ATTACHMENT 1

First and Second Quarter 2017 Groundwater Sampling Logs

In-Situ Inc.

Troll 9000 | Low-Flow System
3/6/2017 | ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Billy J Cobern	Pump Model/Type	GeoPro Bladder
Company Name	ARCADIS	Tubing Type	LDPE
Project Name	Racer Plant#2	Tubing Diameter	0.17 [in]
Site Name	Lansing	Tubing Length	85 [ft]
		Pump placement from TOC	75 [ft]

Well Information:		**Pumping information:**	
Well ID	MW-16-81	Final pumping rate	100 [mL/min]
Well diameter	2 [in]	Flowcell volume	496.39 [mL]
Well total depth	77.35 [ft]	Calculated Sample Rate	298 [sec]
Depth to top of screen	67 [ft]	Sample rate	300 [sec]
Screen length	120 [in]	Stabilized drawdown	0 [in]
Depth to Water	69.78 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1 +/-3 %	+/-1 +/-10 %	+/-1 +/-10 %	+/-10
Last 5 Readings	11:20:11	14.24	7.01	3670.73	115.55	0.95	-90.08
	11:25:13	14.23	7.01	3684.72	134.19	0.95	-89.44
	11:30:14	14.26	7.00	3673.93	114.21	0.93	-89.01
	11:35:16	14.27	7.00	3676.38	111.10	0.92	-88.37
	11:40:18	14.28	7.00	3665.25	115.01	0.90	-87.98
Variance in last 3 readings	11:30:14	0.03	-0.01	-10.79	-19.99	-0.02	0.43
	11:35:16	0.00	0.00	2.45	-3.11	-0.01	0.64
	11:40:18	0.01	0.00	-11.13	3.91	-0.02	0.39

Notes:

PID: 0.0 ppm
Time: 11:05
Pump time: 40 minutes
Purge: .8 gallon
SDTW: n/a
FDTW: 70.48
Parameters: 1,4 Dioxane

Stick up well, locked, didn't meet maximum drawdown requirement, drawdown didn't stabilize, DUP-01

In-Situ Inc.

Troll 9000 | Low-Flow System
3/6/2017 | ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Billy J Cobern	Pump Model/Type	GeoPro Bladder
Company Name	ARCADIS	Tubing Type	LDPE
Project Name	Racer Plant#2	Tubing Diameter	0.17 [in]
Site Name	Lansing	Tubing Length	85 [ft]
		Pump placement from TOC	75 [ft]

Well Information:		**Pumping information:**	
Well ID	MW-16-82	Final pumping rate	100 [mL/min]
Well diameter	2 [in]	Flowcell volume	496.39 [mL]
Well total depth	77.2 [ft]	Calculated Sample Rate	298 [sec]
Depth to top of screen	67 [ft]	Sample rate	300 [sec]
Screen length	120 [in]	Stabilized drawdown	0 [in]
Depth to Water	70.41 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1 +/-3 %	+/-1 +/-10 %	+/-1 +/-10 %	+/-10
Last 5 Readings	12:30:19	13.97	7.24	1317.26	11.99	1.15	-80.82
	12:35:20	13.98	7.24	1317.41	12.00	1.12	-79.93
	12:40:22	13.98	7.24	1329.29	10.91	1.09	-85.49
	12:45:23	13.97	7.23	1320.13	11.69	1.11	-83.52
	12:50:24	13.98	7.23	1318.14	11.62	1.11	-81.64
Variance in last 3 readings	12:40:22	0.00	0.00	11.87	-1.10	-0.03	-5.56
	12:45:23	-0.01	0.00	-9.16	0.79	0.03	1.97
	12:50:24	0.01	0.00	-1.99	-0.08	-0.01	1.88

Notes:

PID: 0.0 ppm
Time: 12:50
Pump time: 25 minutes
Purge: .5 gallon
SDTW: n/a
FDTW: 71.17
Parameters: 1,4 Dioxane

Stick up well, locked, didn't meet maximum drawdown requirement, drawdown didn't stabilize

In-Situ Inc.

Troll 9000 | Low-Flow System
3/6/2017 | ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	Billy J Cobern	Pump Model/Type	GeoPro Bladder
Company Name	ARCADIS	Tubing Type	LDPE
Project Name	Racer Plant#2	Tubing Diameter	0.17 [in]
Site Name	Lansing	Tubing Length	89 [ft]
		Pump placement from TOC	79 [ft]

Well Information:		**Pumping information:**	
Well ID	MW-16-84	Final pumping rate	100 [mL/min]
Well diameter	2 [in]	Flowcell volume	514.25 [mL]
Well total depth	81.15 [ft]	Calculated Sample Rate	309 [sec]
Depth to top of screen	71 [ft]	Sample rate	300 [sec]
Screen length	120 [in]	Stabilized drawdown	0 [in]
Depth to Water	74.49 [ft]		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	DO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1 +/-3 %	+/-1 +/-10 %	+/-1 +/-10 %	+/-10
Last 5 Readings	13:55:06	14.16	7.17	1582.79	50.68	1.51	-73.57
	14:00:08	14.23	7.16	1584.88	41.76	1.45	-75.88
	14:05:09	14.26	7.16	1595.73	34.39	1.40	-76.30
	14:10:11	14.27	7.16	1607.96	31.13	1.40	-77.79
	14:15:13	14.27	7.16	1598.85	31.74	1.40	-78.31
Variance in last 3 readings	14:05:09	0.02	0.00	10.85	-7.37	-0.06	-0.42
	14:10:11	0.02	0.00	12.23	-3.25	0.00	-1.49
	14:15:13	0.00	0.00	-9.11	0.61	0.00	-0.51

Notes:

PID: 0.0 ppm
Time: 14:50
Pump time: 40 minutes
Purge: .8 gallon
SDTW: n/a
FDTW: 75.68
Parameters: 1,4 Dioxane

Stick up well, locked, didn't meet maximum drawdown requirement, drawdown didn't stabilize, MSMSD

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No. B0064481.2017.00600 | Page 1 of 2

Site Location: Plant 6 | Date: 6/20/17

Site/Well No.: MW-03-05 | Replicate No.: NA | Code No.: NA

Weather: Sunny, ~70°F | Sampling Time: Begin 1245 End 1248

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	NA
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	48.19
Depth to Water (ft bmp)	24.60
Water-Level Elevation (ft)	NA
Water Column in Well (ft)	23.59
Casing Diameter/Type	2"/PVC
Gallons in Well	3.77
Gallons Pumped/Bailed Prior to Sampling	~1.50
Sample Pump Intake Setting (ft bmp)	~45.69
Purge Time	begin 1110 end 1248
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	17.71
SpC (mS/cm)	3.740
CND (mS/cm)	3.220
Dissolved Oxygen (%)	62.1
Dissolved Oxygen (mg/L)	5.95
pH (s.u.)	7.40
ORP (mV)	90.3
Turbidity (NTU)	149
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
1,4-Dioxane	40 ml voa	3	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-03-05 PROJ #: B0064481.2017.00600

DATE : 6/20/17 LOC: RACER Lansing Plant 6

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1115	17.09	3.752	3.184	25.5	2.44	7.32	100.1	100	AR	25.12
1120	16.50	3.739	3.134	33.1	3.20	7.32	95.2	100	AR	25.53
1125	16.63	3.741	3.141	41.5	4.00	7.39	90.9	100	AR	25.91
1130	17.76	3.780	3.222	47.9	4.49	7.42	89.3	100	AR	26.17
1135	18.49	3.741	3.277	54.0	4.99	7.46	87.5	100	AR	26.36
1140	18.10	3.756	3.260	59.4	5.55	7.46	88.1	100	799	26.55
1145	17.79	3.746	3.227	60.5	5.71	7.44	89.0	100	632	26.69
1150	17.89	3.745	3.235	60.9	5.76	7.43	89.3	100	508	26.76
1155	18.01	3.745	3.245	61.9	5.80	7.43	89.5	100	349	26.83
1200	17.96	3.741	3.241	61.9	5.81	7.43	90.0	100	302	26.99
1205	17.91	3.737	3.236	62.0	5.82	7.42	90.3	100	256	27.03
1210	17.90	3.733	3.230	62.1	5.83	7.42	90.7	100	197	27.11
1215	17.71	3.741	3.271	62.7	5.82	7.43	90.1	100	181	27.16
1220	17.60	3.752	3.324	63.3	5.81	7.44	89.4	100	169	27.19
1225	17.89	3.746	3.254	63.6	5.90	7.42	90.3	100	151	27.21
1230	17.52	3.741	3.212	63.8	5.99	7.41	90.7	100	145	27.24
1235	17.80	3.732	3.200	64.0	6.00	7.40	90.9	100	141	27.27
1240	17.71	3.740	3.220	62.1	5.95	7.40	90.3	100	149	27.29
1245	Sample Collected									
Total Depth of Well:		48.19								
Depth To Water Before Purging:		24.60								
Depth To Water After Purging:		27.29								

- AR = Above Range

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No.: B0064479.2017 | Page: 1 of 2

Site Location: Lansing Plant 2 | Date: 5/30/17

Site/Well No.: MW-12-05R | Replicate No.: NA | Code No.: NA

Weather: Partly Cloudy, ~70°F | Sampling Time: Begin 1415 End 1420

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	NA
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	112.22
Depth to Water (ft bmp)	76.52
Water-Level Elevation (ft)	NA
Water Column in Well (ft)	35.70
Casing Diameter/Type	4"/Steel
Gallons in Well	23.21
Gallons Pumped/Bailed Prior to Sampling	~1.25
Sample Pump Intake Setting (ft bmp)	~106.22
Purge Time	begin 1320 end 1420
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	19.04
SpC (mS/cm)	1.057
CND (mS/cm)	0.940
Dissolved Oxygen (%)	2.2
Dissolved Oxygen (mg/L)	0.23
pH (s.u.)	10.18
ORP (mV)	29.6
Turbidity (NTU)	5.81
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
Low level 1,4-Dioxane via EPA Method 522	250 ml amber	2	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-12-05R PROJ #: B0064479.2017.00603

DATE : 5/30/17 LOC: RACER Lansing Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1325	20.07	0.578	0.524	108.5	9.83	9.19	79.0	100	21.2	76.71
1330	18.41	1.071	0.936	47.4	4.43	10.22	73.5	100	12.6	76.71
1335	18.74	1.056	0.930	11.6	1.07	10.19	66.9	100	9.56	76.71
1340	18.85	1.058	0.935	7.1	0.71	10.25	54.3	100	8.21	76.71
1345	19.06	1.060	0.940	4.3	0.39	10.32	45.7	100	7.74	76.71
1350	19.91	1.057	0.936	3.1	0.31	10.22	42.1	100	7.13	76.71
1355	18.89	1.055	0.932	2.6	0.24	10.19	37.1	100	6.78	76.71
1400	18.99	1.054	0.933	2.3	0.22	10.22	33.1	100	6.49	76.71
1405	18.96	1.055	0.936	2.3	0.23	10.16	31.1	100	6.09	76.71
1410	19.04	1.057	0.940	2.2	0.23	10.18	29.6	100	5.81	76.71
1415	Sample	Collected								
Total Depth of Well:		112.22								
Depth To Water Before Purging:			76.52							
Depth To Water After Purging:			76.71							

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No.: B0064479.2017 | Page: 1 of 2

Site Location: Lansing Plant 2 | Date: 5/30/17

Site/Well No.: MW-17-87 | Replicate No.: NA | Code No.: NA

Weather: Partly Cloudy, ~70°F | Sampling Time: Begin 1535 End 1540

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	NA
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	113.83
Depth to Water (ft bmp)	74.50
Water-Level Elevation (ft)	NA
Water Column in Well (ft)	39.33
Casing Diameter/Type	4"/Steel
Gallons in Well	25.56
Gallons Pumped/Bailed Prior to Sampling	≈ 0.75
Sample Pump Intake Setting (ft bmp)	≈ 108.83
Purge Time	begin 1455 end 1540
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	16.70
SpC (mS/cm)	3.059
CND (mS/cm)	2.591
Dissolved Oxygen (%)	-1.8
Dissolved Oxygen (mg/L)	-0.13
pH (s.u.)	8.52
ORP (mV)	-202.3
Turbidity (NTU)	9.60
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
Low level 1,4-Dioxane via EPA Method 522	250 ml amber	2	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MW-17-87 PROJ #: B0064479.2017.00603

DATE: 5/30/17 LOC: RACER Lansing Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1500	16.24	3.038	2.528	3.0	0.25	8.30	-178.4	100	30.8	74.80
1505	16.30	3.052	2.543	1.2	0.12	8.36	-193.3	100	26.3	74.84
1510	16.37	3.059	2.553	-0.6	-0.06	8.42	-210.0	100	23.1	74.87
1515	16.78	3.042	2.564	-0.5	-0.05	8.46	-214.0	100	22.5	74.90
1520	16.83	3.041	2.605	-1.5	-0.10	8.50	-194.9	100	14.3	74.93
1525	16.76	3.056	2.605	-1.7	-0.12	8.51	-200.1	100	11.3	74.96
1530	16.70	3.059	2.591	-1.8	-0.13	8.52	-202.3	100	9.60	74.96
1535	Sample	Collected								
Total Depth of Well:		113.93								
Depth To Water Before Purging:			74.50							
Depth To Water After Purging:			74.96							

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YSI/LOW FLOW SAMPLING LOG

WELL : MW-04-05(6) PROJ #: B0064481.2017.00003

DATE : 4/26/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1135	12.4	7.543		55.7	5.89	6.96	-35.0	~200	371	12.33
1140	12.3	7.531		46.5	4.65	6.99	-42.1	~200	181	12.90
1145	12.3	7.567		35.6	3.71	7.00	-43.2	~200	115	13.44
1150	12.3	7.590		28.4	2.99	7.01	-43.3	~200	70.4	13.83
1155	12.4	7.635		25.3	2.63	7.02	-42.8	~200	52.7	13.99
1200	12.4	7.693		23.7	2.41	7.02	-42.6	~200	44.3	14.08
1205	12.5	7.699		19.2	2.00	7.02	-42.4	~200	31.5	14.10
1210	12.4	7.709		15.9	1.66	7.02	-42.3	~200	28.2	14.25
1215	12.6	7.738		13.6	1.40	7.02	-42.2	~200	27.8	14.37
1220	12.4	7.740		12.0	1.23	7.02	-41.9	~200	24.3	14.28
1225	12.5	7.761		10.0	1.03	7.02	-42.1	~200	18.5	14.32
1230	12.5	7.735		8.7	0.91	7.02	-42.1	~200	19.4	14.42
1235	12.6	7.742		7.6	0.80	7.02	-42.1	~200	17.7	14.42
1240	12.2	7.750		7.0	0.72	7.02	-42.2	~200	15.1	14.84
1245	12.2	7.663		6.2	0.65	7.02	-42.0	~200	18.9	15.04
1250	12.2	7.676		6.0	0.61	7.02	-41.7	~200	15.9	15.24
1255	12.4	7.711		5.0	0.53	7.02	-42.3	~200	14.6	15.41
1300	12.3	7.700		5.0	0.52	7.02	-42.7	~200	13.8	15.49
1305	12.3	7.720		5.0	0.51	7.02	-43.3	~200	14.9	15.58
~~15~~										
Total Depth of Well:										
Depth To Water Before Purging:			9.70							
Depth To Water After Purging:			15.58							

ARCADIS

Water Sampling Log

Project	Roger Lansing	Project No.	B0084481.2017.00603	Page	1 of
Site Location	Lansing			Date	4/26/17
Site/Well No.	MW-04-05(6)	Replicate No.	—	Code No.	—
Weather	~70° ; Sunny	Sampling Time:	Begin 1310	End	1315

Evacuation Data

Measuring Point	
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	—
Depth to Water (ft bmp)	9.70
Water-Level Elevation (ft)	
Water Column in Well (ft)	
Casing Diameter/Type	2"
Gallons in Well	
Gallons Pumped/Bailed Prior to Sampling	~5
Sample Pump Intake Setting (ft bmp)	~25 ft
Purge Time	begin 135 end 1305
Pumping Rate (ml/min)	~200
Evacuation Method	

Field Parameters

Temperature (°C)	12.3
SpC (mS/cm)	7.720
CND (mS/cm)	
Dissolved Oxygen (%)	5.0
Dissolved Oxygen (mg/L)	0.51
pH (s.u.)	7.02
ORP (mV)	-43.3
Turbidity (NTU)	14.9
Color	Clear
Odor	none
Appearance	Clear
Sampling Method	low-flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs & 1-4 Dioxane	40-ml Voa	3	HCL

Sampling Personnel: Keith Bozm

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

Water Sampling Log

Project: Racer Landing | Project No.: B0064481.2017.0005 | Page: 2 of ___

Site Location: Landing | Date: 4/26/17

Site/Well No.: MW-05-04 | Replicate No.: — | Code No.: —

Weather: ~60°-overcast | Sampling Time: Begin 1420 End 1425

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	42.70
Depth to Water (ft bmp)	22.30
Water-Level Elevation (ft)	—
Water Column in Well (ft)	20.40
Casing Diameter/Type	2"
Gallons in Well	3.264
Gallons Pumped/Bailed Prior to Sampling	~4
Sample Pump Intake Setting (ft bmp)	~35 ft
Purge Time	begin 1335 end 1415
Pumping Rate (ml/min)	~200
Evacuation Method	

Field Parameters

Temperature (°C)	13.6
SpC (mS/cm)	1.880
CND (mS/cm)	
Dissolved Oxygen (%)	2.0
Dissolved Oxygen (mg/L)	0.23
pH (s.u.)	7.13
ORP (mV)	-66.8
Turbidity (NTU)	8.46
Color	clear
Odor	none
Appearance	clear
Sampling Method	low-flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
1-4 Dioxane	40ml Vial	3	HCl

Sampling Personnel: Kurt Bonn

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-03-04 PROJ #: D006448.2017.00603

DATE : 4/26/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1335	14.2	1.888		10.0	1.01	7.18	-50.0	~200	643	22.75
1340	13.8	1.844		6.6	0.68	7.13	-58.8	~200	464	22.96
1345	13.7	1.772		9.0	0.94	7.13	-57.0	~200	377	23.04
1350	13.6	1.795		6.4	0.66	7.13	-57.9	~200	133	23.11
1355	13.6	1.834		4.0	0.41	7.13	-60.6	~200	38.0	23.20
1400	13.7	1.853		3.1	0.32	7.13	-63.3	~200	45.5	23.20
1405	13.6	1.871		2.4	0.24	7.13	-65.2	~200	21.1	23.26
1410	13.6	1.874		2.0	0.22	7.13	-66.68	~200	11.9	23.32
1415	13.6	1.880		2.0	0.23	7.13	-66.8	~200	8.46	23.24
Total Depth of Well:										
Depth To Water Before Purging: 22.30										
Depth To Water After Purging: 23.24										

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-03-03(6) PROJ #: B0064481.2017.00003

DATE : 4/26/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1440	15.8	8.932		10.2	0.86	9.35	54.7	~200	132	31.2
1445	15.8	8.968		6.0	0.57	9.72	36.5	~200		
1450	—	Pump	Stuck							
										31.74
1/27/17	~~1540~~ ~~1545~~									
1540	13.8	8807		3.7	0.36	6.91	-39.7	~200	####	33.93
1545	13.7	8.815		3.3	0.34	6.91	-44.8	~200	####	35.09
1550	13.8	8.801		5.1	0.51	6.90	-46.8	~200	####	35.15
1555	13.8	8801		4.9	0.49	6.89	-46.9	~200	####	35.58
1600	13.8	8805		5.5	0.55	6.87	-44.8	~200	938	36.28
1605	13.7	8.808		5.2	0.52	6.85	-43.5	~200	####	37.04
1610	13.7	8.809		3.9	0.39	6.84	-43.3	~200	####	38.05
1615	13.7	8812		4.1	0.43	6.84	-44.0	~200	####	39.22
1620	13.7	8.810		4.1	0.42	6.84	-45.4	~200	####	40.18
1625	13.7	8.805		3.6	0.36	6.84	-46.7	~200	####	—
—	well	went	dry							
—	returned on		5/1/17							
840	19.1	8.672		107.7	9.02	6.66	37.3	~200	####	30.33
Total Depth of Well:			44.66							
Depth To Water Before Purging:			30.48							
Depth To Water After Purging:			—							

ARCADIS

Water Sampling Log

Project	Roeer - Lansky	Project No.	B0084481.2017.00003	Page	3 of
Site Location	Lansky			Date	4/26/17
Site/Well No.	MW-02-03(6)	Replicate No.	—	Code No.	—
Weather	~60°; overcast	Sampling Time:	Begin 845	End	850

Evacuation Data		Field Parameters	
Measuring Point	—	Temperature (°C)	19.1
MP Elevation (ft)	—	SpC (mS/cm)	8.872
Land Surface Elevation (ft)	—	CND (mS/cm)	—
Sounded Well Depth (ft bmp)	44.66	Dissolved Oxygen (%)	107.7
Depth to Water (ft bmp)	~~44.66~~ 30.48	Dissolved Oxygen (mg/L)	9.02
Water-Level Elevation (ft)	—	pH (s.u.)	6.66
Water Column in Well (ft)	~~30.48~~ 14.18	ORP (mV)	37.3
Casing Diameter/Type	2"	Turbidity (NTU)	####
Gallons in Well	2.269	Color	dark brown
Gallons Pumped/Bailed Prior to Sampling	~2.5 gal	Odor	none
		Appearance	Murky
Sample Pump Intake Setting (ft bmp)	~40 ft	Sampling Method	low-flow
Purge Time	begin ~~1440~~ end —	Remarks	lost pump in well. Recovered pump & sampled on 5/1/17
Pumping Rate (ml/min)	~200		
Evacuation Method			

Constituents Sampled	Container Description	Number	Preservative
VOCs; 1-4 Dioxane	40ml Voc	3	HCL

Sampling Personnel: [signature]

Well Casing Volumes

Gal./Ft.	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

Water Sampling Log

Project: Keeco-Lansdale | Project No.: B0064481.2017.00003 | Page: 4 of ___

Site Location: Ft Lansdale | Date: 4/27/16

Site/Well No.: MW-08-06 | Replicate No.: Dup-08 | Code No.: ___

Weather: ~60°-overcast | Sampling Time: Begin 1220 End 1225

Evacuation Data

Measuring Point	–
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	41.36
Depth to Water (ft bmp)	36.14
Water-Level Elevation (ft)	–
Water Column in Well (ft)	5.22
Casing Diameter/Type	2"
Gallons in Well	0.8352
Gallons Pumped/Bailed Prior to Sampling	~2.5
Sample Pump Intake Setting (ft bmp)	~40 ~40 ft
Purge Time	begin 1135 end 1215
Pumping Rate (ml/min)	~100
Evacuation Method	

Field Parameters

Temperature (°C)	14.3
SpC (mS/cm)	11.574
CND (mS/cm)	
Dissolved Oxygen (%)	1.7
Dissolved Oxygen (mg/L)	0.17
pH (s.u.)	6.77
ORP (mV)	-39.0
Turbidity (NTU)	10.0
Color	clear
Odor	none
Appearance	clear
Sampling Method	low-flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs & 1-4 Dioxane	40ml Vox	3	HCL

Sampling Personnel: [signature]

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" ~~= 0.16~~	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

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WELL: MW-03-06 PROJ #: B0064481.2017.00605

DATE: 4/27/16 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1135	14.4	11.631		15.2	1.44	6.78	-28.8	~100	378	36.44
1140	14.3	11.591		5.6	0.55	6.77	-32.4	~100	185	36.62
1145	14.2	11.600		3.0	0.31	6.77	-33.2	~100	93.1	36.82
1150	14.1	11.594		2.3	0.23	6.77	-34.0	~100	49.0	36.96
1155	14.1	11.582		2.0	0.20	6.77	-36.1	~100	28.1	37.11
1200	14.1	11.582		2.1	0.20	6.77	-37.3	~100	17.5	37.23
1205	14.4	11.569		1.8	0.18	6.77	-38.3	~100	11.5	37.38
1210	14.3	11.572		1.7	0.17	6.77	-39.2	~100	10.3	37.44
1215	14.3	11.574		1.8	0.17	6.77	-39.0	~100	10.0	37.56
Total Depth of Well:			41.36							
Depth To Water Before Purging:			36.14							
Depth To Water After Purging:			37.56							

ARCADIS

Water Sampling Log

Project: Racer-Lansing | Project No.: B006481.2017.0003 | Page: 5 of ___

Site Location: Lansing | Date: 4/27/17

Site/Well No.: MW-88-08 | Replicate No.: — | Code No.: —

Weather: ~60°; overcast | Sampling Time: Begin 1505 End 1510

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	44.96
Depth to Water (ft bmp)	33.04
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11.92
Casing Diameter/Type	2"
Gallons in Well	1.907
Gallons Pumped/Bailed Prior to Sampling	~7.5
Sample Pump Intake Setting (ft bmp)	~42
Purge Time	begin 1300 end 1500
Pumping Rate (ml/min)	~200
Evacuation Method	

Field Parameters

Temperature (°C)	13.0
SpC (mS/cm)	2.152
CND (mS/cm)	
Dissolved Oxygen (%)	1.3
Dissolved Oxygen (mg/L)	0.13
pH (s.u.)	7.21
ORP (mV)	~81
Turbidity (NTU)	9.7
Color	clear
Odor	none
Appearance	clear
Sampling Method	Low flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs & 1-4 Dioxane	40 ml Vial	3	HCL

Sampling Personnel: Kevin Ba

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-03-08 PROJ #: B006481.2017.0003

DATE : 4/27/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1300	13.7	2.438		2.8	2.17	7.30	-52.6	~200	#####	33.32
1305	13.3	2.387		6.3	0.66	7.14	-58.8	~200	#####	33.57
1310	13.3	2.324		8.9	0.90	7.15	-58.3	~200	#####	33.97
1315	13.3	2.388		7.5	0.77	7.16	-59.2	~200	645	34.06
1320	13.3	2.445		5.6	0.57	7.15	-61.4	~200	300	34.23
1325	13.2	2.468		3.7	0.38	7.15	-64.5	~200	150	34.33
1330	13.2	2.463		3.6	0.38	7.16	-67.8	~200	65.7	34.48
1335	13.3	2.446		2.6	0.27	7.16	-70.7	~200	39.5	34.58
1340	13.3	2.432		2.4	0.25	7.17	-72.4	~200	30.2	34.58
1345	13.4	2.412		2.2	0.23	7.17	-73.6	~200	26.5	34.58
1350	13.3	2.388		2.1	0.21	7.17	-74.2	~200	22.5	34.58
1355	13.3	2.351		1.9	0.20	7.18	-73.4	~200	19.2	34.58
1400	13.3	2.329		1.7	0.17	7.19	-76.4	~200	16.5	34.68
1405	13.3	2.296		1.6	0.16	7.19	-77.5	~200	13.6	34.70
1410	13.3	2.279		1.6	0.16	7.20	-78.3	~200	16.7	34.74
1415	13.2	2.253		1.6	0.16	7.20	-78.3	~200	62.4	34.82
1420	13.2	2.233		1.4	0.14	7.20	-79.5	~200	134	34.91
1425	13.1	2.223		1.4	0.14	7.20	-79.7	~200	145	34.97
1430	13.1	2.204		1.8	0.18	7.21	-79.9	~200	131	34.97
1435	13.0	2.168		1.6	0.17	7.21	-80.3	~200	95.7	34.98
1440	13.0	2.159		1.5	0.15	7.21	-80.5	~200	79.7	34.98
1445	13.0	2.154		1.4	0.14	7.22	-80.8	~200	50.2	34.96
1450	13.0	2151		1.3	0.14	7.22	-81.2	~200	34.8	34.96
1455	13.2	2155		1.3	0.13	7.22	-78.0	~200	27.3	34.51
1500	13.0	2152		1.3	0.13	7.21	-78.1	~200	19.7	34.66
Total Depth of Well:			44.96							
Depth To Water Before Purging:			33.04							
Depth To Water After Purging:			34.66							

ARCADIS

Water Sampling Log

Project	Roeer-Lansky	Project No.	B0084498.2017.0003	Page	6 of
Site Location	Lansky			Date	4/28/17
Site/Well No.	MW-19-35	Replicate No.	—	Code No.	—
Weather	60°; overcast	Sampling Time: Begin	1020	End	1025

Evacuation Data		Field Parameters	
Measuring Point	—	Temperature (°C)	13.1
MP Elevation (ft)	—	SpC (mS/cm)	1.712
Land Surface Elevation (ft)	—	CND (mS/cm)	
Sounded Well Depth (ft bmp)	29.50	Dissolved Oxygen (%)	1.2
Depth to Water (ft bmp)	23.6	Dissolved Oxygen (mg/L)	0.12
Water-Level Elevation (ft)	—	pH (s.u.)	6.68
Water Column in Well (ft)	5.9	ORP (mV)	-28.9
Casing Diameter/Type	2"	Turbidity (NTU)	8.82
Gallons in Well	0.944	Color	clear
Gallons Pumped/Bailed Prior to Sampling	~2	Odor	none
		Appearance	clear
Sample Pump Intake Setting (ft bmp)	~27 ft	Sampling Method	low-flow
Purge Time	begin 900 end 1015	Remarks	Peristaltic Pump used
Pumping Rate (ml/min)	~150		
Evacuation Method			

