

**Groundwater Monitoring Form**

**For DNR Use Only**

Facility Name : MADISON GAS & ELECTRIC COMPENSATORY RECHARGE  
 Contact Address : PO Box 1231  
 Madison, WI 53701-1231  
 Facility Contact : Jeffrey Marcouiller, Mng Energy Prod Support Serv  
 Phone Number : 608-251-5320  
 Reporting Period : 01/01/2021 - 03/31/2021  
 Form Due Date : 05/15/2021  
 Permit Number : **0063088**

Date Received:  
 DOC: 464898  
 FIN: 31792  
 FID: 113353020  
 Region: South Central Region  
 Permit Drafter: Brenda L Howald  
 Reviewer: Nathan J Wells  
 Office: Fitchburg

**Well No/Description: 801/MW-1 Infiltration Area Well**

WI Unique No:  Sample Date: 03/16/2021  
 Casing Top Elevation(Feet, MSL): 1007.47  
 Casing Top Elevation New(Feet, MSL):  
 Well Is: Broken: N Frozen: N Dry: N Sample Has: Odor: N Color: N Turbidity: N  
 Abandoned On: Abandoned By:

Parameter	Sample Value	Units	PALs	ESs	LOD	LOQ	Lab Certification Number
166 - Depth To Groundwater	28.38	feet					
227 - Groundwater Elevation	979.09	feet MSL					
105 - Chloride	39.7	mg/L	125	250			405132750
447 - Sodium Dissolved	31.5	mg/L	136				405132750
274 - Manganese Dissolved	<1.2	ug/L	60	300	1.2	4.0	405132750
330 - Nitrogen, Nitrite + Nitrate Total	0.75	mg/L	2	10	0.059	0.25	405132750
377 - pH Field	8.19	su	8				
462 - Solids, Total Dissolved	188	mg/L	940				405132750
833 - Arsenic Dissolved	<0.28	ug/L	1	10	0.28	1.0	405132750
261 - Lead Dissolved	<0.24	ug/L	1.5	15	0.24	1.0	405132750
248 - Iron Dissolved	<0.058	mg/L	0.15	0.3			405132750
809 - Calcium Dissolved	25500	ug/L					405132750
735 - Potassium Dissolved	2080	ug/L					405132750
734 - Magnesium Dissolved	10000	ug/L					405132750
204 - Fecal Coliform	<9	#/100 ml					
186 - Dissolved Oxygen	2.82	mg/L					
420 - Turbidity	0	NTU					

**Well No/Description: 802/MW-2 Background Well**

WI Unique No:  Sample Date: 03/16/2021  
 Casing Top Elevation(Feet, MSL): 1018.95  
 Casing Top Elevation New(Feet, MSL):  
 Well Is: Broken: N Frozen: N Dry: N Sample Has: Odor: N Color: N Turbidity: N  
 Abandoned On: Abandoned By:

Parameter	Sample Value	Units	PALs	ESs	LOD	LOQ	Lab Certification Number
166 - Depth To Groundwater	38.85	feet					
227 - Groundwater Elevation	980.1	feet MSL					
105 - Chloride	1500	mg/L	125	250			405132750
447 - Sodium Dissolved	539	mg/L	136				405132750
274 - Manganese Dissolved	3.5	ug/L	60	300	2.4	8.1	405132750
330 - Nitrogen, Nitrite + Nitrate Total	3.3	mg/L	2	10	0.059	0.25	405132750
377 - pH Field	7.08	su	8				
462 - Solids, Total Dissolved	2780	mg/L	940				405132750
833 - Arsenic Dissolved	<0.56	ug/L	1	10	0.56	2.0	405132750
261 - Lead Dissolved	<0.47	ug/L	1.5	15	0.47	2.0	405132750
248 - Iron Dissolved	<0.116	mg/L	0.15	0.3			405132750
809 - Calcium Dissolved	271000	ug/L					405132750
735 - Potassium Dissolved	1450	ug/L			473	1580	405132750

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Parameter	Sample Value	Units	PALs	ESs	LOD	LOQ	Lab Certification Number
734 - Magnesium Dissolved	116000	ug/L					405132750
204 - Fecal Coliform	<9	#/100 ml					
186 - Dissolved Oxygen	10.06	mg/L					
420 - Turbidity	0	NTU					

**Well No/Description: 803/MW-3 Downgradient Well**

WI Unique No:  Sample Date: 03/16/2021  
 Casing Top Elevation(Feet, MSL): 999.50  
 Casing Top Elevation New(Feet, MSL):  
 Well Is: Broken: N Frozen: N Dry: N Sample Has: Odor: N Color: N Turbidity: N  
 Abandoned On: Abandoned By:

Parameter	Sample Value	Units	PALs	ESs	LOD	LOQ	Lab Certification Number
166 - Depth To Groundwater	23.2	feet					
227 - Groundwater Elevation	976.3	feet MSL					
105 - Chloride	25.5	mg/L	125	250			405132750
447 - Sodium Dissolved	23.1	mg/L	136				405132750
274 - Manganese Dissolved	<1.2	ug/L	60	300	1.2	4.0	405132750
330 - Nitrogen, Nitrite + Nitrate Total	1.7	mg/L	2	10	0.059	0.25	405132750
377 - pH Field	7.66	su	8				
462 - Solids, Total Dissolved	338	mg/L	940				405132750
833 - Arsenic Dissolved	0.31	ug/L	1	10	0.28	1.0	405132750
261 - Lead Dissolved	<0.24	ug/L	1.5	15	0.24	1.0	405132750
248 - Iron Dissolved	<0.058	mg/L	0.15	0.3			405132750
809 - Calcium Dissolved	45500	ug/L					405132750
735 - Potassium Dissolved	514	ug/L			237	789	405132750
734 - Magnesium Dissolved	20200	ug/L					405132750
204 - Fecal Coliform	<9	#/100 ml					
186 - Dissolved Oxygen	5.15	mg/L					
420 - Turbidity	0	NTU					

**Well No/Description: 804/MW-4 Downgradient Well**

WI Unique No:  Sample Date: 03/16/2021  
 Casing Top Elevation(Feet, MSL): 992.72  
 Casing Top Elevation New(Feet, MSL):  
 Well Is: Broken: N Frozen: N Dry: N Sample Has: Odor: N Color: N Turbidity: N  
 Abandoned On: Abandoned By:

Parameter	Sample Value	Units	PALs	ESs	LOD	LOQ	Lab Certification Number
166 - Depth To Groundwater	25.2	feet					
227 - Groundwater Elevation	967.52	feet MSL					
105 - Chloride	115	mg/L	125	250			405132750
447 - Sodium Dissolved	64.6	mg/L	136				405132750
274 - Manganese Dissolved	<1.2	ug/L	60	300	1.2	4.0	405132750

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Parameter	Sample Value	Units	PALs	ESs	LOD	LOQ	Lab Certification Number
330 - Nitrogen, Nitrite + Nitrate Total	2.0	mg/L	2	10	0.059	0.25	405132750
377 - pH Field	7.37	su	8				
462 - Solids, Total Dissolved	5.4	mg/L	940				405132750
833 - Arsenic Dissolved	0.64	ug/L	1	10	0.28	1.0	405132750
261 - Lead Dissolved	<0.24	ug/L	1.5	15	0.24	1.0	405132750
248 - Iron Dissolved	<0.058	mg/L	0.15	0.3			405132750
809 - Calcium Dissolved	65400	ug/L					405132750
735 - Potassium Dissolved	1460	ug/L					405132750
734 - Magnesium Dissolved	29800	ug/L					405132750
204 - Fecal Coliform	<9	#/100 ml					
186 - Dissolved Oxygen	4.85	mg/L					
420 - Turbidity	0	NTU					

**Well No/Description: 805/MW-5 Downgradient Piezometer**

WI Unique No:  Sample Date: 03/16/2021  
 Casing Top Elevation(Feet, MSL): 1001.11  
 Casing Top Elevation New(Feet, MSL):  
 Well Is: Broken: N Frozen: N Dry: N Sample Has: Odor: N Color: N Turbidity: Y  
 Abandoned On: Abandoned By:

Parameter	Sample Value	Units	PALs	ESs	LOD	LOQ	Lab Certification Number
166 - Depth To Groundwater	100.24	feet					
227 - Groundwater Elevation	900.87	feet MSL					
105 - Chloride	2.0	mg/L	125	250			405132750
447 - Sodium Dissolved	3.33	mg/L	136				405132750
274 - Manganese Dissolved	<1.2	ug/L	60	300	1.2	4.0	405132750
330 - Nitrogen, Nitrite + Nitrate Total	1.4	mg/L	2	10	0.059	0.25	405132750
377 - pH Field	7.34	su	8				
462 - Solids, Total Dissolved	302	mg/L	940				405132750
833 - Arsenic Dissolved	<0.28	ug/L	1	10	0.28	1.0	405132750
261 - Lead Dissolved	<0.24	ug/L	1.5	15	0.24	1.0	405132750
248 - Iron Dissolved	<0.058	mg/L	0.15	0.3			405132750
809 - Calcium Dissolved	67500	ug/L					405132750
735 - Potassium Dissolved	1230	ug/L					405132750
734 - Magnesium Dissolved	35900	ug/L					405132750
204 - Fecal Coliform	<9	#/100 ml					
186 - Dissolved Oxygen	4.63	mg/L					
420 - Turbidity	78.56	NTU					

**Well No/Description: 806/MW-6 Downgradient Piezometer**

WI Unique No:  Sample Date: 03/16/2021  
 Casing Top Elevation(Feet, MSL): 992.63  
 Casing Top Elevation New(Feet, MSL):  
 Well Is: Broken: N Frozen: N Dry: N Sample Has: Odor: N Color: N Turbidity: N  
 Abandoned On: Abandoned By:

Parameter	Sample Value	Units	PALs	ESs	LOD	LOQ	Lab Certification Number
Groundwater Monitoring Parameter							
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Reporting Period: 01/01/2021 to 03/31/2021							

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Parameter	Sample Value	Units	PALs	ESs	LOD	LOQ	Lab Certification Number
166 - Depth To Groundwater	93.93	feet					
227 - Groundwater Elevation	898.7	feet MSL					
105 - Chloride	0.81	mg/L	125	250	0.43	2.0	405132750
447 - Sodium Dissolved	2.63	mg/L	136				405132750
274 - Manganese Dissolved	138	ug/L	60	300	1.2	4.0	405132750
330 - Nitrogen, Nitrite + Nitrate Total	<0.059	mg/L	2	10	0.059	0.25	405132750
377 - pH Field	7.15	su	8				
462 - Solids, Total Dissolved	336	mg/L	940				405132750
833 - Arsenic Dissolved	<0.28	ug/L	1	10	0.28	1.0	405132750
261 - Lead Dissolved	<0.24	ug/L	1.5	15	0.24	1.0	405132750
248 - Iron Dissolved	<0.058	mg/L	0.15	0.3			405132750
809 - Calcium Dissolved	72100	ug/L					405132750
735 - Potassium Dissolved	1170	ug/L					405132750
734 - Magnesium Dissolved	32600	ug/L					405132750
204 - Fecal Coliform	<9	#/100 ml					
186 - Dissolved Oxygen	0.70	mg/L					
420 - Turbidity	0	NTU					

**Sample Collected By:**

Personnel Name: Adam Watson Organization: SCS Engineers for MGE

# Groundwater Monitoring Form

## General Remarks

MW1 - Infiltration Area Well - pH sample is over the PAL  
MW2 - Background Well - Chloride sample is over the ES; Nitrogen, Sodium Dissolved, and TDS samples are over the PAL; Manganese Dissolved and Potassium Dissolved samples are between the LOD and LOQ  
MW3 - Downgradient Well - Arsenic Dissolved and Potassium Dissolved samples are between the LOD and LOQ  
MW4 - Downgradient Well - Nitrogen sample is over the PAL; Arsenic Dissolved sample is between the LOD and LOQ  
MW5 continues to show turbidity  
MW6 - Downgradient Piezometer - Manganese Dissolved sample is over the PAL; Chloride sample is between the LOD and LOQ

## Laboratory Quality Control Comments