REI
CIVIL & ENVIRONMENTAL ENGINEERING, SURVEYING

September 5, 2019

Wisconsin Department of Natural Resources
Attn: Mr. Phil Richard
875 South 4th Avenue
Park Falls, WI 54552

Subject:

Site Update
Phillips Plating Corporation
984 North Lake Avenue
Phillips, WI
BRRTS: 02-51-559634

Dear Phil,

The purpose of this letter is to provide you with an update for site investigation activities associated with the above referenced site. The site location is shown on Figure 1.

BACKGROUND

This site is in the NW ¼, SW ¼, Section 7, T37N, R01E in the City of Phillips, Price County. A site vicinity map is included as attachment (Figure 1). The facility is an operating plating facility which specializes in metallic plating of various plastic components.

SUMMARY OF DATES AND WORK COMPLETED

- **December 11, 2018** – REI onsite to sample all monitoring wells and piezometers.
- **April 30, 2019** – REI onsite to sample all monitoring wells and piezometers.

SITE SUMMARY

REI submitted the Site Investigation Report / Remedial Action Plan on October 30, 2013. Site Update reports have been submitted on January 24, 2013, March 13, 2013, October 14, 2014, January 19, 2017, December 29, 2017, and September 4, 2018. These reports conclude that groundwater contamination originating from the Phillips Plating wastewater process is present on and off site. REI presented three (3) alternatives as a part of the Remedial Action Plan including source excavation, chemical injection, and long-term groundwater monitoring for natural attenuation. Groundwater monitoring was selected due to the limited ability to access the impacted source areas inside the building as well as the limited access between the building, State Highway 13 and railroad right of way along State Highway 13. Since the identification of the issue, Phillips Plating has also replaced or upgraded all process water tanks and piping by adding secondary containment or removing the Underground Storage Tanks (USTs) and replacing with Aboveground Storage Tanks (ASTs). They have also recoated the floors under the plating machines with chemical resistant epoxy to prevent any migration of materials. Therefore, it is believed that there is no additional leak or ongoing source to the contamination.

Groundwater elevation data was collected prior to sampling and summarized on Table 1 and groundwater field monitoring and laboratory analytical results are summarized on Tables 2a-2r. The updated groundwater flow maps for the December 2018 and April 2019 sample events completed along with location of all monitoring wells and piezometer are depicted in Figures 3a & 3b. Historically, groundwater has been documented in a northeasterly flow direction. The expansion of the well network on the Phillips Medisize property has revealed higher groundwater elevations in the monitoring wells near Elk Lake (WBIC 2240000) compared to elevations in monitoring wells near the source area. Elk Lake is part of the Phillips Chain of Lakes, expanded by the impoundment of the Elk River. The hydrologic lake type of Elk Lake is a drainage lake which means it has an inlet and an outlet and the main water source is stream drainage. Based on depth to groundwater and underlying geologic conditions, Elk Lake is likely fed from both groundwater and surface water sources. Increased elevations in monitoring wells closer to the lake are likely a product of a hydraulic connection between the groundwater and the lake. Groundwater flow direction may also be influenced near Elk Lake which has a westerly flow direction as it approaches the outlet into Long Lake (WBIC 2239300) at the STH 13 bridge.

GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical results reveal exceedances of chromium and nickel above the Wisconsin Administrative Code (WAC) Ch. NR 140 Enforcement Standard (ES) in down-gradient wells of MW6, MW8 and MW9 all located east of the Phillips Plating building. MW8 and MW9 analytical results demonstrate stable or decreasing trends for chromium and nickel since sample events conducted in 2014. MW6 analytical results demonstrate a decreasing/stable trend for nickel since 2014, however, an increasing trend has been identified for chromium since 2015. Chromium concentration in the April 30, 2019 sample matched the concentration of the second all time highest at that location which was recorded in February 2015.

Side gradient monitoring well MW5 reveals exceedances above the WAC Ch. NR 140 ES for chromium and nickel. At this location, chromium has demonstrated a stable/decreasing trend. Conversely, nickel has demonstrated an increasing trend since 2015.

Side gradient monitoring wells MW2, MW7, MW11 and MW12 reveal no detections above the WAC CH. NR 140 ES or Preventive Action Limit (PAL) for the metals of concern. Up-gradient well MW1 does not reveal detections of chromium, however, nickel has been detected above the WAC Ch. NR 140 PAL since 2016. Up/side gradient MW4 does not reveal any detections for chromium and only low-level detections for nickel.

Down gradient monitoring wells MW13, MW14 and MW15 reveal no detections above the WAC Ch. NR 140 ES or PAL for the metals of concern aiding in lateral definition of the contaminant plume at the water table.

MW10 is located downgradient along the contamination plume and had consistently revealed analytical results exceeding the WAC Ch. NR 140 ES for chromium and nickel. However, in July 2018, only WAC Ch. NR 140 PAL exceedances were noted for chromium and no exceedances were noted for chromium or nickel and April 2019. Overall a stable to decreasing trend continues in MW10 since May 2015 to present. Groundwater samples were collected, and split samples were submitted to Pace Analytical Services and Northern Lake Service, Inc. for wells MW10 and MW11 as well as recently installed MW13, MW14, MW15, PZ2, and PZ3. The split sample analysis is in accordance with the original agreement with Phillips Medisize. Figure 4a and Figure 4b shows the estimated extent of dissolved chromium and nickel in the groundwater for the December 2018 and April 2019 sample events respectively.

PZ1 is located immediately adjacent to MW6. Concentrations of nickel are below the PAL and in most recent events below method detection limits. Therefore, although there is a downward gradient between MW6 and PZ1, detections of nickel are not being realized in PZ1 as they are in MW6. However, chromium is present in concentrations exceeding the WAC Ch. NR 140 ES and has been relatively stable in levels detected since the initial sampling event. Based on concentrations of chromium in PZ1 and the downward gradient, the vertical extent of the chromium plume has not been defined.

PZ2 is located immediately adjacent to MW13. Concentrations of nickel and chromium are below laboratory reporting limits. An upward gradient was identified in the December 11, 2018 round of groundwater sampling and a downward gradient was identified in the April 30, 2019 round of groundwater sampling at this location.

PZ3 is nested directly adjacent to MW10. Concentrations of nickel and chromium exceeded the ES in the December 11, 2018 and April 30, 2019 sample event. A downward gradient was identified between MW10 and PZ3 in both events. Chromium and nickel concentrations are reported at two (2) to three (3) orders of magnitude higher in PZ3 than MW10. The increased metals concentration at depth is likely a combination of the metals sinking in the groundwater formation with lateral movement and the downward gradient.

CONCLUSIONS AND RECOMMENDATIONS

REI has conducted ongoing groundwater monitoring to demonstrate stable or decreasing contaminant trends. Such trends have been identified in many of the Phillips Plating monitoring wells. However, increasing chromium concentration trends in MW6 since 2015 and increasing nickel concentration trends in MW5 since 2015 may warrant an increased groundwater monitoring frequency to a quarterly schedule in select source area wells and a continued semi-annual monitoring schedule in the remaining well network.

Downward gradients have been identified in well nests MW6/PZ1, MW10/PZ3, and MW13/PZ2. Considering these downward gradients and contaminants are likely sinking in the formation, REI recommends consideration for the installation of additional piezometers at greater depths to aid in vertical definition of the groundwater contamination.

Please contact our office at (715) 675-9784 or electronically at klassa@reiengineering.com to further discuss anything contained in this update.

Sincerely,
REI Engineering, Inc.

Brian Bailey
Environmental Scientist

Attachments

- Table 1 – Groundwater Elevation Summary
- Table 2a-2r – Groundwater Analytical Results Summary
- Table 3a-3c – Vertical Gradient Calculations
- Figure 1 – Site Vicinity Map
- Figure 2 – Site Map
- Figure 3a-3b – Groundwater Contour Maps
- Figure 4a-4b – Estimated Extent of Groundwater Contamination for Chromium and Nickel

Attachment A – Laboratory Analytical Reports

Cc: Mr. Darin Baratka, Phillips Plating Corp., 984 N. Lake Avenue Phillips, WI 54555
Mr. Dan Anderson, Phillips Medisize (electronic copy)

TABLE 1
GROUNDWATER ELEVATION SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI

Well	**MW1**	**MW2**	**MW3**	**MW4**	**MW5**	**MW6**	**MW7**	**MW8**	**MW9**	**MW10**	**MW11**	**MW12**	**MW13**	**MW14**	**MW15**	**PZ1**	**PZ2**	**PZ3**
TOC Elevation	1459.82	1457.24	1461.33	1459.19	1457.51	1458.16	1453.30	1457.92	1455.91	1450.54	1452.99	1459.50	1457.91	1449.03	1449.48	1457.96	1457.55	1451.00
Ground Elevation	1460.22	1457.58	1461.59	1459.52	1457.99	1458.67	1454.02	1458.23	1456.33	1451.11	1453.51	1459.98	1458.09	1449.21	1449.89	1458.36	1458.22	1451.16
Top of Screen Elevation	1445.92	1442.94	1446.85	1444.85	1443.86	1448.49	1443.76	1447.86	1445.85	1446.21	1445.75	1449.88	1446.48	1445.30	1445.87	1429.73	1429.36	1432.12
Well Depth	23.90	24.30	24.48	24.34	23.65	19.67	19.54	20.06	20.06	14.33	17.24	19.62	21.43	13.73	13.61	33.23	33.19	23.88
Depth to Water (from TOC)																		
12/12/2012	12.76	12.58	15.43	13.79	15.70	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
1/3/2013	13.06	12.83	15.74	14.02	15.77	16.76	15.04	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
2/6/2013	13.49	13.24	16.08	14.19	15.84	16.85	15.19	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
2/19/2013	NC	NC	NC	NC	NC	NC	NC	9.78	17.39	NI	NI	NI	NI	NI	NI	NI	NI	NI
3/5/2013	13.76	13.50	16.33	14.46	15.74	16.76	15.12	9.78	17.37	NI	NI	NI	NI	NI	NI	NI	NI	NI
5/8/2013	10.38	9.83	9.72	9.79	11.38	15.75	13.07	9.39	14.86	NI	NI	NI	NI	NI	NI	NI	NI	NI
7/15/2013	9.39	10.69	10.81	10.51	15.15	16.19	13.96	9.68	15.97	7.8	9.94	13.06	NI	NI	NI	17.05	NI	NI
8/12/2013	9.76	11.09	12.01	11.35	15.31	16.11	14.21	9.57	16.24	8.03	10.28	14.21	NI	NI	NI	17.21	NI	NI
11/12/2013	10.14	11.13	11.37	11.49	15.29	16.3	14.2	9.63	16.34	8.1	10.39	14.61	NI	NI	NI	17.43	NI	NI
2/12/2014	10.99	12.20	14.31	12.95	15.56	16.61	15.13	10.04	17.32	9.04	11.41	16.16	NI	NI	NI	18.27	NI	NI
6/2/2014	8.42	10.03	9.41	9.63	14.38	15.91	13.14	9.41	15.12	7.29	9.11	11.42	NI	NI	NI	16.32	NI	NI
8/5/2014	9.45	10.94	11.28	11.05	15.28	16.27	14.11	9.73	16.13	8.03	10.19	12.95	NI	NI	NI	17.11	NI	NI
11/5/2014	9.91	11.25	11.56	X	15.39	16.39	14.33	9.89	16.5	8.28	10.54	13.57	NI	NI	NI	17.45	NI	NI
2/10/2015	11.31	11.73	13.36	12.59	15.56	16.51	14.95	10.01	17.11	8.85	11.17	17.8	NI	NI	NI	18.03	NI	NI
5/4/2015	10.53	12.94	11.26	11.87	15.37	16.31	14.1	9.87	16.19	8.04	10.24	12.94	NI	NI	NI	17.45	NI	NI
8/4/2015	9.94	11.11	Well Abandoned	11.27	15.24	16.18	14.11	9.39	16.02	8.02	10.24	13.61	NI	NI	NI	17.25	NI	NI
11/3/2015	10.21	11.78		12.56	15.41	16.32	14.25	9.58	16.42	8.22	10.37	14.13	NI	NI	NI	17.6	NI	NI
2/22/2016	10.86	12.06		NA	15.52	16.36	14.89	9.41	17.07	8.76	11.08	15.77	NI	NI	NI	18.06	NI	NI
8/31/2016	10.32	11.55		12.38	NA	16.32	13.99	9.78	16.09	7.9	10.07	15.45	NI	NI	NI	17.16	NI	NI
2/14/2017	11.68	12.90		13.12	15.76	16.55	14.81	9.76	17.09	8.76	11.06	15.81	NI	NI	NI	18.2	NI	NI
8/29/2017	9.71	11.71		11.90	15.42	NA	13.87	10.17	16.19	7.90	10.07	13.66	NI	NI	NI	17.13	NI	NI
7/11/2018	10.90	11.35		11.76	15.41	16.35	13.94	10.21	16.04	7.84	10.01	13.25	15.28	6.55	7.34	17.15	14.94	8.31
12/11/2018	11.02	12.00		12.40	15.66	16.61	14.70	10.99	16.95	8.68	10.96	15.34	16.08	7.30	8.04	18.05	15.66	9.15
4/30/2019	9.38	12.20		11.55	15.28	16.22	13.55	10.03	15.69	7.50	9.50	12.27	9.32	6.15	6.88	17.15	14.45	9.32
Water Elevation																		
12/12/2012	1447.06	1444.66	1445.9	1445.4	1441.81	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
1/3/2013	1446.76	1444.41	1445.59	1445.17	1441.74	1441.40	1438.26	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
2/6/2013	1446.33	1444.00	1445.25	1445.00	1441.67	1441.31	1438.11	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
2/19/2013	NC	NC	NC	NC	NC	NC	NC	1448.45	1438.94	NI	NI	NI	NI	NI	NI	NI	NI	NI
3/5/2013	1446.06	1443.74	1445.00	1444.73	1441.77	1441.40	1438.18	1448.14	1438.54	NI	NI	NI	NI	NI	NI	NI	NI	NI
5/8/2013	1449.44	1447.41	1451.61	1449.4	1446.13	1442.41	1440.23	1448.53	1441.05	NI	NI	NI	NI	NI	NI	NI	NI	NI
7/15/2013	1450.43	1446.55	1450.52	1448.68	1442.36	1441.97	1439.34	1448.24	1439.94	1442.74	1443.05	1446.44	NI	NI	NI	1440.91	NI	NI
8/12/2013	1450.06	1446.15	1449.32	1447.84	1442.2	1442.05	1439.09	1448.35	1439.67	1442.51	1442.71	1445.29	NI	NI	NI	1440.75	NI	NI
11/12/2013	1449.68	1446.11	1449.96	1447.7	1442.22	1441.86	1439.1	1448.29	1439.57	1442.44	1442.6	1444.89	NI	NI	NI	1440.53	NI	NI
2/12/2014	1448.83	1445.04	1447.02	1446.24	1441.95	1441.55	1438.17	1447.88	1438.59	1441.5	1441.58	1443.34	NI	NI	NI	1439.69	NI	NI
6/2/2014	1451.4	1447.21	1451.92	1449.56	1443.13	1442.25	1440.16	1448.51	1440.79	1443.25	1443.88	1448.08	NI	NI	NI	1441.64	NI	NI
8/5/2014	1450.37	1446.3	1450.05	1448.14	1442.23	1441.89	1439.19	1448.19	1439.78	1442.51	1442.8	1446.55	NI	NI	NI	1440.85	NI	NI
11/5/2014	1449.91	1445.99	1449.77	X	1442.12	1441.77	1438.97	1448.03	1439.41	1442.26	1442.45	1445.93	NI	NI	NI	1440.51	NI	NI
2/10/2015	1448.51	1445.51	1447.97	1446.6	1441.95	1441.65	1438.35	1447.91	1438.8	1441.69	1441.82	1441.7	NI	NI	NI	1439.93	NI	NI
5/4/2015	1449.29	1444.3	1450.07	1447.32	1442.14	1441.85	1439.2	1448.05	1439.72	1442.5	1442.75	1446.56	NI	NI	NI	1440.51	NI	NI
8/4/2015	1449.88	1446.13	Well Abandoned	1447.92	1442.27	1441.98	1439.19	1448.53	1439.89	1442.52	1442.75	1445.89	NI	NI	NI	1440.71	NI	NI
11/3/2015	1449.61	1445.46		1446.63	1442.1	1441.84	1439.05	1448.34	1439.49	1442.32	1442.62	1445.37	NI	NI	NI	1440.36	NI	NI
2/22/2016	1448.96	1445.18		NA	1441.99	1441.80	1438.41	1448.51	1438.84	1441.78	1441.91	1443.73	NI	NI	NI	1439.9	NI	NI
8/31/2016	1449.5	1445.69		1446.81	NA	1441.84	1439.31	1448.14	1439.82	1442.64	1442.92	1444.05	NI	NI	NI	1440.8	NI	NI
2/14/2017	1448.14	1444.34		1446.07	1441.75	1441.61	1438.49	1448.16	1438.82	1441.78	1441.93	1443.69	NI	NI	NI	1439.76	NI	NI
8/29/2017	1450.11	1445.53		1447.29	1442.09	NA	1439.43	1447.75	1439.72	1442.64	1442.92	1445.84	NI	NI	NI	1440.83	NI	NI
7/11/2018	1448.92	1445.89		1447.43	1442.10	1441.81	1439.36	1447.71	1439.87	1442.70	1442.98	1446.25	1442.63	1442.48	1442.14	1440.81	1442.61	1442.69
12/11/2018	1448.80	1445.24		1446.79	1441.85	1441.55	1438.60	1446.93	1438.96	1441.86	1442.03	1444.16	1441.83	1441.73	1441.44	1439.91	1441.89	1441.85
4/30/2019	1450.44	1445.04		1447.64	1442.23	1441.94	1439.75	1447.89	1440.22	1443.04	1443.49	1447.23	1448.59	1442.88	1442.60	1440.81	1443.10	1441.68
Average Depth to Water (from Top of Casing)	10.76	11.77	12.76	12.13	15.25	16.36	14.30	9.81	16.39	8.17	10.37	14.22	13.56	6.67	7.42	17.45	15.02	8.93
Average Elevation of Water (at Groundwater Surface)	1449.06	1445.47	1448.57	1447.06	1442.26	1441.80	1439.00	1448.12	1439.54	1442.37	1442.62	1445.28	1444.35	1442.36	1442.06	1440.51	1442.53	1442.07
Minimum Depth to Water (from Top of casing)	8.42	9.83	9.41	9.63	11.38	15.75	13.07	9.39	14.86	7.29	9.11	11.42	9.32	6.15	6.88	16.32	14.45	8.31

All well elevations referenced to an on site benchmark with an assumed elevation of 1460.00
NI = Not Installed
NC = Not Collected

TABLE 2a
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW1

PARAMETER	ES	PAL	12/11/2012	3/5/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	5/4/2015	8/4/2015	2/22/2016	8/31/2016	2/14/2017	8/29/2017	7/11/2018	12/11/2018	4/30/2019
Metals (ug/L)																		
Arsenic	10	1	<0.50	<4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	280	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	<0.10	*0.91* [J]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Chromium	100	10	2	<1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			<0.0017	<0.0034	NA	NA	NA	NA	NA	NA	NA	<0.0039	<0.026	<0.0051	<0.0051	<0.051	<0.051	<0.13
Lead	15	1.5	<0.10	1.5[J]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.025	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	20	5.5	7.7[J]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	10	<2.0	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<0.13	<1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1[J]	<2.1	<2.5	<2.5	<2.5	<2.5	<2.5
Dissolved Iron (filtered)	300	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	26.9[J]	30.6[J]	20.6[J]	<15.5	17.8[J]	44.6[J]	*173*
Dissolved Manganese (filtered)	300	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.8	1.9[J]	2.8[J]	2.3[J]	1.1[J]	7.3	15.8
Dissolved Nickel (filtered)	100	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	*98.8*	*93*	*66.7*	*60.9*	*41.5*	*45.3*	*35.4*
Nitrate Nitrogen (mg/L)	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	*5.2*	*5.1*	*5.0*	*6.0*	*7.0*	*7.8*	*7.2*
Sulfate (mg/L)	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.8	23	21.5	18.2	17.7	20.1	15.3
Field Measurements																		
Temperature (^{o}F)			NA	NA	56.26	57.11	44.14	49.97	58.55	45.98	56.33	47.80	60.25	47.73	60.61	54.50	53.42	46.20
Conductivity (ms/cm)			NA	NA	1,803	2,370	2,680	2,305	1,922	1,747	1,146	1,205	1,006	1,135	793	1,311	1,539	2,362
Dissolved Oxygen (mg/L)			NA	NA	4.22	1.03	2.71	3.35	2.19	2.01	2.86	2.93	3.95	3.79	6.41	2.86	6.47	3.74
pH			NA	NA	6.45	6.9	6.19	7.08	7.51	7.12	7.58	7.76	7.93	7.21	7.53	6.95	7.15	NA
Redox Potential (mV)			NA	NA	139.4	24.1	244.6	-8.9	-70.5	97.5	59.7	245.0	30.4	180.1	54.9	167.6	-2.8	125.5