Constituents Sampled	Container Description	Number	Preservative
As, Cr, Co, Pb, Ni, V	125 ml Plastic	1	HNO_3

Sampling Personnel: Kevin B[illegible]

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-35 PROJ #: B006448.2017.00003

DATE : 4/28/17 LOC: ___

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
900	12.8	2.000		3.1	0.33	6.89	-37.6	~150	17.1	23.80
905	12.7	1.985		2.9	0.30	6.91	-59.0	~150	66.7	23.81
910	12.8	1.985		5.9	0.63	6.93	-63.2	~150	53.3	23.81
915	12.8	1.980		4.2	0.45	6.93	-62.9	~150	33.3	23.82
920	12.8	1.974		3.0	0.30	6.93	-59.8	~150	24.8	23.88
925	12.8	1.977		2.2	0.24	6.93	-56.0	~150	19.2	23.83
930	12.7	1.964		2.2	0.23	6.93	-51.6	~150	12.3	23.82
935	12.7	1.953		2.2	0.24	6.93	-46.3	~150	13.8	23.83
940	12.9	1.944		2.3	0.24	6.93	-42.2	~150	12.5	23.81
945	12.6	1.931		2.1	0.23	6.92	-38.3	~150	11.4	23.82
950	13.0	1.926		2.0	0.22	6.92	-33.9	~150	12.1	23.83
955	12.8	1.905		1.9	0.18	6.91	-29.9	~150	12.4	23.82
1000	12.9	1.874		1.8	0.18	6.90	-25.7	~150	11.1	23.82
~~1005~~ 1005	13.0	1.844		1.3	0.12	6.89	-24.0	~150	9.52	23.81
1010	13.0	1.820		1.2	0.13	6.89	-23.8	~150	~~8~~ 8.46	23.81
1015	13.1	1.792		1.2	0.12	6.88	-28.9	~150	8.82	23.81
Total Depth of Well:			29.50							
Depth To Water Before Purging:			23.6							
Depth To Water After Purging:			23.81							

ARCADIS

Water Sampling Log

Project	Racer - Lansing	Project No.	B0084498.2017.00003	Page	7 of
Site Location	Lansing			Date	4/28/17
Site/Well No.	MW-12-16	Replicate No.	—	Code No.	—
Weather	60° - Partly Sunny	Sampling Time:	Begin 1240	End	1245

Evacuation Data		Field Parameters	
Measuring Point	—	Temperature (°C)	13.2
MP Elevation (ft)	—	SpC (mS/cm)	1.951
Land Surface Elevation (ft)		CND (mS/cm)	
Sounded Well Depth (ft bmp)	32.18	Dissolved Oxygen (%)	3.6
Depth to Water (ft bmp)	23.04	Dissolved Oxygen (mg/L)	0.36
Water-Level Elevation (ft)	—	pH (s.u.)	6.86
Water Column in Well (ft)	9.14	ORP (mV)	-19.9
Casing Diameter/Type	2"	Turbidity (NTU)	4.57
Gallons in Well	1.462	Color	Clear
Gallons Pumped/Bailed Prior to Sampling	~2	Odor	none
		Appearance	Clear
Sample Pump Intake Setting (ft bmp)	[illegible]	Sampling Method	low flow
Purge Time	begin 1040 end 1235	Remarks	Peristaltic Pump used
Pumping Rate (ml/min)	~150		
Evacuation Method	—		

Constituents Sampled	Container Description	Number	Preservative
As, Co, Cu, Pb, Ni, V	125 ml Plastic	1	HNO_3

Sampling Personnel: Kevin B[illegible]

Well Casing Volumes

Gal./Ft.				
0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

12 / 6/16 / 0.18 / 9.42

ARCADIS

YSI/LOW FLOW SAMPLING LOG

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WELL : MW-12-16 PROJ #: B006448.2017.00003

DATE : 4/28/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1040	12.6	2.506		3.0	0.32	6.76	22.3	~150	98.5	23.04
1045	12.4	2.496		4.3	0.46	6.77	14.7	~150	189	23.04
1050	12.5	2.484		2.7	0.30	6.77	11.5	~150	177	23.06
1055	12.5	2.476		2.4	0.24	6.78	9.9	~150	90.7	23.06
1100	12.5	2.444		2.6	0.28	6.78	8.6	~150	96.3	23.06
1105	12.7	2.417		2.6	0.28	6.79	6.0	~150	123	23.06
1110	12.6	2.361		2.9	0.30	6.80	3.9	~150	115	23.06
1115	12.8	2.309		3.3	0.34	6.82	1.1	~150	101	23.06
1120	12.8	2.258		3.4	0.34	6.83	-1.5	~150	51.9	23.06
1125	12.7	2.212		3.2	0.33	6.84	-5.2	~150	42.6	23.06
1130	12.8	2.155		3.2	0.33	6.84	-8.7	~150	45.8	23.06
1135	13.1	2.096		3.2	0.33	6.85	-12.8	~150	244	23.06
1140	13.3	2129		18.6	1.9	6.96	-22.0	~150	299	23.06
1145	12.8	2.150		5.9	0.62	6.85	-13.0	~150	168	23.06
1150	12.9	2.124		4.1	0.44	6.86	-13.3	~150	92.8	23.06
1155	12.7	2.033		4.7	0.51	6.88	-13.9	~150	67.9	23.06
1200	12.9	1.999		5.1	0.54	6.89	-14.0	~150	45.5	23.06
1205	13.0	1.970		5.1	0.53	6.89	-13.8	~150	35.8	23.06
1210	13.0	1.960		4.8	0.49	6.88	-14.7	~150	21.8	23.06
1215	13.1	1.959		4.3	0.45	6.87	-15.9	~150	17.9	23.06
1220	13.2	1.960		4.0	0.41	6.87	-17.7	~150	14.3	23.06
1225	13.1	1.962		3.7	0.39	6.87	-18.7	~150	12.2	23.06
1230	13.2	1.961		3.7	0.38	6.87	-19.8	~150	7.32	23.06
1235	13.2	1.957		3.6	0.36	6.86	-19.9	~150	4.57	23.06
Total Depth of Well:			32.18							
Depth To Water Before Purging:			23.04							
Depth To Water After Purging:			23.06							

ARCADIS

Water Sampling Log

Project: Boeer - Lansky | Project No. B0064802017.0003 | Page 8 of —

Site Location: Lansky | Date: 5/11/17

Site/Well No.: MW-13-40 | Replicate No.: — | Code No.: —

Weather: 60° - Rainy | Sampling Time: Begin 1135 End 1140

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	79.25
Depth to Water (ft bmp)	63.34
Water-Level Elevation (ft)	—
Water Column in Well (ft)	15.91
Casing Diameter/Type	2"
Gallons in Well	2.54
Gallons Pumped/Bailed Prior to Sampling	~5
Sample Pump Intake Setting (ft bmp)	75 ft
Purge Time	begin 935 end 1130
Pumping Rate (ml/min)	~200
Evacuation Method	

Field Parameters

Temperature (°C)	13.6
SpC (mS/cm)	7.487
CND (mS/cm)	
Dissolved Oxygen (%)	2.4
Dissolved Oxygen (mg/L)	0.24
pH (s.u.)	6.86
ORP (mV)	-108.5
Turbidity (NTU)	185
Color	cloudy
Odor	none
Appearance	murky
Sampling Method	low-flow
Remarks	well did not stabilize Sampled after 2 hours

Constituents Sampled	Container Description	Number	Preservative
1-4 Dioxane	40ml Vial	3	HCl

Sampling Personnel: Kevin Bos

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-40 PROJ #: B0064480.2017.00003

DATE : 5/1/17 LOC: ___

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
935	13.7	7.544		4.7	0.48	6.87	-48.0	~200	####	65.02
940	14.4	1.348		8.2	0.80	7.00	-37.8	~200	####	64.09
945	13.6	7.583		6.2	0.63	6.86	-45.3	~200	####	65.72
950	13.6	7.560		13.4	1.36	6.85	-47.6	~200	####	66.38
955	13.6	7.557		9.7	0.98	6.86	-51.0	~200	511	66.87
1000	13.6	7.553		7.9	0.81	6.86	-50.3	~200	314	67.37
1005	13.6	7.590		6.4	0.64	6.86	-55.4	~200	240	67.86
1010	13.6	7.601		6.2	0.62	6.86	-57.8	~200	287	68.22
1015	13.6	7.566		6.1	0.61	6.85	-56.5	~200	374	68.64
1020	13.6	7.562		5.7	0.58	6.85	-57.3	~200	559	68.22
1025	13.7	7.539		6.9	0.70	6.86	-57.0	~200	795	69.62
1030	13.7	7.438		9.0	0.94	6.87	-59.2	~200	747	69.71
1035	13.6	7.508		6.5	0.67	6.87	-61.1	~200	700	69.70
1040	13.7	7.570		4.9	0.57	6.86	-70.7	~200	533	69.63
1045	13.7	7.612		4.1	0.43	6.86	-81.8	~200	489	69.63
1050	13.6	7.637		3.6	0.37	6.86	-89.6	~200	341	68.66
1055	13.6	7.629		3.3	0.32	6.85	-93.7	~200	269	68.57
1100	13.5	7.625		3.0	0.30	6.85	-98.3	~200	347	68.53
1105	13.7	7.586		3.1	0.31	6.85	-104.7	~200	280	68.52
1110	13.6	7587		2.8	0.29	6.85	-111.2	~200	261	68.53
1115	13.7	7.530		2.6	0.26	6.86	-115.1	~200	212	68.53
1120	13.6	7.502		2.5	0.25	6.86	-103.7	~200	194	68.50
1125	13.7	7.482		2.4	0.25	6.86	-102.0	~200	173	68.58
1130	13.6	7.487		2.4	0.24	6.86	-108.5	~200	185	68.62
Total Depth of Well:			74.15							
Depth To Water Before Purging:			63.34							
Depth To Water After Purging:										

ARCADIS

Water Sampling Log

Project: Pacer-Lansing | Project No.: B0044802017.00003 | Page: 10 of ___

Site Location: Lansing | Date: 5/1/17

Site/Well No.: MW-13-38 | Replicate No.: MS-MSD | Code No.: —

Weather: 60°-overcast | Sampling Time: Begin 1635 End 1640

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	131.30
Depth to Water (ft bmp)	72.95
Water-Level Elevation (ft)	—
Water Column in Well (ft)	58.38
Casing Diameter/Type	~~2"~~ 6"
Gallons in Well	~~9.34~~ 55.81
Gallons Pumped/Bailed Prior to Sampling	~5
Sample Pump Intake Setting (ft bmp)	~120 ft
Purge Time	begin ~~1500~~ end ___
Pumping Rate (ml/min)	~200
Evacuation Method	—

Field Parameters

Temperature (°C)	13.3
SpC (mS/cm)	1.91
CND (mS/cm)	—
Dissolved Oxygen (%)	1.0
Dissolved Oxygen (mg/L)	0.11
pH (s.u.)	8.39
ORP (mV)	-~~22~~.0
Turbidity (NTU)	~~47~~ 12.6
Color	clear
Odor	none
Appearance	clear
Sampling Method	low flow
Remarks	MS-MSD

Constituents Sampled	Container Description	Number	Preservative
1-4 Dioxane	40ml vial	9	HCl

Sampling Personnel: [signature]

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	~~2" = 0.16~~ 2" = 0.17	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-38 PROJ #: B0064450.2017000603

DATE : 60°- Overcast LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1500	14.1	1.91	-	2.6	0.27	8.23	-178.1	~200	21.4	73.26
1505	13.7	1.90	-	2.0	0.20	8.27	-200.0	~200	13.2	73.56
1510	13.7	1.90	-	1.7	0.18	8.30	-200.9	~200	13.8	73.62
1515	13.7	1.90	-	1.6	0.17	8.34	-197.4	~200	13.7	73.56
1520	13.6	1.90	-	1.6	0.15	8.34	~207.8	~200	14.3	73.56
1525	13.6	1.89	-	1.4	0.16	8.36	~205.0	~200	15.4	73.56
1530	13.5	1.89	-	1.4	0.14	8.36	~206.4	~200	15.3	73.56
1535	13.6	1.89	-	1.4	0.15	8.36	~205.1	~200	15.2	73.56
1540	13.7	1.90	-	1.4	0.14	8.37	~207.3	~200	16.2	73.56
1545	13.5	1.90	-	1.2	0.13	8.38	~208.9	~200	29.4	73.62
1550	13.4	1.90	-	1.2	0.12	8.38	~223.2	~200	18.2	73.62
1555	13.4	1.90	-	1.3	0.13	8.38	~232.4	~200	15.5	73.62
1600	13.3	1.90	-	1.2	0.11	8.39	-225.7	~200	14.2	73.62
1605	13.5	1.89	-	1.2	0.12	8.39	~227.0	~200	14.7	73.62
1610	13.4	1.90	-	1.1	0.16	8.39	-239.6	~200	16.0	73.64
1615	13.3	1.90	-	1.1	0.12	8.39	-230.7	~200	13.8	73.64
1620	13.4	1.89	-	1.0	0.11	8.40	-234.0	~200	13.9	73.64
1625	13.3	1.90	-	1.0	0.11	8.39	-232.0	~200	14.8	73.64
1630	13.3	1.91	-	1.0	0.11	8.39	~230	~200	12.6	73.64
Total Depth of Well:			131.30							
Depth To Water Before Purging:			72.95							
Depth To Water After Purging:			73.64							

ARCADIS

Water Sampling Log

Project	Racer-Lansing	Project No. B0064480.2017.00603		Page	11 of
Site Location	Lansing			Date	5/2/17
Site/Well No.	MW-09-02(3)	Replicate No.	—	Code No.	—
Weather	60; rainy	Sampling Time:	Begin 1000	End	1005

Evacuation Data		Field Parameters	
Measuring Point	—	Temperature (°C)	11.9
MP Elevation (ft)	—	SpC (mS/cm)	7.58
Land Surface Elevation (ft)	—	CND (mS/cm)	—
Sounded Well Depth (ft bmp)	84.11	Dissolved Oxygen (%)	10.5
Depth to Water (ft bmp)	69.68	Dissolved Oxygen (mg/L)	1.10
Water-Level Elevation (ft)	—	pH (s.u.)	6.48
Water Column in Well (ft)	14.43	ORP (mV)	-3.3
Casing Diameter/Type	2"	Turbidity (NTU)	64.7
Gallons in Well	2.309	Color	cloudy
Gallons Pumped/Bailed Prior to Sampling	~2.5	Odor	none
		Appearance	little murky
Sample Pump Intake Setting (ft bmp)	~~~80~~ ~70*	Sampling Method	low-flow
Purge Time	begin 845 end 955	Remarks	*obstruction in well prevents pump from getting lower than 70'. cannot use water meter when pump is in well.
Pumping Rate (ml/min)	~100		
Evacuation Method			

Constituents Sampled	Container Description	Number	Preservative
1-4 Dioxane	40ml Voa	3	HCL

Sampling Personnel: Keith [illegible]

Well Casing Volumes

Gal./Ft.				
0.5" = 0.01	1-¼" = 0.06	2" = 0.16 (circled)	3" = 0.37	4" = 0.65
1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-02-02(3) PROJ #: B0064480.2017.0003

DATE : 5/2/17 LOC: ___

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
845	11.7	7.27	-	20.8	2.20	6.41	65.6	~100	~~####~~	-
850	12.0	7.50	-	31.7	3.32	6.45	79.6	~100	####	-
855	12.0	7.56	-	24.1	2.56	6.48	77.5	~100	365	-
900	12.2	7.54	-	18.8	1.95	6.45	75.0	~100	221	-
905	11.8	7.54	-	17.6	1.84	6.50	73.4	~100	300	-
910	12.0	7.59	-	15.5	1.62	6.48	65.8	~100	154	-
915	12.1	7.56	-	13.6	1.42	6.48	10.5	~100	108	-
920	12.2	7.56	-	13.4	1.39	6.48	8.0	~100	113	-
925	12.1	7.58	-	12.6	1.33	6.48	7.4	~100	107	-
930	12.0	7.60	-	11.9	1.28	6.48	5.5	~100	81.2	-
935	12.1	7.57	-	11.5	1.20	6.48	4.8	~100	57.4	-
940	12.1	7.58	-	10.3	1.07	6.48	3.7	~100	45.2	-
945	11.9	7.62	-	9.6	1.00	6.43	-0.4	~100	52.0	-
950	11.9	7.55	-	9.7	1.00	6.59	-1.4	~100	58.0	-
955	11.9	7.58	-	10.5	1.10	6.48	-3.3	~100	64.7	-
Total Depth of Well:			84.11							
Depth To Water Before Purging:			69.68							
Depth To Water After Purging:			-							

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-29 PROJ #: B0064480.2017.00603

DATE : 5/2/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1050	13.2	2.63	-	9.8	1.01	6.51	-35.8	~200	554	69.57
1055	13.2	2.64	-	9.6	1.00	6.49	-33.0	~200	303	69.57
1100	13.2	2.68	-	7.6	0.76	6.50	-39.8	~200	171	69.66
1105	13.3	2.68	-	6.1	063	6.49	-37.2	~200	115	69.57
1110	13.2	2.67	-	5.1	0.52	6.49	-38.1	~200	112	69.57
1115	13.3	2.33	-	4.7	0.49	6.50	-46.0	~200	85.0	69.57
1120	13.3	2.67	-	4.2	0.43	6.49	-42.7	~200	66.2	65.52
1125	13.2	2.67	-	3.6	0.38	6.50	-39.1	~200	70.2	65.63
1130	13.2	2.67	-	3.1	0.32	6.50	-37.4	~200	450	65.63
1135	13.3	2.67	-	2.7	0.28	6.50	-36.5	~200	49.4	65.6
1140	13.3	2.67	-	2.5	0.26	6.50	-35.8	~200	41.0	65.69
1145	13.3	2.67	-	2.3	0 25	6.50	-35.9	~200	27.5	65.68
1150	13.3	2.67	-	2.1	0.23	6.50	-36.0	~200	25.3	65.63
1155	13.3	2.67	-	21	0.22	6.50	-36.2	~200	20.1	65.63
1200	13.3	2.67	-	2.0	0.20	6.50	-35.9	~200	14.4	65.68
1205	13.3	2.68	-	2.0	0.20	6.50	-36.1	~200	17.5	65.63
1210	13.3	2.67	-	1.8	0.19	6.51	-36.7	~200	12.0	65.63
1215	13.3	2.67	-	1.8	0.19	6.51	-37.1	~200	11.5	65.71
1220	13.4	2.67	-	1.7	0.18	6.51	-38.1	~200	10.5	65.63
1225	13.4	2.67	-	1.6	0.17	6.51	-38.5	~200	9.24	65.63
Total Depth of Well:			76.30							
Depth To Water Before Purging:			69.57							
Depth To Water After Purging:			65.63							

ARCADIS

Water Sampling Log

Project: Pacer - Lansky   Project No. B0084480.2017.00603   Page 12 of ____

Site Location: Lansky   Date ____

Site/Well No. MW S/13-29   Replicate No. Dup-06   Code No. –

Weather: 60° - overcast   Sampling Time: Begin 1230   End 1235

Evacuation Data		Field Parameters	
Measuring Point	–	Temperature (°C)	13.4
MP Elevation (ft)	–	SpC (mS/cm)	267
Land Surface Elevation (ft)	–	CND (mS/cm)	–
Sounded Well Depth (ft bmp)	76.30	Dissolved Oxygen (%)	1.6
Depth to Water (ft bmp)	69.57	Dissolved Oxygen (mg/L)	0.17
Water-Level Elevation (ft)	–	pH (s.u.)	6.51
Water Column in Well (ft)	6.73	ORP (mV)	-38.5
Casing Diameter/Type	2"	Turbidity (NTU)	9.24
Gallons in Well	~1.08	Color	clear
Gallons Pumped/Bailed Prior to Sampling	~7	Odor	none
		Appearance	clear
Sample Pump Intake Setting (ft bmp)	~75 ft	Sampling Method	low-flow
Purge Time	begin 1050 end 1225	Remarks	Duplicate
Pumping Rate (ml/min)	~200		
Evacuation Method			

Constituents Sampled	Container Description	Number	Preservative
1-4 Dioxane	40ml Voa	6	HCL

Sampling Personnel: Keith Boe

Well Casing Volumes

Gal./Ft.	0.5" = 0.01	1-¼" = 0.06	2" = 0.16 (circled)	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

Water Sampling Log

Project: Roser - Lansing | Project No: B004480.2017.00003 | Page: 12 of ___

Site Location: Lansing | Date: 5/2/17

Site/Well No.: MW-05(3) | Replicate No.: — | Code No.: —

Weather: 70°; overcast | Sampling Time: Begin 1500 | End 1505

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	15.21
Depth to Water (ft bmp)	3.97
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11.24
Casing Diameter/Type	4"
Gallons in Well	7.306
Gallons Pumped/Bailed Prior to Sampling	~5
Sample Pump Intake Setting (ft bmp)	~14.5 ft
Purge Time	begin 1520 end 1535
Pumping Rate (ml/min)	~200
Evacuation Method	

Field Parameters

Temperature (°C)	11.0
SpC (mS/cm)	1.58
CND (mS/cm)	—
Dissolved Oxygen (%)	22.9
Dissolved Oxygen (mg/L)	2.42
pH (s.u.)	7.24
ORP (mV)	143
Turbidity (NTU)	51.0
Color	cloudy
Odor	none
Appearance	little murky
Sampling Method	low-flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs	40 ml vial	3	HCl

Sampling Personnel: Keith Boam

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-05(3) PROJ #: B006450.2017.00603

DATE : 5/2/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
~~1320~~ 1420	10.8	1.82	-	19.1	2.07	7.46	-19.0	~200	#####	3.97
~~1325~~ 1425	10.7	1.81	-	20.6	2.27	7.19	-22.8	~200	799	4.68
~~1330~~ 1430	10.9	1.80	-	20.6	2.27	7.20	-30.6	~200	680	5.04
~~1335~~ 1435	10.8	1.80	-	20.8	2.28	7.21	-32.4	~200	319	5.20
~~1340~~ 1440	10.9	1.80	-	22.0	2.42	7.22	-36.3	~200	216	5.40
~~1345~~ 1445	10.8	1.80	-	21.9	2.42	7.22	-36.5	~200	142	5.51
~~1350~~ 1450	10.8	1.80	-	22.6	2.50	7.23	-34.1	~200	99.8	5.61
~~1355~~ 1455	10.8	1.79	-	23.1	2.56	7.23	-28.6	~200	89.3	5.71
~~1400~~ 1500	10.8	1.79	-	23.1	2.55	7.23	-26.2	~200	56.3	5.71
~~1405~~ 1505	10.9	1.78	-	24.0	2.67	7.24	-16.7	~200	51.2	5.76
~~1410~~ 1510	10.8	1.77	-	23.9	2.65	7.24	-12.1	~200	43.2	5.76
~~1415~~ 1515	10.8	1.77	-	24.5	2.68	7.24	-5.1	~200	41.0	5.81
~~1420~~ 1520	10.9	1.75	-	25.2	2.75	7.24	-0.7	~200	39.1	5.83
~~1425~~ 1525	10.9	1.74	-	26.0	2.85	7.24	2.1	~200	40.9	5.91
~~1430~~ 1530	10.9	1.72	-	26.2	2.86	7.25	5.6	~200	44.4	6.01
~~1435~~ 1535	10.9	1.69	-	27.5	2.99	7.25	7.6	~200	52.6	~~6.27~~ 6.21
~~1440~~ 1540	10.9	1.66	-	28.3	3.12	7.26	10.6	~200	55.1	6.43
~~1445~~ 1545	10.9	1.62	-	28.6	3.12	7.26	12.8	~200	50.6	6.51
~~1450~~ 1550	10.9	1.59	-	22.8	2.84	7.25	14.1	~200	53.0	6.61
~~1455~~ 1555	11.0	1.58	-	22.9	2.42	7.24	14.3	~200	51.0	6.71
Total Depth of Well:			15.21							
Depth To Water Before Purging:			3.97							
Depth To Water After Purging:			6.71							

ARCADIS

Water Sampling Log

Project: Racer-Lonsky | Project No. [illegible] | Page 14 of ___

Site Location: Lonsky | Date: 5/2/17

Site/Well No.: UNK-10 | Replicate No.: — | Code No.: —

Weather: 60's, overcast | Sampling Time: Begin 1710 | End 1715

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	15.33
Depth to Water (ft bmp)	2.33
Water-Level Elevation (ft)	—
Water Column in Well (ft)	13
Casing Diameter/Type	6"
Gallons in Well	19.11
Gallons Pumped/Bailed Prior to Sampling	~6
Sample Pump Intake Setting (ft bmp)	~15'
Purge Time	begin 1550 end 1705
Pumping Rate (ml/min)	~250
Evacuation Method	

Field Parameters

Temperature (°C)	10.9
SpC (mS/cm)	0.448
CND (mS/cm)	—
Dissolved Oxygen (%)	18.7
Dissolved Oxygen (mg/L)	2.09
pH (s.u.)	7.25
ORP (mV)	-53.8
Turbidity (NTU)	9.7
Color	clear
Odor	none
Appearance	clear
Sampling Method	low-flow
Remarks	*well did not stabilize

Constituents Sampled	Container Description	Number	Preservative
VOCs	40ml Voa	3	HCl

Sampling Personnel: Kevin B

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : UNK-10 PROJ #: B0064480.2017.00003

DATE : 5/2/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1550	10.9	0.71	-	1.4	0.15	7.38	-107.5	~200	#####	2.41
1555	10.6	0.71	-	1.0	0.13	7.29	-120.5	~250	352	3.18
1600	10.6	0.71	-	1.2	0.13	7.35	-126.2	~250	137	3.87
1605	10.6	0.71	-	1.4	0.16	7.37	-127.4	~250	73.9	4.32
1610	10.6	0.71	-	1.6	0.18	7.39	-128.4	~250	60.2	4.55
1615	10.6	0.70	-	2.0	0.22	7.38	-128.0	~250	53.7	4.87
1620	10.6	0.70	-	3.3	0.35	7.38	-124.8	~250	33.3	5.06
1625	10.6	0.687	-	3.6	0.39	7.37	-122.1	~250	27.7	5.24
1630	10.6	0.673	-	3.8	0.42	7.37	-117.3	~250	23.0	5.61
1635	10.6	0.646	-	4.2	0.45	7.35	-111.6	~250	30.5	5.68
1640	10.7	0.619	-	5.5	0.62	7.34	-104.1	~250	17.7	5.68
1645	10.7	0.574	-	7.6	0.85	7.32	-93.7	~250	17.9	5.68
1650	10.8	0.539	-	9.8	0.96	7.30	-83.4	~250	24.8	5.68
1653	10.8	0.501	-	13.3	1.47	7.28	-73.1	~250	15.7	5.68
1700	10.9	0.468	-	16.2	1.80	7.26	-63.6	~250	14.1	5.68
1705	10.9	0.448	-	18.7	2.09	7.25	-53.8	~250	9.7	5.68
Total Depth of Well:			15.33							
Depth To Water Before Purging:			2.33							
Depth To Water After Purging:			5.68							

ARCADIS

Water Sampling Log

Project	Roeer-Lansig	Project No.	B0084980.2017C0003	Page	15 of
Site Location	Lansig			Date	5/3/17
Site/Well No.	MW-06(3)	Replicate No.	—	Code No.	—
Weather	60° - Sunny	Sampling Time: Begin	925	End	930

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	11.52
Depth to Water (ft bmp)	2.55
Water-Level Elevation (ft)	—
Water Column in Well (ft)	8.97
Casing Diameter/Type	6"
Gallons in Well	13.19
Gallons Pumped/Bailed Prior to Sampling	~2
Sample Pump Intake Setting (ft bmp)	~11'
Purge Time	begin 835 end 920
Pumping Rate (ml/min)	~150
Evacuation Method	

Field Parameters

Temperature (°C)	11.2
SpC (mS/cm)	0.467
CND (mS/cm)	0.344
Dissolved Oxygen (%)	3.9
Dissolved Oxygen (mg/L)	0.41
pH (s.u.)	7.39
ORP (mV)	-366
Turbidity (NTU)	8.10
Color	clear
Odor	none
Appearance	clear
Sampling Method	low-flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs	40ml Voa	3	HCL

Sampling Personnel: [signature]

