	105			80-120	%REC	1	11/22/2023 16:12
Surr: 4-Bromofluorobenzene	97.0			80-120	%REC	1	11/22/2023 16:12
Surr: Dibromofluoromethane	103			80-120	%REC	1	11/22/2023 16:12
Surr: Toluene-d8	94.8			80-120	%REC	1	11/22/2023 16:12

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 30-Nov-23

Client: The Mannik & Smith Group, Inc.
 Project: Racer
 Sample ID: WR23300311 10823 ERR 010
 Collection Date: 11/8/2023 11:45 AM

Work Order: 23111062
 Lab ID: 23111062-15
 Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229382</u>							
Aluminum	0.055		0.0057	0.010	mg/L	1	11/16/2023 20:35
Iron	0.44		0.047	0.080	mg/L	1	11/16/2023 20:35
Manganese	0.19		0.0017	0.0050	mg/L	1	11/16/2023 20:35
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 11/16/23	Analyst: STP
<u>BatchID: 229382</u>							
Aluminum		U	0.0057	0.010	mg/L	1	11/16/2023 20:36
Iron	0.20		0.047	0.080	mg/L	1	11/16/2023 20:36
Manganese	0.15		0.0017	0.0050	mg/L	1	11/16/2023 20:36

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: The Mannik & Smith Group, Inc.
Work Order: 23111062
Project: Racer

QC BATCH REPORT

Batch ID: **229367** Instrument ID **ICPMS3** Method: **SW6020B**

MBLK		Sample ID: MBLK-229367-229367			Units: mg/L		Analysis Date: 11/16/2023 07:06 PM			
Client ID:		Run ID: ICPMS3_231116A			SeqNo: 10217390		Prep Date: 11/16/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	0.010								
Iron	U	0.080								
Manganese	U	0.0050								

LCS		Sample ID: LCS-229367-229367			Units: mg/L		Analysis Date: 11/16/2023 07:08 PM			
Client ID:		Run ID: ICPMS3_231116A			SeqNo: 10217391		Prep Date: 11/16/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1037	0.010	0.1	0	104	80-120	0			
Iron	9.77	0.080	10	0	97.7	80-120	0			
Manganese	0.09677	0.0050	0.1	0	96.8	80-120	0			

MS		Sample ID: 23111062-13BMS			Units: mg/L		Analysis Date: 11/16/2023 07:52 PM			
Client ID: WR2330031 110723 ADH 008		Run ID: ICPMS3_231116A			SeqNo: 10217416		Prep Date: 11/16/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1188	0.010	0.1	0.01115	108	75-125	0			
Iron	9.832	0.080	10	0.2147	96.2	75-125	0			
Manganese	0.4415	0.0050	0.1	0.3557	85.8	75-125	0			

MSD		Sample ID: 23111062-13BMSD			Units: mg/L		Analysis Date: 11/16/2023 07:54 PM			
Client ID: WR2330031 110723 ADH 008		Run ID: ICPMS3_231116A			SeqNo: 10217417		Prep Date: 11/16/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1168	0.010	0.1	0.01115	106	75-125	0.1188	1.69	20	
Iron	10.05	0.080	10	0.2147	98.3	75-125	9.832	2.15	20	
Manganese	0.445	0.0050	0.1	0.3557	89.3	75-125	0.4415	0.78	20	

The following samples were analyzed in this batch:

23111062-01A	23111062-01B	23111062-03A
23111062-03B	23111062-06A	23111062-06B
23111062-07A	23111062-07B	23111062-08A
23111062-08B	23111062-09A	23111062-09B
23111062-10A	23111062-10B	23111062-11A
23111062-11B	23111062-12A	23111062-12B
23111062-13A	23111062-13B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.
 Work Order: 23111062
 Project: Racer

QC BATCH REPORT

Batch ID: **229382** Instrument ID **ICPMS3** Method: **SW6020B**

MBLK		Sample ID: MBLK-229382-229382			Units: mg/L		Analysis Date: 11/16/2023 07:59 PM			
Client ID:		Run ID: ICPMS3_231116A			SeqNo: 10217420		Prep Date: 11/16/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	0.010								
Iron	U	0.080								
Manganese	U	0.0050								

LCS		Sample ID: LCS-229382-229382			Units: mg/L		Analysis Date: 11/16/2023 08:01 PM			
Client ID:		Run ID: ICPMS3_231116A			SeqNo: 10217421		Prep Date: 11/16/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1184	0.010	0.1	0	118	80-120	0			
Iron	9.94	0.080	10	0	99.4	80-120	0			
Manganese	0.1045	0.0050	0.1	0	104	80-120	0			

MS		Sample ID: 23110908-13Dms			Units: mg/L		Analysis Date: 11/16/2023 08:28 PM			
Client ID:		Run ID: ICPMS3_231116A			SeqNo: 10217436		Prep Date: 11/16/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.121	0.010	0.1	0.006421	115	75-125	0			
Iron	9.861	0.080	10	0.01423	98.5	75-125	0			
Manganese	0.1048	0.0050	0.1	0.0004906	104	75-125	0			

MSD		Sample ID: 23110908-13Dmsd			Units: mg/L		Analysis Date: 11/16/2023 08:29 PM			
Client ID:		Run ID: ICPMS3_231116A			SeqNo: 10217437		Prep Date: 11/16/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1128	0.010	0.1	0.006421	106	75-125	0.121	6.98	20	
Iron	9.825	0.080	10	0.01423	98.1	75-125	9.861	0.362	20	
Manganese	0.1034	0.0050	0.1	0.0004906	103	75-125	0.1048	1.4	20	

The following samples were analyzed in this batch:

23111062-15A	23111062-15B
--------------	--------------

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.
 Work Order: 23111062
 Project: Racer

QC BATCH REPORT

Batch ID: **229912** Instrument ID **ICPMS3** Method: **SW6020B**

MBLK		Sample ID: MBLK-229912-229912				Units: mg/L		Analysis Date: 11/28/2023 08:05 PM		
Client ID:		Run ID: ICPMS3_231128A		SeqNo: 10253315		Prep Date: 11/28/2023		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	0.010								
Iron	U	0.080								

MBLK		Sample ID: MBLK-229912-229912				Units: mg/L		Analysis Date: 11/29/2023 03:24 PM		
Client ID:		Run ID: ICPMS4_231129A		SeqNo: 10257501		Prep Date: 11/28/2023		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	U	0.0050								