PAL = Preventive Action Limit
ES = Enforcement Standards

BOLD	= Exceeds Enforcement Standard
Italic	= Exceeds Preventative Action Limit

NA - Not Analyzed
< - Concentration less than listed detection limit
J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
pH electrode malfunction 4/30/2019

TABLE 2b
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW2

PARAMETER	ES	PAL	12/11/2012	3/5/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	5/4/2015	8/4/2015	2/22/2016	8/31/2016	2/14/2017	8/29/2017	7/11/2018	12/11/2018	4/30/2019
Metals (ug/L)																		
Arsenic	10	1	<0.50	<4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	180	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	<0.10	0.40[J]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Chromium	100	10	1.4	<1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			<0.0017	<0.0034	NA	NA	NA	NA	NA	NA	NA	<0.039	<0.13	<0.051	<0.26	<0.13	<0.13	<0.13
Lead	15	1.5	<0.10	1.3[J]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.025	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	20	9.0	4.5[J]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	10	<2.0	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<0.13	<1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.1	<2.1	<2.5	<2.5	<2.5	<2.5	<2.5
Dissolved Iron (filtered)	300	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	28.7[J]	41.9[J]	60.5[J]	<15.5	16.9[J]	<35.4	<35.4
Dissolved Manganese (filtered)	300	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	*72.5*	*72.2*	*46.9*	*136*	*126*	**427**	*271*
Dissolved Nickel (filtered)	100	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.2	10.3	10[J]	8.1[J]	4.0[J]	10.9	4.8[J]
Nitrate Nitrogen (mg/L)	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	**31.7**	**23.1**	**15.7**	**22.9**	**32.5**	**37.6**	**14.4**
Sulfate (mg/L)	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	37.6	27.8	20.3	16.3	22.7	17.2	32.2
Field Measurements																		
Temperature (^{o}F)			NA	NA	58.47	57.95	46.8	44.95	56.7	44.08	56.13	47.83	62.47	49.06	61.07	57.38	53.42	43.8
Conductivity (ms/cm)			NA	NA	458	459	1,053	115	154	1,052	161	798	212	589	40	21	714	1,028
Dissolved Oxygen (mg/L)			NA	NA	6.44	3.77	5.66	3.81	4.46	10.75	5.56	2.87	2.63	3.05	3.83	1.59	4.14	8.52
pH			NA	NA	5.74	6.87	5.65	7.17	7.82	6.94	7.32	6.25	6.93	5.75	7.64	3.50	5.62	NA
Redox Potential (mV)			NA	NA	112.0	-32.7	230.1	45.8	-9.8	138.8	81.3	217.6	96.9	195.1	72.0	355.3	-66.8	220.1

PAL = Preventive Action Limit
ES = Enforcement Standards

BOLD	= Exceeds Enforcement Standard
Italic	= Exceeds Preventative Action Limit

NA - Not Analyzed
< - Concentration less than listed detection limit
J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
pH electrode malfunction 4/30/2019

TABLE 2c
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW3

PARAMETER	ES	PAL	12/11/2012	3/5/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	11/5/2014	2/10/2015	5/4/2015	5/4/2015
Metals (ug/L)													
Arsenic	10	1	<0.50	<4.4	NA	NA	NA	NA	NA	NA	NA	NA	Well Abandoned - Following Sample Collection
Barium	2000	400	25	57.2	NA	NA	NA	NA	NA	NA	NA	NA	
Cadmium	5	0.5	<0.10	<0.38	NA	NA	NA	NA	NA	NA	NA	NA	
Dis. Total Chromium (filtered)	100	10	2.2	<1.2	<1.2	<1.2	<1.2	<2.1	<2.1	<2.1	<2.1	<2.1	
Total Chromium (unfiltered)	100	10	NA	NA	*35.1*	*58.8*	*41.4*	*34.7*	*16.1*	*71.5*	*47.7*	**100**	
Chromium, Hexavalent (mg/L)			<0.0017	<0.0034	<0.0034	<0.0034	<0.034	<0.0039	<0.0097	<0.019	<0.039	<0.019	
Lead	15	1.5	<0.10	2.2[J]	NA	NA	NA	NA	NA	NA	NA	NA	
Mercury	2	0.2	<0.025	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	
Dissolved Nickel (filtered)	100	20	1.4	1.5[J]	24.7	1.8[J]	<0.75	3.4[J]	1.8[J]	1.9[J]	<1.4	<1.4	
Nickel (Unfiltered)	100	20	NA	NA	1.4[J]	*47.9*	*30.5*	*25.6*	12.8	*55.4*	*38.8*	*70.6*	
Selenium	50	10	<2.0	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	
Silver	50	10	<0.13	<1.4	NA	NA	NA	NA	NA	NA	NA	NA	
Dissolved Manganese (filtered)	300	60	NA	NA	2.1[J]	2.0[J]	2.3[J]	2.1[J]	<1.4	1.8[J]	1.9[J]	<1.4	
Manganese (unfiltered)	300	60	NA	NA	**881**	**1,130**	**845**	**493**	**216**	**945**	**743**	**1,230**	
Dissolved Total Iron (filtered)	300	150	NA	NA	68.9[J]	28.6[J]	22.8[J]	<12.9	16.9[J]	28.8[J]	18.4[J]	<12.9	
Total Iron (unfiltered)	300	150	NA	NA	**26,200**	**42,900**	**29,500**	**26,300**	**10,900**	**55,700**	**38,500**	**75,300**	
Nitrate Nitrogen (mg/L)	10	2	NA	NA	*2.3*	*3.1*	*3.4*	*5*	*2.1*	*2.2*[J]	*2.8*	*3.2*	
Sulfate (mg/L)	250	125	NA	NA	8.4	6.7	10.3	9.6	10.7	21.3[J]	12.8[J]	<10.0	
Field Measurements													
Temperature (^{o}F)			NA	NA	52.73	54.12	48.23	47.91	53.76	53.53	47.85	45.38	
Conductivity (ms/cm)			NA	NA	162	221	267	301	216	194	193	203	
Dissolved Oxygen (mg/L)			NA	NA	7.63	5.33	8.04	4.73	3.81	6.99	7.66	9.2	
pH			NA	NA	6.43	7.41	5.67	6.22	6.83	6.36	6.77	6.46	
Redox Potential (mV)			NA	NA	90.6	11.2	273.6	77.2	52.2	121	158.2	188.5	

PAL = Preventive Action Limit

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NA - Not Analyzed

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J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

TABLE 2d
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW4

PARAMETER	ES	PAL	12/11/2012	3/5/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	5/4/2015	8/4/2015	8/31/2016	2/14/2017	8/29/2017	7/11/2018	12/11/2018	4/30/2019
Metals (ug/L)																	
Arsenic	10	1	<0.50	<4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	45	29.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	<0.10	<0.38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Chromium (dissolved)	100	10	3.4	1.5[J]	NA	NA	NA	NA	NA	NA	NA	<2.1	<2.5	<2.5	<2.5	<2.5	<2.5
Chromium, Hexavalent (mg/L)			<0.0017	<0.0034	NA	NA	NA	NA	NA	NA	NA	<0.0051	<0.0051	<0.0051	<0.0051	<0.026	<0.0051
Lead	15	1.5	<0.10	<1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.025	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (dissolved)	100	20	6.8	3.5[J]	NA	NA	NA	NA	NA	NA	NA	<1.4	<1.9	<1.9	<1.9	2.7[J]	3.9[J]
Selenium	50	10	<2.0	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<0.13	<1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese (dissolved)	300	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.4	<1.1	<1.1	<1.1	<1.1	<1.1
Dissolved Iron (filtered)	300	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<15.5	<15.5	<15.5	<35.4	<35.4
Nitrate Nitrogen (mg/L)	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	*3.1*	*2.8*	*3.5*	*2.4*	*2.3*	*2.0*
Sulfate (mg/L)	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.9[J]	10.3[J]	8.5	7.2[J]	9.1	7.2
Field Measurements																	
Temperature (^{o}F)			NA	NA	53.04	54.38	49.93	47.78	54.59	47.22	52.74	55.41	49.55	53.89	54.86	53.06	47.7
Conductivity (ms/cm)			NA	NA	3.71	374	423	381	235	351	320	380	412	390	459.9	566.5	701.9
Dissolved Oxygen (mg/L)			NA	NA	4.74	6.02	5.29	1.24	3.21	4.91	6.31	4.15	2.48	2.80	2.60	0.78	0.45
pH			NA	NA	7.19	7.69	6.4	8.05	8.19	7.22	7.38	7.95	7.16	7.54	7.66	7.94	NA
Redox Potential (mV)			NA	NA	-27.2	-43.8	200.0	-7.2	-24.1	159.1	92.5	49.3	177.1	40.0	200.9	-113.9	193.1

PAL = Preventive Action Limit
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BOLD	= Exceeds Enforcement Standard
Italic	= Exceeds Preventative Action Limit

NA - Not Analyzed
< - Concentration less than listed detection limit
J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
pH electrode malfunction 4/30/2019

TABLE 2e
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI

MW5

PARAMETER	ES	PAL	12/11/2012	1/3/2013	3/5/2013	5/8/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	11/5/2014	2/10/2015	5/4/2015	8/4/2015	11/3/2015	2/22/2016	2/14/2017	8/29/2017	7/11/2018	12/11/2018	4/30/2019
Metals (ug/L)																						
Arsenic	10	1	<0.50	<4.7	<4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	110	138	*686*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	<0.10	<0.39	*1.8*[J]	**18.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	**430**	**414**	**359**	*49.2*	**174**	**254**	**458**	**188**	**360**	**340**	**330**	**317**	**351**	**381**	**351**	**321**	**365**	**195**	**306**	**160**
Total Chromium (unfiltered)	100	10	NA	NA	NA	NA	**1,130**	**1,540**	**1,680**	**1,700**	**1,380**	**1,770**	**1,010**	**1,090**	**1,970**	**1,530**	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			0.59	0.46	0.33	<0.86	0.26	0.34	0.31[J]	0.39	0.24	0.28	0.27	0.33	0.25	0.093[J]	<0.097	0.28	0.22[J]	0.18	0.24	0.11
Lead	15	1.5	<0.10	<1.4	*2.5*[J]	*NA*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.025	<0.10	<0.10	*NA*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	**440**	**787**	**6,230**	**1,420**	**1,090**	**368**	**295**	**3,870**	**267**	**236**	**303**	**1,160**	**379**	**378**	**462**	**593**	**922**	**3,040**	**1,830**	**2,120**
Nickel (Unfiltered)	100	20	NA	NA	NA	NA	**974**	**1,220**	**1,120**	**1,920**	**952**	**1,160**	**977**	**1,660**	**1,520**	**1,280**	NA	NA	NA	NA	NA	NA
Selenium	50	10	<2.0	<5.8	<6.6	*NA*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<0.13	<2.3	<1.4	*NA*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	0.3	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<12.9	21.4[J]	<15.5	<15.5	<35.4	<35.4
Dissolved Manganese (filtered)	300	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.5	5.3	11	54.2	21.6	32.9
Nitrate Nitrogen (mg/L)	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	*4.3*	*4.4*	*5.0*	*7.5*	*6.7*	*6.2*
Sulfate (mg/L)	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30.1	24.1	24.4	37.1	33.9	38.8
Field Measurements																						
Temperature (^{o}F)			NA	NA	NA	NA	55.26	57.59	50.02	47.71	55.12	54.57	49.94	46.65	53.67	57.27	49.82	51.68	55.42	53.78	52.16	47.2
Conductivity (ms/cm)			NA	NA	NA	NA	1,498	1,753	1,215	3,866	1,996	1,456	818	2,377	941	621	491	878	1,009	3,496	1,478	4,393
Dissolved Oxygen (mg/L)			NA	NA	NA	NA	5.03	4.53	6.76	3.89	2.92	5.35	7.02	9.18	6.03	4.57	6.27	5.56	6.61	5.03	4.98	8.06
pH			NA	NA	NA	NA	5.02	6.94	5.15	5.63	6.01	5.95	6.25	6.21	6.87	6.25	6.60	6.44	6.69	5.87	5.93	NA
Redox Potential (mV)			NA	NA	NA	NA	185.2	-11.4	227.1	127.6	61.1	144.3	160	147.8	134	294.7	224.2	182.1	120.0	243.5	-67.9	234.5

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pH electrode malfunction 4/30/2019

TABLE 2f
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW6

PARAMETER	ES	PAL	1/3/2013	3/5/2013	5/8/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	11/5/2014	2/10/2015	5/4/2015	8/4/2015	11/3/2015	2/22/2016	8/31/2016	2/14/2017	8/29/2017	7/11/2018	12/11/2018	4/30/2019
Metals (ug/L)																						
Arsenic	10	1	*<4.7*	*<4.4*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	225	112	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	*1.6 J*	*0.87 J*	*0.51 J*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	**323**	**146**	**337**	**1,010**	**602**	**858**	**844**	**6,230**	**19,900**	**14,300**	**1,920**	**2,510**	**3,160**	**6,960**	**7,770**	**6,030**	**5,800**	**11,500**	**13,200**	**14,300**
Total Chromium (unfiltered)	100	10	NA	NA	NA	**3,160**	**4,550**	**2,840**	**4,290**	**8,910**	**21,800**	**16,000**	**6,210**	**8,500**	**7,250**	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			0.14	0.14	<0.086	<0.0034	0.58	0.66	1.1	5.9	21.7	13.9	2.2	2.6	3.5	6.8	7.4	7.0	7.3	11.7	11.7	14.0
Lead	15	1.5	*2.5J*	*2.2J*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	*0.28*	*0.23*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	**14,100**	**9,820**	**3,690**	**16,700**	**10,900**	**6,460**	**6,870**	**17,500**	**23,800**	**19,000**	**2,480**	**3,400**	**3,720**	**8,810**	**10,100**	**5,720**	**4,140**	**6,030**	**6,560**	**6,680**
Nickel (Unfiltered)	100	20	NA	NA	NA	**14,300**	**11,100**	**6,010**	**7,360**	**17,600**	**22,900**	**18,200**	**3,700**	**4,960**	**5,130**	NA	NA	NA	NA	NA	NA	NA
Selenium	50	10	<5.8	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<2.3	<1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese (filtered)	300	60	NA	NA	NA	**1,090**	**982**	**690**	**783**	NA	**954**	**974**	**645**	**703**	**597**	**669**	**781**	**767**	**922**	**1,220**	**1,290**	**1,060**
Manganese (unfiltered)	300	60	NA	NA	NA	**1,340**	**1,690**	**1,120**	**1,390**	**1,720**	**1,380**	**1,880**	**1,350**	**2,140**	**1,150**	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	NA	NA	NA	<14.0	<14.0	<14	<12.9	<12.9	<12.9	<12.9	<12.9	<12.9	<12.9	<12.9	<12.9	<15.5	<15.5	<31.0	<35.4	<35.4
Iron (unfiltered)	300	150	NA	NA	NA	**22,300**	**34,600**	**26,600**	**32,600**	**31,600**	**25,400**	**52,000**	**38,000**	**75,600**	**28,600**	NA	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen (mg/L)	10	2	NA	NA	NA	**14.3**	**16.1**	**11.6**	**10.9**	**12**	**12.2**	**11.8**	*7.9*	*6.8*	*9.2*	*8.4*	**11.1**	**10.9**	*6.7*	**12.5**	**11**	**13.9**
Sulfate (mg/L)	250	125	NA	NA	NA	*204*	*208*	*194*	*195*	**266**	**274**	**288**	*209*	*211*	*217*	**256**	**236**	**269**	**251**	**302**	**334**	**439**
Field Measurements																						
Temperature (^{o}F)			NA	NA	NA	57.42	58.27	55.93	51.79	57.88	56.83	54.18	53.71	56.97	58.6	55.96	58.41	56.07	57.06	55.94	55.4	54.1
Conductivity (ms/cm)			NA	NA	NA	1,203	1,209	1,419	1,200	1,254	1,167	1,077	1,188	1,171	1,244	1,124	1,269	1,139	1,241	1,517	1,779	1,862
Dissolved Oxygen (mg/L)			NA	NA	NA	0.72	1.07	1.31	0.79	0.89	0.36	0.36	0.52	0.74	0.03	0.36	0.13	0.33	0.80	0.42	0.28	0.48
pH			NA	NA	NA	6.09	7.63	5.49	6.79	7.15	6.87	6.84	6.82	7.2	6.91	7.13	7.21	6.81	6.95	6.62	6.67	NA
Redox Potential (mV)			NA	NA	NA	167.7	-7.5	196	40.4	114.6	176.2	198	197.6	148.6	290.3	261.5	147.3	196.9	118.8	242.4	-40.0	210.7

PAL = Preventive Action Limit
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pH electrode malfunction 4/30/2019

TABLE 2g
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW7

PARAMETER	ES	PAL	1/3/2013	3/5/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	11/5/2014	2/10/2015	5/4/2015	8/4/2015	11/3/2015	2/22/2016	8/31/2016	2/14/2017	8/29/2017	7/11/2018	12/11/2018	4/30/2019
Metals (ug/L)																					
Arsenic	10	1	<4.7	<4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	*841*	*661*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	<0.39	*0.58* J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Chromium	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	<2.4	<1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.2 J	<2.1	<2.5	5.2 J	<2.5	<2.5	<2.5
Chromium, Hexavalent (mg/L)			<0.0039	<0.0034	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.039	<0.026	<0.026	<0.51	<0.013	<0.26	<0.13
Lead	15	1.5	<1.4	<1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	20	6.1 J	4.3 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	10	<5.8	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<2.3	2.0 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<12.9	<12.9	<15.5	90.6 J	*293*	46.8 J	85.9 J
Dissolved Manganese (filtered)	300	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.8 J	<1.4	<1.1	3.5 J	7.4	1.6 J	3.7 J
Dissolved Nickel (filtered)	100	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 J	1.8 J	<1.9 J	<1.9	<1.9	<1.9	7.2 J
Nitrate Nitrogen (mg/L)	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	*4.2*	*3.4*	*3.8*	*2.8*	*3.2*	*3.3*	*2.5*
Sulfate (mg/L)	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40.8	42.4	36.7	35.0	34.3	44.8	23.6
Field Measurements																					
Temperature (^{o}F)			NA	NA	52.35	53.45	48.45	47.88	53.67	52.87	47.82	46.41	52.43	53.88	48.61	53.82	48.65	54.25	53.96	50.9	45.2
Conductivity (ms/cm)			NA	NA	4,130	2,795	4,908	3,054	4,771	3,358	2,708	4,173	4,047	2,571	2,447	4,913	3,095	1,730	3,595	2,369	2,678
Dissolved Oxygen (mg/L)			NA	NA	5.21	4.62	5.83	5.97	3.71	4.99	7.9	9.51	8.41	7.61	7.50	7.89	9.66	9.46	6.95	7.44	8.85
pH			NA	NA	6.11	7.44	6.31	6.34	6.77	6.83	7.08	6.69	7.64	6.71	7.45	7.24	7.09	7.37	6.24	6.72	NA
Redox Potential (mV)			NA	NA	135.1	-37.3	278.2	56.7	20.2	102.5	130.7	139.9	95.4	272.8	202.8	91.6	143.5	64.4	229.2	-15.1	195.0