Well Casing Volumes

Gal./Ft.	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MW-06(3) PROJ #: B064480.2017.00603

DATE: 5/3/16 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
835	11.0	0.480	0352	25.1	2.67	6.97	71.0	150	308	2.79
840	11.0	0.476	0349	7.1	0.78	7.09	33.9	150	183	2.83
845	11.0	0.472	0.346	5.3	0.58	7.07	-11.5	150	112	2.85
850	11.0	0.470	0.344	4.5	0.52	7.34	-25.5	150	64.0	2.89
855	11.0	0.469	0.344	4.3	0.48	7.37	-45.1	150	49.6	2.92
900	11.1	0.468	0.344	4.2	0.47	7.37	-42.5	150	36.7	2.95
905	11.1	0.468	0.344	4.1	0.45	7.38	-42.4	150	24.2	2.96
910	11.2	0.467	0.344	3.9	0.43	7.39	-36	150	17.8	2.96
915	11.2	0.467	0.344	3.9	0.42	7.38	-36.5	150	11.6	2.96
920	11.2	0.467	0.344	3.9	0.41	7.39	-36	150	8.10	2.96
Total Depth of Well:			11.52							
Depth To Water Before Purging:			2.55							
Depth To Water After Purging:			2.96							

ARCADIS

Water Sampling Log

Project	Roeer-Lansley	Project No.	B0044802017.0003	Page	15 of
Site Location	Lansley			Date	5/3/17
Site/Well No.	MW-08-04	Replicate No.	—	Code No.	—
Weather	60°, Sunny	Sampling Time: Begin	1150	End	1155

Evacuation Data		Field Parameters	
Measuring Point	—	Temperature (°C)	13.1
MP Elevation (ft)	—	SpC (mS/cm)	2.19
Land Surface Elevation (ft)	—	CND (mS/cm)	1.69
Sounded Well Depth (ft bmp)	~~[illegible]~~ 88.17	Dissolved Oxygen (%)	11.0
Depth to Water (ft bmp)	63.57	Dissolved Oxygen (mg/L)	1.15
Water-Level Elevation (ft)	—	pH (s.u.)	6.93
Water Column in Well (ft)	24.6	ORP (mV)	-35.8
Casing Diameter/Type	2"	Turbidity (NTU)	118
Gallons in Well	3.936	Color	cloudy
Gallons Pumped/Bailed Prior to Sampling	~3	Odor	none
		Appearance	little murky
Sample Pump Intake Setting (ft bmp)	~88'	Sampling Method	
Purge Time	begin 950 end	Remarks	*well did not stabilize
Pumping Rate (ml/min)	~200		
Evacuation Method			

Constituents Sampled	Container Description	Number	Preservative
1-4 Dioxane	40 ml Voa	3	HCL

Sampling Personnel ______

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-07-04(3) PROJ #: 60644660.2017.00003

DATE : 5/3/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
950	13.0	4.37	3.37	14.4	1.50	6.84	-51.8	~200	####	64.89
955	13.0	4.43	3.41	8.1	0.89	6.87	-50.0	~200	####	64.97
1000	13.0	4.35	3.36	15.4	1.59	6.88	-62.7	~200	####	65.32
1005	12.8	0.042	0.031	~~98.8~~ 97.1	10.08	7.02	-47.6	~200	666	65.18
1010	12.7	4.26	3.27	16.4	1.71	6.98	-46.2	~200	549	65.22
1015	13.0	4.19	3.23	11.7	1.20	6.93	-48.1	~200	341	65.20
1020	13.0	4.12	3.17	12.6	1.32	6.94	-47.3	~200	286	65.20
1025										
1030										
1035	12.9	3.87	2.98	18.2	1.88	6.95	-37.0	~200	411	65.02
1040	12.8	~~3.88~~ 0.033	0.023	51.1	5.47	7.13	-32.1	~200	336	64.97
1045	12.8	0.028	0.024	81.5	8.62	7.01	-27.6	~200	258	65.10
1050	12.9	0.031	0.023	20.2	2.12	7.05	-21.6	~200	189	65.08
1055	12.7	0.115	0.024	20.3	2.16	7.07	-20.6	~200	173	64.98
1100	12.9	0.034	0.023	62.3	6.64	7.05	-24.0	~200	182	64.98
1105	12.8	3.78	2.90	17.4	1.77	6.97	-27.5	~200	117	64.87
1110	12.2	2.85	2.67	30.4	3.09	7.05	-19.2	~200	105	64.97
1115	12.7	3.84	2.94	17.0	1.77	6.94	-24.7	~200	490	65.04
1120	13.1	0.035	0.026	26.7	2.87	7.07	-24.6	~200	317	65.02
1125	12.9	0.030	0.023	44.4	4.01	7.08	-28.6	~200	229	65.09
1130	13.0	3.99	3.08	~~12.2~~ 12.6	1.29	6.94	-36.0	~200	140	65.43
1135	13.0	~~3.87~~	3.08	15.4	1.61	7.03	-34.8	~200	166	65.05
1140	13.1	4.46	3.12	69.5	7.46	7.03	-26.9	~200	157	65.2
1145	13.1	2.19	1.69	11.0	1.15	6.93	-35.8	~200	118	65.4
Had to step away from pump to meet equipment curing										
Total Depth of Well:			~~88.21~~	88.17						
Depth To Water Before Purging:			~~63.57~~	63.57						
Depth To Water After Purging:										

ARCADIS

Water Sampling Log

Project: Racer - Lansing | Project No. 60064480.2017.0003 | Page 16 of —

Site Location: Lansing | Date: 5/3/17

Site/Well No.: MW-23 | Replicate No.: — | Code No.: —

Weather: 70°; Sunny | Sampling Time: Begin 1335 End 1340

Evacuation Data

Measuring Point	—
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	61.35
Depth to Water (ft bmp)	50.42
Water-Level Elevation (ft)	—
Water Column in Well (ft)	8.93
Casing Diameter/Type	2"
Gallons in Well	~1.43
Gallons Pumped/Bailed Prior to Sampling	~5
Sample Pump Intake Setting (ft bmp)	~60'
Purge Time	begin 1225 end 1330
Pumping Rate (ml/min)	~200
Evacuation Method	

Field Parameters

Temperature (°C)	13.1
SpC (mS/cm)	1.48
CND (mS/cm)	1.14
Dissolved Oxygen (%)	2.3
Dissolved Oxygen (mg/L)	0.24
pH (s.u.)	7.07
ORP (mV)	-95.6
Turbidity (NTU)	8.96
Color	clear
Odor	none
Appearance	clear
Sampling Method	low-flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
Metals: ~~Fe~~ As, Co, Cu, Pb, Ni, V	125 ml Plastic	1	HNO_3

Sampling Personnel: [signature]

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-23 PROJ #: B0064480.2017.00603

DATE : 5/3/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1225	13.1	1.51	1.16	5.9	0.63	7.06	-80.1	~200	221	52.71
1230	13.0	45.82 1.48	1.14	5.4	0.57	7.04	-82.7	~200	114	52.78
1235	13.0	1.49	1.15	5.1	0.53	7.03	-85.8	~200	56.4	52.71
1240	13.0	1.47	1.14	6.2	0.65	7.10	-83.4	~200	56.6	52.71
1245	13.1	1.46	1.13	6.3	0.67	7.09	-87.5	~200	47.3	52.73
1250	13.0	1.45	1.12	5.2	0.55	7.04	-89.9	~200	40.0	52.81
1255	13.0	1.46	1.13	4.6	0.48	7.04	-90.3	~200	30.3	52.85
1300	13.0	1.47	1.13	4.2	0.44	7.05	-89.6	~200	25.9	52.85
1305	13.2	1.47	1.14	3.8	0.39	7.06	-90.6	~200	22.6	52.87
1310	13.0	1.47	1.14	3.3	0.35	7.05	-91.9	~200	19.4	52.82
1315	13.0	1.47	1.14	3.1	0.33	7.05	-92.5	~200	14.6	52.85
1320	13.0	1.48	1.14	2.3	0.23	7.05	-93.5	~200	13.6	52.89
1325	13.1	1.48	1.14	2.3	0.23	7.05	-92.5	~200	9.26	52.87
1330	13.1	1.48	1.14	2.3	0.24	7.07	-95.6	~200	8.96	52.89
Total Depth of Well:			61.35							
Depth To Water Before Purging:			52.42							
Depth To Water After Purging:			52.89							

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-22 PROJ #: BD0644BD.2017.00603

DATE : 5-3-17 LOC: Racine Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1335	14.6	2.92	-	7.1	0.70	6.92	-9.9	100	19.3	53.45
1340	14.2	2.83	-	7.3	0.75	6.93	-5.6	100	18.6	53.45
1345	15.0	2.81	-	7.1	0.73	6.91	-9.2	100	12.1	53.45
1350	15.5	2.58	-	6.5	0.66	6.91	-16.9	100	10.2	53.45
1355	15.6	2.66	-	7.1	0.73	6.91	-20.3	100	9.74	53.45
1400	15.0	2.78	-	7.0	0.71	6.91	-26.3	100	9.21	53.45
1405	15.3	2.76	-	6.4	0.68	6.92	-28.3	100	8.79	53.45
1410	15.2	2.77	-	6.7	0.69	6.91	-29.9	100	8.31	53.45
Total Depth of Well:		63.95								
Depth To Water Before Purging:			52.97							
Depth To Water After Purging:			53.45							

ARCADIS

Water Sampling Log

Project: Roces Lansing | Project No. B00644BD.2017 | Page 1 of 2

Site Location: Plant 3 | Date: 5-3-17

Site/Well No.: MW-22 | Replicate No.: | Code No.:

Weather: sunny, warm | Sampling Time: Begin 1320 End 1410

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	63.95
Depth to Water (ft bmp)	52.97
Water-Level Elevation (ft)	–
Water Column in Well (ft)	10.98
Casing Diameter/Type	2" PVC
Gallons in Well	1.76
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	60'
Purge Time	begin 1320 end 1410
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	15.2
SpC (mS/cm)	2.77
CND (mS/cm)	–
Dissolved Oxygen (%)	6.7
Dissolved Oxygen (mg/L)	0.69
pH (s.u.)	6.91
ORP (mV)	-29.9
Turbidity (NTU)	8.31
Color	clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
Metals	1-250ml Poly	1	HNO3

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : PW-14-03 PROJ #: B0064480.2017.00603

DATE : 5-3-17 LOC: Racer Lansing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1050	13.8	3.67	—	50.1	5.11	6.52	-56.1	100	17.5	73.60
1055	14.2	3.68	—	49.3	5.02	6.52	-49.8	100	9.28	73.60
1100	14.7	3.69	-	35.6	3.54	6.51	-49.2	100	8.21	73.60
1105	15.0	3.69	-	29.2	2.90	6.50	-49.0	100	7.75	73.60
1110	14.7	3.69	-	18.5	1.83	6.49	-47.4	100	3.78	73.60
1115	14.6	3.69	-	14.9	1.52	6.49	-49.4	100	4.47	73.60
1120	14.5	3.69	-	11.5	1.16	6.49	-50.3	100	3.06	73.60
1125	14.3	3.69	—	10.9	1.10	6.49	-50.6	100	3.41	73.60
1130	14.3	3.70	—	10.5	1.08	6.49	-51.3	100	3.76	73.60
Total Depth of Well:		107								
Depth To Water Before Purging:			73.56							
Depth To Water After Purging:			73.60							

ARCADIS

Water Sampling Log

Project: Racer Landing | Project No. B0064480.2017 | Page 1 of 2

Site Location: Plant 3 | Date: 5.3.17

Site/Well No.: PW-14-03 | Replicate No.: | Code No.:

Weather: Warm, sunny | Sampling Time: Begin 1040 End 1130

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	102.00
Depth to Water (ft bmp)	73.56
Water-Level Elevation (ft)	–
Water Column in Well (ft)	28.44
Casing Diameter/Type	6" PVC
Gallons in Well	41.80
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	85'
Purge Time	begin 1040 end 1130
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	14.3
SpC (mS/cm)	3.70
CND (mS/cm)	—
Dissolved Oxygen (%)	10.5
Dissolved Oxygen (mg/L)	1.04
pH (s.u.)	10.49
ORP (mV)	-51.3
Turbidity (NTU)	3.76
Color	Clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC, 1,4 Dioxane	40 ml Vial	3	HCL

Sampling Personnel: John Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-25 PROJ #: B0064480.2017.00003

DATE : 5-3-17 LOC: Razor Landing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0915	12.2	2.600	-	11.8	1.24	6.70	-52.0	100	118	69.85
0920	17.3	2.65	-	8.4	0.90	6.70	-52.3	100	148	69.85
0925	11.9	2.64	-	9.4	0.99	6.71	-50.9	100	115	69.85
0930	11.6	2.60	-	10.2	1.09	6.71	-49.2	100	111	69.85
0935	11.9	2.58	-	10.3	1.10	6.70	-48.7	100	96.5	69.85
0940	12.2	2.58	-	9.8	1.06	6.70	-48.5	100	103	69.85
0945	12.4	2.56	-	9.6	1.04	6.70	-47.8	100	97.9	69.85
Total Depth of Well:		75.04								
Depth To Water Before Purging:			69.60							
Depth To Water After Purging:			69.85							

ARCADIS

Water Sampling Log

Project Reuel Lansing Project No. B0064480.2017 Page 1 of 2

Site Location Plant 3 Date 5-3-17

Site/Well No. MW-13-25 Replicate No. Ø Code No.

Weather Warm, sunny Sampling Time: Begin 0900 End 945

Evacuation Data		Field Parameters	
Measuring Point	TOC	Temperature (°C)	12.4
MP Elevation (ft)	–	SpC (mS/cm)	2.56
Land Surface Elevation (ft)	–	CND (mS/cm)	–
Sounded Well Depth (ft bmp)	75.04	Dissolved Oxygen (%)	9.6
Depth to Water (ft bmp)	69.60	Dissolved Oxygen (mg/L)	1.04
Water-Level Elevation (ft)	–	pH (s.u.)	6.70
Water Column in Well (ft)	5.44	ORP (mV)	-47.8
Casing Diameter/Type	2" PVC	Turbidity (NTU)	97.9
Gallons in Well	0.87	Color	cloudy
Gallons Pumped/Bailed Prior to Sampling	~1	Odor	N
		Appearance	cloudy
Sample Pump Intake Setting (ft bmp)	73'	Sampling Method	Bladder Pump
Purge Time	begin 0900 end 945	Remarks	
Pumping Rate (ml/min)	100	FB0002_050317 collected	
Evacuation Method	Bladder Pump		

Constituents Sampled	Container Description	Number	Preservative
1,4 Dioxane	40 ml vial	3	HCL

Sampling Personnel Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

Water Sampling Log

Project: Racer | Project No.: B0064479.2017.00603 | Page: 2 of 2

Site Location: Plant 2 | Date: 4-27-17

Site/Well No.: MW-14-61 | Replicate No.: MS/MSD | Code No.:

Weather: Windy - cool | Sampling Time: Begin 1320 End 1425

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	78.30
Depth to Water (ft bmp)	72.06
Water-Level Elevation (ft)	–
Water Column in Well (ft)	6.24
Casing Diameter/Type	2"
Gallons in Well	1
Gallons Pumped/Bailed Prior to Sampling	~ 1
Sample Pump Intake Setting (ft bmp)	75'
Purge Time	begin 1320 end 1425
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	15.0
SpC (mS/cm)	0.95
CND (mS/cm)	—
Dissolved Oxygen (%)	31.2
Dissolved Oxygen (mg/L)	3.15
pH (s.u.)	7.17
ORP (mV)	-75.0
Turbidity (NTU)	19.6
Color	clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	MS/MSD collected

Constituents Sampled	Container Description	Number	Preservative
1,4 Dioxane	40ml vial	3 (x3 MS/MSD)	HCl

Sampling Personnel: John Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : P2-MW-04 PROJ #: B0064479.2017.00603

DATE : 4-27-17 LOC: & Racer - Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1025	15.4	1.72		126	1.19	7.17	-96.6	100	342	10.70
1030	14.8	1.51		39.6	3.94	7.22	-76.9	100	291	10.70
1035	14.5	1.33		54.8	5.65	7.26	-69.5	100	251	10.70
1040	14.5	1.31		60.0	6.07	7.26	-65.2	100	191	10.70
1045	14.4	1.32		61.4	6.18	7.26	-63.9	100	124	10.70
1050	14.6	1.33		61.0	6.13	7.25	-64.4	100	74.0	10.70
1055	14.7	1.35		62.8	6.31	7.25	-65.9	100	62.3	10.70
1100	14.8	1.36		63.4	6.48	7.24	-66.8	100	50.5	10.70
1105	14.7	1.38		60.2	6.05	7.23	-68.3	100	45.9	10.70
1110	14.7	1.40		63.4	6.40	7.23	-68.5	100	38.7	10.70
1115	14.7	1.42		62.1	6.20	7.23	-68.9	100	33.2	10.70
1120	14.6	1.43		60.1	6.01	7.23	-69.1	100	31.0	10.70
1125	14.6	1.44		59.8	5.98	7.22	-69.5	100	30.8	10.70
Total Depth of Well:		35.70								
Depth To Water Before Purging:			10.02							
Depth To Water After Purging:			10.70							

ARCADIS

Water Sampling Log

Project: Racer | Project No.: B0064479.2017.00603 | Page: 1 of 2

Site Location: Plant 2 | Date: 4-27-17

Site/Well No.: P2-MW-04 | Replicate No.: | Code No.:

Weather: windy, warm | Sampling Time: Begin 1015 End 1125

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	-
Land Surface Elevation (ft)	-
Sounded Well Depth (ft bmp)	35.70
Depth to Water (ft bmp)	10.02
Water-Level Elevation (ft)	-
Water Column in Well (ft)	25.68
Casing Diameter/Type	2"
Gallons in Well	4.1
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	31'
Purge Time	begin 1015 end 1125
Pumping Rate (ml/min)	100 ml
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	14.6
SpC (mS/cm)	1.44
CND (mS/cm)	-
Dissolved Oxygen (%)	59.8
Dissolved Oxygen (mg/L)	5.98
pH (s.u.)	7.22
ORP (mV)	-69.5
Turbidity (NTU)	30.8
Color	clear
Odor	~
Appearance	clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
1,4 Dioxane	40ml vial	3	HCl

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : P2-SB-20 PROJ #: B0064479.2017.00603

DATE : 4-27-17 LOC: Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
900	11.8	0.35		16.0	1.79	9.58	64.3	100	19.9	10.11
905	14.7	0.34		13.2	1.30	9.66	42.8	100	16.0	10.70
910	15.1	0.32		4.9	0.47	9.82	21.5	100	14.9	10.70
915	15.0	0.31		3.3	0.32	9.85	14.4	100	13.9	10.70
920	14.9	0.31		2.6	0.28	9.86	9.0	100	12.8	10.70
925	14.8	0.31		1.9	0.20	9.87	1.6	100	13.2	10.70
930	14.8	0.31		1.9	0.21	9.87	0.8	100	12.2	10.70

Total Depth of Well:	16.20
Depth To Water Before Purging:	8.27
Depth To Water After Purging:	10.70

ARCADIS

Water Sampling Log

Project: Racer | Project No.: B0064479.2017.00603 | Page: 2 of 2

Site Location: Plant 2 | Date: 4.27.17

Site/Well No.: P2-SB-2D | Replicate No.: | Code No.:

Weather: windy · warm | Sampling Time: Begin 0855 End 0930

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	-
Land Surface Elevation (ft)	-
Sounded Well Depth (ft bmp)	116.20
Depth to Water (ft bmp)	8.27
Water-Level Elevation (ft)	-
Water Column in Well (ft)	7.93
Casing Diameter/Type	2"
Gallons in Well	1.26
Gallons Pumped/Bailed Prior to Sampling	~ 1
Sample Pump Intake Setting (ft bmp)	14'
Purge Time	begin 0855 end 0930
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	14.8
SpC (mS/cm)	0.31
CND (mS/cm)	—
Dissolved Oxygen (%)	1.9
Dissolved Oxygen (mg/L)	0.21
pH (s.u.)	9.87
ORP (mV)	0.8
Turbidity (NTU)	12.2
Color	Clear
Odor	N
Appearance	Clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
1,4 Dioxane	40ml vial	3	HCl

Sampling Personnel: Jake Pisalnicwicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-16-84 PROJ #: B0064479.2017.00603

DATE : 4-26-17 LOC: Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1550	25.1	1.34		9.2	0.74	7.08	-103.3	100	835	73.80
1555	24.5	1.35		10.8	0.88	7.09	-103.3	100	520	73.81
1600	24.9	1.33		18.6	1.51	7.09	-93.1	100	320	73.81
1605	25.4	1.32		11.9	0.97	7.09	-95.4	100	251	73.81
1610	26.2	1.30		11.0	0.87	7.09	-98.2	100	201	73.81
1615	26.2	1.30		10.4	0.84	7.09	-96.6	100	174	73.81
1620	26.3	1.28		11.1	0.98	7.09	-94.1	100	149	73.81
1625	26.4	1.27		11.6	1.01	7.09	-92.5	100	137	73.81
1630	26.6	1.26		11.7	0.94	7.09	-91.0	100	121	73.81
1635	26.4	1.25		12.5	1.01	7.09	-90.1	100	117	73.81
1640	26.3	1.24		12.9	1.04	7.09	-89.9	100	114	73.81
~~1645~~										

Total Depth of Well:	92.0	
Depth To Water Before Purging:		73.74
Depth To Water After Purging:		73.81

ARCADIS

Water Sampling Log

Project: Racer | Project No. B0204479.2017.00603 | Page 2 of 2

Site Location: Plant 2 | Date: 4-26-17

Site/Well No.: MW-16-84 | Replicate No.: | Code No.:

Weather: sunny | Sampling Time: Begin 1540 End 1640

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	82.0
Depth to Water (ft bmp)	73.74
Water-Level Elevation (ft)	–
Water Column in Well (ft)	8.26
Casing Diameter/Type	2"
Gallons in Well	1.32
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	79'
Purge Time	begin 1540 end 1640
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	26.3
SpC (mS/cm)	1.24
CND (mS/cm)	–
Dissolved Oxygen (%)	12.9
Dissolved Oxygen (mg/L)	1.04
pH (s.u.)	7.09
ORP (mV)	-89.9
Turbidity (NTU)	114
Color	cloudy
Odor	N
Appearance	cloudy
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs' 1,4 dioxane	40ml vial	3	HCL

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-15-72

PROJ #: B0064479.2017.00603

DATE : 4-26-17

LOC: Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1320	17.5	1.70		4.9	0.47	6.93	-95.9	100	67.0	59.70
1325	17.9	1.72		3.1	0.31	6.93	-97.1	100	40.6	59.70
1330	18.0	1.75		3.4	0.31	6.93	-97.1	100	32.6	59.70
1335	18.1	1.77		3.5	0.29	6.93	-97.3	100	27.7	59.70
1340	18.1	1.79		2.5	0.24	6.94	-97.8	100	21.1	59.70
1345	18.3	1.80		2.6	0.25	6.95	-98.7	100	22.3	59.70
1350	18.0	1.80		2.4	0.23	6.95	-98.5	100	21.1	59.70

Total Depth of Well: 71.30

Depth To Water Before Purging: 59.67

Depth To Water After Purging: 59.70

ARCADIS

Water Sampling Log

Project: Racer | Project No.: B0106479.2017.00603 | Page: 1 of 2

Site Location: plant 2 | Date: 4-26-17

Site/Well No.: MW-15-72 | Replicate No.: Dup-04 | Code No.:

Weather: windy, sunny | Sampling Time: Begin 1310 End 1350

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	-
Land Surface Elevation (ft)	-
Sounded Well Depth (ft bmp)	71.30
Depth to Water (ft bmp)	59.67
Water-Level Elevation (ft)	-
Water Column in Well (ft)	11.67
Casing Diameter/Type	2" PVC
Gallons in Well	1.86
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	68'
Purge Time	begin 1310 end
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	18.0
SpC (mS/cm)	1.80
CND (mS/cm)	
Dissolved Oxygen (%)	2.4
Dissolved Oxygen (mg/L)	0.23
pH (s.u.)	6.95
ORP (mV)	-58.5
Turbidity (NTU)	21.1
Color	clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	* Dup-04 collected * * collected additional 3 gallon sample for UCLA - sample time - 1500 *

Constituents Sampled	Container Description	Number	Preservative
VOCs, 1,4 Dioxane	40ml vial	3	HCl

Sampling Personnel: John Pisaltrevich

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-45 PROJ #: 30064479.2017.00603

DATE : 4-26-17 LOC: Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0920	14.8	1.11		22.0	2.23	7.28	-90.8	100	23.9	69.32
0925	15.6	1.12		26.0	2.82	7.29	-87.1	100	20.9	69.32
0930	15.1	1.11		30.4	3.05	7.29	-80.8	100	19.3	69.32
0935	15.3	1.11		39.3	3.99	7.29	-78.7	100	17.6	69.32
0940	15.0	1.12		38.5	3.90	7.28	-74.6	100	14.7	69.32
0945	15.1	1.12		40.1	4.20	7.28	-72.6	100	13.6	69.32
0950	15.1	1.13		42.4	4.36	7.29	-71.4	100	11.1	69.32
0955	15.1	1.13		40.6	4.09	7.29	-70.9	100	10.9	69.32
1000	15.1	1.13		41.1	4.17	7.30	-70.1	100	10.1	69.32
Total Depth of Well:		79.60								
Depth To Water Before Purging:			69.31							
Depth To Water After Purging:			69.32							

ARCADIS

Water Sampling Log

Project: Racer | Project No. B00644479.2017.00603 | Page 1 of 2

Site Location: Plant 2 | Date: 4-26-17

Site/Well No.: MW-13-45 | Replicate No.: | Code No.:

Weather: cool, cloudy | Sampling Time: Begin 910 End 1005

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	-
Land Surface Elevation (ft)	-
Sounded Well Depth (ft bmp)	79.00
Depth to Water (ft bmp)	69.31
Water-Level Elevation (ft)	-
Water Column in Well (ft)	10.29
Casing Diameter/Type	2"
Gallons in Well	1.65
Gallons Pumped/Bailed Prior to Sampling	~~7600~~ ~1
Sample Pump Intake Setting (ft bmp)	76
Purge Time	begin 910 end 1005
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	15.1
SpC (mS/cm)	1.13
CND (mS/cm)	
Dissolved Oxygen (%)	41.1
Dissolved Oxygen (mg/L)	4.17
pH (s.u.)	7.30
ORP (mV)	-70.1
Turbidity (NTU)	10.1
Color	clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	Collected Additional 3 gallon sample for UCLA

Constituents Sampled	Container Description	Number	Preservative
1,4 dioxane	40ml vial	3	HCL

Sampling Personnel: John Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-14-59 PROJ #: B0064479.2017.00603

DATE : 4.25.17 LOC: Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1615	13.7	0.80		1.9	0.22	7.20	-53.0	100	30.8	7.70
1620	13.7	0.80		1.5	0.16	7.19	-54.3	100	26.9	7.80
1625	13.6	0.80		0.9	0.10	7.19	-55.7	100	57.9	7.85
1630	13.7	0.81		0.9	0.10	7.20	-57.7	100	92.4	7.85
1635	13.6	0.81		0.8	0.08	7.19	-57.6	100	78.1	7.86
1640	13.7	0.81		0.7	0.08	7.19	-60.0	100	68.9	7.86
1645	13.7	0.81		0.7	0.07	7.19	-61.1	100	63.3	7.86
1650	13.7	0.82		0.7	0.07	7.20	-60.5	100	60.1	7.86
1655	13.7	0.82		0.7	0.08	7.20	-60.3	100	57.1	7.86
Total Depth of Well:		16.85	-							
Depth To Water Before Purging:			7.16							
Depth To Water After Purging:										

ARCADIS

Water Sampling Log

Project: Racel | Project No. B00164479.2017.00603 | Page 2 of 2

Site Location: Plant 2 | Date: 4-25-17

Site/Well No.: MW-14-59 | Replicate No.: | Code No.:

Weather: Sunny | Sampling Time: Begin 1610 End 1655

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	-
Land Surface Elevation (ft)	-
Sounded Well Depth (ft bmp)	18.85
Depth to Water (ft bmp)	7.16
Water-Level Elevation (ft)	-
Water Column in Well (ft)	11.69
Casing Diameter/Type	2"
Gallons in Well	1.87
Gallons Pumped/Bailed Prior to Sampling	~ 1
Sample Pump Intake Setting (ft bmp)	15'
Purge Time	begin 1610 end 1655
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	13.7
SpC (mS/cm)	0.82
CND (mS/cm)	-
Dissolved Oxygen (%)	0.7
Dissolved Oxygen (mg/L)	0.08
pH (s.u.)	7.20
ORP (mV)	-60.3
Turbidity (NTU)	57.3
Color	Clear
Odor	N
Appearance	Clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs, 1,4 dioxane	40ml vial	3	HCl

Sampling Personnel: John Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-14-60

PROJ #: B0064479.2017.00603

DATE : 4-25-17

LOC: Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1425	13.6	1.25		2.1	0.25	7.27	-99.0	100	25.9	12.40
1430	13.4	1.25		1.8	0.19	7.27	-100.9	100	14.1	12.40
1435	13.5	1.25		1.6	0.16	7.28	-99.4	100	12.4	12.40
1440	13.4	1.24		1.3	0.14	7.27	-99.7	100	11.1	12.40
1445	13.4	1.24		1.4	0.15	7.27	-99.9	100	10.9	12.40

Total Depth of Well: 23.55

Depth To Water Before Purging: 12.30

Depth To Water After Purging: 12.40

ARCADIS

Water Sampling Log

Project: Raleigh | Project No.: 30064479.2017.00003 | Page: 2 of 2

Site Location: Plant 2 | Date: 4.25.17

Site/Well No.: MW-14-60 | Replicate No.: | Code No.:

Weather: Sunny | Sampling Time: Begin 1415 End 1445

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	23.55
Depth to Water (ft bmp)	12.36
Water-Level Elevation (ft)	–
Water Column in Well (ft)	11.19
Casing Diameter/Type	2"
Gallons in Well	1.79
Gallons Pumped/Bailed Prior to Sampling	~ 1
Sample Pump Intake Setting (ft bmp)	~ 21'
Purge Time	begin 1420 end 1445
Pumping Rate (ml/min)	100ml/min
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	13.4
SpC (mS/cm)	1.24
CND (mS/cm)	–
Dissolved Oxygen (%)	1.4
Dissolved Oxygen (mg/L)	0.15
pH (s.u.)	7.27
ORP (mV)	-99.9
Turbidity (NTU)	10.9
Color	clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC's, 1,4 dioxane	40ml vial	3	HCl

Sampling Personnel:

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MW-17-86 PROJ #: B0064479.2017.00603

DATE: 4-25-17 LOC: Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1235	15.3	1.01		50.2	4.94	7.29	-91.1	100	23.2	71.25
1240	15.5	~~45.6?~~ 1.01		54.9	5.43	7.29	-87.4	100	14.9	71.25
1245	15.1	1.02		53.5	5.28	7.28	-87.1	100	9.80	71.25
1250	15.1	1.02		53.6	5.51	7.26	-86.8	100	8.21	71.25
1255	15.2	1.02		53.2	5.67	7.26	-86.4	100	7.75	71.25

Total Depth of Well: 8220

Depth To Water Before Purging: 71.24

Depth To Water After Purging: 71.25

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Water Sampling Log

Project ~~MW-17-86~~ Racer | Project No. BD0164479.2017.00603 | Page 2 of 2

Site Location Plant 2 | Date 4.25.17

Site/Well No. MW-17-86 | Replicate No. | Code No.