LCS		Sample ID: LCS-229912-229912				Units: mg/L		Analysis Date: 11/28/2023 08:06 PM		
Client ID:		Run ID: ICPMS3_231128A		SeqNo: 10253316		Prep Date: 11/28/2023		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09654	0.010	0.1	0	96.5	80-120	0			
Iron	9.757	0.080	10	0	97.6	80-120	0			

LCS		Sample ID: LCS-229912-229912				Units: mg/L		Analysis Date: 11/29/2023 03:26 PM		
Client ID:		Run ID: ICPMS4_231129A		SeqNo: 10257502		Prep Date: 11/28/2023		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	0.09971	0.0050	0.1	0	99.7	80-120	0			

MS		Sample ID: 23111850-01BMS				Units: mg/L		Analysis Date: 11/28/2023 08:33 PM		
Client ID:		Run ID: ICPMS3_231128A		SeqNo: 10253332		Prep Date: 11/28/2023		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	2.506	0.010	0.1	1.625	880	75-125	0			SEO
Iron	12.6	0.080	10	3.184	94.1	75-125	0			

MSD		Sample ID: 23111850-01BMSD				Units: mg/L		Analysis Date: 11/28/2023 08:35 PM		
Client ID:		Run ID: ICPMS3_231128A		SeqNo: 10253333		Prep Date: 11/28/2023		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	2.69	0.010	0.1	1.625	1060	75-125	2.506	7.08	20	SEO
Iron	12.65	0.080	10	3.184	94.6	75-125	12.6	0.382	20	

The following samples were analyzed in this batch: 23111062-05A 23111062-05B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389720

Instrument ID VMS7

Method: SW8260D

MBLK	Sample ID: 7V-BLKW2-231121-R389720	Units: µg/L	Analysis Date: 11/21/2023 08:50 PM							
Client ID:	Run ID: VMS7_231121B	SeqNo: 10237966	Prep Date:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1,2-Trichlorotrifluoroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2,4-Trichlorobenzene	U	1.0								
1,2-Dibromo-3-chloropropane	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichlorobenzene	U	1.0								
1,2-Dichloroethane	U	1.0								
1,2-Dichloropropane	U	1.0								
1,3-Dichlorobenzene	U	1.0								
1,4-Dichlorobenzene	U	1.0								
2-Butanone	U	5.0								
2-Hexanone	U	5.0								
4-Methyl-2-pentanone	U	1.0								
Acetone	U	10								
Benzene	U	1.0								
Bromodichloromethane	U	1.0								
Bromoform	U	1.0								
Bromomethane	U	1.0								
Carbon disulfide	U	1.0								
Carbon tetrachloride	U	1.0								
Chlorobenzene	U	1.0								
Chloroethane	U	1.0								
Chloroform	U	1.0								
Chloromethane	U	1.0								
cis-1,2-Dichloroethene	U	1.0								
cis-1,3-Dichloropropene	U	1.0								
Cyclohexane	U	2.0								
Dibromochloromethane	U	1.0								
Dichlorodifluoromethane	U	1.0								
Ethylbenzene	U	1.0								
Isopropylbenzene	U	1.0								
Methyl acetate	U	2.0								
Methyl tert-butyl ether	U	1.0								
Methylcyclohexane	U	1.0								
Methylene chloride	U	5.0								
Styrene	U	1.0								
Tetrachloroethene	U	1.0								
Toluene	U	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: **R389720** Instrument ID **VMS7** Method: **SW8260D**

trans-1,2-Dichloroethene	U	1.0						
trans-1,3-Dichloropropene	U	1.0						
Trichloroethene	U	1.0						
Trichlorofluoromethane	U	1.0						
Vinyl chloride	U	1.0						
Xylenes, Total	U	3.0						
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.68</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>103</i>	<i>80-120</i>	<i>0</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>19.27</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>96.4</i>	<i>80-120</i>	<i>0</i>	
<i>Surr: Dibromofluoromethane</i>	<i>20.84</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>104</i>	<i>80-120</i>	<i>0</i>	
<i>Surr: Toluene-d8</i>	<i>20.39</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>102</i>	<i>80-120</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389720

Instrument ID VMS7

Method: SW8260D

LCS				Sample ID: 7V-LCSW1-231121-R389720		Units: µg/L		Analysis Date: 11/21/2023 07:58 PM		
Client ID:		Run ID: VMS7_231121B		SeqNo: 10237964		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	19.02	1.0	20	0	95.1	75-119	0			
1,1,2,2-Tetrachloroethane	20.47	1.0	20	0	102	80-123	0			
1,1,2-Trichloroethane	19.83	1.0	20	0	99.2	83-118	0			
1,1,2-Trichlorotrifluoroethane	19.41	1.0	20	0	97	64-133	0			
1,1-Dichloroethane	19.35	1.0	20	0	96.8	73-122	0			
1,1-Dichloroethene	19.91	1.0	20	0	99.6	66-131	0			
1,2,4-Trichlorobenzene	19.2	1.0	20	0	96	73-127	0			
1,2-Dibromo-3-chloropropane	23.33	1.0	20	0	117	52-141	0			
1,2-Dibromoethane	20.97	1.0	20	0	105	60-159	0			
1,2-Dichlorobenzene	19.85	1.0	20	0	99.2	80-119	0			
1,2-Dichloroethane	19.07	1.0	20	0	95.4	78-121	0			
1,2-Dichloropropane	19.52	1.0	20	0	97.6	78-120	0			
1,3-Dichlorobenzene	19.26	1.0	20	0	96.3	80-120	0			
1,4-Dichlorobenzene	19.81	1.0	20	0	99	81-119	0			
2-Butanone	20.72	5.0	20	0	104	69-147	0			
2-Hexanone	18.85	5.0	20	0	94.2	67-140	0			
4-Methyl-2-pentanone	28.1	1.0	20	0	140	68-199	0			
Acetone	16.94	10	20	0	84.7	70-166	0			
Benzene	19.66	1.0	20	0	98.3	78-120	0			
Bromodichloromethane	19	1.0	20	0	95	73-126	0			
Bromoform	17.83	1.0	20	0	89.2	60-124	0			
Bromomethane	35.09	1.0	20	0	175	20-183	0			
Carbon disulfide	19.76	1.0	20	0	98.8	67-159	0			
Carbon tetrachloride	18.33	1.0	20	0	91.6	69-124	0			
Chlorobenzene	19.54	1.0	20	0	97.7	80-118	0			
Chloroethane	21.28	1.0	20	0	106	35-136	0			
Chloroform	19.62	1.0	20	0	98.1	75-119	0			
Chloromethane	19.63	1.0	20	0	98.2	26-117	0			
cis-1,2-Dichloroethene	20.15	1.0	20	0	101	75-123	0			
cis-1,3-Dichloropropene	18.4	1.0	20	0	92	69-120	0			
Cyclohexane	18.06	2.0	20	0	90.3	66-128	0			
Dibromochloromethane	18.46	1.0	20	0	92.3	63-117	0			
Dichlorodifluoromethane	22.09	1.0	20	0	110	36-133	0			
Ethylbenzene	20.35	1.0	20	0	102	76-116	0			
Isopropylbenzene	20.3	1.0	20	0	102	77-118	0			
Methyl tert-butyl ether	18.67	1.0	20	0	93.4	77-137	0			
Methylcyclohexane	18.75	1.0	20	0	93.8	66-125	0			
Methylene chloride	19.52	5.0	20	0	97.6	68-125	0			
Styrene	21.16	1.0	20	0	106	76-123	0			
Tetrachloroethene	20.91	1.0	20	0	105	80-124	0			
Toluene	20.33	1.0	20	0	102	78-116	0			
trans-1,2-Dichloroethene	19.97	1.0	20	0	99.8	73-124	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389720	Instrument ID VMS7	Method: SW8260D						
trans-1,3-Dichloropropene	18.98	1.0	20	0	94.9	67-118	0	
Trichloroethene	19.12	1.0	20	0	95.6	75-122	0	
Trichlorofluoromethane	20.6	1.0	20	0	103	52-115	0	
Vinyl chloride	22.11	1.0	20	0	111	49-122	0	
Xylenes, Total	61	3.0	60	0	102	77-119	0	
<i>Surr: 1,2-Dichloroethane-d4</i>	20.52	0	20	0	103	80-120	0	
<i>Surr: 4-Bromofluorobenzene</i>	20.26	0	20	0	101	80-120	0	
<i>Surr: Dibromofluoromethane</i>	20.17	0	20	0	101	80-120	0	
<i>Surr: Toluene-d8</i>	20.21	0	20	0	101	80-120	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.
 Work Order: 23111062
 Project: Racer