PAL = Preventive Action Limit

ES = Enforcement Standards

BOLD	= Exceeds Enforcement Standard
Italic	= Exceeds Preventative Action Limit

NA - Not Analyzed

< - Concentration less than listed detection limit

J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

pH electrode malfunction 4/30/2019

TABLE 2h
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW8

PARAMETER	ES	PAL	2/19/2013	3/5/2013	5/8/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	11/5/2014	2/10/2015	5/4/2015	8/4/2015	11/2/2015	2/22/2016	8/31/2016	2/14/2017	8/29/2017	7/11/2018	12/11/2018	4/30/2019
Metals (ug/L)																						
Arsenic	10	1	<4.4	<4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	50.5	39.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	<0.38	<0.38	0.47[J]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	**537**	**507**	**1,540**	**2,630**	**2,570**	**1,550**	**2,030**	**3,320**	**1,910**	**1,850**	**1,020**	**1,060**	**776**	**1,270**	**488**	**426**	**470**	**594**	**560**	**399**
Total Chromium (unfiltered)	100	10	NA	NA	NA	**2,610**	**2,700**	**1,910**	**2,220**	**3,420**	**2,110**	**2,110**	**1,330**	**1,580**	**986**	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			0.53	0.46	1.1	2.7	2.7	1.8	1.8	3.3	1.8	1.6	0.98	1.1	0.76	1.1	0.49	0.42	0.53	0.57	0.52	0.31
Lead	15	1.5	<1.2	*1.5*[J]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	**278**	**546**	**1,060**	**1,720**	**1,510**	**605**	**1,710**	**3,420**	**1,920**	**1,010**	**1,530**	**1,450**	**1,770**	**1,460**	**1,400**	**1,040**	**1,750**	**876**	**1,290**	**966**
Nickel (Unfiltered)	100	20	NA	NA	NA	**1,860**	**1,860**	**1,190**	**2,070**	**3,700**	**2,300**	**1,980**	**1,900**	**1,930**	**1,920**	NA	NA	NA	NA	NA	NA	NA
Selenium	50	10	<6.6	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<1.4	<1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	65.0[J]	<12.9	<15.5	<15.5	<15.5	<35.4	37.4[J]
Dissolved Manganese (filtered)	300	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	*160*	*105*	37.2	38.2	29.5	42.0	40.6
Nitrate Nitrogen (mg/L)	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	*7.5*	*6.6*	**14.7**	**12.1**	**40.4**	**28.4**	*9.5*
Sulfate (mg/L)	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24.9	<10.0	9.1[J]	8.8[J]	14.2[J]	20.3	27.5
Field Measurements																						
Temperature (^{o}F)			NA	NA	NA	59.35	57.67	51	54.9	60.92	57.19	51.46	52.5	60.51	59.48	49.76	63.53	50.87	60.50	59.54	54.68	46.50
Conductivity (ms/cm)			NA	NA	NA	474	330	234	255	398	255	188	271	234	243	138	223	239	695	747	563.2	1454
Dissolved Oxygen (mg/L)			NA	NA	NA	3.58	3.29	3.29	1.2	1.05	3.56	4.09	5.76	4.08	3.45	4.82	3.46	7.63	3.66	4.60	7.25	7.66
pH			NA	NA	NA	5.75	6.19	5.14	5.51	5.52	5.65	5.86	5.71	6.63	5.72	6.28	6.38	6.37	6.15	5.42	5.79	NA
Redox Potential (mV)			NA	NA	NA	160.9	72.4	235.5	148.1	129.8	148.4	181.8	186.7	145.1	318.8	248.7	141.3	206.7	167.9	271.6	-40.7	177.7

PAL = Preventive Action Limit
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Italic = Exceeds Preventative Action Limit
NA - Not Analyzed
< - Concentration less than listed detection limit
J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
pH electrode malfunction 4/30/2019

TABLE 2i
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW9

PARAMETER	ES	PAL	2/19/2013	3/5/2013	5/8/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	11/5/2014	2/10/2015	5/4/2015	8/4/2015	11/3/2015	2/22/2016	8/31/2016	2/14/2017	8/29/2017	7/11/2018	12/11/2018	4/30/2019
Metals (ug/L)																						
Arsenic	10	1	<4.4	<4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	214	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	*0.63 J*	**15.0**	*3.0 J*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	**2,160**	**862**	**499**	**539**	**1,120**	**2,580**	**279**	**2,770**	**545**	**682**	**1,000**	**679**	**905**	**938**	**361**	**1,270**	**366**	**238**	**478**	**604**
Total Chromium (unfiltered)	100	10	NA	NA	NA	**1,190**	**1,520**	**6,000**	**1,350**	**2,370**	**1,720**	**621**	**1,060**	**1,450**	**1,480**	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			2.3	0.85	<0.086	0.51	2.7	3.4	0.27	1.6	0.56	0.49	0.63	0.6	0.92	0.86	0.4	1.1	0.36 J	0.24	0.35	0.54
Lead	15	1.5	*3.1 J*	*4.8 J*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.10	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	*65.8*	17.8	**1,790**	**647**	**273**	**190**	**1,290**	**292**	**280**	**1,020**	**656**	**279**	**298**	**173**	**229**	**222**	**423**	**555**	**536**	**341**
Nickel (Unfiltered)	100	20	NA	NA	NA	**723**	**370**	**762**	**1,430**	**366**	**582**	**1,100**	**756**	**534**	**519**	NA	NA	NA	NA	NA	NA	NA
Selenium	50	10	<6.6	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<1.4	<1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese (filtered)	300	60	NA	NA	NA	*182*	*152*	*261*	**334**	*87.4*	*92.9*	**311**	**524**	**223**	**287**	*130*	*134*	*124*	*198*	*250*	*162*	*238*
Manganese (unfiltered)	300	60	NA	NA	NA	**1,020**	**554**	**5,190**	**1,420**	**518**	**2,050**	**550**	**1,220**	**1,930**	**1,750**	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	NA	NA	NA	16.4 J	38.1 J	25.9 J	28.2 J	16.4 J	37.9 J	31.0 J	<12.9	<12.9	<12.9	<12.9	<12.9	<15.5	<15.5	<15.5	<35.4	919
Iron (unfiltered)	300	150	NA	NA	NA	**37,900**	**15,600**	**194,000**	**62,200**	**20,100**	**102,000**	**11,100**	**40,500**	**91,400**	**136,000**	NA	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen (mg/L)	10	2	NA	NA	NA	**11.2**	*9.9*	**12**	*8.4*	*7.7*	*8.2*	**28.9**	**22.4**	**11.9**	**12.3**	*8.7*	*6.9*	*9.4*	*8.6*	*8.4*	**10.6**	*8.3*
Sulfate (mg/L)	250	125	NA	NA	NA	85.8	*147*	*161*	*79.6*	*91.9*	*77.8*	**1,010**	**614**	**113**	**85**	63.6	50.1	56.9	65.4	49.8	73.7	79.8
Field Measurements																						
Temperature (°F)			NA	NA	NA	53.27	55.25	50.41	51.48	53.67	53.46	50.01	48.83	53.18	55.77	48.75	55.18	50.79	55.35	51.62	52.52	47.4
Conductivity (ms/cm)			NA	NA	NA	3,254	2,045	2,602	6,191	2,984	1,982	3,304	4,095	2,088	1,834	1,880	1,481	1,932	2,064	3,541	2,690	2,163
Dissolved Oxygen (mg/L)			NA	NA	NA	1.18	1.81	6.90	3.98	2.61	0.53	5.16	2.44	2.02	0.17	0.52	0.17	5.81	6.50	5.74	3.83	7.29
pH			NA	NA	NA	6.25	7.44	4.75	5.45	6.31	6.82	5.98	6.63	6.89	6.6	7.24	7.2	6.18	6.52	5.79	5.8	NA
Redox Potential (mV)			NA	NA	NA	156.1	2.6	237.6	119.8	52.1	155.6	198.5	198.2	175.9	289.7	262.7	122.5	200.5	150.6	263.4	-44.9	184.2

PAL = Preventive Action Limit
ES = Enforcement Standards

BOLD	= Exceeds Enforcement Standard
Italic	= Exceeds Preventative Action Limit

NA - Not Analyzed
< - Concentration less than listed detection limit
J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
pH electrode malfunction 4/30/2019

TABLE 2j
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW10

Laboratory			Pace	NLS	Pace	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS
PARAMETER	**ES**	**PAL**	7/15/2013	7/15/2013	8/12/2013	11/12/2013	11/12/2013	2/12/2014	2/12/2014	6/2/2014	6/2/2014	8/5/2014	8/5/2014	11/5/2014	11/5/2014	2/10/2015	2/5/2015	5/4/2015	5/4/2015	8/4/2015	8/4/2015	11/3/2015	11/3/2015	2/22/2016	2/22/2016	8/31/2016	8/31/2016	2/14/2017	2/14/2017	8/29/2017	8/29/2017	7/11/2018	7/11/2018	12/11/2018	12/11/2018	4/30/2019	4/30/2019
Metals (ug/L)																																				
Arsenic	10	1	<4.4	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<7.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	101	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	69.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	<0.38	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	*79.2*	**130**	*59.6*	**228**	**230**	**124**	**120**	**346**	**290**	**172**	**170**	**244**	**240**	**126**	**120**	**995**	**960**	**633**	**650**	**196**	**210**	**724**	**730**	**217**	**240**	**652**	**670**	**317**	**330**	*12.5*	*21*	*50.0*	*57*	<2.5	3.3
Total Chromium (unfiltered)	100	10	NA	NA	**120**	**254**	NA	**177**	**190**	**318**	**320**	**493**	**490**	**121**	**140**	**176**	**190**	**799**	**750**	**412**	**520**	**234**	**230**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			0.14	0.28	0.045	0.13	0.27	0.36	0.23	0.26	0.33	0.096	0.17	0.21	0.23	0.37	0.46	0.6	0.27	0.63	0.61	0.43	0.47	0.74	0.66	0.65	0.58	0.58	0.25	0.49	0.44	0.029	0.017	0.017	0.021	<0.013	0.004
Lead	15	1.5	*2.5* [J]	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.10	<0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	*38.4*	*44*	*22.6*	*97.2*	*93.0*	*19.7*	19	**110**	*85*	*27.4*	*25*	*81.6*	*71*	*35.8*	*36*	**261**	**270**	**167**	**180**	*33.2*	**41**	**171**	**170**	*47.4*	*53*	**229**	**270**	**118**	**130**	*43.8*	**130**	*77.3*	**110**	7.5 [J]	4.7
Nickel (Unfiltered)	100	20	NA	NA	*79.2*	**141.0**	NA	60.8	*61*	**158**	*99*	**215**	**220**	*36.8*	*41*	*67.2*	*80*	**194**	**170**	**101**	**120**	*67.8*	*69*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	10	<6.6	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<1.4	<0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese (filtered)	300	60	NA	NA	40.4	5.7	NA	3.2 [J]	NA	6.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.5 [J]	NA	1.8 [J]	NA	6.8	NA	3.2 [J]	NA	54.9	NA	15.3	NA	<1.1	NA
Manganese (unfiltered)	300	60	NA	NA	**1,010**	**825**	NA	**594**	NA	**841**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	NA	NA	19.8 [J]	31.4 [J]	NA	24.1 [J]	NA	32.5 [J]	NA	27.1 [J]	NA	34.6 [J]	NA	26.7 [J]	NA	<12.9	NA	<12.9	NA	NA	NA	<12.9	NA	17.3 [J]	NA	<15.5	NA	<15.5	NA	<15.5	NA	<35.4	NA	<35.4	NA
Iron (unfiltered)	300	150	NA	NA	**21,700**	**17,500**	NA	**13,900**	NA	**23,200**	NA	**16,700**	NA	**6,700**	NA	**6,110**	NA	**9,070**	NA	**8,320**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen (mg/L)	10	2	NA	NA	*4.3*	*3.4*	NA	*3.2*	NA	*2.6*	NA	*2.4*	NA	*2*	NA	*3.2*	NA	1.6	NA	*3.8*	NA	*4.3*	NA	*4.2*	NA	*3*	NA	*3.4*	NA	*3.0*	NA	<0.38	NA	1.2	NA	1.4	NA
Sulfate (mg/L)	250	125	NA	NA	41.4	36.8	NA	69.1	NA	52	NA	36.7	NA	34.1	NA	57.5	NA	30.7	NA	38.9	NA	50.8	NA	60.7	NA	70.3	NA	44.9	NA	31.9	NA	38.6	NA	14.3	NA	7.1	NA
Field Measurements																																				
Temperature (^{0}F)			NA	NA	55.68	52.95		47.61		50.87		55.51		52.16		48.96		47.45		56.66		55.96		45.32		58.16		49.57		59.23		54.86		48.56		42.0	
Conductivity (ms/cm)			NA	NA	1,010	408		737		320		469		550		1,007		564		427		450		444		374		879		345		331.7		307.6		199.8	
Dissolved Oxygen (mg/L)			NA	NA	7.77	4.63		5.91		3.06		3.61		6.11		4.57		5.65		7.13		6.95		4.18		6.85		4.63		8.92		5.69		6.01		6.28	
pH			NA	NA	6.24	7.27		5.68		6.26		6.72		6.44		6.26		6.49		7.1		6.66		7.04		7.03		6.49		6.96		6.23		6.44		NA	
Redox Potential (mV)			NA	NA	142.5	16.40		225.30		57.40		29.9		116		187		170.3		135.9		298.3		259.4		116.4		135.1		104.4		196.1		-76.2		130.8	

PAL = Preventive Action Limit
ES = Enforcement Standards

BOLD	= Exceeds Enforcement Standard
Italic	= Exceeds Preventative Action Limit

NA - Not Analyzed
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J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
Pace = Lab analysis conducted by Pace Analtyical Servcies
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Values in brackets are NLS version of "J" qualifier
pH electrode malfunction 4/30/2019

TABLE 2k
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW11

Laboratory			Pace	NLS	Pace	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS	Pace	NLS
PARAMETER	**ES**	**PAL**	7/15/2013	7/15/2013	8/12/2013	11/12/2013	11/12/2013	2/12/2014	2/12/2014	6/2/2014	6/2/2014	8/5/2014	8/5/2014	11/5/2014	11/5/2014	2/10/2015	2/10/2015	5/4/2015	5/4/2015	8/4/2015	8/4/2015	11/3/2015	11/3/2015	2/22/2016	2/22/2016	8/31/2016	8/31/2016	2/14/2017	2/14/2017	8/29/2017	8/29/2017	7/11/2018	7/11/2018	12/11/2018	12/11/2018	4/30/2019	4/30/2019
Metals (ug/L)																																				
Arsenic	10	1	<4.4	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	331	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	<0.38	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	<1.2	<0.5	<1.2	<1.2	[0.68]	<1.2	<1.0	<2.1	<0.5	<2.1	<0.5	<2.1	[0.47]	<2.1	<0.32	<2.1	[0.75]	<2.1	<1.0	<2.1	<0.5	<2.1	<0.5	<2.1	[0.88]	<2.5	<0.67	<2.5	<0.50	<2.5	<0.58	<2.5	<0.58	<2.5	<0.58
Total Chromium (unfiltered)	100	10	NA	NA	**120**	**150**	NA	**46.8**	**110**	*63.1*	<0.5	*78.9*	*90*	*54.1*	*60*	*37.4*	*51*	*80.1*	*78*	*37.6*	*36*	*17.6*	*7.4*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			<0.0086	<1.7	<0.0034	<0.017	<0.0017	<0.034	[0.0017]	<0.019	<0.0017	<0.039	<0.0017	<0.019	<0.0017	<0.019	<0.0023	<0.019	<0.0017	<0.019	<0.005	<0.019	<0.0011	<0.019	[1.2]	<0.026	<1.1	<0.026	[0.0025]	<0.026	<0.0011	<0.026	<0.0011	<0.051	<0.0011	<0.051	0.0023
Lead	15	1.5	*4.6*[J]	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.10	<0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	2.3[J]	2	1.1[J]	1.1[J]	[1.4]	<0.75	<1.0	<1.4	1.3	<1.4	[0.80]	<1.4	<1.3	<1.4	<1.3	<1.4	<1.3	<1.4	<1.0	<1.4	[0.52]	<1.4	[0.81]	<1.4	<1.3	<1.9	<1.1	<1.9	[0.53]	<1.9	[1.3]	<1.9	<0.94	<1.9	<0.94
Nickel (Unfiltered)	100	20	NA	NA	*82.4*	**106.0**	NA	*32.2*	*75*	*42.3*	[0.69]	*52.6*	*59*	*36.6*	*39*	*24.8*	*36*	*51*	*53*	*25.1*	*25*	12.9	6.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	10	<6.6	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<1.4	<0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**674**	NA	*272*	NA	*266*	NA	*166*	NA	29.6	NA	50.2[J]	NA	50.5[J]	NA
Dissolved Manganese (filtered)	300	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	*130*	NA	*64.8*	NA	48.3	NA	37.2	NA	18.2	NA	55.7	NA	53.3	NA
Nitrate Nitrogen (mg/L)	10	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	*8.2*	NA	*5.4*	NA	*5.2*	NA	*5.8*	NA	*7.3*	NA	*7.9*	NA	*5.6*	NA
Sulfate (mg/L)	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.7	NA	15.7[I]	NA	14.9[I]	NA	*17*	NA	15.2	NA	18.7	NA	16.4	NA
Field Measurements																																				
Temperature (^{0}F)			NA	NA	58.01	57.33		48.49		44.33		55.7		55.98		48.01		44.09		56.89		59.4		47.24		62.04		50.95		59.69		56.12		52.16		41.4	
Conductivity (ms/cm)			NA	NA	883	738		749		411		935		613		692		618		619		586		708		659		829		688		739		760		883	
Dissolved Oxygen (mg/L)			NA	NA	3.16	2.28		2.71		1.27		1.01		0.58		0.78		2.08		2.03		0.46		0.75		0.3		0.42		2.01		0.89		1.08		2.04	
pH			NA	NA	6.10	7.03		5.55		5.58		6.43		6.17		6.29		6.06		6.58		6.1		6.37		6.35		6.1		6.34		5.87		6.1		NA	
Redox Potential (mV)			NA	NA	109.1	3.1		247.8		102.1		-7.4		111.1		184.4		134.1		144.6		271.6		274.1		120.5		160.6		80.4		207.1		-75.6		211.3	

PAL = Preventive Action Limit
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BOLD	= Exceeds Enforcement Standard
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Pace = Lab analysis conducted by Pace Analtyical Servcies
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Values in brackets are NLS version of "J" qualifier
pH electrode malfunction 4/30/2019

TABLE 2l
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW12

PARAMETER	ES	PAL	7/15/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	5/4/2015	8/4/2015	2/22/2016	8/31/2016	2/14/2017	8/29/2017	7/11/2018	12/11/2018	4/30/2019
Metals (ug/L)																	
Arsenic	10	1	<4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	195	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	<0.38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Chromium	100	10	<1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	15	1.5	<1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	20	1.4*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	10	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			<0.086	NA	NA	NA	NA	NA	NA	NA	<0.019	<0.026	<0.026	<0.051	<0.051	<0.13	<0.13
Dis. Total Chromium (filtered)	100	10	NA	NA	NA	NA	NA	NA	NA	NA	<2.1	<2.1	<2.1	<2.5	<2.5	<2.5	<2.5
Dissolved Iron (filtered)	300	150	NA	NA	NA	NA	NA	NA	NA	NA	<12.9	<12.9	16.9[J]	<15.5	<15.5	<35.4	<35.4
Dissolved Manganese (filtered)	300	60	NA	NA	NA	NA	NA	NA	NA	NA	<1.4	<1.4	<1.5[J]	1.7[J]	<1.1	<1.1	<1.1
Dissolved Nickel (filtered)	100	20	NA	NA	NA	NA	NA	NA	NA	NA	<1.4	<1.4	<1.9	<1.9	<1.9	<1.9	<1.9
Nitrate Nitrogen (mg/L)	10	2	NA	NA	NA	NA	NA	NA	NA	NA	*6.8*	*5.3*	*7.8*	*5.1*	*4.3*	*6.4*	*3.7*
Sulfate (mg/L)	250	125	NA	NA	NA	NA	NA	NA	NA	NA	18.8	16.1[J]	35.8	17.3	11.3[J]	18.0	13.0[J]
Field Measurements																	
Temperature (^{o}F)			NA	55.10	55.75	49.27	47.64	57.55	44.08	54.62	48.99	57.53	49.73	58.2	54.32	52.52	42.9
Conductivity (ms/cm)			NA	1,277	1,451	1,898	1,234	752	1,052	1,499	2,102	1,677	5,640	1,498	1,246	1,416	1,164
Dissolved Oxygen (mg/L)			NA	6.80	6.11	3.75	5.46	3.32	10.75	8.52	9.77	6.15	9.61	7.86	6.82	7.67	10.1
pH			NA	4.98	6.81	6.16	6.37	6.62	6.94	7.65	7.45	7.01	6.72	6.98	6.11	6.30	NA
Redox Potential (mV)			NA	170.3	-11.40	259.80	36.7	31.2	138.8	105.4	234.2	96.4	174.5	84.8	216.2	-9.2	194.7

PAL = Preventive Action Limit

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BOLD = Exceeds Enforcement Standard

Italic = Exceeds Preventative Action Limit

NA - Not Analyzed

< - Concentration less than listed detection limit

J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

pH electrode malfunction 4/30/2019

TABLE 2m
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW13

Laboratory			Pace	NLS	Pace	NLS	Pace	NLS
PARAMETER	**ES**	**PAL**	7/11/2018	7/11/2018	12/11/2018	12/11/2018	4/30/2019	4/30/2019
Metals (ug/L)								
Arsenic	10	1	NA	NA	NA	NA	NA	NA
Barium	2000	400	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	<2.5	2.7	<2.5	2.7	<2.5	5
Total Chromium (unfiltered)	100	10	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			<0.051	<0.0011	<0.26	0.0093	<0.26	0.0066
Lead	15	1.5	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	<1.9	[2.7]	1.9[J]	[2.5]	3.6[J]	[3.2]
Nickel (Unfiltered)	100	20	NA	NA	NA	NA	NA	NA
Selenium	50	10	NA	NA	NA	NA	NA	NA
Silver	50	10	NA	NA	NA	NA	NA	NA
Dissolved Manganese (filtered)	300	60	**799**	NA	**2,110**	NA	**1,620**	NA
Manganese (unfiltered)	300	60	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	**375**	NA	**5,460**	NA	**3,270**	NA
Iron (unfiltered)	300	150	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen (mg/L)	10	2	<0.38	NA	<0.38	NA	<0.38	NA
Sulfate (mg/L)	250	125	7.2[J]	NA	<5.0	NA	<5.0	NA
Field Measurements								
Temperature (^{o}F)			51.26		50.54		45.6	
Conductivity (ms/cm)			344.2		652.6		443.8	
Dissolved Oxygen (mg/L)			1.27		0.91		1.04	
pH			5.89		6.58		NA	
Redox Potential (mV)			105.2		-110.2		-56.1	

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Values in brackets are NLS version of "J" qualifier
pH electrode malfunction 4/30/2019

TABLE 2n
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW14

Laboratory			Pace	NLS	Pace	NLS	Pace	NLS
PARAMETER	**ES**	**PAL**	7/11/2018	7/11/2018	12/11/2018	12/11/2018	4/30/2019	4/30/2019
Metals (ug/L)								
Arsenic	10	1	NA	NA	NA	NA	NA	NA
Barium	2000	400	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	<2.5	<0.58	<2.5	<0.58	<2.5	<0.58
Total Chromium (unfiltered)	100	10	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			<0.051	<0.0011	<0.026	[0.0012]	<0.26	0.0037
Lead	15	1.5	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	<1.9	<0.94	<1.9	<0.94	<1.9	<0.94
Nickel (Unfiltered)	100	20	NA	NA	NA	NA	NA	NA
Selenium	50	10	NA	NA	NA	NA	NA	NA
Silver	50	10	NA	NA	NA	NA	NA	NA
Dissolved Manganese (filtered)	300	60	**849**	NA	**522**	NA	*252*	NA
Manganese (unfiltered)	300	60	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	**5,480**	NA	**7,100**	NA	**3,960**	NA
Iron (unfiltered)	300	150	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen (mg/L)	10	2	<0.38	NA	<0.38	NA	<0.38	NA
Sulfate (mg/L)	250	125	12.9[J]	NA	9.1[J]	NA	6.9[J]	NA
Field Measurements								
Temperature (^{o}F)			52.16		48.2		42.3	
Conductivity (ms/cm)			627.3		510.7		427.3	
Dissolved Oxygen (mg/L)			1.38		0.83		0.66	
pH			6.35		6.63		NA	
Redox Potential (mV)			-27.1		-97.4		20.0	

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NLS = Lab analysis conducted by Northern Lake Service
Values in brackets are NLS version of "J" qualifier
pH electrode malfunction 4/30/2019

TABLE 2o
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
MW15

Laboratory			Pace	NLS	Pace	NLS	Pace	NLS
PARAMETER	**ES**	**PAL**	7/11/2018	7/11/2018	12/11/2018	12/11/2018	4/30/2019	4/30/2019
Metals (ug/L)								
Arsenic	10	1	NA	NA	NA	NA	NA	NA
Barium	2000	400	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	<2.5	[1.1]	<2.5	[1.5]	<2.5	<0.58
Total Chromium (unfiltered)	100	10	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			<0.13	<0.0011	<0.26	[0.0029]	<0.26	0.0027
Lead	15	1.5	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	6.9[J]	6.2	5.1[J]	4.8	4.0[J]	[2.5]
Nickel (Unfiltered)	100	20	NA	NA	NA	NA	NA	NA
Selenium	50	10	NA	NA	NA	NA	NA	NA
Silver	50	10	NA	NA	NA	NA	NA	NA
Dissolved Manganese (filtered)	300	60	**1,800**	NA	**1,480**	NA	*70*	NA
Manganese (unfiltered)	300	60	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	**3,490**	NA	**4,360**	NA	**559**	NA
Iron (unfiltered)	300	150	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen (mg/L)	10	2	<0.38	NA	<0.38	NA	<0.38	NA
Sulfate (mg/L)	250	125	<5.0	NA	<5.0	NA	<5.0	NA
Field Measurements								
Temperature (^{o}F)			60.62		50.54		39.6	
Conductivity (ms/cm)			286.5		152.1		287.7	
Dissolved Oxygen (mg/L)			1.26		0.39		3.61	
pH			5.29		5.94		NA	
Redox Potential (mV)			121.7		-91.8		158.2	

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Values in brackets are NLS version of "J" qualifier
pH electrode malfunction 4/30/2019

TABLE 2p
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
PZ1

PARAMETER	ES	PAL	7/15/2013	8/12/2013	11/12/2013	2/12/2014	6/2/2014	8/5/2014	11/5/2014	2/10/2015	5/4/2015	8/4/2015	11/3/2015	2/22/2016	8/31/2016	2/14/2017	8/29/2017	7/11/2018	12/11/2018	4/30/2019
Metals (ug/L)																				
Arsenic	10	1	<4.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	400	101	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	<0.38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	**5,980**	**1,590**	**810**	**1,310**	**652**	**1,640**	**1,090**	**1,950**	**1,420**	**1,220**	**1,470**	**1,740**	**1,650**	**1,730**	**1,480**	**1,350**	**1,500**	**1,130**
Total Chromium (unfiltered)	100	10	NA	**2,910**	**1,610**	**1,490**	**1,520**	**1,760**	**2,040**	**2,040**	**1,660**	**2,130**	**2,790**	NA	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			5.6	1.6	1.0	1.1	0.41	1.60	1	2	2	1	1.7	1.9	1.9	1.9	1.1	1.2	1.5	1.2
Lead	15	1.5	*2.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	4.8	4.1[J]	3.5[J]	3.8[J]	3.1[J]	2.9[J]	2.4[J]	3.9[J]	2.0[J]	2.1[J]	2.1[J]	1.7[J]	2.0[J]	3.7[J]	<1.9	<1.9	<1.9	<1.9
Nickel (Unfiltered)	100	20	NA	**269**	**108**	*24.8*	*87*	14.9	*81.2*	18.1	15	*73.2*	**108**	NA	NA	NA	NA	NA	NA	NA
Selenium	50	10	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	10	<1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese (filtered)	300	60	NA	*124*	*154*	*61.5*	45	14.9	*102*	5.0[J]	9.7	22	28.9	16.6	11.1	19.5	15.7	21.6	9.2	8.4
Manganese (unfiltered)	300	60	NA	**4,400**	**1,900**	**362**	**1,320**	*179*	**1,220**	*223*	*216*	**1,210**	**1,590**	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	NA	<14.0	<14.0	<14.0	<12.9	<12.9	<12.9	<12.9	<12.9	<12.9	<12.9	<12.9	<12.9	<15.5	<15.5	<15.5	<35.4	121
Iron (unfiltered)	300	150	NA	**301,000**	**99,600**	**27,700**	**104,000**	**14,900**	**103,000**	**16,100**	**15,700**	**95,300**	**74,500**	NA	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen (mg/L)	10	2	NA	*4.3*	*3.4*	*3.9*	*3.1*	*3.8*	*3.4*	*4.2*	*4*	*3.8*	*4.3*	*4.3*	*3.8*	*4.1*	*4.0*	*5.1*	*6.3*	*5.5*
Sulfate (mg/L)	250	125	NA	62.8	55.6	58.4	51.9	49.7	44.3	48.6	45.2	43.1	41.8	44.0	39.3	42.0	39.7	40.8	45.9	46.5
Field Measurements																				
Temperature (^{o}F)			NA	56.79	58.5	55.4	55.31	56.97	57.56	55.45	53.91	55.55	57.92	54.77	57.6	54.58	58.02	55.58	55.4	54.3
Conductivity (ms/cm)			NA	6.14	595	681	784	747	585	565	554	548	549	515	526	565	444	531.7	517.3	512.4
Dissolved Oxygen (mg/L)			NA	0.61	2.55	4.72	0.38	1.07	0.72	2.51	2.37	1.21	0.16	2.01	0.67	1.07	2.04	1.06	1.69	2.64
pH			NA	6.45	7.79	5.98	7.3	7.62	7.28	7.46	7.38	7.2	7.3	7.62	7.71	7.07	7.28	7.04	7.41	NA
Redox Potential (mV)			NA	141.1	-27.5	177.0	-11.3	-13.3	147.4	148	171.6	127.7	270.9	246.1	81.1	167.3	105.9	234	-50.3	194.1

PAL = Preventive Action Limit
ES = Enforcement Standards

BOLD	= Exceeds Enforcement Standard
Italic	= Exceeds Preventative Action Limit

NA - Not Analyzed
< - Concentration less than listed detection limit
J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
pH electrode malfunction 4/30/2019

TABLE 2q
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
PZ2

Laboratory			Pace	NLS	Pace	NLS	Pace	NLS
PARAMETER	**ES**	**PAL**	7/11/2018	7/11/2018	12/11/2018	12/11/2018	4/30/2019	4/30/2019
Metals (ug/L)								
Arsenic	10	1	NA	NA	NA	NA	NA	NA
Barium	2000	400	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	<2.5	<0.58	<2.5	<0.58	<2.5	[0.62]
Total Chromium (unfiltered)	100	10	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			<0.51	<0.0011	<1.3	[0.0029]	<0.026	[0.001]
Lead	15	1.5	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	<1.9	[2.6]	<1.9	<0.94	<1.9	<0.94
Nickel (Unfiltered)	100	20	NA	NA	NA	NA	NA	NA
Selenium	50	10	NA	NA	NA	NA	NA	NA
Silver	50	10	NA	NA	NA	NA	NA	NA
Dissolved Manganese (filtered)	300	60	**684**	NA	**709**	NA	**591**	NA
Manganese (unfiltered)	300	60	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	*298*	NA	**1450**	NA	**384**	NA
Iron (unfiltered)	300	150	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen (mg/L)	10	2	<0.38	NA	<0.38	NA	<0.075	NA
Sulfate (mg/L)	250	125	15.2	NA	<5.0	NA	5.6	NA
Field Measurements								
Temperature (^{o}F)			51.08		49.82		46.4	
Conductivity (ms/cm)			373		323.7		265.9	
Dissolved Oxygen (mg/L)			2.1		0.80		0.32	
pH			6.93		6.98		NA	
Redox Potential (mV)			-141.4		-103.7		24.2	

PAL = Preventive Action Limit
ES = Enforcement Standards

BOLD	= Exceeds Enforcement Standard
Italic	= Exceeds Preventative Action Limit

NA - Not Analyzed
< - Concentration less than listed detection limit
J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
Pace = Lab analysis conducted by Pace Analtyical Servcies
NLS = Lab analysis conducted by Northern Lake Service
Values in brackets are NLS version of "J" qualifier
pH electrode malfunction 4/30/2019

TABLE 2r
GROUNDWATER ANALYTICAL RESULTS SUMMARY
PHILLIPS PLATING CORPORATION
984 N. LAKE AVENUE, PHILLIPS, WI
PZ3

Laboratory			Pace	NLS	Pace	NLS	Pace	NLS
PARAMETER	**ES**	**PAL**	7/11/2018	7/11/2018	12/11/2018	12/11/2018	4/30/2019	4/30/2019
Metals (ug/L)								
Arsenic	10	1	NA	NA	NA	NA	NA	NA
Barium	2000	400	NA	NA	NA	NA	NA	NA
Cadmium	5	0.5	NA	NA	NA	NA	NA	NA
Dis. Total Chromium (filtered)	100	10	**1,510**	**1,300**	**1,150**	**1,000**	**789**	**800**
Total Chromium (unfiltered)	100	10	NA	NA	NA	NA	NA	NA
Chromium, Hexavalent (mg/L)			1.6	1.3	1.2	0.98	0.7	0.091
Lead	15	1.5	NA	NA	NA	NA	NA	NA
Mercury	2	0.2	NA	NA	NA	NA	NA	NA
Dissolved Nickel (filtered)	100	20	**4,040**	**3,800**	**3,260**	**3,200**	**2,660**	**3,000**
Nickel (Unfiltered)	100	20	NA	NA	NA	NA	NA	NA
Selenium	50	10	NA	NA	NA	NA	NA	NA
Silver	50	10	NA	NA	NA	NA	NA	NA
Dissolved Manganese (filtered)	300	60	**410**	NA	**272**	NA	*239*	NA
Manganese (unfiltered)	300	60	NA	NA	NA	NA	NA	NA
Dissolved Iron (filtered)	300	150	22.3[J]	NA	<35.4	NA	<35.4	NA
Iron (unfiltered)	300	150	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen (mg/L)	10	2	*7.8*	NA	*7.1*	NA	*6.6*	NA
Sulfate (mg/L)	250	125	51.4	NA	60.5	NA	50.2	NA
Field Measurements								
Temperature (^{o}F)			56.48		49.28		43.4	
Conductivity (ms/cm)			651		700.5		434.4	
Dissolved Oxygen (mg/L)			5.15		6.17		1.78	
pH			6.36		6.79		NA	
Redox Potential (mV)			179.8		-74.0		119.2	

PAL = Preventive Action Limit

ES = Enforcement Standards

BOLD	= Exceeds Enforcement Standard
Italic	= Exceeds Preventative Action Limit

NA - Not Analyzed

< - Concentration less than listed detection limit

J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

Pace = Lab analysis conducted by Pace Analtyical Servcies

NLS = Lab analysis conducted by Northern Lake Service

Values in brackets are NLS version of "J" qualifier

pH electrode malfunction 4/30/2019

Table 3a: MW6/PZ1 Vertical Gradient Calculations

Well Name -->	MW6	PZ1
Ground Surface Elevation (feet MSL) -->	1,458.67	1,458.36
Top of Well Casing Elevation (feet MSL) -->	1,458.16	1,457.96
Screen Joint (feet bgs) -->	10.18	28.63
Screen Joint (feet MSL) -->	1,448.49	1,429.73
Screen Length (feet) -->	10	5

	MW6	PZ1	Mid-Point to Mid-Point	
Date	Groundwater Elevation (feet MSL)	Groundwater Elevation (feet MSL)	Vertical Gradient ft/ft	Vertical Gradient Direction
7/15/2013	1,441.97	1,440.91	8.15E-02	Down
8/12/2013	1,442.05	1,440.75	9.97E-02	Down
11/12/2013	1,441.86	1,440.53	1.03E-01	Down
2/12/2014	1,441.55	1,439.69	1.45E-01	Down
6/2/2014	1,442.25	1,441.64	4.64E-02	Down
8/5/2014	1,441.89	1,440.85	8.02E-02	Down
11/5/2014	1,441.77	1,440.51	9.77E-02	Down
2/10/2015	1,441.65	1,439.93	1.34E-01	Down
5/4/2015	1,441.85	1,440.51	1.04E-01	Down
8/4/2015	1,441.98	1,440.71	9.77E-02	Down
11/3/2015	1,441.84	1,440.36	1.14E-01	Down
2/22/2016	1,441.80	1,439.90	1.47E-01	Down
8/31/2016	1,441.84	1,440.80	8.04E-02	Down
2/14/2017	1,441.61	1,439.76	1.44E-01	Down
7/11/2018	1,441.81	1,440.81	7.74E-02	Down
12/11/2018	1441.55	1439.91	1.28E-01	Down
4/30/2019	1,441.94	1,440.81	8.70E-02	Down

Minimum	4.64E-02	Down
Maximum	1.47E-01	Down
Average	1.04E-01	Down

Table 3b: MW10/PZ3 Vertical Gradient Calculations

Well Name -->	MW10	PZ3
Ground Surface Elevation (feet MSL) -->	1,451.11	1,451.16
Top of Well Casing Elevation (feet MSL) -->	1,450.54	1,451.00
Screen Joint (feet bgs) -->	4.90	19.04
Screen Joint (feet MSL) -->	1,446.21	1,432.12
Screen Length (feet) -->	10	5

	MW10	PZ3	Mid-Point to Mid-Point	
Date	Groundwater Elevation (feet MSL)	Groundwater Elevation (feet MSL)	Vertical Gradient ft/ft	Vertical Gradient Direction
7/11/2018	1,442.70	1,442.69	1.02E-03	Down
12/11/2018	1,441.86	1,441.85	1.06E-03	Down
4/30/2019	1,443.04	1,441.68	1.36E-01	Down

Minimum	1.02E-03	Down
Maximum	1.36E-01	Down
Average	4.60E-02	Down

Table 3c: MW13/PZ2 Vertical Gradient Calculations

Well Name -->	MW13	PZ2
Ground Surface Elevation (feet MSL) -->	1,458.09	1,458.22
Top of Well Casing Elevation (feet MSL) -->	1,457.91	1,457.55
Screen Joint (feet bgs) -->	11.67	28.19
Screen Joint (feet MSL) -->	1,446.48	1,429.36
Screen Length (feet) -->	10	5

	MW13	PZ2	Mid-Point to Mid-Point	
Date	Groundwater Elevation (feet MSL)	Groundwater Elevation (feet MSL)	Vertical Gradient ft/ft	Vertical Gradient Direction
7/11/2018	1,441.97	1,440.91	8.57E-02	Down
12/11/2018	1,441.83	1,441.89	4.88E-03	Up
4/30/2019	1,448.59	1,443.10	3.76E-01	Down

Minimum	4.88E-03	Up
Maximum	3.76E-01	Down
Average	1.52E-01	Down

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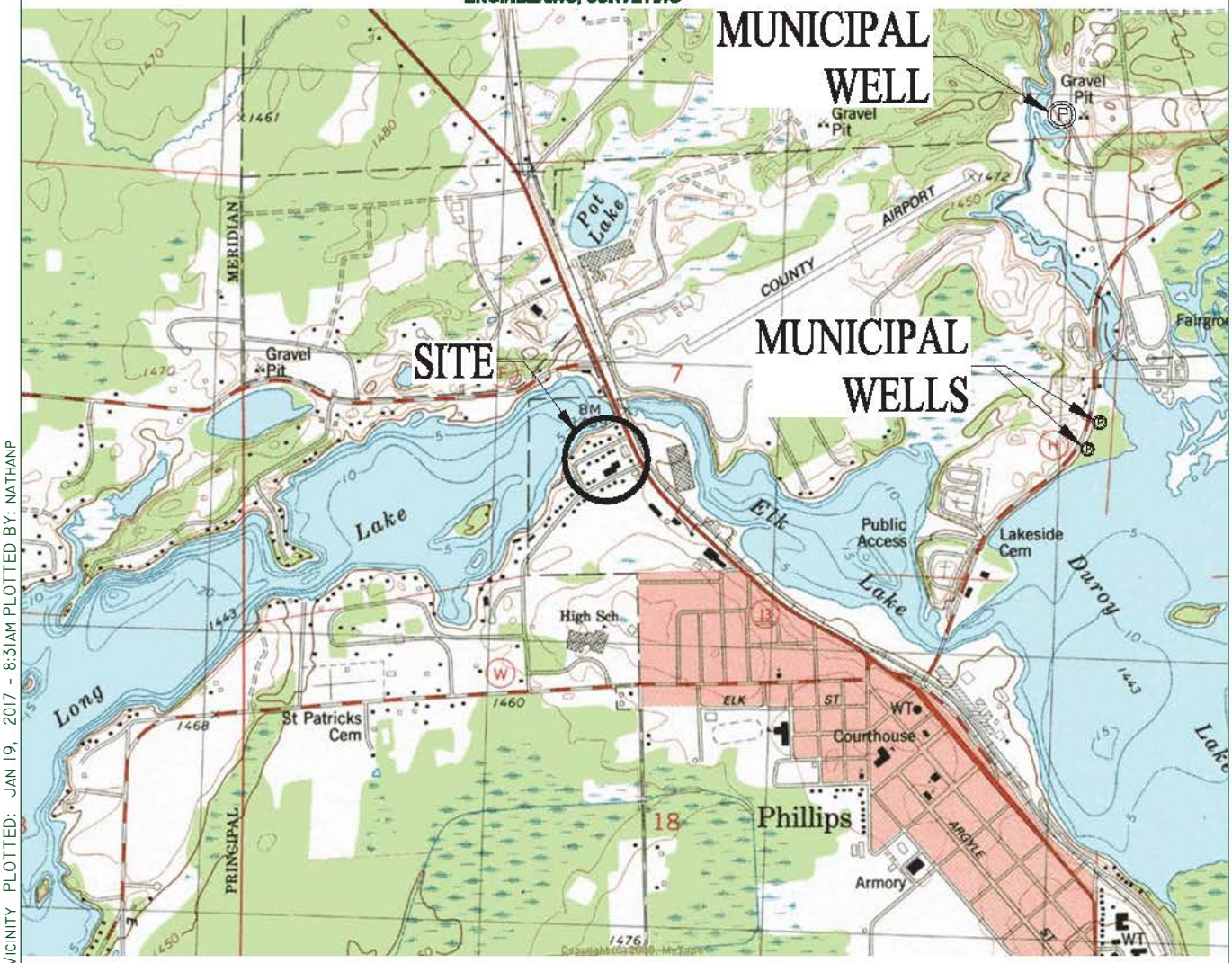
ENGINEERING, SURVEYING



SCALE 1:24 000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

UTM GRID AND 1984 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

PHILLIPS, WIS.
NW/4 PHILLIPS 15' QUADRANGLE
45090-F4-TF-024
1984
DMA 2975 III NW–SERIES V861

QUADRANGLE LOCATION

REI Engineering, INC.

PHILLIPS PLATING CORP. 984 N LAKE AVENUE PHILLIPS, WISCONSIN	FIGURE 1 : SITE VICINITY MAP		
	PROJECT NO. 6134B	DRAWN BY: NAP	DATE: 12/13/12

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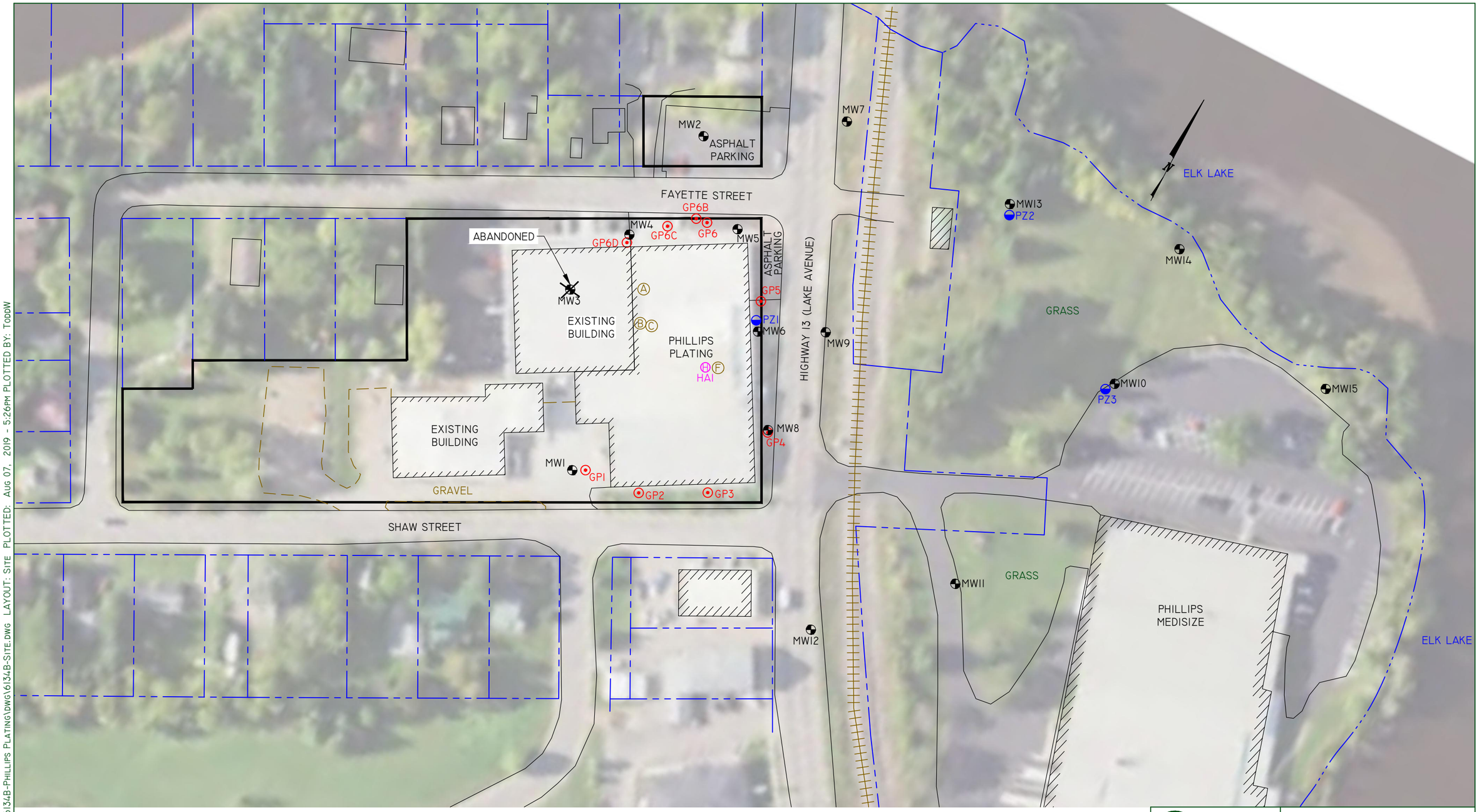

LEGEND

SCALE 0 50 100

- GEOPROBE SOIL BORING
- MONITORING WELL
- HAND AUGER SOIL BORING
- PIEZOMETER
- PROPERTY BOUNDARY
- PHILLIPS PLATING PROPERTY
- (A) 550 GALLON SPILL CATCH TANK
- (B) 5500 GALLON WASTE TREATMENT PROCESS TANK (STORAGE TANK)
- (C) 1500 GALLON WASTE TREATMENT PROCESS TANK (WASTE TREATMENT COLLECTION TANK)
- (F) 600 GALLON WASTE TREATMENT PROCESS TANK (PLATING LINE COLLECTION TANK)

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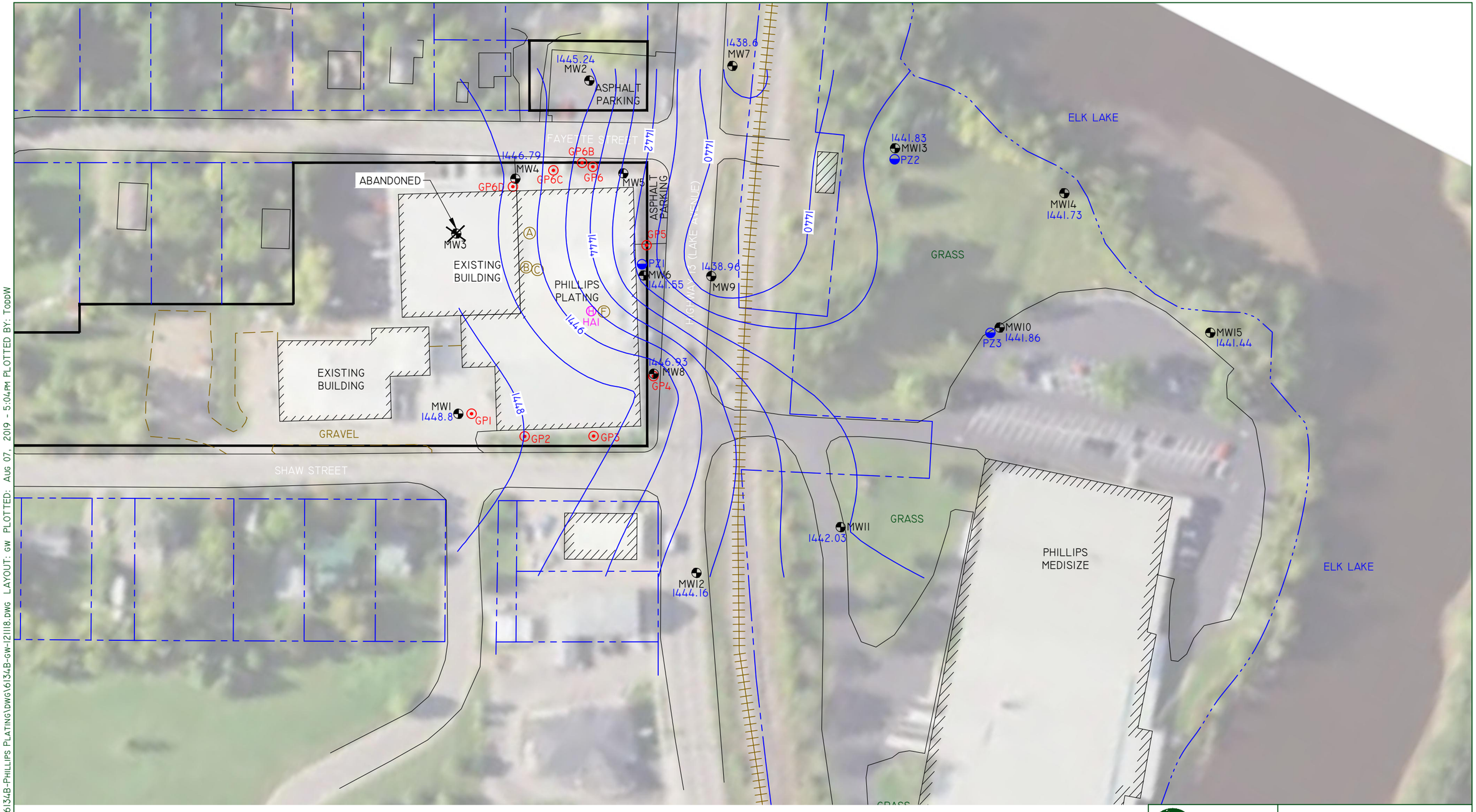
PHILLIPS PLATING CORP.
984 N LAKE AVENUE
PHILLIPS, WISCONSIN

FIGURE 2 : SITE MAP

PROJECT No.	DRAWN BY:	DATE:
6134B	TAW	8/7/2019

DRAWING FILE: P:\6100-6199\6134B-PHILLIPS PLATING\DWG\6134B-SITE.DWG LAYOUT: SITE PLOTTED: AUG 07, 2019 - 5:26PM PLOTTED BY: TODDW



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LEGEND

SCALE 0 50 100

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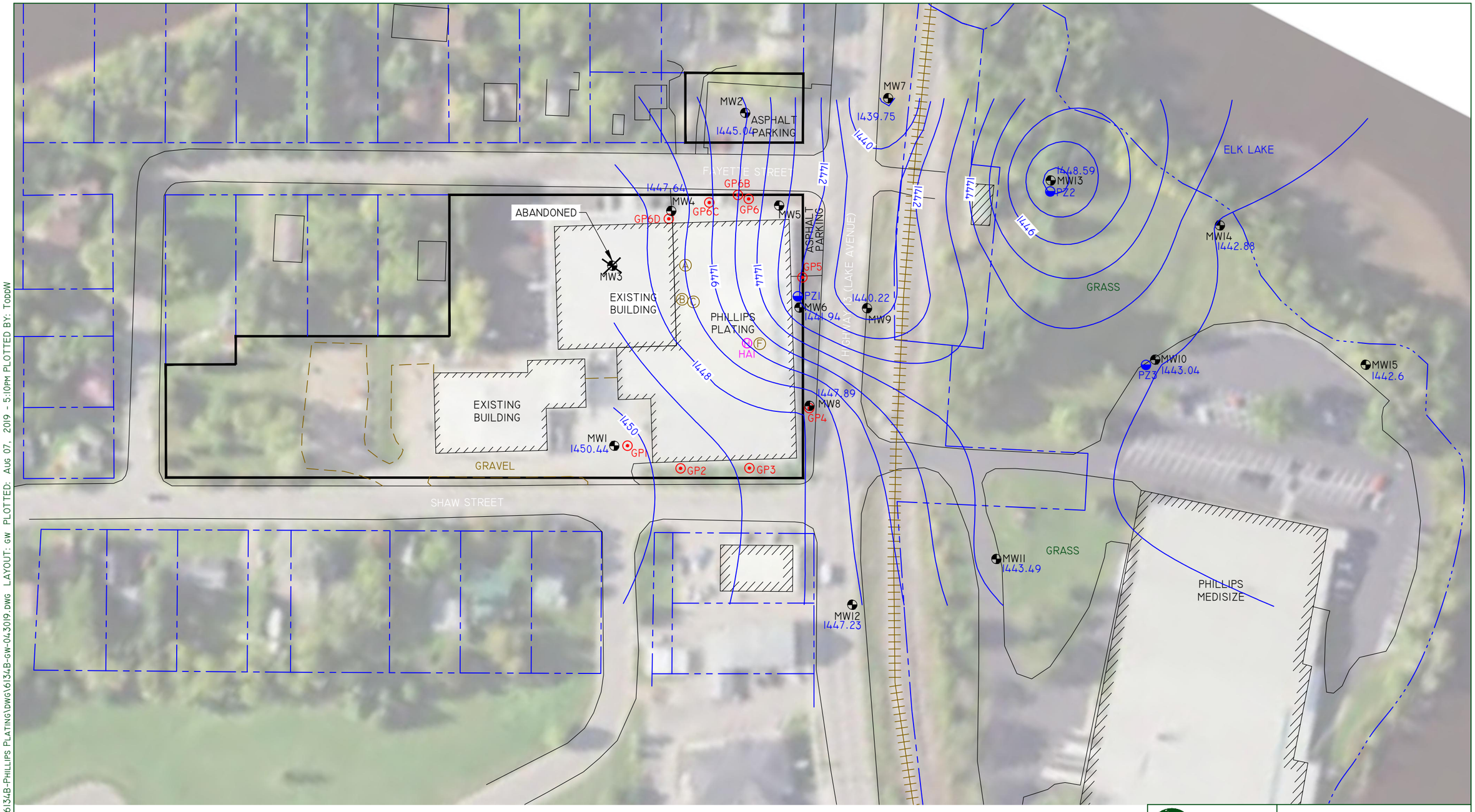
984 N LAKE AVENUE
PHILLIPS, WISCONSIN

FIGURE 3a : GROUNDWATER CONTOUR MAP (12/11/2018)

PROJECT No.	DRAWN BY:	DATE:
6134B	TAW	8/6/2019



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LEGEND

SCALE 0 50 100

- GEOPROBE SOIL BORING
- MONITORING WELL
- HAND AUGER SOIL BORING
- PIEZOMETER
- PROPERTY BOUNDARY
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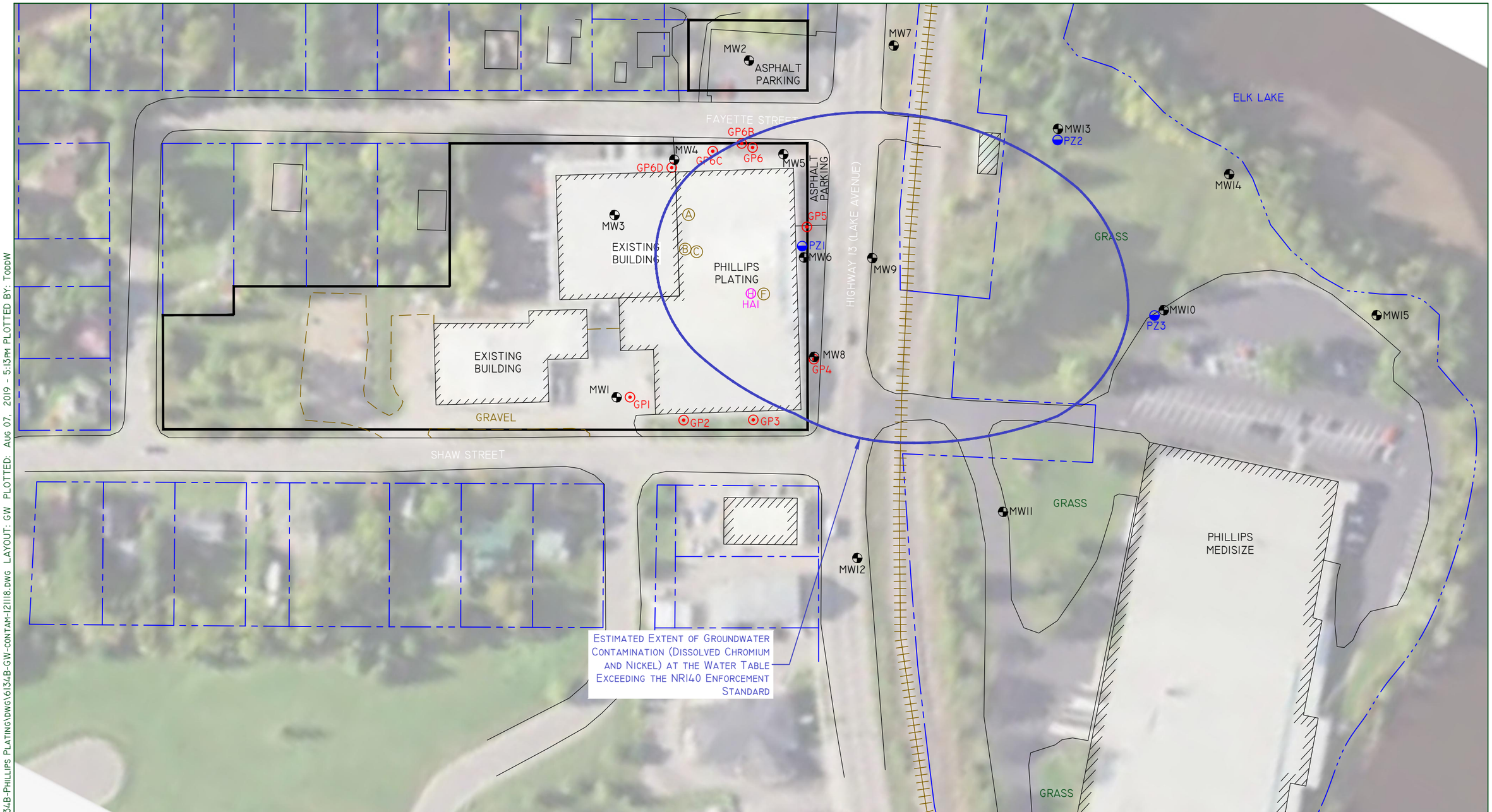
PHILLIPS PLATING CORP.
984 N LAKE AVENUE
PHILLIPS, WISCONSIN

FIGURE 3b : GROUNDWATER CONTOUR MAP (4/30/2019)

PROJECT No.	DRAWN BY:	DATE:
6134B	TAW	8/6/2019



LEGEND

SCALE
0 50 100

- GEOPROBE SOIL BORING
- MONITORING WELL
- HAND AUGER SOIL BORING

- (A) 550 GALLON SPILL CATCH TANK
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- (F) 600 GALLON WASTE TREATMENT PROCESS TANK (PLATING LINE COLLECTION TANK)

- PROPERTY BOUNDARY
- PHILLIPS PLATING PROPERTY
- AREA OF GROUNDWATER CONTAMINATION (DEFINED)

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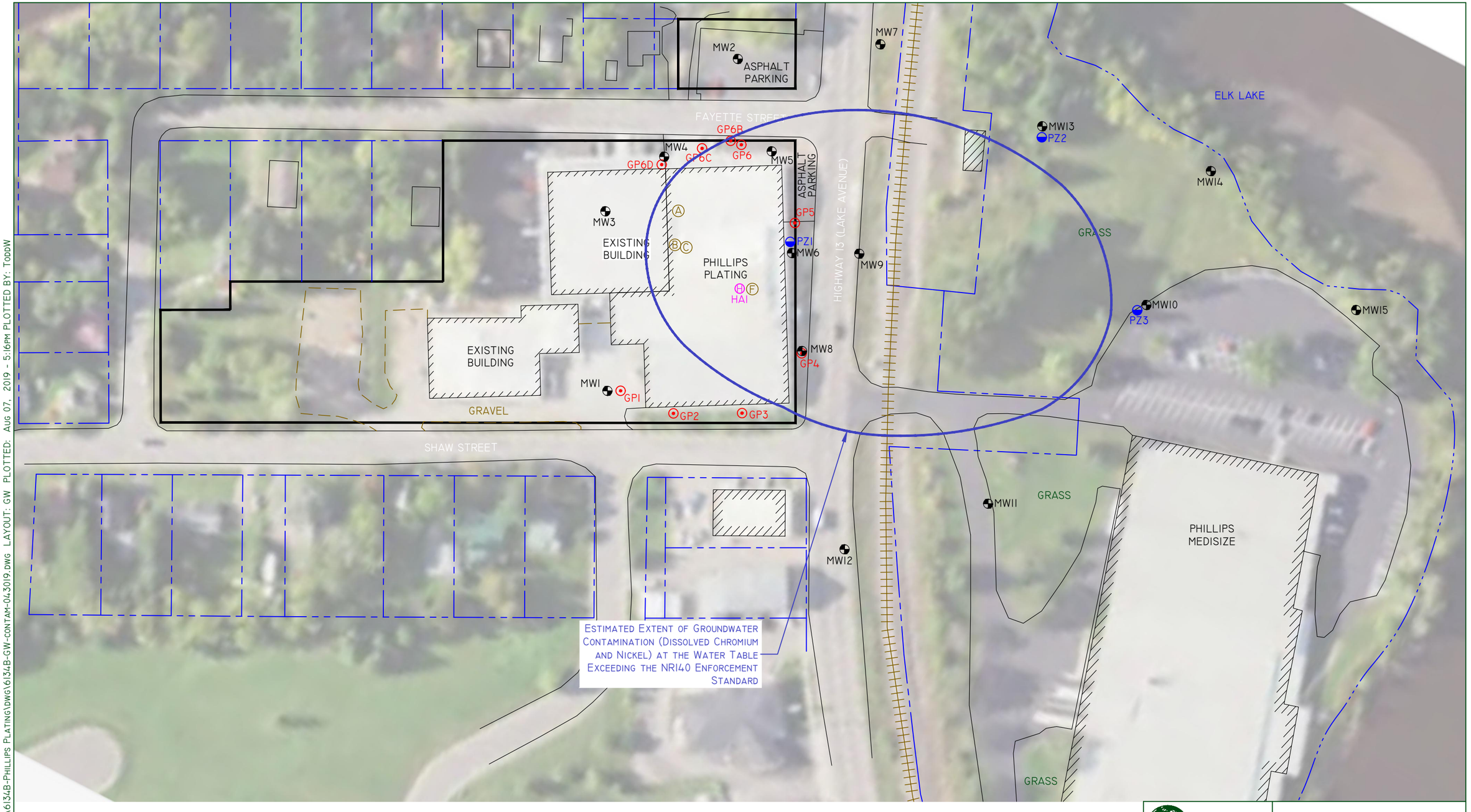
984 N LAKE AVENUE
PHILLIPS, WISCONSIN

FIGURE 4a : *ESTIMATED EXTENT OF GROUNDWATER CONTAMINATION EXCEEDING NR140ES (12/11/18)*

PROJECT No.	DRAWN BY:	DATE:
6134B	TAW	8/7/2019

DRAWING FILE: P:\6100-6199\6134B-PHILLIPS PLATING\DWG\6134B-GW-CONTAM-121118.DWG LAYOUT: GW PLOTTED: AUG 07, 2019 - 5:13PM PLOTTED BY: TODDW



LEGEND

SCALE
0 50 100

- GEOPROBE SOIL BORING
- MONITORING WELL
- HAND AUGER SOIL BORING

- (A) 550 GALLON SPILL CATCH TANK
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- PROPERTY BOUNDARY
- PHILLIPS PLATING PROPERTY
- AREA OF GROUNDWATER CONTAMINATION (DEFINED)

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PHILLIPS PLATING CORP.
984 N LAKE AVENUE
PHILLIPS, WISCONSIN

FIGURE 4b : *ESTIMATED EXTENT OF GROUNDWATER CONTAMINATION EXCEEDING NR140ES (04/30/19)*

PROJECT No.	DRAWN BY:	DATE:
6134B	TAW	8/7/2019

DRAWING FILE: P:\6100-6199\6134B-PHILLIPS PLATING\DWG\6134B-GW-CONTAM-043019.DWG LAYOUT: GW PLOTTED: AUG 07, 2019 - 5:16PM PLOTTED BY: TODDW

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

December 21, 2018

Ken Lassa
REI
4080 North 20th Avenue
Wausau, WI 54401

RE: Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Dear Ken Lassa:
Enclosed are the analytical results for sample(s) received by the laboratory on December 12, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brian Basten
brian.basten@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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CERTIFICATIONS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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SAMPLE SUMMARY

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40180839001	**MW1**	Water	12/11/18 08:50	12/12/18 09:05
40180839002	**MW2**	Water	12/11/18 09:50	12/12/18 09:05
40180839003	**MW4**	Water	12/11/18 10:15	12/12/18 09:05
40180839004	**MW5**	Water	12/11/18 10:35	12/12/18 09:05
40180839005	**MW6**	Water	12/11/18 14:35	12/12/18 09:05
40180839006	**MW7**	Water	12/11/18 09:30	12/12/18 09:05
40180839007	**MW8**	Water	12/11/18 13:45	12/12/18 09:05
40180839008	**MW9**	Water	12/11/18 14:05	12/12/18 09:05
40180839009	**MW10**	Water	12/11/18 13:10	12/12/18 09:05
40180839010	**MW11**	Water	12/11/18 11:00	12/12/18 09:05
40180839011	**MW12**	Water	12/11/18 09:15	12/12/18 09:05
40180839012	**MW13**	Water	12/11/18 12:15	12/12/18 09:05
40180839013	**MW14**	Water	12/11/18 11:45	12/12/18 09:05
40180839014	**MW15**	Water	12/11/18 11:25	12/12/18 09:05
40180839015	**PZ1**	Water	12/11/18 14:20	12/12/18 09:05
40180839016	**PZ2**	Water	12/11/18 12:30	12/12/18 09:05
40180839017	**PZ3**	Water	12/11/18 13:30	12/12/18 09:05

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SAMPLE ANALYTE COUNT

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40180839001	**MW1**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839002	**MW2**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839003	**MW4**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839004	**MW5**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839005	**MW6**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839006	**MW7**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839007	**MW8**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839008	**MW9**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839009	**MW10**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839010	**MW11**	EPA 6010	TXW	4	PASI-G

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839011	**MW12**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839012	**MW13**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839013	**MW14**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839014	**MW15**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839015	**PZ1**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839016	**PZ2**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40180839017	**PZ3**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW1 **Lab ID: 40180839001** Collected: 12/11/18 08:50 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		12/18/18 01:01	7440-47-3	
Iron, Dissolved	**44.6J**	ug/L	118	35.4	1		12/18/18 01:01	7439-89-6	
Manganese, Dissolved	**7.3**	ug/L	5.0	1.1	1		12/18/18 01:01	7439-96-5	
Nickel, Dissolved	**45.3**	ug/L	10.0	1.9	1		12/18/18 01:01	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.051**	mg/L	0.17	0.051	10		12/12/18 09:10		D3,H3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**7.8**	mg/L	1.1	0.38	5		12/12/18 11:47	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**20.1**	mg/L	15.0	5.0	5		12/12/18 11:47	14808-79-8	M0

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW2 **Lab ID: 40180839002** Collected: 12/11/18 09:50 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		12/18/18 01:13	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		12/18/18 01:13	7439-89-6	
Manganese, Dissolved	**427**	ug/L	5.0	1.1	1		12/18/18 01:13	7439-96-5	
Nickel, Dissolved	**10.9**	ug/L	10.0	1.9	1		12/18/18 01:13	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.13**	mg/L	0.43	0.13	25		12/12/18 09:10		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**37.6**	mg/L	4.5	1.5	20		12/12/18 18:59	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**17.2**	mg/L	15.0	5.0	5		12/12/18 13:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW4 **Lab ID: 40180839003** Collected: 12/11/18 10:15 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		12/18/18 01:15	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		12/18/18 01:15	7439-89-6	
Manganese, Dissolved	**<1.1**	ug/L	5.0	1.1	1		12/18/18 01:15	7439-96-5	
Nickel, Dissolved	**2.7J**	ug/L	10.0	1.9	1		12/18/18 01:15	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.026**	mg/L	0.086	0.026	5		12/12/18 09:10		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**2.3**	mg/L	0.22	0.075	1		12/12/18 13:21	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**9.1**	mg/L	3.0	1.0	1		12/12/18 13:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW5 **Lab ID: 40180839004** Collected: 12/11/18 10:35 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**306**	ug/L	10.0	2.5	1		12/18/18 01:18	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		12/18/18 01:18	7439-89-6	
Manganese, Dissolved	**21.6**	ug/L	5.0	1.1	1		12/18/18 01:18	7439-96-5	
Nickel, Dissolved	**1830**	ug/L	10.0	1.9	1		12/18/18 01:18	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**0.24**	mg/L	0.17	0.051	10		12/12/18 09:10		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**6.7**	mg/L	1.1	0.38	5		12/12/18 13:34	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**33.9**	mg/L	15.0	5.0	5		12/12/18 13:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW6 **Lab ID: 40180839005** Collected: 12/11/18 14:35 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**13200**	ug/L	10.0	2.5	1		12/18/18 01:20	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		12/18/18 01:20	7439-89-6	
Manganese, Dissolved	**1290**	ug/L	5.0	1.1	1		12/18/18 01:20	7439-96-5	
Nickel, Dissolved	**6560**	ug/L	10.0	1.9	1		12/18/18 01:20	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**13.2**	mg/L	0.86	0.26	50		12/12/18 09:10		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**11.0**	mg/L	1.1	0.38	5		12/12/18 13:48	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**334**	mg/L	60.0	20.0	20		12/12/18 19:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW7 **Lab ID: 40180839006** Collected: 12/11/18 09:30 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		12/18/18 01:22	7440-47-3	
Iron, Dissolved	**46.8J**	ug/L	118	35.4	1		12/18/18 01:22	7439-89-6	
Manganese, Dissolved	**1.6J**	ug/L	5.0	1.1	1		12/18/18 01:22	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		12/18/18 01:22	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.26**	mg/L	0.86	0.26	50		12/12/18 09:10		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**3.3**	mg/L	1.1	0.38	5		12/12/18 14:01	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**44.8**	mg/L	15.0	5.0	5		12/12/18 14:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW8 **Lab ID: 40180839007** Collected: 12/11/18 13:45 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**560**	ug/L	10.0	2.5	1		12/18/18 01:25	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		12/18/18 01:25	7439-89-6	
Manganese, Dissolved	**42.0**	ug/L	5.0	1.1	1		12/18/18 01:25	7439-96-5	
Nickel, Dissolved	**1290**	ug/L	10.0	1.9	1		12/18/18 01:25	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**0.52**	mg/L	0.21	0.064	12.5		12/12/18 09:10		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**28.4**	mg/L	4.5	1.5	20		12/12/18 19:39	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**20.3**	mg/L	15.0	5.0	5		12/12/18 14:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW9 **Lab ID: 40180839008** Collected: 12/11/18 14:05 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**478**	ug/L	10.0	2.5	1		12/18/18 01:27	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		12/18/18 01:27	7439-89-6	
Manganese, Dissolved	**162**	ug/L	5.0	1.1	1		12/18/18 01:27	7439-96-5	
Nickel, Dissolved	**536**	ug/L	10.0	1.9	1		12/18/18 01:27	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**0.35**	mg/L	0.17	0.051	10		12/12/18 09:10		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**10.6**	mg/L	2.2	0.75	10		12/12/18 14:28	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**73.7**	mg/L	30.0	10.0	10		12/12/18 14:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW10 **Lab ID: 40180839009** Collected: 12/11/18 13:10 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**50.0**	ug/L	10.0	2.5	1		12/18/18 01:30	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		12/18/18 01:30	7439-89-6	
Manganese, Dissolved	**15.3**	ug/L	5.0	1.1	1		12/18/18 01:30	7439-96-5	
Nickel, Dissolved	**77.3**	ug/L	10.0	1.9	1		12/18/18 01:30	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**0.017**	mg/L	0.017	0.0051	1		12/12/18 09:10		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.2**	mg/L	0.22	0.075	1		12/12/18 14:41	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**14.3**	mg/L	3.0	1.0	1		12/12/18 14:41	14808-79-8	

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW11 **Lab ID: 40180839010** Collected: 12/11/18 11:00 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		12/18/18 01:37	7440-47-3	
Iron, Dissolved	**50.2J**	ug/L	118	35.4	1		12/18/18 01:37	7439-89-6	
Manganese, Dissolved	**55.7**	ug/L	5.0	1.1	1		12/18/18 01:37	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		12/18/18 01:37	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.051**	mg/L	0.17	0.051	10		12/12/18 09:10		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**7.9**	mg/L	1.1	0.38	5		12/12/18 14:54	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**18.7**	mg/L	15.0	5.0	5		12/12/18 14:54	14808-79-8	

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW12 **Lab ID: 40180839011** Collected: 12/11/18 09:15 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		12/18/18 01:39	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		12/18/18 01:39	7439-89-6	
Manganese, Dissolved	**<1.1**	ug/L	5.0	1.1	1		12/18/18 01:39	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		12/18/18 01:39	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.13**	mg/L	0.43	0.13	25		12/12/18 09:10		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**6.4**	mg/L	1.1	0.38	5		12/12/18 15:52	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**18.0**	mg/L	15.0	5.0	5		12/12/18 15:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW13 **Lab ID: 40180839012** Collected: 12/11/18 12:15 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**5.5J**	ug/L	10.0	2.5	1		12/18/18 01:42	7440-47-3	
Iron, Dissolved	**5460**	ug/L	118	35.4	1		12/18/18 01:42	7439-89-6	
Manganese, Dissolved	**2110**	ug/L	5.0	1.1	1		12/18/18 01:42	7439-96-5	
Nickel, Dissolved	**1.9J**	ug/L	10.0	1.9	1		12/18/18 01:42	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.26**	mg/L	0.86	0.26	50		12/12/18 09:10		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**<0.38**	mg/L	1.1	0.38	5		12/12/18 16:05	14797-55-8	D3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**<5.0**	mg/L	15.0	5.0	5		12/12/18 16:05	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW14 **Lab ID: 40180839013** Collected: 12/11/18 11:45 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		12/18/18 01:44	7440-47-3	
Iron, Dissolved	**7100**	ug/L	118	35.4	1		12/18/18 01:44	7439-89-6	
Manganese, Dissolved	**522**	ug/L	5.0	1.1	1		12/18/18 01:44	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		12/18/18 01:44	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.26**	mg/L	0.86	0.26	50		12/12/18 09:10		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**<0.38**	mg/L	1.1	0.38	5		12/12/18 16:18	14797-55-8	D3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**9.1J**	mg/L	15.0	5.0	5		12/12/18 16:18	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: MW15 **Lab ID: 40180839014** Collected: 12/11/18 11:25 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		12/18/18 01:47	7440-47-3	
Iron, Dissolved	**4360**	ug/L	118	35.4	1		12/18/18 01:47	7439-89-6	
Manganese, Dissolved	**1480**	ug/L	5.0	1.1	1		12/18/18 01:47	7439-96-5	
Nickel, Dissolved	**5.1J**	ug/L	10.0	1.9	1		12/18/18 01:47	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.26**	mg/L	0.86	0.26	50		12/12/18 09:10		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**<0.38**	mg/L	1.1	0.38	5		12/12/18 16:32	14797-55-8	D3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**<5.0**	mg/L	15.0	5.0	5		12/12/18 16:32	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: PZ1 **Lab ID: 40180839015** Collected: 12/11/18 14:20 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**1500**	ug/L	10.0	2.5	1		12/18/18 01:49	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		12/18/18 01:49	7439-89-6	
Manganese, Dissolved	**9.2**	ug/L	5.0	1.1	1		12/18/18 01:49	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		12/18/18 01:49	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**1.5**	mg/L	0.43	0.13	25		12/12/18 09:10		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**6.3**	mg/L	1.1	0.38	5		12/12/18 16:45	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**45.9**	mg/L	15.0	5.0	5		12/12/18 16:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: PZ2 **Lab ID: 40180839016** Collected: 12/11/18 12:30 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		12/18/18 01:52	7440-47-3	
Iron, Dissolved	**1450**	ug/L	118	35.4	1		12/18/18 01:52	7439-89-6	
Manganese, Dissolved	**709**	ug/L	5.0	1.1	1		12/18/18 01:52	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		12/18/18 01:52	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<1.3**	mg/L	4.3	1.3	250		12/12/18 09:10		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**<0.38**	mg/L	1.1	0.38	5		12/12/18 16:59	14797-55-8	D3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**<5.0**	mg/L	15.0	5.0	5		12/12/18 16:59	14808-79-8	D3

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Sample: PZ3 **Lab ID: 40180839017** Collected: 12/11/18 13:30 Received: 12/12/18 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**1150**	ug/L	10.0	2.5	1		12/18/18 01:54	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		12/18/18 01:54	7439-89-6	
Manganese, Dissolved	**272**	ug/L	5.0	1.1	1		12/18/18 01:54	7439-96-5	
Nickel, Dissolved	**3260**	ug/L	10.0	1.9	1		12/18/18 01:54	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**1.2**	mg/L	0.43	0.13	25		12/12/18 09:10		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**7.1**	mg/L	1.1	0.38	5		12/12/18 17:12	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**60.5**	mg/L	15.0	5.0	5		12/12/18 17:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

QC Batch: 309432 Analysis Method: EPA 6010
QC Batch Method: EPA 6010 Analysis Description: ICP Metals, Trace, Dissolved
Associated Lab Samples: 40180839001, 40180839002, 40180839003, 40180839004, 40180839005, 40180839006, 40180839007, 40180839008, 40180839009, 40180839010, 40180839011, 40180839012, 40180839013, 40180839014, 40180839015, 40180839016, 40180839017

METHOD BLANK: 1807718 Matrix: Water
Associated Lab Samples: 40180839001, 40180839002, 40180839003, 40180839004, 40180839005, 40180839006, 40180839007, 40180839008, 40180839009, 40180839010, 40180839011, 40180839012, 40180839013, 40180839014, 40180839015, 40180839016, 40180839017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	<2.5	10.0	12/18/18 00:56	
Iron, Dissolved	ug/L	<35.4	118	12/18/18 00:56	
Manganese, Dissolved	ug/L	<1.1	5.0	12/18/18 00:56	
Nickel, Dissolved	ug/L	<1.9	10.0	12/18/18 00:56	

LABORATORY CONTROL SAMPLE: 1807719

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	500	479	96	80-120	
Iron, Dissolved	ug/L	5000	4950	99	80-120	
Manganese, Dissolved	ug/L	500	485	97	80-120	
Nickel, Dissolved	ug/L	500	483	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1807720 1807721

Parameter	Units	40180839001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Dissolved	ug/L	<2.5	500	500	479	473	96	95	75-125	1	20	
Iron, Dissolved	ug/L	44.6J	5000	5000	4970	4970	99	99	75-125	0	20	
Manganese, Dissolved	ug/L	7.3	500	500	480	477	95	94	75-125	1	20	
Nickel, Dissolved	ug/L	45.3	500	500	528	521	97	95	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

QC Batch: 309016 Analysis Method: SM 3500-Cr B (Online)
QC Batch Method: SM 3500-Cr B (Online) Analysis Description: Chromium, Hexavalent by 3500
Associated Lab Samples: 40180839001, 40180839002, 40180839003, 40180839004, 40180839005, 40180839006, 40180839007, 40180839008, 40180839009, 40180839010, 40180839011, 40180839012, 40180839013, 40180839014, 40180839015, 40180839016, 40180839017

METHOD BLANK: 1805009 Matrix: Water
Associated Lab Samples: 40180839001, 40180839002, 40180839003, 40180839004, 40180839005, 40180839006, 40180839007, 40180839008, 40180839009, 40180839010, 40180839011, 40180839012, 40180839013, 40180839014, 40180839015, 40180839016, 40180839017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/L	<0.0051	0.017	12/12/18 09:10	

LABORATORY CONTROL SAMPLE: 1805010

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/L	0.3	0.30	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1805011 1805012

Parameter	Units	40180839001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/L	<0.051	3	3	2.9	2.9	96	96	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1805013 1805014

Parameter	Units	40180839011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/L	<0.13	7.5	7.5	7.5	7.6	100	101	90-110	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

QC Batch: 309003 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40180839001, 40180839002, 40180839003, 40180839004, 40180839005, 40180839006, 40180839007, 40180839008, 40180839009, 40180839010, 40180839011, 40180839012, 40180839013, 40180839014, 40180839015, 40180839016, 40180839017

METHOD BLANK: 1804944 Matrix: Water
Associated Lab Samples: 40180839001, 40180839002, 40180839003, 40180839004, 40180839005, 40180839006, 40180839007, 40180839008, 40180839009, 40180839010, 40180839011, 40180839012, 40180839013, 40180839014, 40180839015, 40180839016, 40180839017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	<0.075	0.22	12/12/18 11:21	
Sulfate	mg/L	<1.0	3.0	12/12/18 11:21	

LABORATORY CONTROL SAMPLE: 1804945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	1.5	1.4	97	90-110	
Sulfate	mg/L	20	19.2	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1804946 1804947

Parameter	Units	40180839001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	7.8	7.5	7.5	15.7	15.7	106	106	90-110	0	15	
Sulfate	mg/L	20.1	100	100	132	131	111	111	90-110	0	15	M0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1804948 1804949

Parameter	Units	40180839017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	7.1	7.5	7.5	14.9	14.9	104	104	90-110	0	15	
Sulfate	mg/L	60.5	100	100	169	170	109	109	90-110	0	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40180839001	**MW1**	EPA 6010	309432		
40180839002	**MW2**	EPA 6010	309432		
40180839003	**MW4**	EPA 6010	309432		
40180839004	**MW5**	EPA 6010	309432		
40180839005	**MW6**	EPA 6010	309432		
40180839006	**MW7**	EPA 6010	309432		
40180839007	**MW8**	EPA 6010	309432		
40180839008	**MW9**	EPA 6010	309432		
40180839009	**MW10**	EPA 6010	309432		
40180839010	**MW11**	EPA 6010	309432		
40180839011	**MW12**	EPA 6010	309432		
40180839012	**MW13**	EPA 6010	309432		
40180839013	**MW14**	EPA 6010	309432		
40180839014	**MW15**	EPA 6010	309432		
40180839015	**PZ1**	EPA 6010	309432		
40180839016	**PZ2**	EPA 6010	309432		
40180839017	**PZ3**	EPA 6010	309432		
40180839001	**MW1**	SM 3500-Cr B (Online)	309016		
40180839002	**MW2**	SM 3500-Cr B (Online)	309016		
40180839003	**MW4**	SM 3500-Cr B (Online)	309016		
40180839004	**MW5**	SM 3500-Cr B (Online)	309016		
40180839005	**MW6**	SM 3500-Cr B (Online)	309016		
40180839006	**MW7**	SM 3500-Cr B (Online)	309016		
40180839007	**MW8**	SM 3500-Cr B (Online)	309016		
40180839008	**MW9**	SM 3500-Cr B (Online)	309016		
40180839009	**MW10**	SM 3500-Cr B (Online)	309016		
40180839010	**MW11**	SM 3500-Cr B (Online)	309016		
40180839011	**MW12**	SM 3500-Cr B (Online)	309016		
40180839012	**MW13**	SM 3500-Cr B (Online)	309016		
40180839013	**MW14**	SM 3500-Cr B (Online)	309016		
40180839014	**MW15**	SM 3500-Cr B (Online)	309016		
40180839015	**PZ1**	SM 3500-Cr B (Online)	309016		
40180839016	**PZ2**	SM 3500-Cr B (Online)	309016		
40180839017	**PZ3**	SM 3500-Cr B (Online)	309016		
40180839001	**MW1**	EPA 300.0	309003		
40180839002	**MW2**	EPA 300.0	309003		
40180839003	**MW4**	EPA 300.0	309003		
40180839004	**MW5**	EPA 300.0	309003		
40180839005	**MW6**	EPA 300.0	309003		
40180839006	**MW7**	EPA 300.0	309003		
40180839007	**MW8**	EPA 300.0	309003		
40180839008	**MW9**	EPA 300.0	309003		
40180839009	**MW10**	EPA 300.0	309003		
40180839010	**MW11**	EPA 300.0	309003		
40180839011	**MW12**	EPA 300.0	309003		
40180839012	**MW13**	EPA 300.0	309003		
40180839013	**MW14**	EPA 300.0	309003		
40180839014	**MW15**	EPA 300.0	309003		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6134B PHILLIPS PLATING
Pace Project No.: 40180839

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40180839015	**PZ1**	EPA 300.0	309003		
40180839016	**PZ2**	EPA 300.0	309003		
40180839017	**PZ3**	EPA 300.0	309003		
40180839001	**MW1**	EPA 300.0	309003		
40180839002	**MW2**	EPA 300.0	309003		
40180839003	**MW4**	EPA 300.0	309003		
40180839004	**MW5**	EPA 300.0	309003		
40180839005	**MW6**	EPA 300.0	309003		
40180839006	**MW7**	EPA 300.0	309003		
40180839007	**MW8**	EPA 300.0	309003		
40180839008	**MW9**	EPA 300.0	309003		
40180839009	**MW10**	EPA 300.0	309003		
40180839010	**MW11**	EPA 300.0	309003		
40180839011	**MW12**	EPA 300.0	309003		
40180839012	**MW13**	EPA 300.0	309003		
40180839013	**MW14**	EPA 300.0	309003		
40180839014	**MW15**	EPA 300.0	309003		
40180839015	**PZ1**	EPA 300.0	309003		
40180839016	**PZ2**	EPA 300.0	309003		
40180839017	**PZ3**	EPA 300.0	309003		

Pace Analytical®
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

CHAIN OF CUSTODY

40180839

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	REI
Branch/Location:	Wausau
Project Contact:	Ken Lassa
Phone:	715-675-9784
Project Number:	61343
Project Name:	Phillips Platry
Project State:	WI
Sampled By (Print):	Brian J. Bailey
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	Ken Lassa
Mail To Company:	REI
Mail To Address:	klassa@reiengineering.com bbailey@reiengineering.com
Invoice To Contact:	SAA
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO)	PRESERVATION (CODE)*	Analyses Requested: Total Dissolved Cr, Ni, Mn, Fe	Hex Cr	Nitrate	Sulfate	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
					Y/N	Pick Letter							
001	MW 1	12/11/18	8:50	GW	Y	D	X	X	X	X			
002	MW 2		9:50		N	A							
003	MW 4		10:15		N	A							
004	MW 5		10:35		N	A							
005	MW 6		2:35		N	A							
6	MW 7		9:30		N	A							
7	MW 8		1:45		N	A							
8	MW 9		2:05		N	A							
9	MW 10		1:10		N	A							
010	MW 11		11:00		N	A							
11	MW 12		9:15		N	A							
12	MW 13		12:15		N	A							
13	MW 14		11:45		N	A							

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	12/11/18 4:20		
Walter	12/12/18 0905		12/12/18 0905

PACE Project No.: 40180839

Receipt Temp = R01 °C

Sample Receipt pH: OK / Adjusted

Cooler Custody Seal: Present / Not Present

Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

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CHAIN OF CUSTODY

40180839

(Please Print Clearly)	
Company Name:	REI
Branch/Location:	Wausau
Project Contact:	Ken Lassa
Phone:	715-675-9784
Project Number:	61348
Project Name:	Phillips Plating
Project State:	WI
Sampled By (Print):	Brian J. Bailey
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	Ken Lassa
Mail To Company:	REI
Mail To Address:	klassa@reiengineering.com bbailey@reiengineering.com
Invoice To Contact:	SAA
Invoice To Company:	↓
Invoice To Address:	↓
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

***Preservation Codes**
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: Total/dissolved Cr, Ni, Mn, Fe	Hex Cr	Nitrate	Sulfate
14	MW15	12/11/18	11:25	GW	Y	D	X	X	X	X
15	PZ1	↓	2:20	↓	N	A	↓	↓	↓	↓
16	PZ2	↓	12:30	↓	N	A	↓	↓	↓	↓
17	PZ3	↓	1:30	↓	N	A	↓	↓	↓	↓

CLIENT COMMENTS

LAB COMMENTS (Lab Use Only)

Profile #

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	12/11/18 4:20		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Waltco	12/12/18 0905	Pace	12/12/18 0905
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.
40180839

Receipt Temp = R01 °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / Not Present

Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: REI Project # 40188839

All containers needing preservation have been checked and noted below: X Yes ☐No ☐N/A Initial when completed: PG Date/ Time:

Lab Lot# of pH paper: 10052681 Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass: AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	Plastic: BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	Vials: DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	WGFU	WPFU	General: SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																															X		2.5 / 5 / 10
002																															X		2.5 / 5 / 10
003																															X		2.5 / 5 / 10
004																															X		2.5 / 5 / 10
005																															X		2.5 / 5 / 10
006																															X		2.5 / 5 / 10
007																															X		2.5 / 5 / 10
008																															X		2.5 / 5 / 10
009																															X		2.5 / 5 / 10
010																															X		2.5 / 5 / 10
011																															X		2.5 / 5 / 10
012																															X		2.5 / 5 / 10
013																															X		2.5 / 5 / 10
014																															X		2.5 / 5 / 10
015																															X		2.5 / 5 / 10
016																															X		2.5 / 5 / 10
017																															X		2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : ☐Yes ☐No X N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3C	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

Pace Analytical 1241 Bellevue Street, Green Bay, WI 54302	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: 25Apr2018
	Document No.: **F-GB-C-031-Rev.07**	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #: **WO#: 40180839**

40180839

Client Name: REI

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☒ Waltco ☐ Client ☐ Pace Other:

Tracking #: 1922480-1

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - N/A **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: R01 /Corr:

Temp Blank Present: ☐ yes ☒ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 12/12/18
Initials: FG

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☐Yes ☒No	5. Sample Pt MW1, MW7, and MW12 did not make hold time. 12/12/18 FG for CA6
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☒Yes ☐No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD: ☐Yes ☒No ☐N/A		8.
Correct Containers Used:	☒Yes ☐No	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date: 12-12-18

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

Client: **REI Engineering Inc**
Attn: Ken Lassa
4080 North 20th Avenue
Wausau, WI 54401 8846

NLS Project: 313228
NLS Customer: 29027
Fax: 715 675 4060 Phone: 715 675 9784

Project: Phillips Plating/6134B

MW10 NLS ID: 1097019
COC: :1 Matrix: GW
Collected: 12/11/18 13:10 Received: 12/12/18

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	57	ug/L	1	0.58	1.9	12/12/18	SW846 6010	721026460
Chromium, Hex. as Cr+6	21	ug/L	2	2.2*	6.8*	12/12/18	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	110	ug/L	1	0.94	3.2	12/12/18	SW846 6010	721026460
Lab filtration	yes					12/12/18	NA	721026460

MW11 NLS ID: 1097020
COC: :2 Matrix: GW
Collected: 12/11/18 11:00 Received: 12/12/18

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	ND	ug/L	1	0.58	1.9	12/12/18	SW846 6010	721026460
Chromium, Hex. as Cr+6	ND	ug/L	1	1.1*	3.4*	12/12/18	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	ND	ug/L	1	0.94	3.2	12/12/18	SW846 6010	721026460
Lab filtration	yes					12/12/18	NA	721026460

MW13 NLS ID: 1097021
COC: :4 Matrix: GW
Collected: 12/11/18 12:15 Received: 12/12/18

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	6.6	ug/L	1	0.58	1.9	12/12/18	SW846 6010	721026460
Chromium, Hex. as Cr+6	9.3	ug/L	1	1.1*	3.4*	12/12/18	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	[2.5]	ug/L	1	0.94	3.2	12/12/18	SW846 6010	721026460
Lab filtration	yes					12/12/18	NA	721026460

MW14 NLS ID: 1097022
COC: :4 Matrix: GW
Collected: 12/11/18 11:45 Received: 12/12/18

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	ND	ug/L	1	0.58	1.9	12/12/18	SW846 6010	721026460
Chromium, Hex. as Cr+6	[1.2]	ug/L	1	1.1*	3.4*	12/12/18	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	ND	ug/L	1	0.94	3.2	12/12/18	SW846 6010	721026460
Lab filtration	yes					12/12/18	NA	721026460

MW15 NLS ID: 1097023
COC: :5 Matrix: GW
Collected: 12/11/18 11:25 Received: 12/12/18

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	[1.5]	ug/L	1	0.58	1.9	12/12/18	SW846 6010	721026460
Chromium, Hex. as Cr+6	[2.9]	ug/L	1	1.1*	3.4*	12/12/18	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	4.8	ug/L	1	0.94	3.2	12/12/18	SW846 6010	721026460
Lab filtration	yes					12/12/18	NA	721026460

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

NLS Project: 313228
NLS Customer: 29027

Client: **REI Engineering Inc**
Attn: Ken Lassa
4080 North 20th Avenue
Wausau, WI 54401 8846

Fax: 715 675 4060 Phone: 715 675 9784

Project: Phillips Plating/6134B

PZ2 NLS ID: 1097024
COC: :6 Matrix: GW
Collected: 12/11/18 12:30 Received: 12/12/18

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	ND	ug/L	1	0.58	1.9	12/12/18	SW846 6010	721026460
Chromium, Hex. as Cr+6	[2.9]	ug/L	1	1.1*	3.4*	12/12/18	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	ND	ug/L	1	0.94	3.2	12/12/18	SW846 6010	721026460
Lab filtration	yes					12/12/18	NA	721026460

PZ3 NLS ID: 1097025
COC: :7 Matrix: GW
Collected: 12/11/18 13:30 Received: 12/12/18

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	1000	ug/L	1	0.58	1.9	12/12/18	SW846 6010	721026460
Chromium, Hex. as Cr+6	980	ug/L	100	110*	340*	12/12/18	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	3200	ug/L	1	0.94	3.2	12/12/18	SW846 6010	721026460
Lab filtration	yes					12/12/18	NA	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.
ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

May 13, 2019

Ken Lassa
REI
4080 North 20th Avenue
Wausau, WI 54401

RE: Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Dear Ken Lassa:
Enclosed are the analytical results for sample(s) received by the laboratory on May 01, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brian Basten
brian.basten@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40186763001	**MW-1**	Water	04/30/19 09:00	05/01/19 09:05
40186763002	**MW-2**	Water	04/30/19 09:30	05/01/19 09:05
40186763003	**MW-4**	Water	04/30/19 09:40	05/01/19 09:05
40186763004	**MW-5**	Water	04/30/19 09:50	05/01/19 09:05
40186763005	**MW-6**	Water	04/30/19 12:00	05/01/19 09:05
40186763006	**MW-7**	Water	04/30/19 09:20	05/01/19 09:05
40186763007	**MW-8**	Water	04/30/19 11:30	05/01/19 09:05
40186763008	**MW-9**	Water	04/30/19 11:15	05/01/19 09:05
40186763009	**MW-10**	Water	04/30/19 10:50	05/01/19 09:05
40186763010	**MW-11**	Water	04/30/19 10:00	05/01/19 09:05
40186763011	**MW-12**	Water	04/30/19 09:10	05/01/19 09:05
40186763012	**MW-13**	Water	04/30/19 10:30	05/01/19 09:05
40186763013	**MW-14**	Water	04/30/19 10:20	05/01/19 09:05
40186763014	**MW-15**	Water	04/30/19 10:10	05/01/19 09:05
40186763015	**PZ-1**	Water	04/30/19 11:45	05/01/19 09:05
40186763016	**PZ-2**	Water	04/30/19 10:40	05/01/19 09:05
40186763017	**PZ-3**	Water	04/30/19 11:00	05/01/19 09:05

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40186763001	**MW-1**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763002	**MW-2**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763003	**MW-4**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763004	**MW-5**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763005	**MW-6**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763006	**MW-7**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763007	**MW-8**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763008	**MW-9**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763009	**MW-10**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763010	**MW-11**	EPA 6010	TXW	4	PASI-G

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SAMPLE ANALYTE COUNT

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763011	**MW-12**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763012	**MW-13**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763013	**MW-14**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763014	**MW-15**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763015	**PZ-1**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763016	**PZ-2**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
40186763017	**PZ-3**	EPA 6010	TXW	4	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 300.0	HMB	1	PASI-G

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-1 **Lab ID: 40186763001** Collected: 04/30/19 09:00 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 17:49	7440-47-3	
Iron, Dissolved	**173**	ug/L	118	35.4	1		05/03/19 17:49	7439-89-6	
Manganese, Dissolved	**15.8**	ug/L	5.0	1.1	1		05/03/19 17:49	7439-96-5	
Nickel, Dissolved	**35.4**	ug/L	10.0	1.9	1		05/03/19 17:49	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.013**	mg/L	0.043	0.013	2.5		05/01/19 09:15		D3,H3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**7.2**	mg/L	1.1	0.38	5		05/01/19 17:27	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**15.3**	mg/L	15.0	5.0	5		05/01/19 17:27	14808-79-8	M0

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-2 **Lab ID: 40186763002** Collected: 04/30/19 09:30 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 17:56	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		05/03/19 17:56	7439-89-6	
Manganese, Dissolved	**271**	ug/L	5.0	1.1	1		05/03/19 17:56	7439-96-5	
Nickel, Dissolved	**4.8J**	ug/L	10.0	1.9	1		05/03/19 17:56	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.13**	mg/L	0.43	0.13	25		05/01/19 09:15		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**14.4**	mg/L	1.1	0.38	5		05/01/19 18:11	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**32.2**	mg/L	15.0	5.0	5		05/01/19 18:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-4 **Lab ID: 40186763003** Collected: 04/30/19 09:40 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 17:59	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		05/03/19 17:59	7439-89-6	
Manganese, Dissolved	**<1.1**	ug/L	5.0	1.1	1		05/03/19 17:59	7439-96-5	
Nickel, Dissolved	**3.9J**	ug/L	10.0	1.9	1		05/03/19 17:59	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.0051**	mg/L	0.017	0.0051	1		05/01/19 09:15		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**2.0**	mg/L	1.1	0.38	5		05/01/19 18:25	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**7.2J**	mg/L	15.0	5.0	5		05/01/19 18:25	14808-79-8	M0

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-5 **Lab ID: 40186763004** Collected: 04/30/19 09:50 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**160**	ug/L	10.0	2.5	1		05/03/19 18:01	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		05/03/19 18:01	7439-89-6	
Manganese, Dissolved	**32.9**	ug/L	5.0	1.1	1		05/03/19 18:01	7439-96-5	
Nickel, Dissolved	**2120**	ug/L	10.0	1.9	1		05/03/19 18:01	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**0.11**	mg/L	0.086	0.026	5		05/01/19 09:15		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**6.2**	mg/L	1.1	0.38	5		05/01/19 18:39	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**38.8**	mg/L	15.0	5.0	5		05/01/19 18:39	14808-79-8	

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-6 **Lab ID: 40186763005** Collected: 04/30/19 12:00 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**14300**	ug/L	10.0	2.5	1		05/03/19 18:04	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		05/03/19 18:04	7439-89-6	
Manganese, Dissolved	**1060**	ug/L	5.0	1.1	1		05/03/19 18:04	7439-96-5	
Nickel, Dissolved	**6680**	ug/L	10.0	1.9	1		05/03/19 18:04	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**14.0**	mg/L	0.86	0.26	50		05/01/19 09:15		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**13.9**	mg/L	1.1	0.38	5		05/01/19 18:54	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**439**	mg/L	60.0	20.0	20		05/02/19 15:12	14808-79-8	

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-7 **Lab ID: 40186763006** Collected: 04/30/19 09:20 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 18:06	7440-47-3	
Iron, Dissolved	**85.9J**	ug/L	118	35.4	1		05/03/19 18:06	7439-89-6	
Manganese, Dissolved	**3.7J**	ug/L	5.0	1.1	1		05/03/19 18:06	7439-96-5	
Nickel, Dissolved	**7.2J**	ug/L	10.0	1.9	1		05/03/19 18:06	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.13**	mg/L	0.43	0.13	25		05/01/19 09:15		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**2.5**	mg/L	1.1	0.38	5		05/01/19 19:51	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**23.6**	mg/L	15.0	5.0	5		05/01/19 19:51	14808-79-8	

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-8 **Lab ID: 40186763007** Collected: 04/30/19 11:30 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**399**	ug/L	10.0	2.5	1		05/03/19 18:09	7440-47-3	
Iron, Dissolved	**37.4J**	ug/L	118	35.4	1		05/03/19 18:09	7439-89-6	
Manganese, Dissolved	**40.6**	ug/L	5.0	1.1	1		05/03/19 18:09	7439-96-5	
Nickel, Dissolved	**966**	ug/L	10.0	1.9	1		05/03/19 18:09	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**0.31**	mg/L	0.17	0.051	10		05/01/19 09:15		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**9.5**	mg/L	1.1	0.38	5		05/01/19 20:05	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**27.5**	mg/L	15.0	5.0	5		05/01/19 20:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-9 **Lab ID: 40186763008** Collected: 04/30/19 11:15 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**604**	ug/L	10.0	2.5	1		05/03/19 18:11	7440-47-3	
Iron, Dissolved	**919**	ug/L	118	35.4	1		05/03/19 18:11	7439-89-6	
Manganese, Dissolved	**238**	ug/L	5.0	1.1	1		05/03/19 18:11	7439-96-5	
Nickel, Dissolved	**341**	ug/L	10.0	1.9	1		05/03/19 18:11	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**0.54**	mg/L	0.17	0.051	10		05/01/19 09:15		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**8.3**	mg/L	1.1	0.38	5		05/01/19 20:20	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**79.8**	mg/L	15.0	5.0	5		05/01/19 20:20	14808-79-8	

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-10 **Lab ID: 40186763009** Collected: 04/30/19 10:50 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 18:19	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		05/03/19 18:19	7439-89-6	
Manganese, Dissolved	**<1.1**	ug/L	5.0	1.1	1		05/03/19 18:19	7439-96-5	
Nickel, Dissolved	**7.5J**	ug/L	10.0	1.9	1		05/03/19 18:19	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.013**	mg/L	0.043	0.013	2.5		05/01/19 09:15		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.4**	mg/L	0.22	0.075	1		05/01/19 20:34	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**7.1**	mg/L	3.0	1.0	1		05/01/19 20:34	14808-79-8	

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-11 **Lab ID: 40186763010** Collected: 04/30/19 10:00 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 18:21	7440-47-3	
Iron, Dissolved	**50.5J**	ug/L	118	35.4	1		05/03/19 18:21	7439-89-6	
Manganese, Dissolved	**53.3**	ug/L	5.0	1.1	1		05/03/19 18:21	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		05/03/19 18:21	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.051**	mg/L	0.17	0.051	10		05/01/19 09:15		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**5.6**	mg/L	1.1	0.38	5		05/01/19 20:49	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**16.4**	mg/L	15.0	5.0	5		05/01/19 20:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-12 **Lab ID: 40186763011** Collected: 04/30/19 09:10 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 18:24	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		05/03/19 18:24	7439-89-6	
Manganese, Dissolved	**<1.1**	ug/L	5.0	1.1	1		05/03/19 18:24	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		05/03/19 18:24	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.13**	mg/L	0.43	0.13	25		05/01/19 09:15		D3,H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**3.7**	mg/L	1.1	0.38	5		05/01/19 21:03	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**13.0J**	mg/L	15.0	5.0	5		05/01/19 21:03	14808-79-8	D3

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-13 **Lab ID: 40186763012** Collected: 04/30/19 10:30 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 18:26	7440-47-3	
Iron, Dissolved	**3270**	ug/L	118	35.4	1		05/03/19 18:26	7439-89-6	
Manganese, Dissolved	**1620**	ug/L	5.0	1.1	1		05/03/19 18:26	7439-96-5	
Nickel, Dissolved	**3.6J**	ug/L	10.0	1.9	1		05/03/19 18:26	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.26**	mg/L	0.86	0.26	50		05/01/19 09:15		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**<0.38**	mg/L	1.1	0.38	5		05/01/19 21:17	14797-55-8	D3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**<5.0**	mg/L	15.0	5.0	5		05/01/19 21:17	14808-79-8	D3

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-14 **Lab ID: 40186763013** Collected: 04/30/19 10:20 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 18:29	7440-47-3	
Iron, Dissolved	**3960**	ug/L	118	35.4	1		05/03/19 18:29	7439-89-6	
Manganese, Dissolved	**252**	ug/L	5.0	1.1	1		05/03/19 18:29	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		05/03/19 18:29	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.26**	mg/L	0.86	0.26	50		05/01/19 09:15		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**<0.38**	mg/L	1.1	0.38	5		05/01/19 21:32	14797-55-8	D3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**6.9J**	mg/L	15.0	5.0	5		05/01/19 21:32	14808-79-8	D3

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: MW-15 **Lab ID: 40186763014** Collected: 04/30/19 10:10 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 18:31	7440-47-3	
Iron, Dissolved	**559**	ug/L	118	35.4	1		05/03/19 18:31	7439-89-6	
Manganese, Dissolved	**70.3**	ug/L	5.0	1.1	1		05/03/19 18:31	7439-96-5	
Nickel, Dissolved	**4.0J**	ug/L	10.0	1.9	1		05/03/19 18:31	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.26**	mg/L	0.86	0.26	50		05/01/19 09:15		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**<0.38**	mg/L	1.1	0.38	5		05/01/19 21:46	14797-55-8	D3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**<5.0**	mg/L	15.0	5.0	5		05/01/19 21:46	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: PZ-1 **Lab ID: 40186763015** Collected: 04/30/19 11:45 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**1130**	ug/L	10.0	2.5	1		05/03/19 18:34	7440-47-3	
Iron, Dissolved	**121**	ug/L	118	35.4	1		05/03/19 18:34	7439-89-6	
Manganese, Dissolved	**8.4**	ug/L	5.0	1.1	1		05/03/19 18:34	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		05/03/19 18:34	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**1.2**	mg/L	0.17	0.051	10		05/01/19 09:15		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**5.5**	mg/L	1.1	0.38	5		05/01/19 22:00	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**46.5**	mg/L	15.0	5.0	5		05/01/19 22:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: PZ-2 **Lab ID: 40186763016** Collected: 04/30/19 10:40 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/03/19 18:36	7440-47-3	
Iron, Dissolved	**384**	ug/L	118	35.4	1		05/03/19 18:36	7439-89-6	
Manganese, Dissolved	**591**	ug/L	5.0	1.1	1		05/03/19 18:36	7439-96-5	
Nickel, Dissolved	**<1.9**	ug/L	10.0	1.9	1		05/03/19 18:36	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**<0.026**	mg/L	0.086	0.026	5		05/01/19 09:15		D3
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**<0.075**	mg/L	0.22	0.075	1		05/01/19 22:58	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**5.6**	mg/L	3.0	1.0	1		05/01/19 22:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Sample: PZ-3 **Lab ID: 40186763017** Collected: 04/30/19 11:00 Received: 05/01/19 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**789**	ug/L	10.0	2.5	1		05/03/19 18:39	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		05/03/19 18:39	7439-89-6	
Manganese, Dissolved	**239**	ug/L	5.0	1.1	1		05/03/19 18:39	7439-96-5	
Nickel, Dissolved	**2660**	ug/L	10.0	1.9	1		05/03/19 18:39	7440-02-0	
Chromium, Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent	**0.70**	mg/L	0.43	0.13	25		05/01/19 09:15		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**6.6**	mg/L	1.1	0.38	5		05/01/19 23:12	14797-55-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**50.2**	mg/L	15.0	5.0	5		05/01/19 23:12	14808-79-8	M0

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

QC Batch: 320372 Analysis Method: EPA 6010
QC Batch Method: EPA 6010 Analysis Description: ICP Metals, Trace, Dissolved
Associated Lab Samples: 40186763001, 40186763002, 40186763003, 40186763004, 40186763005, 40186763006, 40186763007, 40186763008, 40186763009, 40186763010, 40186763011, 40186763012, 40186763013, 40186763014, 40186763015, 40186763016, 40186763017

METHOD BLANK: 1861247 Matrix: Water
Associated Lab Samples: 40186763001, 40186763002, 40186763003, 40186763004, 40186763005, 40186763006, 40186763007, 40186763008, 40186763009, 40186763010, 40186763011, 40186763012, 40186763013, 40186763014, 40186763015, 40186763016, 40186763017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	<2.5	10.0	05/03/19 17:39	
Iron, Dissolved	ug/L	<35.4	118	05/03/19 17:39	
Manganese, Dissolved	ug/L	<1.1	5.0	05/03/19 17:39	
Nickel, Dissolved	ug/L	<1.9	10.0	05/03/19 17:39	

LABORATORY CONTROL SAMPLE: 1861248

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	500	493	99	80-120	
Iron, Dissolved	ug/L	5000	4960	99	80-120	
Manganese, Dissolved	ug/L	500	492	98	80-120	
Nickel, Dissolved	ug/L	500	465	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1861249 1861250

Parameter	Units	40186763001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Dissolved	ug/L	<2.5	500	500	495	492	99	98	75-125	1	20	
Iron, Dissolved	ug/L	173	5000	5000	5080	5100	98	99	75-125	0	20	
Manganese, Dissolved	ug/L	15.8	500	500	502	501	97	97	75-125	0	20	
Nickel, Dissolved	ug/L	35.4	500	500	511	499	95	93	75-125	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

QC Batch: 320003 Analysis Method: SM 3500-Cr B (Online)
QC Batch Method: SM 3500-Cr B (Online) Analysis Description: Chromium, Hexavalent by 3500
Associated Lab Samples: 40186763001, 40186763002, 40186763003, 40186763004, 40186763005, 40186763006, 40186763007, 40186763008, 40186763009, 40186763010, 40186763011, 40186763012, 40186763013, 40186763014, 40186763015, 40186763016, 40186763017

METHOD BLANK: 1859178 Matrix: Water
Associated Lab Samples: 40186763001, 40186763002, 40186763003, 40186763004, 40186763005, 40186763006, 40186763007, 40186763008, 40186763009, 40186763010, 40186763011, 40186763012, 40186763013, 40186763014, 40186763015, 40186763016, 40186763017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/L	<0.0051	0.017	05/01/19 09:15	

LABORATORY CONTROL SAMPLE: 1859179

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/L	0.3	0.28	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1859180 1859181

Parameter	Units	40186763001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/L	<0.013	0.75	0.75	0.72	0.72	95	95	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1859182 1859183

Parameter	Units	40186763011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/L	<0.13	7.5	7.5	7.6	6.8	101	91	90-110	11	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

QC Batch: 320032 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40186763001, 40186763002, 40186763003, 40186763004, 40186763005, 40186763006, 40186763007, 40186763008, 40186763009, 40186763010, 40186763011, 40186763012, 40186763013, 40186763014, 40186763015, 40186763016, 40186763017

METHOD BLANK: 1859293 Matrix: Water
Associated Lab Samples: 40186763001, 40186763002, 40186763003, 40186763004, 40186763005, 40186763006, 40186763007, 40186763008, 40186763009, 40186763010, 40186763011, 40186763012, 40186763013, 40186763014, 40186763015, 40186763016, 40186763017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	<0.075	0.22	05/01/19 16:59	
Sulfate	mg/L	<1.0	3.0	05/01/19 16:59	

LABORATORY CONTROL SAMPLE: 1859294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	1.5	1.5	103	90-110	
Sulfate	mg/L	20	20.7	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1859295 1859296

Parameter	Units	40186763001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	7.2	7.5	7.5	15.1	15.5	104	110	90-110	3	15	
Sulfate	mg/L	15.3	100	100	127	131	111	116	90-110	3	15	M0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1859301 1859302

Parameter	Units	40186763017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	6.6	7.5	7.5	14.6	14.5	107	106	90-110	1	15	
Sulfate	mg/L	50.2	100	100	161	161	111	111	90-110	0	15	M0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
H1	Analysis conducted outside the recognized method holding time.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40186763001	**MW-1**	EPA 6010	320372		
40186763002	**MW-2**	EPA 6010	320372		
40186763003	**MW-4**	EPA 6010	320372		
40186763004	**MW-5**	EPA 6010	320372		
40186763005	**MW-6**	EPA 6010	320372		
40186763006	**MW-7**	EPA 6010	320372		
40186763007	**MW-8**	EPA 6010	320372		
40186763008	**MW-9**	EPA 6010	320372		
40186763009	**MW-10**	EPA 6010	320372		
40186763010	**MW-11**	EPA 6010	320372		
40186763011	**MW-12**	EPA 6010	320372		
40186763012	**MW-13**	EPA 6010	320372		
40186763013	**MW-14**	EPA 6010	320372		
40186763014	**MW-15**	EPA 6010	320372		
40186763015	**PZ-1**	EPA 6010	320372		
40186763016	**PZ-2**	EPA 6010	320372		
40186763017	**PZ-3**	EPA 6010	320372		
40186763001	**MW-1**	SM 3500-Cr B (Online)	320003		
40186763002	**MW-2**	SM 3500-Cr B (Online)	320003		
40186763003	**MW-4**	SM 3500-Cr B (Online)	320003		
40186763004	**MW-5**	SM 3500-Cr B (Online)	320003		
40186763005	**MW-6**	SM 3500-Cr B (Online)	320003		
40186763006	**MW-7**	SM 3500-Cr B (Online)	320003		
40186763007	**MW-8**	SM 3500-Cr B (Online)	320003		
40186763008	**MW-9**	SM 3500-Cr B (Online)	320003		
40186763009	**MW-10**	SM 3500-Cr B (Online)	320003		
40186763010	**MW-11**	SM 3500-Cr B (Online)	320003		
40186763011	**MW-12**	SM 3500-Cr B (Online)	320003		
40186763012	**MW-13**	SM 3500-Cr B (Online)	320003		
40186763013	**MW-14**	SM 3500-Cr B (Online)	320003		
40186763014	**MW-15**	SM 3500-Cr B (Online)	320003		
40186763015	**PZ-1**	SM 3500-Cr B (Online)	320003		
40186763016	**PZ-2**	SM 3500-Cr B (Online)	320003		
40186763017	**PZ-3**	SM 3500-Cr B (Online)	320003		
40186763001	**MW-1**	EPA 300.0	320032		
40186763002	**MW-2**	EPA 300.0	320032		
40186763003	**MW-4**	EPA 300.0	320032		
40186763004	**MW-5**	EPA 300.0	320032		
40186763005	**MW-6**	EPA 300.0	320032		
40186763006	**MW-7**	EPA 300.0	320032		
40186763007	**MW-8**	EPA 300.0	320032		
40186763008	**MW-9**	EPA 300.0	320032		
40186763009	**MW-10**	EPA 300.0	320032		
40186763010	**MW-11**	EPA 300.0	320032		
40186763011	**MW-12**	EPA 300.0	320032		
40186763012	**MW-13**	EPA 300.0	320032		
40186763013	**MW-14**	EPA 300.0	320032		
40186763014	**MW-15**	EPA 300.0	320032		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6134B PHILLIPS PLATTING
Pace Project No.: 40186763

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40186763015	**PZ-1**	EPA 300.0	320032		
40186763016	**PZ-2**	EPA 300.0	320032		
40186763017	**PZ-3**	EPA 300.0	320032		
40186763001	**MW-1**	EPA 300.0	320032		
40186763002	**MW-2**	EPA 300.0	320032		
40186763003	**MW-4**	EPA 300.0	320032		
40186763004	**MW-5**	EPA 300.0	320032		
40186763005	**MW-6**	EPA 300.0	320032		
40186763006	**MW-7**	EPA 300.0	320032		
40186763007	**MW-8**	EPA 300.0	320032		
40186763008	**MW-9**	EPA 300.0	320032		
40186763009	**MW-10**	EPA 300.0	320032		
40186763010	**MW-11**	EPA 300.0	320032		
40186763011	**MW-12**	EPA 300.0	320032		
40186763012	**MW-13**	EPA 300.0	320032		
40186763013	**MW-14**	EPA 300.0	320032		
40186763014	**MW-15**	EPA 300.0	320032		
40186763015	**PZ-1**	EPA 300.0	320032		
40186763016	**PZ-2**	EPA 300.0	320032		
40186763017	**PZ-3**	EPA 300.0	320032		

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Page 1 of 2

40186763

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	REI
Branch/Location:	Wausau
Project Contact:	Ken Lassa
Phone:	715-675-9784
Project Number:	6134B
Project Name:	Phillips Plating
Project State:	WI
Sampled By (Print):	Ryan Rosch
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	Ken Lassa
Mail To Company:	REI
Mail To Address:	klassa@rveng.com
Invoice To Contact:	SAA
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Analyses Requested: Total Dissolved Cr, Ni, Mn, Fe	Hex Cr	Nitrate	Sulfate	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	FILTERED? (YES/NO)				Y	N	N	N			
	PRESERVATION (CODE)*				D	A	A	A			
001	MW-1	4/30/19	9:00	GW	X	X	X	X			
002	MW-2		9:30								
003	MW-4		9:40								
004	MW-5		9:50								
005	MW-6		12:00								
006	MW-7		9:20								
007	MW-8		11:30								
008	MW-9		11:15								
009	MW-10		10:50								
010	MW-11		10:00								
011	MW-12		9:10								
012	MW-13		10:30								
013	MW-14		10:20								

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	4/30/19 7:00		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Walton	5-1-19 0905		5-1-19 0905
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.: 40186763
Receipt Temp = ROT °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

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40186763

CHAIN OF COSTODY

(Please Print Clearly)

Company Name:	REI
Branch/Location:	Wausau
Project Contact:	Ken Lassa
Phone:	715-675-9784
Project Number:	6134B
Project Name:	Phillips Plating
Project State:	WI
Sampled By (Print):	Ryan Resch
Sampled By (Sign):	[signature]
PO #:	
Regulatory Program:	

Quote #:	
Mail To Contact:	Ken Lassa
Mail To Company:	REI
Mail To Address:	klassa@reiengineering.com
Invoice To Contact:	SAA
Invoice To Company:	↓
Invoice To Address:	↓
Invoice To Phone:	

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, Sl = Sludge
W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

					FILTERED? (YES/NO) Y/N	Y	N	N	N						
					PRESERVATION (CODE)* Pick Letter	D	A	A	A						
		COLLECTION			Analyses Requested	Total Dissolved Cr, Ni, Mn, Fe	Hex Cr	Nitrate	Sulfate						
PACE LAB #	CLIENT FIELD ID	DATE	TIME	MATRIX									CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
014	MW-15	4/30/19	10:10	GW		X	X	X	X						
015	PZ-1	↓	11:45	↓		↓	↓	↓	↓						
016	PZ-2	↓	10:40	↓		↓	↓	↓	↓						
017	PZ-3	↓	11:00	↓		↓	↓	↓	↓						

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Walter	5/1/19 0905	[signature] Pace	5/1/19 0905

PACE Project No. 40186763

Receipt Temp = ROI °C

Sample Receipt pH: OK / Adjusted (OK circled)

Cooler Custody Seal: Present / Not Present (Not Present circled)
Intact / Not Intact

Version 6.0 06/14/06

ORIGINAL

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: REI Project # Q01676J

All containers needing preservation have been checked and noted below: ☒Yes ☐No ☐N/A Initial when completed: SCV Date/ Time:

Lab Lot# of pH paper: 1045361 Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass							Plastic							Vials						Jars			General			VOA Vials (>6mm)*	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU	SP5T	ZPLC	GN							
001											1		1																	X		2.5 / 5 / 10
002											1		1																	X		2.5 / 5 / 10
003											1		1																	X		2.5 / 5 / 10
004											1		1																	X		2.5 / 5 / 10
005											1		1																	X		2.5 / 5 / 10
006											1		1																	X		2.5 / 5 / 10
007											1		1																	X		2.5 / 5 / 10
008											1		1																	X		2.5 / 5 / 10
009											1		1																	X		2.5 / 5 / 10
010											1		1																	X		2.5 / 5 / 10
011											1		1																	X		2.5 / 5 / 10
012											1		1																	X		2.5 / 5 / 10
013											1		1																	X		2.5 / 5 / 10
014											1		1																	X		2.5 / 5 / 10
015											1		1																	X		2.5 / 5 / 10
016											1		1																	X		2.5 / 5 / 10
017											1		1																	X		2.5 / 5 / 10
018																																2.5 / 5 / 10
019																																2.5 / 5 / 10
020																																2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☐N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3C	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

Pace Analytical™ 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 25Apr2018
	Document No.: F-GB-C-031-Rev.07	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: REI

Project #: WO#: 40186763

40186763

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☒ Waltco ☐ Client ☐ Pace Other:

Tracking #: 2043972

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Thermometer Used SR - N/A **Type of Ice:** (Wet) Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROI /Corr:

Temp Blank Present: ☐ yes ☑ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 5-1-19
Initials: SW

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☐Yes ☑No ☐N/A	3. Pg 1 only 5-1-19 SW
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time: 5-1-19 SW	☑Yes ☐No	5. 001-Cr6 past hold 5-1-19 SW
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time: OK to run past Hold per Brian Bricky
Short Hold Time Analysis (<72hr):	☑Yes ☐No	6. 5-1-19 BB
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☑Yes ☐No ☐N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: BB **Date:** 5-1-19

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

Client: **REI Engineering Inc**
Attn: Ken Lassa
4080 North 20th Avenue
Wausau, WI 54401 8846

NLS Project: 320249
NLS Customer: 29027
Fax: 715 675 4060 Phone: 715 675 9784

Project: Phillips Plating/6134B

MW-10 NLS ID: 1118371
COC: :1 Matrix: GW
Collected: 04/30/19 10:50 Received: 05/01/19

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	3.3	ug/L	1	0.58	1.9	05/01/19	SW846 6010	721026460
Chromium, Hex. as Cr+6	4.0	ug/L	1	0.52	1.7	05/01/19	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	4.7	ug/L	1	0.94	3.2	05/01/19	SW846 6010	721026460
Lab filtration	yes					05/01/19	NA	721026460

MW-11 NLS ID: 1118372
COC: :2 Matrix: GW
Collected: 04/30/19 10:00 Received: 05/01/19

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	ND	ug/L	1	0.58	1.9	05/01/19	SW846 6010	721026460
Chromium, Hex. as Cr+6	2.3	ug/L	1	0.52	1.7	05/01/19	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	ND	ug/L	1	0.94	3.2	05/01/19	SW846 6010	721026460
Lab filtration	yes					05/01/19	NA	721026460

MW-13 NLS ID: 1118373
COC: :3 Matrix: GW
Collected: 04/30/19 10:30 Received: 05/01/19

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	5.0	ug/L	1	0.58	1.9	05/01/19	SW846 6010	721026460
Chromium, Hex. as Cr+6	6.6	ug/L	1	0.52	1.7	05/01/19	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	[3.2]	ug/L	1	0.94	3.2	05/01/19	SW846 6010	721026460
Lab filtration	yes					05/01/19	NA	721026460

MW-14 NLS ID: 1118374
COC: :4 Matrix: GW
Collected: 04/30/19 10:20 Received: 05/01/19

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	ND	ug/L	1	0.58	1.9	05/01/19	SW846 6010	721026460
Chromium, Hex. as Cr+6	3.7	ug/L	1	0.52	1.7	05/01/19	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	ND	ug/L	1	0.94	3.2	05/01/19	SW846 6010	721026460
Lab filtration	yes					05/01/19	NA	721026460

MW-15 NLS ID: 1118375
COC: :5 Matrix: GW
Collected: 04/30/19 10:10 Received: 05/01/19

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	ND	ug/L	1	0.58	1.9	05/01/19	SW846 6010	721026460
Chromium, Hex. as Cr+6	2.7	ug/L	1	0.52	1.7	05/01/19	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	[2.5]	ug/L	1	0.94	3.2	05/01/19	SW846 6010	721026460
Lab filtration	yes					05/01/19	NA	721026460

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

NLS Project: 320249
NLS Customer: 29027

Client: **REI Engineering Inc**
Attn: Ken Lassa
4080 North 20th Avenue
Wausau, WI 54401 8846

Fax: 715 675 4060 Phone: 715 675 9784

Project: Phillips Plating/6134B

PZ-2 NLS ID: 1118376
COC: :6 Matrix: GW
Collected: 04/30/19 10:40 Received: 05/01/19

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	[0.62]	ug/L	1	0.58	1.9	05/01/19	SW846 6010	721026460
Chromium, Hex. as Cr+6	[1.0]	ug/L	1	0.52	1.7	05/01/19	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	ND	ug/L	1	0.94	3.2	05/01/19	SW846 6010	721026460
Lab filtration	yes					05/01/19	NA	721026460

PZ-3 NLS ID: 1118377
COC: :7 Matrix: GW
Collected: 04/30/19 11:00 Received: 05/01/19

Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab
Chromium, dis. as Cr by ICP	800	ug/L	1	0.58	1.9	05/01/19	SW846 6010	721026460
Chromium, Hex. as Cr+6	9.1	ug/L	1	0.52	1.7	05/01/19	3500-Cr B-2009	721026460
Nickel, dis. as Ni by ICP	3000	ug/L	1	0.94	3.2	05/01/19	SW846 6010	721026460
Lab filtration	yes					05/01/19	NA	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.
ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President