Weather Sunny | Sampling Time: Begin 1220 End 1300

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	-
Land Surface Elevation (ft)	-
Sounded Well Depth (ft bmp)	82.20
Depth to Water (ft bmp)	71.24
Water-Level Elevation (ft)	-
Water Column in Well (ft)	10.96
Casing Diameter/Type	2"
Gallons in Well	1.75
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	~~82~~ 79'
Purge Time	begin 1220 end
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	15.2
SpC (mS/cm)	1.07
CND (mS/cm)	
Dissolved Oxygen (%)	53.2
Dissolved Oxygen (mg/L)	5.67
pH (s.u.)	7.26
ORP (mV)	-86.4
Turbidity (NTU)	7.75
Color	clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC, 1,4 dioxane	40 ml vial	3	HCl

Sampling Personnel Jake Pizalewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE 1 OF 2

WELL : MW-16-85 PROJ #: B00644479.2017.00603

DATE : 4-25-17 LOC: Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1030	15.3	0.91		51.7	5.12	7.56	-68.3	100	44.8	75.91
1035	15.1	~~45.09~~ 0.93		26.7	2.74	7.39	-78.8	100	1167	76.54
1040	15.1	0.95		14.1	1.38	7.32	-85.1	100	174	77.10
1045	15.0	0.96		8.6	0.84	7.30	-90.4	100	160	77.40
1050	15.1	0.95		6.7	0.665	7.29	-93.3	100	185	77.58
1055	15.2	0.94		5.4	0.52	7.28	-95.6	100	2166	77.41
1100	15.6	0.93		5.0	0.49	7.27	-96.0	100	275	77.80
1105	15.8	0.93		5.0	0.50	7.27	-96.9	100	291	78.40
1110	15.9	0.94		4.9	0.48	7.27	-97.4	100	271	78.60
1115	16.0	0.94		4.9	0.46	7.27	-97.7	100	278	78.60
1120	16.0	0.95		4.8	0.47	7.27	-98.1	100	284	78.62
Total Depth of Well:		83.30								
Depth To Water Before Purging:		74.83								
Depth To Water After Purging:		78.62								

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Water Sampling Log

Project: Racer - Plant 2 | Project No. B00644 79.2017.00603 | Page 2 of 2

Site Location: Plant 2 | Date: 4.25.17

Site/Well No.: MW-16-85 | Replicate No.: | Code No.:

Weather: Sunny | Sampling Time: Begin 1015 End 1120

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	83.30
Depth to Water (ft bmp)	74.83
Water-Level Elevation (ft)	–
Water Column in Well (ft)	8.47
Casing Diameter/Type	2"
Gallons in Well	1.36
Gallons Pumped/Bailed Prior to Sampling	~ 1
Sample Pump Intake Setting (ft bmp)	~ 79'
Purge Time	begin 1015 end
Pumping Rate (ml/min)	100 ml/min
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	16.0
SpC (mS/cm)	0.95
CND (mS/cm)	–
Dissolved Oxygen (%)	4.8
Dissolved Oxygen (mg/L)	0.47
pH (s.u.)	7.27
ORP (mV)	-98.1
Turbidity (NTU)	284
Color	cloudy
Odor	N
Appearance	cloudy
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC's	40 ml vial	3	HCl
1,4 dioxane	40 ml vial	1	HCl

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

Water Sampling Log

Project: B0064479.2017.00603 | Project No. | Page 1 of

Site Location: P2 | Date: 5/27/17

Site/Well No.: TW-14-02 | Replicate No.: DUP-03 | Code No.:

Weather: sunny 69° | Sampling Time: Begin 0855 | End 0940

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	74.12
Depth to Water (ft bmp)	62.88
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11.24
Casing Diameter/Type	2"
Gallons in Well	1.798
Gallons Pumped/Bailed Prior to Sampling	~2
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 0855 end 0940
Pumping Rate (ml/min)	100
Evacuation Method	—

Field Parameters

Temperature (°C)	16.1
SpC (mS/cm)	3.74
CND (mS/cm)	
Dissolved Oxygen (%)	6.2
Dissolved Oxygen (mg/L)	58
pH (s.u.)	6.70
ORP (mV)	-40.0
Turbidity (NTU)	19.7
Color	~ CLEAR
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC	40 ml VOA	3	HCl
1,4-dioxane	"	11	11

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

800-316-6056
9214 8839

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : TW-14-02

PROJ #: B00644792017.00603

DATE : 04/27/17

LOC: PZ

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0855	16.7	3.56		5.4	.51	6.61	-14.8	100	58.5	63.75
0900	16.8	3.58		4.8	.44	6.63	-20.1	"	74.8	63.73
0905	16.3	3.8		3.7	.34	6.67	-31.0	"	41.2	63.91
0910	17.2	3.76		13.8	1.20	6.67	-35.6	"	39.7	63.95
0915	16.9	3.78		6.1	.56	6.68	-36.1	"	36.9	63.73
0920	16.8	3.77		5.2	.50	6.68	-36.3	"	33.0	63.96
0925	16.7	3.78		5.7	.56	6.69	-39.1	"	26.1	63.95
0930	16.1	3.79		6.4	.60	6.70	-40.2	"	21.0	63.95
0935	16.1	3.79		6.2	.58	6.70	-40.0	"	19.7	63.95
0940	S	A	M	P	L	E				
Total Depth of Well:										
Depth To Water Before Purging:			62.88							
Depth To Water After Purging:			63.95							

ARCADIS

Water Sampling Log

Project: RACER | Project No.: B0064479.2017.00603 | Page ___ of ___

Site Location: P2 | Date: ___

Site/Well No.: ~~P2~~ 16-01 | Replicate No.: ___ | Code No.: ___

Weather: Cloudy 69° | Sampling Time: Begin 1115 End 1145

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	75.42
Depth to Water (ft bmp)	61.45
Water-Level Elevation (ft)	—
Water Column in Well (ft)	13.968
Casing Diameter/Type	2"
Gallons in Well	2.235
Gallons Pumped/Bailed Prior to Sampling	~1.5
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1115 end 1145
Pumping Rate (ml/min)	100
Evacuation Method	___

Field Parameters

Temperature (°C)	15.9
SpC (mS/cm)	1.60
CND (mS/cm)	___
Dissolved Oxygen (%)	2.9
Dissolved Oxygen (mg/L)	.26
pH (s.u.)	6.80
ORP (mV)	-46.3
Turbidity (NTU)	21.2
Color	Pale Yellow
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
1,4-dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : ~~MW~~ AS-16-01 PROJ #: B0064479.2017.00603

DATE : 04-27-17 LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1115	15.9	1.64		4.8	.49	6.86	-55.9	100	8.00	62.41
1120	15.8	1.62		4.8	.48	6.85	-54.2	|	8.21	62.49
1125	15.8	1.61		3.5	.35	6.82	-49.8	|	14.1	63.76
1130	15.8	1.61		3.5	.33	6.81	-48.8	|	17.9	63.98
1135	16.0	1.60		2.9	.26	6.81	-47.4	|	21.0	64.31
1140	15.9	1.60		~~3.2~~ 2.9	~~.28~~	6.80	-46.3		21.2	64.35
1145	S	A	M	P	L	E				
Total Depth of Well:		75.42								
Depth To Water Before Purging:			61.75							
Depth To Water After Purging:			64.40							

ARCADIS

Water Sampling Log

Project: RACER | Project No.: B0064424.2017.00603 | Page ___ of ___

Site Location: P2 | Date: 04/27/17

Site/Well No.: PW-14-01 | Replicate No.: — | Code No.: —

Weather: Cloudy 69° | Sampling Time: Begin 1210 End 1240

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	85.65
Depth to Water (ft bmp)	65.85
Water-Level Elevation (ft)	—
Water Column in Well (ft)	—
Casing Diameter/Type	4"
Gallons in Well	12.870
Gallons Pumped/Bailed Prior to Sampling	~2
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 1210 end 1240
Pumping Rate (ml/min)	100
Evacuation Method	

Field Parameters

Temperature (°C)	18.7
SpC (mS/cm)	1.87
CND (mS/cm)	—
Dissolved Oxygen (%)	3.8
Dissolved Oxygen (mg/L)	.36
pH (s.u.)	6.87
ORP (mV)	-63.0
Turbidity (NTU)	3.40
Color	Clear
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
1,4-dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : PW-14-01 PROJ #: B0064479.2017.00603

DATE : 4/27/17 LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1210	18.2	1.84		15.7	1.45	6.87	-50.5	100	8.18	65.12
1215	18.2	~~45.6?~~ 1.84		11.5	1.07	6.86	-50.6	|	8.02	65.12
1220	18.1	1.86		5.8	.54	6.86	-53.8	|	3.92	65.12
1225	18.5	1.86		3.7	.34	6.87	-62.6	|	3.51	65.27
1230	18.8	1.87		3.8	.36	6.87	-62.6	|	3.46	65.42
1235	18.7	1.87		3.8	.36	6.87	-63.0	|	3.40	65.45
1240	S	A	M	P	L	E		|		

Total Depth of Well:	85.65
Depth To Water Before Purging:	65.12
Depth To Water After Purging:	65.45

ARCADIS

Water Sampling Log

Project: RACER | Project No.: B0064479.2017.0063 | Page ___ of ___

Site Location: P2 | Date: 4/27/17

Site/Well No.: AMW-16-02 | Replicate No.: ___ | Code No.: ___

Weather: sunny 69° | Sampling Time: Begin 1405 End 1440

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	76.42
Depth to Water (ft bmp)	64.71
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11.71
Casing Diameter/Type	2"
Gallons in Well	1.873
Gallons Pumped/Bailed Prior to Sampling	~2
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1405 end 1440
Pumping Rate (ml/min)	100
Evacuation Method	—

Field Parameters

Temperature (°C)	14.3
SpC (mS/cm)	2.13
CND (mS/cm)	—
Dissolved Oxygen (%)	3.2
Dissolved Oxygen (mg/L)	.32
pH (s.u.)	6.94
ORP (mV)	-52.7
Turbidity (NTU)	7.31
Color	clear
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
1,4-Dioxane	40ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

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YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : AS-16-02   PROJ #: B0064979.2017.00603

DATE : 4/27/17   LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1405	14.7	2.07		3.4	.33	6.93	-45.4	100	17.7	64.6
1410	14.7	45.6? 2.11		2.8	.28	6.93	-47.7	|	10.4	65.25
1415	14.8	2.10		2.7	.27	6.92	-48.3	|	9.1	65.29
1420	14.3	2.11		2.8	.28	6.93	-52.1	|	10.5	65.71
1425	14.6	2.11		2.9	.29	6.94	-52.2	|	8.51	66.25
1430	14.2	2.13		3.3	.33	6.94	-52.9	|	7.01	66.95
1435	14.3	2.13		3.2	.32	6.94	-52.7	|	7.31	67.0
1440	S	A	M	P	L	E				

Total Depth of Well: 78.92

Depth To Water Before Purging: 64.81

Depth To Water After Purging: 67.0

ARCADIS

Water Sampling Log

Project: RACER | Project No.: B0064479.2017.00603 | Page ___ of ___

Site Location: P2 | Date: 4/27/17

Site/Well No.: TW-16-01 | Replicate No.: — | Code No.: —

Weather: ___ | Sampling Time: Begin 1550 End 1635

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	~~76.42~~ 78.00
Depth to Water (ft bmp)	~~61.81~~ 63.78
Water-Level Elevation (ft)	—
Water Column in Well (ft)	14.220
Casing Diameter/Type	2"
Gallons in Well	2.275
Gallons Pumped/Bailed Prior to Sampling	~2
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1550 end 1635
Pumping Rate (ml/min)	100
Evacuation Method	—

Field Parameters

Temperature (°C)	14.4
SpC (mS/cm)	2.49
CND (mS/cm)	
Dissolved Oxygen (%)	4.2
Dissolved Oxygen (mg/L)	.42
pH (s.u.)	6.93
ORP (mV)	-37.9
Turbidity (NTU)	23.4
Color	clear
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
1,4-dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : TV-16-01 PROJ #: B0064479.2017.00603

DATE : 4/27/17 LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1550	14.5	2.39		4.7	.48	6.94	-28.9	100	23.5	65.97
1555	14.6	~~45.6?~~ 2.39		4.1	.41	6.93	-33.6	|	20.1	65.62
1600	14.6	2.39		4.0	.41	6.94	-34.1	|	19.7	65.62
1605	14.4	2.41		4.0	.40	6.93	-36.5	|	19.5	65.71
1610	14.4	2.40		4.0	.40	6.93	-37.1	|	28.7	65.73
1620	14.4	2.42		3.7	.39	6.93	-36.7	|	25.7	66.42
1625	14.4	2.47		4.3	.43	6.93	-37.7	|	22.1	67.6
1630	14.4	2.49		4.2	.42	6.93	-37.9		23.4	67.91
1635	S	A	M	P	L	E				
Total Depth of Well:		78.00								
Depth To Water Before Purging:			63.78							
Depth To Water After Purging:			67.91							

ARCADIS

Water Sampling Log

Project: RACER | Project No.: B0064479.2017.00603 | Page: 2 of ___

Site Location: Plant 2 | Date: 4/25/17

Site/Well No.: MW-16-78 | Replicate No.: — | Code No.: —

Weather: Sunny 65° | Sampling Time: Begin 1245 End 1330

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	76.2
Depth to Water (ft bmp)	68.51
Water-Level Elevation (ft)	—
Water Column in Well (ft)	7.69
Casing Diameter/Type	2"
Gallons in Well	1.230
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 1245 end 1330
Pumping Rate (ml/min)	100
Evacuation Method	Bladder

Field Parameters

Temperature (°C)	15.8
SpC (mS/cm)	1.73
CND (mS/cm)	
Dissolved Oxygen (%)	13.5
Dissolved Oxygen (mg/L)	1.41
pH (s.u.)	6.89
ORP (mV)	-55.6
Turbidity (NTU)	49.3
Color	Clear
Odor	None
Appearance	—
Sampling Method	Bladder
Remarks	~

Constituents Sampled	Container Description	Number	Preservative
VOC	40 mL	3	HCl
1,4-Dioxane	" "	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-16-78 PROJ #: B0064479.2017.0063

DATE : 4/25/17 LOC: Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1245	15.5	1.74		11.1	1.09	6.85	-60.6	100	213	68.52
1250	15.6	~~45.0?~~ 1.73		49.2	4.77	6.89	-56.9	|	189	68.21
1255	16.0	1.73		70.3	6.79	6.91	-55.5	|	118	68.21
1300	16.1	1.73		29.1	2.78	6.89	-52.0	|	91.3	68.21
1305	16.1	1.73		28.1	2.71	6.89	-52.3	|	88.9	68.21
1310	15.9	1.73		38.0	3.92	6.89	-53.0	|	92.6	68.21
1315	15.8	1.73		14.8	1.46	6.88	-55.0	|	57.6	68.21
1320	15.8	1.72		14.4	1.31	6.88	-56.2	|	50.2	68.21
1325	15.8	1.72		14.0	1.06	6.88	-56.7		49.0	68.21
1330	S	A	M	D	L	E				
Total Depth of Well:		76.2								
Depth To Water Before Purging:			68.51							
Depth To Water After Purging:			68.21							

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Water Sampling Log

Project B90 6479.2017.00603 Project No. Plant 2 Page 3 of ___

Site Location Racer Plant 2 Date 4/25/17

Site/Well No. MW-16-74 Replicate No. — Code No. —

Weather Sunny 55° Sampling Time: Begin 1435 End 1515

Evacuation Data

Measuring Point TOC

MP Elevation (ft) —

Land Surface Elevation (ft) —

Sounded Well Depth (ft bmp) 73.70

Depth to Water (ft bmp) ~~73.70~~ 68.1

Water-Level Elevation (ft) ~~68.1~~ —

Water Column in Well (ft) 5.6

Casing Diameter/Type 2" [redacted]

Gallons in Well .896

Gallons Pumped/Bailed Prior to Sampling ~1

Sample Pump Intake Setting (ft bmp) —

Purge Time begin 1435 end 1515

Pumping Rate (ml/min) 150

Evacuation Method —

Field Parameters

Temperature (°C) 15.1

SpC (mS/cm) 2.27

CND (mS/cm) ~~2.27~~

Dissolved Oxygen (%) 2.5

Dissolved Oxygen (mg/L) .24

pH (s.u.) 6.89

ORP (mV) -94.5

Turbidity (NTU) 39.6

Color Clear

Odor —

Appearance —

Sampling Method Bladder

Remarks —

Constituents Sampled	Container Description	Number	Preservative
VOC	40 mL VOA	3	HCl
1,4 dioxane	" "	3	HCl

Sampling Personnel BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

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YSI/LOW FLOW SAMPLING LOG

WELL : MW-16-74 PROJ #: B0064479.2017.00603

DATE : 4/25/17 LOC: Plant 2 Racer

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1445 ~~[illegible]~~	16.3	2.24		11.3	1.09	6.91	-44.2	150	132	68.15
1450 ~~[illegible]~~	15.8	2.24		7.7	.75	6.89	-42.1			104	68.24
1455 ~~[illegible]~~	15.1	2.25		2.8	.28	6.88	-40.7		49.7	68.25
1500	15.2	2.26		2.7	.28	6.88	-41.3		73.0	68.21
1505	15.3	2.27		2.6	.26	6.89	-44.5		41.8	68.21
1510	15.1	2.27		2.5	.24	6.89	-44.5		39.7	68.23
1515	S	A	M	P	L	E				

Total Depth of Well:	73.1
Depth To Water Before Purging:	68.1
Depth To Water After Purging:	68.23

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Water Sampling Log

Project: RACER P2 | Project No.: B006479.2017.00603 | Page: 9 of

Site Location: Racer Plant 2 | Date: 4/25/17

Site/Well No.: MW-16-77 | Replicate No.: — | Code No.: —

Weather: Sunny 60° | Sampling Time: Begin 1615 End 1650

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	
Land Surface Elevation (ft)	
Sounded Well Depth (ft bmp)	74.3
Depth to Water (ft bmp)	64.1
Water-Level Elevation (ft)	
Water Column in Well (ft)	10.2
Casing Diameter/Type	2"
Gallons in Well	1.632
Gallons Pumped/Bailed Prior to Sampling	~2
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 1615 end 1650
Pumping Rate (ml/min)	150 ml/min
Evacuation Method	

Field Parameters

Temperature (°C)	17.4
SpC (mS/cm)	1.73
CND (mS/cm)	↓
Dissolved Oxygen (%)	12.5
Dissolved Oxygen (mg/L)	1.20
pH (s.u.)	7.11
ORP (mV)	-62.4
Turbidity (NTU)	23.0
Color	Clear
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
VOC	40mL VOA	3	HCl
1,4 Dioxane	40ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

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YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-16-77 PROJ #: B006474.2017.00603

DATE : 4/25/17 LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1615	15.1	1.75		8.6	.83	7.11	-71.2	150	35.8	65.65
1620	14.7	1.71		11.8	1.19	7.10	-57.3	150	31.3	66.32
1625	15.3	1.74		8.9	.81	7.11	-68.1	150	45.0	66.65
1630	15.7	1.74		8.7	.86	7.11	-65.0	|	25.6	67.1
1635	15.9	1.73		11.5	.91	7.12	-65.4	|	27.0	67.75
1640	17.0	1.73		12.0	1.05	7.11	-66.7	|	21.1	67.91
1645	17.4	1.77		12.5	1.20	7.11	-62.9	|	20.0	68.0
1650	sampled									
Total Depth of Well:		74.1								
Depth To Water Before Purging:			64.1							
Depth To Water After Purging:			68.45							

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Water Sampling Log

Project: B00 64479.2017.00603 Project No. _____ Page 1 of _____

Site Location: Plant 2 Date: 3/26/17

Site/Well No.: MW-16-79 Replicate No. _____ Code No. _____

Weather: 65° Sunny Sampling Time: Begin ~~0942~~ 1600 End 1605 Grab sample (see 75:109)

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	76.2
Depth to Water (ft bmp)	69.95
Water-Level Elevation (ft)	—
Water Column in Well (ft)	6.25
Casing Diameter/Type	2"
Gallons in Well	1.00
Gallons Pumped/Bailed Prior to Sampling	N/
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 0942 end 1215
Pumping Rate (ml/min)	100
Evacuation Method	Bladder

Field Parameters

Temperature (°C)	19.4
SpC (mS/cm)	.89
CND (mS/cm)	
Dissolved Oxygen (%)	10.9
Dissolved Oxygen (mg/L)	.94
pH (s.u.)	7.26
ORP (mV)	~~76.0~~ -99.0
Turbidity (NTU)	546
Color	Brown
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
VOC	40 mL VOA	3	HCl
1,4 dio	40 mL VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

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YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-16-79 PROJ #: B0064479.2017.09603

DATE : 4/25/17 - 4/26/17 LOC: Plant 2 Racer

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0950	15.7	.97		21.1	2.13	6.92	-51.2	100	212	69.95
0955	15.1	~~4.50~~ .98		22.4	2.34	6.95	-60.0	100	188	70.25
1000	15.4	.98		16.5	1.66	6.92	-62.0		309	70.51
1005	15.9	.97		11.1	1.07	6.91	-63.8		286	70.99
1010	15.8	.97		11.2	1.11	6.91	-63.5		251	71.2
1015	16.3	.97		15.2	1.48	7.02	-64.2		+++	71.6
1020	16.2	.97		10.5	1.02	7.04	-70.4		841	71.87
1030	16.2	.97		8.9	.97	7.05	-72.1		584	72.20
1035	15.8	.97		7.4	.73	7.07	-75.0		513	72.38
1040	15.9	.97		6.3	.64	7.08	-76.0		533	72.55
1045	15.7	.97							414	
	Pump	hit	bottom and	agitated	silt,	will	Purge for	time		
			to	allow well	to	clear				
		Well	ran	dry	while	Purging	sediment.			
		was	able	to take	sample	of high	Turb.	water		
		near	bottom	of well,	will	return				
1215		sampled	muddy	GW/	will	most	likely	discard		
4/26										
		Per	sampling	plan,	well	went	dry,	allowed	full	
		recharge	and	came	back	next	day	to take	sample	
1605	14.4	.89		10.4	.94	7.26	-94.1		546	

Total Depth of Well:	
Depth To Water Before Purging:	69.95
Depth To Water After Purging:	

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Water Sampling Log

Project RACER Project No. 30064479.2017.00603 Page 8 of ___

Site Location P2 Date 4/26/17

Site/Well No. ~~MW-14-56~~ TW-14-01 Replicate No. — Code No. —

Weather Sunny 78° Sampling Time: Begin 1530 End 1555

Evacuation Data

Measuring Point: TOC

MP Elevation (ft): —

Land Surface Elevation (ft): —

Sounded Well Depth (ft bmp): 78.20

Depth to Water (ft bmp): 66.04

Water-Level Elevation (ft): —

Water Column in Well (ft): 12.16

Casing Diameter/Type: 2"

Gallons in Well: 1.945

Gallons Pumped/Bailed Prior to Sampling: ~2

Sample Pump Intake Setting (ft bmp):

Purge Time begin 1530 end 1555

Pumping Rate (ml/min): 100

Evacuation Method:

Field Parameters

Temperature (°C): 19.0

SpC (mS/cm): 3.11

CND (mS/cm):

Dissolved Oxygen (%): 3.0

Dissolved Oxygen (mg/L): .26

pH (s.u.): 6.78

ORP (mV): -53.8

Turbidity (NTU): 2.11

Color: clear

Odor: —

Appearance: —

Sampling Method: Bladder

Remarks: —

Constituents Sampled	Container Description	Number	Preservative
VOC	40 ml VOA	3	HCl
1,4-dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

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YSI/LOW FLOW SAMPLING LOG

WELL: TW-19-01 PROJ #: B0064479.2017.00603

DATE: 4/26/17 LOC: R2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1530	18.6	2.88		4.9	.46	6.89	-57.3	100	6.13	66.58
1535	18.9	2.88		3.9	.37	6.83	-55.8	|	3.79	66.88
1540	18.4	2.88		3.7	.33	6.83	-56.1	|	3.51	66.92
1545	18.7	3.08		3.2	.32	6.80	-54.2	|	2.36	67.03
1550	19.0	3.11		3.0	.26	6.78	-53.8	|	2.11	67.15
1555	S	A	M	P	L	E		|		
~~1600~~								|		
~~1605~~								|		
~~1610~~										

Total Depth of Well:	78.20	
Depth To Water Before Purging:	~~66.04~~	
Depth To Water After Purging:	67.15	

ARCADIS

Water Sampling Log

Project: RACER | Project No.: B0064479.2012.0063 | Page: 7 of ___

Site Location: P2 | Date: ___

Site/Well No.: MW-14-56 | Replicate No.: ___ | Code No.: ___

Weather: Sunny 78° | Sampling Time: Begin 1350 End 1430

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	~
Sounded Well Depth (ft bmp)	79.02
Depth to Water (ft bmp)	71.96
Water-Level Elevation (ft)	~
Water Column in Well (ft)	7.06
Casing Diameter/Type	2"
Gallons in Well	1.129
Gallons Pumped/Bailed Prior to Sampling	~1.5
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1350 end 1430
Pumping Rate (ml/min)	150
Evacuation Method	

Field Parameters

Temperature (°C)	18.2
SpC (mS/cm)	5.86
CND (mS/cm)	
Dissolved Oxygen (%)	7.4
Dissolved Oxygen (mg/L)	.68
pH (s.u.)	6.71
ORP (mV)	-22.4
Turbidity (NTU)	43.8
Color	Clear
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
VOC	40 ml VOA	3	HCl
1,4-Dioxane	" "	" "	" "

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-14-56 PROJ #: B0064479.2017.00607

DATE : 04/26/17 LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1350	16.1	5.94		11.5	1.06	6.69	-24.2	190	404	73.72
1355	14.8	5.92		6.45	.60	6.70	-22.9		127	74.5
1400	17.4	5.86		7.7	.93	6.70	-27.1		64.2	74.32
1405	19.0	5.96		8.8	.80	6.70	-27.0		59.1	74.34
1410	18.4	5.91		6.5	.60	6.70	-25.6		50.2	74.02
1415	18.5	5.92		7.0	.64	6.70	-25.5		49.1	74.03
1420	18.2	5.94		7.1	.65	6.70	-25.3		42.9	74.03
1425	18.0	5.89		7.4	.67	6.71	-23.0		43.9	74.03
1430	S	A	M	P	L	E				
Total Depth of Well:										
Depth To Water Before Purging:			71.96							
Depth To Water After Purging:			73.95							

ARCADIS

Water Sampling Log

Project: RACER P2 | Project No.: B006447A.2017.00603 | Page: 6 of ___

Site Location: MP2 | Date: 04/26/17

Site/Well No.: MW-16-76 | Replicate No.: ~ | Code No.: ~

Weather: Cloudy 62° | Sampling Time: Begin 1105 End 1145

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	~
Land Surface Elevation (ft)	~
Sounded Well Depth (ft bmp)	82.15
Depth to Water (ft bmp)	66.159
Water-Level Elevation (ft)	~
Water Column in Well (ft)	~
Casing Diameter/Type	2"
Gallons in Well	2.9896
Gallons Pumped/Bailed Prior to Sampling	1.5
Sample Pump Intake Setting (ft bmp)	~
Purge Time	begin 1105 end 1145
Pumping Rate (ml/min)	150
Evacuation Method	

Field Parameters

Temperature (°C)	13.8
SpC (mS/cm)	2.14
CND (mS/cm)	
Dissolved Oxygen (%)	13.1
Dissolved Oxygen (mg/L)	1.27
pH (s.u.)	7.15
ORP (mV)	-76.8
Turbidity (NTU)	15.4
Color	~
Odor	~
Appearance	~
Sampling Method	Bladder
Remarks	~

Constituents Sampled	Container Description	Number	Preservative
VOC	40 ml VOA	3	HCl
1,4-dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-16-76

PROJ #: B0064479.2017.00603

DATE : 04/26/17

LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1105	18.3	1.99		102.4	9.32	7.89	18.4	150	224	67.51
1110	14.2	2.07		15.2	1.64	7.18	100.8		69.5	68.64
1115	17.7	2.10		11.8	1.16	7.15	-85.8		44.4	68.65
1120	17.4	2.11		11.5	1.10	7.16	-86.7		40.1	68.71
1125	15.4	2.08		17.4	1.791	7.16	-88.6		36.1	68.73
1130	16.1	2.08		11.5	1.11	7.15	-77.4		35.7	68.78
1135	14.1	2.14		13.0	1.25	7.15	-76.4		B 20.0	68.88
1140	13.8	2.14		13.1	1.27	7.15	-76.8		15.4	68.85
1145	S	A	M	PL	E					

Total Depth of Well:	82.15
Depth To Water Before Purging:	66.59
Depth To Water After Purging:	68.85

ARCADIS

Water Sampling Log

Project: RACER P2 | Project No.: B00649792017.0003 | Page: 5 of ___

Site Location: RACER P2 | Date: 4/26/17

Site/Well No.: MW-16-75 | Replicate No.: — | Code No.: —

Weather: overcast 60° | Sampling Time: Begin 0900 End 0945

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	74.1
Depth to Water (ft bmp)	62.73
Water-Level Elevation (ft)	[redacted]
Water Column in Well (ft)	11.37
Casing Diameter/Type	2"
Gallons in Well	1.8192
Gallons Pumped/Bailed Prior to Sampling	~2
Sample Pump Intake Setting (ft bmp)	~~100 ft~~
Purge Time	begin 0900 end 0945
Pumping Rate (ml/min)	100 ml/min
Evacuation Method	

Field Parameters

Temperature (°C)	15.0
SpC (mS/cm)	1.86
CND (mS/cm)	
Dissolved Oxygen (%)	8.8
Dissolved Oxygen (mg/L)	.88
pH (s.u.)	7.01
ORP (mV)	-95.7
Turbidity (NTU)	4.10
Color	Clear
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
VOC	40ml VOA	3	HCl
1,4-Dioxane	" "	" "	" "

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-16-75 PROJ #: B0064479.2017.00603

DATE : 5/26/17 LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0910	14.3	1.84		9.8	1.00	6.89	-85.5	100	15.1	63.69
0915	14.4	1.84		6.6	.68	6.96	-90.9	|	14.1	63.81
0920	15.2	1.83		6.1	.60	6.99	-94.9	|	11.8	63.85
0925	15.3	1.85		7.1	.71	7.01	-97.0	|	12.5	63.91
0930	14.9	1.86		8.8	.88	7.02	-96.6	|	9.74	63.68
0935	15.0	1.86		8.5	.85	7.01	-95.1	|	9.51	63.89
0940	15.0	1.86		8.8	.88	7.01	-95.7	|	9.10	63.72
0945	S	A	M	P	L	E				
Total Depth of Well:		74.1								
Depth To Water Before Purging:			62.73							
Depth To Water After Purging:			63.65							

1.

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Water Sampling Log

Project: RACER | Project No.: B0064479.2017.0003 | Page ___ of ___

Site Location: P2 | Date: 4/28/17

Site/Well No.: MW-14-55 | Replicate No.: ___ | Code No.: ___

Weather: sunny 60° | Sampling Time: Begin 1205 End 1255

Evacuation Data

Measuring Point	___
MP Elevation (ft)	___
Land Surface Elevation (ft)	___
Sounded Well Depth (ft bmp)	20.05
Depth to Water (ft bmp)	15.85
Water-Level Elevation (ft)	✓
Water Column in Well (ft)	4.2
Casing Diameter/Type	2"
Gallons in Well	.672
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	✓
Purge Time	begin 1205 end 1255
Pumping Rate (ml/min)	100
Evacuation Method	___

Field Parameters

Temperature (°C)	10.6
SpC (mS/cm)	.675
CND (mS/cm)	___
Dissolved Oxygen (%)	71.1
Dissolved Oxygen (mg/L)	7.91
pH (s.u.)	7.25
ORP (mV)	583
Turbidity (NTU)	40.1
Color	slight yellow
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
VOC	40ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-14-55

PROJ #: B0064479.2017.00603

DATE : 4/28/17

LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1205	10.2	.665		70.1	7.44	7.31	58.9	100	+++	16.90
1210	10.4	~~45.6?~~ .673		71.4	7.96	7.27	58.4	100	696	17.02
1215	10.4	.675		71.5	7.96	7.26	58.4		660	17.01
1220	10.2	.676		70.9	7.95	7.25	58.1		391	17.15
1225	11.7	.666		66.4	7.48	7.25	57.4		420	16.91
1230	10.5	.679		71.4	7.93	7.25	57.8		205	17.0
1235	10.5	.676		70.3	7.8	7.25	57.9		167	17.02
1240	10.4	.676		71.3	7.90	7.24	58.2		121	17.02
1245	10.6	.675		71.0	7.91	7.25	58.1		87	17.02
1250	10.6	.675		71.1	7.91	7.25	58.3		40.1	17.02
1255	S	A	M	P	L	E				

Total Depth of Well: 29.95

Depth To Water Before Purging: 15.85

Depth To Water After Purging: 17.02

ARCADIS

Water Sampling Log

Project ~~IW~~ TRACER Project No. B0064979.2017.00603 Page ____ of ____

Site Location P2 Date 5/1/17

Site/Well No. MW-12-18 Replicate No. ____ Code No. ____

Weather sunny 57° Sampling Time: Begin 940 End 1015

Evacuation Data		Field Parameters	
Measuring Point	TOC	Temperature (°C)	13.1
MP Elevation (ft)		SpC (mS/cm)	2.59
Land Surface Elevation (ft)		CND (mS/cm)	
Sounded Well Depth (ft bmp)	34.85	Dissolved Oxygen (%)	3.5
Depth to Water (ft bmp)	23.15	Dissolved Oxygen (mg/L)	.37
Water-Level Elevation (ft)	—	pH (s.u.)	6.90
Water Column in Well (ft)	11.70	ORP (mV)	-10.9
Casing Diameter/Type	2"	Turbidity (NTU)	9.81
Gallons in Well	1.872	Color	Clear
Gallons Pumped/Bailed Prior to Sampling	1-2	Odor	—
		Appearance	—
Sample Pump Intake Setting (ft bmp)	—	Sampling Method	Bladder
Purge Time	begin 940 end 1015	Remarks	—
Pumping Rate (ml/min)	100		
Evacuation Method			

Constituents Sampled	Container Description	Number	Preservative
VOCs	40 ml VOA	3	HCl

Sampling Personnel BK

Well Casing Volumes

Gal./Ft.	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-12-18 PROJ #: B0064479.2017.00603

DATE : 5/1/17 LOC: PZ

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0940	13.0	2.59		7.7	.76	6.75	64.0	100	32.7	23.15
0945	12.8	~~5.62~~ 2.61		4.6	.51	6.83	35.5		22.3	23.68
0950	13.7	2.58		13.7	1.50	6.87	12.0		24.1	23.82
0955	13.0	2.60		15.6	1.59	6.88	9.0		22.7	23.85
1000	13.1	2.59		3.9	.39	6.90	-8.9		11.3	23.96
1005	13.2	2.59		4.0	.40	6.89	-7.0		10.7	24.02
1010	13.1	2.59		3.5	.37	6.90	-10.1		9.81	24.03
1015	↓	A	M	P	L	E				
~~1020~~										
Total Depth of Well:		34.85								
Depth To Water Before Purging:			23.15							
Depth To Water After Purging:			24.05							

ARCADIS

Water Sampling Log

Project: RACER | Project No.: B0064479.2017.00603 | Page ___ of ___

Site Location: P2 | Date: 4/5/17

Site/Well No.: MW-12-09 | Replicate No.: ___ | Code No.: ___

Weather: Sunny 57° | Sampling Time: Begin 1125 End 1200

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	21.65
Depth to Water (ft bmp)	13.21
Water-Level Elevation (ft)	—
Water Column in Well (ft)	8.44
Casing Diameter/Type	2"
Gallons in Well	1.35
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	~
Purge Time	begin 1125 end 1200
Pumping Rate (ml/min)	100
Evacuation Method	

Field Parameters

Temperature (°C)	13.6
SpC (mS/cm)	3.02
CND (mS/cm)	
Dissolved Oxygen (%)	4.4
Dissolved Oxygen (mg/L)	.46
pH (s.u.)	6.79
ORP (mV)	-29.3
Turbidity (NTU)	19.3
Color	Clear
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
1,4-Dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-12-09 PROJ #: B0064479.2017.00003

DATE : 05-1-17 LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1125	13.2	2.85		5.9	.56	6.77	-29.9	100	33.5	13.17
1130	13.3	~~45.67~~ 2.94		3.8	.40	6.77	-29.5			25.5	13.17
1135	13.4	2.97		3.9	.41	6.77	-29.3			21.0	13.17
1140	13.3	2.98		4.0	.40	6.78	-29.4			19.7	13.17
1145	13.3	2.98		4.0	.41	6.78	-29.3			23.0	13.17
1150	13.6	3.02		4.1	.43	6.78	-29.3			21.0	13.17
1155	13.6	3.02		4.4	.46	6.79	-29.3			19.3	13.17
1200	S	A	M	P	L	E				

Total Depth of Well:	21.65
Depth To Water Before Purging:	13.21
Depth To Water After Purging:	13.17

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-49 PROJ #: B0064480.2017.00003

DATE : 5.2.17 LOC: Racer Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1525	10.7	1.71	-	35.4	3.84	7.12	-72.4	100	7.15	67.80
1530	9.9	1.67	-	44.8	4.94	7.18	-72.5	100	6.72	67.80
1535	9.8	1.70	-	40.4	4.57	7.19	-71.4	100	5.52	67.80
1540	10.2	1.69	-	41.7	4.64	7.20	-72.0	100	6.02	67.80
1545	10.5	1.69	-	40.1	4.68	7.19	-70.7	100	6.43	67.80
1550	10.6	1.69	-	39.8	4.60	7.19	-70.1	100	6.06	67.80
Total Depth of Well:		81.65								
Depth To Water Before Purging:			67.25							
Depth To Water After Purging:			67.80							

ARCADIS

Water Sampling Log

Project: Racine | Project No. 30064480.2017 | Page 1 of 2

Site Location: Plant 3 | Date: 5-2-17

Site/Well No.: MW-13-49 | Replicate No.: | Code No.:

Weather: cold, rainy | Sampling Time: Begin 1515 End 1550

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	81.65
Depth to Water (ft bmp)	67.25
Water-Level Elevation (ft)	–
Water Column in Well (ft)	14.4
Casing Diameter/Type	2" PVC
Gallons in Well	2.3
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	77'
Purge Time	begin 1515 end 1550
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	10.6
SpC (mS/cm)	1.69
CND (mS/cm)	–
Dissolved Oxygen (%)	39.8
Dissolved Oxygen (mg/L)	4.60
pH (s.u.)	7.19
ORP (mV)	-70.1
Turbidity (NTU)	6.06
Color	Clear
Odor	N
Appearance	Clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
1,4 Dioxane	40 ml vial	3	HCL

Sampling Personnel: John Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-46 PROJ #: B0064480.2017.00003

DATE : 5-2-17 LOC: Racer Lansing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1325	10.9	3.50	-	20.1	2.10	6.68	-32.3	100	63.7	66.18
1330	11.1	~~3.52~~	-	11.2	1.20	6.68	-32.0	100	52.8	66.20
1335	11.1	3.51	-	8.7	0.90	6.69	-35.6	100	47.6	66.20
1340	11.5	3.50	-	9.0	0.99	6.69	-39.2	100	70.1	66.20
1345	11.8	3.52	-	9.3	1.03	6.69	-40.8	100	114.1	66.20
1350	11.3	3.50	-	10.1	1.14	6.70	-43.1	100	71.1	66.20
1355	11.2	3.49	-	10.5	1.20	6.70	-45.5	100	56.3	66.20
1400	11.7	3.49	-	11.4	1.21	6.70	-47.0	100	43.1	66.20
1405	11.9	3.49	-	10.9	1.09	6.70	-47.7	100	33.3	66.20
1410	11.4	3.47	-	14.0	1.58	6.70	-47.6	100	53.6	66.20
1415	11.7	3.47	-	13.9	1.49	6.70	-48.0	100	66.3	66.20
1420	11.7	3.46	-	14.5	1.56	6.71	-47.7	100	60.6	66.20
1425	11.7	3.44	-	14.4	1.50	6.71	-47.6	100	59.9	66.20
~~1430~~										
Total Depth of Well:		74.63								
Depth To Water Before Purging:			65.89							
Depth To Water After Purging:			66.20							

ARCADIS

Water Sampling Log

Project: Racer | Project No. B00644801.2017 | Page 1 of 2

Site Location: Plant 3 | Date: 5-2-17

Site/Well No.: MW-13-46 | Replicate No.: | Code No.:

Weather: cold, Rainy | Sampling Time: Begin 1320 End 1425

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	74.63
Depth to Water (ft bmp)	65.89
Water-Level Elevation (ft)	—
Water Column in Well (ft)	8.47
Casing Diameter/Type	2" ~~1.5"~~ PVC
Gallons in Well	1.39
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	71'
Purge Time	begin 1320 end 1425
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	11.7
SpC (mS/cm)	3.44
CND (mS/cm)	
Dissolved Oxygen (%)	14.4
Dissolved Oxygen (mg/L)	1.50
pH (s.u.)	6.71
ORP (mV)	-47.6
Turbidity (NTU)	59.9
Color	cloudy
Odor	~
Appearance	cloudy
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
1,4 Dioxane	40ml vial	3	HCl

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : PW-14-02 PROJ #: B00644479.2017.00603

DATE : 5.2.17 LOC: Refer Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1055	8.6	3.17	-	16.3	1.93	7.47	27.9	100	45.8	70.10
1100	10.9	3.19		3.4	0.39	7.44	-5.8	100	39.1	70.10
1105	10.0	3.25		3.9	0.38	7.45	-6.5	100	29.7	70.10
1110	9.5	3.20		5.4	0.55	7.46	-1.1	100	35.6	70.10
1115	8.7	3.18		7.0	0.81	7.46	3.0	100	40.1	70.10
1120	8.2	3.20		13.6	1.10	7.48	6.4	100	39.1	70.10
1125	7.9	3.23		20.0	2.35	7.49	9.2	100	36.8	70.10
1130	8.5	3.20		33.6	3.10	7.52	4.3	100	32.6	70.10
1135	8.8	3.20		43.2	4.76	7.53	-1.6	100	43.8	70.10
1140	9.6	3.18		45.9	5.05	7.53	-7.4	100	41.7	70.10
1145	9.8	3.17		46.6	5.30	7.53	-9.3	100	40.2	70.10
1150	10.0	3.16		49.6	5.48	7.53	-17.4	100	37.6	70.10
1155	10.2	3.20		50.6	5.56	7.53	-28.4	100	35.2	70.10
1200	10.0	3.20		50.2	5.60	7.54	-25.6	100	34.9	70.10
1205	10.1	3.21		50.8	5.65	7.54	-26.9	100	37.6	70.10
Total Depth of Well:		88.10								
Depth To Water Before Purging:			70.05							
Depth To Water After Purging:			70.0							

ARCADIS

Water Sampling Log

Project: Racer Landing | Project No.: B00644 79.2017 | Page: 1 of 2

Site Location: Plant 2 | Date: 5-2-17

Site/Well No.: PW-14-02 | Replicate No.: | Code No.:

Weather: cold, Rainy | Sampling Time: Begin 1035 End 1205

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	88.10
Depth to Water (ft bmp)	70.05
Water-Level Elevation (ft)	–
Water Column in Well (ft)	18.05
Casing Diameter/Type	6" PVC
Gallons in Well	26.53
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	76'
Purge Time	begin 1035 end 1205
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	10.1
SpC (mS/cm)	3.21
CND (mS/cm)	–
Dissolved Oxygen (%)	50.8
Dissolved Oxygen (mg/L)	5.65
pH (s.u.)	7.54
ORP (mV)	-26.9
Turbidity (NTU)	37.6
Color	cloudy
Odor	N
Appearance	cloudy
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs, 1,4 Dioxane	40 ml vial	3	HCl

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-43 PROJ #: B0064479.2017.00603

DATE : 5-2-17 LOC: Racer Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0850	8.2	2.97	-	18.9	2.20	7.02	-39.6	100	27.9	70.45
0855	8.2	~~49.62~~ 3.03	-	23.9	2.78	7.00	-31.0	100	59.1	70.45
0900	8.5	3.07	-	30.5	3.50	7.00	-27.0	100	43.2	70.45
0905	8.5	2.97	-	19.1	2.28	7.05	-35.1	100	85.6	70.45
0910	8.5	2.96	-	18.1	2.10	7.05	-35.0	100	110	70.45
0915	8.6	2.95	-	17.0	2.01	7.06	-35.3	100	129	70.45
0920	9.0	2.95	-	16.6	1.88	7.04	-30.9	100	107	70.45
0925	8.5	2.96	-	17.6	1.95	7.05	-29.1	100	105	70.45
0930	8.2	2.97	-	18.4	2.10	7.05	-28.6	100	124	70.45
0935	8.1	2.99	-	19.5	2.16	7.06	-25.2	100	138	70.45
0940	7.9	2.98	-	16.3	1.88	7.05	-21.2	100	120	70.45
0945	8.3	2.98	-	16.9	1.90	7.05	-20.6	100	115	70.45
0950	8.5	2.98	-	17.1	1.89	7.05	-17.1	100	129	70.45
0955	8.6	2.98	-	17.2	1.90	7.05	-17.5	100	135	70.45
1000	8.7	2.98	-	17.2	1.91	7.04	-17.1	100	130	70.45
Total Depth of Well:		80.60								
Depth To Water Before Purging:			70.30							
Depth To Water After Purging:										

ARCADIS

Water Sampling Log

Project: Racer Landing | Project No. B0016479.2017 | Page 1 of 2

Site Location: Plant 2 | Date: 5.2.17

Site/Well No.: MW-13-43 | Replicate No.: | Code No.:

Weather: cold, Rainy | Sampling Time: Begin 0830 End 1000

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	-
Land Surface Elevation (ft)	-
Sounded Well Depth (ft bmp)	80.60
Depth to Water (ft bmp)	70.36
Water-Level Elevation (ft)	-
Water Column in Well (ft)	10.24
Casing Diameter/Type	2" PVC
Gallons in Well	1.64
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	77'
Purge Time	begin 0830 end 1000
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	8.7
SpC (mS/cm)	2.98
CND (mS/cm)	-
Dissolved Oxygen (%)	17.2
Dissolved Oxygen (mg/L)	1.91
pH (s.u.)	7.24
ORP (mV)	-17.1
Turbidity (NTU)	130
Color	cloudy
Odor	N
Appearance	Cloudy
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
1,4 Dioxane	40ml vial	3	HCl

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-16-82 PROJ #: BDDL04479.2017.00603

DATE : 5-1-17 LOC: Racci Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1505	16.2	113	–	21.5	2.11	7.16	-115.5	100	12.3	69.80
1510	16.1	1.13	–	11.8	1.18	7.15	-114.2	100	4.72	69.80
1515	15.7	1.13	–	11.0	1.12	7.17	-107.4	100	4.35	69.80
1520	15.9	1.12	–	17.8	1.80	7.18	-101.1	100	5.29	69.80
1525	16.1	1.12	–	20.6	2.01	7.19	-98.9	100	6.09	69.80
1530	16.0	1.12	–	28.1	2.84	7.24	-98.0	100	5.45	69.80
1535	15.9	1.12	–	29.1	2.95	7.25	-97.4	100	5.10	69.80
1540	15.8	1.12	–	30.1	3.10	7.28	-96.1	100	5.21	69.80
1545	15.8	1.12	–	31.1	3.03	7.29	-95.7	100	5.05	69.80
Total Depth of Well:		78.30								
Depth To Water Before Purging:			69.75							
Depth To Water After Purging:										

ARCADIS

Water Sampling Log

Project: Roller | Project No.: B0064979.2017 | Page: 1 of 2

Site Location: Plant 2 | Date: 5-1-17

Site/Well No.: MW-16-82 | Replicate No.: | Code No.:

Weather: cool, cloudy | Sampling Time: Begin 1450 End 1545

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	78.30
Depth to Water (ft bmp)	69.75
Water-Level Elevation (ft)	–
Water Column in Well (ft)	8.55
Casing Diameter/Type	2" PVC
Gallons in Well	1.37
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	75'
Purge Time	begin 1450 end 1545
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	15.8
SpC (mS/cm)	1.12
CND (mS/cm)	–
Dissolved Oxygen (%)	31.1
Dissolved Oxygen (mg/L)	3.03
pH (s.u.)	7.29
ORP (mV)	-95.7
Turbidity (NTU)	5.05
Color	clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC's	40ml vial	3	HCl

Sampling Personnel: John Pisarchick

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-14-54 PROJ #: B0064479.2017.00003

DATE : 5-1-17 LOC: Power Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1345	12.8	1.74	—	6.2	0.63	8.28	-210.6	100	6.79	12.75
1350	12.7	~~1.80~~ 1.71	-	1.8	0.22	8.26	-261.8	100	3.26	12.75
1355	12.6	1.68	-	2.0	0.20	8.26	-275.3	100	3.03	12.75
1400	12.6	1.67	-	1.8	0.19	8.26	-282.0	100	2.94	12.75
1405	12.7	1.62	-	1.8	0.19	8.27	-279.1	100	2.26	12.75
Total Depth of Well:		19.07								
Depth To Water Before Purging:			12.71							
Depth To Water After Purging:			12.75							

ARCADIS

Water Sampling Log

Project: Racer | Project No. 30064479.2017 | Page 1 of 2

Site Location: Plant 2 | Date: 5-1-17

Site/Well No.: MW-14-54 | Replicate No.: | Code No.:

Weather: cloudy, cool | Sampling Time: Begin 1340 End 1405

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	-
Land Surface Elevation (ft)	-
Sounded Well Depth (ft bmp)	19.07
Depth to Water (ft bmp)	12.71
Water-Level Elevation (ft)	-
Water Column in Well (ft)	6.36
Casing Diameter/Type	2" PVC
Gallons in Well	1.02
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	17'
Purge Time	begin 1340 end 1405
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	12.7
SpC (mS/cm)	1.62
CND (mS/cm)	-
Dissolved Oxygen (%)	1.8
Dissolved Oxygen (mg/L)	0.19
pH (s.u.)	8.27
ORP (mV)	-279.1
Turbidity (NTU)	2.26
Color	clear
Odor	~
Appearance	clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC's	40 ml vial	3	HCl

Sampling Personnel: John Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

Water Sampling Log

Project: Rozzi | Project No.: B0064479.2017 | Page: 1 of 2

Site Location: Plant 2 | Date: 5-1-17

Site/Well No.: MW-01(2) | Replicate No.: MS/MSD | Code No.:

Weather: Rainy, Warm | Sampling Time: Begin 1000 End 1125

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	15.95
Depth to Water (ft bmp)	6.49
Water-Level Elevation (ft)	—
Water Column in Well (ft)	9.46
Casing Diameter/Type	2" PVC
Gallons in Well	0.95
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	13'
Purge Time	begin 1000 end 1125
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	15.7
SpC (mS/cm)	5.56
CND (mS/cm)	—
Dissolved Oxygen (%)	3.7
Dissolved Oxygen (mg/L)	0.38
pH (s.u.)	6.79
ORP (mV)	-39.4
Turbidity (NTU)	9.89
Color	clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	MS/MSD collected

Constituents Sampled	Container Description	Number	Preservative
VOCs	40ml vial	9	HCL

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-01(2) PROJ #: B0064479.2017.00603

DATE : 5-1-17 LOC: Racci Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1015	12.8	4.43	-	33.7	3.52	6.79	-17.0	100	11.7	7.42
1020	14.4	4.60	-	29.1	2.90	6.79	10.1	100	9.26	8.50
1025	15.4	4.77	-	25.1	2.45	6.78	33.7	100	7.03	8.28
1030	16.4	5.35		11.2	1.05	6.76	-34.7	100	35.9	
1035			Pump slipped down well casing							
			reset pump							
1035										
1040	14.1	4.47	-	42.6	4.32	6.85	-18.4	100	23.3	8.20
1045	14.1	4.75	-	37.3	3.70	6.83	-19.0	100	14.1	8.20
1050	14.3	5.03	-	25.9	2.60	6.82	-23.5	100	13.3	8.25
1055	14.3	5.34	-	12.8	1.28	6.80	-29.7	100	14.3	8.30
1100	14.16	5.31	-	11.2	1.10	6.80	-30.6	100	13.9	8.30
1105	15.2	5.40		8.5	0.80	6.79	-35.2	100	12.1	8.30
1110	15.5	5.50		5.3	0.52	6.79	-36.2	100	11.9	8.31
1115	15.6	5.53		4.0	0.40	6.79	-38.3	100	10.4	8.31
1120	15.6	5.55		3.8	0.38	6.79	-39.1	100	9.91	8.31
1125	15.7	5.56		3.7	0.38	6.79	-39.4	100	9.89	8.31
Total Depth of Well:		15.95								
Depth To Water Before Purging:			6.49							
Depth To Water After Purging:			8.31							

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-14-57 PROJ #: B0064479.2017.00603

DATE : 4-28-17 LOC: Racer Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1300	12.5	0.86		21.0	2.23	7.35	41.6	100	38.9	12.90
1305	12.8	0.85		25.1	2.79	7.36	41.3	100	22.9	12.90
1310	12.9	0.83		27.6	2.87	7.38	41.6	100	19.7	12.85
1315	12.4	0.84		32.4	3.40	7.38	42.9	100	14.7	12.85
1320	12.6	0.83		31.1	3.31	7.39	45.1	100	14.4	12.85
1325	12.7	0.83		30.8	3.28	7.39	45.9	100	13.9	12.85

Total Depth of Well:	21.40
Depth To Water Before Purging:	12.57
Depth To Water After Purging:	1285

ARCADIS

Water Sampling Log

Project: Racer | Project No.: B0016479.2017 | Page: 1 of 2

Site Location: Plant 2 | Date: 4-28-17

Site/Well No.: MW-14-57 | Replicate No.: | Code No.:

Weather: sunny, warm | Sampling Time: Begin 1255 End 1325

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	21.40
Depth to Water (ft bmp)	12.57
Water-Level Elevation (ft)	–
Water Column in Well (ft)	8.83
Casing Diameter/Type	2" PVC
Gallons in Well	1.41
Gallons Pumped/Bailed Prior to Sampling	~ 1
Sample Pump Intake Setting (ft bmp)	19'
Purge Time	begin 1255 end 1325
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	12.7
SpC (mS/cm)	0.83
CND (mS/cm)	–
Dissolved Oxygen (%)	30.8
Dissolved Oxygen (mg/L)	3.28
pH (s.u.)	7.38
ORP (mV)	45.9
Turbidity (NTU)	13.9
Color	clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC's, 1,4 Dioxane	40ml vial	3	HCL

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-16-81 PROJ #: B0064479.2017.00603

DATE : 4.28.17 LOC: Racer Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1030	14.6	3.26		9.5	0.93	6.99	-95.3	100	72.0	69.80
1035	14.7	3.24		29.0	2.88	6.96	-87.9	100	57.3	69.80
1040	15.3	3.26		20.9	2.06	6.95	-81.8	100	44.1	69.80
1045	15.5	3.28		11.2	1.11	6.95	-83.4	100	36.0	69.80
1050	15.7	3.28		11.1	1.07	6.95	-83.4	100	38.2	69.80
1055	15.5	3.27		15.1	1.50	6.94	-80.6	100	59.1	69.80
1100	14.8	3.26		7.3	0.70	6.93	-78.7	100	74.6	69.80
1105	14.7	3.25		3.0	0.29	6.93	-79.9	100	87.6	69.80
1110	14.9	3.23		2.1	0.21	6.93	-80.5	100	79.6	69.80
1115	15.2	3.26		2.6	0.25	6.93	-81.8	100	69.5	69.80
1120	15.4	3.25		2.5	0.26	6.92	-82.8	100	61.6	69.80
1125	15.6	3.25		2.9	0.28	6.92	-83.3	100	58.6	69.80
1130	15.9	3.24		2.7	0.26	6.92	-83.4	100	60.3	69.80
Total Depth of Well:		78.30								
Depth To Water Before Purging:			69.24							
Depth To Water After Purging:			69.80							

ARCADIS

Water Sampling Log

Project: Racer | Project No.: B0064479.2017 | Page: 1 of 2

Site Location: Plant 2 | Date: 4-28-17

Site/Well No.: MW-16-81 | Replicate No.: Dup-02 | Code No.:

Weather: cool, cloudy | Sampling Time: Begin 1020 End 1130

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	-
Land Surface Elevation (ft)	-
Sounded Well Depth (ft bmp)	69.24
Depth to Water (ft bmp)	78.30
Water-Level Elevation (ft)	-
Water Column in Well (ft)	9.06
Casing Diameter/Type	2" PVC
Gallons in Well	1.45
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	76'
Purge Time	begin 1020 end 1130
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	15.9
SpC (mS/cm)	3.24
CND (mS/cm)	-
Dissolved Oxygen (%)	2.7
Dissolved Oxygen (mg/L)	0.26
pH (s.u.)	6.92
ORP (mV)	-83.4
Turbidity (NTU)	60.3
Color	cloudy
Odor	N
Appearance	cloudy
Sampling Method	Bladder Pump
Remarks	Dup-02 collected EBD002-042817 collected

Constituents Sampled	Container Description	Number	Preservative
VOC's, 1,4 Dioxane	40 ml vial	3	HCl

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-14-62 PROJ #: B0064479.2017.00603

DATE : 4.28.17 LOC: Racer Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0900	10.8	0.72		~~2.5~~	0.25	11.88	-227.6	100	48.3	6.35
0905	10.7	0.73		1.5	0.13	11.90	-240.1	100	6.94	6.36
0910	10.7	0.72		1.2	0.11	11.90	-242.2	100	4.60	6.36
0915	10.8	0.71		1.1	0.10	11.89	-243.3	100	2.43	6.36
0920	10.8	0.71		1.0	0.10	11.89	-244.0	100	2.10	6.36
Total Depth of Well:		19.63								
Depth To Water Before Purging:			5.80							
Depth To Water After Purging:			6.36							

ARCADIS

Water Sampling Log

Project: Racer | Project No.: B0064479.2017 | Page: 2 of 2

Site Location: Plant 2 | Date: 4-28-17

Site/Well No.: MW-14-62 | Replicate No.: Dup-01 | Code No.:

Weather: | Sampling Time: Begin 2850 End 0920

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	–
Land Surface Elevation (ft)	–
Sounded Well Depth (ft bmp)	19.63
Depth to Water (ft bmp)	5.80
Water-Level Elevation (ft)	–
Water Column in Well (ft)	13.83
Casing Diameter/Type	2" PVC
Gallons in Well	2.21
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	17'
Purge Time	begin 0850 end 0920
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	10.8
SpC (mS/cm)	0.71
CND (mS/cm)	–
Dissolved Oxygen (%)	1.0
Dissolved Oxygen (mg/L)	0.10
pH (s.u.)	11.89
ORP (mV)	-244.0
Turbidity (NTU)	2.10
Color	clear
Odor	~
Appearance	clear
Sampling Method	Bladder Pump
Remarks	Dup-01 collected FB0002_042817 collected

Constituents Sampled	Container Description	Number	Preservative
VOCs, 1,4 Dioxane	40ml vial	3	HCl

Sampling Personnel: Jake Pisarkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE 1 OF 2

WELL : MW-14-58 PROJ #: B0064479.2017.00603

DATE : 4.27.17 LOC: Rocks - Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1545	14.1	6.21		1.5	0.16	6.61	-68.4	100	318	13.85
1550	14.2	6.18		1.5	0.15	6.62	-69.6	100	208	13.85
1555	14.1	6.11		1.3	0.13	6.62	-70.1	100	175	13.85
1600	14.0	5.97		1.2	0.12	6.63	-70.8	100	156	13.85
1605	13.9	5.85		1.3	0.13	6.65	-71.9	100	99.1	13.85
1610	13.8	5.66		1.3	0.13	6.67	-72.9	100	84.4	13.85
1615	13.8	5.44		1.1	0.10	6.68	-74.4	100	55.9	13.85
1620	13.7	5.27		1.3	0.12	6.69	-75.0	100	43.7	13.85
1625	13.7	5.17		1.4	0.15	6.71	-74.9	100	25.9	13.85
1630	13.7	5.01		1.5	0.15	6.73	-75.3	100	22.4	13.85
1635	13.7	4.97		1.6	0.16	6.74	-74.9	100	20.9	13.85
1640	13.7	4.95		1.7	0.16	6.74	-75.1	100	20.1	13.85
Total Depth of Well:		29.92								
Depth To Water Before Purging:			13.05							
Depth To Water After Purging:			13.85							

ARCADIS

Water Sampling Log

Project: Racer | Project No.: B0064479.2017 | Page: 2 of 2

Site Location: Plant 2 | Date: 4-27-17

Site/Well No.: MW-14-58 | Replicate No.: | Code No.:

Weather: Windy, cool | Sampling Time: Begin 1530 End 1640

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	29.92
Depth to Water (ft bmp)	13.65
Water-Level Elevation (ft)	~~+0.27~~
Water Column in Well (ft)	16.27
Casing Diameter/Type	2"
Gallons in Well	2.60
Gallons Pumped/Bailed Prior to Sampling	~ 1
Sample Pump Intake Setting (ft bmp)	27'
Purge Time	begin 1530 end 1640
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	13.7
SpC (mS/cm)	4.95
CND (mS/cm)	—
Dissolved Oxygen (%)	1.7
Dissolved Oxygen (mg/L)	0.16
pH (s.u.)	6.74
ORP (mV)	-75.1
Turbidity (NTU)	20.1
Color	clear
Odor	N
Appearance	clear
Sampling Method	Bladder Pump
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC, 1,4 Dioxane	40ml vial	3	HCL

Sampling Personnel: John Pigalkiewicz

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-14-61 PROJ #: B001044479.2017.00603

DATE : 4-27-17 LOC: Racer Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1320	16.6	0.96		24.2	2.35	7.07	-71.2	100	69.5	72.10
1325	16.4	0.97		26.0	2.50	7.09	-72.0	100	60.1	72.10
1330	16.2	0.97		27.8	2.72	7.10	-72.7	100	55.7	72.10
1335	16.1	0.96		31.9	3.02	7.11	-73.1	100	89.6	72.10
1340	15.6	0.95		51.2	4.89	7.21	-70.8	100	121	72.10
1345	15.9	0.95		39.5	3.92	7.18	-71.3	100	142	72.10
1350	15.6	0.96		36.1	3.56	7.17	-74.3	100	69.5	72.10
1355	15.9	0.95		32.2	3.14	7.17	-75.5	100	58.0	72.10
1400	15.7	0.95		31.7	3.14	7.17	-75.2	100	40.1	72.10
1405	16.0	0.95		33.5	3.28	7.18	-77.0	100	32.5	72.10
1410	15.8	0.95		32.4	3.18	7.17	-76.8	100	26.7	72.10
1415	15.6	0.95		30.5	3.11	7.17	-76.7	100	22.6	72.10
1420	15.1	0.95		31.9	3.18	7.16	-75.9	100	20.1	72.10
1425	15.0	0.95		31.2	3.15	7.17	-75.0	100	19.6	72.10
Total Depth of Well:		78.30								
Depth To Water Before Purging:			72.06							
Depth To Water After Purging:			72.10							

ARCADIS

Water Sampling Log

Project: RACER | Project No. B0064479.2017.00003 | Page ___ of ___

Site Location: P2 | Date: 5/1/17

Site/Well No.: MW-15-73 | Replicate No. ___ | Code No. ___

Weather: Cloudy 57° | Sampling Time: Begin ~~1345~~ 1430 End 1505

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	82.20
Depth to Water (ft bmp)	74.01
Water-Level Elevation (ft)	—
Water Column in Well (ft)	8.19
Casing Diameter/Type	2"
Gallons in Well	1.310
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin ~~1345~~ 1430 end 1505
Pumping Rate (ml/min)	100
Evacuation Method	—

Field Parameters

Temperature (°C)	13.6
SpC (mS/cm)	2.85
CND (mS/cm)	
Dissolved Oxygen (%)	4.4
Dissolved Oxygen (mg/L)	.47
pH (s.u.)	6.82
ORP (mV)	-75.4
Turbidity (NTU)	35.7
Color	—
Odor	✓
Appearance	—
Sampling Method	Bladder
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC	40 ml VOA	3	HCl
1,4-Dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-15-73 PROJ #: B0064979.2017.00603

DATE : 05/01/17 LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
(1430 [illegible]	14.3	2.86		9.1	.91	6.80	-69.5	100	325	74.01
1435	14.1	~~45.67~~ 2.86		7.3	.73	6.80	-70.4	|	326	74.25
1440	13.6	2.84		[illegible]	.89	6.81	-74.9	|	187	74.39
1445	13.8	2.85		7.0	.70	6.82	-75.2	|	117	74.41
1450	13.8	2.85		5.6	.56	6.82	-75.4	|	89.0	74.41
1455	13.6	2.85		4.3	.47	6.82	-75.5	|	51.2	74.41
1500	13.6	2.85		4.4	.47	6.82	-75.4		35.7	74.41
1505	S	A	M	P	L	E				

Total Depth of Well:	82.20	
Depth To Water Before Purging:	74.01	
Depth To Water After Purging:	74.41	

ARCADIS

Water Sampling Log

Project: RACER | Project No.: B00644792017.0007 | Page ___ of ___

Site Location: PZ | Date: 5/15/17

Site/Well No.: MW-16-80 | Replicate No.: ___ | Code No.: ___

Weather: Sunny 57° | Sampling Time: Begin 1545 End 1630

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	74.20
Depth to Water (ft bmp)	66.08
Water-Level Elevation (ft)	~~[illegible]~~
Water Column in Well (ft)	8.120
Casing Diameter/Type	2"
Gallons in Well	1.299
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1545 end 1630
Pumping Rate (ml/min)	100
Evacuation Method	✓

Field Parameters

Temperature (°C)	12.1
SpC (mS/cm)	2.31
CND (mS/cm)	
Dissolved Oxygen (%)	3.2
Dissolved Oxygen (mg/L)	.34
pH (s.u.)	6.97
ORP (mV)	-89.4
Turbidity (NTU)	61.2
Color	—
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
VOC	40 ml VOA	3	HCl
1,4-Dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-16-80 PROJ #: B006477.2017.00603

DATE : 5/1/17 LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1545	12.7	2.36		10.4	1.06	7.07	-80.6	190	421	67.06
1550	12.3	~~45.62~~ 2.31		7.8	.82	7.06	-80.1		301	67.30
1555	12.2	2.26		8.3	.87	7.05	-76.4		175	68.15
1600	12.1	2.27		7.6	.80	7.04	-76.5		106	68.05
1605	12.1	2.27		6.4	.67	7.02	-77.7		86.1	68.05
1610	12.1	2.28		6.3	.67	7.01	-78.2		80.5	68.05
1615	12.1	2.29		5.0	.55	7.00	-82.2		65.1	68.00
1620	12.1	2.31		3.1	.35	6.97	-88.9		64.6	68.00
1625	12.1	2.31		3.2	.34	6.97	-89.4		61.2	68.01
1630	S	A	M	P	L	E				
Total Depth of Well:		74.20								
Depth To Water Before Purging:			66.08							
Depth To Water After Purging:			68.01							

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-14-63 PROJ #: B0064479.2017.00603

DATE : 05/02/17 LOC: PZ

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0840	11.7	1.18		2.1	.23	6.86	-66.1	100	+++	69.05
0845	11.5	~~45.6?~~ 1.18		6.2	.67	6.86	-55.21		417	68.95
0850	10.1	1.18		5.1	.56	6.87	-36.3		302	68.95
0855										
0900			Dropped Pump, will purge to reduce Turbidity							
0905										
0925	9.7	1.19		2.3	.27	6.89	-52.9		511	68.69
0930	8.3	1.19		2.6	.31	6.89	-53.8		515	68.69
0935	8.0	1.18		3.4	.39	6.89	-51.5		507	68.69
0940	8.0	1.19		3.4	.41	6.84	-51.5		518	68.69
0945	8.0	1.18		3.2	.38	6.89	-51.5		507	68.69
0950	8.4	1.18		3.2	.39	6.89	-51.6		612	68.65
0955	8.7	1.18		3.0	.39	6.89	-52.7		500	68.65
	S	A	M	P	L	E				

Total Depth of Well:	
Depth To Water Before Purging:	69.05
Depth To Water After Purging:	

ARCADIS

Water Sampling Log

Project: RACER Project No. B0064479.2017.0063 Page ___ of ___

Site Location: P2 Date: 05/02/17

Site/Well No.: MW-14-63 Replicate No. ___ Code No. ___

Weather: Cloudy 43° Sampling Time: Begin 0840 End 0955

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	77.6
Depth to Water (ft bmp)	69.05
Water-Level Elevation (ft)	—
Water Column in Well (ft)	8.55
Casing Diameter/Type	2"
Gallons in Well	1.368
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 0840 end 0955
Pumping Rate (ml/min)	100
Evacuation Method	

Field Parameters

Temperature (°C)	8.7
SpC (mS/cm)	1.18
CND (mS/cm)	
Dissolved Oxygen (%)	3.0
Dissolved Oxygen (mg/L)	.34
pH (s.u.)	6.89
ORP (mV)	-52.7
Turbidity (NTU)	500
Color	Brown. Gy
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
1,4-dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-16-83

PROJ #: 60064479.2017.00603

DATE : 05/02/17

LOC: P2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1105	10.6	2.54		10.7	1.22	6.93	-65.2	100	[illegible]331	75.81
1110	10.3	45.6? 2.53		11.7	1.29	6.95	-65.7		[illegible]27	75.85
1115	10.3	2.53		10.3	1.20	6.95	-65.8		211	75.85
1120	10.3	2.53		10.3	1.19	6.95	-68.1		205	75.85
1125	10.4	2.53		10.5	1.20	6.95	-68.0		151 [illegible]	75.85
1140	10.6	2.54		10.7	1.23	6.96	-66.7		150 [illegible]	75.85
1145	[illegible]S	A	M	P	L	E				

Total Depth of Well:	79.5
Depth To Water Before Purging:	73.6
Depth To Water After Purging:	75.85

ARCADIS

Water Sampling Log

Project: RASER | Project No.: B0064479.2017.00003 | Page ___ of ___

Site Location: P2 | Date: 05/02/17

Site/Well No.: MW-16-83 | Replicate No.: ___ | Code No.: ___

Weather: Drizzle 43° | Sampling Time: Begin 1105 End 1140

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	___
Land Surface Elevation (ft)	___
Sounded Well Depth (ft bmp)	79.5
Depth to Water (ft bmp)	73.6
Water-Level Elevation (ft)	—
Water Column in Well (ft)	5.9
Casing Diameter/Type	2"
Gallons in Well	.944
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	___
Purge Time	begin 1105 end 1140
Pumping Rate (ml/min)	___
Evacuation Method	___

Field Parameters

Temperature (°C)	10.6
SpC (mS/cm)	2.54
CND (mS/cm)	___
Dissolved Oxygen (%)	10.7
Dissolved Oxygen (mg/L)	1.23
pH (s.u.)	6.96
ORP (mV)	-66.7
Turbidity (NTU)	150
Color	Light Grey
Odor	—
Appearance	Small amount of silt was constant during Purge
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
VOC	40 ml VOA	3	HCl
1,4-Dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-13-34   PROJ #: B0064479.2017.00603

DATE : 05/02/17   LOC: P3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1400	11.5	1.69		19.6	2.12	7.28	34.5	100	55	67.18
1405	11.4	~~45.6?~~ 1.68		19.2	2.07	7.27	34.6	|	42	67.34
1410	11.7	1.68		15.1	1.6	~~7.24~~ 7.23	26.9	|	15.5	67.67
1415	11.6	1.68		15.0	1.59	7.23	26.5	|	11.7	67.66
1420	11.1	1.68		9.6	1.06	7.19	-16.0	|	10.9	67.58
1425	11.1	1.64		9.0	1.00	7.19	-32.6	|	10.5	67.39
1430	10.9	1.72		8.9	1.01	7.19	-31.0	|	9.81	67.41
1435	S	A	M	P	L	E				

Total Depth of Well:	79.00
Depth To Water Before Purging:	66.40
Depth To Water After Purging:	67.41

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Water Sampling Log

Project: RACER Project No. B0064479.2017.00603 Page ___ of ___

Site Location: P3 Date: 05/02/17

Site/Well No.: MW-13-34 Replicate No. ___ Code No. ___

Weather: Cloudy 46° Sampling Time: Begin 1900 End 1935

Evacuation Data

Measuring Point	TOS
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	~~66.40~~ 79.00
Depth to Water (ft bmp)	66.40
Water-Level Elevation (ft)	—
Water Column in Well (ft)	12.600
Casing Diameter/Type	2"
Gallons in Well	2.016
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 1400 end 1435
Pumping Rate (ml/min)	100
Evacuation Method	

Field Parameters

Temperature (°C)	10.4
SpC (mS/cm)	1.72
CND (mS/cm)	
Dissolved Oxygen (%)	8.9
Dissolved Oxygen (mg/L)	1.01
pH (s.u.)	7.19
ORP (mV)	-31.0
Turbidity (NTU)	[redacted] 10
Color	—
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOC	40ml VOA	3	HCl
1,4-dioxane	40ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-13-48 PROJ #: B0064479.2017.00607

DATE : 05/02/17 LOC: PJ

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1530	11.1	2.30		3.0	.30	6.75	-62.3	100	50.7	61.95
1535	11.0	~~45.6?~~ 2.31		2.8	.31	6.76	-62.7		31.0	61.44
1540	11.1	2.32		3.3	.37	6.76	-63.0		28.9	61.45
1545	11.0	2.35		2.7	.26	6.76	-64.2		21.0	61.45
1550	11.0	2.35		2.8	.27	6.76	-64.9		19.1	61.45
1555	11.1	2.35		2.6	.26	6.76	-64.9		15.5	61.45
1600	11.3	2.36		2.6	.26	6.76	-64.9		13.0	61.45
1605	11.5	2.37		2.5	.25	6.76	-65.1		11.1	61.45
	S	A	M	P	L	E				

Total Depth of Well:	79.00
Depth To Water Before Purging:	61.47
Depth To Water After Purging:	61.45

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Water Sampling Log

Project: RACER | Project No. B0064479.2017.0060.01 | Page ____ of ____

Site Location: P3 | Date: 05/02/17

Site/Well No.: MW-17-48 | Replicate No.: DUP-07 | Code No. ____

Weather: Cloudy 46° | Sampling Time: Begin 1530 End 1605

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	~
Land Surface Elevation (ft)	~
Sounded Well Depth (ft bmp)	70.00
Depth to Water (ft bmp)	61.47
Water-Level Elevation (ft)	—
Water Column in Well (ft)	~~w~~ 8.530
Casing Diameter/Type	2"
Gallons in Well	1.364
Gallons Pumped/Bailed Prior to Sampling	n/l
Sample Pump Intake Setting (ft bmp)	
Purge Time	begin 1530 end 1605
Pumping Rate (ml/min)	
Evacuation Method	

Field Parameters

Temperature (°C)	
SpC (mS/cm)	
CND (mS/cm)	
Dissolved Oxygen (%)	
Dissolved Oxygen (mg/L)	
pH (s.u.)	
ORP (mV)	
Turbidity (NTU)	
Color	
Odor	
Appearance	
Sampling Method	
Remarks	

Constituents Sampled	Container Description	Number	Preservative

Sampling Personnel: ____

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

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YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-13-23 PROJ #: B0064479.2017.00623

DATE : 05/03/17 LOC: P3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0925	10.4	~~1.58~~		21.1	2.38	6.76	55.5	100	+++	72.85
0930	10.3	~~45.0?~~ 1.60		20.8	2.33	6.76	55.1		+++	73.05
0935	9.7	1.60		20.6	2.34	6.77	53.5		+++	73.16
0940	9.9	1.60		20.4	2.26	6.76	53.0		+++	73.19
0945	11.5	1.61		14.3	1.53	6.76	48.9		339	73.7
0950	12.0	1.61		14.1	1.47	6.76	48.7		328	74.03
0955	11.7	1.60		12.0	1.33	6.76	48.9		316	74.11
1000	10.1	1.61		10.8	1.20	6.73	49.1		310	74.08
1005	10.6	1.61		10.5	1.15	6.73	49.5		319	74.15
1010	9.9	1.61		10.8	1.21	6.77	50.5		307	74.19
1015	S	A	M	P	L	E				

Total Depth of Well:	74.90	
Depth To Water Before Purging:		72.03
Depth To Water After Purging:		74.26

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Water Sampling Log

Project: RACER | Project No. B0064479.2017.0003 | Page ___ of ___

Site Location: P3 | Date: 05/03/17

Site/Well No.: MW-13-823 | Replicate No.: ✓ | Code No.: ✓

Weather: Sunny 41° | Sampling Time: Begin 0925 End 1015

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	~
Land Surface Elevation (ft)	~
Sounded Well Depth (ft bmp)	74.00
Depth to Water (ft bmp)	72.03
Water-Level Elevation (ft)	—
Water Column in Well (ft)	1.970
Casing Diameter/Type	2"
Gallons in Well	.315
Gallons Pumped/Bailed Prior to Sampling	~1
Sample Pump Intake Setting (ft bmp)	✓
Purge Time	begin 0925 end 1015
Pumping Rate (ml/min)	100
Evacuation Method	✓

Field Parameters

Temperature (°C)	9.9
SpC (mS/cm)	1.61
CND (mS/cm)	
Dissolved Oxygen (%)	10.8
Dissolved Oxygen (mg/L)	1.21
pH (s.u.)	6.97
ORP (mV)	50.5
Turbidity (NTU)	307
Color	~Tan
Odor	~
Appearance	~
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
1,4-dioxane	40ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

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YSI/LOW FLOW SAMPLING LOG

PAGE ___ OF ___

WELL : MW-019 PROJ #: B0064479.2017.00603

DATE : 5/3/17 LOC: P3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1135	14.1	~~.183~~		72.1	7.57	7.97	22.3	100	+++	55.33
1140	14.0	~~45.6?~~ .182		70.1	7.16	7.94	23.4		+++	55.39
1145	14.1	~~.183~~ .182		65.5	6.75	7.82	28.5		933	55.29
1150	14.0	.182		64.7	6.62	7.83	28.7		915	55.30
1155	14.0	.194		61.6	6.28	7.73	28.4		671	55.45
1200	14.1	.190		62.9	6.40	7.78	28.4		605	55.41
1205	14.0	.185		61.8	6.37	7.77	28.6		725	5535
1210	14.0	.220		59.4	6.18	7.72	32.2		691	55.35
1215	14.0	.225		58.0	6.01	7.70	33.2		455	55.35
1220	14.1	.235		54.2	5.68	7.69	34.7		423	55.35
1225	S	A	m	P	L	E				

Total Depth of Well:	65'
Depth To Water Before Purging:	55.33
Depth To Water After Purging:	55.35

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Water Sampling Log

Project: RACER | Project No.: B0064479.2017.00003 | Page ___ of ___

Site Location: P3 | Date: 05/03/17

Site/Well No.: MW-19 | Replicate No.: — | Code No.: —

Weather: Sunny 41° | Sampling Time: Begin 1135 | End ___

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	65.00
Depth to Water (ft bmp)	55.33
Water-Level Elevation (ft)	—
Water Column in Well (ft)	9.670
Casing Diameter/Type	2"
Gallons in Well	1.547
Gallons Pumped/Bailed Prior to Sampling	~1.5
Sample Pump Intake Setting (ft bmp)	—
Purge Time	begin 1135 end ___
Pumping Rate (ml/min)	100
Evacuation Method	—

Field Parameters

Temperature (°C)	14.1
SpC (mS/cm)	.235
CND (mS/cm)	~~.34~~
Dissolved Oxygen (%)	54.2
Dissolved Oxygen (mg/L)	5.68
pH (s.u.)	7.69
ORP (mV)	34.7
Turbidity (NTU)	423
Color	tan
Odor	—
Appearance	—
Sampling Method	Bladder
Remarks	—

Constituents Sampled	Container Description	Number	Preservative
1,4-Dioxane	40 ml VOA	3	HCl

Sampling Personnel: BF

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

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Water Sampling Log

Project RACER Lansing Plant 6 Project No. B0064481.2017.00603 Page 1 of 2

Site Location RACER Lansing Plant 6 Date 4/25/17

Site/Well No. MW-13-36R Replicate No. NA Code No. NA

Weather Sunny, ≈70°F Sampling Time: Begin 1055 End 1100

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	12.78
Depth to Water (ft bmp)	5.04
Water-Level Elevation (ft)	—
Water Column in Well (ft)	7.74
Casing Diameter/Type	2" / PVC
Gallons in Well	1.24
Gallons Pumped/Bailed Prior to Sampling	≈1.00
Sample Pump Intake Setting (ft bmp)	≈10.28
Purge Time	begin 1015 end 1100
Pumping Rate (ml/min)	100
Evacuation Method	Peristaltic

Field Parameters

Temperature (°C)	9.9
SpC (mS/cm)	1.65
CND (mS/cm)	~~10.6~~ aw NA
Dissolved Oxygen (%)	~~1.22~~ aw 10.6
Dissolved Oxygen (mg/L)	~~12.11~~ aw 1.22
pH (s.u.)	12.11
ORP (mV)	81.2
Turbidity (NTU)	0.50
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	MS/MSD collected

Constituents Sampled	Container Description	Number	Preservative
Select Metals	125 ml poly	3	HNO_3

Sampling Personnel A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

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YSI/LOW FLOW SAMPLING LOG

WELL: MW-13-36R PROJ #: B006448I.2017.00603

DATE: 4/25/17 LOC: Plant 6 RACER Lansing

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1020	9.7	1.46	—	6.1	0.72	11.97	143.4	100	2.08	5.04
1025	10.0	1.53	—	7.4	0.82	12.01	128.9	100	1.56	5.04
1030	9.5	1.57	—	9.5	1.07	12.05	108.1	100	1.14	5.04
1035	9.8	1.59	—	9.4	1.09	12.07	99.6	100	0.96	5.04
1040	9.8	1.63	—	10.5	1.19	12.10	87.7	100	0.88	5.04
1045	9.9	1.65	—	10.6	1.21	12.10	83.2	100	0.72	5.04
1050	9.9	1.65	—	10.6	1.22	12.11	81.2	100	0.50	5.04
1055	Collected MW-13-36R_042517									
Total Depth of Well:		12.78								
Depth To Water Before Purging:		5.04								
Depth To Water After Purging:		5.04								

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Water Sampling Log

Project RACER Lansing Plant 6 Project No. B0064481.2017.00603 Page 1 of 2

Site Location RACER Lansing Plant 6 Date 4/25/17

Site/Well No. MW-12-13 Replicate No. NA Code No. NA

Weather Cloudy, ≈ 70°F Sampling Time: Begin 1250 End 1255

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	25.41
Depth to Water (ft bmp)	9.30
Water-Level Elevation (ft)	—
Water Column in Well (ft)	16.11
Casing Diameter/Type	2" / PVC
Gallons in Well	2.58
Gallons Pumped/Bailed Prior to Sampling	≈ 1.50
Sample Pump Intake Setting (ft bmp)	≈ 22.91
Purge Time	begin 1150 end 1255
Pumping Rate (ml/min)	100
Evacuation Method	Peristaltic

Field Parameters

Temperature (°C)	11.1
SpC (mS/cm)	1.24
CND (mS/cm)	—
Dissolved Oxygen (%)	2.2
Dissolved Oxygen (mg/L)	0.26
pH (s.u.)	7.34
ORP (mV)	-31.0
Turbidity (NTU)	7.20
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
Select Metals	125 ml poly	1	HNO_3

Sampling Personnel A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-12-13 PROJ #: B0064481.2017.00603

DATE : 4/25/17 LOC: Plant 6 RACER Lansing

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1155	11.0	1.43	—	7.1	0.78	7.96	148.5	100	42.4	10.40
1200	10.9	1.43	—	6.7	0.62	7.70	137.0	100	26.7	10.80
1205	11.1	1.39	—	4.3	0.47	7.59	83.5	100	18.3	11.11
1210	11.5	1.35	—	3.5	0.38	7.47	37.7	100	12.1	11.15
1215	11.1	1.35	—	3.4	0.37	7.45	19.2	100	10.8	11.19
1220	11.0	1.32	—	2.9	0.31	7.40	2.1	100	9.41	11.25
1225	11.2	1.30	—	2.7	0.30	7.39	-7.4	100	7.27	11.31
1230	11.2	1.28	—	2.5	0.27	7.36	-18.4	100	6.50	11.33
1235	11.2	1.26	—	2.4	0.26	7.35	-23.1	100	6.89	11.34
1240	11.1	1.25	—	2.3	0.26	7.34	-26.6	100	7.11	11.35
1245	11.1	1.24	—	2.2	0.26	7.34	-31.0	100	7.20	11.39
1250	Collected MW-12-13-042517									
Total Depth of Well:		25.41								
Depth To Water Before Purging:			9.30							
Depth To Water After Purging:			11.39							

ARCADIS

Water Sampling Log

Project RACER Lansing Plant 6 Project No. B60041481.2017.00003 Page 1 of 2

Site Location RACER Lansing Plant 6 Date 4/25/17

Site/Well No. MW-12-12 Replicate No. NA Code No. NA

Weather Sunny, ≈70°F Sampling Time: Begin 1540 End 1545

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	17.21
Depth to Water (ft bmp)	6.20
Water-Level Elevation (ft)	—
Water Column in Well (ft)	11.01
Casing Diameter/Type	2"/pvc
Gallons in Well	1.76
Gallons Pumped/Bailed Prior to Sampling	≈1.00
Sample Pump Intake Setting (ft bmp)	≈14.71
Purge Time	begin 1445 end 1545
Pumping Rate (ml/min)	100
Evacuation Method	Peristaltic

Field Parameters

Temperature (°C)	11.4
SpC (mS/cm)	0.92
CND (mS/cm)	—
Dissolved Oxygen (%)	2.3
Dissolved Oxygen (mg/L)	0.26
pH (s.u.)	7.40
ORP (mV)	85.0
Turbidity (NTU)	8.41
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
Select Metals	125 ml poly	1	HNO_3

Sampling Personnel A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-12-12 PROJ #: B0064481.2017.00603

DATE : 4/25/17 LOC: Plant 6 RACER Lansing

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1450	11.3	0.82	—	3.5	0.38	7.42	57.3	100	23.7	8.29
1455	11.4	0.76	—	2.4	0.27	7.33	65.2	100	21.6	9.05
1500	11.3	0.80	—	2.2	0.23	7.32	70.0	100	23.9	9.80
1505	11.2	0.77	—	2.1	0.23	7.40	72.9	100	20.1	10.76
1510	11.6	0.83	—	2.2	0.24	7.38	76.8	100	32.6	11.36
1515	11.8	0.87	—	2.3	0.24	7.38	79.3	100	41.7	11.74
1520	11.6	0.91	—	2.4	0.26	7.40	82.1	100	16.4	11.81
1525	11.6	0.91	—	2.4	0.26	7.41	83.6	100	9.80	11.89
1530	11.4	0.92	—	2.4	0.27	7.40	84.0	100	8.61	11.92
1535	11.4	0.92	—	2.3	0.26	7.40	85.0	100	8.41	11.96
1540	Collected MW-12-12_042517									
Total Depth of Well:		17.21								
Depth To Water Before Purging:			6.26							
Depth To Water After Purging:			11.96							

ARCADIS

Water Sampling Log

Project RACER Landing Plant 6 Project No. B006414.81.2017.0003 Page 1 of 2

Site Location RACER Landing Plant 6 Date 4/25/17

Site/Well No. MW-12-11 Replicate No. NA Code No. NA

Weather Sunny, ~70°F Sampling Time: Begin 1635 End 1640

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	16.79
Depth to Water (ft bmp)	2.00
Water-Level Elevation (ft)	—
Water Column in Well (ft)	14.79
Casing Diameter/Type	2"/PVC
Gallons in Well	2.37
Gallons Pumped/Bailed Prior to Sampling	~0.50
Sample Pump Intake Setting (ft bmp)	~12.29
Purge Time	begin 1605 end 1640
Pumping Rate (ml/min)	100
Evacuation Method	Peristaltic

Field Parameters

Temperature (°C)	11.3
SpC (mS/cm)	0.79
CND (mS/cm)	—
Dissolved Oxygen (%)	2.7
Dissolved Oxygen (mg/L)	0.28
pH (s.u.)	7.13
ORP (mV)	-94.1
Turbidity (NTU)	1.80
Color	Clear
Odor	None
Appearance	~~Low flow~~ aw clear
Sampling Method	Low flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
Select Metals	125 ml poly	1	HNO3

Sampling Personnel A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MW-12-11 PROJ #: B0064481.2017.00603

DATE: 4/25/17 LOC: Plant 6 RACER Lansing

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1610	11.5	0.76	—	6.1	0.66	7.12	-56.8	100	98.9	2.81
1615	11.3	0.77	—	3.1	0.31	7.12	-83.6	100	4.61	3.00
1620	11.2	0.79	—	2.8	0.29	7.12	-90.3	100	2.14	3.08
1625	11.1	0.79	—	2.7	0.29	7.13	-92.4	100	1.96	3.11
1630	11.3	0.79	—	2.7	0.28	7.13	-94.1	100	1.80	3.13
1635	Collected MW-12-11-042517									
Total Depth of Well:		16.79								
Depth To Water Before Purging:		2.00								
Depth To Water After Purging:		3.13								

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Water Sampling Log

Project RACER Lansing | Project No. B0064480.2017.00603 | Page 1 of 2

Site Location Plant 3 | Date 4/26/17

Site/Well No. MW-12-04 | Replicate No. NA | Code No. NA

Weather Cloudy, scattered showers, ~80°F | Sampling Time: Begin 1135 End 1140

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	99.96
Depth to Water (ft bmp)	50.20
Water-Level Elevation (ft)	—
Water Column in Well (ft)	49.76
Casing Diameter/Type	4" / Steel
Gallons in Well	32.34
Gallons Pumped/Bailed Prior to Sampling	≈ 1.00
Sample Pump Intake Setting (ft bmp)	≈ 94.96
Purge Time	begin 1050 end 1140
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	13.3
SpC (mS/cm)	1.63
CND (mS/cm)	1.29
Dissolved Oxygen (%)	8.0
Dissolved Oxygen (mg/L)	0.81
pH (s.u.)	6.90
ORP (mV)	-48.6
Turbidity (NTU)	3.97
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
1,4-Dioxane via low level USEPA Method 522	250 ml amber	2	HCl

Sampling Personnel A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MW-12-04 PROJ #: B0064480.2017.00603

DATE: 4/26/17 LOC: Plant 3 RACER Lansing

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1055	14.6	1.56	1.25	18.7	1.94	6.84	-39.7	100	23.6	50.20
1100	12.0	1.67	1.25	11.2	1.17	6.86	-45.6	100	21.2	50.20
1105	13.3	1.60	1.25	9.3	0.97	6.86	-46.1	100	18.4	50.20
1110	14.2	1.59	1.27	7.4	0.75	6.90	-49.1	100	16.6	50.20
1115	14.6	1.60	1.28	7.4	0.74	6.90	-49.7	100	11.1	50.20
1120	13.6	1.64	1.29	7.7	0.79	6.90	-49.2	100	9.81	50.20
1125	13.9	1.63	1.29	7.9	0.80	6.90	-48.9	100	9.14	5.20
1130	13.3	1.63	1.29	8.0	0.81	6.90	-48.6	100	8.97	5.20
1135	Collected MW-12-04_042617									
Total Depth of Well:		99.96								
Depth To Water Before Purging:			50.20							
Depth To Water After Purging:			50.20							

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Water Sampling Log

Project RACER Lansing Plant 2 Project No. B0064479.2017.00003 Page 1 of 2

Site Location RACER Lansing Plant 2 Date 4/26/17

Site/Well No. MW-12-05R Replicate No. NA Code No. NA

Weather Cloudy, windy, ~80°F Sampling Time: Begin 1340 End 1350

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	112.35
Depth to Water (ft bmp)	76.56
Water-Level Elevation (ft)	—
Water Column in Well (ft)	35.79
Casing Diameter/Type	4" / steel
Gallons in Well	≈ 23.26
Gallons Pumped/Bailed Prior to Sampling	= 1.00
Sample Pump Intake Setting (ft bmp)	≈107.35
Purge Time	begin 1255 end 1350
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	16.2
SpC (mS/cm)	1.46
CND (mS/cm)	1.22
Dissolved Oxygen (%)	3.5
Dissolved Oxygen (mg/L)	0.35
pH (s.u.)	8.08
ORP (mV)	-542.2
Turbidity (NTU)	7.79
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs	40 ml VOA	3	HCl
1,4-Dioxane via low-level USEPA Method 522	250 ml amber	2	HCl

Sampling Personnel A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-12-05R PROJ #: B0064479.2017.00603

DATE : 4/26/17 LOC: RACER Lansing Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1300	20.8	1.13	1.03	47.9	4.26	9.94	-124.1	100	37.4	76.56
1305	17.7	1.50	1.28	36.0	3.39	8.42	-252.1	100	26.8	76.56
1310	17.8	1.48	1.27	10.9	1.03	7.89	-480.0	100	17.3	76.56
1315	16.4	1.47	1.28	4.2	0.41	7.95	-538.5	100	14.5	76.56
1320	16.3	1.47	1.23	4.0	0.40	7.95	-531.1	100	13.2	76.56
1325	16.4	1.46	1.22	3.9	0.39	7.98	-545.0	100	9.60	76.56
1330	16.6	1.47	1.22	3.5	0.35	8.07	-539.1	100	8.88	76.56
1335	16.2	1.46	1.22	3.5	0.35	8.08	-542.2	100	7.79	76.56
1340	Collected MW-12-05R_04262017									
Total Depth of Well:		112.35								
Depth To Water Before Purging:			76.56							
Depth To Water After Purging:			76.56							

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Water Sampling Log

Project: RACER Lansing Plant 2 | Project No.: B0044479.2017.00603 | Page: 1 of 2

Site Location: RACER Lansing Plant 2 | Date: 4/26/17

Site/Well No.: MW-17-87 | Replicate No.: NA | Code No.: NA

Weather: Sunny, windy, ≈80°F | Sampling Time: Begin 1525 End 1535

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	113.85
Depth to Water (ft bmp)	74.71
Water-Level Elevation (ft)	—
Water Column in Well (ft)	39.14
Casing Diameter/Type	4" / Steel
Gallons in Well	≈25.44
Gallons Pumped/Bailed Prior to Sampling	≈ 1.00
Sample Pump Intake Setting (ft bmp)	≈ 108.85
Purge Time	begin 1445 end —
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	19.0
SpC (mS/cm)	3.50
CND (mS/cm)	3.07
Dissolved Oxygen (%)	7.6
Dissolved Oxygen (mg/L)	0.71
pH (s.u.)	7.08
ORP (mV)	-256.8
Turbidity (NTU)	6.59
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs	40 ml voa	3	HCl
1,4-Dioxane via low-level USEPA Method 522	250 ml amber	2	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MW-17-87 PROJ #: B0064479.2017.00603

DATE: 4/26/17 LOC: RACER Lansing Plant 2

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1450	20.0	3.61	3.26	30.0	2.72	7.02	-97.5	100	23.0	74.71
1455	19.3	3.64	3.24	16.0	1.46	7.03	-112.9	100	16.3	74.71
1500	18.8	3.65	3.21	10.3	0.94	7.06	-141.8	100	12.1	74.71
1505	18.7	3.59	3.15	8.3	0.83	7.07	-191.1	100	10.6	74.71
1510	18.7	3.52	3.10	7.8	0.72	7.07	-247.9	100	9.14	74.71
1515	18.9	3.51	3.08	7.6	0.71	7.07	-251.3	100	8.06	74.71
1520	19.0	3.50	3.07	7.6	0.71	7.08	-256.8	100	6.59	74.71
1525	Collected MW-17-87_042617									
Total Depth of Well:		113.85								
Depth To Water Before Purging:			74.71							
Depth To Water After Purging:			74.71							

ARCADIS

Water Sampling Log

Project RACER Lansing Plant 6 Project No. 80064481.2017.00603 Page 1 of 2

Site Location RACER Lansing Plant 6 Date 4/27/17

Site/Well No. MWBP-12-UST1-4 Replicate No. NA Code No. NA

Weather Cloudy, ≈60°F Sampling Time: Begin 1020 End 1025

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	11.24
Depth to Water (ft bmp)	6.85
Water-Level Elevation (ft)	—
Water Column in Well (ft)	4.39
Casing Diameter/Type	4" / PVC
Gallons in Well	2.85
Gallons Pumped/Bailed Prior to Sampling	≈ 1.00
Sample Pump Intake Setting (ft bmp)	≈ 8.74
Purge Time	begin 0920 end 1025
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	10.8
SpC (mS/cm)	1.97
CND (mS/cm)	1.43
Dissolved Oxygen (%)	3.3
Dissolved Oxygen (mg/L)	0.36
pH (s.u.)	7.28
ORP (mV)	-50.2
Turbidity (NTU)	1.01
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs	40 ml VOA	3	HCl

Sampling Personnel A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MWBP-12-UST1-4 PROJ #: B0064481.2017.00603

DATE : 4/27/17 LOC: RACER Lansing Plant 6

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0925	11.4	1.67	1.24	14.6	1.55	7.06	194.9	100	9.64	7.02
0930	10.9	~~2.68~~ 1.76 aw	1.26	5.0	0.55	7.19	86.3	100	5.15	7.02
0935	10.4	1.75	1.27	4.7	0.49	7.22	68.9	100	3.27	7.02
0940	10.7	1.77	1.30	3.6	0.40	7.24	35.1	100	3.01	7.02
0945	10.9	1.86	1.33	3.4	0.37	7.26	4.3	100	2.50	7.02
0950	10.7	1.86	1.35	3.4	0.36	7.26	-9.3	100	2.14	7.02
0955	10.7	1.89	1.38	3.4	0.37	7.26	-29.1	100	2.01	7.02
1000	10.8	1.92	1.40	3.4	0.37	7.27	-37.0	100	1.92	7.02
1005	10.8	1.96	1.42	3.3	0.36	7.28	-46.3	100	1.66	7.02
1010	10.8	1.97	1.43	3.3	0.36	7.28	-49.1	100	1.14	7.02
1015	10.8	1.97	1.43	3.3	0.36	7.28	-50.2	100	1.01	7.02
1020	Collected MWBP-12-UST1-4_042717									
Total Depth of Well:		11.24								
Depth To Water Before Purging:			6.85							
Depth To Water After Purging:			7.02							

ARCADIS

Water Sampling Log

Project RACER Lansing Plant 6 Project No. B006448L.2017.00603 Page 1 of 2

Site Location RACER Lansing Plant 6 Date 4/27/17

Site/Well No. MWBP-12A-UST1-4 Replicate No. NA Code No. NA

Weather Cloudy, ≈ 60°F Sampling Time: Begin 1225 End 1230

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	36.72
Depth to Water (ft bmp)	28.37
Water-Level Elevation (ft)	—
Water Column in Well (ft)	8.35
Casing Diameter/Type	2"/pvc
Gallons in Well	1.34
Gallons Pumped/Bailed Prior to Sampling	≈ 1.00
Sample Pump Intake Setting (ft bmp)	≈ 34.22
Purge Time	begin 1130 end 1230
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	13.6
SpC (mS/cm)	4.12
CND (mS/cm)	3.20
Dissolved Oxygen (%)	3.0
Dissolved Oxygen (mg/L)	0.30
pH (s.u.)	6.81
ORP (mV)	-44.5
Turbidity (NTU)	1.13
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs	40 ml voa	3	HCl

Sampling Personnel A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MWBP-12A-UST1-4 PROJ #: B0064481.2017.00603

DATE : 4/27/17 LOC: RACER Lansing Plant 6

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1135	13.5	5.74	3.47	7.9	1.18	6.78	-9.3	100	68.2	28.45
1140	11.2	5.13	3 43	5.3	0.89	6.78	-16.2	100	40.0	28.45
1145	10.9	4.65	3.39	4.3	0.46	6.79	-22.7	100	21.8	28.45
1150	11.6	4.51	3.33	4.1	0.45	6.80	-30.6	100	12.3	28.45
1155	8.0	4.91	3.29	4.3	0.50	6.80	-34.9	100	5.91	28.45
1200	8.2	4.16	3.26	3.0	0.30	6.81	-38.7	100	4.90	28.45
1205	13.6	4.14	3.24	~~3.3~~ 3.1 aw	0.31	6.81	-40.5	100	3.21	28.45
1210	13.6	4.12	3.21	3.0	0.31	6.81	-41.7	100	2.20	28.45
1215	13.6	4.12	3.22	2.9	0.30	6.81	-43.2	100	1.61	28.45
1220	13.6	4.12	3.20	3.0	0.30	6.81	-44.5	100	1.13	28.45
1225	Collected MWBP-12A-UST1-4-042717									
Total Depth of Well:		36.12								
Depth To Water Before Purging:			28.37							
Depth To Water After Purging:			2845							

ARCADIS

Water Sampling Log

Project RACER Lansing Plant 6 Project No. B00644481.2013.00603 Page 1 of 2

Site Location RACER Lansing Plant 6 Date 4/27/17

Site/Well No. MWBP-11-UST1-4 Replicate No. NA Code No. NA

Weather Cloudy, ≈60°F Sampling Time: Begin 1355 End 1400

Evacuation Data

Measuring Point	Toc
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	11.22
Depth to Water (ft bmp)	2.60
Water-Level Elevation (ft)	—
Water Column in Well (ft)	8.62
Casing Diameter/Type	4"/pvc
Gallons in Well	≈ 5.60
Gallons Pumped/Bailed Prior to Sampling	= 1.00
Sample Pump Intake Setting (ft bmp)	= 8.72
Purge Time	begin 1300 end 1400
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	11.9
SpC (mS/cm)	1.03
CND (mS/cm)	0.77
Dissolved Oxygen (%)	15.4
Dissolved Oxygen (mg/L)	1.68
pH (s.u.)	9.86
ORP (mV)	28.5
Turbidity (NTU)	1.99
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs	40ml voa	3	HCl

Sampling Personnel A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MWBP-11-UST1-4 PROJ #: B0064481.2017.00603

DATE: 4/27/17 LOC: RACER Lansing Plant 6

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1305	8.3	1.35	0.73	35.9	3.19	10.17	111.4	100	19.6	2.60
1310	9.1	1.06	0.73	33.3	4.12	10.13	111.0	100	10.4	2.60
1315	11.9	0.99	0.74	32.3	5.86	9.89	110.5	100	4.07	2.60
1320	12.0	1.00	0.75	26.9	2.10	9.86	94.3	100	3.71	2.60
1325	12.0	1.01	0.76	19.0	2.03	9.83	86.4	100	3.28	2.60
1330	12.1	1.02	0.77	17.2	1.85	9.86	53.7	100	3.08	2.60
1335	12.1	1.02	0.77	16.2	1.77	9.85	41.2	100	2.81	2.60
1340	12.0	1.02	0.77	15.9	1.72	9.85	30.8	100	2.60	2.60
1345	12.0	1.02	0.77	15.6	1.70	9.85	29.2	100	2.26	2.60
1350	11.9	1.03	0.77	15.4	1.68	9.86	28.5	100	1.99	2.60
1355	Collected MWBP-11-UST1-4_042717									
Total Depth of Well:		11.22								
Depth To Water Before Purging:			2.60							
Depth To Water After Purging:			2.60							

ARCADIS

Water Sampling Log

Project RACER Lansing Plant 6 Project No. B00644481.2017.00603 Page 1 of 2

Site Location RACER Lansing Plant 6 Date 4/27/17

Site/Well No. MWBP-10-USTS-6 Replicate No. NA Code No. NA

Weather Cloudy, ≈60°F Sampling Time: Begin 1600 End 1605

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	36.85
Depth to Water (ft bmp)	30.26
Water-Level Elevation (ft)	—
Water Column in Well (ft)	6.59
Casing Diameter/Type	2"/PVC
Gallons in Well	= 1.05
Gallons Pumped/Bailed Prior to Sampling	= 0.75
Sample Pump Intake Setting (ft bmp)	= 34.35
Purge Time	begin 1525 end 1605
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	7.2
SpC (mS/cm)	4.80
CND (mS/cm)	3.50
Dissolved Oxygen (%)	7.6
Dissolved Oxygen (mg/L)	0.81
pH (s.u.)	6.91
ORP (mV)	-18.6
Turbidity (NTU)	5.01
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low flow
Remarks	Dup-09_042717 collected here

Constituents Sampled	Container Description	Number	Preservative
VOCs	40 ml voa	6	HCl

Sampling Personnel A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MWBP-10-UST5-6 PROJ #: B0064481.2017.006603

DATE: 4/27/17 LOC: RACER Lansing Plant 6

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1530	8.1	6.09	3.53	16.2	2.14	6.88	-52.4	100	18.6	30.35
1535	7.3	5.79	3.52	13.1	1.55	6.90	-29.6	100	10.2	30.35
1540	7.1	5.50	3.51	9.6	1.13	6.91	-15.3	100	8.41	30.36
1545	7.4	5.00	3.50	8.0	0.88	6.91	-18.1	100	6.40	30.38
1550	7.6	4.91	3.50	7.8	0.83	6.91	-18.4	100	5.06	30.39
1555	7.2	4.80	3.50	7.6	0.81	6.91	-18.6	100	5.01	30.41
1600	Collected MWBP-10-UST5-6_042717									
Total Depth of Well:		36.85								
Depth To Water Before Purging:			30.26							
Depth To Water After Purging:			30.41							

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No. 80064480.2017.00603 | Page 1 of 2

Site Location: Plant 3 | Date: 4/28/17

Site/Well No.: MW-12-21 | Replicate No.: NA | Code No.: NA

Weather: Cloudy, ≈ 50°F | Sampling Time: Begin 1105 End 1110

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	78.04
Depth to Water (ft bmp)	68.37
Water-Level Elevation (ft)	—
Water Column in Well (ft)	9.67
Casing Diameter/Type	2" / PVC
Gallons in Well	1.55
Gallons Pumped/Bailed Prior to Sampling	~~=75.54 gw~~ = 1.25
Sample Pump Intake Setting (ft bmp)	= 75.54
Purge Time	begin 0945 end 1110
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	10.9
SpC (mS/cm)	1.72
CND (mS/cm)	1.29
Dissolved Oxygen (%)	6.6
Dissolved Oxygen (mg/L)	0.70
pH (s.u.)	6.84
ORP (mV)	-39.4
Turbidity (NTU)	80.1
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs + 1,4-Dioxane	40ml voa	3	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-12-21 PROJ #: B0064480.2017.00603

DATE : 4/28/17 LOC: Plant 3 RACER Lansing

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0950	11.2	1.64	1.21	11.5	1.26	6.76	26.3	100	212	70.01
0955	11.4	1.63	1.20	13.8	1.51	6.82	16.7	100	161	71.80
1000	10.6	1.64	1.18	14.8	1.64	6.85	13.9	100	93.4	72.21
1005	10.6	1.63	1.18	15.2	1.66	6.86	12.4	100	81.1	72.59
1010	10.4	1.64	1.18	14.6	1.63	6.87	7.9	100	131	72.70
1015	10.7	1.66	1.21	12.2	1.33	6.86	-6.0	100	101	72.83
1020	10.7	1.72	1.25	8.8	0.96	6.84	-27.0	106	206	73.01
1025	10.7	1.72	1.25	7.8	0.83	6.83	-33.4	100	200	73.13
1030	11.0	1.71	1.26	6.7	0.73	6.85	-38.6	100	192	73.15
1035	11.0	1.70	1.26	6.7	0.73	6.84	-39.2	100	181	73.16
1040	11.1	1.70	1.26	6.6	0.72	6.84	-39.4	100	193	73.16
1045	11.1	1.71	1.27	6.5	0.70	6.84	-40.0	100	142	73.16
1050	11.1	1.71	1.27	6.6	0.70	6.84	-39.8	100	123	73.16
1055	11.0	1.71	1.28	6.6	0.70	6.84	-39.6	100	96.2	73.17
1100	10.9	1.72	1.29	6.6	0.70	6.84	-39.4	106	80.1	73.17
1105	Collected MW-12-21_042817									
Total Depth of Well:		78.04								
Depth To Water Before Purging:			68.37							
Depth To Water After Purging:			73.17							

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No.: B0064480.2017.00003 | Page: 1 of 2

Site Location: Plant 3 | Date: 4/28/17

Site/Well No.: MW-13-22 | Replicate No.: NA | Code No.: NA

Weather: Cloudy, = 50°F | Sampling Time: Begin 1315 End 1320

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	97.32
Depth to Water (ft bmp)	70.90
Water-Level Elevation (ft)	—
Water Column in Well (ft)	26.42
Casing Diameter/Type	2"/pvc
Gallons in Well	=4.23
Gallons Pumped/Bailed Prior to Sampling	=0.50
Sample Pump Intake Setting (ft bmp)	=94.82
Purge Time	begin ~~1200~~ 1240 end 1320
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	14.6
SpC (mS/cm)	1.93
CND (mS/cm)	1.53
Dissolved Oxygen (%)	3.5
Dissolved Oxygen (mg/L)	0.35
pH (s.u.)	6.87
ORP (mV)	-84.6
Turbidity (NTU)	4.11
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
VOCs + 1,4-Dioxane	40 ml voa	3	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-22 PROJ #: B006448O.2017.00603

DATE : 4/28/17 LOC: Plant 3 RACER Lansing

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
~~1205~~										
~~1210~~										
~~1215~~	YSI fails. Stop to troubleshoot									
~~1220~~										
1245	14.4	1.92	1.53	5.9	0.60	6.84	-65.7	100	39.6	7.90
1250	14.5	1.93	1.54	4.5	0.45	6.86	-76.7	100	28.2	7.90
1255	14.7	1.93	1.55	3.8	0.38	6.87	-80.8	100	12.1	7.90
1300	14.6	1.93	1.54	3.6	0.36	6.87	-82.9	100	8.64	7.90
1305	14.1	1.93	1.54	3.5	0.35	6.87	-84.0	100	7.32	7.90
1310	14.6	1.93	1.53	3.5	0.35	6.87	-84.6	100	4.11	7.90
1315	Collected MW-13-22_042817									
Total Depth of Well:		97.32								
Depth To Water Before Purging:			70.90							
Depth To Water After Purging:			70.90							

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No.: B041480.2017.00603 | Page: 1 of 2

Site Location: Plant 3 | Date: 5/1/17

Site/Well No.: CH-14-RO | Replicate No.: NA | Code No.: NA

Weather: Scattered showers, ~60°F | Sampling Time: Begin 1030 End 1035

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	14.84
Depth to Water (ft bmp)	5.35
Water-Level Elevation (ft)	—
Water Column in Well (ft)	9.49
Casing Diameter/Type	2" / PVC
Gallons in Well	= 1.52
Gallons Pumped/Bailed Prior to Sampling	= 0.75
Sample Pump Intake Setting (ft bmp)	= 12.34
Purge Time	begin 0945 end 1035
Pumping Rate (ml/min)	100
Evacuation Method	Peristaltic

Field Parameters

Temperature (°C)	12.6
SpC (mS/cm)	1.02
CND (mS/cm)	0.78
Dissolved Oxygen (%)	2.1
Dissolved Oxygen (mg/L)	0.21
pH (s.u.)	7.18
ORP (mV)	327.1
Turbidity (NTU)	0.26
Color	Clear / yellowish green
Odor	None
Appearance	Yellowish green
Sampling Method	Low Flow
Remarks	Purge water placed in overpack drum

Constituents Sampled	Container Description	Number	Preservative
Select Metals	125ml poly	1	HNO_3
Hexavalent Chromium	125ml poly	1	None

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: CH-14-RO PROJ #: B0064480.2017.00603

DATE: 5/1/17 LOC: RACER Lansing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0950	13.1	1.03	0.79	6.5	0.67	7.14	394.7	100	0.85	5.62
0955	13.1	1.03	0.79	5.1	0.64	7.16	386.6	100	0.80	5.63
1000	13.0	1.03	0.79	4.0	0.41	7.17	373.1	100	0.72	5.65
1005	12.7	1.03	0.79	3.1	0.33	7.17	356.8	100	0.50	5.66
1010	12.7	1.02	0.78	2.7	0.28	7.18	344.3	100	0.41	5.67
1015	12.6	1.02	0.78	2.3	0.24	7.18	337.6	100	0.35	5.67
1020	12.6	1.02	0.78	2.1	0.21	7.18	330.9	100	0.30	5.67
1025	12.6	1.02	0.78	2.1	0.21	7.18	327.1	100	0.26	5.67
1030	Collected CH-14-RO_05			0117						
Total Depth of Well:		14.84								
Depth To Water Before Purging:		5.35								
Depth To Water After Purging:		5.67								

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No. B0064480.2017.00603 | Page 1 of 2

Site Location: Plant 3 | Date: 5/1/17

Site/Well No.: MW-91-2 | Replicate No.: NA | Code No.: NA

Weather: Scattered Showers, ~60°F | Sampling Time: Begin 1200 End 1205

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	81.40
Depth to Water (ft bmp)	60.84
Water-Level Elevation (ft)	—
Water Column in Well (ft)	20.56
Casing Diameter/Type	4" / PVC
Gallons in Well	= 13.36
Gallons Pumped/Bailed Prior to Sampling	= 0.75
Sample Pump Intake Setting (ft bmp)	= 76.40
Purge Time	begin 1110 end 1205
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	16.2
SpC (mS/cm)	0.055
CND (mS/cm)	0.045
Dissolved Oxygen (%)	12.5
Dissolved Oxygen (mg/L)	1.23
pH (s.u.)	5.93
ORP (mV)	287.7
Turbidity (NTU)	2.51
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
1,4-Dioxane	40 ml VOA	3	HCl
Select Metals	125 ml poly	1	HNO_3
Hexavalent Chromium	125 ml poly	1	None

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-91-2 PROJ #: B0064480.2017.00603

DATE : 5/1/17 LOC: RACER Lansing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1115	14.8	0.055	0.044	15.2	1.51	5.93	299.0	100	14.9	61.09
1120	15.4	0.054	0.045	14.9	1.38	5.93	294.6	100	12.1	61.09
1125	15.5	0.055	0.045	14.6	1.39	5.94	294.0	100	8.43	61.09
1130	15.8	0.055	0.045	14.2	1.39	5.95	293.3	100	6.11	61.09
1135	15.7	0.055	0.045	14.0	1.39	5.94	292.7	100	4.03	61.09
1140	15.9	0.055	0.045	13.6	1.36	5.94	290.9	100	3.60	61.09
1145	15.9	0.055	0.045	13.1	1.31	5.94	289.2	100	2.96	61.09
1150	16.0	0.055	0.045	12.5	1.25	5.93	288.1	100	2.80	61.09
1155	16.2	0.055	0.045	12.5	1.23	5.93	287.7	100	2.51	61.09
1200	Collected MW-91-2_0501			17						
Total Depth of Well:		81.40								
Depth To Water Before Purging:			60.84							
Depth To Water After Purging:			61.09							

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No. B0064480.2017.0003 | Page 1 of 2

Site Location: Plant 3 | Date: 5/1/17

Site/Well No.: MW-13-41 | Replicate No.: NA | Code No.: NA

Weather: Scattered showers, ~60°F | Sampling Time: Begin 1620 End 1625

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	81.83
Depth to Water (ft bmp)	64.57
Water-Level Elevation (ft)	—
Water Column in Well (ft)	17.26
Casing Diameter/Type	2" / PVC
Gallons in Well	2.76
Gallons Pumped/Bailed Prior to Sampling	≈2.00
Sample Pump Intake Setting (ft bmp)	≈79.33
Purge Time	begin 1435 end 1625
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	13.6
SpC (mS/cm)	5.69
CND (mS/cm)	4.46
Dissolved Oxygen (%)	2.2
Dissolved Oxygen (mg/L)	0.22
pH (s.u.)	7.19
ORP (mV)	-105.7
Turbidity (NTU)	98.6
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
1,4-Dioxane	40ml voa	3	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MW-13-41 PROJ #: B0064480.2017.00603

DATE: 5/1/17 LOC: RACER Lansing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1440	14.7	5.12	4.12	39.1	3.89	7.23	146.6	100	14.9	64.59
1445	14.5	~~5.83~~	4.19	20.3	2.02	7.17	7.7	100	65.6	64.60
1450	14.4	5.31	4.27	12.1	1.10	7.16	-40.1	100	99.3	64.60
1455	14.4	5.42	4.32	9.2	0.92	7.15	-56.1	100	112	64.60
1500	14.4	5.44	4.34	7.2	0.77	7.15	-65.7	100	223	64.60
1505	14.2	5.52	4.39	5.5	0.55	7.14	-71.1	100	265	64.60
1510	14.1	5.62	4.48	3.7	0.37	7.15	-96.3	100	298	64.60
1515	14.1	5.63	4.47	3.3	0.33	7.15	-93.0	100	271	64.60
1520	14.1	~~4.43~~ 5.65	4.47	3.2	0.32	7.15	-91.1	100	260	64.60
1525	14.1	5.66	4.48	3.0	0.36	7.16	-94.1	100	250	64.60
1530	14.2	5.64	4.49	2.8	0.28	7.16	-96.2	100	235	64.60
1535	14.0	5.67	4.48	2.6	0.26	7.17	-98.3	100	220	64.60
1540	14.0	5.67	4.48	2.6	0.26	7.17	-98.7	100	217	64.60
1545	13.8	5.68	4.47	2.4	0.24	7.17	-101.3	100	188	64.60
1550	13.7	5.68	4.47	2.3	0.23	7.18	-102.2	100	166	64.60
1555	13.7	5.68	4.47	2.3	0.23	7.18	-103.8	100	150	64.60
1600	13.7	5.65	4.48	2.3	0.23	7.19	-104.5	100	136	64.60
1605	13.7	5.66	4.47	2.3	0.23	7.19	-105.0	100	125	64.60
1610	13.6	5.67	4.47	2.2	0.22	7.19	-105.1	100	115	64.60
1615	13.6	5.69	4.46	2.2	0.22	7.19	-105.7	100	98.6	64.60
1620	Collected	MW-13-41_050117								
Total Depth of Well:		81.83								
Depth To Water Before Purging:			64.57							
Depth To Water After Purging:			64.60							

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No. 80064480.2017.00603 | Page 1 of 2

Site Location: Plant 3 | Date: 5/2/17

Site/Well No.: MW-15-71 | Replicate No.: NA | Code No.: NA

Weather: Windy, ≈40°F | Sampling Time: Begin 1030 End 1040

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	119.45
Depth to Water (ft bmp)	68.56
Water-Level Elevation (ft)	—
Water Column in Well (ft)	50.89
Casing Diameter/Type	2" / PVC
Gallons in Well	8.14
Gallons Pumped/Bailed Prior to Sampling	≈2.00
Sample Pump Intake Setting (ft bmp)	≈116.95
Purge Time	begin 0850 end 1040
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	10.2
SpC (mS/cm)	1.56
CND (mS/cm)	1.13
Dissolved Oxygen (%)	4.0
Dissolved Oxygen (mg/L)	0.45
pH (s.u.)	7.10
ORP (mV)	-79.2
Turbidity (NTU)	9.55
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	MS/MSD collected here

Constituents Sampled	Container Description	Number	Preservative
1,4-Dioxane 8260B SIM	40 ml VOA	~~3~~ 9	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-15-71 PROJ #: B0064480.2017.00603

DATE : 5/2/17 LOC: RACER Lansing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
0855	10.5	1.52	1.10	46.6	4.99	6.98	12.6	100	489	68.60
0900	9.5	1.56	1.10	9.7	1.15	7.09	-60.4	100	360	68.60
0905	9.6	1.56	1.10	6.9	0.78	7.09	-68.0	100	251	68.60
0910	9.9	1.56	1.11	6.1	0.69	7.10	-71.7	100	221	68.60
0915	10.2	1.55	1.11	5.7	0.64	7.11	-73.4	100	208	68.60
0920	10.2	1.55	1.12	5.1	0.57	7.10	-75.0	100	191	68.60
0925	10.1	1.56	1.12	5.0	0.55	7.09	-74.8	100	183	68.60
0930	10.1	1.56	1.12	4.8	0.53	7.09	-74.5	100	173	68.60
0935	10.1	1.56	1.12	4.8	0.53	7.08	-74.0	100	150	68.60
0940	10.2	1.56	1.12	4.7	0.52	7.08	-73.8	100	141	68.60
0945	10.2	1.56	1.12	4.6	0.50	7.09	-73.2	100	132	68.60
0950	10.1	1.57	1.13	4.5	0.50	7.10	-73.1	100	120	68.60
0955	10.0	1.57	1.13	4.5	0.50	7.10	-73.0	100	116	68.60
1000	9.9	1.57	1.13	4.4	0.49	7.10	-72.5	100	112	68.60
1005	10.1	1.57	1.13	4.4	0.49	7.10	-76.4	100	76.3	68.60
1010	10.5	1.56	1.13	4.2	0.47	7.10	-78.5	100	50.1	68.60
1015	10.4	1.56	1.13	4.1	0.46	7.10	-78.9	100	38.5	68.60
1020	10.2	1.56	1.13	4.0	0.45	7.10	-79.1	100	20.6	68.60
1025	10.2	1.56	1.13	4.0	0.45	7.10	-79.2	100	9.55	68.60
1030	Collected	MW-15-71_050217								
Total Depth of Well:		119.45								
Depth To Water Before Purging:		68.56								
Depth To Water After Purging:										

ARCADIS

Water Sampling Log

Project: RACER Lansing Project No. B0064480.2017.00603 Page 1 of 2

Site Location: Plant 3 Date: 5/2/17

Site/Well No.: MW-13-24 Replicate No.: NA Code No.: NA

Weather: Cloudy, rain, ≈40 °F Sampling Time: Begin ~~1900~~ 1300 aw End ~~1405~~ 1305 aw

Evacuation Data		Field Parameters	
Measuring Point	TOC	Temperature (°C)	10.1
MP Elevation (ft)	—	SpC (mS/cm)	1.53
Land Surface Elevation (ft)	—	CND (mS/cm)	1.14
Sounded Well Depth (ft bmp)	77.33	Dissolved Oxygen (%)	9.9
Depth to Water (ft bmp)	67.30	Dissolved Oxygen (mg/L)	0.98
Water-Level Elevation (ft)	—	pH (s.u.)	6.84
Water Column in Well (ft)	10.03	ORP (mV)	-42.0
Casing Diameter/Type	2" / PVC	Turbidity (NTU)	0.59
Gallons in Well	1.60	Color	Clear
Gallons Pumped/Bailed Prior to Sampling	≈ 1.00	Odor	None
		Appearance	Clear
Sample Pump Intake Setting (ft bmp)	≈ 74.83	Sampling Method	Low Flow
Purge Time	begin 1210 end ~~1305~~ 1305 aw	Remarks	
Pumping Rate (ml/min)	100		
Evacuation Method	Bladder Pump		

Constituents Sampled	Container Description	Number	Preservative
1,4-Dioxane 8260B SIMS	40ml Voa	3	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.				
0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MW-13-24 PROJ #: B0064480.2017.00603

DATE: 5/2/17 LOC: RACER Lansing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1215	10.4	1.31	0.96	22.0	2.56	6.97	-36.3	100	5.25	67.75
1220	10.1	2.14	1.06	28.3	3.70	6.88	-37.5	100	1.93	~~67.90~~
1225	10.1	1.95	1.05	22.0	2.51	6.88	-37.6	100	1.40	67.91
1230	10.5	1.73	1.04	21.2	2.51	6.89	-37.8	100	1.14	67.93
1235	10.7	1.66	1.05	16.4	1.75	6.88	-37.9	100	1.02	67.94
1240	10.2	1.53	1.08	11.1	1.29	6.85	-38.2	100	0.90	67.94
1245	10.2	1.51	1.10	10.2	1.03	6.84	-39.9	100	0.82	67.94
1250	10.6	1.52	1.13	10.0	0.98	6.84	-41.6	100	0.64	67.94
1255	10.1	1.53	1.14	9.9	0.98	6.84	-42.0	100	0.59	67.94
~~1900~~	Collected MW-13-24_05021 7									
1300										

Total Depth of Well:	77.33
Depth To Water Before Purging:	67.30
Depth To Water After Purging:	67.94

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No.: B0064480.2017.0003 | Page: 1 of 2

Site Location: Plant 3 | Date: 5/2/17

Site/Well No.: MW-14-65 | Replicate No.: NA | Code No.: NA

Weather: cloudy, ≈40°F | Sampling Time: Begin 1455 End 1500

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	13.20
Depth to Water (ft bmp)	5.58
Water-Level Elevation (ft)	—
Water Column in Well (ft)	7.62
Casing Diameter/Type	2"/PVC
Gallons in Well	1.22
Gallons Pumped/Bailed Prior to Sampling	≈1.00
Sample Pump Intake Setting (ft bmp)	≈10.70
Purge Time	begin 1415 end 1500
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	7.8
SpC (mS/cm)	0.95
CND (mS/cm)	0.61
Dissolved Oxygen (%)	29.6
Dissolved Oxygen (mg/L)	2.40
pH (s.u.)	7.25
ORP (mV)	167.8
Turbidity (NTU)	6.39
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	
Remarks	

Constituents Sampled	Container Description	Number	Preservative
TCL VOCs SW8260	40ml voa	3	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL: MW-14-65 PROJ #: B0064480.2017.00603

DATE: 5/2/17 LOC:

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1420	8.6	0.89	0.61	15.2	1.67	7.25	160.3	100	3.97	6.72
1425	7.2	0.92	0.61	21.8	2.64	7.24	155.8	100	4.80	7.04
1430	7.3	0.89	0.61	21.6	2.53	7.23	155.9	100	5.51	7.39
1435	7.6	0.91	0.61	22.5	2.67	7.24	158.5	100	6.30	7.72
1440	7.6	0.95	0.61	30.7	2.93	7.25	163.9	100	6.79	8.05
1445	7.5	0.95	0.61	30.8	2.98	7.25	165.0	100	6.04	8.10
1450	7.8	0.95	0.61	29.6	2.90	7.25	167.8	100	6.39	8.12
1455	Collected MW-14-65_050217									
Total Depth of Well:		13.20								
Depth To Water Before Purging:			5.58							
Depth To Water After Purging:			8.12							

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No. B0044480.2017.00603 | Page 1 of 2

Site Location: Plant 3 | Date: 5/2/17

Site/Well No.: UNK-11 | Replicate No.: NA | Code No.: NA

Weather: Cloudy, ≈ 40°F | Sampling Time: Begin 1615 End 1620

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	11.82
Depth to Water (ft bmp)	4.05
Water-Level Elevation (ft)	—
Water Column in Well (ft)	7.77
Casing Diameter/Type	2" / PVC
Gallons in Well	1.24
Gallons Pumped/Bailed Prior to Sampling	≈1.00
Sample Pump Intake Setting (ft bmp)	≈9.32
Purge Time	begin 1530 end 1620
Pumping Rate (ml/min)	100
Evacuation Method	Bladder Pump

Field Parameters

Temperature (°C)	10.6
SpC (mS/cm)	0.75
CND (mS/cm)	0.54
Dissolved Oxygen (%)	2.7
Dissolved Oxygen (mg/L)	0.27
pH (s.u.)	7.20
ORP (mV)	-101.1
Turbidity (NTU)	5.40
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
TCL VOCs SW8260	40 ml VOA	3	HCl

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : UNK-11 PROJ #: B0064480.2017.00603

DATE : 5/2/17 LOC: RALER Lansing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1535	10.5	0.76	0.55	4.5	0.51	7.23	-89.4	100	10.5	5.10
1540	10.7	0.75	0.55	3.3	0.31	7.23	-97.2	100	9.83	6.15
1545	10.8	0.75	0.55	2.7	0.30	7.23	-101.6	100	9.30	6.70
1550	10.8	0.75	0.55	2.3	0.26	7.21	-103.7	100	8.64	7.74
1555	10.8	0.75	0.55	2.4	0.27	7.21	-104.6	100	7.61	7.95
1600	10.8	0.75	0.55	2.4	0.26	7.21	-104.0	100	7.44	8.20
1605	10.6	0.75	0.54	2.6	0.27	7.20	-102.1	100	7.00	8.21
1610	10.6	0.75	0.54	2.7	0.27	7.20	-101.1	100	5.40	8.21
1615	Collected UNK-11_050217									
Total Depth of Well:		11.82								
Depth To Water Before Purging:			4.05							
Depth To Water After Purging:			8.21							

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No. B0064480.2017.00003 | Page 1 of 2

Site Location: Plant 3 | Date: 5/3/17

Site/Well No.: MW-13-31 | Replicate No.: NA | Code No.: NA

Weather: Sunny, ~50°F | Sampling Time: Begin 0935 End 0930

Evacuation Data

Measuring Point	Toc
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	12.80
Depth to Water (ft bmp)	7.52
Water-Level Elevation (ft)	—
Water Column in Well (ft)	5.28
Casing Diameter/Type	2"/PVC
Gallons in Well	=0.85
Gallons Pumped/Bailed Prior to Sampling	= 0.75
Sample Pump Intake Setting (ft bmp)	= 10.30
Purge Time	begin 0850 end 0936
Pumping Rate (ml/min)	100
Evacuation Method	Peristaltic pump

Field Parameters

Temperature (°C)	12.6
SpC (mS/cm)	3.72
CND (mS/cm)	3.32
Dissolved Oxygen (%)	9.4
Dissolved Oxygen (mg/L)	0.94
pH (s.u.)	7.02
ORP (mV)	196.5
Turbidity (NTU)	0.42
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	Low Flow
Remarks	

Constituents Sampled	Container Description	Number	Preservative
Select Metals	125 ml poly	1	#NO3

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-31 PROJ #: B00604480.2017.00603

DATE : 5/3/17 LOC: RACER Lansing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV aw	Flow Rate mL/min	Turbidity NTU	DTW
0855	12.6	3.58	3.12	29.8	2.83	7.01	~~218.1~~	100	3.97	7.52
0900	12.3	3.65	3.24	13.1	1.36	7.02	205.1	100	2.08	7.52
0905	12.1	3.70	3.30	11.1	1.13	7.02	201.9	100	1.51	7.52
0910	12.2	3.71	3.31	9.9	0.99	7.02	198.2	100	0.89	7.52
0915	12.5	3.71	3.32	9.6	0.96	7.02	197.0	100	0.61	7.52
0920	12.6	3.72	3.32	9.4	0.94	7.02	196.5	100	0.42	7.52
0925	Collected MW-13-31_050317									
Total Depth of Well:		12.80								
Depth To Water Before Purging:			7.52							
Depth To Water After Purging:			7.52							

ARCADIS

Water Sampling Log

Project: RACER Lansing | Project No.: B0064480.2017.00003 | Page: 1 of 2

Site Location: Plant 3 | Date: 5/3/17

Site/Well No.: MW-13-32 | Replicate No.: NA | Code No.: NA

Weather: Sunny, ≈ 50°F | Sampling Time: Begin 1035 End 1040

Evacuation Data

Measuring Point	TOC
MP Elevation (ft)	—
Land Surface Elevation (ft)	—
Sounded Well Depth (ft bmp)	12.64
Depth to Water (ft bmp)	6.20
Water-Level Elevation (ft)	—
Water Column in Well (ft)	6.44
Casing Diameter/Type	2" / PVC
Gallons in Well	= 1.03
Gallons Pumped/Bailed Prior to Sampling	≈ 0.75
Sample Pump Intake Setting (ft bmp)	= 10.14
Purge Time	begin 1000 end
Pumping Rate (ml/min)	100
Evacuation Method	Peristaltic Pump

Field Parameters

Temperature (°C)	9.8
SpC (mS/cm)	3.34
CND (mS/cm)	3.05
Dissolved Oxygen (%)	2.6
Dissolved Oxygen (mg/L)	0.27
pH (s.u.)	6.95
ORP (mV)	161.0
Turbidity (NTU)	4.61
Color	Clear
Odor	None
Appearance	Clear
Sampling Method	
Remarks	Dup-05 collected here

Constituents Sampled	Container Description	Number	Preservative
Select Metals	125ml poly	2	HNO_3

Sampling Personnel: A. Westhuis

Well Casing Volumes

Gal./Ft.					
	0.5" = 0.01	1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.04	1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

bmp	Below measuring point	mL	Milliliter	NTU	Nephelometric turbidity units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not recorded	VOC	Volatile organic compounds

ARCADIS

YSI/LOW FLOW SAMPLING LOG

WELL : MW-13-32 PROJ #: B0064480.2017.00603

DATE : 5/3/17 LOC: RACER Lansing Plant 3

Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pH	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW
1005	10.6	3.23	2.96	12.6	1.30	6.87	218.3	100	16.1	6.20
1010	10.1	3.30	3.01	6.4	0.65	6.91	192.2	100	11.3	6.20
1015	10.3	3.33	3.04	4.1	0.42	6.93	163.2	100	7.60	6.20
1020	10.3	3.34	3.05	3.0	0.30	6.94	158.9	100	6.41	6.20
1025	10.1	3.34	3.05	2.8	0.28	6.95	160.6	100	5.02	6.20
1030	9.8	3.34	3.05	2.6	0.27	6.95	161.0	100	4.61	6.20
1035	Collected MW-13-32_050317									
Total Depth of Well:		12.64								
Depth To Water Before Purging:			6.20							
Depth To Water After Purging:			6.20							

ARCADIS

Water-Level Measurement Form

Project No.:	B0064481.2017.00603	Field Personnel:	A. Westhuis
Site Location:	Lansing, MI	Date:	4/24/17
Instrument Model	WLM	Instrument Serial No.:	711 (Geotech Rental)

Plant 6 perched Well Number	Time	W.L. Measurements TD (feet)	DTW (feet)	DTP (feet)	Comments Well Locked	Lock Condition	PID Well Headspace (ppm) ~~Other~~ ~~Comments~~
P6-MW-01	1326	31.23	28.96	—	Yes	Good	0.0ppm
P6-SB-07	1401	23.62	5.45	—	Yes	Good	0.0ppm
P6-SB-21	1407	11.12	2.64	—	Yes	Good	0.0ppm
SME-MW-02	1137	37.28	33.26	—	No	NA	0.0ppm
MW-14-66	1230	22.22	5.27	—	Yes	Good	0.0ppm
MW-14-67	1303	20.84	4.73	—	Yes	Good	0.0ppm
MW-14-68	1259	44.08	Dry	—	Yes	Good	0.0ppm
MW-14-69	1253	48.99	Dry	—	Yes	Good	0.0ppm
MW-14-70	1235	23.12	9.60	—	Yes	Good	0.0ppm
Weathered Bedrock							
MW-13-52	1503	81.45	70.43	—	Yes	Good	0.0ppm
MW-13-53	1307	85.45	77.02	—	Yes	Good	0.0ppm
Bedrock							
MW-04-01(6)	1105	87.97	75.65	—	Yes	Good	0.0ppm
MW-04-04R	1212	111.08	81.43	—	YES	Good	0.0ppm
MW-04-06R	0958	78.02	71.01	—	Yes	Good	0.0ppm
MW-12-03	1013	82.31	68.80	—	Yes	Good	0.0ppm
MW-13-50	1459	109.87	82.04	—	Yes	Good	0.0ppm
MW-13-51	1451	89.79	73.99	—	Yes	Good	0.0ppm (Plant 2 well)
P2-MW-02	1548	40.22	37.01	—	No	NA	0.0ppm (Plant 2 well)
MW-13-46	1609	74.63	65.89	—	Yes	Good	0.0ppm (Plant 3 well)
MW-91-6	1613	95.78	63.11	—	No	NA	0.0ppm (Plant 3 well)
MW-13-34	1618	79.93	67.09	—	Yes	Good	0.0ppm (Plant 3 well)
MW-13-47	1621	114.18	66.84	—	Yes	Good	0.0ppm (Plant 3 well)
MW-13-48	1626	73.06	61.43	—	Yes	Good	0.0ppm (Plant 3 well)
MW-13-49	1631	81.65	67.25	—	Yes	Good	0.0ppm (Plant 3 well)
MW-91-5	1646	126.33	65.19	—	No	NA	0.0ppm (Plant 3 well)
MW-12-04	0911	99.96	50.46	—	No	NA	0.0ppm (Plant 3 well)

Plant 3

W.L. Water Level
TD Total Depth
DTW Depth To Water
DTP Depth To Product

Gauged 4/25/17

ARCADIS

Water-Level Measurement Form

Project No.:	B0064481.2017.00603	Field Personnel:	A. Westhuis
Site Location:	Lansing, MI	Date:	4/24/17
Instrument Model	WLM	Instrument Serial No.:	711 (Geotech Rental)

Plant 6 Perched Well Number	Time	TD (feet)	DTW (feet)	DTP (feet)	Comments: Well Locked	Lock Condition	PID Well Headspace (ppm) ~~Other Comments~~
MW-02-03(6)	1155	44.62	30.72	—	No	NA	0.0ppm
MW-03-04	1036	42.69	22.12	—	No	NA	0.0ppm
MW-03-06	1200	40.57	36.20	—	Yes	Good	0.0ppm
MW-03-08	1145	44.93	33.38	—	No	NA	0.0ppm
MW-04-05(6)	1023	29.63	9.52	—	No	NA	0.0ppm
MW-12-11	1422	16.79	2.06	—	No	NA	0.0ppm
MW-12-12	0941	17.21	6.28	—	No	NA	~~located~~ 4/25/17 0.0ppm
MW-12-13	1255	25.41	9.80	—	Yes	Good	0.0ppm
MW-12-16	1433	32.18	22.99	—	No	NA	0.0ppm
MW-13-35	1437	29.50	23.74	—	No	NA	0.0ppm
MW-13-36R	1311	12.78	4.89	—	Yes	Good	0.0ppm
MWBP-10-UST5-6	1555	36.85	30.73	—	No	NA	0.0ppm
MWBP-11-UST1-4	1346	11.22	2.65	—	No	NA	0.0ppm
MWBP-12A-UST1-4	1343	36.72	29.29	—	No	NA	0.0ppm
MWBP-12-UST1-4	1346	11.24	7.90	—	No	NA	0.0ppm
P6-SB-18	1227	12.15	4.46	—	Yes	Good	0.0ppm
P6-SB-35	1307	11.97	3.96	—	Yes	Good	0.0ppm
P6-SB-37	1305	13.93	4.43	—	Yes	Good	0.0ppm
MW-02-01(6)	1049	40.08	27.55	—	No	NA	0.0ppm
MW-02-02(6)	1118	43.39	29.93	—	No	NA	0.0ppm
MW-03-02	1033	39.35	21.98	—	Yes	Good	0.0ppm
MW-03-05							could not locate
MW-03-07	1108	40.50	26.16	—	No	NA	0.0ppm
MW-12-10R	1010	17.97	10.29	—	Yes	Good	0.0ppm
MW-12-14	1320	32.05	23.94	—	Yes	Good	0.0ppm
MW-12-15	1430	22.66	19.66	—	No	NA	0.0ppm
MWBP-12-UST5-6	1600	38.50	32.28	—	No	NA	0.0ppm
MWBP-13A-UST1-4	1349	37.99	32.41	—	No	NA	0.0ppm
P6-MW-01	1326	31.23	28.96	—	Yes	Good	0.0ppm
continued							

W.L. Water Level
TD Total Depth
DTW Depth To Water
DTP Depth To Product

ATTACHMENT 2

Grand River Sampling Summary Figure

GR-north:
0.081 ug/L J

GR-South:
Non-detect
(<0.2 ug/L)

LEGEND

SURFACE WATER SAMPLING POINT

J- ESTIMATED CONCENTRATION ABOVE THE METHOD DETECTION LIMIT AND BELOW THE REPORTING LIMIT

LOWER 1,4-DIOXANE PLUME
> PROPOSED DW CRITERIA (7.2 µg/L)

PLANT 2

PLANT 3

PLANT 6

0 960 1,920

SCALE IN FEET

Source: Esri, DigitalGlobe, Ge
Getmapping, Aerogrid, IGN, IG

RACER TRUST
LANSING, MICHIGAN

SURFACE WATER SAMPLING RESULTS - 1,4-DIOXANE

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1

CITY: Novi DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
G:\GIS\Project Files\MotorsLiquidationCompany\Lansing\Docs\2017 Workplan Figures\Surface Water Sampling.mxd PLOTTED: 3/17/2017 2:56:55 PM BY: dolexa