QC BATCH REPORT

Batch ID: **R389720** Instrument ID **VMS7** Method: **SW8260D**

MS				Sample ID: 23110779-31A MS		Units: µg/L		Analysis Date: 11/22/2023 03:15 AM		
Client ID:		Run ID: VMS7_231121B		SeqNo: 10237988		Prep Date:		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	210.2	10	200	0	105	75-119	0			HH
1,1,2,2-Tetrachloroethane	230.7	10	200	0	115	80-123	0			HH
1,1,2-Trichloroethane	209.3	10	200	0	105	83-118	0			HH
1,1,2-Trichlorotrifluoroethane	198.8	10	200	0	99.4	64-133	0			HH
1,1-Dichloroethane	217.3	10	200	0	109	73-122	0			HH
1,1-Dichloroethene	231.7	10	200	0	116	66-131	0			HH
1,2,4-Trichlorobenzene	106	10	200	0	53	73-127	0			SHH
1,2-Dibromo-3-chloropropane	220.9	10	200	0	110	52-141	0			HH
1,2-Dibromoethane	210.9	10	200	0	105	60-159	0			HH
1,2-Dichlorobenzene	171.2	10	200	0	85.6	80-119	0			HH
1,2-Dichloroethane	206.3	10	200	0	103	78-121	0			HH
1,2-Dichloropropane	217.5	10	200	0	109	78-120	0			HH
1,3-Dichlorobenzene	153.8	10	200	0	76.9	80-120	0			SHH
1,4-Dichlorobenzene	164	10	200	0	82	81-119	0			HH
2-Butanone	224.6	50	200	0	112	69-147	0			HH
2-Hexanone	229.3	50	200	0	115	67-140	0			HH
4-Methyl-2-pentanone	297.9	10	200	0	149	68-199	0			HH
Acetone	204.1	100	200	0	102	70-166	0			HH
Benzene	221.3	10	200	0	111	78-120	0			HH
Bromodichloromethane	204.3	10	200	0	102	73-126	0			HH
Bromoform	179.9	10	200	0	90	60-124	0			HH
Bromomethane	274.6	10	200	0	137	20-183	0			HH
Carbon disulfide	226.7	10	200	0	113	67-159	0			HH
Carbon tetrachloride	182.6	10	200	0	91.3	69-124	0			HH
Chlorobenzene	193.5	10	200	0	96.8	80-118	0			HH
Chloroethane	233.9	10	200	0	117	35-136	0			HH
Chloroform	213.6	10	200	0	107	75-119	0			HH
Chloromethane	214.4	10	200	0	107	26-117	0			HH
cis-1,2-Dichloroethene	221.7	10	200	0	111	75-123	0			HH
cis-1,3-Dichloropropene	192.4	10	200	0	96.2	69-120	0			HH
Cyclohexane	176.5	20	200	0	88.2	66-128	0			HH
Dibromochloromethane	189.3	10	200	0	94.6	63-117	0			HH
Dichlorodifluoromethane	270.3	10	200	0	135	36-133	0			SHH
Ethylbenzene	193.1	10	200	0	96.6	76-116	0			HH
Isopropylbenzene	160.9	10	200	0	80.4	77-118	0			HH
Methyl tert-butyl ether	207	10	200	0	104	77-137	0			HH
Methylcyclohexane	122	10	200	0	61	66-125	0			SHH
Methylene chloride	235.9	50	200	6.3	115	68-125	0			HH
Styrene	206.7	10	200	0	103	76-123	0			HH
Tetrachloroethene	181	10	200	0	90.5	80-124	0			HH
Toluene	208.1	10	200	0	104	78-116	0			HH
trans-1,2-Dichloroethene	224.1	10	200	0	112	73-124	0			HH

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389720	Instrument ID VMS7	Method: SW8260D							
trans-1,3-Dichloropropene	187.7	10	200	0	93.8	67-118	0	HH	
Trichloroethene	209.6	10	200	0	105	75-122	0	HH	
Trichlorofluoromethane	234.9	10	200	0	117	52-115	0	SHH	
Vinyl chloride	265.3	10	200	0	133	49-122	0	SHH	
Xylenes, Total	568.8	30	600	0	94.8	77-119	0	HH	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>199.1</i>	<i>0</i>	<i>200</i>	<i>0</i>	<i>99.6</i>	<i>80-120</i>	<i>0</i>		
<i>Surr: 4-Bromofluorobenzene</i>	<i>204.6</i>	<i>0</i>	<i>200</i>	<i>0</i>	<i>102</i>	<i>80-120</i>	<i>0</i>		
<i>Surr: Dibromofluoromethane</i>	<i>195.2</i>	<i>0</i>	<i>200</i>	<i>0</i>	<i>97.6</i>	<i>80-120</i>	<i>0</i>		
<i>Surr: Toluene-d8</i>	<i>196.1</i>	<i>0</i>	<i>200</i>	<i>0</i>	<i>98</i>	<i>80-120</i>	<i>0</i>		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.
 Work Order: 23111062
 Project: Racer

QC BATCH REPORT

Batch ID: **R389720** Instrument ID **VMS7** Method: **SW8260D**

MSD				Sample ID: 23110779-31A MSD			Units: µg/L		Analysis Date: 11/22/2023 03:33 AM		
Client ID:		Run ID: VMS7_231121B			SeqNo: 10237989		Prep Date:		DF: 10		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1,1-Trichloroethane	214.7	10	200	0	107	75-119	210.2	2.12	30	HH	
1,1,2,2-Tetrachloroethane	237.9	10	200	0	119	80-123	230.7	3.07	30	HH	
1,1,2-Trichloroethane	207.5	10	200	0	104	83-118	209.3	0.864	30	HH	
1,1,2-Trichlorotrifluoroethane	213.8	10	200	0	107	64-133	198.8	7.27	30	HH	
1,1-Dichloroethane	227.7	10	200	0	114	73-122	217.3	4.67	30	HH	
1,1-Dichloroethene	244.9	10	200	0	122	66-131	231.7	5.54	30	HH	
1,2,4-Trichlorobenzene	129.5	10	200	0	64.8	73-127	106	20	30	SHH	
1,2-Dibromo-3-chloropropane	233.9	10	200	0	117	52-141	220.9	5.72	30	HH	
1,2-Dibromoethane	220.4	10	200	0	110	60-159	210.9	4.41	30	HH	
1,2-Dichlorobenzene	188.9	10	200	0	94.4	80-119	171.2	9.83	30	HH	
1,2-Dichloroethane	212.3	10	200	0	106	78-121	206.3	2.87	30	HH	
1,2-Dichloropropane	223.2	10	200	0	112	78-120	217.5	2.59	30	HH	
1,3-Dichlorobenzene	170.6	10	200	0	85.3	80-120	153.8	10.4	30	HH	
1,4-Dichlorobenzene	182.4	10	200	0	91.2	81-119	164	10.6	30	HH	
2-Butanone	231.1	50	200	0	116	69-147	224.6	2.85	30	HH	
2-Hexanone	231.7	50	200	0	116	67-140	229.3	1.04	30	HH	
4-Methyl-2-pentanone	309.5	10	200	0	155	68-199	297.9	3.82	30	HH	
Acetone	224.2	100	200	0	112	70-166	204.1	9.39	30	HH	
Benzene	220.2	10	200	0	110	78-120	221.3	0.498	30	HH	
Bromodichloromethane	210.2	10	200	0	105	73-126	204.3	2.85	30	HH	
Bromoform	188.9	10	200	0	94.4	60-124	179.9	4.88	30	HH	
Bromomethane	337.9	10	200	0	169	20-183	274.6	20.7	30	HH	
Carbon disulfide	236.6	10	200	0	118	67-159	226.7	4.27	30	HH	
Carbon tetrachloride	195.5	10	200	0	97.8	69-124	182.6	6.82	30	HH	
Chlorobenzene	205.9	10	200	0	103	80-118	193.5	6.21	30	HH	
Chloroethane	256.9	10	200	0	128	35-136	233.9	9.37	30	HH	
Chloroform	222.9	10	200	0	111	75-119	213.6	4.26	30	HH	
Chloromethane	232.5	10	200	0	116	26-117	214.4	8.1	30	HH	
cis-1,2-Dichloroethene	225.2	10	200	0	113	75-123	221.7	1.57	30	HH	
cis-1,3-Dichloropropene	197.2	10	200	0	98.6	69-120	192.4	2.46	30	HH	
Cyclohexane	186.9	20	200	0	93.4	66-128	176.5	5.72	30	HH	
Dibromochloromethane	193.5	10	200	0	96.8	63-117	189.3	2.19	30	HH	
Dichlorodifluoromethane	286.2	10	200	0	143	36-133	270.3	5.71	30	SHH	
Ethylbenzene	202.3	10	200	0	101	76-116	193.1	4.65	30	HH	
Isopropylbenzene	180.4	10	200	0	90.2	77-118	160.9	11.4	30	HH	
Methyl tert-butyl ether	209.7	10	200	0	105	77-137	207	1.3	30	HH	
Methylcyclohexane	138.2	10	200	0	69.1	66-125	122	12.5	30	HH	
Methylene chloride	240.1	50	200	6.3	117	68-125	235.9	1.76	30	HH	
Styrene	216.1	10	200	0	108	76-123	206.7	4.45	30	HH	
Tetrachloroethene	195.9	10	200	0	98	80-124	181	7.91	30	HH	
Toluene	213.7	10	200	0	107	78-116	208.1	2.66	30	HH	
trans-1,2-Dichloroethene	236.4	10	200	0	118	73-124	224.1	5.34	30	HH	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389720	Instrument ID VMS7	Method: SW8260D									
trans-1,3-Dichloropropene	193.9	10	200	0	97	67-118	187.7	3.25	30	HH	
Trichloroethene	209.4	10	200	0	105	75-122	209.6	0.0955	30	HH	
Trichlorofluoromethane	254.8	10	200	0	127	52-115	234.9	8.13	30	SHH	
Vinyl chloride	279.5	10	200	0	140	49-122	265.3	5.21	30	SHH	
Xylenes, Total	609.4	30	600	0	102	77-119	568.8	6.89	30	HH	
<i>Surr: 1,2-Dichloroethane-d4</i>	206.1	0	200	0	103	80-120	199.1	3.46	30		
<i>Surr: 4-Bromofluorobenzene</i>	203.4	0	200	0	102	80-120	204.6	0.588	30		
<i>Surr: Dibromofluoromethane</i>	199.5	0	200	0	99.8	80-120	195.2	2.18	30		
<i>Surr: Toluene-d8</i>	198.6	0	200	0	99.3	80-120	196.1	1.27	30		

The following samples were analyzed in this batch:

23111062-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389729c

Instrument ID VMS10

Method: SW8260D

MBLK	Sample ID: 10V-BLKW1-231122-R389729c	Units: µg/L	Analysis Date: 11/22/2023 11:19 AM							
Client ID:	Run ID: VMS10_231122A	SeqNo: 10240752	Prep Date:	DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1,2-Trichlorotrifluoroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2,4-Trichlorobenzene	U	1.0								
1,2-Dibromo-3-chloropropane	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichlorobenzene	U	1.0								
1,2-Dichloroethane	U	1.0								
1,2-Dichloropropane	U	1.0								
1,3-Dichlorobenzene	U	1.0								
1,4-Dichlorobenzene	U	1.0								
2-Butanone	U	5.0								
2-Hexanone	U	5.0								
4-Methyl-2-pentanone	U	1.0								
Acetone	U	10								
Benzene	U	1.0								
Bromodichloromethane	U	1.0								
Bromoform	U	1.0								
Bromomethane	U	1.0								
Carbon disulfide	U	1.0								
Carbon tetrachloride	U	1.0								
Chlorobenzene	U	1.0								
Chloroethane	U	1.0								
Chloroform	U	1.0								
Chloromethane	U	1.0								
cis-1,2-Dichloroethene	U	1.0								
cis-1,3-Dichloropropene	U	1.0								
Cyclohexane	U	2.0								
Dibromochloromethane	U	1.0								
Dichlorodifluoromethane	U	1.0								
Ethylbenzene	U	1.0								
Isopropylbenzene	U	1.0								
Methyl acetate	U	2.0								
Methyl tert-butyl ether	U	1.0								
Methylcyclohexane	U	1.0								
Methylene chloride	U	5.0								
Styrene	U	1.0								
Tetrachloroethene	U	1.0								
Toluene	U	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389729c	Instrument ID VMS10	Method: SW8260D						
trans-1,2-Dichloroethene	U	1.0						
trans-1,3-Dichloropropene	U	1.0						
Trichloroethene	U	1.0						
Trichlorofluoromethane	U	1.0						
Vinyl chloride	U	1.0						
Xylenes, Total	U	3.0						
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.25</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>101</i>	<i>80-120</i>	<i>0</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>17.45</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>87.2</i>	<i>80-120</i>	<i>0</i>	
<i>Surr: Dibromofluoromethane</i>	<i>20.8</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>104</i>	<i>80-120</i>	<i>0</i>	
<i>Surr: Toluene-d8</i>	<i>19.69</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>98.4</i>	<i>80-120</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389729c

Instrument ID VMS10

Method: SW8260D

LCS		Sample ID: 10V-LCSW1-231122-R389729c				Units: µg/L		Analysis Date: 11/22/2023 10:27 AM		
Client ID:		Run ID: VMS10_231122A		SeqNo: 10240750		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	20.94	1.0	20	0	105	75-119	0			
1,1,2,2-Tetrachloroethane	19.24	1.0	20	0	96.2	80-123	0			
1,1,2-Trichloroethane	19.48	1.0	20	0	97.4	83-118	0			
1,1,2-Trichlorotrifluoroethane	22.51	1.0	20	0	113	64-133	0			
1,1-Dichloroethane	19.38	1.0	20	0	96.9	73-122	0			
1,1-Dichloroethene	20.94	1.0	20	0	105	66-131	0			
1,2,4-Trichlorobenzene	20.01	1.0	20	0	100	73-127	0			
1,2-Dibromo-3-chloropropane	18.8	1.0	20	0	94	52-141	0			
1,2-Dibromoethane	21.25	1.0	20	0	106	60-159	0			
1,2-Dichlorobenzene	21.29	1.0	20	0	106	80-119	0			
1,2-Dichloroethane	20.75	1.0	20	0	104	78-121	0			
1,2-Dichloropropane	19.97	1.0	20	0	99.8	78-120	0			
1,3-Dichlorobenzene	20.59	1.0	20	0	103	80-120	0			
1,4-Dichlorobenzene	21.49	1.0	20	0	107	81-119	0			
2-Butanone	15.48	5.0	20	0	77.4	69-147	0			
2-Hexanone	18.11	5.0	20	0	90.6	67-140	0			
4-Methyl-2-pentanone	26.22	1.0	20	0	131	68-199	0			
Acetone	18.42	10	20	0	92.1	70-166	0			
Benzene	20.82	1.0	20	0	104	78-120	0			
Bromodichloromethane	20.19	1.0	20	0	101	73-126	0			
Bromoform	19.9	1.0	20	0	99.5	60-124	0			
Bromomethane	19.6	1.0	20	0	98	20-183	0			
Carbon disulfide	19.82	1.0	20	0	99.1	67-159	0			
Carbon tetrachloride	21.57	1.0	20	0	108	69-124	0			
Chlorobenzene	21.35	1.0	20	0	107	80-118	0			
Chloroethane	17.04	1.0	20	0	85.2	35-136	0			
Chloroform	20.83	1.0	20	0	104	75-119	0			
Chloromethane	17.16	1.0	20	0	85.8	26-117	0			
cis-1,2-Dichloroethene	19.49	1.0	20	0	97.4	75-123	0			
cis-1,3-Dichloropropene	19.29	1.0	20	0	96.4	69-120	0			
Cyclohexane	17.74	2.0	20	0	88.7	66-128	0			
Dibromochloromethane	20.34	1.0	20	0	102	63-117	0			
Dichlorodifluoromethane	15.15	1.0	20	0	75.8	36-133	0			
Ethylbenzene	21.65	1.0	20	0	108	76-116	0			
Isopropylbenzene	22.87	1.0	20	0	114	77-118	0			
Methyl tert-butyl ether	17.56	1.0	20	0	87.8	77-137	0			
Methylcyclohexane	19.77	1.0	20	0	98.8	66-125	0			
Methylene chloride	19.42	5.0	20	0	97.1	68-125	0			
Styrene	22.17	1.0	20	0	111	76-123	0			
Tetrachloroethene	23.67	1.0	20	0	118	80-124	0			
Toluene	20.7	1.0	20	0	104	78-116	0			
trans-1,2-Dichloroethene	20.26	1.0	20	0	101	73-124	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389729c	Instrument ID VMS10	Method: SW8260D						
trans-1,3-Dichloropropene	16.8	1.0	20	0	84	67-118	0	
Trichloroethene	20.47	1.0	20	0	102	75-122	0	
Trichlorofluoromethane	19.89	1.0	20	0	99.4	52-115	0	
Vinyl chloride	17.99	1.0	20	0	90	49-122	0	
Xylenes, Total	64.9	3.0	60	0	108	77-119	0	
<i>Surr: 1,2-Dichloroethane-d4</i>	20.45	0	20	0	102	80-120	0	
<i>Surr: 4-Bromofluorobenzene</i>	20.46	0	20	0	102	80-120	0	
<i>Surr: Dibromofluoromethane</i>	20.78	0	20	0	104	80-120	0	
<i>Surr: Toluene-d8</i>	20.41	0	20	0	102	80-120	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.
 Work Order: 23111062
 Project: Racer

QC BATCH REPORT

Batch ID: **R389729c** Instrument ID **VMS10** Method: **SW8260D**

MS				Sample ID: 23110987-02G MS		Units: µg/L		Analysis Date: 11/22/2023 05:56 PM		
Client ID:		Run ID: VMS10_231122A		SeqNo: 10240775		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	21.33	1.0	20	0	107	75-119	0			
1,1,2,2-Tetrachloroethane	19.38	1.0	20	0	96.9	80-123	0			
1,1,2-Trichloroethane	18.3	1.0	20	0	91.5	83-118	0			
1,1,2-Trichlorotrifluoroethane	22.87	1.0	20	0	114	64-133	0			
1,1-Dichloroethane	18.5	1.0	20	0	92.5	73-122	0			
1,1-Dichloroethene	21.81	1.0	20	0	109	66-131	0			
1,2,4-Trichlorobenzene	16.03	1.0	20	0	80.2	73-127	0			
1,2-Dibromo-3-chloropropane	18.1	1.0	20	0	90.5	52-141	0			
1,2-Dibromoethane	19.76	1.0	20	0	98.8	60-159	0			
1,2-Dichlorobenzene	19.58	1.0	20	0	97.9	80-119	0			
1,2-Dichloroethane	20.22	1.0	20	0	101	78-121	0			
1,2-Dichloropropane	20.31	1.0	20	0	102	78-120	0			
1,3-Dichlorobenzene	19.33	1.0	20	0	96.6	80-120	0			
1,4-Dichlorobenzene	19.84	1.0	20	0	99.2	81-119	0			
2-Butanone	17.77	5.0	20	0	88.8	69-147	0			
2-Hexanone	17.73	5.0	20	0	88.6	67-140	0			
4-Methyl-2-pentanone	24.34	1.0	20	0	122	68-199	0			
Acetone	21.8	10	20	3.86	89.7	70-166	0			
Benzene	21.15	1.0	20	0	106	78-120	0			
Bromodichloromethane	20.76	1.0	20	0	104	73-126	0			
Bromoform	19.01	1.0	20	0	95	60-124	0			
Bromomethane	6.26	1.0	20	0	31.3	20-183	0			
Carbon disulfide	19.35	1.0	20	0	96.8	67-159	0			
Carbon tetrachloride	23.82	1.0	20	0	119	69-124	0			
Chlorobenzene	19.35	1.0	20	0	96.8	80-118	0			
Chloroethane	18.62	1.0	20	0	93.1	35-136	0			
Chloroform	20.24	1.0	20	0	101	75-119	0			
Chloromethane	24.81	1.0	20	0	124	26-117	0			S
cis-1,2-Dichloroethene	19.48	1.0	20	0	97.4	75-123	0			
cis-1,3-Dichloropropene	19.25	1.0	20	0	96.2	69-120	0			
Cyclohexane	18.06	2.0	20	0	90.3	66-128	0			
Dibromochloromethane	19.22	1.0	20	0	96.1	63-117	0			
Dichlorodifluoromethane	20.01	1.0	20	0	100	36-133	0			
Ethylbenzene	19.59	1.0	20	0	98	76-116	0			
Isopropylbenzene	20.3	1.0	20	0	102	77-118	0			
Methyl tert-butyl ether	16.87	1.0	20	0	84.4	77-137	0			
Methylcyclohexane	19.63	1.0	20	0	98.2	66-125	0			
Methylene chloride	19.14	5.0	20	0	95.7	68-125	0			
Styrene	20.22	1.0	20	0	101	76-123	0			
Tetrachloroethene	22.49	1.0	20	0	112	80-124	0			
Toluene	19.49	1.0	20	0	97.4	78-116	0			
trans-1,2-Dichloroethene	19.94	1.0	20	0	99.7	73-124	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389729c	Instrument ID VMS10	Method: SW8260D						
trans-1,3-Dichloropropene	15.91	1.0	20	0	79.6	67-118	0	
Trichloroethene	20.9	1.0	20	0	104	75-122	0	
Trichlorofluoromethane	21.5	1.0	20	0	108	52-115	0	
Vinyl chloride	18.65	1.0	20	0	93.2	49-122	0	
Xylenes, Total	59.92	3.0	60	0	99.9	77-119	0	
<i>Surr: 1,2-Dichloroethane-d4</i>	20.21	0	20	0	101	80-120	0	
<i>Surr: 4-Bromofluorobenzene</i>	19.65	0	20	0	98.2	80-120	0	
<i>Surr: Dibromofluoromethane</i>	20.38	0	20	0	102	80-120	0	
<i>Surr: Toluene-d8</i>	18.73	0	20	0	93.6	80-120	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

QC BATCH REPORT

Work Order: 23111062

Project: Racer

Batch ID: R389729c

Instrument ID VMS10

Method: SW8260D

DUP		Sample ID: 23110987-01G DUP				Units: µg/L		Analysis Date: 11/22/2023 05:39 PM		
Client ID:		Run ID: VMS10_231122A		SeqNo: 10240774		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	1.0	0	0	0		0	0	30	
1,1,2,2-Tetrachloroethane	U	1.0	0	0	0		0	0	30	
1,1,2-Trichloroethane	U	1.0	0	0	0		0	0	30	
1,1,2-Trichlorotrifluoroethane	U	1.0	0	0	0		0	0	30	
1,1-Dichloroethane	U	1.0	0	0	0		0	0	30	
1,1-Dichloroethene	U	1.0	0	0	0		0	0	30	
1,2,4-Trichlorobenzene	U	1.0	0	0	0		0	0	30	
1,2-Dibromo-3-chloropropane	U	1.0	0	0	0		0	0	30	
1,2-Dibromoethane	U	1.0	0	0	0		0	0	30	
1,2-Dichlorobenzene	U	1.0	0	0	0		0	0	30	
1,2-Dichloroethane	U	1.0	0	0	0		0	0	30	
1,2-Dichloropropane	U	1.0	0	0	0		0	0	30	
1,3-Dichlorobenzene	U	1.0	0	0	0		0	0	30	
1,4-Dichlorobenzene	U	1.0	0	0	0		0	0	30	
2-Butanone	U	5.0	0	0	0		0	0	30	
2-Hexanone	U	5.0	0	0	0		0	0	30	
4-Methyl-2-pentanone	U	1.0	0	0	0		0	0	30	
Acetone	5.23	10	0	0	0		3	0	30	J
Benzene	U	1.0	0	0	0		0	0	30	
Bromodichloromethane	U	1.0	0	0	0		0	0	30	
Bromoform	U	1.0	0	0	0		0	0	30	
Bromomethane	U	1.0	0	0	0		0	0	30	
Carbon disulfide	U	1.0	0	0	0		0	0	30	
Carbon tetrachloride	U	1.0	0	0	0		0	0	30	
Chlorobenzene	U	1.0	0	0	0		0	0	30	
Chloroethane	U	1.0	0	0	0		0	0	30	
Chloroform	U	1.0	0	0	0		0	0	30	
Chloromethane	U	1.0	0	0	0		0	0	30	
cis-1,2-Dichloroethene	U	1.0	0	0	0		0	0	30	
cis-1,3-Dichloropropene	U	1.0	0	0	0		0	0	30	
Cyclohexane	U	2.0	0	0	0		0	0	30	
Dibromochloromethane	U	1.0	0	0	0		0	0	30	
Dichlorodifluoromethane	U	1.0	0	0	0		0	0	30	
Ethylbenzene	U	1.0	0	0	0		0	0	30	
Isopropylbenzene	U	1.0	0	0	0		0	0	30	
Methyl acetate	U	2.0	0	0	0		0	0	30	
Methyl tert-butyl ether	U	1.0	0	0	0		0	0	30	
Methylcyclohexane	U	1.0	0	0	0		0	0	30	
Methylene chloride	U	5.0	0	0	0		0	0	30	
Styrene	U	1.0	0	0	0		0	0	30	
Tetrachloroethene	U	1.0	0	0	0		0	0	30	
Toluene	U	1.0	0	0	0		0	0	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: The Mannik & Smith Group, Inc.

Work Order: 23111062

Project: Racer

QC BATCH REPORT

Batch ID: R389729c	Instrument ID VMS10	Method: SW8260D							
trans-1,2-Dichloroethene	U	1.0	0	0	0	0	0	0	30
trans-1,3-Dichloropropene	U	1.0	0	0	0	0	0	0	30
Trichloroethene	U	1.0	0	0	0	0	0	0	30
Trichlorofluoromethane	U	1.0	0	0	0	0	0	0	30
Vinyl chloride	U	1.0	0	0	0	0	0	0	30
Xylenes, Total	U	3.0	0	0	0	0	0	0	30
<i>Surr: 1,2-Dichloroethane-d4</i>	21.22	0	20	0	106	80-120	21.15	0.33	30
<i>Surr: 4-Bromofluorobenzene</i>	18.67	0	20	0	93.4	80-120	17.4	7.04	30
<i>Surr: Dibromofluoromethane</i>	21.45	0	20	0	107	80-120	21.39	0.28	30
<i>Surr: Toluene-d8</i>	19.49	0	20	0	97.4	80-120	20.1	3.08	30

The following samples were analyzed in this batch:

23111062-02A	23111062-14A
--------------	--------------

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Simi Valley, CA
+1 805 528 7161
Kelso, WA
+1 360 577 7222

Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Valparaiso, IN
+1 219 299 8127
Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168
Rochester, NY
+1 585 288 5380

Chain of Custody Form

Page 1 of 2

COC ID: **062090**

ALS Project Manager:

ALS Work Order #:

Customer Information

Project Information

Parameter/Method Request for Analysis

Purchase Order

Quote #

Company Name

Send Report To

Address

City/State/Zip

Phone

Fax

e-Mail Address

Sample Description

Date

Time

Matrix

Pres.

Bottles

A

B

C

D

E

Hold

Project Name

Project Number

Invoice Attn

Address

City/State/Zip

Phone

Fax

ACER

R2330031

Kevin Land

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

→

Total Metals (AL, FE, MN)

Dissolved Metals (AL, FE, MN)

Voc (Method 8260)

23111062
MANNIK&SMITH: The Mannik & Smith Group, Inc.
Project: WR2330031

Sampler(s) Please Print & Sign

ERIC ROBINSON

ERIC ROBINSON

ERIC ROBINSON

ERIC ROBINSON

ERIC ROBINSON

Shipment Method

Turnaround Time in Business Days (BD)

Other

Results Due Date:

11/10/23

2200

Date: 11-10-23

Time: 1500

Date: 11/16/23

Time: 1700

Date: 11/11/23

Time: 931

Received by:

Received by (Laboratory):

Checked by (Laboratory):

Notes: QS →

Cooler ID

Cooler Temp.

QC Packages: (Check One Box Below)

- Level II Std OC
- Level III Std OC/Raw Date
- Level IV SW/84/CLP
- Other
- TRRP Checklist
- TRRP Level IV

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Relinquished by: [Signature]

Relinquished by: [Signature]

Relinquished by: [Signature]

Relinquished by: [Signature]

Relinquished by: [Signature]

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2022 by ALS Environmental
ALS-COC-2022-R00

Sample Receipt Checklist

Client Name: **MANNIK&SMITH**

Date/Time Received: **10-Nov-23 22:00**

Work Order: **23111062**

Received by: **WSK**

Checklist completed by Wiston Katsicki 11-Nov-23
eSignature Date

Reviewed by: Bill Carey 13-Nov-23
eSignature Date

Matrices: Water

Carrier name: Courier

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<input type="text" value="4.0/4.0C"/>	<input type="text" value="DF2"/>	
Cooler(s)/Kit(s):	<input type="text"/>		
Date/Time sample(s) sent to storage:	<input type="text" value="11/11/2023 9:36:53 AM"/>		
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:	<input type="text"/>		

Login Notes: pH checked <2

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



27-Dec-2023

Kevin Lund
The Mannik & Smith Group, Inc.
2365 Haggerty Road South
Suite 100
Canton, MI 48188

Re: **Racer**

Work Order: **23121527**

Dear Kevin,

ALS Environmental received 1 sample on 18-Dec-2023 10:00 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 8.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Bill Carey

Bill Carey
Project Manager

Report of Laboratory Analysis

Certificate No: FL E871106

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Client: The Mannik & Smith Group, Inc.
Project: Racer
Work Order: 23121527

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
23121527-01	WR2330031121823ERR014	Water		12/18/2023 13:10	12/18/2023 22:00	<input type="checkbox"/>

Client: The Mannik & Smith Group, Inc.
Project: Racer
WorkOrder: 23121527

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCS D	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
mg/L	Milligrams per Liter

Client: The Mannik & Smith Group, Inc.

Project: Racer

Work Order: 23121527

Case Narrative

The attached "Sample Receipt Checklist" documents the date of receipt, status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. A copy of the laboratory's scope of accreditation is available upon request.

Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

Any flags on MS/MSD samples not addressed in this narrative are unrelated to samples in this report.

With the following exceptions, all sample analyses achieved analytical criteria.

ALS Group, USA

Date: 27-Dec-23

Client: The Mannik & Smith Group, Inc.
Project: Racer
Sample ID: WR2330031121823ERR014
Collection Date: 12/18/2023 01:10 PM

Work Order: 23121527
Lab ID: 23121527-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020B			Prep: SW3015A / 12/22/23	Analyst: STP
<u>BatchID: 231459</u>							
Aluminum	0.42		0.0057	0.010	mg/L	1	12/22/2023 15:27
Iron	0.89		0.047	0.080	mg/L	1	12/22/2023 15:27
Manganese	0.44		0.0017	0.0050	mg/L	1	12/22/2023 15:27
METALS BY ICP-MS (DISSOLVED)			SW6020B			Prep: SW3015A / 12/22/23	Analyst: STP
<u>BatchID: 231459</u>							
Aluminum	U		0.0057	0.010	mg/L	1	12/22/2023 15:29
Iron	0.47		0.047	0.080	mg/L	1	12/22/2023 15:29
Manganese	0.39		0.0017	0.0050	mg/L	1	12/22/2023 15:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: The Mannik & Smith Group, Inc.
Work Order: 23121527
Project: Racer

QC BATCH REPORT

Batch ID: **231459** Instrument ID **ICPMS3** Method: **SW6020B**

MBLK		Sample ID: MBLK-231459-231459			Units: mg/L		Analysis Date: 12/22/2023 02:44 PM			
Client ID:		Run ID: ICPMS3_231222A			SeqNo: 10347415		Prep Date: 12/22/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	0.010								
Iron	U	0.080								
Manganese	U	0.0050								

LCS		Sample ID: LCS-231459-231459			Units: mg/L		Analysis Date: 12/22/2023 02:46 PM			
Client ID:		Run ID: ICPMS3_231222A			SeqNo: 10347416		Prep Date: 12/22/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1038	0.010	0.1	0	104	80-120	0			
Iron	9.658	0.080	10	0	96.6	80-120	0			
Manganese	0.09275	0.0050	0.1	0	92.7	80-120	0			

MS		Sample ID: 23121401-11BMS			Units: mg/L		Analysis Date: 12/22/2023 03:12 PM			
Client ID:		Run ID: ICPMS3_231222A			SeqNo: 10347503		Prep Date: 12/22/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.2	0.010	0.1	0.06999	130	75-125	0			S
Iron	14.51	0.080	10	4.974	95.3	75-125	0			
Manganese	1.797	0.0050	0.1	1.799	-1.58	75-125	0			SO

MSD		Sample ID: 23121401-11BMSD			Units: mg/L		Analysis Date: 12/22/2023 03:14 PM			
Client ID:		Run ID: ICPMS3_231222A			SeqNo: 10347504		Prep Date: 12/22/2023		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1975	0.010	0.1	0.06999	128	75-125	0.2	1.26	20	S
Iron	14.35	0.080	10	4.974	93.7	75-125	14.51	1.11	20	
Manganese	1.798	0.0050	0.1	1.799	-0.99	75-125	1.797	0.0328	20	SO

The following samples were analyzed in this batch: 23121527-01A 23121527-01B



Simi Valley, CA +1 805 526 7164
 Kells, WA +1 360 577 7222
 Cincinnati, OH +1 513 733 3336
 Everett, WA +1 425 356 2600
 Fort Collins, CO +1 970 490 1511
 Holland, MI +1 616 399 6070

Chain of Custody Form

Houston, TX +1 281 530 5656
 Middletown, PA +1 717 944 5541
 Valparaiso, IN +1 219 299 8127
 Salt Lake City, UT +1 801 266 7700
 South Charleston, WV +1 304 356 3168
 Rochester, NY +1 585 288 5380

Page 1 of 1

COC ID: 062091

Customer Information

Project Information

Parameter/Method Request for Analysis

ALS Project Manager:

ALS Work Order #:

Purchase Order

Project Name

A Total metals (AL, FE, MN)

Quote #

Project Number

B Dissolved metals (AL, FE, MN)

Company Name

Bill To Company

Send Report To

Invoice Attn

Address

Address

23121527
 MANNIK&SMITH, The Mannik & Smith Group, Inc.
 Project: Racer

City/State/Zip

City/State/Zip

Phone

Phone

Fax

Fax

e-Mail Address

e-Mail Address

No.

Date

Time

Matrix

Pres.

Bottles

A

B

C

D

E

F

G

H

I

J

Hold

Sample Description

Date

Time

Matrix

Pres.

Bottles

A

B

C

D

E

F

G

H

I

J

Hold

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WR2330031121823 ERR 014	12-18-23	1310	W	HWC3	2	X	X									
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign

Shipment Method

Turnaround Time in Business Days (BD)

Other

Results Due Date:

Relinquished by: Eric Robinson

Date: 12/18/23

Time: 11:46

Received by:

Received by (Laboratory):

Notes:

Cooler ID

Cooler Temp.

QC Package: (Check One Box Below)

Relinquished by: [Signature]

Date: 12/18/23

Time: 11:00

Received by:

Received by (Laboratory):

Notes:

Cooler ID

Cooler Temp.

QC Package: (Check One Box Below)

Logged by (Laboratory):

Date: 12/19/23

Time: 08:50

Received by:

Received by (Laboratory):

Notes:

Cooler ID

Cooler Temp.

QC Package: (Check One Box Below)

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NAOH 5-Na₂S₂O₃ 6-NAHSO₄ 7-Other 8-4°C 9-5035

- Level II Std QC
- Level III Std QC/Ret Date
- Level IV SW846/CLP
- Other
- TRRP Checklist
- TRRP Level IV

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Sample Receipt Checklist

Client Name: **MANNIK&SMITH**

Date/Time Received: **18-Dec-23 22:00**

Work Order: **23121527**

Received by: **KRW**

Checklist completed by Keith Wierenga 19-Dec-23
eSignature Date

Reviewed by: Bill Carey 20-Dec-23
eSignature Date

Matrices: Water

Carrier name: Courier

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<input type="text" value="2.8/3.8 C"/>		<input type="text" value="IR3"/>
Cooler(s)/Kit(s):	<input type="text"/>		
Date/Time sample(s) sent to storage:	<input type="text" value="12/19/2023 8:49:57 AM"/>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:	<input type="text"/>		

Login Notes: pH Check <2

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: