SCS ENGINEERS

Sheet No. 1 of 2
Calc. No.
Rev. No.

Job No. 25222260.00	Job: Columbia Dry Ash Disposal Facility	By: MJT	Date: 08/02/23
Client: WPL	Subject: Sand Drainage Layer - Unit Gradient	Chk'd: DLN	Date: 08/10/23

Purpose: To determine the maximum length of slope that the final cover drainage layer (sand) can carry infiltrating water and remain stable.

Approach: Use the unit gradient method to determine the maximum slope length.

References:

1. Landfilldesign.com

2. "GRI-GC8, Determination of the Allowable Flow Rate of a Drainage Geocomposite". Geosynthetics Research Institute, 2001

3. "Beyond a factor-of-safety value, i.e., the probability of failure". GRI Newsletter/Report, Vol. 15, no. 3

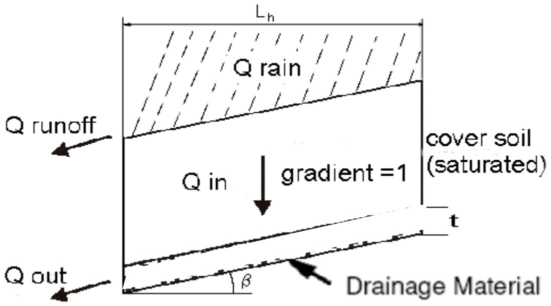
4. "Designing with Geosynthetics". R.M. Koerner, Prentice Hall Publishing Co., Englewood Cliffs, NJ, 1998

5. "Hydraulic Design of Geosynthetic and Granular Liquid Collection Layers". J. P. Giroud, J. G. Zornberg and A. Zhao, Geosynthetics International, Vol. 7, Nos 4-5

6. "Lateral Drainage Design update - part 2". G. N. Richardson, J. P. Giroud and A. Zhao, Geotechnical Fabrics Report, March 2002

7. HELP Model "User's Guide", Table 4: Default Soil, Waste, and Geosynthetic Characteristics

8. SCS Engineers, Plan of Operation Update, Dry Ash Disposal Facility, Columbia Energy Center, Final Grades (Modules 12 and 13) Plan Sheet, August 2023



With Darcy's Law:

$$Q = k \; X \; i \; X \; A$$

Inflow of water in the Drainage Material

$$Q_{in} = k_{veg} \; X \; i \; X \; A = k_{veg} \; X \; 1 \; X \; L_h \; X \; 1$$

Outflow of water from the geocomposite at the toe of the slope

$$Q_{out} = k_{drain} \; X \; i \; X \; A = k_{drain} \; X \; t \; X \; \sin\beta$$

This results in a required k_{drain} of:

$$k_{drain} = \frac{k_{veg} \; X \; L_h}{t \; X \; \sin\beta} \; X \; FS$$

SCS ENGINEERS

Sheet No. 2 of 2
Calc. No.
Rev. No.
Job No. 25222260.00
Job: Columbia Dry Ash Disposal Facility
By: MJT
Date: 08/02/23
Client: WPL
Subject: Sand Drainage Layer - Unit Gradient
Chk'd: DLN
Date: 08/10/23

Assumptions: 1. Soil hydraulic gradient *i* = 1.0.

2. Top soil will be clay. Soil permeability is 4.2 x 10 $^{-5}$ cm/sec for a CL clay from HELP model user's guide.

3. Drainage Layer hydraulic gradient = sinβ where β=14° (4:1 horizontal/vertical final cover slope).

4. Maximum horizontal final cover slope length from crest to toe drain is 371 feet as shown in Module 1 on the final grades plan sheet.

5. The minimum hydraulic conductivity ($k_{drain,ave}$) is 1.0 x 10 $^{-2}$ cm/s for the sand.

6. Cover drainage layer thickness t = 1 foot.

Calculation: Constants

L_h = Drainage pipe spacing or length of slope measured horizontally = See Below
k_{veg} = Permeability of the vegetative supporting soil = 0.000042 cm/sec
S = The liner's slope, **S** = tan **b** = 25% b = 14°
FS_{slope} = Minimum factor of safety against sliding, for drainage layer/geomembrane interface = 1.5
$\delta_{req'd}$ = Minimum interface friction angle = $\tan^{-1}$(FS*tan(b)) = 20.6 degrees

Determine the maximum slope length for the given minimum required drainage layer permeability

L_h (feet)	L_h (meter)	$k_{drain, req}$ (cm/s)	
30	9.1	7.69E-03	Design

Conclusions: The design has an intermediate pipe every 30 feet spaced evenly up the slope. The intermediate pipe spacing design with the sand material has a factor of safety of 1.95.

SCS ENGINEERS

		Sheet No.	1 of 1
		Calc. No.	
		Rev. No.	
Job No. 25220183.00	Job: Columbia Dry Ash Disposal Facility	By: MJT	Date: 04/25/22
Client: WPL	Subject: GCL Internal Shear on Final Cover	Chk'd: DLN	Date: 04/26/22

Purpose: Determine the maximum shear stress acting on a Geosynthetic Clay Liner (GCL) and the GCL internal shear strength required to provide a minimum slope stability safety factor (FS) of 1.5 for the final cover.

Approach: Use maximum shear stress formula and assumed values.

References: Design of GCL Barrier for Final Cover Side Slope Applications, Gregory N. Richardson, Ph.D., P.E., Geosynthetics '97-541

Calculation: The maximum shear stress acting on the GCL can be calculated as follows:

$$\tau_{act} = W_T \sin \beta$$

$$\beta = 14 \,^{\circ}$$

$$W_T = \gamma \quad X \quad h$$

Where:

γ = Soil Unit Weight = 120 pcf

h = Cover Thickness = 2.5 ft

$$W_T = 300 \text{ psf}$$

$$\tau_{act} = 72.6 \text{ psf}$$

$$FS = \frac{\tau_{resist}}{\tau_{act}} = 1.5$$

$$\tau_{resist} = FS \quad X \quad \tau_{act} = 1.5 \quad X \quad 72.6 = 109 \text{ psf}$$

Assumptions: Slope angle, β = 14° (4:1 horizontal / vertical final cover slope)

Soil unit weight, γ = 120 pcf

Conclusion: For a total weight of the final cover system of 300 psf and a slope angle of 4:1, the maximum shear stress will be 72.6 psf. A minimum GCL internal shear strength of 109 psf is required to provide a slope stability safety factor of 1.5.

Appendix A2

Future Module 1 Final Cover Stability Calculations

BT SQUARED
CIVIL & ENVIRONMENTAL ENGINEERING

Sheet No. 1
Calc. No.
Rev. No.
Job No. 4071 Job: Columbia Ash Generation Landfill By: PEG Date 9/23/10
Client: Alliant Subject: Liner Side Slope Drainage Layer Stability Chk'd: DLN Date 9/24/10

EVALUATION:

Evaluate the Phase 1 landfill liner side slope drainage layer for static veneer slope stability.

The side slope on the modules base runs at a 3:1 slope for an approximate maximum of 80 feet.

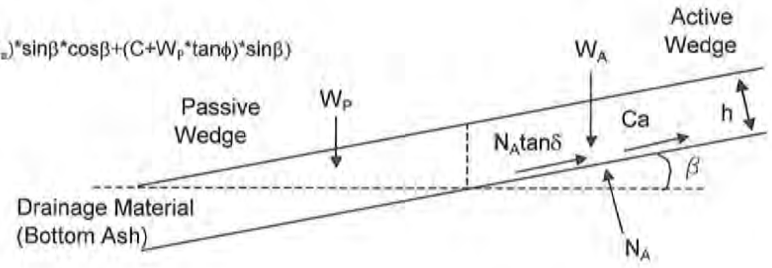
The following calculations evaluate the static veneer slope stability of the 3:1 slope.

REFERENCES:

1.) Koerner, Robert M. & Te-Yang Soong, Analysis and Design of Veneer Cover Soils, Geosynthetic Research Institute.
2.) U.S. Department of Transportation - Federal Highway Administration Recycled Materials, Coal Bottom Ash User's Guide

EQUATIONS:

$FS = (-b+(b^2-4*a*c)^{1/2})/(2*a)$
$a = (W_A-N_A*\cos\beta)*\cos\beta$
$b = -((W_A-N_A*\cos\beta)*\sin\beta*\tan\phi+(N_A*\tan\delta+C_a)*\sin\beta*\cos\beta+(C+W_P*\tan\phi)*\sin\beta)$
$c = (N_A*\tan\delta+C_a)*(\sin\beta)^2*\tan\phi$
$N_A = W_A*\cos\beta$
$W_A = \gamma*h^2*(L/h-1/\sin\beta-\tan\beta/2)$
$W_P = (\gamma*h^2)/\sin2\beta)$
$C_a = c_a(L-h/\sin\beta)$



DEFINITIONS OF VARIABLES:

FS = Factor of Safety
a, b, & c = intermediate variables (= calculated variable)
N_A = Effective force normal to the failure plane of the active wedge (= calculated variable)
W_A = Total weight of active wedge (= calculated variable)
W_P = Total weight of passive wedge (= calculated variable)
β = Soil slope angle beneath the geomembrane (= 18.42 degrees or 0.322 radians
based on liner slope of 3 to 1)
ϕ = Friction angle of the drainage layer material (= 35 degrees 0.611 radians based on Ref #2)
δ = Interface friction angle for liner system geosynthetics (to be determined)
c_a = Adhesion for liner system geosynthetics at active wedge (to be determined) , Variable
γ = Unit weight of the drainage layer material (= 135 pcf based on conservative wet density of bottom ash).
C = Cohesive force along the failure plane of the passive wedge (assumed 0 for drainage layer material)
C_a = Adhesive force of the active wedge for the liner system geosynthetics
h = Thickness of the drainage layer material(= 1.0 foot based on base design)
L = Length of slope measured along the geomembrane (= 80 feet based on base design)

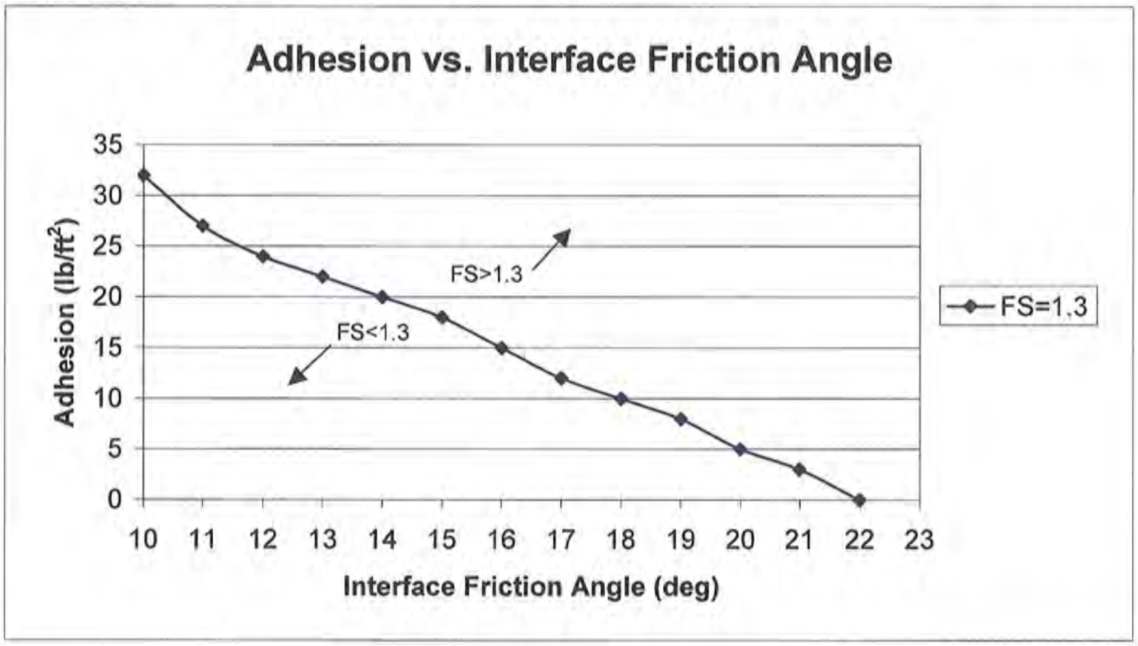
BT SQUARED
CIVIL & ENVIRONMENTAL ENGINEERING

Sheet No. 2
Calc. No.
Rev. No.

Job No. 4071 | Job: Columbia Ash Generation Landfill | By: PEG | Date 9/23/10
Client: Alliant | Subject: Liner Side Slope Drainage Layer Stability | Chk'd: DLN | Date 9/24/10

CALCULATIONS:

δ		c_a	W_A	W_P	N_A	C_a	a	b	c	FS
(deg)	(rad)	(lb/ft^2)	(lb/ft)	(lb/ft)	(lb/ft)	(lb/ft)	(lb/ft)	(lb/ft)	(lb/ft)	
10	0.175	32	10,350	225	9,820	2,459	981	-1,535	293	**1.3**
11	0.192	27	10,350	225	9,820	2,075	981	-1,473	279	**1.3**
12	0.209	24	10,350	225	9,820	1,844	981	-1,457	275	**1.3**
13	0.227	22	10,350	225	9,820	1,690	981	-1,465	277	**1.3**
14	0.244	20	10,350	225	9,820	1,537	981	-1,473	279	**1.3**
15	0.262	18	10,350	225	9,820	1,383	981	-1,482	281	**1.3**
16	0.279	15	10,350	225	9,820	1,153	981	-1,468	277	**1.3**
17	0.297	12	10,350	225	9,820	922	981	-1,455	274	**1.3**
18	0.314	10	10,350	225	9,820	768	981	-1,465	277	**1.3**
19	0.332	8	10,350	225	9,820	615	981	-1,477	279	**1.3**
20	0.349	5	10,350	225	9,820	384	981	-1,465	277	**1.3**
21	0.367	3	10,350	225	9,820	231	981	-1,478	280	**1.3**
22	0.384	0	10,350	225	9,820	0	981	-1,468	277	**1.3**



CONCLUSION:

The landfill liner side slope drainage layer was evaluated for static veneer slope stability along its longest slope. Calculations were performed to determine the minimum adhesion necessary for a range of interface friction angles to reach a FS of 1.3 or greater. Each interface friction angle and the coinciding adhesion was graphed in order to easily determine if a material interface is acceptable along the side slope.

BT SQUARED

Sheet No. 1 of 1
Calc. No.
Rev. No.

Job No. 4071 | Job: Columbia Ash Generation Landfill | By PEG Date 9/27/10
Client: Alliant | Subject: GCL Internal Shear for Liner System | Chk'd DLN Date 9/29/10

Purpose: Determine the maximum shear stress acting on a Geosynthetic Clay Liner (GCL) and the GCL internal shear strength required to provide a minimum slope stability safety factor (FS) of 1.5 for the liner system.

Approach: Use maximum shear stress formula and assumed values.

References: **Design of GCL Barrier for Final Cover Side Slope Applications**
Gregory N. Richardson, Ph.D., P.E. Geosynthetics '97 - 541

Calculation: The maximum shear stress acting on the GCL can be calculated as follows:

$$\tau_{act} = W_T \sin \beta$$

$$\beta = 18.4^\circ$$

$$W_T = \gamma * h$$

Where,

γ = Ash Unit Weight = 135 pcf

h = drainage layer thickness = 1 ft

$$W_T = 135 \text{ psf}$$

$$\tau_{act} = 42.6 \text{ psf}$$

$$FS = \frac{\tau_{resist}}{\tau_{act}} = 1.5$$

$$\tau_{resist} = FS * \tau_{act} = 1.5 * 42.6 = 64 \text{ psf}$$

Assumptions: 1. Slope angle, $\beta = 18.4^\circ$ (3:1 horizontal/vertical liner side slope).

2. Ash unit weight, γ = 135 pcf

Conclusions: For a total weight of the leachate drainage layer of 135 psf and a slope angle of 3:1, the maximum shear stress will be 42.6 psf. A minimum GCL internal shear strength of 64 psf is required to provide a slope stability safety factor of 1.5.

SCS ENGINEERS

Sheet No. 1 of 2
Calc. No.
Rev. No.

Job No. 25222260.00 | Job: Columbia Dry Ash Disposal Facility | By: MJT | Date: 08/02/23
Client: WPL | Subject: Sand Drainage Layer - Unit Gradient | Chk'd: DLN | Date: 08/10/23

Purpose: To determine the maximum length of slope that the final cover drainage layer (sand) can carry infiltrating water and remain stable.

Approach: Use the unit gradient method to determine the maximum slope length.

References:

1. Landfilldesign.com

2. "GRI-GC8, Determination of the Allowable Flow Rate of a Drainage Geocomposite". Geosynthetics Research Institute, 2001

3. "Beyond a factor-of-safety value, i.e., the probability of failure". GRI Newsletter/Report, Vol. 15, no. 3

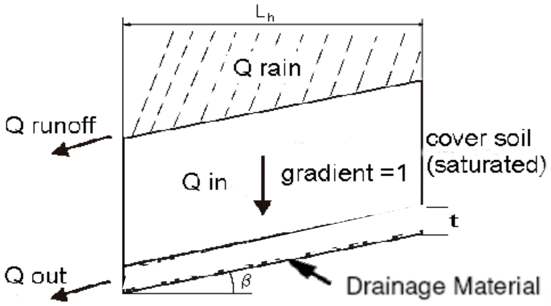
4. "Designing with Geosynthetics". R.M. Koerner, Prentice Hall Publishing Co., Englewood Cliffs, NJ, 1998

5. "Hydraulic Design of Geosynthetic and Granular Liquid Collection Layers". J. P. Giroud, J. G. Zornberg and A. Zhao, Geosynthetics International, Vol. 7, Nos 4-5

6. "Lateral Drainage Design update - part 2". G. N. Richardson, J. P. Giroud and A. Zhao, Geotechnical Fabrics Report, March 2002

7. HELP Model "User's Guide", Table 4: Default Soil, Waste, and Geosynthetic Characteristics

8. SCS Engineers, Plan of Operation Update, Dry Ash Disposal Facility, Columbia Energy Center, Final Grades (Modules 12 and 13) Plan Sheet, August 2023



With Darcy's Law:

$$Q = k \ X \ i \ X \ A$$

Inflow of water in the Drainage Material

$$Q_{in} = k_{veg} \ X \ i \ X \ A = k_{veg} \ X \ 1 \ X \ L_h \ X \ 1$$

Outflow of water from the geocomposite at the toe of the slope

$$Q_{out} = k_{drain} \ X \ i \ X \ A = k_{drain} \ X \ t \ X \ \sin\beta$$

This results in a required k_{drain} of:

$$k_{drain} = \frac{k_{veg} \ X \ L_h}{t \ X \ \sin\beta} \ X \ FS$$

SCS ENGINEERS

Sheet No. 2 of 2
Calc. No.
Rev. No.
Job No. 25222260.00 Job: Columbia Dry Ash Disposal Facility By: MJT Date: 08/02/23
Client: WPL Subject: Sand Drainage Layer - Unit Gradient Chk'd: DLN Date: 08/10/23

Assumptions:

1. Soil hydraulic gradient *i* = 1.0.
2. Top soil will be clay. Soil permeability is 4.2 x 10^{-5} cm/sec for a CL clay from HELP model user's guide.
3. Drainage Layer hydraulic gradient = sinβ where β=14° (4:1 horizontal/vertical final cover slope).
4. Maximum horizontal final cover slope length from crest to toe drain is 371 feet as shown in Module 1 on the final grades plan sheet.
5. The minimum hydraulic conductivity ($k_{drain,ave}$) is 1.0 x 10^{-2} cm/s for the sand.
6. Cover drainage layer thickness t = 1 foot.

Calculation: Constants

L_h = Drainage pipe spacing or length of slope measured horizontally = See Below
k_{veg} = Permeability of the vegetative supporting soil = 0.000042 cm/sec
S = The liner's slope, **S** = tan **b** = 25% b = 14°
FS_{slope} = Minimum factor of safety against sliding, for drainage layer/geomembrane interface = 1.5
$\delta_{req'd}$ = Minimum interface friction angle = $\tan^{-1}$(FS*tan(b)) = 20.6 degrees

Determine the maximum slope length for the given minimum required drainage layer permeability

L_h (feet)	L_h (meter)	$k_{drain, req}$ (cm/s)	
30	9.1	7.69E-03	Design

Conclusions: The design has an intermediate pipe every 30 feet spaced evenly up the slope. The intermediate pipe spacing design with the sand material has a factor of safety of 1.95.

SCS ENGINEERS

Sheet No.	1 of 1
Calc. No.	
Rev. No.	

Job No. 25222260.00	Job: Columbia Dry Ash Disposal Facility	By: MJT	Date: 07/18/23
Client: WPL	Subject: GCL Internal Shear on Final Cover	Chk'd: DLN	Date: 07/25/23

Purpose: Determine the maximum shear stress acting on a Geosynthetic Clay Liner (GCL) and the GCL internal shear strength required to provide a minimum slope stability safety factor (FS) of 1.5 for the final cover.

Approach: Use maximum shear stress formula and assumed values.

References: Design of GCL Barrier for Final Cover Side Slope Applications, Gregory N. Richardson, Ph.D., P.E., Geosynthetics '97-541

Calculation: The maximum shear stress acting on the GCL can be calculated as follows:

$$\tau_{act} = W_T \sin \beta$$

$$\beta = 14\ ^{\circ}$$

$$W_T = \gamma \quad X \quad h$$

Where:

γ = Soil Unit Weight = 120 pcf

h = Cover Thickness = 3.0 ft

$$W_T = 360 \text{ psf}$$

$$\tau_{act} = 87.1 \text{ psf}$$

$$FS = \frac{\tau_{resist}}{\tau_{act}} = 1.5$$

$$\tau_{resist} = FS \quad X \quad \tau_{act} = 1.5 \quad X \quad 87.1 = 131 \text{ psf}$$

Assumptions: Slope angle, β = 14° (4:1 horizontal / vertical final cover slope)

Soil unit weight, γ = 120 pcf

Conclusion: For a total weight of the final cover system of 360 psf and a slope angle of 4:1, the maximum shear stress will be 87.1 psf. A minimum GCL internal shear strength of 131 psf is required to provide a slope stability safety factor of 1.5.

Appendix A3

Future Final Cover Stability Calculations

SCS ENGINEERS

		Sheet No.	1 of 2
		Calc. No.	
		Rev. No.	
Job No. 25222260.00	Job: Columbia Dry Ash Disposal Facility	By: MJT	Date: 08/04/23
Client: WPL	Subject: Liner Side Slope Drainage Layer Stability	Chk'd: DLN	Date: 08/10/23

Purpose: Evaluate the Module 12 and 13 landfill liner side slope drainage layer for static veneer slope stability. The following calculations evaluate the static veneer slope stability of the 3:1 slope.

References: 1. Koerner, Robert M. & Te-Yang Soong, Analysis and Design of Veneer Cover Soils, Geosynthetic Research Institute.

2. U.S. Department of Transportation - Federal Highway Administration Recycled Materials, Coal Bottom Ash User's Guide

Calculation:

$FS = (-b + (b^2 - 4 * a * c)^{1/2}) / (2 * a)$

$a = (W_A - N_A * \cos\beta) * \cos\beta$

$b = - ((W_A - N_A * \cos\beta) * \sin\beta * \tan\phi + (N_A * \tan\delta + C_a) * \sin\beta * \cos\beta + (C + W_P * \tan\phi) * \sin\beta)$

$c = (N_A * \tan\delta + C_a) * (\sin\beta)^2 * \tan\phi$

$N_A = W_A * \cos\beta$

$W_A = \gamma * h^2 * (L / h - 1 / \sin\beta - \tan\beta / 2)$

$W_P = (\gamma * h^2) / \sin2\beta)$

$C_a = c_a (L - h / \sin\beta)$

<u>Where:</u>

FS = Factor of Safety

a, b, & c = intermediate variables (calculated variable)

N_A = Effective force normal to the failure plane of the active wedge (calculated variable)

W_A = Total weight of active wedge (calculated variable)

W_P = Total weight of passive wedge (calculated variable)

β = Soil slope angle beneath the geomembrane = 18.421 degrees = 0.3215 radians
based on liner slope of 3 to 1

ϕ = Friction angle of the sand drainage layer material = 30 degrees = 0.5236 radians
based on experience

δ = Interface friction angle for liner system geosynthetics (to be determined)

c_a = Adhesion for liner system geosynthetics at active wedge (to be determined), Variable

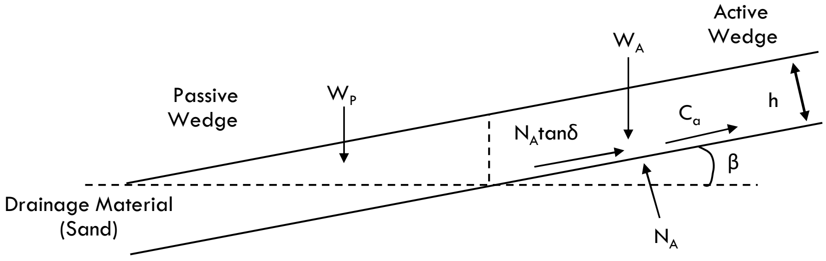
γ = Unit weight of the drainage layer material = 125 pcf
based on conservative wet density of sand

C = Cohesive force along the failure plane of the passive wedge, assumed
= 0 for drainage layer material

C_a = Adhesive force of the active wedge for the liner system geosynthetics

h = Thickness of the drainage layer material = 1 foot, based on base design

L = Length of slope measured along the geomembrane = 82 feet, based on base design



SCS ENGINEERS

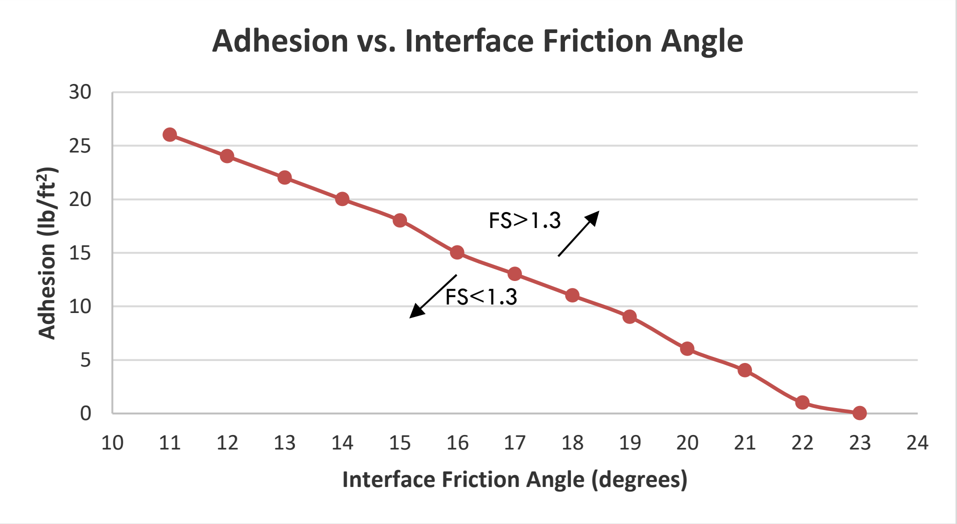
Sheet No. 2 of 2
Calc. No.
Rev. No.

Job No. 25222260.00	Job: Columbia Dry Ash Disposal Facility	By: MJT	Date: 08/04/23
Client: WPL	Subject: Liner Side Slope Drainage Layer Stability	Chk'd: DLN	Date: 08/10/23

Calculation:

(cont.)

δ		c_a	W_A	W_P	N_A	C_a	a	b	c	FS
(deg)	(rad)	(lb/ft^2)	(lb/ft)	(lb/ft)	(lb/ft)	(lb/ft)	(lb/ft)	(lb/ft)	(lb/ft)	
11	0.192	26	9,834	208	9,330	2049.7	932	-1,375	223	1.3
12	0.2094	24	9,834	208	9,330	1,892	932	-1,379	223	1.3
13	0.2269	22	9,834	208	9,330	1,734	932	-1,383	224	1.3
14	0.2443	20	9,834	208	9,330	1,577	932	-1,387	225	1.3
15	0.2618	18	9,834	208	9,330	1,419	932	-1,392	226	1.3
16	0.2793	15	9,834	208	9,330	1,183	932	-1,374	222	1.3
17	0.2967	13	9,834	208	9,330	1,025	932	-1,380	224	1.3
18	0.3142	11	9,834	208	9,330	867	932	-1,386	225	1.3
19	0.3316	9	9,834	208	9,330	710	932	-1,393	226	1.3
20	0.3491	6	9,834	208	9,330	473	932	-1,377	223	1.3
21	0.3665	4	9,834	208	9,330	315	932	-1,385	225	1.3
22	0.384	1	9,834	208	9,330	79	932	-1,371	222	1.3
23	0.4014	0	9,834	208	9,330	0	932	-1,405	228	1.3



Conclusion: The landfill liner side slope drainage layer was evaluated for static veneer slope stability along its longest slope. Calculations were performed to determine the minimum adhesion necessary for a range of interface friction angles to reach a FS of 1.3 or greater. Each interface friction angle and the coinciding adhesion was graphed in order to easily determine if a material interface is acceptable along the side slope.

SCS ENGINEERS

		Sheet No.	1 of 1
		Calc. No.	
		Rev. No.	
Job No. 25220183.00	Job: Columbia Dry Ash Disposal Facility	By: MJT	Date: 03/02/22
Client: WPL	Subject: GCL Internal Shear for Liner System	Chk'd: DLN	Date: 04/13/22

Purpose: Determine the maximum shear stress acting on a Geosynthetic Clay Liner (GCL) and the GCL internal shear strength required to provide a minimum slope stability safety factor (FS) of 1.5 for the liner system.

Approach: Use maximum shear stress formula and assumed values.

References: Design of GCL Barrier for Final Cover Side Slope Applications, Gregory N. Richardson, Ph.D., P.E., Geosynthetics '97-541

Calculation: The maximum shear stress acting on the GCL can be calculated as follows:

$$\tau_{act} = W_T \sin \beta$$

$$\beta = 18.4 \ ^\circ$$

$$W_T = \gamma \quad X \quad h$$

Where:

γ = Sand Unit Weight = 125 pcf

h = Drainage Layer Thickness = 1 ft

$$W_T = 125 \text{ psf}$$

$$\tau_{act} = 39.5 \text{ psf}$$

$$FS = \frac{\tau_{resist}}{\tau_{act}} = 1.5$$

$$\tau_{resist} = FS \quad X \quad \tau_{act} = 1.5 \quad X \quad 39.5 = 59 \text{ psf}$$

Assumptions: Slope angle, β = 18.4° (3:1 horizontal / vertical liner side slope

Sand unit weight, γ = 125 pcf

Conclusion: For a total weight of the leachate drainage layer of 125 psf and a slope angle of 3:1, the maximum shear stress will be 39.46 psf. A minimum GCL internal shear strength of 59.19 psf is required to provide a slope stability safety factor of 1.5.

SCS ENGINEERS

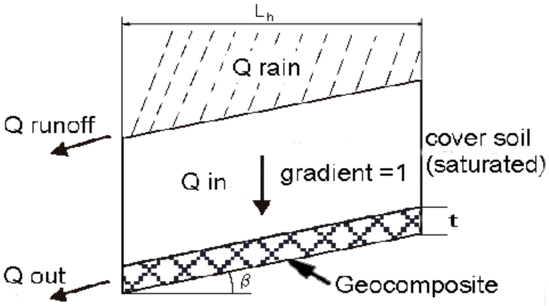
Sheet No. 1 of 2
Calc. No.
Rev. No.
Job No. 25222260.00
Job: Columbia Dry Ash Disposal Facility
By: MJT
Date: 08/04/23
Client: WPL
Subject: Geocomposite Unit Gradient
Chk'd: DLN
Date: 08/11/23

Purpose: To determine the maximum length of slope that the final cover drainage geocomposite can carry infiltrating water and remain stable. Also determine the recommended minimum friction angle for final cover side slope stability. Note: This calculation does not include the flow convergence areas where a separate calculation is required.

Approach: Use the unit gradient method to determine the maximum slope length.

References:

1. Landfilldesign.com - Lateral Drainage System - Single Slope, Unit Gradient Method
2. "GRI-GC8, Determination of the Allowable Flow Rate of a Drainage Geocomposite". Geosynthetics Research Institute, 2001.
3. "Beyond a factor-of-safety value, i.e., the probability of failure". GRI Newsletter/Report, Vol. 15, no. 3.
4. "Designing with Geosynthetics". R.M. Koerner, Prentice Hall Publishing Co., Englewood Cliffs, NJ, 1998.
5. "Hydraulic Design of Geosynthetic and Granular Liquid Collection Layers". J. P. Giroud, J. G. Zornberg and A. Zhao, Geosynthetics International, Vol. 7, Nos 4-5.
6. "Lateral Drainage Design update - part 2". G. N. Richardson, J. P. Giroud and A. Zhao, Geotechnical Fabrics Report, March 2002.
7. Giroud, Zornberg, and Zhao, 2000, "Hydraulic Design of Liquid Collection Layers", Geosynthetics International
8. SCS Engineers, Plan of Operation Update, Dry Ash Disposal Facility, Columbia Energy Center, Final Grades (Modules 12 and 13) Plan Sheet, August 2023
9. HELP Model "User's Guide" in conjunction with GRI report #19, pages 34-37 (Leachate Collection System)



With Darcy's law:

$$Q = k * i * A$$

Inflow of water in the geocomposite

$$Q_{in} = k_{veg} * i * A = k_{veg} * 1 * L_h * 1$$

Outflow of water from the geocomposite at the toe of the slope

$$Q_{out} = k_{comp} * i * A = k_{comp} * i * t * 1 = \theta_{required} * \sin\beta$$ $= \theta$*¿*1 where $\theta = k_{comp} * t$

Inflow equals outflow (Factor of Safety = 1)

$$Q_{in} = Q_{out}$$

This results in a required transmissivity of the geocomposite of:

$$\theta_{required} = \frac{k_{veg} * L_h}{\sin\beta}$$

Which results in the ultimate transmissivity after multiplying by the Total Serviceability Factor (TSF)

$$\theta_{ultimate} = \theta_{required} * FS_d * RF_{in} * RF_{cr} * RF_{cc} * RF_{bc}$$

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		Sheet No.	2 of 2
		Calc. No.	
		Rev. No.	
Job No. 25222260.00	Job: Columbia Dry Ash Disposal Facility	By: MJT	Date: 08/04/23
Client: WPL	Subject: Geocomposite Unit Gradient	Chk'd: DLN	Date: 08/11/23

Assumptions: 1. Soil hydraulic gradient *i* = 1.0.

2. Top soil will be clay. Soil permeability is 4.2 x 10 $^{-5}$ cm/sec for a CL clay from HELP model user's guide.
3. Geocomposite hydraulic gradient = sinβ where β=14° (4:1 horizontal/vertical final cover slope).
4. Factor of safety and transmissivity reduction factors are from recommended values in GRI report #19 (Leachate collection system example) and HELP model "Users Guide"
5. Maximum horizontal final cover slope length from crest to toe drain is 570 feet as shown on Final Grades (Modules 12 and 13) plan sheet. This includes 128' of 10:1 slope length at the peak.

Calculation: Constants

L_h = Drainage pipe spacing or length of slope measured horizontally = See Below

k_{veg} = Permeability of the vegetative supporting soil = 0.000042 cm/sec

S = The liner's slope, **S** = tan **b** = 25% b = 14 °

FS_{slope} = Minimum factor of safety against sliding, for soil/geocomposite or geocomposite/geomembrane interfaces = 1.5

$\delta_{req'd}$ = Minimum interface friction angle = $\tan^{-1}$(FS*tan(b)) = 20.6 degrees

FS_d = Overall factor of safety for drainage = 2.0

RF_{in} = Intrusion Reduction Factor = 1.1

RF_{cr} = Creep Reduction Factor = 1.2

RF_{cc} = Chemical Clogging Reduction Factor = 1.1

RF_{bc} = Biological Clogging Reduction Factor = 1.4

Determine the maximum slope length for a given ultimate transmissivity

Θ_{ult} (m^2/sec)	L_h (meter)	L_h (feet)
1.00E-03	146.5	481

Determine the ultimate transmissivity based on a given slope length

L_h (feet)	L_h (meter)	Θ_{ult} (m^2/sec)	
570	173.7	1.19E-03	~ Total slope length
285	86.9	5.93E-04	~ 1/2 of total slope length
190	57.9	3.96E-04	~ 1/3 of total slope length

Conclusions: If no intermediate drainage outlets were constructed on the final cover, a minimum transmissivity of 1.19 x 10 $^{-3}$ m^2/sec would need to be obtained.

A minimum interface friction angle of 20.6 degrees between cover soil and geocomposite is required to achieve a minimum recommended final cover slope stability safety factor of 1.5.

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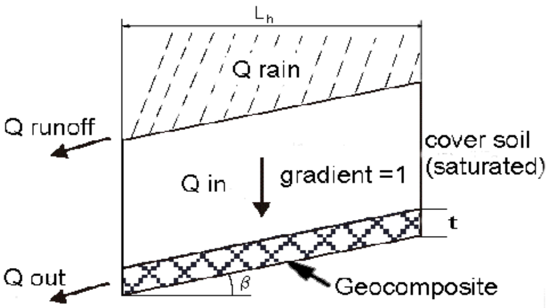
Sheet No. 1 of 2
Calc. No.
Rev. No.
Job No. 25222260.00 Job: Columbia Dry Ash Disposal Facility By: MJT Date: 08/11/2023
Client: WPL Subject: Geocomposite Unit Gradient - Final Cover Access Road Chk'd: DLN Date: 08/15/2023

Purpose: To determine the maximum length of slopes that the final cover drainage geocomposite can carry infiltrating water and remain stable above the Final Cover Access Road.

Approach: Use the unit gradient method to determine the maximum slope length.

References:

1. Landfilldesign.com - Lateral Drainage System - Single Slope, Unit Gradient Method
2. "GRI-GC8, Determination of the Allowable Flow Rate of a Drainage Geocomposite". Geosynthetics Research Institute, 2001.
3. "Beyond a factor-of-safety value, i.e., the probability of failure". GRI Newsletter/Report, Vol. 15, no. 3.
4. "Designing with Geosynthetics". R.M. Koerner, Prentice Hall Publishing Co., Englewood Cliffs, NJ, 1998.
5. "Hydraulic Design of Geosynthetic and Granular Liquid Collection Layers". J. P. Giroud, J. G. Zornberg and A. Zhao, Geosynthetics International, Vol. 7, Nos 4-5.
6. "Lateral Drainage Design update - part 2". G. N. Richardson, J. P. Giroud and A. Zhao, Geotechnical Fabrics Report, March 2002.
7. Giroud, Zornberg, and Zhao, 2000, "Hydraulic Design of Liquid Collection Layers", Geosynthetics International
8. SCS Engineers, Plan of Operation Update, Dry Ash Disposal Facility, Columbia Energy Center, Final Grades (Module 12 and 13) Plan Sheet, August 2023
9. HELP Model "User's Guide", Table 1 - Default Low Density Soil Characteristics
10. Soong, T.Y. and Koerner, R.M. (1997), "The Design of Drainage Systems over Geosynthetically Lined Slopes", Geosynthetics Research Institute, Report #19.



With Darcy's law:

$$Q = k * i * A$$

Inflow of water in the geocomposite

$$Q_{in} = k_{veg} * i * A = k_{veg} * 1 * L_h * 1$$

Outflow of water from the geocomposite at the toe of the slope

$$Q_{out} = k_{comp} * i * A = k_{comp} * i * t * 1 = \theta_{required} * \sin \beta$$ = θ*i*1 where θ = k_{comp} * t

Inflow equals outflow (Factor of Safety = 1)

$$Q_{in} = Q_{out}$$

This results in a required transmissivity of the geocomposite of:

$$\theta_{required} = \frac{k_{veg} * L_h}{\sin \beta}$$

Which results in the ultimate transmissivity after multiplying by the Total Serviceability Factor (TSF)

$$\theta_{ultimate} = \theta_{required} * FS_d * RF_{in} * RF_{cr} * RF_{cc} * RF_{bc}$$

SCS ENGINEERS

Sheet No. 2 of 2
Calc. No.
Rev. No.
Job No. 25222260.00 Job: Columbia Dry Ash Disposal Facility By: MJT Date: 08/11/2023
Client: WPL Subject: Geocomposite Unit Gradient - Final Cover Access Road Chk'd: DLN Date: 08/15/2023

4:1 final cover geocomposite slope above access road

Assumptions: 1. Soil hydraulic gradient *i* = 1.0.

2. Top soil will be clay. Soil permeability is 4.2 x 10 $^{-5}$ cm/sec for a CL clay from HELP model user's guide.
3. Geocomposite hydraulic gradient = sinβ where β=14° (4:1 horizontal/vertical final cover slope).
4. Factor of safety and transmissivity reduction factors are from recommended values in GRI report #19 (Leachate collection system example) and HELP model "Users Guide"
5. Maximum horizontal final cover slope length at 4:1 slope above the road is 495 feet as shown on Final Grades (Module 12 and 13) plan sheet. This includes 95' of 10:1 slope length at the peak.

Calculation: Constants

L_h = Drainage pipe spacing or length of slope measured horizontally = See Below
k_{veg} = Permeability of the vegetative supporting soil = 0.000042 cm/sec
S = The liner's slope, **S** = tan **b** = 25% b = 14 °

FS_d = Overall factor of safety for drainage = 2.0
RF_{in} = Intrusion Reduction Factor = 1.1
RF_{cr} = Creep Reduction Factor = 1.2
RF_{cc} = Chemical Clogging Reduction Factor = 1.1
RF_{bc} = Biological Clogging Reduction Factor = 1.4

Determine the ultimate transmissivity based on a given slope length

L_h (feet)	L_h (meter)	Θ_{ult} (m^2/sec)
495	150.9	1.03E-03

~ Total slope length (4:1 slope above access road only)

Conclusion: If no intermediate drainage outlets were constructed on the final cover, above the Final Cover Access Road, a minimum transmissivity of 1.03 x 10 $^{-3}$ m^2/sec would need to be obtained.

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		Sheet No.	1 of 1
		Calc. No.	
		Rev. No.	
Job No. 25222260.00	Job: Columbia Dry Ash Disposal Facility	By: MJT	Date: 07/18/23
Client: WPL	Subject: GCL Internal Shear on Final Cover	Chk'd: DLN	Date: 07/25/23

Purpose: Determine the maximum shear stress acting on a Geosynthetic Clay Liner (GCL) and the GCL internal shear strength required to provide a minimum slope stability safety factor (FS) of 1.5 for the final cover.

Approach: Use maximum shear stress formula and assumed values.

References: Design of GCL Barrier for Final Cover Side Slope Applications, Gregory N. Richardson, Ph.D., P.E., Geosynthetics '97-541

Calculation: The maximum shear stress acting on the GCL can be calculated as follows:

τ_{act} = $W_T \sin \beta$

β = 14 °

W_T = γ X h

Where:

γ = Soil Unit Weight = 120 pcf

h = Cover Thickness = 3.0 ft

W_T = 360 psf

τ_{act} = 87.1 psf

$$FS = \frac{\tau_{resist}}{\tau_{act}} = 1.5$$

τ_{resist} = FS X τ_{act} = 1.5 X 87.1 = 131 psf

Assumptions: Slope angle, β = 14° (4:1 horizontal / vertical final cover slope)

Soil unit weight, γ = 120 pcf

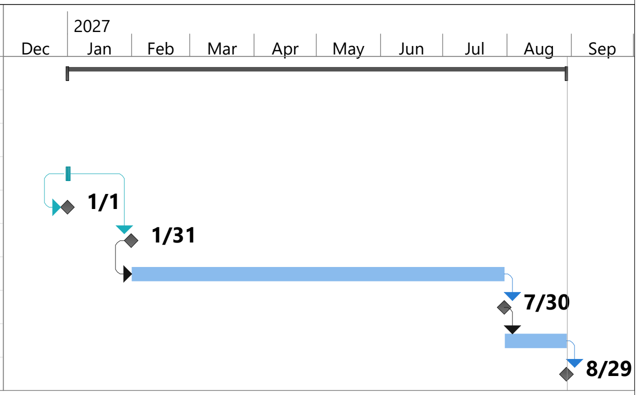
Conclusion: For a total weight of the final cover system of 360 psf and a slope angle of 4:1, the maximum shear stress will be 87.1 psf. A minimum GCL internal shear strength of 131 psf is required to provide a slope stability safety factor of 1.5.

Appendix B

Schedule

Closure Plan - Columbia Ash Disposal Facility

ID	Task Name	Duration	Start	Finish	Predec	Predecessors
1	**Closure of Columbia Ash Disposal Facility**	**241 days?**	**Fri 1/1/27**	**Sun 8/29/27**		
2	Closure of West Phase 1	180 days	Sat 6/1/24	Wed 11/27/24		
3	Closure of West Phase 1 Documentation	30 days	Thu 11/28/24	Fri 12/27/24		
4	Ash Filling Ceases	1 day	Fri 1/1/27	Fri 1/1/27		
5	Other Regulatory Permits - None	0 days	Fri 1/1/27	Fri 1/1/27	4SS	4SS
6	Notification of Intent to Close	0 days	Sun 1/31/27	Sun 1/31/27	4FS+3	4FS+30 days
7	Closure of Remaining Open Area	180 days	Mon 2/1/27	Fri 7/30/27	6SS	6SS
8	Notification of Closure Completion	0 days	Fri 7/30/27	Fri 7/30/27	7	7
9	Documentation of Closure	30 days	Sat 7/31/27	Sun 8/29/27	8	8
10	State Submittal of Documentation Report	0 days	Sun 8/29/27	Sun 8/29/27	9	9



Date: Fri 8/18/23

Task	▬	Inactive Task	▭	Manual Summary Rollup	▬	External Milestone	◆
Split	┈	Inactive Milestone	◇	Manual Summary	┏━┓	Deadline	⬇
Milestone	◆	Inactive Summary	┏━┓	Start-only	[	Progress	━
Summary	┏━┓	Manual Task	▬	Finish-only	]	Manual Progress	━
Project Summary	┏━┓	Duration-only	▬	External Tasks	▬		

Appendix G

CCR Groundwater Monitoring System Plan

CCR Groundwater Monitoring System Plan

Columbia Dry Ash Disposal Facility
Pardeeville, Wisconsin

Prepared for:

Wisconsin Power and Light Company
Columbia Energy Center
W8375 Murray Road
Pardeeville, Wisconsin 53954

SCS ENGINEERS

25222260.00 | September 1, 2023

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

Table of Contents

Figures

Attachments

I:\25222260.00\Deliverables\Plan Modification Addendum\Appendicies\G_CCR Groundwater Monitoring System Plan\230901_CCR Groundwater Monitoring System Plan_Final.docx

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1.0 INTRODUCTION

This Groundwater Monitoring System Plan establishes the coal combustion residual (CCR) groundwater monitoring system for the Columbia Dry Ash Disposal Facility (ADF), as required under NR 507.15(3). Specific requirements, responses to each requirement, and references to attached supporting documentation are included in **Sections 3** and **4**.

2.0 GROUNDWATER MONITORING NETWORK

The CCR groundwater monitoring system includes the following monitoring wells. Separate groups of downgradient monitoring wells are designated for each of the three groups of landfill modules. Two upgradient monitoring wells are designated as background wells for the entire ADF. All monitoring well locations are shown on **Figure 2**.

- Upgradient wells: MW-84A and MW-301
- Modules 1-3 (MOD 1-3) downgradient wells: MW-302, MW-33AR, MW-34A
- Modules 4-6 (MOD 4-6) downgradient wells: MW-309, MW-310, MW-311
- Modules 10-11 (MOD 10-11) downgradient wells: MW-313, MW-314, MW-315

3.0 GROUNDWATER MONITORING NETWORK DEMONSTRATION UNDER NR 514.045 (1)(H)

NR 514.045 (1)(h)

> *"A demonstration that the CCR groundwater monitoring system complies with the requirements under s. NR 507.15 (3), including documentation of the design, installation, and development of any CCR wells."*

The requirements of NR 50715(3)(a) through (e) are listed below, followed by a description of how each requirement is met by the monitoring system.

4.0 CCR GROUNDWATER MONITORING PLAN REQUIREMENTS UNDER NR 507.15 (3)

NR 507.15 (3)

> *"CCR LANDFILLS. In addition to the detection groundwater monitoring system required under s. NR 507.19, the owner or operator of a CCR landfill that accepts CCR on or after October 19, 2015, shall also submit a plan establishing a separate CCR groundwater monitoring system for the purpose of monitoring groundwater quality in the uppermost aquifer in accordance with this chapter. The plan shall be submitted with the plan of operation modification for initial permitting in accordance with s. NR 514.045 or in the feasibility report under ch. NR 512."*

This document establishes the CCR groundwater monitoring system for the Columbia ADF.

4.1 COMPLIANCE WITH NR 507.15 (3)(A)

NR 507.15 (3)(a)

> *"The CCR groundwater monitoring system shall consist of a sufficient number of CCR wells, installed at appropriate locations and depths, as approved by the department, adequate to yield groundwater samples from the uppermost aquifer that accurately represent upgradient groundwater quality that has not been affected by leakage from a CCR landfill and downgradient groundwater quality passing the waste boundary of the CCR landfill. The downgradient monitoring wells shall be installed to ensure detection of groundwater contamination in the uppermost aquifer, including all known or suspected contaminant pathways."*

The uppermost aquifer unit at the site, as defined in NR 500.03(246m), is the surficial sand and gravel aquifer. A summary of the regional hydrogeologic stratigraphy is presented in **Attachment A.** Boring logs for monitoring wells in the CCR monitoring system, showing that the unconsolidated material at these well locations is primarily sand, are included in **Attachment B.** The thickness of unconsolidated deposits at the site varies from approximately 40 to 100 feet. A well construction record for one nearby private supply well that was apparently screened within the sand and gravel aquifer is included as the first log in **Attachment C.** Immediately underlying the surficial sand and gravel aquifer is the Cambrian-Ordovician sandstone aquifer. The three water supply wells at the site (HC-1, HC-2, and HC-3) all obtain water from the sandstone aquifer. The other nearby private wells are cased within the sandstone aquifer, based on the logs that SCS was able to locate through public records (**Attachment C**).

Groundwater elevation data from the site have historically shown that local groundwater flow within the unconsolidated formation is generally to the west, toward the Wisconsin River, but an area of outward radial flow has been present around the pond complex located to the northwest of the ADF. The two most recent groundwater flow maps, from April and October 2022, are included as **Attachment D.** The April 2022 flow map, showing a groundwater mound with radial outward flow around the Primary Ash Pond and Secondary Pond, is more typical of historical conditions around the pond complex. In October 2022, groundwater flow in the vicinity of the pond complex was affected by dewatering operations around the Secondary Pond related to pond closure. In the immediate area of the ADF, groundwater flow is generally to the northwest. This information was used to select background and downgradient monitoring well locations. The background wells (MW-84A and MW-301) are located to the southeast of the ADF, upgradient from the landfill.

The MOD 1-3 downgradient wells (MW-302, MW-33AR, and MW-34A) are located along the western edge of the landfill. The MOD 4-6 downgradient wells (MW-309, MW-310, and MW-311) are located along the northern edge of the landfill and to the northwest. The MOD 10-11 downgradient wells are located along the northern edge of Module 11. The understanding of groundwater flow at the site has changed since the installation of the CCR monitoring wells, due to additional information provided by the CCR monitoring wells at the northern edge of the landfill and other new wells to the northeast of the landfill. WPL would like to discuss with the Department the proper characterization of the groundwater monitoring network going forward, as one multi-unit network or as multiple separate networks.

The downgradient wells were installed as close as practicable to the CCR unit boundaries considering the site layout and obstructions. For the landfill wells, overhead power lines, a railroad right-of-way along the west side of the landfill, and steep grades in some areas restricted drilling locations immediately west and northwest of the ADF.

4.2 COMPLIANCE WITH NR 507.15 (3)(B)

NR 507.15 (3)(b)

> *"The number, spacing, and depths of monitoring wells submitted to the department as part of the CCR groundwater monitoring system plan shall be determined based upon site-specific technical information that shall include thorough characterization of aquifer thickness, groundwater flow rate, and groundwater flow direction, including seasonal and temporal fluctuations in groundwater flow. The monitoring systems shall also take into account the saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities, and effective porosities."*

Regional information on the glacial deposits is included in **Attachment A.** Groundwater flow direction maps reflecting data collected in April and October 2022 are included in **Attachment D** and show little variation in flow direction across the ADF. Monitoring well boring logs showing site-specific geology are included in **Attachment B.** As shown on the logs, the sand and gravel aquifer unit is the uppermost geologic material at the site, and materials comprising the uppermost aquifer at each location are sand, silty sand, poorly graded sand, and/or poorly graded sand with gravel. Sandstone bedrock underlying the sand and gravel aquifer is shown on the boring logs for MW-33BR and MW-34B, located adjacent to MW-33AR and MW-34A (**Attachment B**). Hydraulic conductivity test results for monitoring wells installed for the CCR monitoring system are included in **Attachment E.** Additional geologic and hydrogeologic data are available in historic reports prepared for monitoring of the active and closed CCR landfills under the state monitoring program. Groundwater flow rates calculated using monitoring well hydraulic conductivity results for the wells installed for the CCR monitoring system and site potentiometric surface contours are approximately $2\text{x}10^{-3}$ to $8\text{x}10^{-2}$ feet/day.

The monitoring system takes into account the site-specific technical information listed above. As shown on the boring logs (**Attachment B**), all downgradient CCR monitoring wells are screened within the sand and gravel aquifer. Horizontal well spacing between the CCR monitoring wells is similar to or less than distance between monitoring wells in the pre-existing non-CCR monitoring program, which also monitors groundwater in the unconsolidated sand unit.

4.3 COMPLIANCE WITH NR 507.15 (3)(C)

NR 507.15 (3)(c)

> *"The CCR groundwater monitoring system plan shall include the minimum number of monitoring wells necessary to meet the performance standards specified under par. (a), based on the site-specific information specified under par. (b). The groundwater monitoring system plan shall contain all of the following:*
>
> 1. *A minimum of one upgradient and 3 downgradient monitoring wells to be designated as CCR wells.*
>
> 2. *Additional monitoring wells as necessary to accurately represent the background groundwater quality in the uppermost aquifer that has not been affected by leakage from the CCR landfill and the quality of groundwater passing the waste boundary of the CCR landfill."*

The monitoring system at the site landfill includes two upgradient wells, three downgradient monitoring wells for MOD 1-3, three downgradient wells for MOD 4-6, and three downgradient wells for MOD 10-11. The well locations are shown on **Figure 2**.

4.4 COMPLIANCE WITH NR 507.15 (3)(D)

NR 507.15 (3)(d)

> *"Monitoring wells shall be designed and installed in accordance with s. NR 507.06 and regularly inspected in accordance with s. NR 507.13. All monitoring wells, piezometers, and other measuring, sampling, and analytical devices shall be operated and maintained so that the devices perform to the design specifications throughout the life of the monitoring program."*

Monitoring wells MW-301 through MW-305 were constructed in 2015, monitoring wells MW-309 through MW-311 were constructed in 2018, and monitoring wells MW-313 through MW-315 were constructed in 2022. These wells were constructed with a casing, screen, filter pack, and seal in accordance with the requirements of NR 141, Wis. Adm. Code. Monitoring wells MW-33AR, MW-34A, MW-84A, and M-4R were constructed between 1977 and 2003 to comply with the state-required groundwater sampling program. All of the wells have a bentonite seal in the annular space above the sampling depth. The length of the annular space seal for the pre-existing wells varies in accordance with the state monitoring well construction requirements in effect at the time of well construction. All of the pre-existing wells were included in the state-approved monitoring program. Monitoring well construction documentation is included in **Attachment F**.

Monitoring wells will be operated and maintained so that the devices perform to the design specifications throughout the life of the monitoring program.

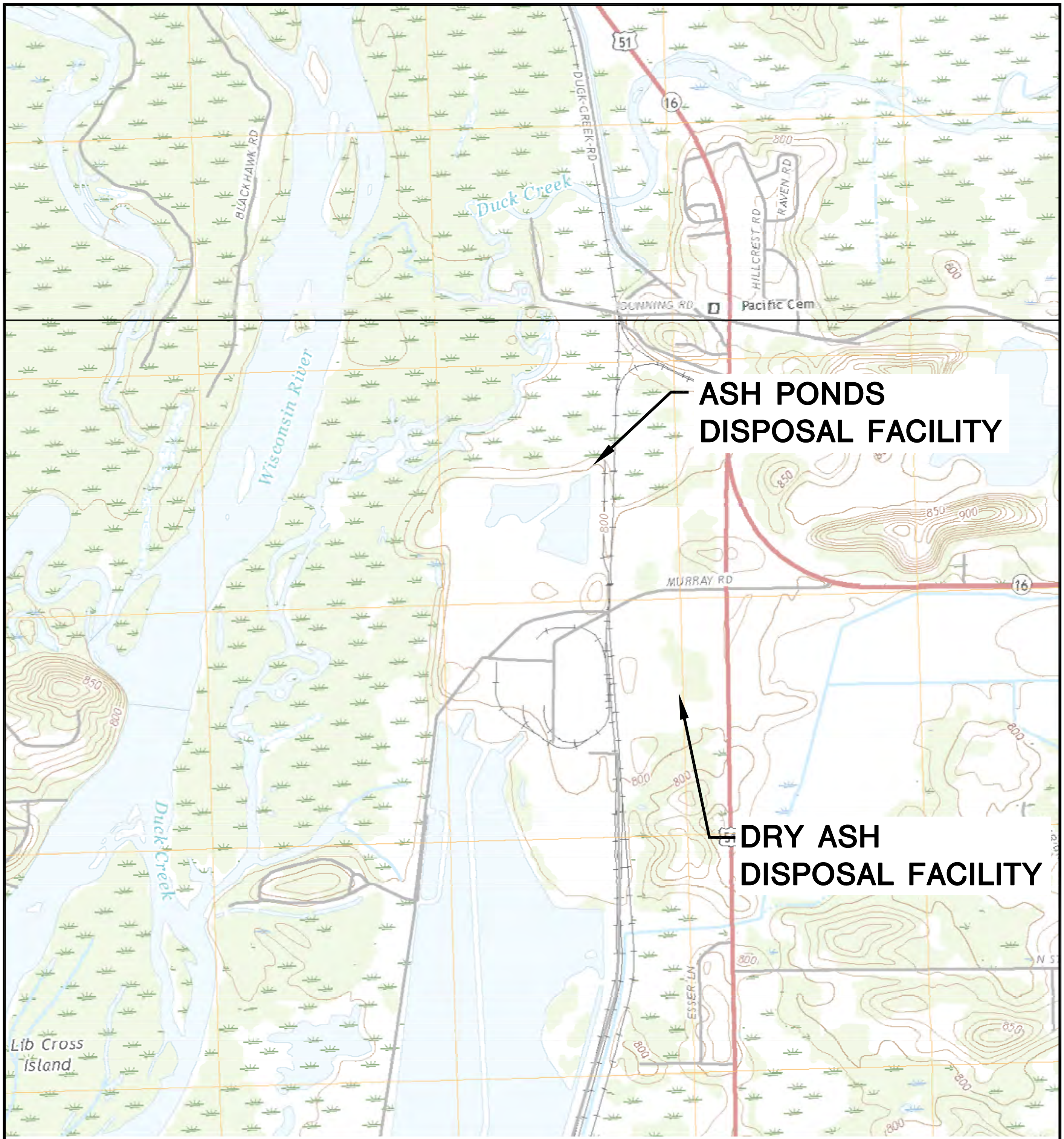
4.5 COMPLIANCE WITH NR 507.15 (3)(E)

NR 507.15 (3)(e)

> *"The documentation of the design, installation, development, and decommissioning of any monitoring wells, piezometers, and other measurement, sampling, and analytical devices shall be performed in accordance with s. NR 507.14 and applicable requirements under ch. NR 141. This includes submission of all required forms to the department in the timeframes specified."*

Installation and development documentation for the existing CCR monitoring network wells are included in **Attachment F.** If additional monitoring wells are installed in the future, documentation will be performed and submitted as required by NR 507.15(3)(e).

Figures



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POYNETTE QUADRANGLE
WISCONSIN–COLUMBIA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

CLIENT	ALLIANT ENERGY COLUMBIA ENERGY CENTER W8375 MURRAY ROAD PARDEEVILLE, WI 53954	SITE	ALLIANT ENERGY COLUMBIA ENERGY CENTER PARDEEVILLE, WI

SITE LOCATION MAP

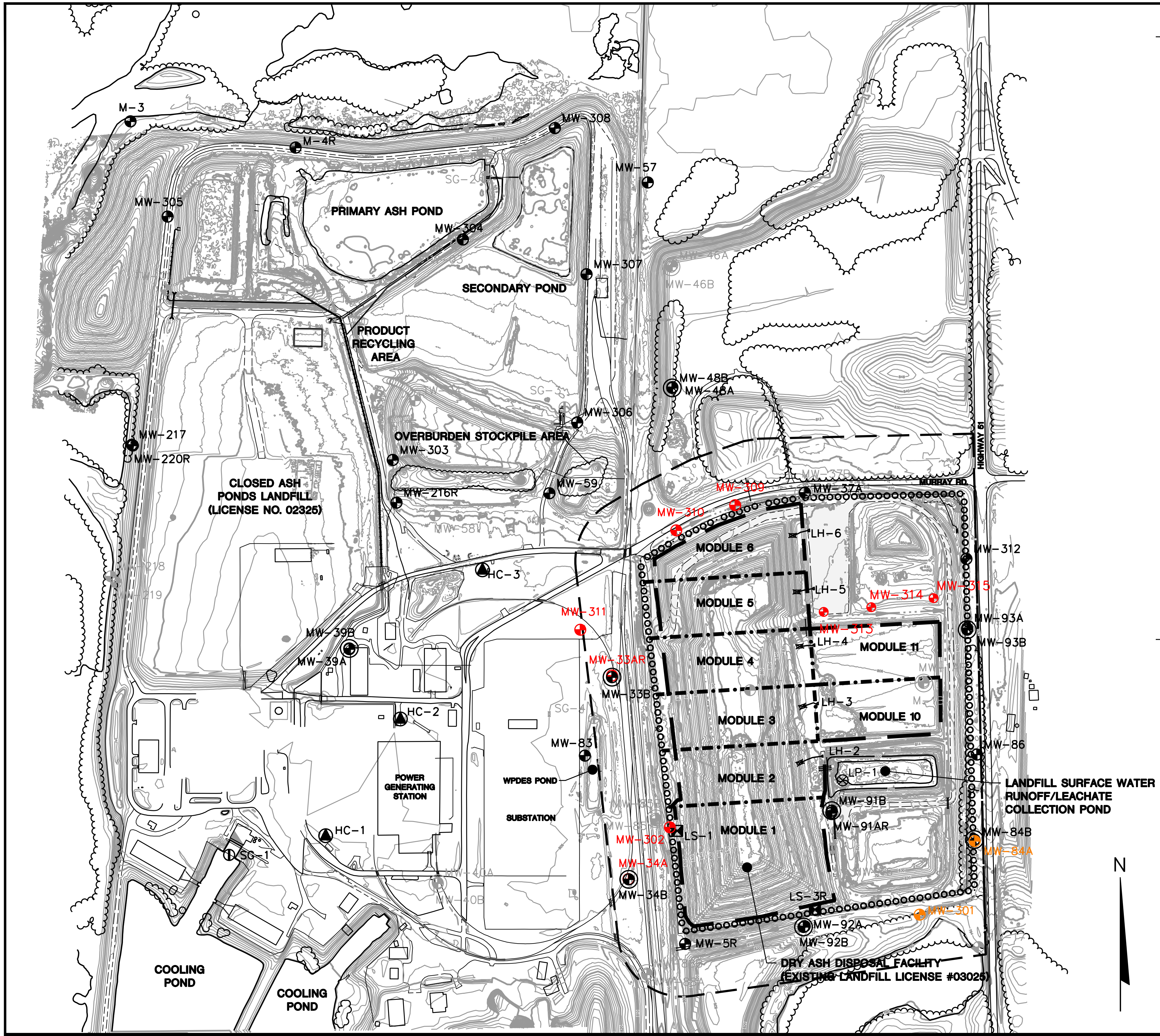
PROJECT NO.	25220067.00	DRAWN BY:	BSS
DRAWN:	12/02/2019	CHECKED BY:	MDB
REVISED:	01/10/2020	APPROVED BY:	TK 04/10/2020

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE
1

I:\25220067.00\Drawings\ASD Mod 1-3 LF\Site Location Map.dwg, 4/12/2020 7:05:09 PM



LEGEND	
───	EXISTING MAJOR CONTOUR (10' INTERVAL)
───	EXISTING MINOR CONTOUR (2' CONTOUR)
── x ── x ──	EXISTING FENCELINE
┼┼┼┼┼┼┼┼┼┼┼	EXISTING TRACKS
═══	EXISTING PAVED ROAD
==========	EXISTING UNPAVED ROAD
── · · · ──	EDGE OF WATER
·ooooooooo·	DRY ASH DISPOSAL FACILITY LIMITS
━ ━ ━	LIMITS OF WASTE
━·━·━	LINER PHASE/MODULE LIMITS
─ ─ ─	DESIGN MANAGEMENT ZONE
▲	WATER SUPPLY WELL
◐	STAFF GAUGE
◕	NON-CCR WATER TABLE WELL
◉	NON-CCR PIEZOMETER
🔴	CCR MONITORING WELL
🟠	CCR BACKGROUND MONITORING WELL
⊗	SURFACE WATER SAMPLE LOCATION
⧗	LYSIMETER
◕	ABANDONED WATER TABLE WELL
◉	ABANDONED PIEZOMETER
◐	ABANDONED STAFF GAUGE
↢	LEACHATE HEADWELL

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEYS BY SCS ENGINEERS IN MAY 2019, DECEMBER 2020, NOVEMBER 2021, AND DECEMBER 2021, AND BY DRONE SURVEY BY AMES IN NOVEMBER 2022, JANUARY 2023 AND JUNE 2023.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AND JANUARY 2016, AND BY SCS ENGINEERS IN FEBRUARY 2018, APRIL 2022, AND JANUARY 2023.
3. SUPPLY WELL LOCATIONS ARE APPROXIMATE AND ASSUMED BASED ON JANUARY 2013 DRAWINGS BY TRC.
4. BACKGROUND MONITORING WELLS FOR THE DRY ASH FACILITY ARE: MW-301 AND MW-84A.
5. THIS DRAWING SHOWS ALL SITE MONITORING WELLS, INCLUDING WELLS THAT ARE NOT USED TO MONITOR THE DRY ASH DISPOSAL FACILITY, THE CLOSED ASH PONDS LANDFILL, ASH POND, AND/OR THE SECONDARY POND.

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25222260.00	DRAWN BY:	KP
DRAWN:	02/09/2023	CHECKED BY:	MDB
REVISED:	03/10/2023	APPROVED BY:	MDB 09/01/23

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CLIENT
ALLIANT ENERGY
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WI 53954

SITE
ALLIANT ENERGY
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
PARDEEVILLE, WI

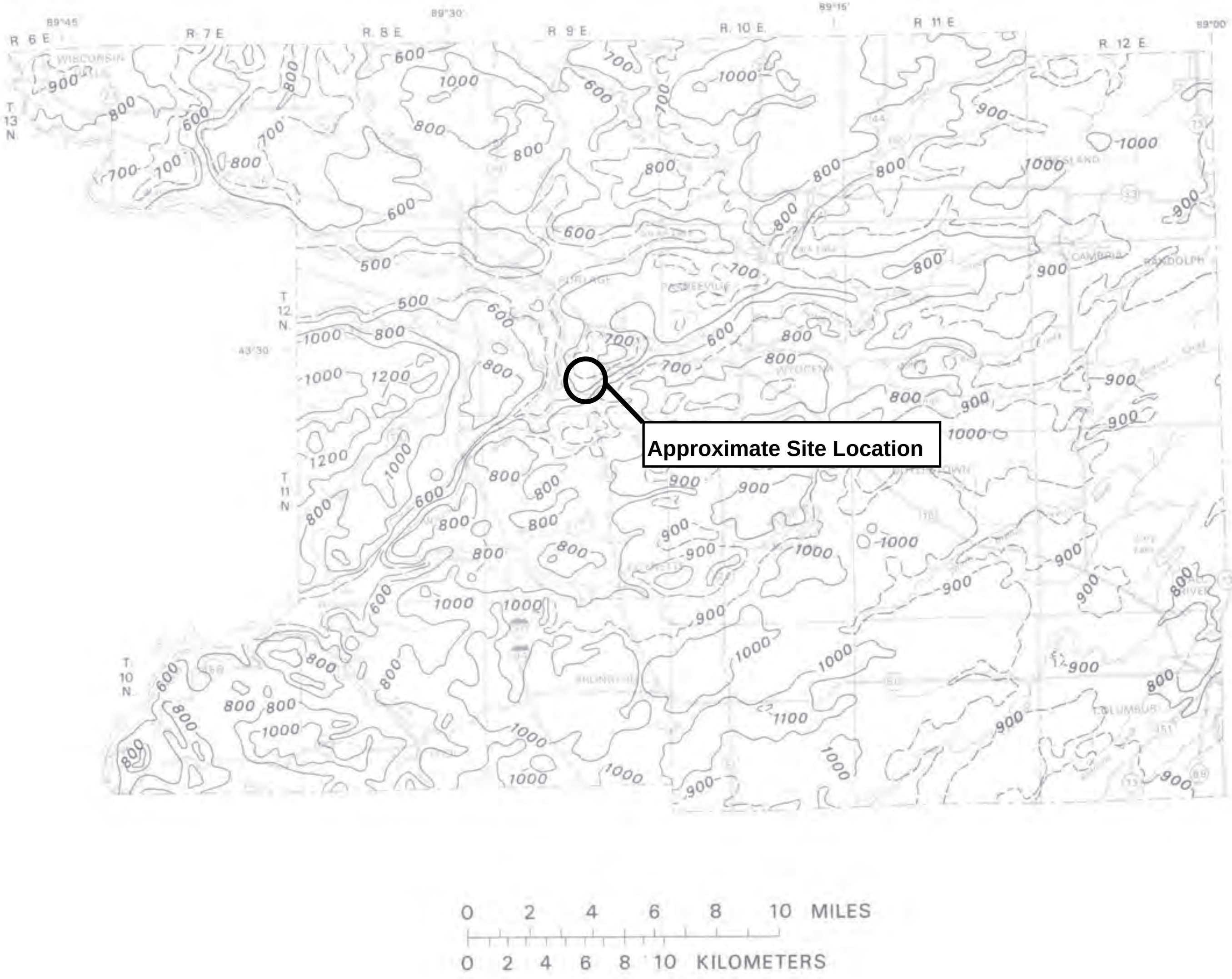
SITE PLAN AND MONITORING WELL LOCATIONS

FIGURE
2

I:\25222260.00\Drawings\Site Plan and Monitoring Well Locations.dwg, 9/1/2023 12:23:49 PM

Attachment A

Regional Hydrogeologic Stratigraphy



EXPLANATION

600

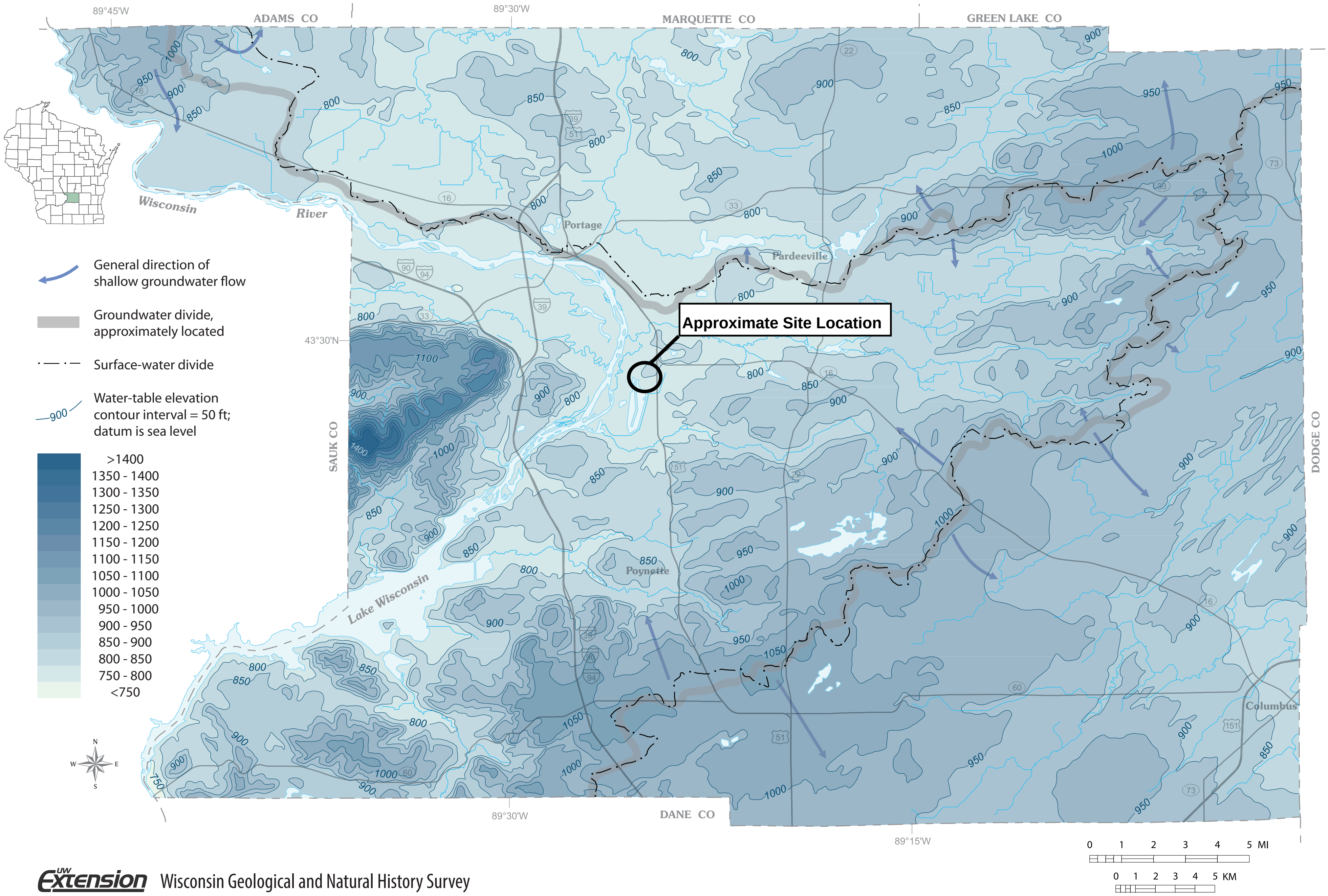
Bedrock contour

Shows altitude of bedrock surface. Contour interval 200 feet, with supplemental dashed 100 foot contours. Datum is mean sea level

Figure 3. Bedrock topography.

Source: Harr, C.A., L.C. Trotta, and R.G. Borman, "Ground-Water Resources and Geology of Columbia County, Wisconsin," University of Wisconisn-Extension Geological and Natural History Surevy Information Circular Number 37, 1978.

Generalized water-table elevation in Columbia County, Wisconsin



UW Extension Wisconsin Geological and Natural History Survey

Source: Sellwood, Stephen M., Wisconsin Geologic and Natural History Survey, Water Table Elevation, Groundwater Resources of Columbia County Wisconsin,

Table COL-3. Regional Hydrogeologic Stratigraphy
Columbia Energy Center / SCS Engineers Project #25215053

Approximate Age	Hydrogeologic Unit	General Thickness (feet)	Name of Rock Unit*	Predominant Lithology
Quaternary (0-1 million years old)	Surficial Aquifer	0 to 300+	Holocene & Pleistocene Deposits	• Unconsolidated clay, silt, sand, gravel, cobbles, boulders, and organic matter
Ordovician (460 to 490 million years old)	Sandstone Aquifer	0 to 800+	Galena Decorah Platteville St. Peter Prairie du Chien	• Dolomite and shaley dolomite • Sandstone
Cambrian (490 to 500 million years old)			Trempeleau Franconia Galesville Eau Claire Mt. Simon	• Sandstone
Precambrian (more than 1 billion years old)	Used for domestic supply in some areas	--	Precambrian	• Igneous and metamorphic rocks

*This nomenclature and classification of rock units in this report are those of the Wisconsin Geological and Natural History Survey and do not necessarily coincide with those accepted by the U.S. Geological Survey.

Sources:
Harr, C.A., L.C. Trotta, and R.G. Borman, “Ground-Water Resources and Geology of Columbia County, Wisconsin,” University of Wisconsin-Extension Geological and Natural History Survey Information Circular Number 37, 1978.
Wisconsin Geological and Natural History Survey, Bedrock Stratigraphic Units in Wisconsin, UW Extension Educational Series 51, ISSN: 1052-2115, 2011.

I:\25215053\Reports\Report 3 - Columbia\Tables\Table_2_Regional_Hydrogeologic_Stratigraphy.doc

Attachment B

Monitoring Well Boring Logs

State of Wisconsin
Department of Natural Resources

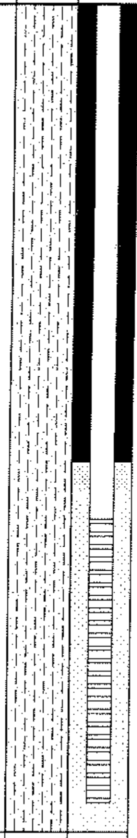
SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 1

Facility/Project Name: Alliant Energy - Columbia
License/Permit/Monitoring Number: 03025
Boring Number: MW-33AR
Boring Drilled By: Name of crew chief (first, last) and Firm: Ryan Fisher, Boart Longyear
Date Drilling Started: 4/9/2003
Date Drilling Completed: 4/9/2003
Drilling Method: 4 1/4" HSA
WI Unique Well No.: PE223
DNR Well ID No.: 138
Common Well Name: MW-33AR
Final Static Water Level: Feet MSL
Surface Elevation: 805.4 Feet MSL
Borehole Diameter: 8.0 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 542,663 N, 2,123,584 E S/C/N
NE 1/4 of SW 1/4 of Section 27, T 12 N, R 9 E
Lat ____° ____' ____"
Long ____° ____' ____"
Local Grid Location: ☐ N ☐ E
Feet ☐ S Feet ☐ W
Facility ID: 111049180
County: Columbia
County Code: 11
Civil Town/City/ or Village: Pacific

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0 22.5 25.0 27.5	**Blind drilled to 29 feet. See log of MW-33BR for lithology.**	SM									
				End of boring at 29 feet.										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature
Firm RMT, Inc.
Tel:
Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 3

Facility/Project Name Alliant Energy - Columbia	License/Permit/Monitoring Number 03025	Boring Number MW-33BR

Boring Drilled By: Name of crew chief (first, last) and Firm Ryan Fisher Boart Longyear	Date Drilling Started 4/8/2003	Date Drilling Completed 4/9/2003	Drilling Method 4 1/4" HSA

WI Unique Well No. PE224	DNR Well ID No. 140	Common Well Name MW-33BR	Final Static Water Level 785.3 Feet MSL	Surface Elevation 805.3 Feet MSL	Borehole Diameter 8.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 542,660 N, 2,123,585 E S/C/N
NE 1/4 of SW 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID 111049180	County Columbia	County Code 11	Civil Town/City/ or Village Pacific

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
AUGER	60													
			1 2 3 4											
1 SS	24	4 4 4 4	5 6 7 8 9	**SILTY SAND (SM),** 85% fine to medium sand, 15% fines, nonplastic, 10YR 5/4 yellowish brown, no odor, moist.	SM									
2 SS	24	3 5 5 5	10 11 12 13 14 15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm RMT, Inc.	Tel: Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A

Boring Number MW-33BR Use only as an attachment to Form 4400-122. Page 2 of 3

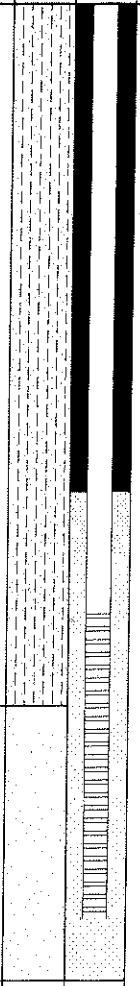
Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
3 SS	24	4 5 4 5												
			16											
			17											
			18											
			19											
4 SS	24	4 3 4 4	20	Same as above, but wet.			▼							
			21											
			22		SM									
			23											
			24											
5 SS	24	50/0	25	Hit a rock, auger through.										
			26											
			27											
			28											
			29											
6 SS	24	8 20 19 27	30	**SILTY SAND WITH GRAVEL (SM),** 70% fine to medium sand, 15% gravel, 15% fines, nonplastic, 10YR 4/3 brown, wet, dense.										
			31											
			32											
			33											
			34											
7 SS	24	10 17 19 24	35		SM									
			36											
			37											
			38											
			39											
			40											

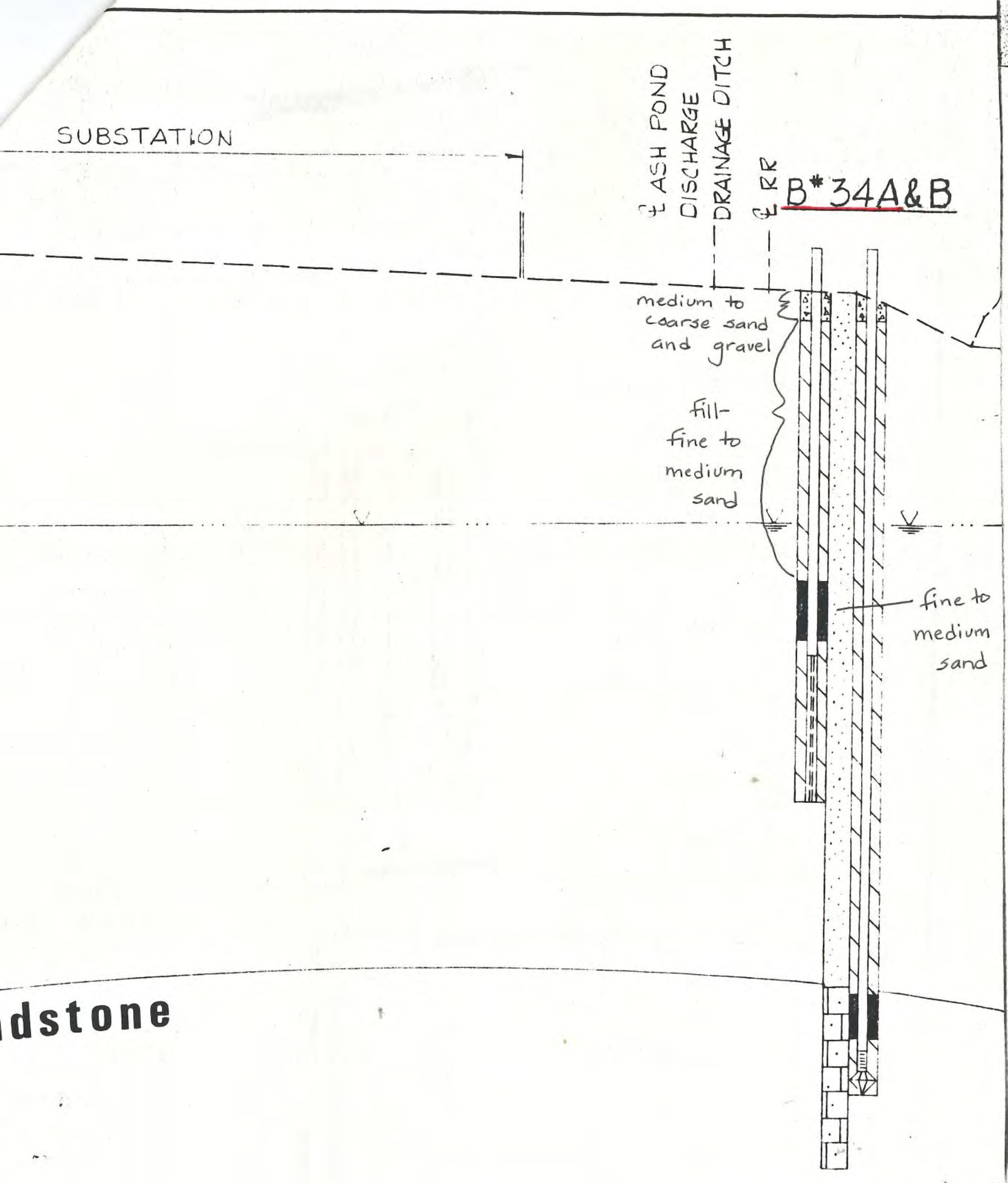
State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-33BR Use only as an attachment to Form 4400-122. Page 3 of 3

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
8 SS	24	18 20 28 39	41 42 43 44	Same as above.										
9 SS	24	27 50/2	45 46 47 48 49 50 51		SM									
			52	**WEATHERED SANDSTONE,** 95% poorly graded medium sand, 5% fines, white to brown, well sorted and rounded, poorly cemented.										
10 SS	24	7 50/1	53 54 55											
			56	**End of boring at 56 feet.**										





Scale:
Horizontal 1"=100'
Vertical 1"=10'

No legend available

Warzyn Engineering Inc.
Geologic Cross Sections
Drawing No. C7134-11
Date 1-20-78

DEPARTMENT OF NATURAL RESOURCES

SAMPLING POINT ID FORM
FORM 4400-40 REV. 6-79

FACILITY NAME
Wisconsin Power and Light Co. / Dry Ash

SAMPLING REQUIRED (✓ ONE)
☐ YES
☐ NO

POINT (✓ ONE)
☐ CAN BE SAMPLED
☐ CANNOT BE SAMPLED

COMMON NAME OF SAMPLING POINT
mw 34A

PREVIOUS COMMON NAME OF SAMPLING POINT

FACILITY ID NO.

POINT ID NO.

TYPE OF POINT (✓ ONE)

1 (G) GROUND WATER
11 ☒ MONITOR WELL
12 ☐ PIEZOMETER
13 ☐ PRIVATE WELL
14 ☐ LYSIMETER
15 ☐ SPRING
16 ☐ RESISTIVITY PROBE

2 (L) LEACHATE
21 ☐ FLOW OR SEEP
22 ☐ POND
23 ☐ COLLECTION SYSTEM

3 (S) SURFACE WATER
31 ☐ UPSTREAM
32 ☐ MID-SITE
33 ☐ DOWNSTREAM
34 ☐ RUN-OFF
35 ☐ IMPOUNDED

POINT LOCATION
2,155 . 200 FT. (+) ☒ E. (-) ☐ W.
541 . 740 FT. (+) ☒ N. (-) ☐ S.
FROM ☒ GRID ORIGIN ☐ BENCHMARK

DATE POINT ESTABLISHED
09 / 28 / 77
MON DAY YEAR

6 COMMENTS ABOUT SAMPLING POINT:
Well depth - 30.6' Gradient from landfill - downgradient
Geologic formation of well screen - sand
Location of well seals / materials used - bentonite seal above well screen

WELL DESCRIPTION

PIPE DIAMETER 2 . 0 0 INCHES

PIPE TOP ELEVATION 806 . 0 0 FEET ☒ MSL ☐ SITE

GROUND SURFACE ELEVATION 802 . 7 0 FEET ☒ MSL ☐ SITE

TYPE OF CASING (✓ ONE)
☒ 1 PLASTIC ☐ 2 STEEL

7 COMMENTS ABOUT REQUIRED SAMPLING:
Avg. vol. of water to be bailed:

Groundwater Flow - westerly

REQUIRED SAMPLING (MG/l except as noted)

	NO.	PARAMETERS	MONTHS OF REQUIRED SAMPLING
🟥	00410	ALKALINITY (AS CA CO_3)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00310	BOD (5 DAY)	1-2-3-4-5-6-7-8-9-10-11-12
☐	00916	CALCIUM	1-2-3-4-5-6-7-8-9-10-11-12
☐	00307	CHLORIDES	1-2-3-4-5-6-7-8-9-10-11-12
☐	00340	COD	1-2-3-4-5-6-7-8-9-10-11-12
🟥	00872	CONDUCTIVITY (SU)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00277	COPPER (DISSOLVED)	1-2-3-4-5-6-7-8-9-10-11-12
🟥	00900	HARDNESS (AS CA CO_3)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥	01046	IRON (DISSOLVED)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00348	MAGNESIUM	1-2-3-4-5-6-7-8-9-10-11-12
☐	00620	NITRATES (AS NO_3)	1-2-3-4-5-6-7-8-9-10-11-12
☐	00640	NITROGEN (TOTAL INOGRANIC N)	1-2-3-4-5-6-7-8-9-10-11-12
🟥	00400	pH (SU)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00129	PHENOLS	1-2-3-4-5-6-7-8-9-10-11-12
🟥	00929	SODIUM	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥	00945	SULFATES	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00360	TOTAL DIS. SOLIDS	1-2-3-4-5-6-7-8-9-10-11-12
🟥	00842	WATER ELEVATION (FT. MSL)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00275	ZINC (DISSOLVED)	1-2-3-4-5-6-7-8-9-10-11-12
	NO.	PARAMETERS (OTHERS)	MONTHS
🟥	01022	Boron	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥		Color	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥		Odor	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥		Turbidity	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥	01002	Arsenic	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	01007	Barium	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	00312	Cadmium	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	00273	Chromium	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	00240	Lead	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	00126	Mercury	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	00270	Selenium	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	01077	Silver	[✓ -6-]

WARZYN
ENGINEERING INC

LOG OF TEST BORING

Project Wisconsin Power & Light

Location Columbia Generating Station

Boring No. MW-84A
Surface Elevation 813.4
Job No. C 7134
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Type	Recovery ↓	Moisture ↓	N	Depth		Qu	W	LL	PL	D
						Dark Brown Silty SAND (SM)					
					5						
						Brown Fine to Medium SAND, Little Silt, Trace to Little Gravel and Boulders (SM)					
					10						
					15						
					20						
					25						
					30						
					35						
						End Boring at 37'					
					40	Well Installed at 37'					

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 10/5/83 Complete 10/5/83
Crew Chief JVS Rig B-40
Drilling Method ED 0-37'

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Page 1 of 2

Facility/Project Name WPL-Columbia SCS#: 25215135.00	License/Permit/Monitoring Number	Boring Number MW-301	
Boring Drilled By: Name of crew chief (first, last) and Firm Kevin Durst Badger State Drilling	Date Drilling Started 11/11/2015	Date Drilling Completed 11/11/2015	Drilling Method hollow stem auger
WI Unique Well No. VY701	DNR Well ID No.	Common Well Name	
Final Static Water Level Feet	Surface Elevation 803.69 Feet	Borehole Diameter 8.5 in.	

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 541562.2 N, 2025001.0 E S/C/N
1/4 of 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County Columbia	County Code 11	Civil Town/City/ or Village Portage

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Pocket Penetration (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				SILTY SAND, yellowish brown (10YR 5/6), fine to medium grained.										
S1	21	7 6 9 10	2							M				
S2	20	6 7 9 10	4	Same as above except, 10YR 5/4 (top section), 10YR 3/6 (bottom section), trace gravel.						M				
			6	Same as above except, 10YR 3/4 (bottom), 10YR 5/4 (top), trace little roots and sticks, trace gravel.										
S3	22	7 6 9 6	7		SM					M				
			9	Same as above except, 10YR (top), 10YR 4/6 (bottom), trace clay at bottom.										
S4	21	4 5 6 5	10							M				
			11	Same as above except, fine to coarse grained sand, little gravel, trace clay in top half, 10YR 3/6.										
S5	18	2 2 4 5	12							M				
			14	Same as above except, 10YR 6/8.										
S6	20	2 3 3 3	15							M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-301 Use only as an attachment to Form 4400-122. Page 2 of 2

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Pocket Penetration (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			16	SILTY SAND, yellowish brown (10YR 5/6), fine to medium grained.										
S7	20	5 4 4 3	17							M				
			18											
			19											
S8	20	2 4 4 5	20							W				
			21		SM									
S9	23	4 4 3 6	22							W				
			23											
			24	Same as above except, 10YR 6/4.										
S10	21	3 2 4 10	25							W				
			26											
			27											
			28	End of boring at 28 ft bgs.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Page 1 of 2

Facility/Project Name WPL-Columbia SCS#: 25215135.00		License/Permit/Monitoring Number		Boring Number MW-302	
Boring Drilled By: Name of crew chief (first, last) and Firm Kevin Durst Badger State Drilling		Date Drilling Started 11/11/2015	Date Drilling Completed 11/12/2015	Drilling Method hollow stem auger	
WI Unique Well No. VY702	DNR Well ID No.	Common Well Name	Final Static Water Level Feet	Surface Elevation 809.93 Feet	Borehole Diameter 8.5 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Pla 541964.7 N, 2123849 E S/C/N
1/4 of 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location
Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Columbia	11	Portage

Sample									Soil Properties						
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Pocket Penetration (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				SILTY SAND, fine to medium grained, trace gravel, 10YR 5/6.										
			1											
S1	12	10 13 17 16	2							M				
			3											
			4	Same as above except, large gravel at bottom, trace to little gravel.										
S2	12	10 12 8 6	5							M				
			6	Same as above except, 10YR 4/6.										
S3	20	2 4 4 5	7		SM					M				
			8											
			9	Same as above except, 10YR 5/8.										
S4	23	3 3 4 5	10							M				
			11	Same as above except, 10YR 6/6.										
S5	20	3 3 3 4	12							M				
			13											
			14	POORLY GRADED SAND, 10YR 6/6.	SP									
S6	20	3 4 4 7	15							M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature for Zach Watson

Firm SCS Engineers
2830 Dairy Drive Madison, WI 53711
Tel: (608) 224-2830
Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-302 Use only as an attachment to Form 4400-122. Page 2 of 2

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Pocket Penetration (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			16	POORLY GRADED SAND, light tan 10YR 8/3.										
S7	20	6 8 10 12	17							M				
			18											
			19		SP									
S8	20	5 6 8 8	20							M				
			21											
S9	19	3 3 3 2	22							M				
			23											
			24	SILTY SAND, 10YR 5/6.	SM									
S10	20	3 3 8 8	25	POORLY GRADED SAND, 10YR 8/3.						W				
			26	Same as above except, light tan 10YR 6/6.										
S11	23	5 9 12 12	27							W				
			28											
			29											
			30		SP									
			31											
			32											
			33											
			34											
			35	End of boring at 35 ft bgs.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 2

Facility/Project Name: WPL - Alliant Columbia Generating Station SCS#: 25217156.01
License/Permit/Monitoring Number:
Boring Number: MW-309
Boring Drilled By: Name of crew chief (first, last) and Firm: Mark Crampton, Badger State Drilling, Co.
Date Drilling Started: 2/13/2018
Date Drilling Completed: 2/14/2018
Drilling Method: hollow stem auger
WI Unique Well No.: VR111
DNR Well ID No.:
Common Well Name: MW-309
Final Static Water Level: 26.7 Feet MSL
Surface Elevation: 809.88 Feet MSL
Borehole Diameter: 8.5 in.
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 543,448 N, 2,124,151 E S/C/N
NW 1/4 of SE 1/4 of Section 27, T 12 N, R 9 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location: Feet ☐ N ☐ S Feet ☐ E ☐ W
Facility ID:
County: Columbia
County Code: 11
Civil Town/City/ or Village: Town of Pacific

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			0–8.5	Hydrovaced boring to 8.5 below ground surface; open hole.										
S1	20	11 14 18	9.5	POORLY GRADED SAND, fine to coarse, yellow, (10YR 7/6), rounded grains.					N/A	M				
S2	20	12 15 20 28	12	Same but with trace gravel.	SP				N/A	M				
S3	24	16 20 26	14.5	Same as above but with no gravel.					N/A	M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature
Firm: SCS Engineers
2830 Dairy Drive Madison, WI 53711
Tel: (608) 224-2830
Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

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Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A

Boring Number MW-309 Use only as an attachment to Form 4400-122. Page 2 of 2

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			16	POORLY GRADED SAND, fine to coarse, yellow, (10YR 7/6), rounded grains, trace silt.										
S4	22	11 17 32 41	17						N/A	M				
S5		22 29 36	19-20						N/A	M				
S6	24	18 20 28 36	22						N/A	M				
S7		18 24 32	24-25						N/A	M				
			26		SP									
S8	22	14 18 30 40	27						N/A	W				Depth to water at ~ 26 feet.
S9	22	22 32 34	29-30						N/A	W				
			36	End of Boring at 36.5 feet bgs.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 2

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL - Alliant Columbia Generating Station SCS#: 25217156.01		MW-310

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Dave Cruise Badger State Drilling, Co.	2/13/2018	2/13/2018	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VR110		MW-310	27.9 Feet MSL	810.96 Feet MSL	8.5 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 543,332 N, 2,123,880 E S/C/N
NW 1/4 of SE 1/4 of Section 27, T 12 N, R 9 E
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location
Feet ☐ N ☐ S
Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Columbia	11	Town of Pacific

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			1 2 3 4 5 6 7 8	Hydrovaced boring to 8 feet below ground surface; open hole.										
S1	18	4 6 8 8	9 10	POORLY GRADED SAND AND GRAVEL, fine to medium sand, coarse gravel, brownish yellow, (10YR 6/6), angular gravel, round sand.					N/A	M				
S2	24	18 27 38 40	11 12 13	Same as above but trace gravel.	SP				N/A	M				
S3	24	26 32 40 38	14 15						N/A	M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
	SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:

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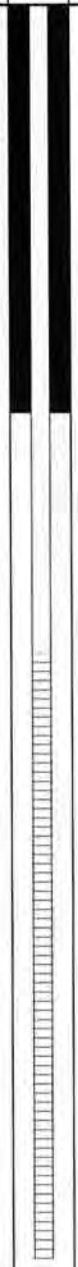
State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A

Boring Number **MW-310** Use only as an attachment to Form 4400-122. Page 2 of 2

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	POORLY GRADED SAND AND GRAVEL, fine to medium sand, coarse gravel, brownish yellow, (10YR 6/6), angular gravel, round sand.										
S4	10	25 50/5	17						N/A	M				Tough drilling
			18											
			19											
S5	24	38 60 50/4	20						N/A	M				
			21											
S6	12	38 50/5	22						N/A	M				
			23											
			24											
S7	24	32 46 50/4	25						N/A	M				
			26		SP									
S8	16	25 40 50/5	27						N/A	W				Depth to water at ~26 feet
			28											
			29											
S9		32 25 50/5	30						N/A	W				
			31											
			32											
			33											
			34											
			35											
			36											
				End of Boring at 36.5 feet bgs.										



State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 2

Facility/Project Name WPL - Alliant Columbia Generating Station SCS#: 25217156.01	License/Permit/Monitoring Number	Boring Number MW-311

Boring Drilled By: Name of crew chief (first, last) and Firm Mark Crampton Badger State Drilling, Co.	Date Drilling Started 2/14/2018	Date Drilling Completed 2/14/2018	Drilling Method hollow stem auger

WI Unique Well No. VR112	DNR Well ID No.	Common Well Name MW-311	Final Static Water Level 23.5 Feet MSL	Surface Elevation 806.53 Feet MSL	Borehole Diameter 8.5 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 542,874 N, 2,123,437 E S/C/N
NE 1/4 of SW 1/4 of Section 27, T 12 N, R 9 E

Lat ____° ____' ____"
Long ____° ____' ____"

Local Grid Location
Feet ☐ N ☐ S
Feet ☐ E ☐ W

Facility ID	County Columbia	County Code 11	Civil Town/City/ or Village Town of Pacific

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				Hydrovaced boring to 8 feet below ground surface; open hole.										
S1	24	12 16 20 24		POORLY GRADED SAND AND GRAVEL, fine to coarse sand, coarse gravel, yellow, (10YR 7/6), rounded sand, angular gravel.					N/A	M				
S2	24	17 27 30 38		Same as above but with trace silt.	SP				N/A	M				
S3	24	18 26 31							N/A	M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-311 Use only as an attachment to Form 4400-122.

Page 2 of 2

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			16	POORLY GRADED SAND AND GRAVEL, fine to coarse sand, coarse gravel, yellow, (10YR 7/6), rounded sand, angular gravel, trace silt.										
S4	24	18 30 40 50/5	17						N/A	M				
			18											
S5	24	30 40 45	19 20						N/A	M				
			21											
S6	8	45 34 50/3	22						N/A	M+/W				
			23											
			24		SP									
S7	18	46 50/5	25						N/A	W				Depth to water at ~25 feet.
			26											
S8	20	46 54 54 50/4	27						N/A	W				
			28											
S9	24	25 38 50/5	29 30	Same as above but with thin silt seams.					N/A	W				
			31											
			32											
			33	End of Boring at 33 feet bgs.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 2

Facility/Project Name WPL - Columbia Dry Ash Disposal Facility SCS#: 25220183.00	License/Permit/Monitoring Number 03025	Boring Number B-313X

Boring Drilled By: Name of crew chief (first, last) and Firm Adam Sweet Horizon Construction and Exploration	Date Drilling Started 12/1/2022	Date Drilling Completed 12/1/2022	Drilling Method Geoprobe/HSA

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level Feet MSL	Surface Elevation Feet MSL	Borehole Diameter 2.0/8.25 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E
Lat ____° ____' ______"
Long ____° ____' ______"
Local Grid Location
Feet ☐ N ☐ S
Feet ☐ E ☐ W

Facility ID 111049180	County Columbia	County Code 11	Civil Town/City/ or Village Town of Pacific

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0–1.1	SILTY GRAVEL, fine to medium sand, fine to coarse gravel, tan, angular gravel (base course/fill).	GM									
			1.1–15	POORLY GRADED SAND, fine to medium, medium brown (7.5Y 5/4), trace angular fine to coarse gravel, trace silt, uniform (alluvium).	SP									
S1	44		0–5							M				Geoprobed to 35 ft. Overdrilled with HSA to 27ft and hit refusal.
S2	47		5–10							M				
S3	60		10–15							M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm SCS Engineers 2830 Dairy Drive, Madison, WI 53718 608-224-3830	Tel: Fax:

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Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A

Boring Number B-313X Use only as an attachment to Form 4400-122. Page 2 of 2

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			16											
			17											
S4	53		18							M				
			19											
			20											
			21											
			22											
S5	60		23							M				
			24											
			25		SP									
S6	30		26							M				Tough/hard drilling, only pushed 2.5 ft
			27											
			28											
S7	30		29							M				HSA refusal at approximately 27 ft; large boulder at depth
			30											
			31											
			32											
S8	60		33	Pulverized gravel at base of core.						M				Geoprobe refusal at 35 ft
			34											
			35	End of Borehole at 35 ft below ground surface. Abandoned borehole with 3/8" bentonite chips. Attempted monitoring wel MW-313 installation.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 3

Facility/Project Name WPL - Columbia Dry Ash Disposal Facility SCS#: 25220183.00	License/Permit/Monitoring Number 03025	Boring Number MW-313

Boring Drilled By: Name of crew chief (first, last) and Firm Adam Sweet Horizon Construction and Exploration	Date Drilling Started 12/19/2022	Date Drilling Completed 12/19/2022	Drilling Method rotosonic

WI Unique Well No. WC188	DNR Well ID No.	Common Well Name MW-313	Final Static Water Level Feet MSL	Surface Elevation ~817.80 Feet MSL	Borehole Diameter 6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 542,957 N, 2,124,559 E S/C/N
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E

Lat ___° ___' ____"
Long ___° ___' ____"

Local Grid Location
Feet ☐ N ☐ S
Feet ☐ E ☐ W

Facility ID 111049180	County Columbia	County Code 11	Civil Town/City/ or Village Town of Pacific

Sample									Soil Properties						
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Blind drilled to 32 feet below ground surface. See boring log B-313X for lithology from 0-32 feet.										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm SCS Engineers 2830 Dairy Drive, Madison, WI 53718 608-224-3830	Tel: Fax:

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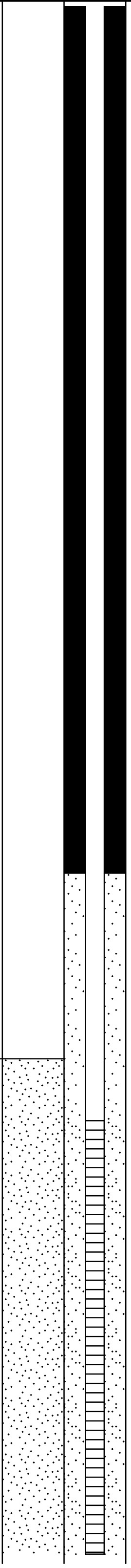
State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-313 Use only as an attachment to Form 4400-122. Page 2 of 3



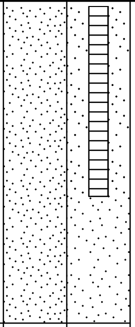
Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			16											
			17											
			18											
			19											
			20											
			21											
			22											
			23											
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32	POORLY GRADED SAND, fine to medium, brown (7.5Y, 5/4), trace angular to sub-rounded fine to coarse gravel, trace silt, massive, (alluvium).										
			33											
			34											
			35											
			36		SP									
			37											
			38											
			39							W				Depth to water ~34-35 ft
			40											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A

Boring Number MW-313 Use only as an attachment to Form 4400-122. Page 3 of 3

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			41 42 43 44 45		SP									
				End of boring at 45 feet below ground surface. Installed monitoring well MW-313 at 43 feet.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 3

Facility/Project Name WPL - Columbia Dry Ash Disposal Facility SCS#: 25220183.00	License/Permit/Monitoring Number 03025	Boring Number MW-314

Boring Drilled By: Name of crew chief (first, last) and Firm Adam Sweet Horizon Construction and Exploration	Date Drilling Started 12/1/2022	Date Drilling Completed 12/1/2022	Drilling Method Geoprobe/HSA

WI Unique Well No. WC199	DNR Well ID No.	Common Well Name MW-314	Final Static Water Level Feet MSL	Surface Elevation ~819.07 Feet MSL	Borehole Diameter 2.0/8.25 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 542,978 N, 2,124,778 E S/C/N
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E
Lat ____° ____' ______"
Long ____° ____' ______"
Local Grid Location
Feet ☐ N ☐ S
Feet ☐ E ☐ W

Facility ID 111049180	County Columbia	County Code 11	Civil Town/City/ or Village Town of Pacific

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1 2	POORLY GRADED SAND, fine to coarse, light brown (fill).										
S1	36		3 4 5		SP					M				Geoprobed to 45 ft, overdrilled with HSA to 45 ft
			6 7	POORLY GRADED SAND, fine to medium, light olive brown (2.5Y, 5/6), trace sub-rounded to sub-angular fine to coarse gravel (alluvium).										
S2	36		8 9 10							M				
			11		SP									
S3	32		12 13 14 15							M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm SCS Engineers 2830 Dairy Drive, Madison, WI 53718
608-224-3830
Tel:
Fax:

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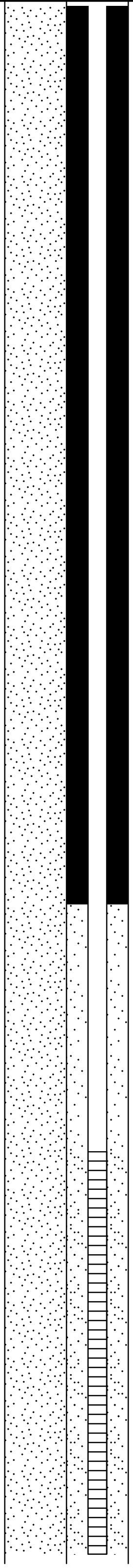
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-314 Use only as an attachment to Form 4400-122.



Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S4	36		16 17 18 19 20							M				
S5	55		21 22 23 24 25							M				
S6	60		26 27 28 29 30		SP					M				
S7	60		31 32 33 34 35							M+				Measured water at approximately 34 ft in augers
S8	60		36 37 38 39 40							W				Depth to water ~36 ft

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A

Boring Number MW-314 Use only as an attachment to Form 4400-122. Page 3 of 3

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S9	60		41 42 43 44 45		SP					W				
				End of borehole at 45 ft. Installed MW-314 to 43.5 ft.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Page 1 of 3

Facility/Project Name WPL - Columbia Dry Ash Disposal Facility SCS#: 25220183.00	License/Permit/Monitoring Number 03025	Boring Number MW-315

Boring Drilled By: Name of crew chief (first, last) and Firm Adam Sweet Horizon Construction and Exploration	Date Drilling Started 12/1/2022	Date Drilling Completed 12/1/2022	Drilling Method Geoprobe/HSA

WI Unique Well No. PM289	DNR Well ID No.	Common Well Name MW-315	Final Static Water Level Feet MSL	Surface Elevation ~817.28 Feet MSL	Borehole Diameter 2.0/8.25 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 543,020 N, 2,125,065 E S/C/N
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E
Lat ____° ____' ______"
Long ____° ____' ______"
Local Grid Location
Feet ☐ N ☐ S
Feet ☐ E ☐ W

Facility ID 111049180	County Columbia	County Code 11	Civil Town/City/ or Village Town of Pacific

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S1	42		1 2 3 4 5	POORLY GRADED SAND, fine to medium sand, fine to coarse gravel, medium brown (fill).	SP					M				Geoprobed to 30 ft and hit refusal. Overdrilled to 45 ft with HSA.
S2	37		6 7 8 9 10	POORLY GRADED SAND, fine to medium sand, light brown (7.5YR, 6/4), with fine to coarse sub-rounded to sub-angular gravel, (alluvium).	SP					M				
S3	40		11 12 13 14 15							M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm SCS Engineers 2830 Dairy Drive, Madison, WI 53718
608-224-3830
Tel:
Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

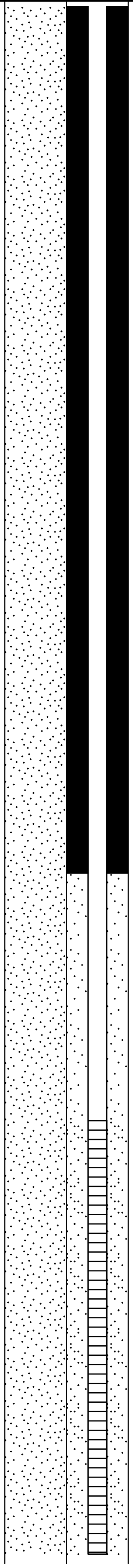
State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-315 Use only as an attachment to Form 4400-122. Page 2 of 3

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S4	60									M				
S5	60									M				
S6	27				SP					M				Sand got more compacted and continued to get more compacted.
S7	4									W				Attempt of split spoon sample at 34 ft and hit refutal. Depth to waterat ~ 34 ft.

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

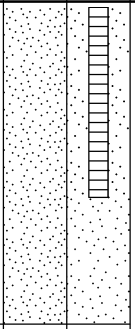


State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A

Boring Number MW-315 Use only as an attachment to Form 4400-122. Page 3 of 3

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			41 42 43 44 45		SP									
				End of boring at 45 feet. Installed MW-315 to 43 feet.										

Attachment C

Private Well Logs

Wel. 6-30M(6-50)

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

1. County Columbia — Town ☒ Village ☐ City ☐ Pacific (Check one and give name)

R9E

2. Location Pacific - Township T12N, ~~R9E~~ Sec 27-SE¼ (Name of street and number of premise or Section, Town and Range numbers)

RECEIVED FEB 6 1952 BUREAU SAN. ENG.

3. Owner ☐ or Agent ☐ Dennis Lovell (Name of individual, partnership or firm)

4. Mail Address Box 233 Portage Wis. (Complete address required)

5. From well to nearest: Building 30 ft; sewer ___ ft; drain 55 ft; septic tank 75 ft;

dry well or filter bed 55 ft; abandoned well — ft.

6. Well is intended to supply water for: Slaughter House

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
4 in	Well Casing Steel	0'	47'

9. GROUT:

Kind	From (ft.)	To (ft.)
Cement top.	0"	10 inch

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Puddled Clay	0'	15'
Concret Slab	15'	17'
Washed Sand	17'	35'
½ to 2" Washed Gravel	35	45'

(Old dug well abt ~~ab~~ 30" Dia.)
D Lovell

Construction of the well was completed on: January 25 1952

The well is terminated 24 inches ☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion? Yes X No ___

Was the well sealed watertight upon completion? Yes X No ___

11. MISCELLANEOUS DATA:

Yield test: ___ Hrs. at ___ GPM.

Depth from surface to water-level: 42 ft.

Water-level when pumping: 43 ft.

Water sample was sent to the state laboratory at: Madison (City) on Feb. 4 1952

Signature Carl C Sanders (Registered Well Driller) — Pardeeville Wis RT 2 (Complete Mail Address)

Please do not write in space below

Rec'd ___ No. ___

Ans'd ___

Interpretation ___

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.					
Confirm					
B. Coli					

Examiner ___

SEE OTHER SIDE

3471

WISCONSIN UNIQUE WELL NUMBER **BE363**

Source: SWAP PROJECT KEYED

State of Wi-Private Water Systems-DG/2
Department Of Natural Resources, Box 7921
Madison, WI 53707

Form 3300-77A
(Rev 02/02)bw

Depth **255** FT

Property Owner **WISCONSIN POWER & LIGHT CO**

Telephone Number - -

Mailing Address PO BOX 98

City PORTAGE State WI Zip Code 53901

County of Well Location SC 11 COLUMBIA

Co Well Permit No W

Well Completion Date December 30, 1971

1. Well Location

T=Town C=City V=Village
T of PACIFIC

Fire#

Street Address or Road Name and Number

Subdivision Name Lot# Block #

Well Constructor EGERER GALLOWAY WELL CORP

License # 21

Facility ID (Public) 111021460

Address CARMEN/STATE/N 3RD

Public Well Plan Approval#

City MILWAUKEE State WI Zip Code 53213

Date Of Approval

Hicap Permanent Well #

Common Well #

Specific Capacity 12.5 gpm/ft

Gov't Lot or **SW** 1/4 of **SW** 1/4 of

Section **27** T **12** N R **9** **E**

2. Well Type 1 (See item 12 below)

1=New 2=Replacement 3=Reconstruction

of previous unique well # __________ constructed in ______

Reason for replaced or reconstructed Well?

1 1=Drilled 2=Driven Point 3=Jetted 4=Other

3. Well Serves # of homes and or **INDUSTRIAL**

N (eg: barn, restaurant, church, school, industry, etc.)

M=Munic O=OTM N=NonCom P=Private Z=Other X=NonPot A=Anode L=Loop H=Drillhole

High Capacity: Well? N

Property? N

4. Is the well located upslope or sideslope and not downslope from any contamination sources, including those on neighboring properties? N

Well located in floodplain? N

Distance in feet from well to nearest: (including proposed)

1. Landfill
2. Building Overhang
3. 1=Septic 2= Holding Tank
4. Sewage Absorption Unit
5. Nonconforming Pit
6. Buried Home Heating Oil Tank
7. Buried Petroleum Tank
8. 1=Shoreline 2= Swimming Pool
9. Downspout/ Yard Hydrant
10. Privy
11. Foundation Drain to Clearwater
12. Foundation Drain to Sewer
13. Building Drain
    1=Cast Iron or Plastic 2=Other
14. Building Sewer 1=Gravity 2=Pressure
    1=Cast Iron or Plastic 2=Other
15. Collector Sewer: ___ units ___ in . diam.
16. Clearwater Sump
17. Wastewater Sump
18. Paved Animal Barn Pen
19. Animal Yard or Shelter
20. Silo
21. Barn Gutter
22. Manure Pipe 1=Gravity 2=Pressure
    1=Cast iron or Plastic 2=Other
23. Other manure Storage
24. Ditch
25. Other NR 812 Waste Source

5. Drillhole Dimensions and Construction Method

Dia.(in.)	From (ft)	To (ft)
19.0	surface	132
15.0	132	255

Upper Enlarged Drillhole / Lower Open Bedrock

-- 1. Rotary - Mud Circulation ----------------
-- 2. Rotary - Air --------------------------------
-- 3. Rotary - Air and Foam --------------------
-- 4. Drill-Through Casing Hammer
-- 5. Reverse Rotary
X -- 6. Cable-tool Bit _ n. dia ----------------
-- 7. Temp. Outer Casing _ in. dia. _____ depth ft.
Removed ?
Other

8.

Geology Codes	Geology Type, Caving/Noncaving, Color, Hardness, etc	From (ft.)	To (ft.)
__T_	GLACIAL DRIFT	0	88
__N_	SANDSTONE	88	255

6. Casing Liner Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
20.0	STEEL 3/8 WALL A53-B	surface	92
16.0	STEEL 3/8 WALL A53-B	0	132

Dia.(in.)	Screen type, material & slot size	From	To

9. Static Water Level

28.0 feet B ground surface
A=Above B=Below

10. Pump Test

Pumping level 48.0 ft. below surface

Pumping at 250.0 GP 12.0 Hrs

11. Well Is: 24 in. A Grade
A=Above
B=Below

Developed? N

Disinfected? Y

Capped? Y

7. Grout or Other Sealing Material

Method Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
NEAT CEMENT	surface	132.0	

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property? N

If no, explain

13. Initials of Well Constructor or Supervisory Driller GG Date Signed 12/30/71

Initials of Drill Rig Operator (Mandatory unless same as above) Date Signed

Additonal Comments?

Owner Sent Label? Y

Variance Issued?

More Geology?

Batch 777777777

DEC 20 1972

WELL CONSTRUCTOR'S REPORT *RRECTED DEC. 14, 1972

FORM 3300–15

NOTE
WHITE COPY – DIVISION'S COPY
GREEN COPY – DRILLER'S COPY
YELLOW COPY – OWNER'S COPY

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Box 450
Madison, Wisconsin 53701

60-214-G

1. COUNTY Columbia — CHECK ONE ☒ Town ☐ Village ☐ City — NAME Pacific

2. LOCATION – ¼ Section, Section, Township, Range: SW-Sec. 27 - 12N - 9E

OR – Grid or street no. — Street name

AND – If available subdivision name, lot & block no.

3. OWNER AT TIME OF DRILLING: Wisconsin Power & Light Co. Well #2

ADDRESS: P. O. Box 192 Well No. 2

POST OFFICE: Madison, Wis. 53701

4. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING	SANITARY SEWER C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C. I.	WASTE WATER DRAIN TILE

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)
Site approved #3320

5. Well is intended to supply water for: Industrial and Potable

NORTH WELL P.W. #43224

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
#19	Surface	152.5			
15	152.5	252.5			

9. FORMATIONS

Kind	From (ft.)	To (ft.)
Glacial Drift	Surface	102
Sandstone	102	252.5

7. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
20	Steel x 3/8"	Surface	110.5
	A-53-B		
16	Steel x 3/8"		152.5
	A-53-B		

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Neat Cement	Surface	152.5

10. TYPE OF DRILLING MACHINE USED

☒ Cable Tool ☐ Direct Rotary ☐ Reverse Rotary
☐ Rotary – air w/drilling mud ☐ Rotary – hammer with drilling mud & air ☐ Jetting with ☐ Air ☐ Water

Well construction completed on April 12 1972

Well is terminated 24 inches ☒ above ☐ below final grade

Well disinfected upon completion ☒ Yes ☐ No

Well sealed watertight upon completion ☒ Yes ☐ No

11. MISCELLANEOUS DATA

Yield test: 24 Hrs. at 1000 GPM

Depth from surface to normal water level 34 ft.

Depth to water level when pumping 100 ft.

Water sample sent to Will submit when pump is started. laboratory on: 19

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, sub-surface pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE EGERER-GALLOWAY WELL CORP.
Geo. M. Galloway/EP Registered Well Driller

COMPLETE MAIL ADDRESS
13640 W. Carmen Ave.
Menomonee Falls, WI
53051

Please do not write in space below

COLIFORM TEST RESULT	GAS – 24 HRS.	GAS – 48 HRS.	CONFIRMED	REMARKS

3468

WISCONSIN UNIQUE WELL NUMBER **GS873**

Source: SWAP PROJECT KEYED

State of Wi-Private Water Systems-DG/2
Department Of Natural Resources, Box 7921
Madison, WI 53707

Form 3300-77A
(Rev 02/02)bw

Depth **310** FT

Property Owner **WISCONSIN POWER & LIGHT**

Telephone Number - -

Mailing Address PO BOX 98

City PORTAGE

State WI

Zip Code 53901

County of Well Location SC 11 COLUMBIA

Co Well Permit No W

Well Completion Date July 14, 1976

1. Well Location

T=Town C=City V=Village
C of PORTAGE

Fire#

Street Address or Road Name and Number

Subdivision Name

Lot#

Block #

Well Constructor MILAEGER WELL & PUMP

License # 82

Facility ID (Public) 111021460

Address 20950 ENTERPRISE AV

Public Well Plan Approval#

City BROOKFIELD

State WI

Zip Code 53005

Date Of Approval

Hicap Permanent Well # 43225

Common Well #

Specific Capacity 10 gpm/ft

Gov't Lot or **SW** 1/4 of **SW** 1/4 of

Section **27** T **12** N R **9** **E**

2. Well Type 1 (See item 12 below)

1=New 2=Replacement 3=Reconstruction

of previous unique well # __________ constructed in ______

Reason for replaced or reconstructed Well?

1 1=Drilled 2=Driven Point 3=Jetted 4=Other

3. Well Serves # of homes and or **GENERATING STATION**

N (eg: barn, restaurant, church, school, industry, etc.)

M=Munic O=OTM N=NonCom P=Private Z=Other X=NonPot A=Anode L=Loop H=Drillhole

High Capacity: Well? N

Property? N

4. Is the well located upslope or sideslope and not downslope from any contamination sources, including those on neighboring properties? N

Well located in floodplain? N

Distance in feet from well to nearest: (including proposed)

1. Landfill
2. Building Overhang
3. 1=Septic 2= Holding Tank
4. Sewage Absorption Unit
5. Nonconforming Pit
6. Buried Home Heating Oil Tank
7. Buried Petroleum Tank
8. 1=Shoreline 2= Swimming Pool
9. Downspout/ Yard Hydrant
10. Privy
11. Foundation Drain to Clearwater
12. Foundation Drain to Sewer
13. Building Drain
    1=Cast Iron or Plastic 2=Other
14. Building Sewer 1=Gravity 2=Pressure
    1=Cast Iron or Plastic 2=Other
15. Collector Sewer: ___ units ___ in . diam.
16. Clearwater Sump
17. Wastewater Sump
18. Paved Animal Barn Pen
19. Animal Yard or Shelter
20. Silo
21. Barn Gutter
22. Manure Pipe 1=Gravity 2=Pressure
    1=Cast iron or Plastic 2=Other
23. Other manure Storage
24. Ditch
25. Other NR 812 Waste Source

5. Drillhole Dimensions and Construction Method

Dia.(in.)	From (ft)	To (ft)
20.0	surface	113
19.0	113	153
15.0	153	310

Upper Enlarged Drillhole — Lower Open Bedrock

-- 1. Rotary - Mud Circulation -----------------
-- 2. Rotary - Air ---------------------------------
-- 3. Rotary - Air and Foam ---------------------
-- 4. Drill-Through Casing Hammer
-- 5. Reverse Rotary
X -- 6. Cable-tool Bit _ n. dia ----------------
-- 7. Temp. Outer Casing _ in. dia. _____ depth ft.
Removed ?

Other

6. Casing Liner Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
20.0	STEEL .375 ASTM 53-B 78#/FT	surface	113
16.0	STEEL .375 ASTM 53-B 62#/FT	113	310

Dia.(in.)	Screen type, material & slot size	From	To

7. Grout or Other Sealing Material

Method Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
NEAT CEMENT	surface	153.0	

8.

Geology Codes	Geology Type, Caving/Noncaving, Color, Hardness, etc	From (ft.)	To (ft.)
__T_	GLACIAL DRIFT	0	113
__N_	SANDSTONE	113	310

9. Static Water Level

25.0 feet B ground surface
A=Above B=Below

10. Pump Test

Pumping level 50.0 ft. below surface

Pumping at 250.0 GP 12.0 Hrs

11. Well Is: 18 in. A Grade
A=Above
B=Below

Developed? N

Disinfected? Y

Capped? Y

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property? N

If no, explain

13. Initials of Well Constructor or Supervisory Driller R

Date Signed 7/14/76

Initials of Drill Rig Operator (Mandatory unless same as above)

Date Signed

Additonal Comments?

Owner Sent Label? Y

Variance Issued?

More Geology?

Batch 777777777

WISCONSIN UNIQUE WELL NUMBER **GO218**

Source: SWAP PROJECT KEYED

State of Wi-Private Water Systems-DG/2
Department Of Natural Resources, Box 7921
Madison, WI 53707

Form 3300-77A
(Rev 02/02)bw

Depth 88 FT

Property Owner THURENALL, JOE
Telephone Number 608 -742 -6775
Mailing Address N6046 HWY 51
City PORTAGE
State WI
Zip Code 53954
County of Well Location SC 11 COLUMBIA
Co Well Permit No W
Well Completion Date July 28, 1937

Well Constructor GEORGE REYNOLDS
License #
Facility ID (Public) 111035320
Address
Public Well Plan Approval#
City PORTAGE
State WI
Zip Code 53954
Date Of Approval
Hicap Permanent Well #
Common Well #
Specific Capacity gpm/ft

1. Well Location
T=Town C=City V=Village
T of PACIFIC
Fire# N6046
Street Address or Road Name and Number
N6046 HWY 51
Subdivision Name
Lot#
Block #

Gov't Lot or NE 1/4 of NE 1/4 of
Section 27 T 12 N R 9 E

2. Well Type 1 (See item 12 below)
1=New 2=Replacement 3=Reconstruction
of previous unique well # __________ constructed in ______
Reason for replaced or reconstructed Well?

1 1=Drilled 2=Driven Point 3=Jetted 4=Other

3. Well Serves # of homes and or TAVERN
N (eg: barn, restaurant, church, school, industry, etc.)
M=Munic O=OTM N=NonCom P=Private Z=Other X=NonPot A=Anode L=Loop H=Drillhole

High Capacity: Well? N
Property? N

4. Is the well located upslope or sideslope and not downslope from any contamination sources, including those on neighboring properties? N
Well located in floodplain? N
Distance in feet from well to nearest: (including proposed)

1. Landfill
2. Building Overhang
3. 1=Septic 2= Holding Tank
4. Sewage Absorption Unit
5. Nonconforming Pit
6. Buried Home Heating Oil Tank
7. Buried Petroleum Tank
8. 1=Shoreline 2= Swimming Pool
9. Downspout/ Yard Hydrant
10. Privy
11. Foundation Drain to Clearwater
12. Foundation Drain to Sewer
13. Building Drain
1=Cast Iron or Plastic 2=Other
14. Building Sewer 1=Gravity 2=Pressure
1=Cast Iron or Plastic 2=Other
15. Collector Sewer: ___ units ___ in . diam.
16. Clearwater Sump
17. Wastewater Sump
18. Paved Animal Barn Pen
19. Animal Yard or Shelter
20. Silo
21. Barn Gutter
22. Manure Pipe 1=Gravity 2=Pressure
1=Cast iron or Plastic 2=Other
23. Other manure Storage
24. Ditch
25. Other NR 812 Waste Source

5. Drillhole Dimensions and Construction Method

Dia.(in.)	From (ft)	To (ft)
6.0	surface	88

Upper Enlarged Drillhole
Lower Open Bedrock
-- 1. Rotary - Mud Circulation ----------------
-- 2. Rotary - Air --------------------------------
-- 3. Rotary - Air and Foam ---------------------
-- 4. Drill-Through Casing Hammer
-- 5. Reverse Rotary
-- 6. Cable-tool Bit _ n. dia ----------------
-- 7. Temp. Outer Casing _ in. dia. _____ depth ft.
Removed ?
Other

8.

Geology Codes	Geology Type, Caving/Noncaving, Color, Hardness, etc	From (ft.)	To (ft.)
__I_	TOPSOIL	0	24
IQN_	CAVING WHITE SANDSTONE	24	50
IHN_	SOLID WHITE SANDSTONE	50	88

6. Casing Liner Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
6.0	STEEL DRILLER'S SPEC PIPE	surface	50

Dia.(in.)	Screen type, material & slot size	From	To

7. Grout or Other Sealing Material

Method Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
	surface		

9. Static Water Level
20.0 feet B ground surface
A=Above B=Below

10. Pump Test
Pumping level 20.0 ft. below surface
Pumping at 10.0 GP M 2.0 Hrs

11. Well Is: 4 in. B Grade
A=Above
B=Below
Developed? N
Disinfected? Y
Capped? N

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property? N
If no, explain

13. Initials of Well Constructor or Supervisory Driller GR
Date Signed 9/11/37
Initials of Drill Rig Operator (Mandatory unless same as above)
Date Signed

Additonal Comments?
Owner Sent Label? Y
Variance Issued?
More Geology?

Batch 777777777

WELL CONSTRUCTOR'S REPORT
FORM 3300–15

SEP 15 1975

NOTE
WHITE COPY – DIVISION'S COPY
GREEN COPY – DRILLER'S COPY
YELLOW COPY – OWNER'S COPY

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Box 450
Madison, Wisconsin 53701

1. COUNTY Columbia

CHECK ONE ☑ Town ☐ Village ☐ City NAME PACIFIC

2. LOCATION – ¼ Section NW Section 27 Township 12N Range 9E

OR – Grid or street no. Street name

AND – If available subdivision name, lot & block no.

3. OWNER AT TIME OF DRILLING LANDSVERK CONST.

ADDRESS

POST OFFICE PORTAGE, WIS

4. Distance in feet from well to nearest:
(Record answer in appropriate block)

BUILDING	SANITARY SEWER C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C. I.	WASTE WATER DRAIN TILE
13	—	—	—	—	—	—	—	—

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
—	—	49	—	—	61		—	—	—

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)

5. Well is intended to supply water for: Home

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8	Surface	54			
6	54	82			

7. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6"	STD BLK Pipe	Surface	54
	.280 wall		
	18.97 WT		
	weld FTS		

9. FORMATIONS

Kind	From (ft.)	To (ft.)
SAND	Surface	18
SANdy clay	18	39
SAND	39	52
SAND ROCK	52	82

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Mud & cuttings	Surface	54

10. TYPE OF DRILLING MACHINE USED

☐ Cable Tool ☐ Direct Rotary ☐ Reverse Rotary
☐ Rotary – air w/drilling mud ☑ Rotary – hammer with drilling mud & air ☐ Jetting with ☐ Air ☐ Water

Well construction completed on 8-29 19 75

Well is terminated 12 **inches** ☑ above ☐ below **final grade**

Well disinfected upon completion ☑ Yes ☐ No

Well sealed watertight upon completion ☑ Yes ☐ No

11. MISCELLANEOUS DATA

Yield test: 2 **Hrs. at** 15 **GPM**

Depth from surface to normal water level 20 **ft.**

Depth to water level when pumping 65 **ft.**

Water sample sent to MADISON **laboratory on:** 8-29 19 75

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, sub-surface pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE Sam Vander Galien Jr. Registered Well Driller

COMPLETE MAIL ADDRESS **SAM'S ROTARY DRILLERS,**
ROUTE 1 -
RANDOLPH, WISCONSIN 53956

Please do not write in space below

COLIFORM TEST RESULT	GAS – 24 HRS.	GAS – 48 HRS.	CONFIRMED	REMARKS
3474				

REV. 3–71

CO-611-U

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

CO-611-U

RECEIVED
JUL 27 1950
BUREAU SAN. ENG.

1. County Columbia Town ☒ Village ☐ City ☐ pacific (Check one and give name)

2. Location N.W. ¼ of S.W. ¼ Sec. 27 T. ~~11 and~~ 12 N. R. 9 E. (Name of street and number of premise or Section, Town and Range numbers) T12N R9E

3. Owner ☒ or Agent ☐ William Murray (Name of individual, partnership or firm)

4. Mail Address Pardeeville Wis. R. R. 2 (Complete address required)

5. From well to nearest: Building 3 ft; sewer ____ ft; drain ____ ft; septic tank 50 ft; ____
dry well or filter bed 100 ft; abandoned well 80 ft. ____

6. Well is intended to supply water for: Home and farm

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8	0	25	4	25	132

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind	From (ft.)	To (ft.)
4	Std. weight steel	0	97'4"

9. GROUT:

Kind	From (ft.)	To (ft.)
none		

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
clay	0	40
sand	40	65
soft sand rock	65	97'4"
sand rock solid	97'4"	132

Construction of the well was completed on:
July 18 1950

The well is terminated 8 inches
☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion?
Yes X No ____

Was the well sealed watertight upon completion?
Yes X No ____

11. MISCELLANEOUS DATA:

Yield test: 3 Hrs. at 6 GPM.

Depth from surface to water-level: 20 ft.

Water-level when pumping: 20 ft.

Water sample was sent to the state laboratory at:
Madison (City) on July 19 1950

Signature Edward Malisch (Registered Well Driller) Portage Wis. R.R. 3 (Complete Mail Address)

Please do not write in space below

Rec'd JUL 21 1950 No. 10757

Ans'd

Interpretation

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.					
Confirm					
B. Coli					

Examiner

3470

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH
See Instructions on Reverse Side

1. County Columbia
Town ☒ Village ☐ City ☐ Pacific
Check one and give name

2. Location Sec 27, Town 12, Range 9E
T12N
Name of street and number of premise or Section, Town and Range numbers

3. Owner ☒ or Agent ☐ Dennis Lovell
Name of individual, partnership or firm

4. Mail Address Portage Wis – 302 – E Pleasant St Portage Wis
Complete address required

1955
SANITATION

5. From well to nearest: Building 20 ft; ~~sewer~~ None ft; ~~drain~~ None ft; septic tank 60 ft;
dry well or filter bed 80 ft; abandoned well 5 ft.

6. Well is intended to supply water for: Slaughter House & Home

7. **DRILLHOLE:**

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
4	0	81			

8. **CASING AND LINER PIPE OR CURBING:**

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
4	Drillers 10.89 per 100 ft	0	37

9. **GROUT:**

Kind	From (ft.)	To (ft.)
None		

10. **FORMATIONS:**

Kind	From (ft.)	To (ft.)
Sand	0	29
Soft Sandstone	29	37
Hardsandstone	37	81

Construction of the well was completed on:
Nov 1 1955

The well is terminated 8 inches
☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion?
Yes ✓ No

Was the well sealed watertight upon completion?
Yes ✓ No

11. **MISCELLANEOUS DATA:**

Yield test: 4 Hrs. at 5 GPM.

Depth from surface to water-level: 44 ft.

Water-level when pumping: 44 ft.

Water sample was sent to the state laboratory at:
Madison on Nov 3 1955
City

Signature George Buzzell
Registered Well Driller

503, E. Conant St. Portage Wis
Complete Mail Address

Please do not write in space below

Rec'd No. 37985

Ans'd

Interpretation

SAFE

10 ml 10 ml 10 ml 10 ml 10 ml

Gas—24 hrs.

48 hrs.

Confirm

B. Coli 0/5

Examiner

3465

Wel. 6-30M (6-50)

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

1. County COLUMBIA Town ☐ ~~Village~~ ☐ ~~City~~ ☐ PACIFIC
Check one and give name

RECEIVED
NOV 20 1953
ENVIRONMENTAL SANITATION

2. Location T 12N R 9E Sec. 27, Sec. 27
Name of street and number of premise or Section, Town and Range numbers

3. Owner ☒ or Agent ☐ '51 DRIVE IN TheATRE
Name of individual, partnership or firm

4. Mail Address HIGhWAY 51 DRIVE IN TheATRE, PORTAGE, WIS
Complete address required

5. From well to nearest: Building 5 ft; sewer ____ ft; drain ____ ft; septic tank 75 ft; ______

dry well or filter bed ____ ft; abandoned well ____ ft. ______

6. Well is intended to supply water for: TheATRE

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
6	0	105			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	STD. STeeL	0	76

9. GROUT:

Kind	From (ft.)	To (ft.)

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
TOpSOIL	0	5
SAND	5	30
CLAY	30	63
SAND ROCK BR.	63	75
SAND ROCK, Wh.	75	105

Construction of the well was completed on:

6/24 1952

The well is terminated 6 inches ☒ ~~above~~, below ☐ the permanent ground surface.

Was the well disinfected upon completion?

Yes ✓ No ____

Was the well sealed watertight upon completion?

Yes ✓ No ____

11. MISCELLANEOUS DATA:

Yield test: 4 Hrs. at 16 GPM.

Depth from surface to water-level: 28 ft.

Water-level when pumping: 28 ft.

Water sample was sent to the state laboratory at:

MADISON on 7/10 1952
City

Signature Geo. Reynolds & Son
Registered Well Driller

PORTAGE, WIS.
Complete Mail Address

Please do not write in space below

Rec'd ______ No. ______

Ans'd ______

Interpretation ______

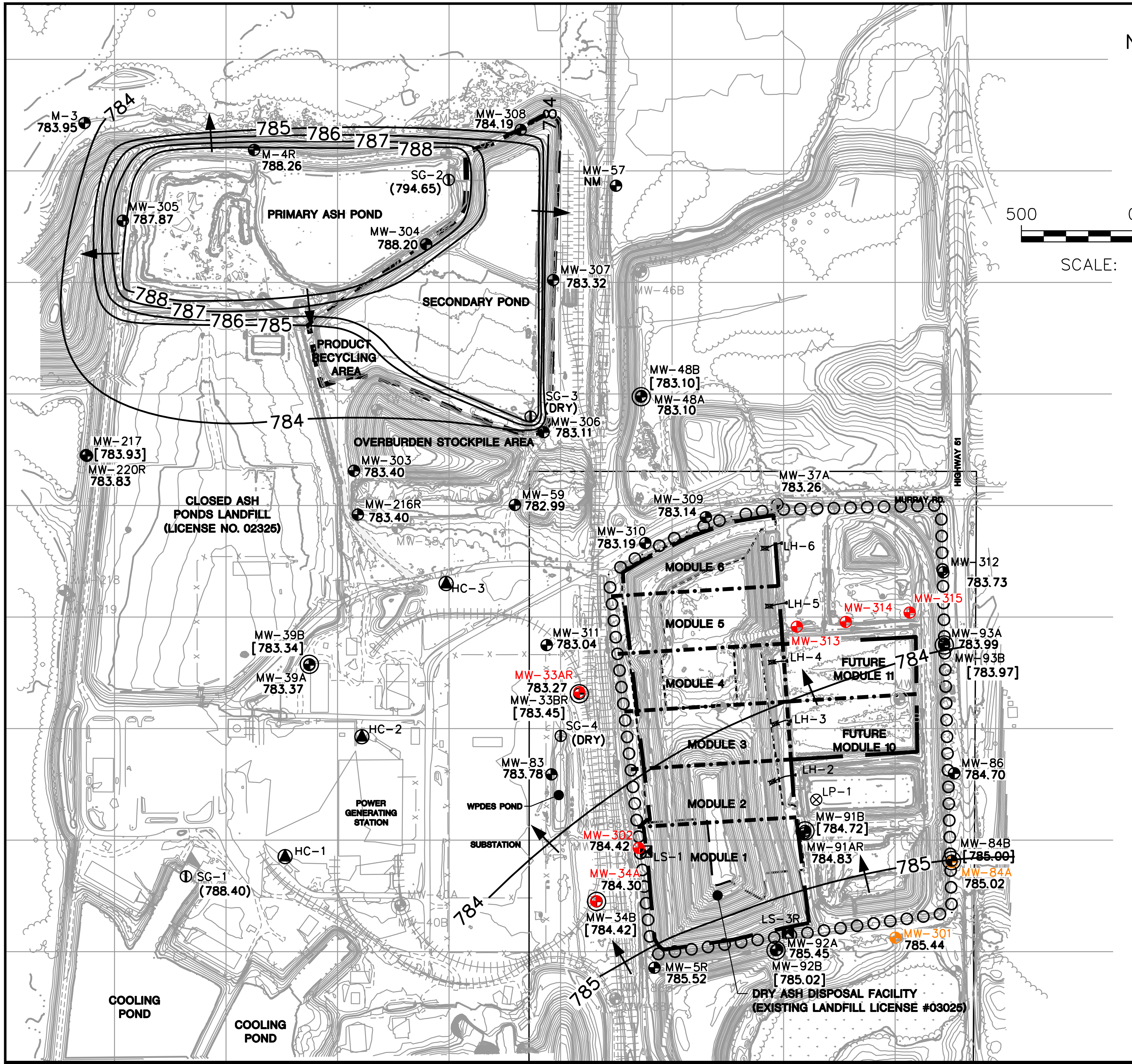
	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.					
Confirm					
B. Coli					

Examiner ______

3464

Attachment D

Site Groundwater Flow Maps



SCALE: 1" = 500'

LEGEND

───	EXISTING MAJOR CONTOUR (10' INTERVAL)
───	EXISTING MINOR CONTOUR (2' CONTOUR)
—x—x—	EXISTING FENCELINE
┼┼┼┼┼	EXISTING TRACKS
═══	EXISTING PAVED ROAD
╌╌╌	EXISTING UNPAVED ROAD
—··	EDGE OF WATER
·OOOOOOOO·	DRY ASH DISPOSAL FACILITY LIMITS
▬ ▬ ▬	LIMITS OF WASTE
▬·▬·▬	LINER PHASE/MODULE LIMITS
▲	WATER SUPPLY WELL
◐	STAFF GAUGE
●	NON-CCR WATER TABLE WELL
◉	NON-CCR PIEZOMETER
🔴	CCR MONITORING WELL
🟠	CCR BACKGROUND MONITORING WELL
⊗	SURFACE WATER SAMPLE LOCATION
☒	LYSIMETER
●	ABANDONED WATER TABLE WELL
◉	ABANDONED PIEZOMETER
↜	LEACHATE HEADWELL
787.62	WATER TABLE ELEVATION
[788.87]	POTENTIOMETRIC SURFACE ELEVATION (NOT CONTOURED)
(795.20)	SURFACE WATER ELEVATION (NOT CONTOURED)
───	WATER TABLE CONTOUR
⟶	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEY BY SCS ENGINEERS IN DECEMBER 2020, AND BY DRONE SURVEY BY AMES ON JANUARY 17, 2023.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AND JANUARY 2016, AND BY SCS ENGINEERS IN FEBRUARY 2018, APRIL 2022, AND JANUARY 2023.
3. SUPPLY WELL LOCATIONS ARE APPROXIMATE AND ASSUMED BASED ON JANUARY 2013 DRAWINGS BY TRC.
4. GROUNDWATER AND SURFACE WATER ELEVATIONS WERE MEASURED ON APRIL 11-13, 2022.
5. MW-57 WAS INACCESSIBLE DURING THE APRIL 2022 EVENT DUE TO HIGH WATER.

PROJECT NO.	25222260.00	DRAWN BY:	KP
DRAWN:	02/06/2023	CHECKED BY:	
REVISED:	02/06/2023	APPROVED BY:	

ENGINEER
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

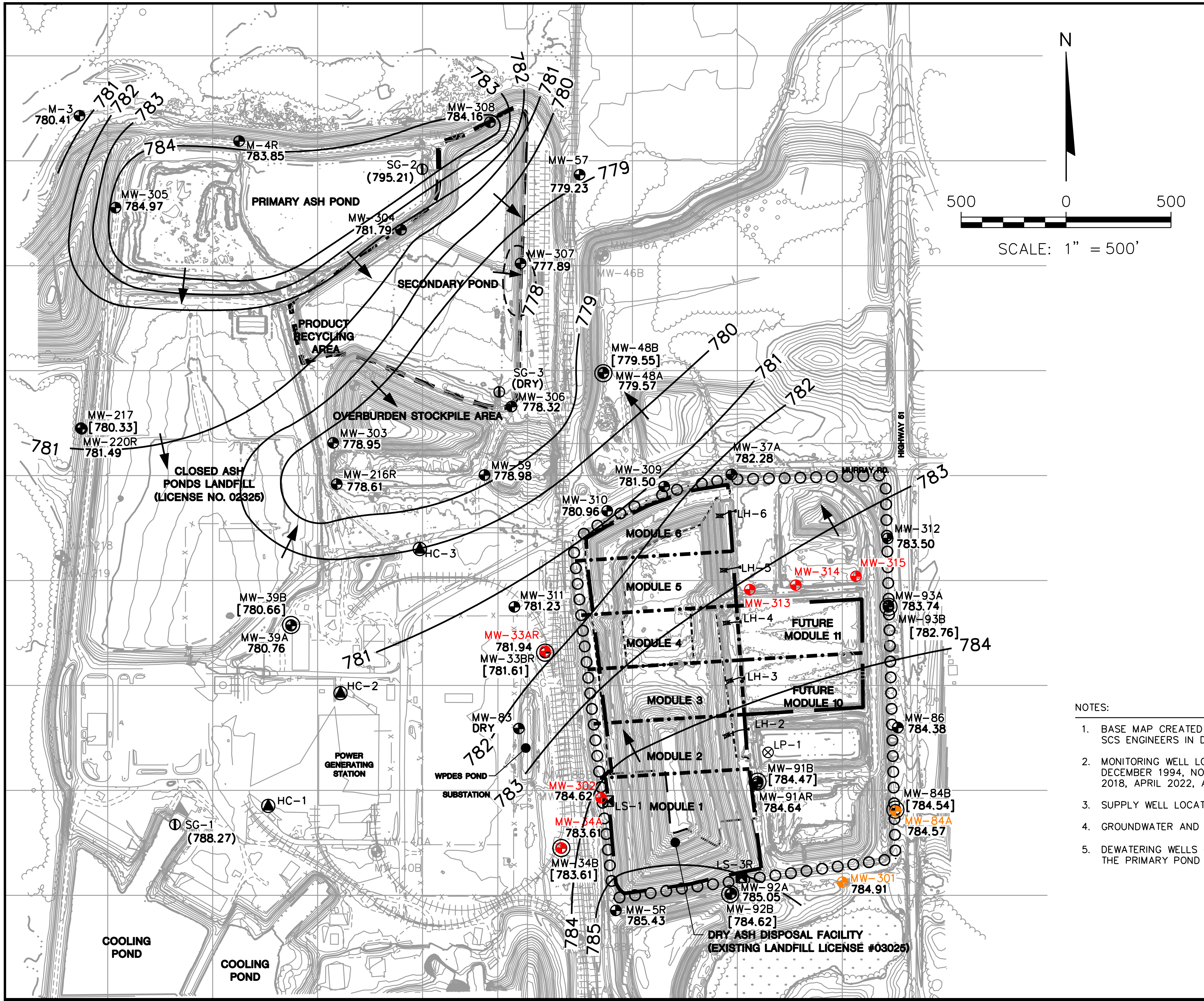
CLIENT
ALLIANT ENERGY
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WI 53954

SITE
ALLIANT ENERGY
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
PARDEEVILLE, WI

WATER TABLE MAP
APRIL 2022

FIGURE
3

I:\25222260.00\Drawings\Water Table Map-April 2022.dwg, 2/9/2023 3:52:38 PM



LEGEND

———	EXISTING MAJOR CONTOUR (10' INTERVAL)
———	EXISTING MINOR CONTOUR (2' CONTOUR)
—x—x—	EXISTING FENCELINE
┼┼┼┼┼┼┼	EXISTING TRACKS
═══	EXISTING PAVED ROAD
- - - -	EXISTING UNPAVED ROAD
—··—	EDGE OF WATER
○○○○○○○○	DRY ASH DISPOSAL FACILITY LIMITS
— — —	LIMITS OF WASTE
—·—·—	LINER PHASE/MODULE LIMITS
▲	WATER SUPPLY WELL
◐	STAFF GAUGE
●	NON-CCR WATER TABLE WELL
◉	NON-CCR PIEZOMETER
●	CCR MONITORING WELL
●	CCR BACKGROUND MONITORING WELL
⊗	SURFACE WATER SAMPLE LOCATION
☒	LYSIMETER
●	ABANDONED WATER TABLE WELL
◉	ABANDONED PIEZOMETER
↜	LEACHATE HEADWELL
787.62	WATER TABLE ELEVATION
[788.87]	POTENTIOMETRIC SURFACE ELEVATION (NOT CONTOURED)
(795.20)	SURFACE WATER ELEVATION (NOT CONTOURED)
———	WATER TABLE CONTOUR
→	APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEY BY SCS ENGINEERS IN DECEMBER 2020, AND BY DRONE SURVEY BY AMES ON JANUARY 17, 2023.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AND JANUARY 2016, AND BY SCS ENGINEERS IN FEBRUARY 2018, APRIL 2022, AND JANUARY 2023.
3. SUPPLY WELL LOCATIONS ARE APPROXIMATE AND ASSUMED BASED ON JANUARY 2013 DRAWINGS BY TRC.
4. GROUNDWATER AND SURFACE WATER ELEVATIONS WERE MEASURED ON OCTOBER 25-27, 2022.
5. DEWATERING WELLS (NOT SHOWN) AROUND THE SECONDARY POND WERE PUMPING AND DISCHARGING TO THE PRIMARY POND DURING THE OCTOBER 2022 SAMPLING EVENT.

PROJECT NO.	25222260.00	DRAWN BY:	KP
DRAWN:	02/09/2023	CHECKED BY:	
REVISED:	02/09/2023	APPROVED BY:	

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT

ALLIANT ENERGY
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WI 53954

SITE

ALLIANT ENERGY
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
PARDEEVILLE, WI

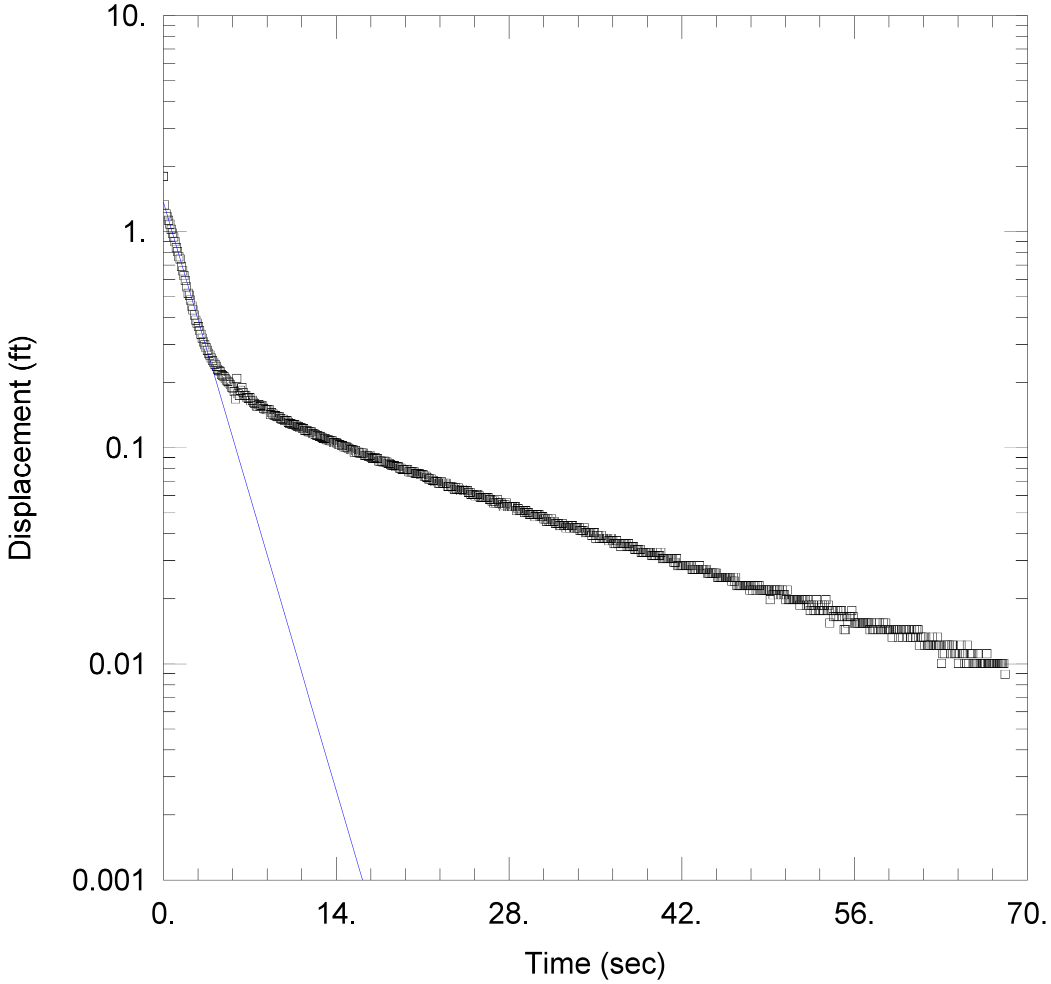
WATER TABLE MAP
OCTOBER 2022

FIGURE
4

I:\25222260.00\Drawings\Water Table Map-October 2022.dwg, 2/9/2023 3:50:53 PM

Attachment E

Hydraulic Conductivity Test Results



WELL TEST ANALYSIS

Data Set: I:\25215135\Data\Hydraulic Conductivity Testing\COL Slug 160120\MW301.aqt
Date: 01/28/16 Time: 08:46:14

PROJECT INFORMATION

Company: SCS
Client: Alliant Energy - Columbia
Project: 25215135
Location: Portage, WI
Test Well: MW-301
Test Date: 12/20/2015

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

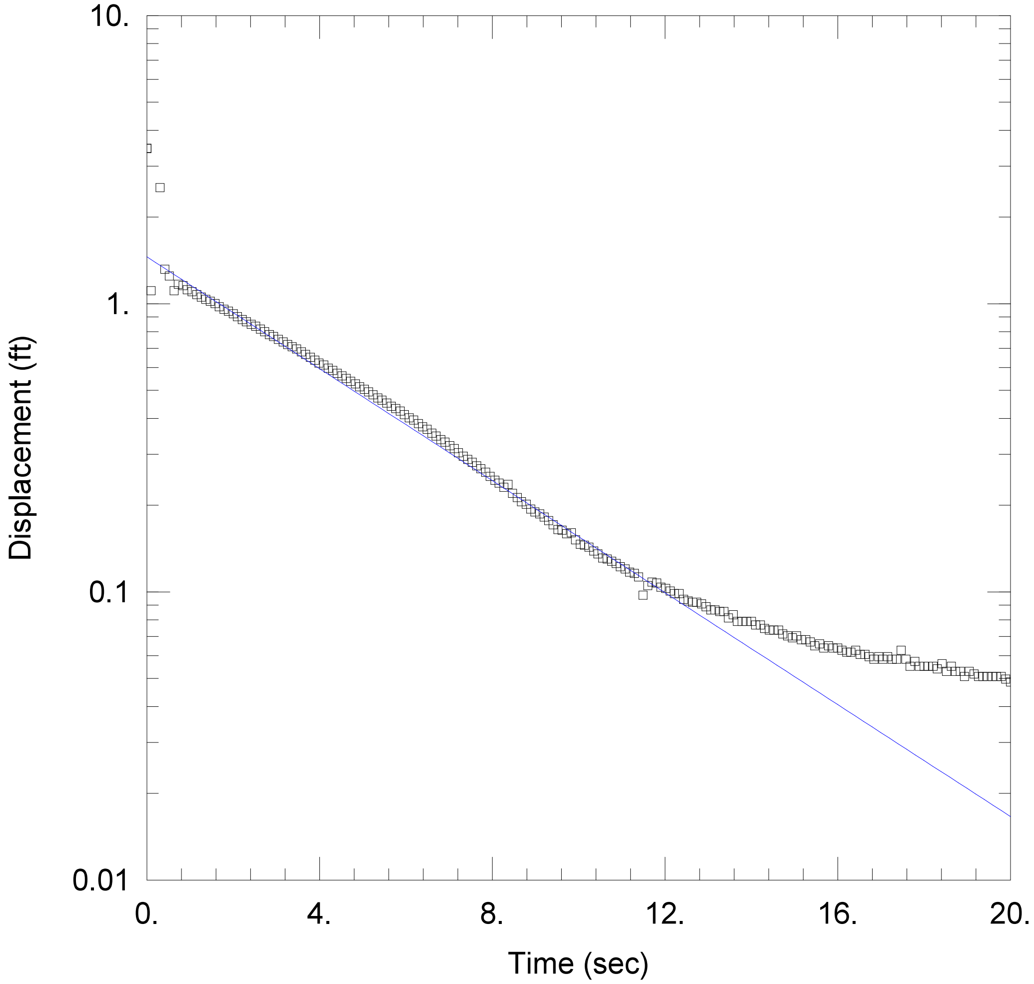
WELL DATA (MW-301 Slug Out)

Initial Displacement: 1.801 ft
Total Well Penetration Depth: 8.75 ft
Casing Radius: 0.09 ft
Static Water Column Height: 8.75 ft
Screen Length: 8.75 ft
Well Radius: 0.35 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.05542 cm/sec
y0 = 1.366 ft



MW-302 SLUG OUT

Data Set: I:\25215135\Data\Hydraulic Conductivity Testing\COL Slug 160120\MW302_Out.aqt
Date: 01/28/16 Time: 08:50:19

PROJECT INFORMATION

Company: SCS
Client: Alliant Energy - Columbia
Project: 25215135
Location: Portage, WI
Test Well: MW-302
Test Date: 12/20/2015

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

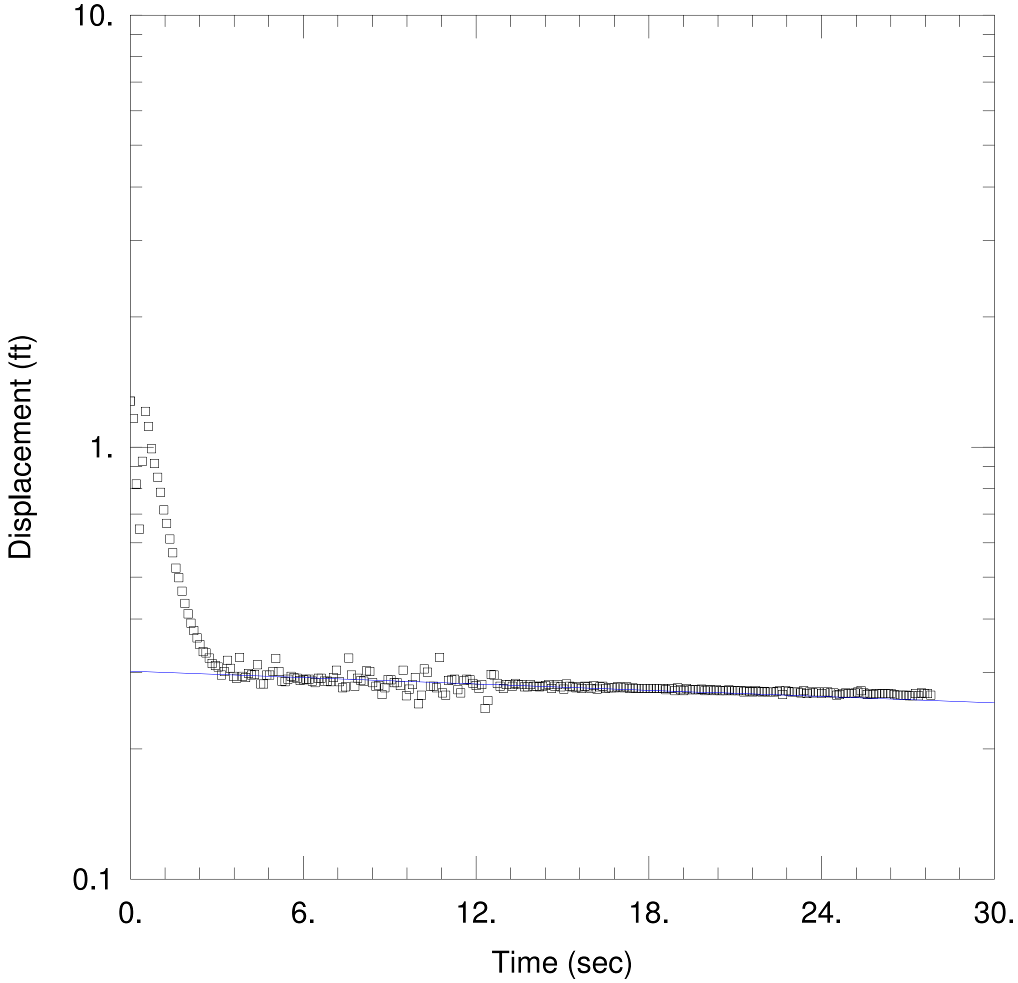
WELL DATA (MW-302 Slug Out)

Initial Displacement: 3.46 ft
Total Well Penetration Depth: 5.85 ft
Casing Radius: 0.09 ft
Static Water Column Height: 5.85 ft
Screen Length: 5.85 ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.03217 cm/sec
y0 = 1.454 ft



WELL TEST ANALYSIS

Data Set: I:\25217156.00\Data and Calculations\Slug Test\180216\MW309.aqt
Date: 05/17/18 Time: 12:55:06

PROJECT INFORMATION

Company: SCS Engineers
Client: WPL-Columbia
Project: 25217156.01
Location: Pardeeville
Test Well: MW-309-Slug Out
Test Date: 2/16/2018

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

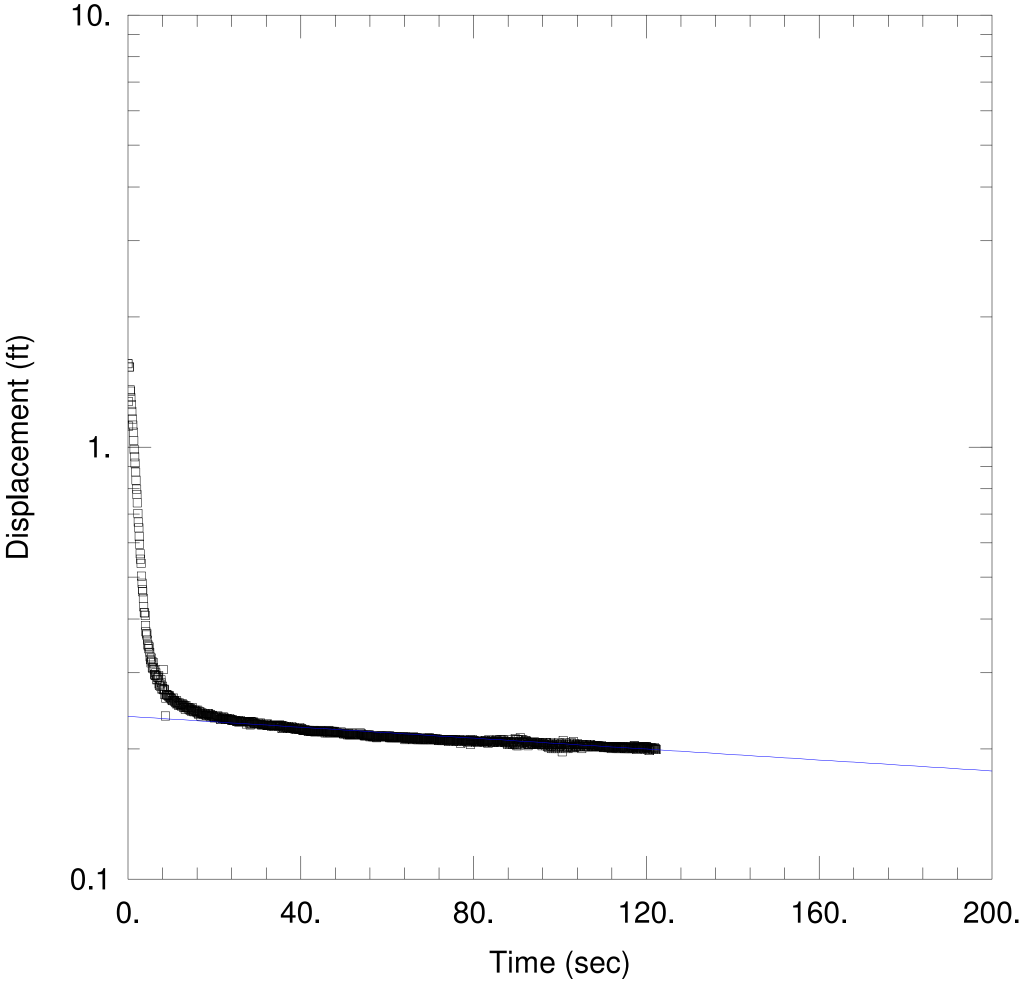
WELL DATA (MW-309)

Initial Displacement: 1.277 ft
Total Well Penetration Depth: 9.97 ft
Casing Radius: 0.099 ft
Static Water Column Height: 7.6 ft
Screen Length: 7.6 ft
Well Radius: 0.35 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0002122 cm/sec
y0 = 0.3025 ft



WELL TEST ANALYSIS

Data Set: I:\25217156.00\Data and Calculations\Slug Test\180216\MW310.aqt
Date: 05/17/18 Time: 12:55:52

PROJECT INFORMATION

Company: SCS Engineers
Client: WPL-Columbia
Project: 25217156.01
Location: Pardeeville, WI
Test Well: MW-310
Test Date: 2/16/2018

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

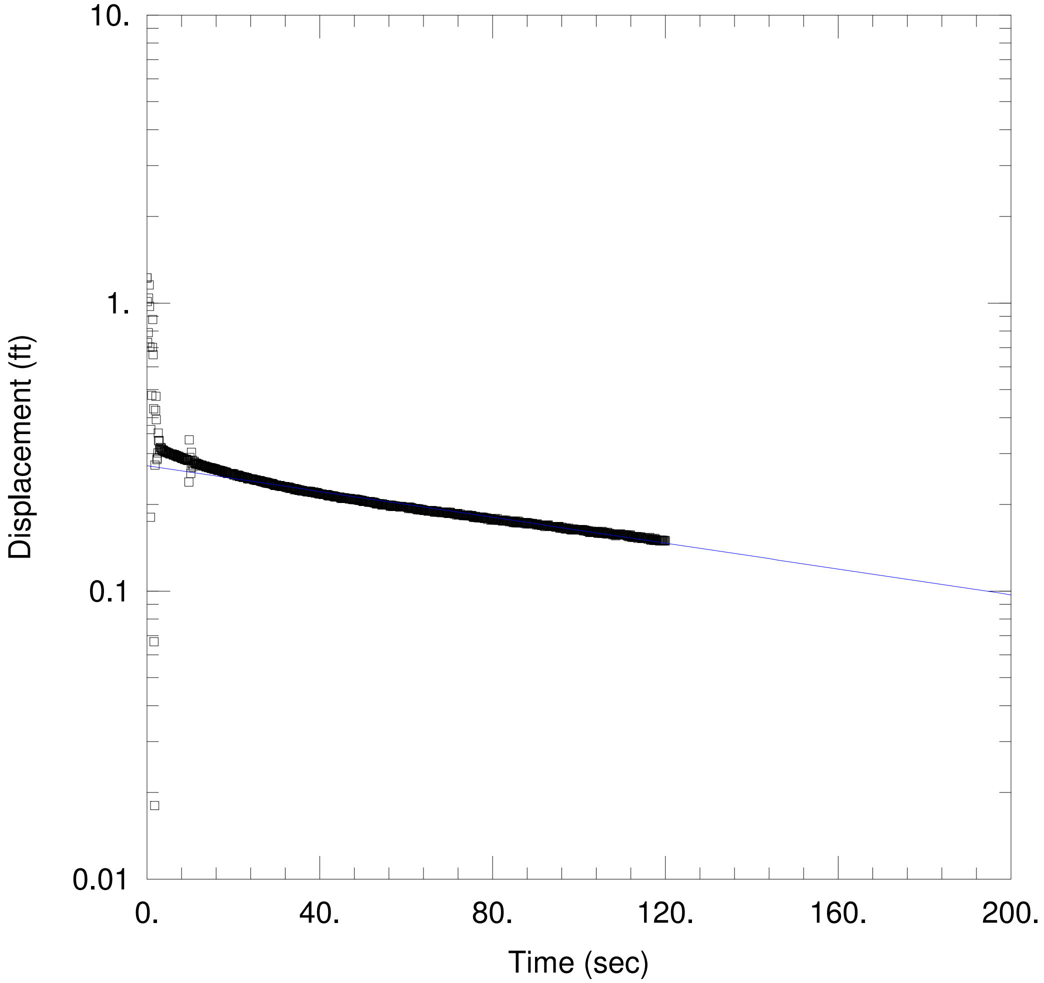
WELL DATA (MW-310)

Initial Displacement: 1.559 ft
Total Well Penetration Depth: 7.9 ft
Casing Radius: 0.09 ft
Static Water Column Height: 7.86 ft
Screen Length: 7.9 ft
Well Radius: 0.35 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0001911 cm/sec
y0 = 0.238 ft



WELL TEST ANALYSIS

Data Set: I:\25217156.00\Data and Calculations\Slug Test\180216\MW311.aqt
Date: 05/17/18
Time: 12:56:06

PROJECT INFORMATION

Company: SCS Engineers
Client: WPL-Columbia
Project: 25217156.01
Location: Pardeeville, WI
Test Well: MW-311
Test Date: 2/16/2018

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

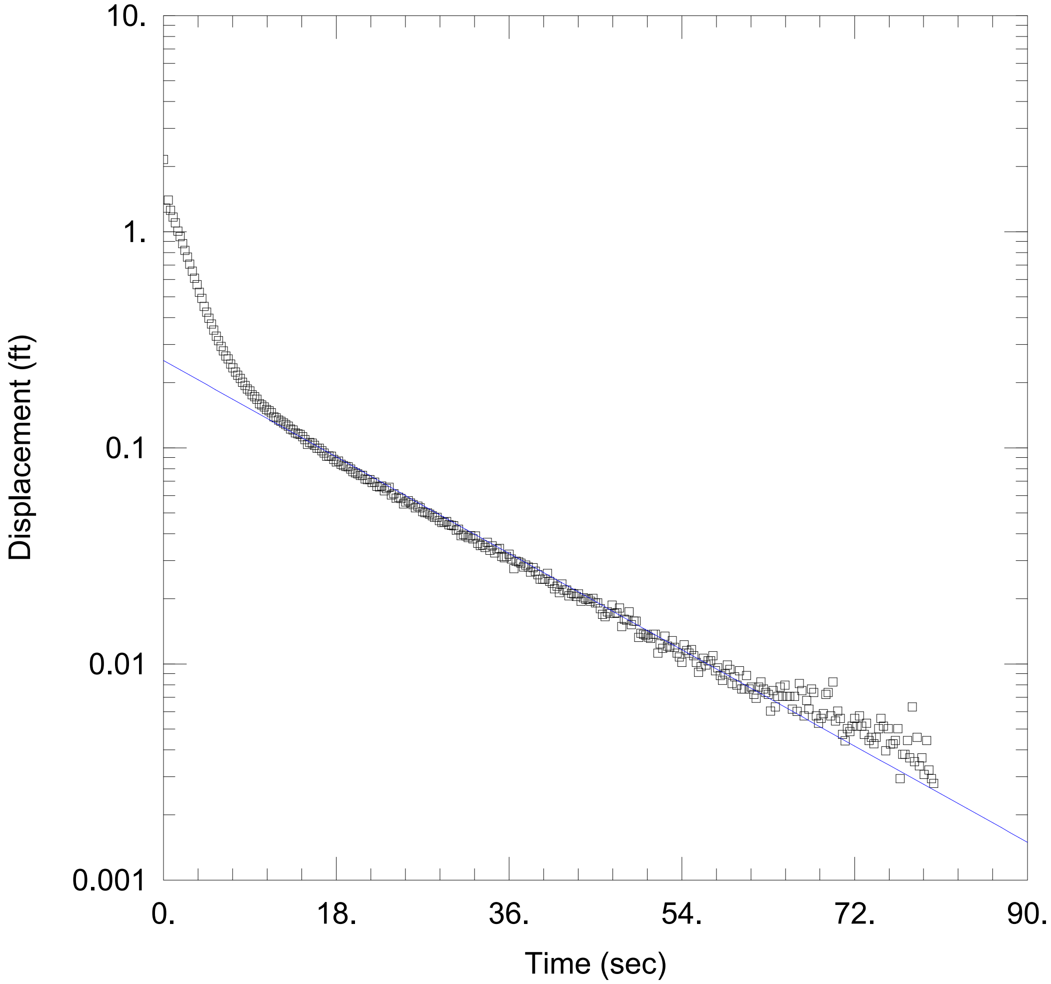
WELL DATA (MW-311)

Initial Displacement: 1.221 ft
Total Well Penetration Depth: 9.46 ft
Casing Radius: 0.09 ft
Static Water Column Height: 9.46 ft
Screen Length: 9.46 ft
Well Radius: 0.35 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0006119 cm/sec
y0 = 0.2724 ft



WELL TEST ANALYSIS

Data Set: I:\25220183.00\Data and Calculations\K Tests\MW 313 314 315\MW313.aqt
Date: 01/24/23 Time: 22:13:07

PROJECT INFORMATION

Company: SCS Engineers
Client: Alliant
Project: 25220183.00
Location: WPL - Columbia
Test Well: MW-313
Test Date: 12/30/2022

AQUIFER DATA

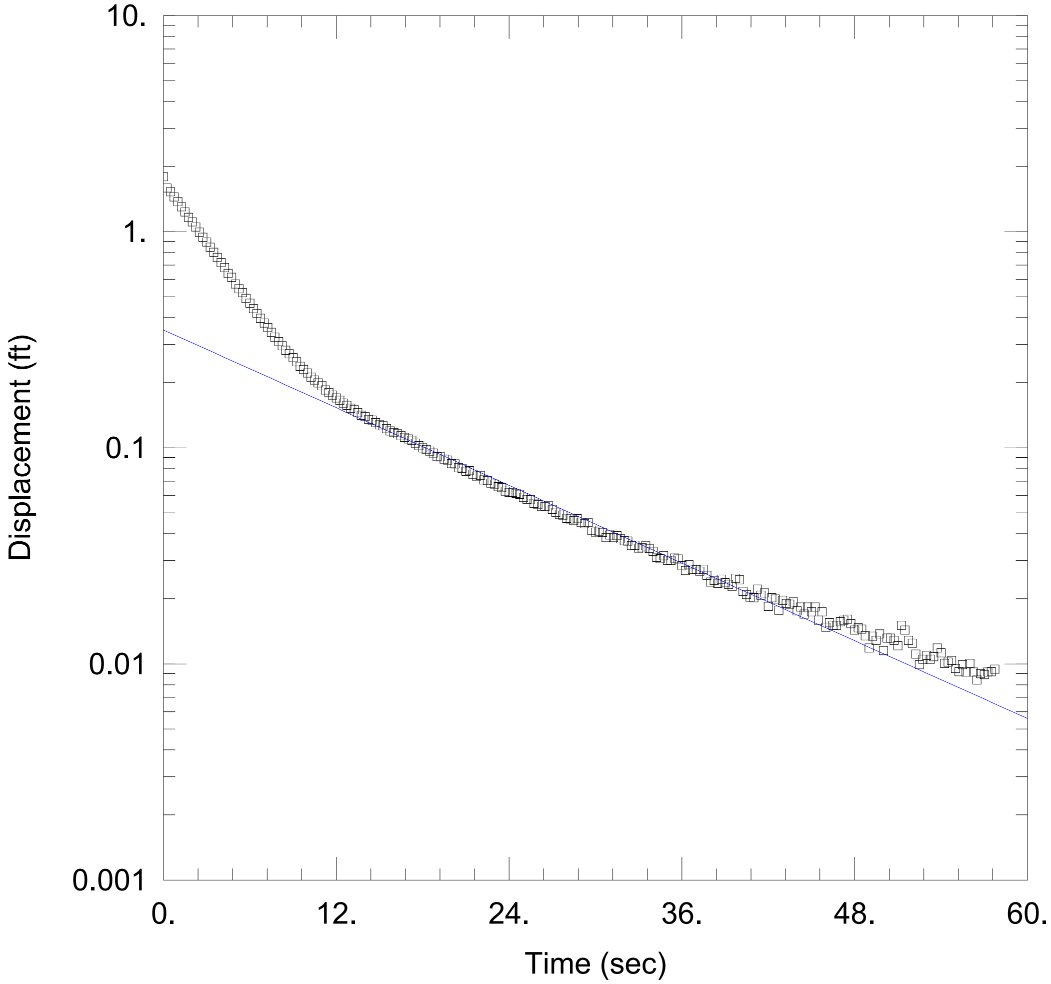
Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-313)

Initial Displacement: 2.16 ft
Static Water Column Height: 8.75 ft
Total Well Penetration Depth: 8.75 ft
Screen Length: 8.75 ft
Casing Radius: 0.09 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.001768 cm/sec
y0 = 0.2531 ft



WELL TEST ANALYSIS

Data Set: I:\25220183.00\Data and Calculations\K Tests\MW 313 314 315\MW314.aqt
Date: 01/24/23 Time: 22:12:57

PROJECT INFORMATION

Company: SCS Engineers
Client: Alliant
Project: 25220183.00
Location: WPL - Columbia
Test Well: MW-314
Test Date: 12/30/2022

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

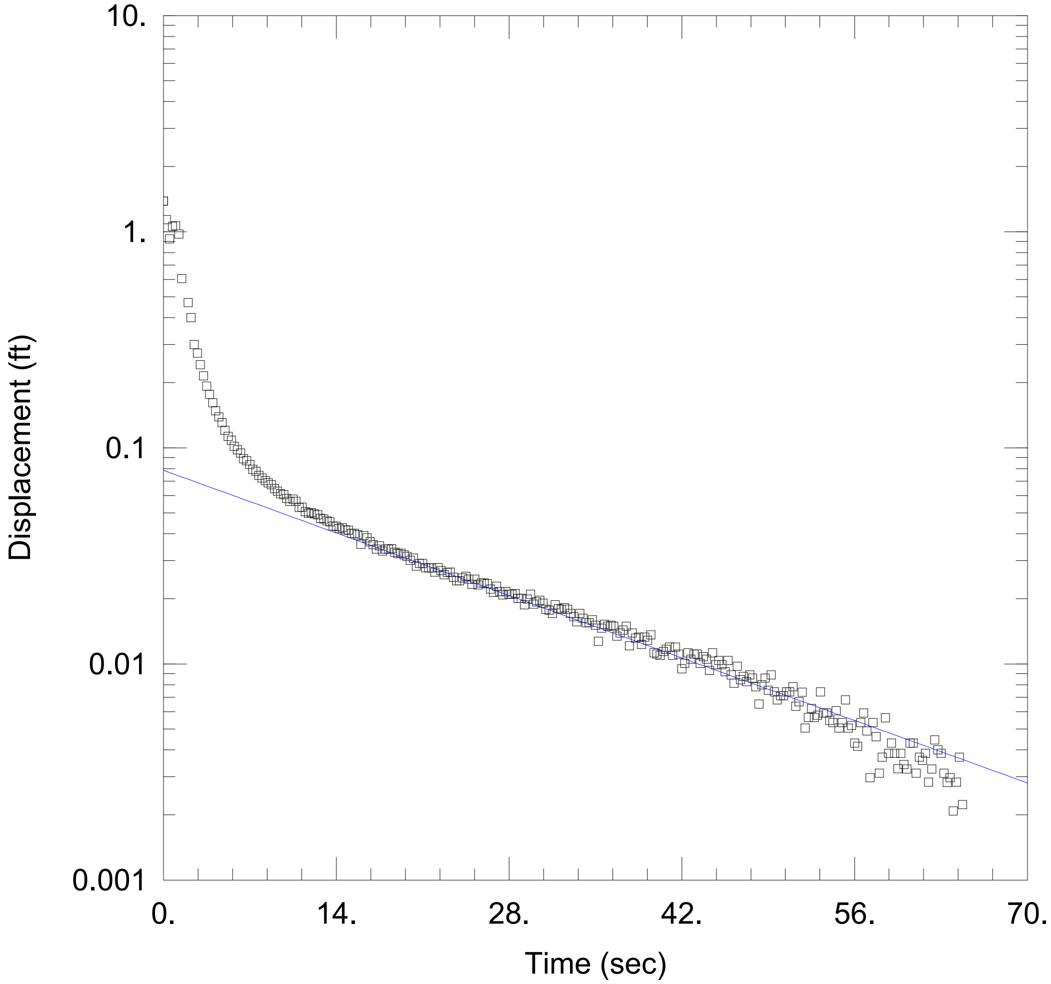
WELL DATA (MW-314)

Initial Displacement: 1.797 ft
Static Water Column Height: 6.55 ft
Total Well Penetration Depth: 6.55 ft
Screen Length: 6.55 ft
Casing Radius: 0.09 ft
Well Radius: 0.35 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.002217 cm/sec
y0 = 0.3507 ft



WELL TEST ANALYSIS

Data Set: I:\25220183.00\Data and Calculations\K Tests\MW 313 314 315\MW315.aqt
Date: 01/24/23 Time: 22:03:09

PROJECT INFORMATION

Company: SCS Engineers
Client: Alliant
Project: 25220183.00
Location: WPL - Columbia
Test Well: MW-315
Test Date: 12/30/2022

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-315)

Initial Displacement: 1.385 ft
Static Water Column Height: 9.27 ft
Total Well Penetration Depth: 9.27 ft
Screen Length: 9.27 ft
Casing Radius: 0.09 ft
Well Radius: 0.35 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.001259 cm/sec
y0 = 0.07861 ft

Attachment F

Monitoring Well Construction Documentation

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: Alliant Energy - Columbia

Local Grid Location of Well: ________ ft. ☐ N. ☐ S. ________ ft. ☐ E. ☐ W.

Well Name: MW-33AR

Facility License, Permit or Monitoring No.: 03025

Local Grid Origin ☐ (estimated: ☐) or Well Location ☒

Lat. ____ ° ____ ' ____ " Long. ____ ° ____ ' ____ " or

Wis. Unique Well No.: PE223

DNR Well Number: 138

Facility ID: 111049180

St. Plane 542,663 ft. N, 2,123,584 ft. E. S/C/N

Date Well Installed: 04/09/2003

Type of Well: Well Code 71/dw

Section Location of Waste/Source: NE 1/4 of SW 1/4 of Sec. 27, T. 12 N, R. 9 ☒ E ☐ W

Well Installed By: (Person's Name and Firm): R. Fischer, Boart Longyear

Distance from Waste/Source: 500 ft.

Enf. Stds. Apply ☐

Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known

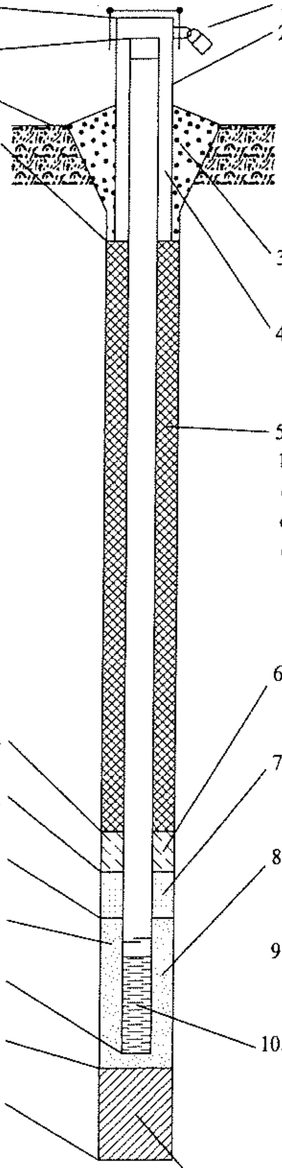
Gov. Lot Number: ________

A. Protective pipe, top elevation 808.09 ft. MSL

B. Well casing, top elevation 808.29 ft. MSL

C. Land surface elevation 805.4 ft. MSL

D. Surface seal, bottom 804.4 ft. MSL or 1.0 ft.



12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger ☒ 4 1
________ Other ☐

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe ________

17. Source of water (attach analysis, if required): ________

E. Bentonite seal, top 794.4 ft. MSL or 11.0 ft.

F. Fine sand, top 789.4 ft. MSL or 16.0 ft.

G. Filter pack, top 788.4 ft. MSL or 17.0 ft.

H. Screen joint, top 787.4 ft. MSL or 18.0 ft.

I. Well bottom 777.4 ft. MSL or 28.0 ft.

J. Filter pack, bottom 776.4 ft. MSL or 29.0 ft.

K. Borehole, bottom 776.4 ft. MSL or 29.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
   - a. Inside diameter: 4.0 in.
   - b. Length: 7.0 ft.
   - c. Material: Steel ☒ 0 4; ________ Other ☐
   - d. Additional protection? ☐ Yes ☒ No
   - If yes, describe: ________

3. Surface seal: Bentonite ☒ 3 0; Concrete ☐ 0 1; ________ Other ☐

4. Material between well casing and protective pipe: Bentonite ☒ 3 0; ________ Other ☐

5. Annular space seal:
   - a. Granular/Chipped Bentonite ☐ 3 3
   - b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
   - c. 10.5 Lbs/gal mud weight . . . Bentonite slurry ☒ 3 1
   - d. ____ % Bentonite . . . Bentonite-cement grout ☐ 5 0
   - e. 3.5 Ft^3 volume added for any of the above
   - f. How installed: Tremie ☐ 0 1; Tremie pumped ☒ 0 2; Gravity ☐ 0 8

6. Bentonite seal:
   - a. Bentonite granules ☒ 3 3
   - b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite chips ☐ 3 2
   - c. ________ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
   - a. #7 Badger
   - b. Volume added 0.5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
   - a. #40 Badger
   - b. Volume added 4.5 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3; Flush threaded PVC schedule 80 ☐ 2 4; ________ Other ☐

10. Screen material: PVC
   - a. Screen Type: Factory cut ☒ 1 1; Continuous slot ☐ 0 1; ________ Other ☐
   - b. Manufacturer Boart Longyear
   - c. Slot size: 0.010 in.
   - d. Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None ☒ 1 4; ________ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature:

Firm: RMT, Inc.

Tel:
Fax:

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

DEPARTMENT OF NATURAL RESOURCES

SAMPLING POINT ID FORM
FORM 4400-40 REV. 6-79

FACILITY NAME
Wisconsin Power and Light Co. /Dry Ash

SAMPLING REQUIRED (✓ ONE)
☐ YES
☐ NO

POINT (✓ ONE)
☐ CAN BE SAMPLED
☐ CANNOT BE SAMPLED

COMMON NAME OF SAMPLING POINT
mw 34A

PREVIOUS COMMON NAME OF SAMPLING POINT

FACILITY ID NO.

POINT ID NO.

TYPE OF POINT (✓ ONE)

1 (G) GROUND WATER
11 ☒ MONITOR WELL
12 ☐ PIEZOMETER
13 ☐ PRIVATE WELL
14 ☐ LYSIMETER
15 ☐ SPRING
16 ☐ RESISTIVITY PROBE

2 (L) LEACHATE
21 ☐ FLOW OR SEEP
22 ☐ POND
23 ☐ COLLECTION SYSTEM

3 (S) SURFACE WATER
31 ☐ UPSTREAM
32 ☐ MID-SITE
33 ☐ DOWNSTREAM
34 ☐ RUN-OFF
35 ☐ IMPOUNDED

POINT LOCATION
2,155 . 200 FT. (+) ☒ E. (-) ☐ W.
541 . 740 FT. (+) ☒ N. (-) ☐ S.
FROM ☒ GRID ORIGIN ☐ BENCHMARK

DATE POINT ESTABLISHED
09 / 28 / 77
MON DAY YEAR

6 COMMENTS ABOUT SAMPLING POINT:
Well depth - 38.6' Gradient from landfill- downgradient
Geologic formation of well screen- sand
Location of well seals/materials used- bentonite seal above well screen

WELL DESCRIPTION

PIPE DIAMETER 2 . 0 0 INCHES

PIPE TOP ELEVATION 806 . 0 0 FEET ☒ MSL ☐ SITE

GROUND SURFACE ELEVATION 802 . 7 0 FEET ☒ MSL ☐ SITE

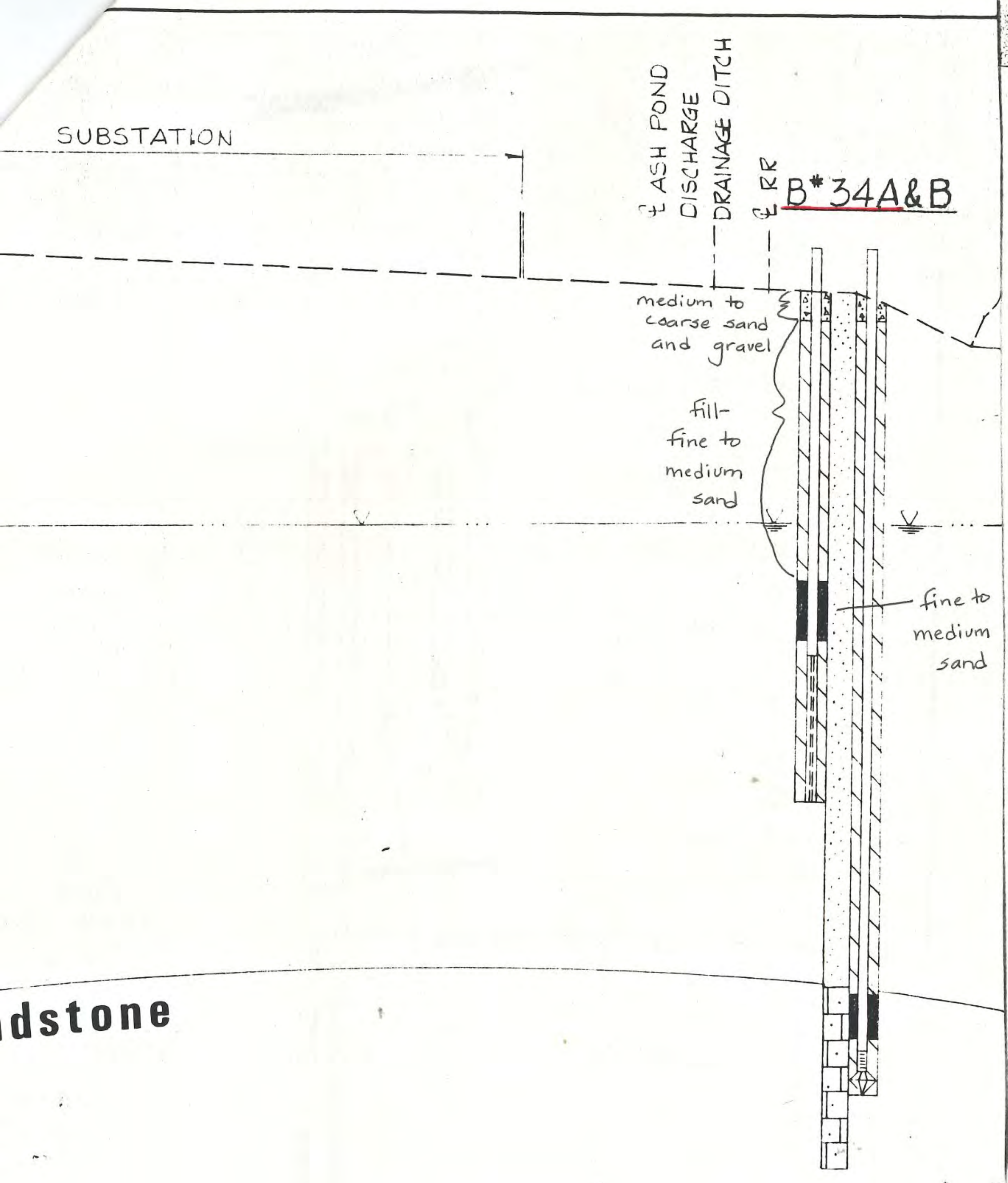
TYPE OF CASING (✓ ONE)
☒ 1 PLASTIC ☐ 2 STEEL

7 COMMENTS ABOUT REQUIRED SAMPLING:
Avg. vol. of water to be bailed:

Groundwater Flow - westerly

REQUIRED SAMPLING (MG/l except as noted)

	NO.	PARAMETERS	MONTHS OF REQUIRED SAMPLING
🟥	00410	ALKALINITY (AS CA CO_3)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00310	BOD (5 DAY)	1-2-3-4-5-6-7-8-9-10-11-12
☐	00916	CALCIUM	1-2-3-4-5-6-7-8-9-10-11-12
☐	00307	CHLORIDES	1-2-3-4-5-6-7-8-9-10-11-12
☐	00340	COD	1-2-3-4-5-6-7-8-9-10-11-12
🟥	00872	CONDUCTIVITY (SU)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00277	COPPER (DISSOLVED)	1-2-3-4-5-6-7-8-9-10-11-12
🟥	00900	HARDNESS (AS CA CO_3)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥	01046	IRON (DISSOLVED)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00348	MAGNESIUM	1-2-3-4-5-6-7-8-9-10-11-12
☐	00620	NITRATES (AS NO_3)	1-2-3-4-5-6-7-8-9-10-11-12
☐	00640	NITROGEN (TOTAL INOGRANIC N)	1-2-3-4-5-6-7-8-9-10-11-12
🟥	00400	pH (SU)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00129	PHENOLS	1-2-3-4-5-6-7-8-9-10-11-12
🟥	00929	SODIUM	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥	00945	SULFATES	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00360	TOTAL DIS. SOLIDS	1-2-3-4-5-6-7-8-9-10-11-12
🟥	00842	WATER ELEVATION (FT. MSL)	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
☐	00275	ZINC (DISSOLVED)	1-2-3-4-5-6-7-8-9-10-11-12
	NO.	PARAMETERS (OTHERS)	MONTHS
🟥	01022	Boron	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥		Color	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥		odor	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥		Turbidity	1-2-[✓ 3]-4-5-[✓ 6]-7-8-[✓ 9]-10-11-[✓ 12]
🟥	01002	Arsenic	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	01007	Barium	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	00312	Cadmium	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	00273	Chromium	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	00240	Lead	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	00126	Mercury	1-2-3-4-5-[✓ 6]-7-8-9-10-11-12
🟥	00270	Selenium	1-2-3-4-5-[✓ 6]-7-8-9-1-11-12
🟥	01077	Silver	[✓ -6-]



Scale:

Horizontal 1"=100'

Vertical 1"=10'

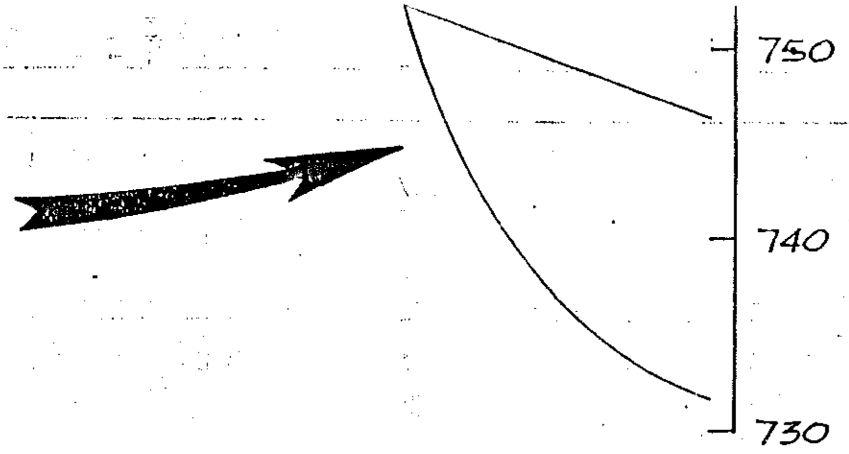
No legend available

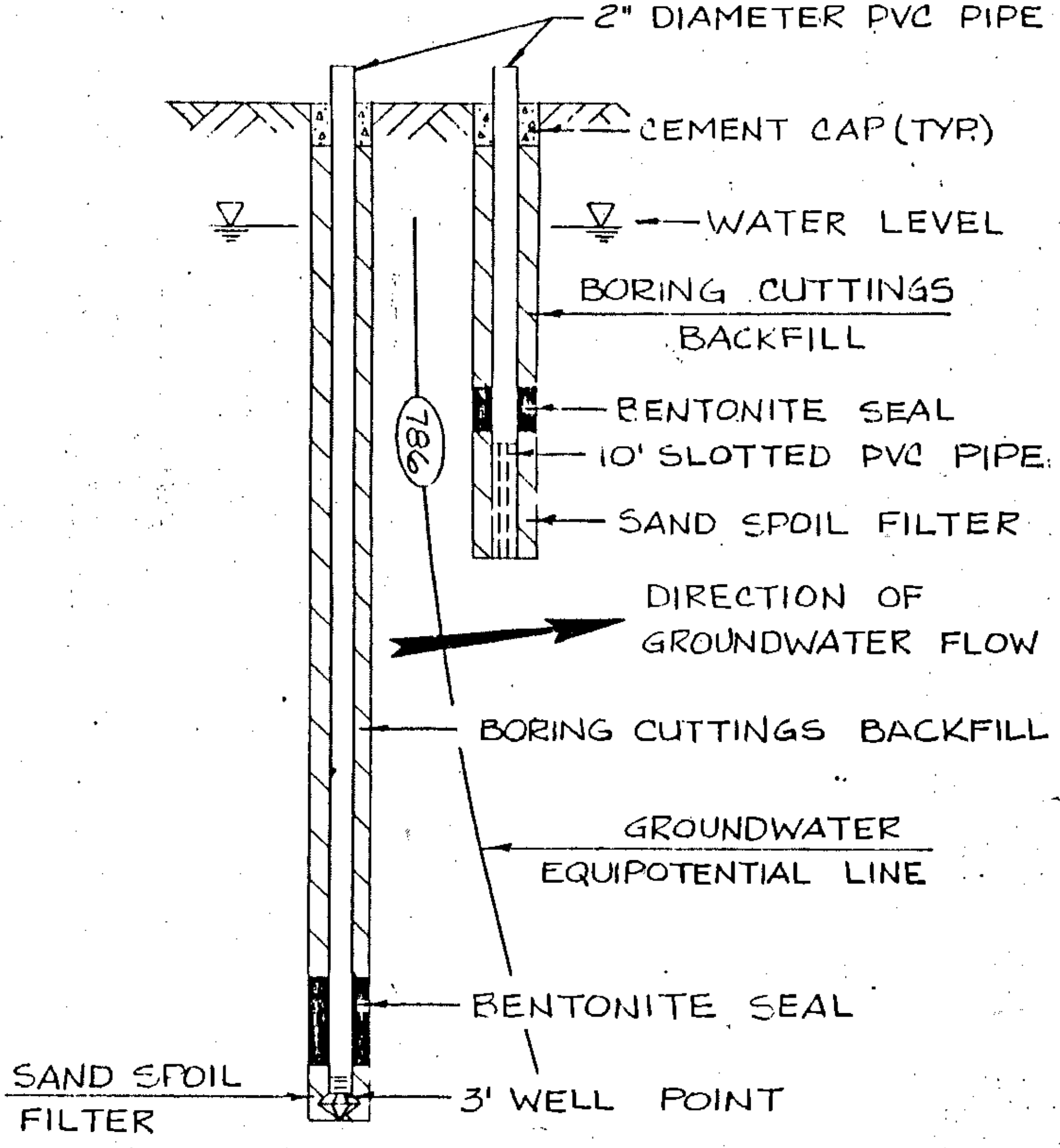
Warzyn Engineering Inc.

Geologic Cross Sections

Drawing No. C7134-11

Date 1-20-78





TYPICAL MONITORING WELL DETAIL

NOT TO SCALE

Date- 1-20-78 Drawing No. 7134-9

Warzyn Engineering Inc.

WELL DETAIL INFORMATION SHEET

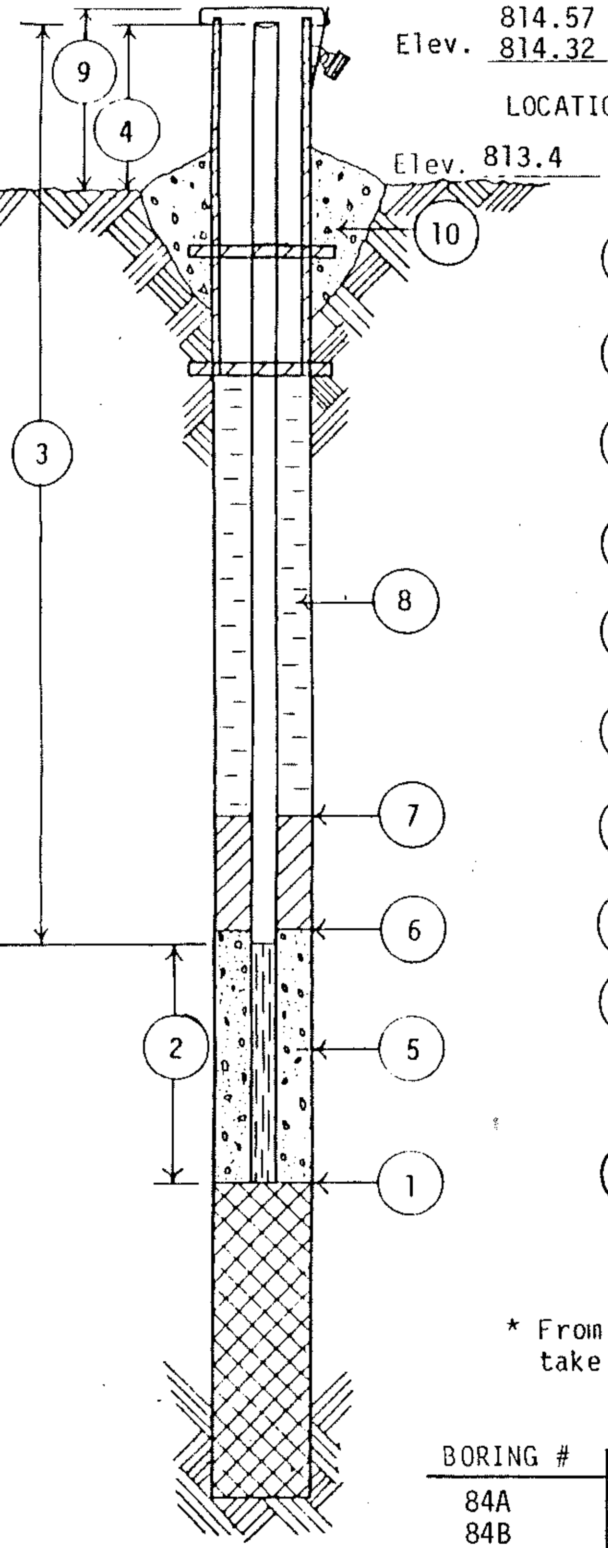
JOB NO. C 7134

BORING NO. MW-84A

DATE 10/5/83

CHIEF JS

LOCATION WP&L-Columbia Generating Station



All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

① DEPTH TO BOTTOM OF BOREHOLE 37 FEET

② LENGTH OF WELL POINT, [✓ WELL SCREEN,] OR SLOTTED PIPE 10 FEET

③ TOTAL LENGTH OF SOLID PIPE 29 FEET @ 2 IN. DIAMETER

④ HEIGHT OF WELL CASING ABOVE GROUND 2 FEET

⑤ TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Flint Sand

⑥ DEPTH OF LOWER OR BOTTOM SEAL 3 FEET

⑦ DEPTH OF UPPER OR TOP SEAL 0 FEET

⑧ TYPE OF BACKFILL Spoils (Sand)

⑨ PROTECTIVE CASING [✓ YES] NO

HEIGHT ABOVE GROUND 2'

LOCKING CAP [✓ YES] NO

⑩ CONCRETE CAP [✓ YES] NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS
84A	10/7/83	3 days	21'	
84B	10/7/83	3 days	19'6"	

WARZYN
ENGINEERING IN

[illegible]

SCS # 25215135

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Managemen ☐
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: WPL-Columbia

Local Grid Location of Well: ______ ft. ☐ N. ☐ S. ______ ft. ☐ E. ☐ W.

Well Name: MW-301

Facility License, Permit or Monitoring No.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐
Lat. ___° ___' ___" Long. ___° ___' ___" or

Wis. Unique Well No.: VY701

DNR Well ID No.

Facility ID

St. Plane 541562.2 ft. N, 2125001 ft. E. S/C/N

Date Well Installed: 11 / 11 / 2015 (m m / d d / y y y y)

Section Location of Waste/Source
SW 1/4 of SE 1/4 of Sec. 27, T. 12 N, R. 9 ☒ E ☐ W

Type of Well
Well Code 11 / MW

Well Installed By: Name (first, last) and Firm
Kevin Duerst
Badger State Drilling

Distance from Waste/Source ______ ft.

Enf. Stds. Apply ☐

Location of Well Relative to Waste/Source
u ☐ Upgradient s ☐ Sidegradient
d ☐ Downgradient n ☐ Not Known

Gov. Lot Number

A. Protective pipe, top elevation 807 . 16 ft. MSL

B. Well casing, top elevation 806 89 ft. MSL

C. Land surface elevation 803 69 ft. MSL

D. Surface seal, bottom 791 . 69 ft. MSL or 12 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger ☒ 4 1
Other ☐

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top 803.69 ft. MSL or 0 ft.

F. Fine sand, top 791.69 ft. MSL or 12 ft.

G. Filter pack, top 789.69 ft. MSL or 14 ft.

H. Screen joint, top 787.69 ft. MSL or 16 ft.

I. Well bottom 777.69 ft. MSL or 26 ft.

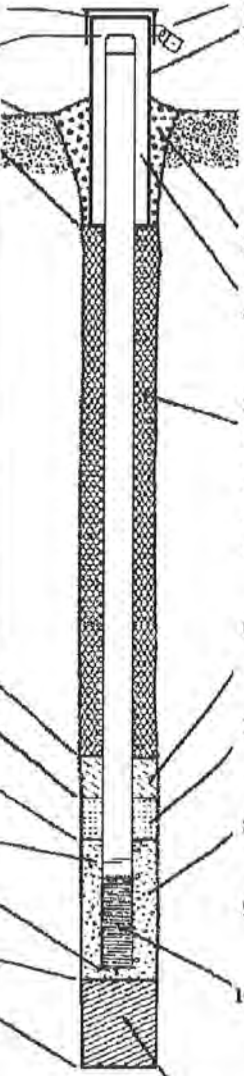
J. Filter pack, bottom 776.69 ft. MSL or 27 ft.

K. Borehole, bottom 775.69 ft. MSL or 28 ft.

L. Borehole, diameter 8.5 in.

M. O.D. well casing 2.4 in.

N. I.D. well casing 2.0 in.



1. Cap and lock? ☐ Yes ☒ No

2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 5 ft.
c. Material: Steel ☒ 0 4
Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: bumper posts

3. Surface seal: Bentonite ☒ 3 0
Concrete ☐ 0 1
Other ☐

4. Material between well casing and protective pipe:
Bentonite ☒ 3 0
Bentonite to grade, sand above Other ☐

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 3 3
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3 1
d. ____ % Bentonite . . . . . . Bentonite-cement grout ☐ 5 0
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ☐ 0 8

6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☑ 3 2
c. 4 ft3 Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sidley Inc. #7 ☐
b. Volume added 0.5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #5 ☐
b. Volume added 2 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☒ 1 1
Continuous slot ☐ 0 1
Other ☐
b. Manufacturer Johnson
c. Slot size: 0. 01 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☐ 1 4
Native Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25215135

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: WPL-Columbia

Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.

Well Name: MW-302

Facility License, Permit or Monitoring No.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ° ' " Long. ° ' " or

Wis. Unique Well No.: VY702

DNR Well ID No.

Facility ID

St. Plane 541964.7 ft. N, 2123849 ft. E. S/C/N

Date Well Installed: 11 / 12 / 2015 (m m / d d / y y y y)

Section Location of Waste/Source: SE 1/4 of SW 1/4 of Sec. 27, T. 12 N, R. 9 ☒ E ☐ W

Type of Well: Well Code 11 / MW

Well Installed By: Name (first, last) and Firm: Kevin Duerst, Badger State Drilling

Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known

Gov. Lot Number

Distance from Waste/Source ____ ft.

Enf. Stds. Apply ☐

A. Protective pipe, top elevation 813.19 ft. MSL

B. Well casing, top elevation 813.00 ft. MSL

C. Land surface elevation 809.93 ft. MSL

D. Surface seal, bottom 793.53 ft. MSL or 16.4 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger ☒ 4 1
Other ☐

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top 809.93 ft. MSL or 0 ft.

F. Fine sand, top 793.53 ft. MSL or 16.4 ft.

G. Filter pack, top 791.53 ft. MSL or 18.4 ft.

H. Screen joint, top 789.53 ft. MSL or 20.4 ft.

I. Well bottom 779.53 ft. MSL or 30.4 ft.

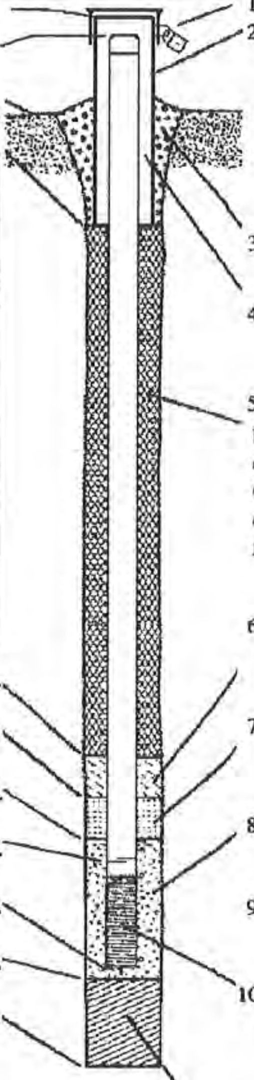
J. Filter pack, bottom 776.93 ft. MSL or 33 ft.

K. Borehole, bottom 776.93 ft. MSL or 33 ft.

L. Borehole, diameter 8.5 in.

M. O.D. well casing 2 3/8 in.

N. I.D. well casing 2 in.



1. Cap and lock? ☐ Yes ☒ No

2. Protective cover pipe:
   - a. Inside diameter: 6 in.
   - b. Length: 5 ft.
   - c. Material: Steel ☐ 0 4; Other ☐ steel
   - d. Additional protection? ☐ Yes ☐ No
     If yes, describe: yes, bumper posts

3. Surface seal: Bentonite ☒ 3 0; Concrete ☐ 0 1; Other ☐

4. Material between well casing and protective pipe: Bentonite ☒ 3 0; Other ☐ Bentonite to grade, sand above

5. Annular space seal:
   - a. Granular/Chipped Bentonite ☐ 3 3
   - b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
   - c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3 1
   - d. ____ % Bentonite . . . . . . Bentonite-cement grout ☐ 5 0
   - e. ____ Ft^3 volume added for any of the above
   - f. How installed: Tremie ☐ 0 1; Tremie pumped ☐ 0 2; Gravity ☐ 0 8

6. Bentonite seal: a. Bentonite granules ☐ 3 3
   - b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☐ 3 2
   - c. 4.7 ft3 Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
   - a. RW Sidley Inc. #7 ☐
   - b. Volume added 1 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
   - a. RW Sidley #5 ☐
   - b. Volume added 2.5 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3; Flush threaded PVC schedule 80 ☐ 2 4; Other ☐

10. Screen material: PVC
    - a. Screen type: Factory cut ☒ 1 1; Continuous slot ☐ 0 1; Other ☐
    - b. Manufacturer Johnson
    - c. Slot size: 0.01 in.
    - d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☐ 1 4; Other ☒ Native

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: for Zach Watson

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25217156.01

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: WPL-Columbia Generating Station

Local Grid Location of Well: 543447.673 ft. ☒ N. ☐ S. 2124151.113 ft. ☒ E. ☐ W.

Well Name: MW-309

Facility License, Permit or Monitoring No.:

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐
Lat. ____ ° ____ ' ____ " Long. ____ ° ____ ' ____ " or

Wis. Unique Well No.: VR111

DNR Well ID No.: ___

Facility ID: __________

St. Plane ______ ft. N, ______ ft. E. S/C/N

Date Well Installed: 02 / 14 / 2018 (m m / d d / y y y y)

Type of Well
Well Code 11 / MW

Section Location of Waste/Source: NW 1/4 of SE 1/4 of Sec. 27, T. 12 N, R. 09 ☒ E ☐ W

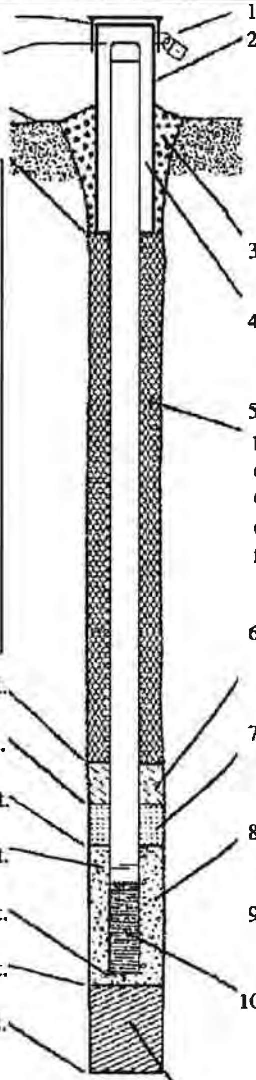
Well Installed By: Name (first, last) and Firm
Mark Crampton
Badger State Drilling Co., Inc.

Distance from Waste/ Source ______ ft.

Enf. Stds. Apply ☒

Location of Well Relative to Waste/Source:
u ☐ Upgradient s ☐ Sidegradient
d ☒ Downgradient n ☐ Not Known

Gov. Lot Number: ______



A. Protective pipe, top elevation 813.59 ft. MSL

B. Well casing, top elevation 813.28 ft. MSL

C. Land surface elevation 809.88 ft. MSL

D. Surface seal, bottom 807.61 ft. MSL or 2.27 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger ☒ 4 1
Other ☐

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe –

17. Source of water (attach analysis, if required):
–

E. Bentonite seal, top 807.61 ft. MSL or 2.27 ft.

F. Fine sand, top 788.61 ft. MSL or 21.27 ft.

G. Filter pack, top 786.61 ft. MSL or 23.27 ft.

H. Screen joint, top 785.61 ft. MSL or 24.27 ft.

I. Well bottom 775.61 ft. MSL or 34.27 ft.

J. Filter pack, bottom 773.38 ft. MSL or 36.5 ft.

K. Borehole, bottom 773.38 ft. MSL or 36.5 ft.

L. Borehole, diameter 8.5 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 2.01 in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 5 ft.
c. Material: Steel ☒ 0 4
Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ______

3. Surface seal: Bentonite ☒ 3 0
Concrete ☐ 0 1
Other ☐

4. Material between well casing and protective pipe:
Bentonite ☐ 3 0
Filter Sand (#5) Other ☒

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 3 3
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3 1
d. ____ % Bentonite . . . . . . Bentonite-cement grout ☐ 5 0
e. 0.342 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ☒ 0 8

6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 3 2
c. ______ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sidley #7 (1 bag) ☒
b. Volume added ______ ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #5 (6 bags) ☒
b. Volume added ______ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☒ 1 1
Continuous slot ☐ 0 1
Other ☐
b. Manufacturer Monoflex
c. Slot size: 0. 010 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☒ 1 4
Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25217156.01

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: WPL-Columbia Generating Station
Local Grid Location of Well: 543331.971 ft. ☒ N. ☐ S. 2123879.85 ft. ☒ E. ☐ W.
Well Name: MW-310
Facility License, Permit or Monitoring No.
Local Grid Origin ☐ (estimated: ☐) or Well Location ☐
Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or
Wis. Unique Well No. VR110
DNR Well ID No.
Facility ID
St. Plane ___ ft. N, ___ ft. E. S/C/N
Date Well Installed 02 / 13 / 2018 (m m d d y y y y)
Section Location of Waste/Source: NW 1/4 of SE 1/4 of Sec. 27, T. 12 N, R. 09 ☒ E ☐ W
Type of Well: Well Code 11 / MW
Well Installed By: Name (first, last) and Firm: Dave Cruise
Badger State Drilling Co., Inc.
Distance from Waste/Source ___ ft.
Enf. Stds. Apply ☒
Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known
Gov. Lot Number

A. Protective pipe, top elevation 813.93 ft. MSL
B. Well casing, top elevation 813.62 ft. MSL
C. Land surface elevation 810.96 ft. MSL
D. Surface seal, bottom 809.21 ft. MSL or 1.75 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

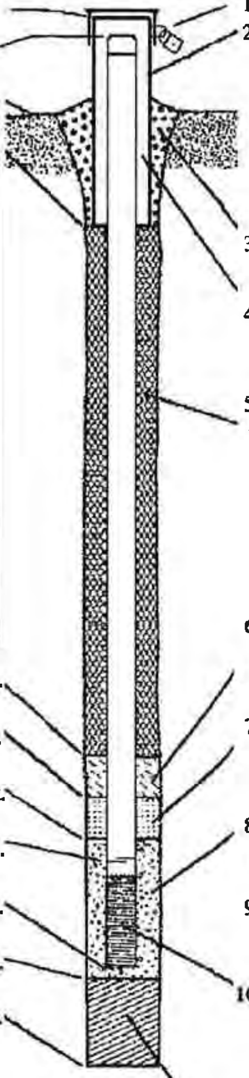
14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐ ▨

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe --

17. Source of water (attach analysis, if required):
--

E. Bentonite seal, top	809.21 ft. MSL or	1.75 ft.
F. Fine sand, top	789.21 ft. MSL or	21.75 ft.
G. Filter pack, top	787.21 ft. MSL or	23.75 ft.
H. Screen joint, top	785.21 ft. MSL or	25.75 ft.
I. Well bottom	775.21 ft. MSL or	35.75 ft.
J. Filter pack, bottom	774.46 ft. MSL or	36.5 ft.
K. Borehole, bottom	774.46 ft. MSL or	36.5 ft.
L. Borehole, diameter	8.5 in.	
M. O.D. well casing	2.38 in.	
N. I.D. well casing	2.01 in.	



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 6 in.
   b. Length: 5 ft.
   c. Material: Steel ☒ 04
   Other ☐ ▨
   d. Additional protection? ☐ Yes ☒ No
   If yes, describe:
3. Surface seal: Bentonite ☒ 30
   Concrete ☐ 01
   Other ☐ ▨
4. Material between well casing and protective pipe:
   Bentonite ☐ 30
   Filter Sand (#5) Other ☒ ▨
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
   b. ___ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
   c. ___ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
   d. ___ % Bentonite . . . . . . Bentonite-cement grout ☐ 50
   e. 0.369 Ft^3 volume added for any of the above
   f. How installed: Tremie ☐ 01
   Tremie pumped ☐ 02
   Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
   b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
   c. ___ Other ☐ ▨
7. Fine sand material: Manufacturer, product name & mesh size
   a. RW Sidley #7 (1 bag) ☒
   b. Volume added ___ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
   a. RW Sidley #5 (7 bags) ☒
   b. Volume added ___ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
   Flush threaded PVC schedule 80 ☐ 24
   Other ☐ ▨
10. Screen material: PVC ▨
    a. Screen type: Factory cut ☒ 11
    Continuous slot ☐ 01
    Other ☐ ▨
    b. Manufacturer Monoflex
    c. Slot size: 0.010 in.
    d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☒ 14
    Other ☐ ▨

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25217156.01

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Remediation/Redevelopment ☐ Waste Managemen ☒ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: WPL-Columbia Generating Station

Local Grid Location of Well: 542874.39 ft. ☒ N. ☐ S. 2123437.50 ft. ☒ E. ☐ W.

Well Name: MW-311

Facility License, Permit or Monitoring No.:

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or

Wis. Unique Well No.: VR112

DNR Well ID No.:

Facility ID:

St. Plane ft. N, ft. E. S/C/N

Date Well Installed: 02 / 14 / 2018 (m m / d d / y y y y)

Type of Well: Well Code 11 / MW

Section Location of Waste/Source: NE 1/4 of SW 1/4 of Sec. 27, T. 12 N, R. 09 ☒ E ☐ W

Well Installed By: Name (first, last) and Firm
Mark Crampton
Badger State Drilling Co., Inc.

Distance from Waste/Source ft.

Enf. Stds. Apply ☒

Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known

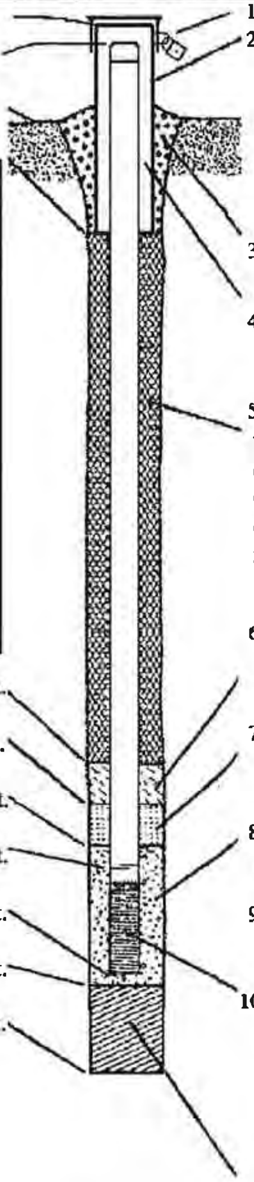
Gov. Lot Number:

A. Protective pipe, top elevation 810.05 ft. MSL

B. Well casing, top elevation 809.74 ft. MSL

C. Land surface elevation 806.53 ft. MSL

D. Surface seal, bottom 803.55 ft. MSL or 2.98 ft.



12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0; Hollow Stem Auger ☒ 4 1; Other ☐

15. Drilling fluid used: Water ☐ 0 2; Air ☐ 0 1; Drilling Mud ☐ 0 3; None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe --

17. Source of water (attach analysis, if required):
--

E. Bentonite seal, top 803.55 ft. MSL or 2.98 ft.

F. Fine sand, top 787.55 ft. MSL or 18.98 ft.

G. Filter pack, top 785.55 ft. MSL or 20.98 ft.

H. Screen joint, top 783.55 ft. MSL or 22.98 ft.

I. Well bottom 773.55 ft. MSL or 32.98 ft.

J. Filter pack, bottom 773.53 ft. MSL or 33 ft.

K. Borehole, bottom 773.53 ft. MSL or 33 ft.

L. Borehole, diameter 8.5 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 2.01 in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
   - a. Inside diameter: 6 in.
   - b. Length: 5 ft.
   - c. Material: Steel ☒ 0 4; Other ☐
   - d. Additional protection? ☐ Yes ☒ No
     If yes, describe:

3. Surface seal: Bentonite ☒ 3 0; Concrete ☐ 0 1; Other ☐

4. Material between well casing and protective pipe: Bentonite ☐ 3 0; Other ☒ Filter Sand (#5)

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 3 3
   - b. ______ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
   - c. ______ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3 1
   - d. ______ % Bentonite . . . . . . Bentonite-cement grout ☐ 5 0
   - e. 0.288 Ft^3 volume added for any of the above
   - f. How installed: Tremie ☐ 0 1; Tremie pumped ☐ 0 2; Gravity ☒ 0 8

6. Bentonite seal: a. Bentonite granules ☐ 3 3
   - b. ☐ /4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 3 2
   - c. ______ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
   - a. RW Sidley #7 (1 bag) ☒
   - b. Volume added ft^3

8. Filter pack material: Manufacturer, product name & mesh size
   - a. RW Sidley #5 (6 bags) ☒
   - b. Volume added ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3; Flush threaded PVC schedule 80 ☐ 2 4; Other ☐

10. Screen material: PVC
    - a. Screen type: Factory cut ☒ 1 1; Continuous slot ☐ 0 1; Other ☐
    - b. Manufacturer Monoflex
    - c. Slot size: 0.010 in.
    - d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☒ 1 4; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature:

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25220183.00

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: WPL-Columbia Dry Ash Disposal Facility

Local Grid Location of Well: ______ ft. ☐ N. ☐ S. ______ ft. ☐ E. ☐ W.

Well Name: MW-313

Facility License, Permit or Monitoring No.: 03025

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐
Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or

Wis. Unique Well No.: WC188

DNR Well ID No.: ___

Facility ID: 111049180

St. Plane 542956.598 ft. N, 2124559.041 ft. E. S/C/N

Date Well Installed: 12 / 019 / 2022 (m m / d d / y y y y)

Type of Well
Well Code 11 / MW

Section Location of Waste/Source
NW 1/4 of NE 1/4 of Sec. 27, T. 12 N, R. 09 ☒ E ☐ W

Well Installed By: Name (first, last) and Firm
Adam Sweet
Horizon Construction and Exploration

Distance from Waste/Source ______ ft.

Enf. Stds. Apply ☒

Location of Well Relative to Waste/Source
u ☐ Upgradient s ☐ Sidegradient
d ☒ Downgradient n ☐ Not Known

Gov. Lot Number ______

A. Protective pipe, top elevation ______ ft. MSL

B. Well casing, top elevation 820.30 ft. MSL

C. Land surface elevation ~817.80 ft. MSL

D. Surface seal, bottom ______ ft. MSL or ____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger ☐ 4 1
Rotosonic Other ☒

15. Drilling fluid used: Water ☒ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe NA

17. Source of water (attach analysis, if required):
Horizon's drilling shop

E. Bentonite seal, top ~817.80 ft. MSL or 0 ft.

F. Fine sand, top ~788.80 ft. MSL or 29 ft.

G. Filter pack, top ~786.80 ft. MSL or 31 ft.

H. Screen joint, top ~784.80 ft. MSL or 33 ft.

I. Well bottom ~774.80 ft. MSL or 43 ft.

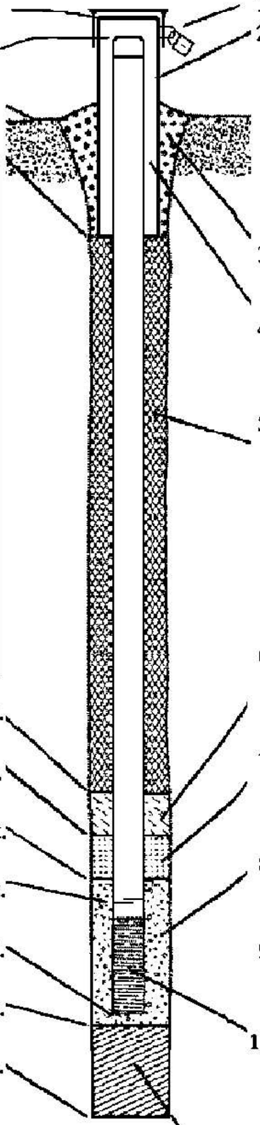
J. Filter pack, bottom ~772.80 ft. MSL or 45 ft.

K. Borehole, bottom ~772.80 ft. MSL or 45 ft.

L. Borehole, diameter 6.00 in.

M. O.D. well casing 2.31 in.

N. I.D. well casing 2.21 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
   a. Inside diameter: 4 in.
   b. Length: 5 ft.
   c. Material: Steel ☒ 0 4
   Other ☐
   d. Additional protection? ☒ Yes ☐ No
   If yes, describe: Three bollards

3. Surface seal: Bentonite ☒ 3 0
Concrete ☐ 0 1
Other ☐

4. Material between well casing and protective pipe:
Bentonite ☒ 3 0
Filter sand Other ☒

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 3 3
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3 1
d. ____ % Bentonite . . . . . . Bentonite-cement grout ☐ 5 0
e. 5.22 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity ☒ 0 8

6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 3 2
c. ______ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #5 ☒
b. Volume added 0.36 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #7 ☒
b. Volume added 2.52 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3
Flush threaded PVC schedule 80 ☐ 2 4
Other ☐

10. Screen material: PVC
   a. Screen type: Factory cut ☒ 1 1
   Continuous slot ☐ 0 1
   Other ☐
   b. Manufacturer Monoflex
   c. Slot size: 0. 010 in.
   d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☐ 1 4
SP- native, cave in Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Jackie Rennebohm

Firm SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

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SCS # 25220183.00

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Managemen ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: WPL-Columbia Dry Ash Disposal Facility
Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.
Well Name: MW-314

Facility License, Permit or Monitoring No.: 03025
Local Grid Origin ☐ (estimated: ☐) or Well Location ☐
Lat. ____ ° ____ ' ____ " Long. ____ ° ____ ' ____ " or
Wis. Unique Well No.: WC199
DNR Well ID No.: ____

Facility ID: 111049180
St. Plane 542978.081 ft. N, 2124778.237 ft. E. S/C/N
Date Well Installed: 12 / 01 / 2022 (m m / d d / y y y y)

Type of Well
Well Code 11 / MW
Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 27, T. 12 N, R. 09 ☒ E ☐ W
Well Installed By: Name (first, last) and Firm
Adam Sweet
Horizon Construction and Exploration

Distance from Waste/Source ____ ft.
Enf. Stds. Apply ☒
Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known
Gov. Lot Number ____

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 821.57 ft. MSL
C. Land surface elevation ~819.07 ft. MSL
D. Surface seal, bottom ____ ft. MSL or ____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger ☒ 4 1
Other ☐

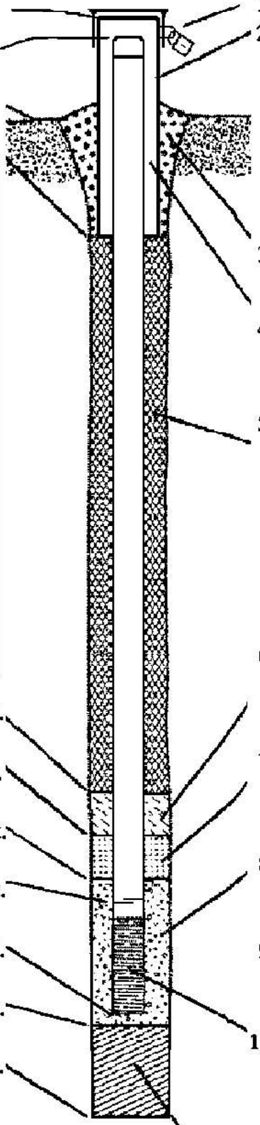
15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe NA

17. Source of water (attach analysis, if required):
NA

E. Bentonite seal, top ~819.07 ft. MSL or 0 ft.
F. Fine sand, top ~789.57 ft. MSL or 29.5 ft.
G. Filter pack, top ~787.57 ft. MSL or 31.5 ft.
H. Screen joint, top ~785.57 ft. MSL or 33.5 ft.
I. Well bottom ~775.57 ft. MSL or 43.5 ft.
J. Filter pack, bottom ~775.57 ft. MSL or 43.5 ft.
K. Borehole, bottom ~774.07 ft. MSL or 45 ft.
L. Borehole, diameter 8.25 in.
M. O.D. well casing 2.31 in.
N. I.D. well casing 2.21 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
 a. Inside diameter: 4 in.
 b. Length: 5 ft.
 c. Material: Steel ☒ 0 4
 Other ☐
 d. Additional protection? ☒ Yes ☐ No
 If yes, describe: Three bollards
3. Surface seal: Bentonite ☒ 3 0
 Concrete ☐ 0 1
 Other ☐
4. Material between well casing and protective pipe:
 Bentonite ☒ 3 0
 Filter sand Other ☒
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 3 3
 b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
 c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3 1
 d. ____ % Bentonite . . . . . . Bentonite-cement grout ☐ 5 0
 e. 10.47 Ft^3 volume added for any of the above
 f. How installed: Tremie ☐ 0 1
 Tremie pumped ☐ 0 2
 Gravity ☒ 0 8
6. Bentonite seal: a. Bentonite granules ☐ 3 3
 b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 3 2
 c. ____ Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
 a. Red Flint #5 ☒
 b. Volume added 0.71 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
 a. Red Flint #7 ☒
 b. Volume added 4.26 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3
 Flush threaded PVC schedule 80 ☐ 2 4
 Other ☐
10. Screen material: PVC
 a. Screen type: Factory cut ☒ 1 1
 Continuous slot ☐ 0 1
 Other ☐
 b. Manufacturer Monoflex
 c. Slot size: 0. 010 in.
 d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☐ 1 4
 SP- native, cave in Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Jackie Rennebohm
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25220183

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: WPL-Columbia Dry Ash Disposal Facility

Local Grid Location of Well ☐N. ☐S. ___ ft. ___ ft. ☐E. ☐W.

Well Name: MW-315

Facility License, Permit or Monitoring No.: 03025

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or

Wis. Unique Well No.: PM289

DNR Well ID No.: ___

Facility ID: 111049180

St. Plane 543019.956 ft. N, 2125065.014 ft. E. S/C/N

Date Well Installed: 12 / 2 / 2022 (m m / d d / y y y y)

Type of Well: Well Code 11 / MW

Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 27, T. 12 N, R. 09 ☒E ☐W

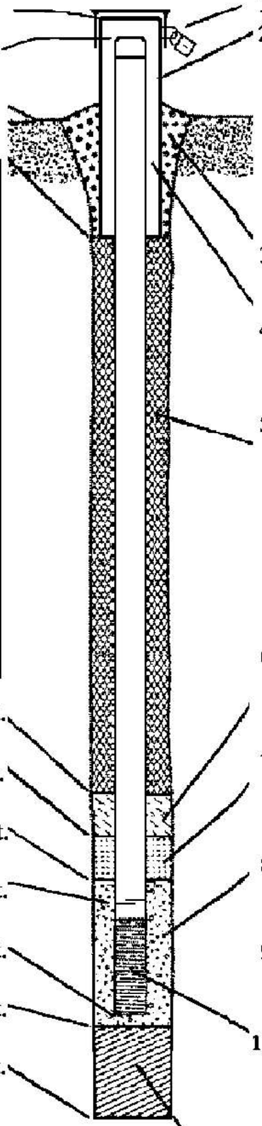
Well Installed By: Name (first, last) and Firm: Adam Sweet, Horizon Construction and Exploration

Distance from Waste/ Source ___ ft.

Enf. Stds. Apply ☒

Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known

Gov. Lot Number: ___



A. Protective pipe, top elevation ___ ft. MSL

B. Well casing, top elevation 819.78 ft. MSL

C. Land surface elevation ~817.28 ft. MSL

D. Surface seal, bottom ___ ft. MSL or ___ ft.

12. USCS classification of soil near screen: GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐ Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 5 0; Hollow Stem Auger ☒ 4 1; Other ☐

15. Drilling fluid used: Water ☐ 0 2; Air ☐ 0 1; Drilling Mud ☐ 0 3; None ☒ 9 9

16. Drilling additives used? ☐ Yes ☒ No

Describe NA

17. Source of water (attach analysis, if required): NA

E. Bentonite seal, top ~817.28 ft. MSL or 0 ft.

F. Fine sand, top ~788.28 ft. MSL or 29 ft.

G. Filter pack, top ~786.28 ft. MSL or 31 ft.

H. Screen joint, top ~784.28 ft. MSL or 33 ft.

I. Well bottom ~774.28 ft. MSL or 43 ft.

J. Filter pack, bottom ~772.28 ft. MSL or 45 ft.

K. Borehole, bottom ~772.28 ft. MSL or 45 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.31 in.

N. I.D. well casing 2.21 in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
   - a. Inside diameter: 4 in.
   - b. Length: 5 ft.
   - c. Material: Steel ☒ 0 4; Other ☐
   - d. Additional protection? ☒ Yes ☐ No; If yes, describe: three bollards

3. Surface seal: Bentonite ☒ 3 0; Concrete ☐ 0 1; Other ☐

4. Material between well casing and protective pipe: Bentonite ☒ 3 0; Filter Sand Other ☒

5. Annular space seal:
   - a. Granular/Chipped Bentonite ☒ 3 3
   - b. ___ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
   - c. ___ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3 1
   - d. ___ % Bentonite . . . . . . Bentonite-cement grout ☐ 5 0
   - e. 10.23 Ft^3 volume added for any of the above
   - f. How installed: Tremie ☐ 0 1; Tremie pumped ☐ 0 2; Gravity ☒ 0 8

6. Bentonite seal:
   - a. Bentonite granules ☐ 3 3
   - b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 3 2
   - c. ___ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
   - a. Red Flint #5 ☒
   - b. Volume added 0.71 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
   - a. Red Flint #7 ☒
   - b. Volume added 4.97 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3; Flush threaded PVC schedule 80 ☐ 2 4; Other ☐

10. Screen material: PVC
    - a. Screen type: Factory cut ☒ 1 1; Continuous slot ☐ 0 1; Other ☐
    - b. Manufacturer Monoflex
    - c. Slot size: 0.010 in.
    - d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☒ 1 4; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Jackie Rennebohm

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name: Alliant Energy - Columbia
County: Columbia
Well Name: MW-33AR
Facility License, Permit or Monitoring Number: 03025
County Code: 11
Wis. Unique Well Number: PE223
DNR Well Number: 138

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☒	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed, and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
other ______	☐	

3. Time spent developing well 60 min.

4. Depth of well (from top of well casing) 31.3 ft.

5. Inside diameter of well 2.06 in.

6. Volume of water in filter pack and well casing 6.0 gal.

7. Volume of water removed from well 35.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added ______

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	23.47 ft.	23.62 ft.
Date	b.	4/10/2003	4/10/2003
Time	c.	08:50 ☒ a.m. ☐ p.m.	11:50 ☒ a.m. ☐ p.m.
12. Sediment in well bottom		0.0 inches	0.0 inches
13. Water clarity		Clear ☐ 1 0 Turbid ☒ 1 5 (Describe) Opaque, brown	Clear ☐ 2 0 Turbid ☒ 2 5 (Describe) Slight, tan

Fill in if drilling fluids were used and well is at solid waste facility:

	Before Development	After Development
14. Total suspended solids	mg/l	72 mg/l
15. COD	mg/l	mg/l

16. Well developed by: Person's Name and Firm
Peter M. Chase
RMT, Inc.

17. Additional comments on development:
Pumped dry 3 times.

Facility Address or Owner/Responsible Party Address
Name: Peter M. Chase
Firm: RMT, Inc.
Street: 744 Heartland Tr.
City/State/Zip: Madison, WI 53717

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature:
Print Name: Peter M. Chase
Firm: RMT, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ ____________

Facility/Project Name	County Name	Well Name	
Alliant-Columbia	Columbia	MW-301	
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number**	**DNR Well ID Number**
	11	VY701	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method
- surged with bailer and bailed ☐ 41
- surged with bailer and pumped ☒ 61
- surged with block and bailed ☐ 42
- surged with block and pumped ☐ 62
- surged with block, bailed and pumped ☐ 70
- compressed air ☐ 20
- bailed only ☐ 10
- pumped only ☐ 51
- pumped slowly ☐ 50
- Other ____________ ☐

3. Time spent developing well 120 min.

4. Depth of well (from top of well casisng) 29. 4 ft.

5. Inside diameter of well 2. 00 in.

6. Volume of water in filter pack and well casing 7. 6 gal.

7. Volume of water removed from well 84. 0 gal.

8. Volume of water added (if any) ___.__ gal.

9. Source of water added ____________

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 21. 72 ft.	21. 77 ft.
Date	b. 12 / 02 / 2015 (m m d d y y y y)	12 / 02 / 2015 (m m d d y y y y)
Time	c. 08 : 30 ☒ a.m. ☐ p.m.	10 : 30 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	0. inches	0. inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe)	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Gary Last Name: Sterkel
Firm: SCS ENGINEERS

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Nate Last Name: Sievers
Facility/Firm: Wisconsin Power and Light
Street: W8375 Murray Rd.
City/State/Zip: Pardeville, WI 53954

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: for Gary Sterkel
Print Name: Gary Sterkel
Firm: SCS ENGINEERS

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ ____________

Facility/Project Name	County Name	Well Name	
Alliant - Columbia	Columbia	MW-302	
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number**	**DNR Well ID Number**
	11	VY702	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method
   - surged with bailer and bailed ☐ 4 1
   - surged with bailer and pumped ☒ 6 1
   - surged with block and bailed ☐ 4 2
   - surged with block and pumped ☐ 6 2
   - surged with block, bailed and pumped ☐ 7 0
   - compressed air ☐ 2 0
   - bailed only ☐ 1 0
   - pumped only ☐ 5 1
   - pumped slowly ☐ 5 0
   - Other ____________ ☐

3. Time spent developing well 120 min.

4. Depth of well (from top of well casisng) 33 . 6 ft.

5. Inside diameter of well 2 . 00 in.

6. Volume of water in filter pack and well casing 5 . 4 gal.

7. Volume of water removed from well 60 . 0 gal.

8. Volume of water added (if any) ___ . ___ gal.

9. Source of water added ____________

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☒ No

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	28 . 37 ft.	28 . 41 ft.
Date	b.	12 / 02 / 2015 (m m d d y y y y)	12 / 02 / 2015 (m m d d y y y y)
Time	c.	02 : 00 ☐ a.m. ☒ p.m.	04 : 00 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		0 . ___ inches	0 . ___ inches
13. Water clarity		Clear ☐ 1 0 Turbid ☒ 1 5 (Describe)	Clear ☒ 2 0 Turbid ☐ 2 5 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___ . ___ mg/l	___ . ___ mg/l
15. COD	___ . ___ mg/l	___ . ___ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Gary Last Name: Sterkel
Firm: SCS ENGINEERS

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Nate Last Name: Sievers
Facility/Firm: Wisconsin Power and Light
Street: W8375 Murray Rd.
City/State/Zip: Pardeeville, WI 53954

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: for G.S.
Print Name: Gary Sterkel
Firm: SCS ENGINEERS

NOTE: See instructions for more information including a list of county codes and well type codes.

SCS # 25217156.01

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ ____________

Facility/Project Name	County Name	Well Name
WPL - Alliant Columbia Generating Station	Columbia	MW-309

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	11	VR111	

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method
   - surged with bailer and bailed ☐ 4 1
   - surged with bailer and pumped ☒ 6 1
   - surged with block and bailed ☐ 4 2
   - surged with block and pumped ☐ 6 2
   - surged with block, bailed and pumped ☐ 7 0
   - compressed air ☐ 2 0
   - bailed only ☐ 1 0
   - pumped only ☐ 5 1
   - pumped slowly ☐ 5 0
   - Other ____________ ☐

3. Time spent developing well 75 min.

4. Depth of well (from top of well casisng) 37.67 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing 7.04 gal.

7. Volume of water removed from well 50.0 gal.

8. Volume of water added (if any) ___ gal.

9. Source of water added ____________

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	30.07 ft.	32.29 ft.
Date	b.	02/16/2018 (mm dd yyyy)	02/16/2018 (mm dd yyyy)
Time	c.	12:47 ☐ a.m. ☒ p.m.	13:50 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		___ inches	___ inches
13. Water clarity		Clear ☐ 1 0 Turbid ☒ 1 5	Clear ☒ 2 0 Turbid ☐ 2 5
(Describe)		Brown Silty	

Fill in if drilling fluids were used and well is at solid waste facility:

	Before Development	After Development
14. Total suspended solids	___ mg/l	___ mg/l
15. COD	___ mg/l	___ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Kyle Last Name: Kramer
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:

Two cycles of well purging dry and recharging.

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Nate Last Name: Sievers
Facility/Firm: Wisconsin Power and Light
Street: W8375 Murray Road
City/State/Zip: Pardeeville, Wisconsin 53954

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:
Print Name: Kyle Kramer
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

SCS # 25217156.01

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒

Remediation/Redevelopment ☐ Other ☐

Facility/Project Name WPL - Alliant Columbia Generating Station	**County Name** Columbia		**Well Name** MW-310
Facility License, Permit or Monitoring Number	**County Code** 11	**Wis. Unique Well Number** VR110	**DNR Well ID Number**

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☒	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other	☐	

3. Time spent developing well 171 min.

4. Depth of well (from top of well casisng) 38.41 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing 7.28 gal.

7. Volume of water removed from well 60.0 gal.

8. Volume of water added (if any) . gal.

9. Source of water added

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	30.55 ft.	32.30 ft.
Date	b.	2/16/2018 (m m d d y y y y)	2/16/2018 (m m d d y y y y)
Time	c.	9:45 ☒ a.m. ☐ p.m.	12:36 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		. inches	. inches
13. Water clarity		Clear ☐ 1 0 Turbid ☒ 1 5 (Describe) brown silty	Clear ☒ 2 0 Turbid ☐ 2 5 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	. mg/l	. mg/l
15. COD	. mg/l	. mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Kyle Last Name: Kramer

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:

Four cycles of well purging dry and recharging.

Name and Address of Facility Contact /Owner/Responsible Party

First Name: Nate Last Name: Sievers

Facility/Firm: Wisconsin Power and Light

Street: W8375 Murray Road

City/State/Zip: Pardeeville, Wisconsin 53954

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:

Print Name: Kyle Kramer

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

SCS # 25217156.01

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ ____

Facility/Project Name: WPL - Alliant Columbia Generating Station
County Name: Columbia
Well Name: MW-311
Facility License, Permit or Monitoring Number: ____
County Code: 11
Wis. Unique Well Number: VR112
DNR Well ID Number: ____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other ____	☐	

3. Time spent developing well: 168 min.

4. Depth of well (from top of well casisng): 36.19 ft.

5. Inside diameter of well: 2.0 in.

6. Volume of water in filter pack and well casing: 8.74 gal.

7. Volume of water removed from well: 100.0 gal.

8. Volume of water added (if any): ___.__ gal.

9. Source of water added ____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 26.75 ft.	28.51 ft.
Date	b. 2/16/2018 (mm/dd/yyyy)	2/16/2018 (mm/dd/yyyy)
Time	c. 2:00 ☐ a.m. ☒ p.m.	4:48 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) brown silty	Clear ☒ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Kyle Last Name: Kramer
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Nate Last Name: Sievers
Facility/Firm: Columbia Dry Ash & Ash Pond Disposal Facilities
Street: W8375 Murray Road
City/State/Zip: Pardeeville, Wisconsin 53954

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:
Print Name: Kyle Kramer
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

SCS # 25220183.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name WPL-Columbia Dry Ash Disposal Facility	County Name Columbia	Well Name MW-313	
Facility License, Permit or Monitoring Number 03025	County Code 11	Wis. Unique Well Number WC188	DNR Well ID Number

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other	☐	

3. Time spent developing well: 45 min.

4. Depth of well (from top of well casisng): 46.18 ft.

5. Inside diameter of well: 2.21 in.

6. Volume of water in filter pack and well casing: 10.6 gal.

7. Volume of water removed from well: 110.0 gal.

8. Volume of water added (if any): ___ gal.

9. Source of water added: NA

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	37.34 ft.	37.43 ft.
Date b. (mm/dd/yyyy)	12/30/2022	12/30/2022
Time c.	3:05 ☐ a.m. ☒ p.m.	3:50 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___ inches	___ inches
13. Water clarity	Clear ☒ 10 Turbid ☐ 15 (Describe) clear to light brown at start	Clear ☒ 20 Turbid ☐ 25 (Describe) clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___ mg/l	___ mg/l
15. COD	___ mg/l	___ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Adam Last Name: Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
31 degrees F and cloudy
Purge rate= 5 gallons/ 2 minutes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: ___ Last Name: ___
Facility/Firm: Wisconsin Power and Light Co. - Alliant Energy
Street: 1919 Alliant Energy Center Way
City/State/Zip: Madison, WI 53713

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature:
Print Name: Adam Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

SCS # 25220183.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ ______

Facility/Project Name	County Name	Well Name
WPL-Columbia Dry Ash Disposal Facility	Columbia	MW-314

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
03025	11	WC199	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method
- surged with bailer and bailed ☐ 41
- surged with bailer and pumped ☒ 61
- surged with block and bailed ☐ 42
- surged with block and pumped ☐ 62
- surged with block, bailed and pumped ☐ 70
- compressed air ☐ 20
- bailed only ☐ 10
- pumped only ☐ 51
- pumped slowly ☐ 50
- Other ______ ☐

3. Time spent developing well 132 min.

4. Depth of well (from top of well casisng) 44.96 ft.

5. Inside diameter of well 2.31 in.

6. Volume of water in filter pack and well casing 10.4 gal.

7. Volume of water removed from well 120.0 gal.

8. Volume of water added (if any) ___ gal.

9. Source of water added NA

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	37.34 ft.	38.37 ft.
Date b. (mm/dd/yyyy)	12/30/2022	12/30/2022
Time c.	11:10 ☒ a.m. ☐ p.m.	1:22 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___ inches	___ inches
13. Water clarity	Clear ☒ 10 Turbid ☐ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	creamy brown at start	clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___ mg/l	___ mg/l
15. COD	___ mg/l	___ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Adam Last Name: Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
31 degrees F and cloudy
Purge rate= 5.0 gallons/ 5 minutes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: ______ Last Name: ______
Facility/Firm: Wisconsin Power and Light Co. - Alliant Energy
Street: 1919 Alliant Energy Center Way
City/State/Zip: Madison, WI 53713

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature:
Print Name: Adam Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

SCS # 25220183.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County Name	Well Name	
WPL-Columbia Dry Ash Disposal Facility	Columbia	MW-315	
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number**	**DNR Well ID Number**
03025	11	PM289	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method
- surged with bailer and bailed ☐ 41
- surged with bailer and pumped ☒ 61
- surged with block and bailed ☐ 42
- surged with block and pumped ☐ 62
- surged with block, bailed and pumped ☐ 70
- compressed air ☐ 20
- bailed only ☐ 10
- pumped only ☐ 51
- pumped slowly ☐ 50
- Other ☐

3. Time spent developing well 120 min.

4. Depth of well (from top of well casisng) 45.61 ft.

5. Inside diameter of well 2.31 in.

6. Volume of water in filter pack and well casing 10.64 gal.

7. Volume of water removed from well 120.0 gal.

8. Volume of water added (if any) ___ gal.

9. Source of water added NA

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	36.34 ft.	36.34 ft.
Date	b.	12/30/2022 (mm dd yyyy)	12/30/2022 (mm dd yyyy)
Time	c.	10:40 ☒ a.m. ☐ p.m.	12:40 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		___ inches	___ inches
13. Water clarity		Clear ☒ 10 Turbid ☐ 15 (Describe) brown at start	Clear ☒ 20 Turbid ☐ 25 (Describe) clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids ___ mg/l ___ mg/l

15. COD ___ mg/l ___ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Adam Last Name: Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
31 degrees F and cloudy
Purge rate= 1gallon/minute

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Last Name:
Facility/Firm: Wisconsin Power and Light Co. - Alliant Energy
Street: 1919 Alliant Energy Center Way
City/State/Zip: Madison, WI 53713

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature:
Print Name: Adam Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

Appendix H

Groundwater Sampling and Analysis Plan

Groundwater Sampling and Analysis Plan

Columbia Energy Center
W8375 Murray Road
Pardeeville, Wisconsin 53954

Prepared for:
Wisconsin Power and Light Company

Alliant Energy

4902 N Biltmore Lane
Madison, Wisconsin 53707

SCS ENGINEERS

25222260.00 | September 1, 2023

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

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Attachments

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1.0 INTRODUCTION

This Groundwater Sampling Plan (plan) summarizes groundwater sampling and analysis procedures for the Columbia Energy Center, a generating station with a coal combustion residuals (CCR) landfill and settling ponds located in Pardeeville, Wisconsin (**Figure 1**).

Groundwater sampling at this site is performed to satisfy sampling requirements at CCR wells under NR 514.045 and NR 507.15(3), and the site groundwater sampling program at non-CCR wells and other monitoring points that predates these rules. This plan was prepared in accordance with the requirements of NR 507.16. Samples will be obtained and analyzed in accordance with this plan and the requirements of NR 507.17.

Previously, groundwater sampling at this site has been performed to satisfy the requirements of both the Federal CCR Rule and the site's permit. The sampling program previously performed under the Federal CCR rule will continue under the requirements of NR 514.045 and NR 507.15(3), with the addition of select parameters and monitoring points required by NR 507.15(3) but not by the Federal CCR Rule. The sampling program previously performed under the site's permit will continue, with modifications as requested in the March 2023 Plan Modification Addendum 2.

2.0 SAMPLING EVENTS AND PARAMETERS

A list of the locations at which water level measurements and samples will be collected in compliance with the requirements under NR 514.15(3) and NR 507.15(3) (i.e., the CCR well network) is included in **Table 1.** A list of the locations at which water level measurements and samples will be collected in continuation of the site monitoring program that predated the requirements of NR 514.045 (i.e., the non-CCR well network) is included in **Table 2.** These tables include the parameters that may be analyzed at each sampling location. Sampling point locations are shown on **Figure 2.** All site groundwater monitoring points are shown on **Figure 2**, including several monitoring wells that are not associated with the Dry Ash Disposal Facility.

All groundwater samples collected under the NR 514.15(3) compliance sampling program are to be unfiltered (total analysis). Groundwater samples collected under the continuation of the site monitoring program that predated the requirements of NR 514.045 are to be filtered (dissolved analysis) or unfiltered (total analysis) as shown in **Table 2.**

In addition to the routine semiannual events, supplemental sampling events may be performed as follows:

- Retesting to evaluate a potential groundwater standard exceedance.
- Initial sampling of new monitoring wells added to the monitoring system.

Supplemental sampling events will typically include a subset of the parameters and wells shown in **Tables 1** and **2.**

The specific sampling and analysis requirements for each sampling event will be communicated to the sampling team and laboratory prior to the event.

3.0 FIELD METHODS

3.1 WATER LEVEL MEASUREMENTS

Depth to water will be recorded at each monitoring well immediately prior to purging using an electronic water level measuring tape. These measurements should be taken from the top of the polyvinyl chloride (PVC) well casing. During each sampling event, depths to groundwater at all wells must be measured immediately prior to purging and within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

3.2 FIELD PARAMETERS

Field parameters will be measured and recorded using the procedures in Sections 3.4.1.1 and 3.5.2. Different procedures are used for wells sampled using low-flow and non-low-flow methods.

Field pH, temperature, and specific conductance will be measured using a portable electronic meter. For samples collected using low-flow methods, field dissolved oxygen, oxidation/reduction potential, and turbidity will also be measured using a portable electronic meter. Meter calibration will be performed prior to field measurements according to the manufacturer's instructions and will be documented.

3.3 SAMPLING ORDER

Monitoring wells will be sampled in an order that allows for efficient collection of all samples to avoid effects from temporal variations in groundwater flow. Pumps used for purging and sample collection at CCR monitoring wells, and all bailers used for sample collection at non-CCR wells, are dedicated to specific wells, therefore sampling the wells in order from least- to most-impacted to avoid cross-contamination is not necessary.

3.4 WELL PURGING

Monitoring wells will be purged using either low-flow (CCR Wells) or non-low-flow (non-CCR wells) techniques as required by the applicable monitoring program. Supply wells will be purged with appropriate state-published techniques. Purging techniques are described below.

3.4.1 Monitoring Wells – Low-Flow Method

CCR monitoring wells will be sampled using low-flow sampling techniques, as documented in U.S. Environmental Protection Agency (U.S. EPA) publication EPA/540/S-95/504. All site CCR monitoring wells have dedicated WellWizard ™ sampling systems for this purpose. These dedicated pump systems will be used for well purging and for sample collection.

3.4.1.1 If Well Does Not Purge Dry

After the initial water level measurement, the well will be purged with a consistent flow of 1 liter per minute (L/min) or less. The water level should remain stable or stabilize during the purging. If the level does not stabilize and continues to drop, the flow rate will be reduced. If the level does not stabilize with a flow rate of 50 milliliters per minute (mL/min), the well will be purged according to the procedure in Section 3.4.1.2. The purge rate will be measured using a calibrated device and timer, and recorded.

Purge water should be monitored until three consecutive readings, taken approximately 2 minutes or 0.5 well volumes apart, are stabilized within the provided ranges for the following parameters:

Parameter	Range
pH(1,2)	+/- 0.1 unit
Specific Conductance(1,2)	+/- 3%
Dissolved Oxygen(1,2)	+/- 10%
Oxidation/Reduction Potential(1,2)	+/- 10 millivolts
Temperature(2)	+/- 3%
Turbidity(1,2) (Required if collecting non-filtered metals samples. Recommended otherwise.)	+/- 10% for values greater than 5 NTU. If three turbidity values are less than 5 NTU, consider the values as stabilized.

References: (1): U.S. EPA Publication EPA/540/S-95/504 and (2): U.S. EPA Region 1 Low-Stress (Low-Flow) SOP, Revision Number 3, Revised January 19, 2010.

Measurements will be collected using a portable meter and recorded. All parameters except turbidity must be obtained using a flow-through cell. Samples for turbidity measurements will be obtained before water enters the flow-through cell.

Observations of sample odor and color will be recorded. Visual observations of turbidity may be recorded in addition to instrument readings.

Once the readings have stabilized, which indicates that stagnant water in the well has been replaced with formation water, the well will be ready for groundwater sampling from the discharge.

3.4.1.2 If Well Purges Dry

If a well purges dry where low-flow sampling is the intended sampling method, or if a stable water level cannot be achieved even with very low purge rates, the well will be purged dry using the dedicated pump. The well will then be allowed to recover sufficiently so that the required sample volume may be collected.

3.4.2 Monitoring Wells – Non-Low-Flow Sampling

Each non-CCR well sampled under the monitoring program shown in **Table 2** will be purged and sampled using a dedicated bailer. If a large purge volume is required at a well, a pump may be used to purge the well, and the dedicated bailer will be used for sample collection. If a well does not purge dry, four well volumes will be removed prior to sample collection and the sample will be collected at the completion of purging. If a well does purge dry, the well will be allowed to recover and sampled with a dedicated bailer.

3.4.3 Supply Wells

The site supply well will be purged according to the guidance in Section 3.4 of the Wisconsin Department of Natural Resources (WDNR) Groundwater Sampling Field Manual (PUBL-DG-038). The purge location will be as close to the well's pump as possible. If a sample cannot be collected before the water passes through a pressure tank or treatment system, this will be documented. Water will be run from the tap for a minimum of 2 minutes if the sample tap is before a pressure tank, or 5 minutes if the sample tap is after a pressure tank, prior to sample collection.

3.5 SAMPLING PROTOCOL

3.5.1 General Sampling Procedures

Disposable chemical-resistant (e.g., nitrile) gloves will be worn during sampling and will be changed between sampling points.

All samples will be labeled with the sample ID (monitoring well number), site name, project number, time and date of collection, analytical parameters, preservative, and the initials of the sampler. The laboratory will provide instructions regarding the preservation techniques required for each analysis. The laboratory will provide any required temperature and/or trip blanks, and will provide water and sample containers for field blanks.

3.5.2 Sample Collection

3.5.2.1 Monitoring Wells – Low-Flow Method

After each well is determined to have stabilized (see **Section 3.4.1.1**), samples will be collected using the dedicated bladder pump. The pumping rate during sampling will not exceed the pumping rate during purging. Samples collected using low-flow methods will not be filtered.

3.5.2.2 Monitoring Wells – Low-Flow Method in Slow-Recovering Wells

At wells purged using the procedure described in **Section 3.4.1.2**, samples will be collected using the dedicated bladder pump after the well has recovered sufficiently for the required sample volume to be collected. The pumping rate during sampling will be set as low as practical in order to minimize sample turbidity. One set of the field parameters listed in Section 3.2.1.1 at the time of sample collection will be measured and recorded; stability is not required. Samples collected using low-flow methods will not be filtered.

3.5.2.3 Monitoring Wells – Non-Low-Flow Method

At wells purged using the procedures described in **Section 3.4.2**, samples will be collected using the dedicated bailer. Field pH, temperature, and specific conductance will be measured at the time of sample collection using an electronic meter. Qualitative descriptions of sample odor, color, and turbidity will also be recorded.

Laboratory samples for parameters that will be reported as dissolved (**Table 2**) will be field-filtered with a disposable 0.45 micron filter. Each filter will be used at a single well and then discarded.

3.5.2.4 Supply wells

Supply well samples will be collected from the sample tap after purging is complete. If a hose is used to direct purge water from an exterior tap, disconnect the hose and sample directly from the tap. Do not filter water supply well samples. Collect additional sample volume in a clean vessel for measurement of field parameters listed in **Table 2.**

3.5.2.5 Leachate Monitoring Points

Leachate head readings in leachate headwells will be obtained from transducers installed in each headwell.

Leachate samples from the landfill surface water runoff/leachate collection pond (monitoring point LP-1) will be collected as grab samples using a dipper. Care will be taken to avoid inclusion of sediment in the sample. This sample will not be filtered. Collect additional sample volume in a clean vessel for measurement of field parameters listed in **Table 1**.

3.5.3 Quality Assurance and Quality Control

3.5.3.1 Field Blanks

One field blank sample will be collected during each sampling event using reagent grade water and sample containers provided by the laboratory. Field blanks at this site are collected for the purpose of assessing potential sample contamination from airborne particles. If applicable, the Field Blank bottles will be filled at the monitoring point where the risk of sample contamination from CCR handling activities appears to be the greatest (e.g., next to a monitoring well, adjacent to or downwind of an active CCR handling area). The location where the Field Blank bottles were filled will be recorded in the field notes. Field blank samples will not be filtered.

Dedicated equipment (bladder pump or bailer) is used for sample collection at all sampled monitoring wells, therefore rinsate and equipment blanks will not be collected.

3.5.3.2 Field Duplicates

One field duplicate per 10 or fewer samples will be collected for metals analysis.

Field duplicate samples will be collected and handled using the same procedures as the original samples. Each duplicate sample will be collected immediately after the associated original sample.

3.5.3.3 Trip Blanks

Trip blanks will not be collected, as volatile organic compounds, gasoline range organics, and petroleum volatile organic compounds are not included in the sampling program.

3.5.4 Sample Containers

Sample containers will be provided by the laboratory contractor for the sample analysis. Containers for samples that require chemical preservation will be pre-preserved by the laboratory. The required sample volume for each sampling point is determined by the analytical methods used. Fill all bottles provided by the laboratory for each sampling point. If sample volume is limited, consult with the laboratory project manager to determine whether all required analyses can be performed on a smaller volume of water for a specific sample. The laboratory will provide sample containers for the collection of quality control samples.

3.5.5 Sample Preservation

Samples will be preserved as required for the analytical methods being used. The laboratory will provide instructions and sample containers pre-filled with preservative chemicals, if required. All samples will be kept on ice from the time of collection until they are submitted to the laboratory, with the exception of samples to be analyzed only for radium 226 and/or radium 228, which may be stored and transported with or without ice per guidance from the laboratory. The laboratory will provide temperature blanks in the sample coolers, if required.

3.5.6 Sample Shipment

Samples for all parameters except radium will be packed in coolers with ice and will be shipped to the laboratory using a method that ensures delivery within required temperature limits. Radium samples do not require ice for shipping. Typically, samples will be shipped for next day delivery using a courier service or a shipping company (e.g., FedEx or UPS).

3.6 EQUIPMENT DECONTAMINATION

Equipment that is not dedicated to a single well (e.g., water level measurement tape or non-dedicated pump) will be decontaminated between monitoring points. Decontamination will consist of cleaning with water and nonphosphate detergent (i.e., Alconox™ or equivalent), followed by a double-rinse.

4.0 ANALYTICAL METHODS

Laboratory sample analysis will be performed using methods listed in **Table 3**. Other methods may be substituted provided the Limit of Detection of the new method is lower than the regulatory standard(s) to which the results will be compared.

4.1 ANALYTICAL QUALITY ASSURANCE/QUALITY CONTROL

Samples for laboratory analysis will be submitted only to a laboratory that is certified by the State of Wisconsin for the methods listed in **Section 4.0**. The laboratory will have established Quality Assurance/Quality Control (QA/QC) procedures that conform to industry standards.

5.0 DOCUMENTATION

5.1 FIELD DOCUMENTATION

Water levels, purge volumes, sample times, field parameters, and general well condition information will be recorded in the sampler's field book, on groundwater sampling log forms, or electronically.

5.2 CHAIN OF CUSTODY

Chain of Custody forms will be supplied by the laboratory and completed in the field by the sampler. An example Chain of Custody form is included in **Attachment A.** At a minimum, Chain of Custody forms will include:

- Sample IDs, date and time of sample collection, required analyses for each sample, and sample preservative (if applicable)
- Site name and project number
- Sampler's name and company
- Laboratory name and address
- Signature of person relinquishing samples for shipping

Tables

Table 1. NR 507.15(3) Groundwater Monitoring Program
CCR Monitoring Program
Wisconsin Power and Light - Columbia Ash Disposal Facility

Landfill Modules and Monitoring Points		Parameters - Detection Monitoring	Parameters - Assessment Monitoring (if required)	Frequency
Groundwater				
All Modules (Background Wells)	MW-84A	Alkalinity	Antimony	Semiannual (April/October)
	MW-301	Boron	Arsenic	
Modules 1-3	MW-302	Calcium	Barium	
	MW-33AR	Hardness	Beryllium	
	MW-34A	Chloride	Cadmium	
Modules 4-6	MW-309	Fluoride	Chromium	
	MW-310	Sulfate	Cobalt	
	MW-311	TDS	Copper	
Modules 10-11	MW-313^	Field Conductivity	Fluoride	
	MW-314^	Field pH	Lead	
	MW-315^	Field Temperature	Lithium	
		Groundwater Elevation	Manganese	
			Mercury	
			Molybdenum	
			Nitrate + Nitrite (as N)	
			Selenium	
			Silver	
			Thallium	
			Zinc	
			Radium 226 and Radium 228, combined	
Module 12 or Modules 12-13	Additional Wells as Installed			

Table 1. NR 507.15(3) Groundwater Monitoring Program
CCR Monitoring Program
Wisconsin Power and Light - Columbia Ash Disposal Facility

Landfill Modules and Monitoring Points		**Parameters - Detection Monitoring**	**Frequency**
Leachate			
All Modules*	LP-1*	BOD$_5$	Semiannual (April/October)
		Field conductivity (at 25 deg C)	
All Modules*	Leachate Collection Tank*	Field pH	
		Alkalinity	
		Boron	
		Cadmium	
		Chloride	
		COD	
		Hardness	
		Iron	
		Lead	
		Manganese	
		Mercury	
		Selenium	
		Total suspended solids	
		Antimony	
		Beryllium	
		Cobalt	
		Fluoride	
		Lithium	
		Molybdenum	
		Radium 226 and 228, combined	
		Sulfate	
		Thallium	
		Semivolatile organic compound scan	Annual

^: MW-313, MW-314, and MW-315 will be abandoned prior to construction of Module 12.
*: At a later date, the leachate collection system will be converted to discharge all leachate to the Leachate Collection Tank.

Created by: MDB Date: 1/11/2023
Last revision by: MDB Date: 8/10/2023
Checked by: ACW Date: 8/17/2023

Table 2. Non-CCR Well Groundwater Monitoring Program
Wisconsin Power and Light - Columbia Dry Ash Disposal Facility
License #3025

Monitoring Points	Parameters	Frequency	Revision from Prior Monitoring Program
Detection Groundwater Monitoring, Non-CCR Wells			
MW-33BR MW-34B MW-37A MW-83 MW-84B MW-86 MW-92A MW-92B MW-93A*	Groundwater elevation Field odor, color, and turbidity Field temperature, conductivity at 25° C, and pH Metals, dissolved (Arsenic, Boron, Molybdenum) Sulfate, dissolved Total Hardness, dissolved (mg/L as $CaCO_3$) Alkalinity, dissolved	Semiannual (April and October)	Remove: -Wells MW-91A and MW-91B -Chloride -Nitrite + Nitrate as N -Aluminum -Barium -Cadmium -Chromium -Mercury (October only) -Selenium
Water Supply Wells			
HC-1 HC-2 HC-3	Field odor, color, and turbidity Field temperature, conductivity at 25° C, and pH Nitrate + Nitrite as N, total Metals, total (Arsenic, Boron, Molybdenum) Sulfate, total Chloride, total Total Hardness (mg/L as $CaCO_3$) Alkalinity	Semiannual (April and October)	Remove: -Aluminum -Barium -Cadmium -Chromium -Selenium
Lysimeters			
LS-1 LS-3R	Field odor, color, and turbidity Field temperature, conductivity at 25° C, and pH Alkalinity Metals, total (Arsenic, Boron, Molybdenum) Total Hardness (mg/L as CaCO3) Chloride, total Chemical Oxygen Demadn (COD) Total Kjeldahl Nitrogen (TKN) Sulfate, total	Semiannual (April and October)	Remove: -Nitrite + Nitrate as N -Aluminum -Barium -Cadmium -Chromium -Mercury -Selenium Add: -COD -TKN
Leachate Head Wells			
LH-2, LH-3^, LH-4^, LH-5, LH-6, LH-10A, LH-10B^, LH-11A, LH-11B^	Leachate head	Monthly	

*MW-93A was installed in 2022, and is in baseline monitoring, including the collection of additional parameters.
^ LH-10A/B and LH-11A/B will replace LH-3 and LH-4 in the monitoring program.

Created by: MDB Date: 1/8/2015
Updated by: MDB Date: 8/10/2023
Checked by: ACW Date: 8/17/2023

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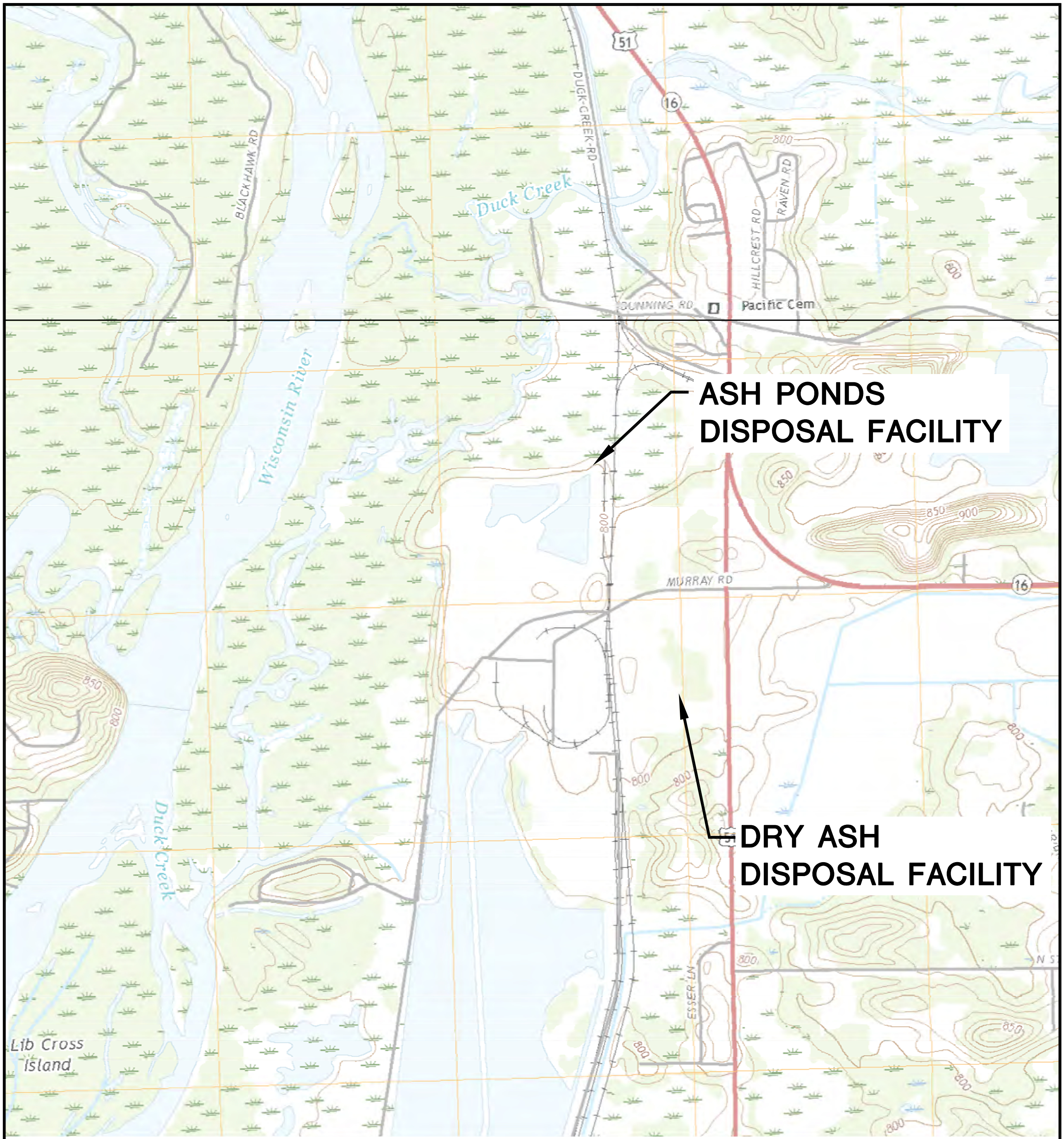
Table 3. Analytical Methods

Parameter Type	Analytical Method
Metals (except mercury)	EPA 6010 or 6020
Mercury	EPA 7470
Chloride, fluoride, sulfate	EPA 9056 or 300.0
Alkalinity	SM 2320B
Hardness	SM5340C
BOD5	SM 5210B
COD	EPA 410.4
Total Suspended Solids	SM 2540D
Total Dissolved Solids	SM 6540C
Nitrate + Nitrite (as N)	EPA 353.2
Radium 226	EPA 903.1
Radium 228	EPA 904.0

Note: Other methods may be substituted provided the Limit of Detection of the new method is lower than the regulatory standard(s) to which the results will be compared.

Figures



ASH PONDS DISPOSAL FACILITY

DRY ASH DISPOSAL FACILITY

N

POYNETTE QUADRANGLE
WISCONSIN–COLUMBIA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

CLIENT
ALLIANT ENERGY
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WI 53954

SITE
ALLIANT ENERGY
COLUMBIA ENERGY CENTER
PARDEEVILLE, WI

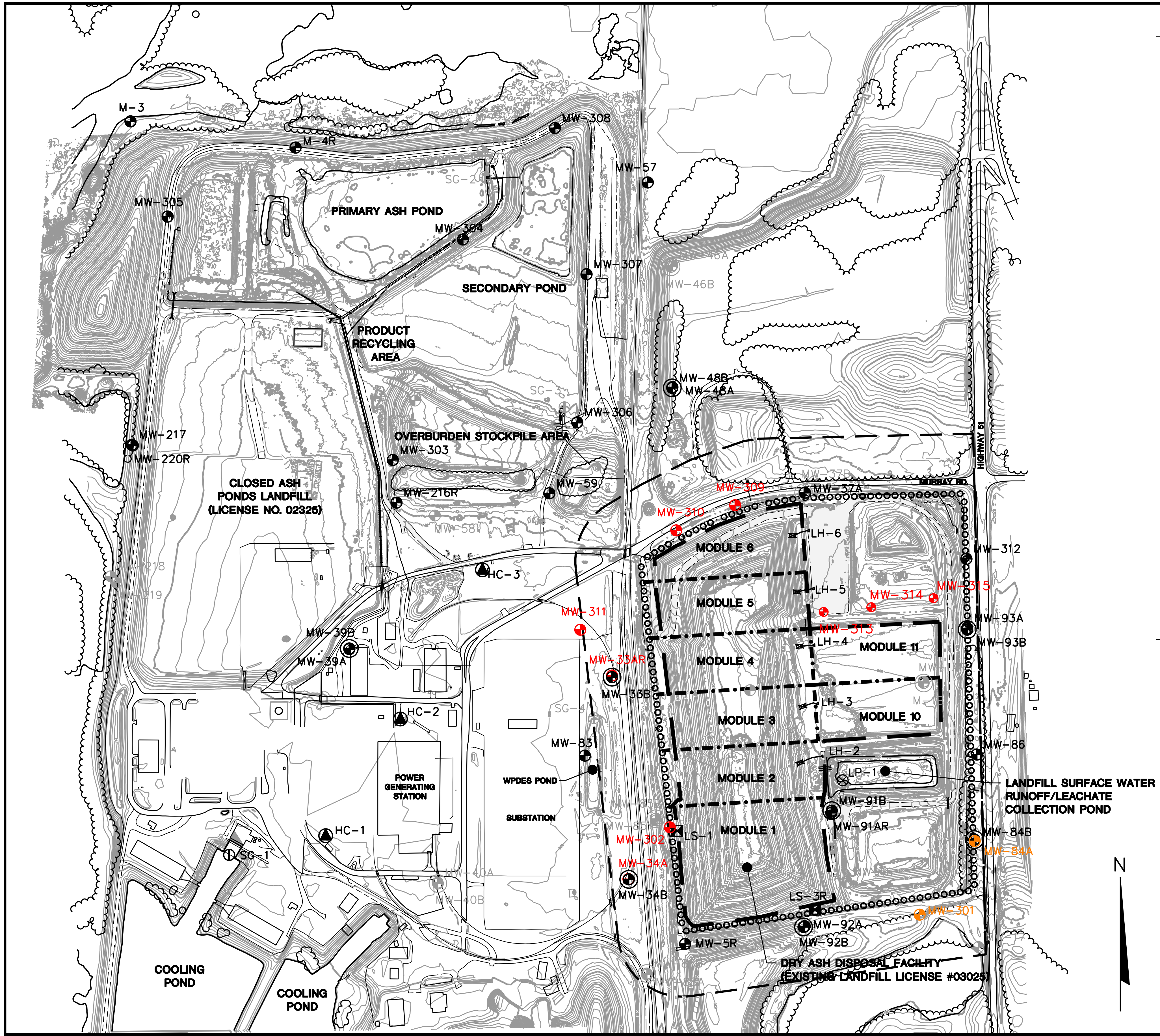
SITE LOCATION MAP

PROJECT NO.	25220067.00	DRAWN BY:	BSS
DRAWN:	12/02/2019	CHECKED BY:	MDB
REVISED:	01/10/2020	APPROVED BY:	TK 04/10/2020

ENGINEER
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE
1

I:\25220067.00\Drawings\ASD Mod 1-3 LF\Site Location Map.dwg, 4/12/2020 7:05:09 PM



LEGEND

———	EXISTING MAJOR CONTOUR (10' INTERVAL)
———	EXISTING MINOR CONTOUR (2' CONTOUR)
—x—x—	EXISTING FENCELINE
++++++++	EXISTING TRACKS
═══	EXISTING PAVED ROAD
=====	EXISTING UNPAVED ROAD
— · · · —	EDGE OF WATER
·oooooooo·	DRY ASH DISPOSAL FACILITY LIMITS
— — —	LIMITS OF WASTE
—·—·—	LINER PHASE/MODULE LIMITS
— — —	DESIGN MANAGEMENT ZONE
▲	WATER SUPPLY WELL
◐	STAFF GAUGE
◕	NON-CCR WATER TABLE WELL
◉	NON-CCR PIEZOMETER
🔴	CCR MONITORING WELL
🟠	CCR BACKGROUND MONITORING WELL
⊗	SURFACE WATER SAMPLE LOCATION
⧗	LYSIMETER
◕	ABANDONED WATER TABLE WELL
◉	ABANDONED PIEZOMETER
◐	ABANDONED STAFF GAUGE
↞	LEACHATE HEADWELL

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEYS BY SCS ENGINEERS IN MAY 2019, DECEMBER 2020, NOVEMBER 2021, AND DECEMBER 2021, AND BY DRONE SURVEY BY AMES IN NOVEMBER 2022, JANUARY 2023 AND JUNE 2023.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AND JANUARY 2016, AND BY SCS ENGINEERS IN FEBRUARY 2018, APRIL 2022, AND JANUARY 2023.
3. SUPPLY WELL LOCATIONS ARE APPROXIMATE AND ASSUMED BASED ON JANUARY 2013 DRAWINGS BY TRC.
4. BACKGROUND MONITORING WELLS FOR THE DRY ASH FACILITY ARE: MW-301 AND MW-84A.
5. THIS DRAWING SHOWS ALL SITE MONITORING WELLS, INCLUDING WELLS THAT ARE NOT USED TO MONITOR THE DRY ASH DISPOSAL FACILITY, THE CLOSED ASH PONDS LANDFILL, ASH POND, AND/OR THE SECONDARY POND.

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25222260.00	DRAWN BY:	KP
DRAWN:	02/09/2023	CHECKED BY:	MDB
REVISED:	03/10/2023	APPROVED BY:	MDB 09/01/23

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT

ALLIANT ENERGY
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WI 53954

SITE

ALLIANT ENERGY
COLUMBIA ENERGY CENTER
COLUMBIA DRY ASH DISPOSAL FACILITY
PARDEEVILLE, WI

SITE PLAN AND MONITORING WELL LOCATIONS

FIGURE
2

I:\25222260.00\Drawings\Site Plan and Monitoring Well Locations.dwg, 9/1/2023 12:23:49 PM

Attachment A

Example Chain of Custody

(Please Print Clearly)

Company Name: SCS Engineers
Branch/Location: Madison, WI
Project Contact: Tom Karwoski
Phone: (608) 224-2830
Project Number: 25221067.00
Project Name: WPL-I43 GW Monitoring
Project State: Wisconsin
Sampled By (Print):
Sampled By (Sign):
PO #:
Regulatory Program:

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

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

Page 1 of

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

Quote #:
Mail To Contact: Tom Karwoski
Mail To Company: SCS Engineers
Mail To Address: 2830 Dairy Drive
Madison, WI 53718
Invoice To Contact: Tom Karwoski
Invoice To Company: SCS Engineers
Invoice To Address: 2830 Dairy Drive
Madison, WI 53718
Invoice To Phone: (608) 224-2830

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

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

Matrix Codes

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

FILTERED? (YES/NO): Y / N
PRESERVATION (CODE)*: Pick Letter
Analyses Requested

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX									CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	MW-302			GW											
	MW-34A			GW											
	MW-33AR			GW											
	Field Blank			W											

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

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

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

Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.

Receipt Temp = °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

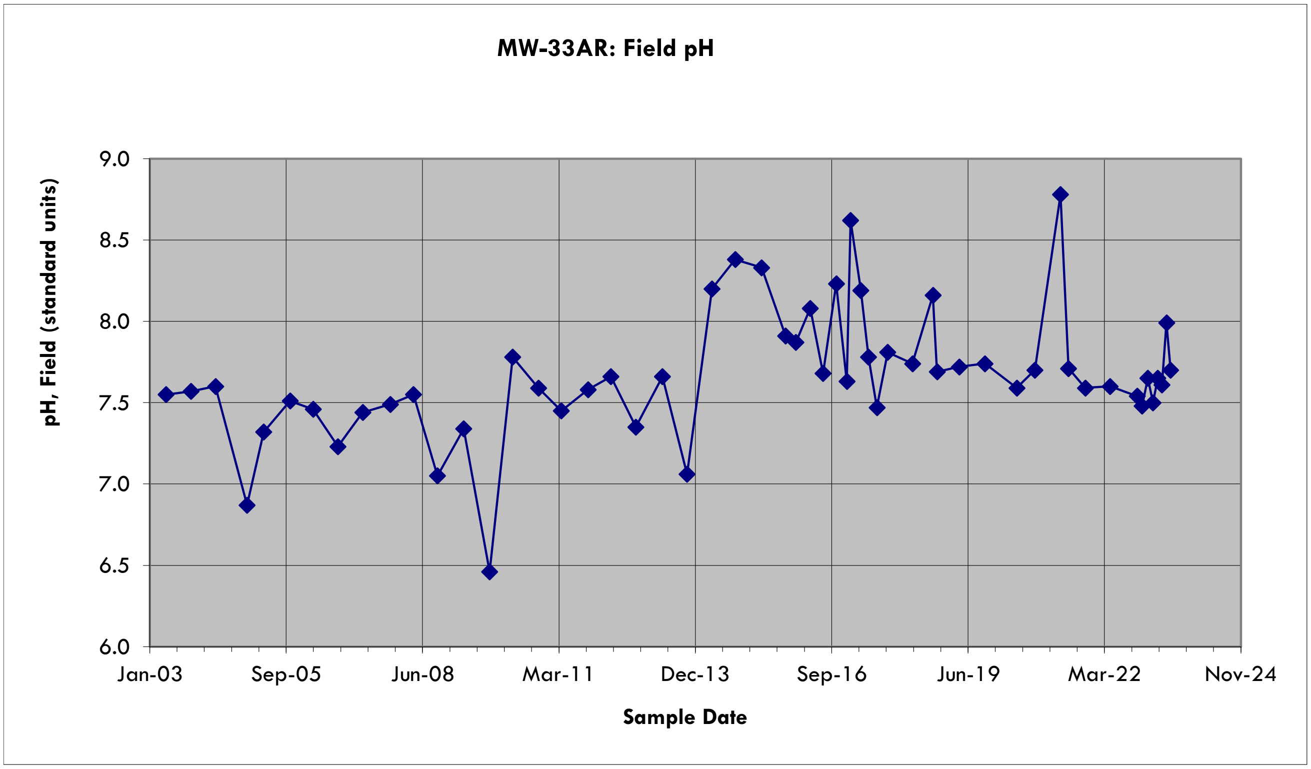
C019a(27Jun2006)

ORIGINAL

Appendix I

PAL and ACL Calculations

I.1 CCR Well PAL and ACL Calcs



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.55	4/29/2003	7.55	7.55	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.57	10/30/2003	7.57	7.57	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.6	4/27/2004	7.6	7.6	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	6.87	12/14/2004	6.87	6.87	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.32	4/15/2005	7.32	7.32	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.51	10/26/2005	7.51	7.51	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.46	4/13/2006	7.46	7.46	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.23	10/12/2006	7.23	7.23	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.44	4/11/2007	7.44	7.44	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.49	10/31/2007	7.49	7.49	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.55	4/17/2008	7.55	7.55	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.05	10/10/2008	7.05	7.05	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.34	4/21/2009	7.34	7.34	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	6.46	10/27/2009	6.46	6.46	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.78	4/14/2010	7.78	7.78	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.59	10/20/2010	7.59	7.59	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.45	4/6/2011	7.45	7.45	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.58	10/20/2011	7.58	7.58	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.66	4/4/2012	7.66	7.66	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.35	10/4/2012	7.35	7.35	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.66	4/17/2013	7.66	7.66	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.06	10/14/2013	7.06	7.06	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	8.2	4/16/2014	8.2	8.2	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	8.38	10/2/2014	8.38	8.38	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	8.33	4/14/2015	8.33	8.33	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.91	10/7/2015	7.91	7.91	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.87	12/21/2015	7.87	7.87	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	8.08	4/5/2016	8.08	8.08	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.68	7/7/2016	7.68	7.68	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	8.23	10/13/2016	8.23	8.23	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.63	12/29/2016	7.63	7.63	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	8.62	1/25/2017	8.62	8.62	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	8.19	4/11/2017	8.19	8.19	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.78	6/6/2017	7.78	7.78	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.47	8/7/2017	7.47	7.47	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.81	10/24/2017	7.81	7.81	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.74	4/24/2018	7.74	7.74	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	8.16	9/21/2018	8.16	8.16	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.69	10/22/2018	7.69	7.69	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.72	4/2/2019	7.72	7.72	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.74	10/8/2019	7.74	7.74	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.59	5/28/2020	7.59	7.59	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.7	10/8/2020	7.7	7.7	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	8.78	4/13/2021	8.78	8.78	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.71	6/11/2021	7.71	7.71	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.59	10/12/2021	7.59	7.59	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.6	4/12/2022	7.6	7.6	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.54	10/27/2022	7.54	7.54	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.48	12/2/2022	7.48	7.48	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.65	1/13/2023	7.65	7.65	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.5	2/21/2023	7.5	7.5	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.65	3/28/2023	7.65	7.65	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.61	4/27/2023	7.61	7.61	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.99	5/31/2023	7.99	7.99	
MW-33AR	PH, FIELD (STANDARD UNITS)	01	7.7	6/30/2023	7.7	7.7	
Calculations							
Count						55	
Mean						7.67	
PAL Limit (NR 140.20(2)(a)						+/- 1	
Upper PAL, Calculated						8.67	
Lower PAL, Calculated						6.67	
Upper PAL, Rounded						8.7	
Lower PAL, Rounded						6.6	

Duplicate Data Not Used for Calculations							

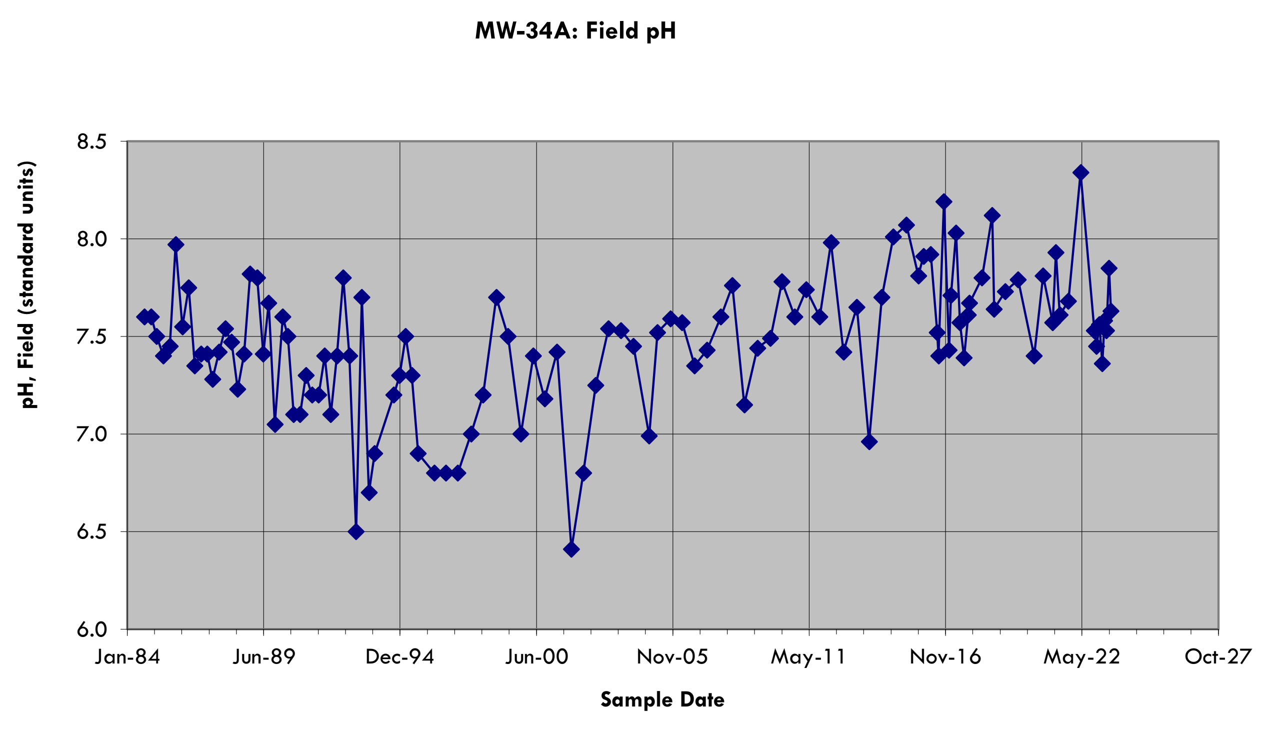
Note: Data through 10/2015 downloaded from GEMS, 12/2015 - 10/2022 downloaded from ChemPoint, later data from PacePort

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.6	9/7/1984	7.6		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.6	12/17/1984	7.6		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.5	3/7/1985	7.5		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.4	6/14/1985	7.4		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.45	9/18/1985	7.45		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.97	12/12/1985	7.97		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.55	3/21/1986	7.55		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.75	6/20/1986	7.75		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.35	9/18/1986	7.35		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.41	12/19/1986	7.41		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.41	3/20/1987	7.41		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.28	6/5/1987	7.28		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.42	9/9/1987	7.42		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.54	12/9/1987	7.54		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.47	3/10/1988	7.47		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.23	6/7/1988	7.23		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.41	9/9/1988	7.41		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.82	12/7/1988	7.82		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.8	3/21/1989	7.8		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.8	3/22/1989	7.8		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.41	6/16/1989	7.41		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.67	9/6/1989	7.67		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.05	12/5/1989	7.05		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.6	3/29/1990	7.6		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.5	6/14/1990	7.5		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.1	9/5/1990	7.1		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.1	12/10/1990	7.1		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.3	3/5/1991	7.3		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.2	6/3/1991	7.2		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.2	9/6/1991	7.2		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.4	12/4/1991	7.4		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.1	3/3/1992	7.1		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.4	6/2/1992	7.4		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.8	9/1/1992	7.8		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.4	12/2/1992	7.4		
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.5	3/10/1993	6.5		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.7	6/2/1993	7.7		
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.7	9/14/1993	6.7		
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.9	12/7/1993	6.9		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.2	9/13/1994	7.2		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.3	12/6/1994	7.3		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.5	3/7/1995	7.5		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.3	6/6/1995	7.3		
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.9	9/6/1995	6.9		
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.8	4/30/1996	6.8		
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.8	10/16/1996	6.8		
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.8	4/8/1997	6.8		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7	10/20/1997	7		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.2	4/14/1998	7.2		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.7	10/27/1998	7.7		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.5	4/16/1999	7.5		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7	10/21/1999	7		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.4	4/20/2000	7.4		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.18	10/4/2000	7.18		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.42	4/3/2001	7.42		
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.41	10/30/2001	6.41		
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.8	4/25/2002	6.8		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.25	10/24/2002	7.25		
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.54	4/29/2003	7.54	7.54	Using last 20 years of data for PAL calculation
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.53	10/29/2003	7.53	7.53	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.45	4/27/2004	7.45	7.45	
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.99	12/14/2004	6.99	6.99	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.52	4/15/2005	7.52	7.52	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.59	10/26/2005	7.59	7.59	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.57	4/13/2006	7.57	7.57	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.35	10/12/2006	7.35	7.35	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.43	4/11/2007	7.43	7.43	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.6	10/31/2007	7.6	7.6	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.76	4/17/2008	7.76	7.76	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.15	10/10/2008	7.15	7.15	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.44	4/21/2009	7.44	7.44	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.49	10/27/2009	7.49	7.49	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.78	4/14/2010	7.78	7.78	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.6	10/20/2010	7.6	7.6	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.74	4/6/2011	7.74	7.74	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.6	10/20/2011	7.6	7.6	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.98	4/4/2012	7.98	7.98	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.42	10/4/2012	7.42	7.42	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.65	4/16/2013	7.65	7.65	
MW-34A	PH, FIELD (STANDARD UNITS)	01	6.96	10/14/2013	6.96	6.96	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.7	4/16/2014	7.7	7.7	
MW-34A	PH, FIELD (STANDARD UNITS)	01	8.01	10/2/2014	8.01	8.01	
MW-34A	PH, FIELD (STANDARD UNITS)	01	8.07	4/14/2015	8.07	8.07	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.81	10/7/2015	7.81	7.81	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.91	12/21/2015	7.91	7.91	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.92	4/5/2016	7.92	7.92	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.52	7/7/2016	7.52	7.52	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.4	7/28/2016	7.4	7.4	
MW-34A	PH, FIELD (STANDARD UNITS)	01	8.19	10/13/2016	8.19	8.19	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.43	12/29/2016	7.43	7.43	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.71	1/25/2017	7.71	7.71	
MW-34A	PH, FIELD (STANDARD UNITS)	01	8.03	4/11/2017	8.03	8.03	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.57	6/6/2017	7.57	7.57	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.39	8/7/2017	7.39	7.39	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.61	10/4/2017	7.61	7.61	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.67	10/24/2017	7.67	7.67	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.8	4/24/2018	7.8	7.8	
MW-34A	PH, FIELD (STANDARD UNITS)	01	8.12	9/21/2018	8.12	8.12	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.64	10/22/2018	7.64	7.64	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.73	4/2/2019	7.73	7.73	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.79	10/8/2019	7.79	7.79	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.4	5/28/2020	7.4	7.4	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.81	10/8/2020	7.81	7.81	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.57	2/25/2021	7.57	7.57	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.93	4/13/2021	7.93	7.93	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.61	6/11/2021	7.61	7.61	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.68	10/12/2021	7.68	7.68	
MW-34A	PH, FIELD (STANDARD UNITS)	01	8.34	4/12/2022	8.34	8.34	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.53	10/27/2022	7.53	7.53	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.45	12/2/2022	7.45	7.45	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.56	1/13/2023	7.56	7.56	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.36	2/21/2023	7.36	7.36	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.58	3/27/2023	7.58	7.58	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.53	4/26/2023	7.53	7.53	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.85	5/31/2023	7.85	7.85	
MW-34A	PH, FIELD (STANDARD UNITS)	01	7.63	6/30/2023	7.63	7.63	
Calculations							
Count						58	
Mean						7.64	
PAL Limit (NR 140.20(2)(a)						+/- 1	
Upper PAL, Calculated						8.64	
Lower PAL, Calculated						6.64	
Upper PAL, Rounded						8.7	
Lower PAL, Rounded						6.6	

Duplicate Data Not Used for Calculations							

Note: Data through 10/2015 downloaded from GEMS, 12/2015 - 10/2022 downloaded from ChemPoint, later data from PacePort

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

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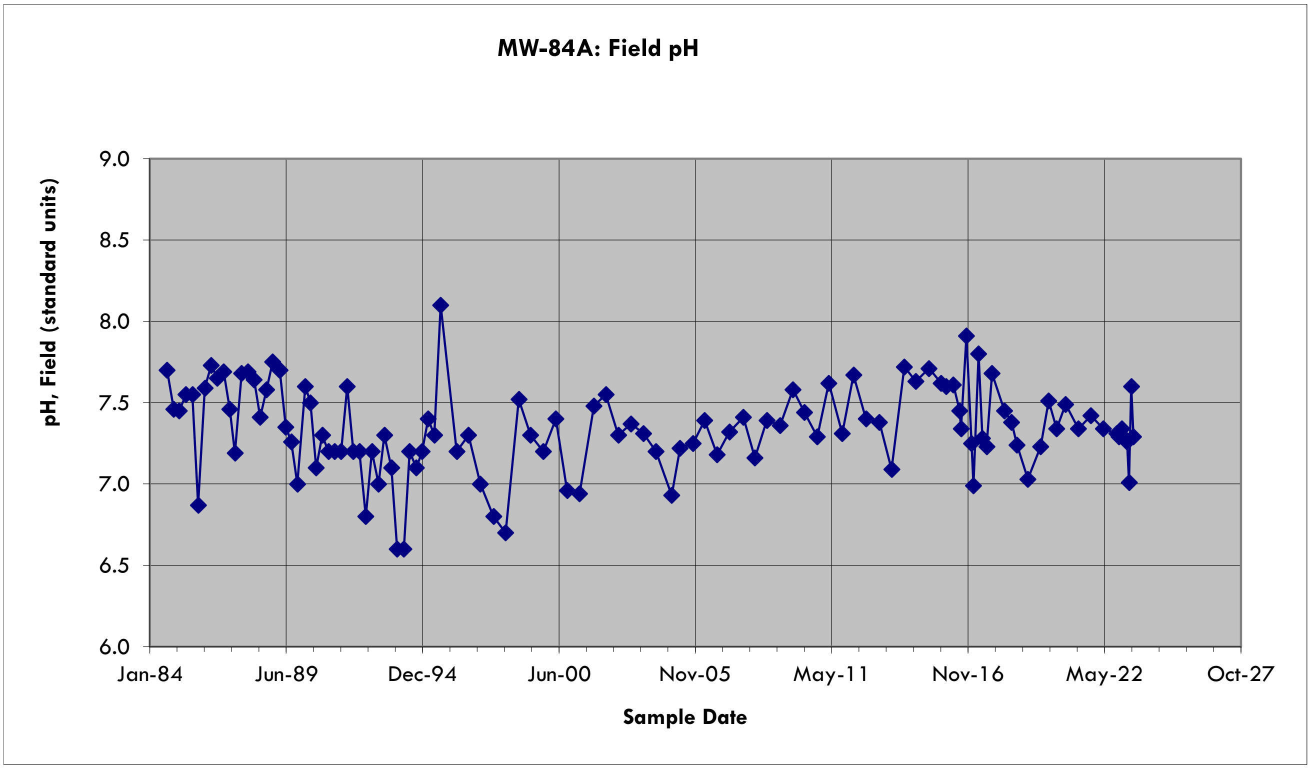
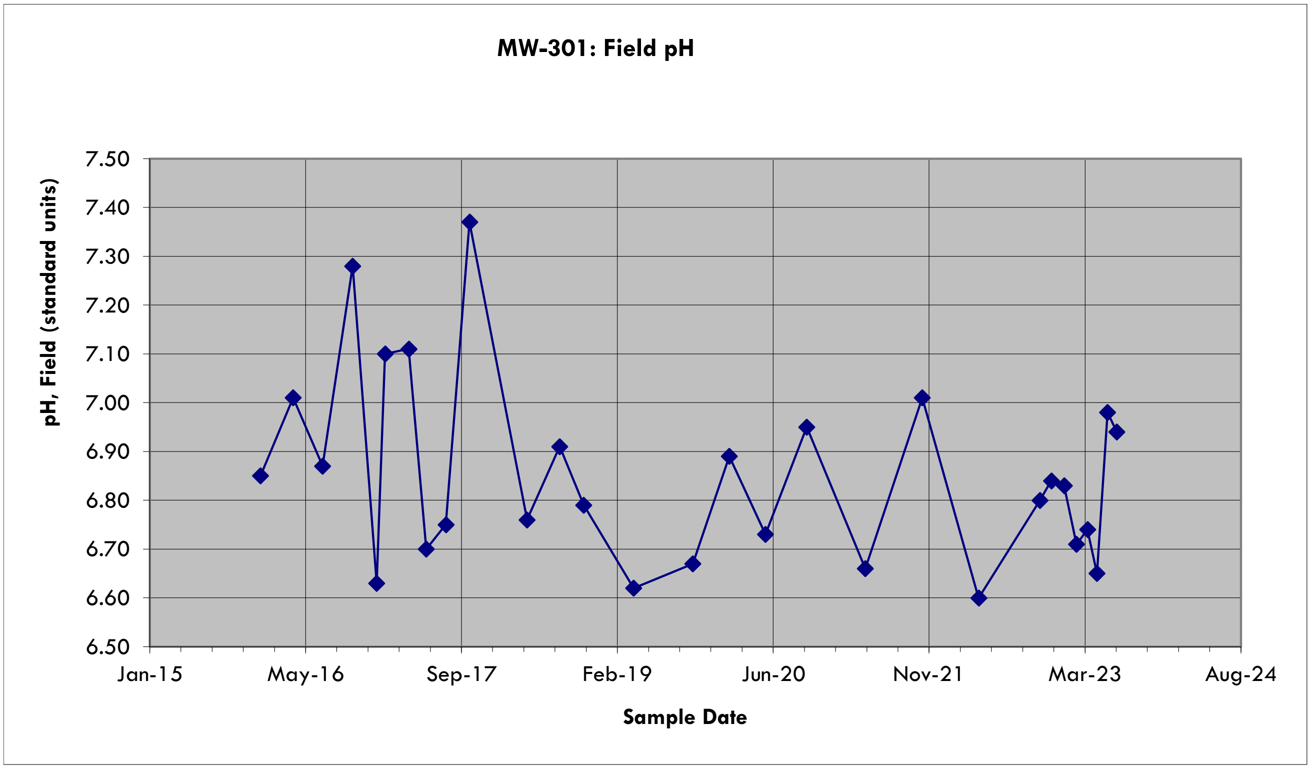


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.70	9/7/1984	7.70	7.70	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.46	12/17/1984	7.46	7.46	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.45	3/7/1985	7.45	7.45	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.55	6/14/1985	7.55	7.55	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.55	9/18/1985	7.55	7.55	
MW-84A	PH, FIELD (STANDARD UNITS)	01	6.87	12/12/1985	6.87	6.87	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.59	3/21/1986	7.59	7.59	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.73	6/20/1986	7.73	7.73	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.65	9/18/1986	7.65	7.65	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.69	12/19/1986	7.69	7.69	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.46	3/20/1987	7.46	7.46	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.19	6/5/1987	7.19	7.19	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.68	9/9/1987	7.68	7.68	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.69	12/9/1987	7.69	7.69	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.64	3/10/1988	7.64	7.64	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.41	6/7/1988	7.41	7.41	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.58	9/9/1988	7.58	7.58	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.75	12/7/1988	7.75	7.75	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.70	3/21/1989	7.70	7.70	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.70	3/22/1989	7.70	7.70	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.35	6/16/1989	7.35	7.35	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.26	9/7/1989	7.26	7.26	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.00	12/6/1989	7.00	7.00	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.60	3/29/1990	7.60	7.60	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.50	6/14/1990	7.50	7.50	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.10	9/6/1990	7.10	7.10	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.30	12/7/1990	7.30	7.30	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	3/6/1991	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	6/3/1991	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	9/6/1991	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.60	12/5/1991	7.60	7.60	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	3/2/1992	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	6/2/1992	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	6.80	9/2/1992	6.80	6.80	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	12/2/1992	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.00	3/10/1993	7.00	7.00	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.30	6/3/1993	7.30	7.30	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.10	9/14/1993	7.10	7.10	
MW-84A	PH, FIELD (STANDARD UNITS)	01	6.60	12/7/1993	6.60	6.60	
MW-84A	PH, FIELD (STANDARD UNITS)	01	6.60	3/15/1994	6.60	6.60	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	6/7/1994	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.10	9/13/1994	7.10	7.10	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	12/6/1994	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.40	3/7/1995	7.40	7.40	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.30	6/5/1995	7.30	7.30	
MW-84A	PH, FIELD (STANDARD UNITS)	01	8.10	9/5/1995	8.10	8.10	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	4/29/1996	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.30	10/17/1996	7.30	7.30	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.00	4/8/1997	7.00	7.00	
MW-84A	PH, FIELD (STANDARD UNITS)	01	6.80	10/20/1997	6.80	6.80	
MW-84A	PH, FIELD (STANDARD UNITS)	01	6.70	4/14/1998	6.70	6.70	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.52	10/27/1998	7.52	7.52	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.30	4/16/1999	7.30	7.30	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	10/21/1999	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.40	4/20/2000	7.40	7.40	
MW-84A	PH, FIELD (STANDARD UNITS)	01	6.96	10/4/2000	6.96	6.96	
MW-84A	PH, FIELD (STANDARD UNITS)	01	6.94	4/3/2001	6.94	6.94	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.48	10/30/2001	7.48	7.48	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.55	4/25/2002	7.55	7.55	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.30	10/25/2002	7.30	7.30	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.37	4/28/2003	7.37	7.37	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.31	10/29/2003	7.31	7.31	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.20	4/27/2004	7.20	7.20	
MW-84A	PH, FIELD (STANDARD UNITS)	01	6.93	12/14/2004	6.93	6.93	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.22	4/14/2005	7.22	7.22	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.25	10/26/2005	7.25	7.25	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.39	4/13/2006	7.39	7.39	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.18	10/12/2006	7.18	7.18	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.32	4/10/2007	7.32	7.32	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.41	10/30/2007	7.41	7.41	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.16	4/17/2008	7.16	7.16	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.39	10/10/2008	7.39	7.39	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.36	4/22/2009	7.36	7.36	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.58	10/27/2009	7.58	7.58	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.44	4/14/2010	7.44	7.44	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.29	10/20/2010	7.29	7.29	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.62	4/6/2011	7.62	7.62	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.31	10/21/2011	7.31	7.31	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.67	4/4/2012	7.67	7.67	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.40	10/4/2012	7.40	7.40	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.38	4/17/2013	7.38	7.38	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.09	10/14/2013	7.09	7.09	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.72	4/17/2014	7.72	7.72	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.63	10/2/2014	7.63	7.63	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.71	4/13/2015	7.71	7.71	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.62	10/8/2015	7.62	7.62	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.60	12/22/2015	7.60	7.60	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.61	4/5/2016	7.61	7.61	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.45	7/8/2016	7.45	7.45	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.34	7/28/2016	7.34	7.34	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.91	10/13/2016	7.91	7.91	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.25	12/29/2016	7.25	7.25	
MW-84A	PH, FIELD (STANDARD UNITS)	01	6.99	1/25/2017	6.99	6.99	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.80	4/11/2017	7.80	7.80	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.28	6/6/2017	7.28	7.28	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.23	8/8/2017	7.23	7.23	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.68	10/24/2017	7.68	7.68	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.45	4/25/2018	7.45	7.45	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.38	8/8/2018	7.38	7.38	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.24	10/24/2018	7.24	7.24	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.03	4/3/2019	7.03	7.03	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.23	10/9/2019	7.23	7.23	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.51	2/3/2020	7.51	7.51	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.34	5/29/2020	7.34	7.34	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.49	10/8/2020	7.49	7.49	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.34	4/14/2021	7.34	7.34	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.42	10/14/2021	7.42	7.42	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.34	4/13/2022	7.34	7.34	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.31	10/27/2022	7.31	7.31	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.29	12/2/2022	7.29	7.29	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.34	1/12/2023	7.34	7.34	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.28	2/21/2023	7.28	7.28	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.26	3/28/2023	7.26	7.26	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.01	4/27/2023	7.01	7.01	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.60	5/30/2023	7.60	7.60	
MW-84A	PH, FIELD (STANDARD UNITS)	01	7.29	6/29/2023	7.29	7.29	
Calculations							
Count						116	
Mean						7.35	
PAL Limit (NR 140.20(2)(a)						+/- 1	
Upper PAL, Calculated						8.35	
Lower PAL, Calculated						6.35	
Upper PAL, Rounded						8.4	
Lower PAL, Rounded						6.3	



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-301	PH, FIELD (STANDARD UNITS)	01	6.85	12/22/2015	6.85	6.85	
MW-301	PH, FIELD (STANDARD UNITS)	01	7.01	4/5/2016	7.01	7.01	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.87	7/8/2016	6.87	6.87	
MW-301	PH, FIELD (STANDARD UNITS)	01	7.28	10/13/2016	7.28	7.28	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.63	12/29/2016	6.63	6.63	
MW-301	PH, FIELD (STANDARD UNITS)	01	7.10	1/25/2017	7.10	7.10	
MW-301	PH, FIELD (STANDARD UNITS)	01	7.11	4/11/2017	7.11	7.11	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.70	6/6/2017	6.70	6.70	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.75	8/8/2017	6.75	6.75	
MW-301	PH, FIELD (STANDARD UNITS)	01	7.37	10/23/2017	7.37	7.37	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.76	4/25/2018	6.76	6.76	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.91	8/8/2018	6.91	6.91	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.79	10/24/2018	6.79	6.79	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.62	4/2/2019	6.62	6.62	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.67	10/9/2019	6.67	6.67	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.89	2/3/2020	6.89	6.89	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.73	5/29/2020	6.73	6.73	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.95	10/8/2020	6.95	6.95	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.66	4/14/2021	6.66	6.66	
MW-301	PH, FIELD (STANDARD UNITS)	01	7.01	10/14/2021	7.01	7.01	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.60	4/13/2022	6.60	6.60	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.80	10/27/2022	6.80	6.80	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.84	12/2/2022	6.84	6.84	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.83	1/12/2023	6.83	6.83	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.71	2/21/2023	6.71	6.71	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.74	3/28/2023	6.74	6.74	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.65	4/27/2023	6.65	6.65	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.98	5/31/2023	6.98	6.98	
MW-301	PH, FIELD (STANDARD UNITS)	01	6.94	6/30/2023	6.94	6.94	
Calculations							
Count						29	
Mean						6.85	
PAL Limit (NR 140.20(2)(a)						+/- 1	
Upper PAL, Calculated						7.85	
Lower PAL, Calculated						5.85	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
Upper PAL, Rounded						7.9	
Lower PAL, Rounded						5.8	

Duplicate Data Not Used for Calculations							

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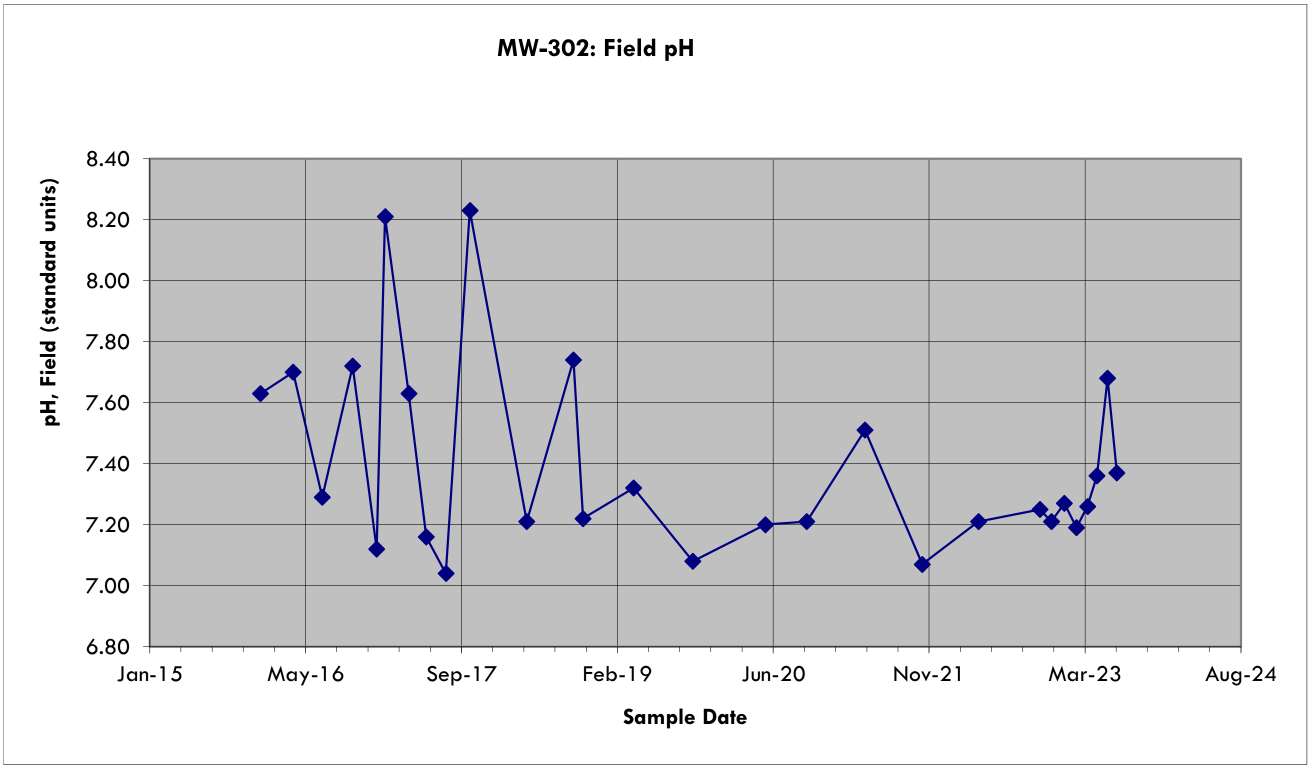

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-302	PH, FIELD (STANDARD UNITS)	01	7.63	12/22/2015	7.63	7.63	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.7	4/5/2016	7.7	7.7	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.29	7/7/2016	7.29	7.29	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.72	10/13/2016	7.72	7.72	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.12	12/29/2016	7.12	7.12	
MW-302	PH, FIELD (STANDARD UNITS)	01	8.21	1/25/2017	8.21	8.21	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.63	4/11/2017	7.63	7.63	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.16	6/6/2017	7.16	7.16	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.04	8/8/2017	7.04	7.04	
MW-302	PH, FIELD (STANDARD UNITS)	01	8.23	10/24/2017	8.23	8.23	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.21	4/24/2018	7.21	7.21	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.74	9/21/2018	7.74	7.74	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.22	10/22/2018	7.22	7.22	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.32	4/2/2019	7.32	7.32	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.08	10/9/2019	7.08	7.08	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.2	5/29/2020	7.2	7.2	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.21	10/8/2020	7.21	7.21	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.51	4/13/2021	7.51	7.51	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.07	10/14/2021	7.07	7.07	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.21	4/12/2022	7.21	7.21	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.25	10/27/2022	7.25	7.25	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.21	12/2/2022	7.21	7.21	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.27	1/13/2023	7.27	7.27	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.19	2/21/2023	7.19	7.19	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.26	3/28/2023	7.26	7.26	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.36	4/27/2023	7.36	7.36	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.68	5/31/2023	7.68	7.68	
MW-302	PH, FIELD (STANDARD UNITS)	01	7.37	6/30/2023	7.37	7.37	
Calculations							
Count						28	
Mean						7.40	
PAL Limit (NR 140.20(2)(a)						+/- 1	
Upper PAL, Calculated						8.40	
Lower PAL, Calculated						6.40	
Upper PAL, Rounded						8.4	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
Lower PAL, Rounded						6.3	

Duplicate Data Not Used for Calculations							

Note: Data through October 2022 downloaded from ChemPoint, later data from PacePort

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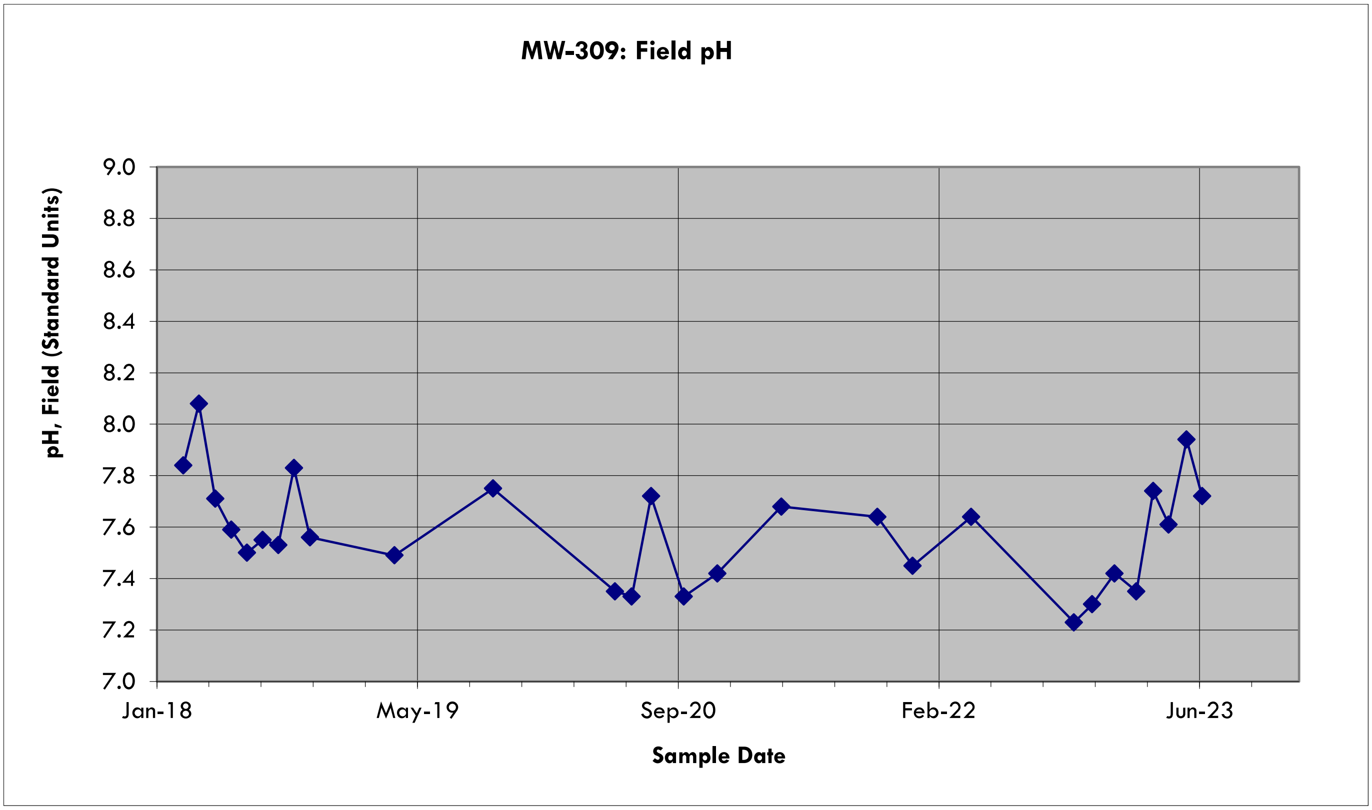

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-309	PH, FIELD (STANDARD UNITS)	01	7.84	2/21/2018	7.84	7.84	
MW-309	PH, FIELD (STANDARD UNITS)	01	8.08	3/23/2018	8.08	8.08	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.71	4/23/2018	7.71	7.71	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.59	5/24/2018	7.59	7.59	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.5	6/23/2018	7.5	7.5	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.55	7/23/2018	7.55	7.55	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.53	8/22/2018	7.53	7.53	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.83	9/21/2018	7.83	7.83	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.56	10/22/2018	7.56	7.56	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.49	4/2/2019	7.49	7.49	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.75	10/8/2019	7.75	7.75	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.35	5/29/2020	7.35	7.35	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.33	6/30/2020	7.33	7.33	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.72	8/6/2020	7.72	7.72	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.33	10/8/2020	7.33	7.33	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.42	12/11/2020	7.42	7.42	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.68	4/13/2021	7.68	7.68	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.64	10/14/2021	7.64	7.64	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.45	12/21/2021	7.45	7.45	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.64	4/12/2022	7.64	7.64	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.23	10/26/2022	7.23	7.23	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.3	11/30/2022	7.3	7.3	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.42	1/12/2023	7.42	7.42	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.35	2/23/2023	7.35	7.35	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.74	3/27/2023	7.74	7.74	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.61	4/26/2023	7.61	7.61	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.94	5/30/2023	7.94	7.94	
MW-309	PH, FIELD (STANDARD UNITS)	01	7.72	6/29/2023	7.72	7.72	
Calculations							
Count						28	
Mean						7.58	
PAL Limit (NR 140.20(2)(a)						+/- 1	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
Upper PAL, Calculated						8.58	
Lower PAL, Calculated						6.58	
Upper PAL, Rounded						8.6	
Lower PAL, Rounded						6.5	

Duplicate Data Not Used for Calculations							

Note:

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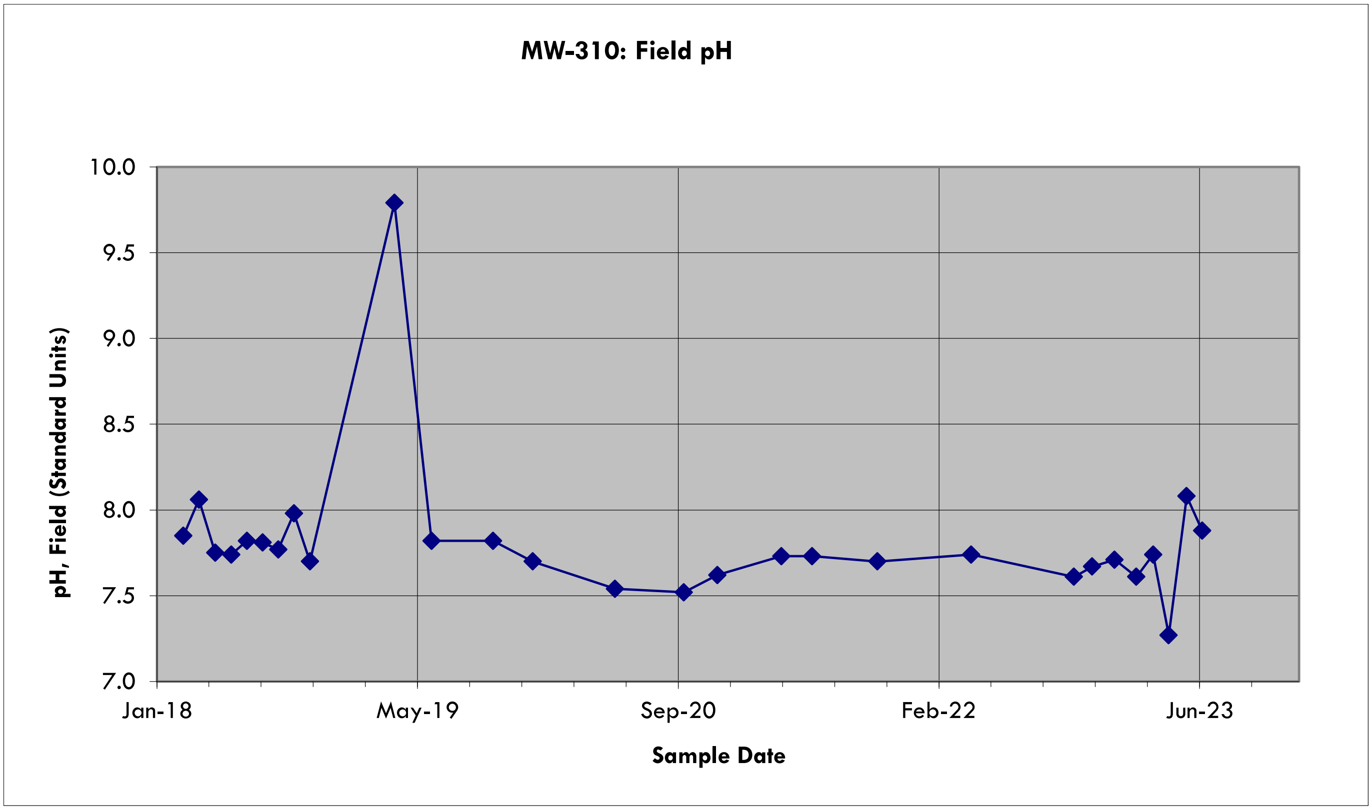
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-310	PH, FIELD (STANDARD UNITS)	01	7.85	2/21/2018	7.85	7.85	
MW-310	PH, FIELD (STANDARD UNITS)	01	8.06	3/23/2018	8.06	8.06	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.75	4/23/2018	7.75	7.75	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.74	5/24/2018	7.74	7.74	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.82	6/23/2018	7.82	7.82	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.81	7/23/2018	7.81	7.81	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.77	8/22/2018	7.77	7.77	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.98	9/21/2018	7.98	7.98	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.70	10/22/2018	7.70	7.70	
MW-310	PH, FIELD (STANDARD UNITS)	01	9.79	4/2/2019	9.79		outlier
MW-310	PH, FIELD (STANDARD UNITS)	01	7.82	6/12/2019	7.82	7.82	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.82	10/8/2019	7.82	7.82	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.70	12/23/2019	7.70	7.70	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.54	5/29/2020	7.54	7.54	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.52	10/8/2020	7.52	7.52	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.62	12/11/2020	7.62	7.62	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.73	4/13/2021	7.73	7.73	
MW-311	PH, FIELD (STANDARD UNITS)	02	7.73	6/11/2021	7.73	7.73	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.70	10/14/2021	7.70	7.70	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.74	4/12/2022	7.74	7.74	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.61	10/26/2022	7.61	7.61	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.67	11/30/2022	7.67	7.67	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.71	1/12/2023	7.71	7.71	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.61	2/23/2023	7.61	7.61	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.74	3/27/2023	7.74	7.74	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.27	4/26/2023	7.27	7.27	
MW-310	PH, FIELD (STANDARD UNITS)	01	8.08	5/30/2023	8.08	8.08	
MW-310	PH, FIELD (STANDARD UNITS)	01	7.88	6/29/2023	7.88	7.88	
Calculations							
Count						27	
Mean						7.74	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
PAL Limit (NR 140.20(2)(a)						+/- 1	
Upper PAL, Calculated						8.74	
Lower PAL, Calculated						6.74	
Upper PAL, Rounded						8.8	
Lower PAL, Rounded						6.7	

Duplicate Data Not Used for Calculations							

Note:

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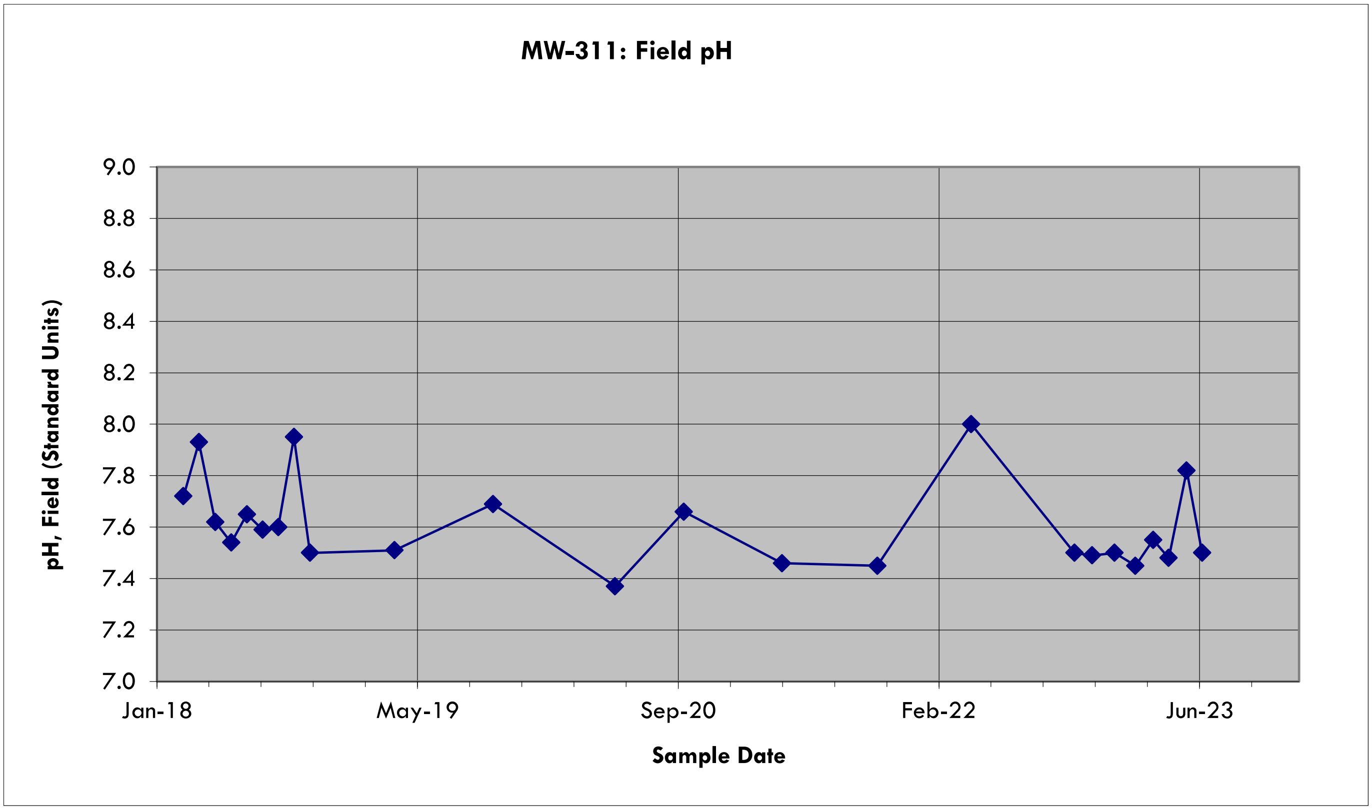
B = Compound detected in blank.

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-311	PH, FIELD (STANDARD UNITS)	01	7.72	2/21/2018	7.72	7.72	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.93	3/23/2018	7.93	7.93	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.62	4/23/2018	7.62	7.62	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.54	5/24/2018	7.54	7.54	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.65	6/23/2018	7.65	7.65	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.59	7/23/2018	7.59	7.59	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.60	8/22/2018	7.60	7.60	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.95	9/21/2018	7.95	7.95	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.50	10/22/2018	7.50	7.50	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.51	4/2/2019	7.51	7.51	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.69	10/8/2019	7.69	7.69	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.37	5/29/2020	7.37	7.37	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.66	10/8/2020	7.66	7.66	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.46	4/14/2021	7.46	7.46	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.45	10/14/2021	7.45	7.45	
MW-311	PH, FIELD (STANDARD UNITS)	01	8.00	4/12/2022	8.00	8.00	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.50	10/27/2022	7.50	7.50	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.49	11/30/2022	7.49	7.49	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.50	1/12/2023	7.50	7.50	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.45	2/21/2023	7.45	7.45	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.55	3/27/2023	7.55	7.55	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.48	4/26/2023	7.48	7.48	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.82	5/30/2023	7.82	7.82	
MW-311	PH, FIELD (STANDARD UNITS)	01	7.50	6/29/2023	7.50	7.50	
Calculations							
Count						24	
Mean						7.61	
PAL Limit (NR 140.20(2)(a)						+/- 1	
Upper PAL, Calculated						8.61	
Lower PAL, Calculated						6.61	
Upper PAL, Rounded						8.7	
Lower PAL, Rounded						6.6	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
Duplicate Data Not Used for Calculations							

Note:

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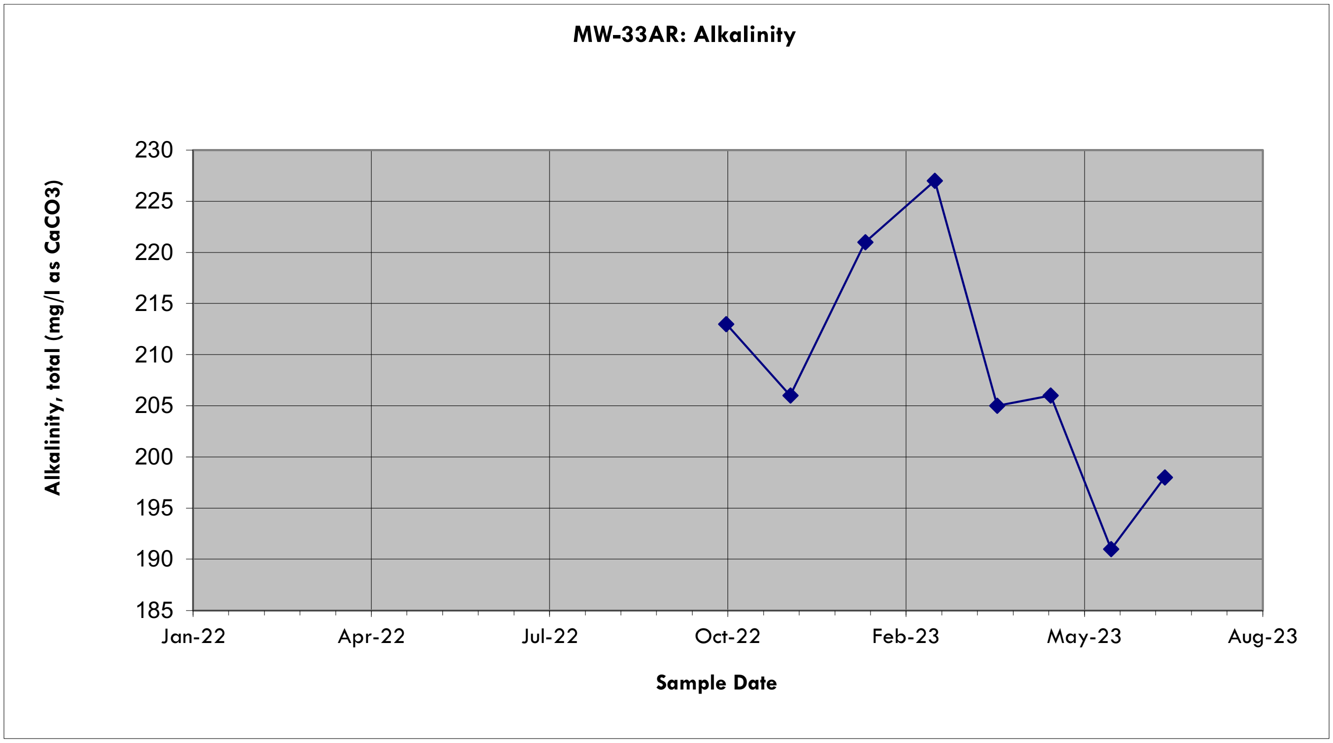
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	Alkalinity, Total as CaCO3	01	213	10/27/2022	213	213	
MW-33AR	Alkalinity, Total as CaCO3	01	206	12/2/2022	206	206	
MW-33AR	Alkalinity, Total as CaCO3	01	221	1/13/2023	221	221	
MW-33AR	Alkalinity, Total as CaCO3	01	227	2/21/2023	227	227	
MW-33AR	Alkalinity, Total as CaCO3	01	205	3/28/2023	205	205	
MW-33AR	Alkalinity, Total as CaCO3	01	206	4/27/2023	206	206	
MW-33AR	Alkalinity, Total as CaCO3	01	191	5/31/2023	191	191	
MW-33AR	Alkalinity, Total as CaCO3	01	198	6/30/2023	198	198	
Calculations							
Count						8	
Mean						208.38	
Std Dev						11.71	
3 X SD (PAL)						35.13	
Min Increase (PAL)						100	
PAL, Calculated						308.38	
PAL, Rounded						310	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from PacePort

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P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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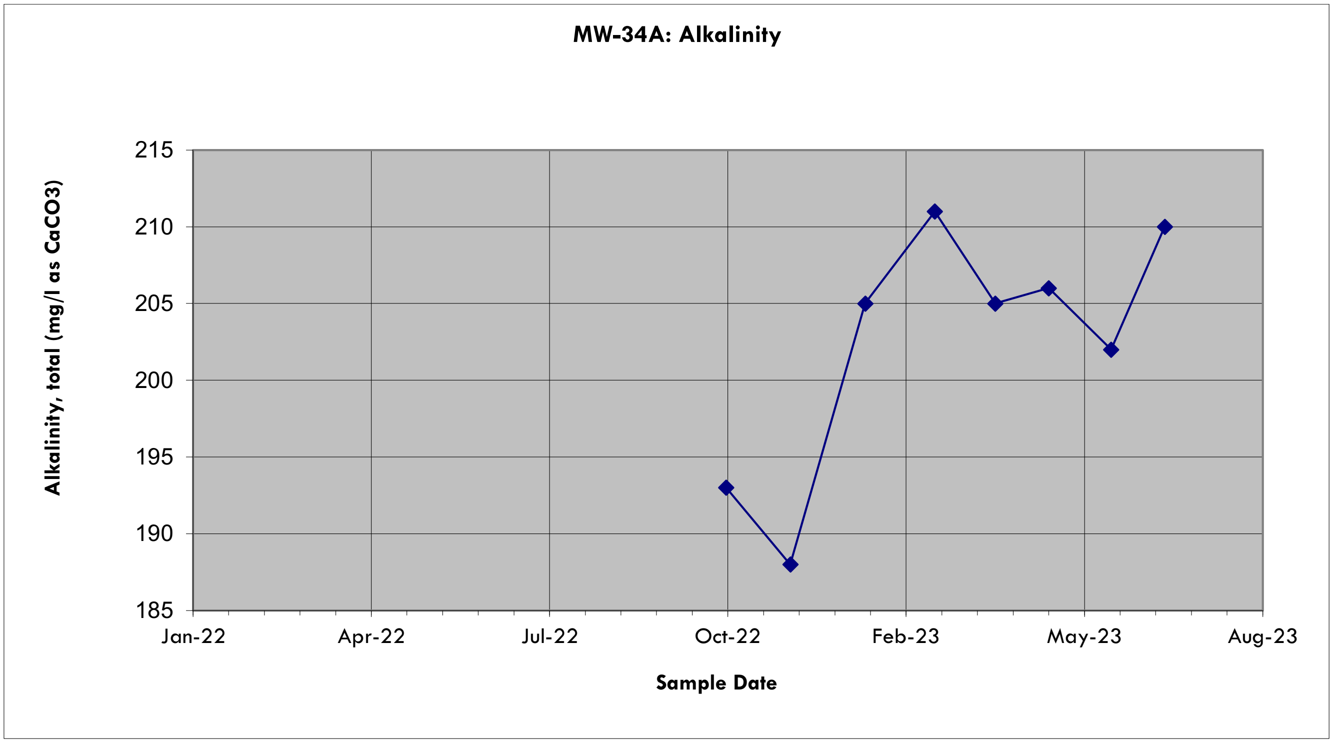

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	Alkalinity, Total as CaCO3	01	193	10/27/2022	193	193	
MW-34A	Alkalinity, Total as CaCO3	01	188	12/2/2022	188	188	
MW-34A	Alkalinity, Total as CaCO3	01	205	1/13/2023	205	205	
MW-34A	Alkalinity, Total as CaCO3	01	211	2/21/2023	211	211	
MW-34A	Alkalinity, Total as CaCO3	01	205	3/27/2023	205	205	
MW-34A	Alkalinity, Total as CaCO3	01	206	4/26/2023	206	206	
MW-34A	Alkalinity, Total as CaCO3	01	202	5/31/2023	202	202	
MW-34A	Alkalinity, Total as CaCO3	01	210	6/30/2023	210	210	
Calculations							
Count						8	
Mean						202.50	
Std Dev						8.05	
3 X SD (PAL)						24.16	
Min Increase (PAL)						100	
PAL, Calculated						302.50	
PAL, Rounded						310	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from PacePort

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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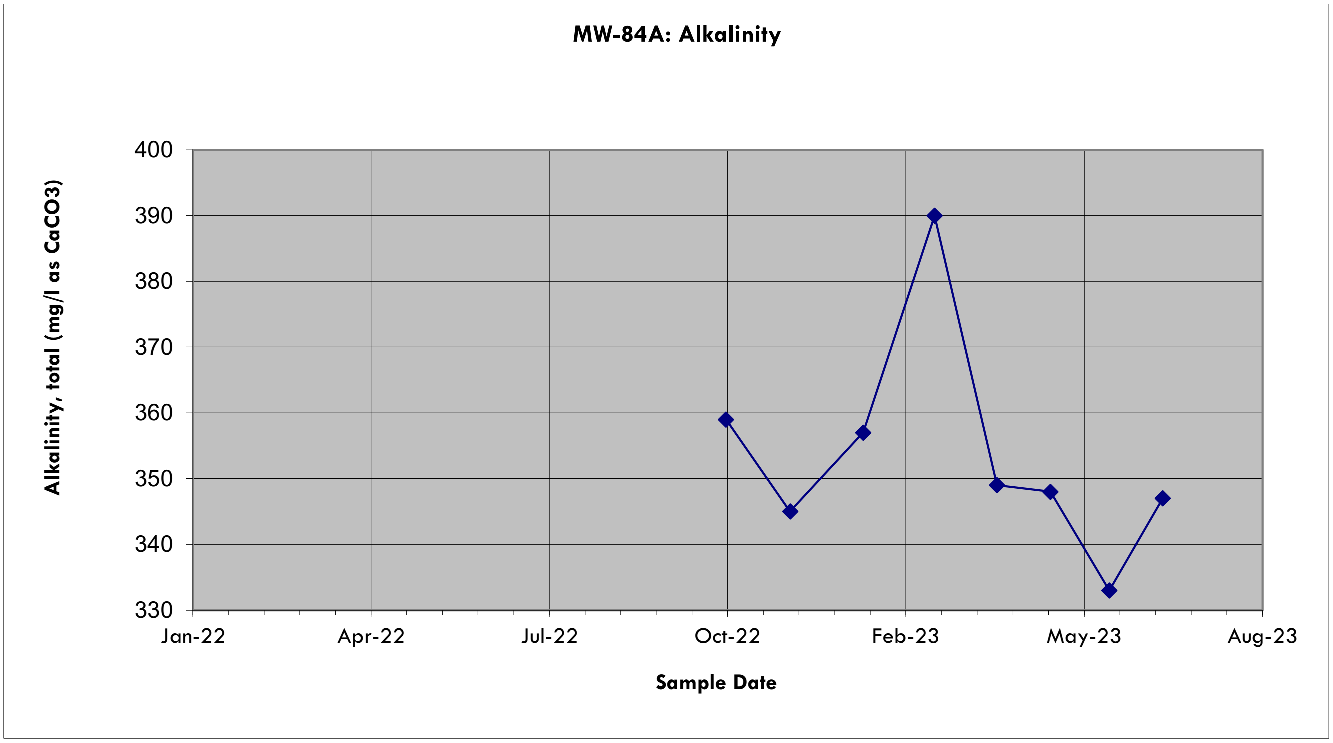

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84A	Alkalinity, Total as CaCO3	01	359	10/27/2022	359	359	
MW-84A	Alkalinity, Total as CaCO3	01	345	12/2/2022	345	345	
MW-84A	Alkalinity, Total as CaCO3	01	357	1/12/2023	357	357	
MW-84A	Alkalinity, Total as CaCO3	01	390	2/21/2023	390	390	
MW-84A	Alkalinity, Total as CaCO3	01	349	3/28/2023	349	349	
MW-84A	Alkalinity, Total as CaCO3	01	348	4/27/2023	348	348	
MW-84A	Alkalinity, Total as CaCO3	01	333	5/30/2023	333	333	
MW-84A	Alkalinity, Total as CaCO3	01	347	6/29/2023	347	347	
Calculations							
Count						8	
Mean						353.50	
Std Dev						16.73	
3 X SD (PAL)						50.20	
Min Increase (PAL)						100	
PAL, Calculated						453.50	
PAL, Rounded						460	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from PacePort

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P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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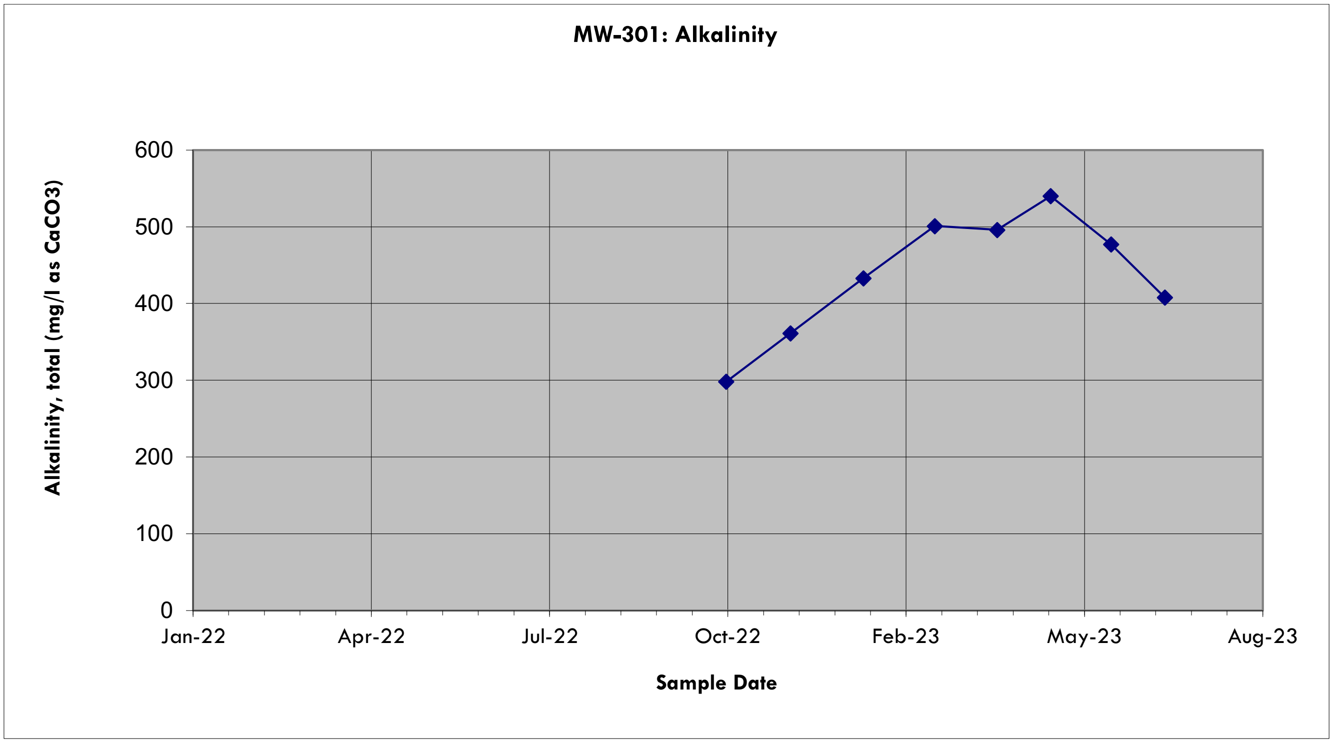

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-301	Alkalinity, Total as CaCO3	01	298	10/27/2022	298	298	
MW-301	Alkalinity, Total as CaCO3	01	361	12/2/2022	361	361	
MW-301	Alkalinity, Total as CaCO3	01	433	1/12/2023	433	433	
MW-301	Alkalinity, Total as CaCO3	01	501	2/21/2023	501	501	
MW-301	Alkalinity, Total as CaCO3	01	496	3/28/2023	496	496	
MW-301	Alkalinity, Total as CaCO3	01	540	4/27/2023	540	540	
MW-301	Alkalinity, Total as CaCO3	01	477	5/31/2023	477	477	
MW-301	Alkalinity, Total as CaCO3	01	408	6/30/2023	408	408	
Calculations							
Count						8	
Mean						439.25	
Std Dev						80.80	
3 X SD (PAL)						242.40	
Min Increase (PAL)						100	
PAL, Calculated						681.65	
PAL, Rounded						690	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from PacePort

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B = Compound detected in blank.
M = Failed method QC check.

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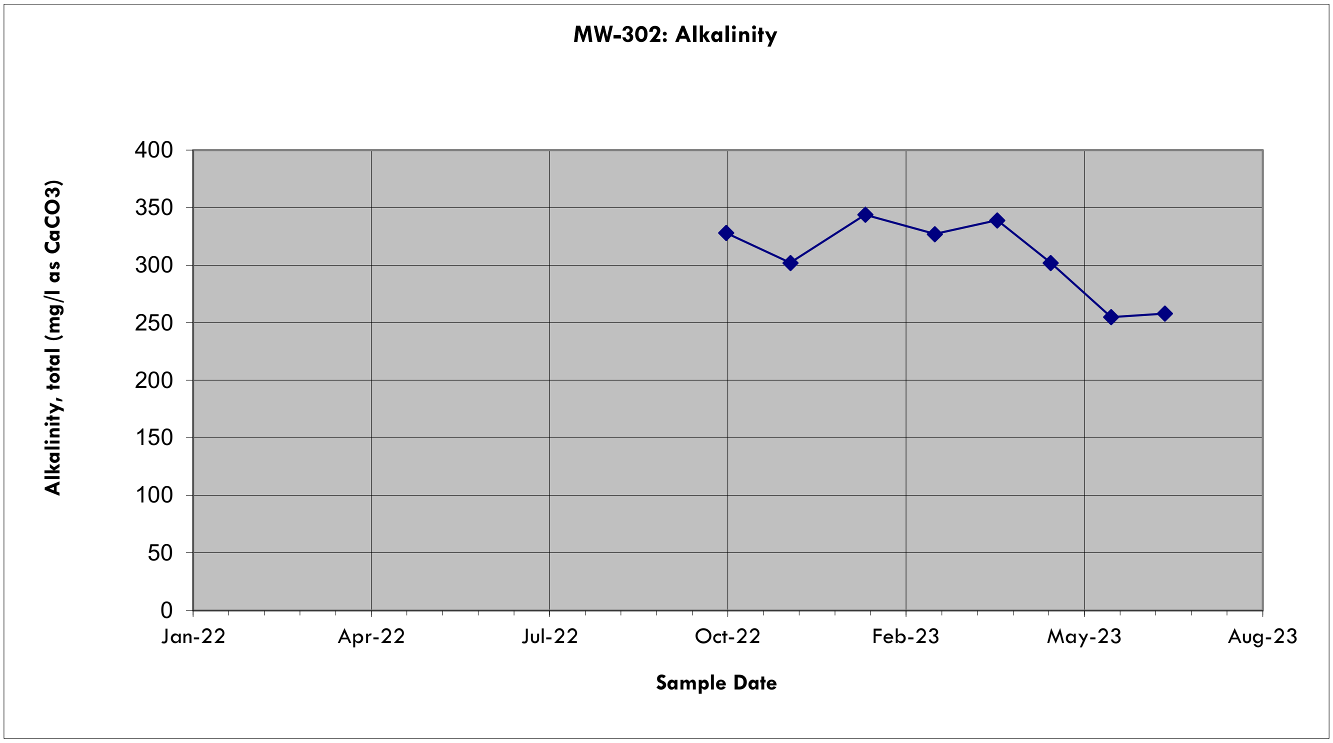

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-302	Alkalinity, Total as CaCO3	01	328	10/27/2022	328	328	
MW-302	Alkalinity, Total as CaCO3	01	302	12/2/2022	302	302	
MW-302	Alkalinity, Total as CaCO3	01	344	1/13/2023	344	344	
MW-302	Alkalinity, Total as CaCO3	01	327	2/21/2023	327	327	
MW-302	Alkalinity, Total as CaCO3	01	339	3/28/2023	339	339	
MW-302	Alkalinity, Total as CaCO3	01	302	4/27/2023	302	302	
MW-302	Alkalinity, Total as CaCO3	01	255	5/31/2023	255	255	
MW-302	Alkalinity, Total as CaCO3	01	258	6/30/2023	258	258	
Calculations							
Count						8	
Mean						306.88	
Std Dev						34.62	
3 X SD (PAL)						103.85	
Min Increase (PAL)						100	
PAL, Calculated						410.73	
PAL, Rounded						420	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from PacePort

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B = Compound detected in blank.
M = Failed method QC check.

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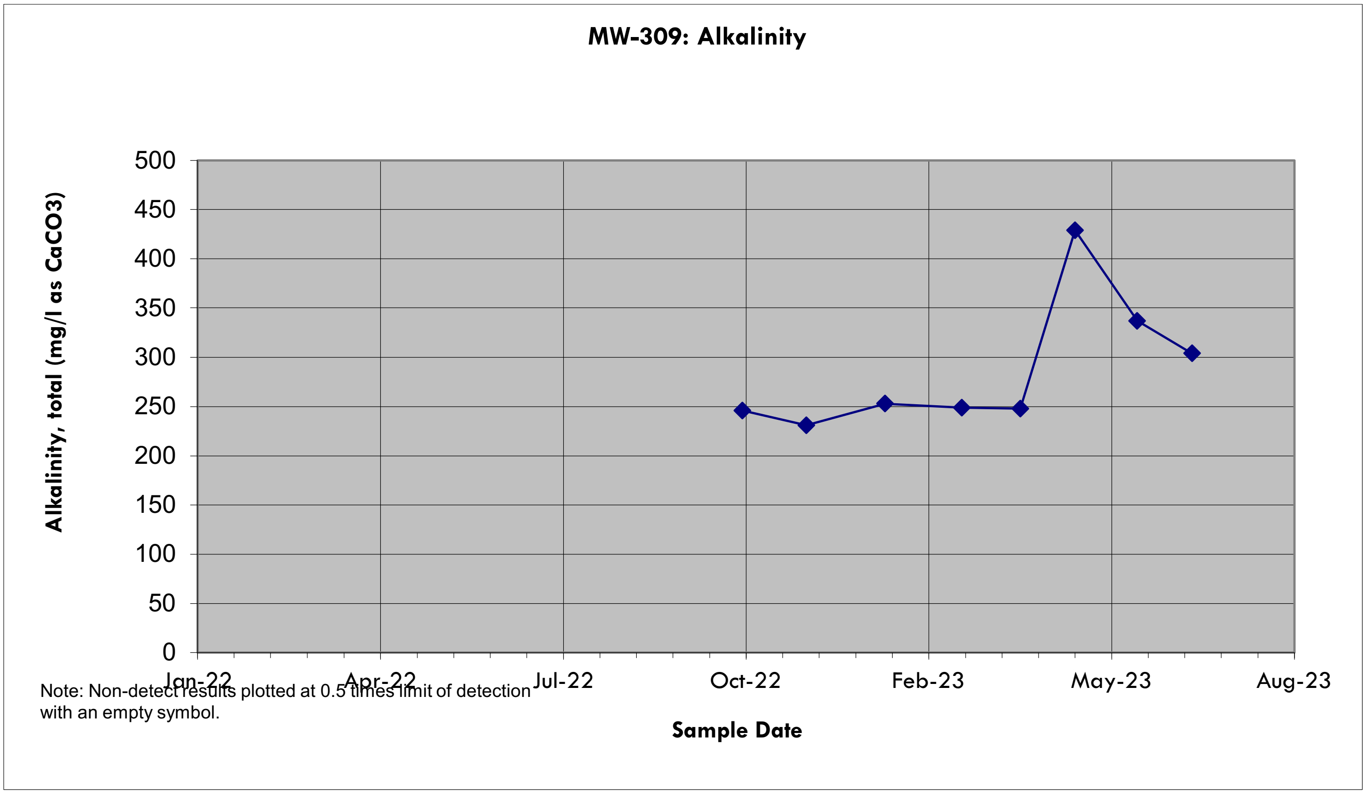

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-309	ALKALINITY, TOTAL (MG/L AS CACO3)	01	246	10/26/2022	246	246	
MW-309	ALKALINITY, TOTAL (MG/L AS CACO3)	01	231	11/30/2022	231	231	
MW-309	ALKALINITY, TOTAL (MG/L AS CACO3)	01	253	1/12/2023	253	253	
MW-309	ALKALINITY, TOTAL (MG/L AS CACO3)	01	249	2/23/2023	249	249	
MW-309	ALKALINITY, TOTAL (MG/L AS CACO3)	01	248	3/27/2023	248	248	
MW-309	ALKALINITY, TOTAL (MG/L AS CACO3)	01	429	4/26/2023	429	429	
MW-309	ALKALINITY, TOTAL (MG/L AS CACO3)	01	337	5/30/2023	337	337	
MW-309	ALKALINITY, TOTAL (MG/L AS CACO3)	01	304	6/29/2023	304	304	
Calculations							
Count						8	
Mean						287.13	
Std Dev						67.50	
3 X SD (PAL)						202.49	
Min Increase (PAL)						100	
PAL, Calculated						489.62	
PAL, Rounded						490	

Duplicate Data Not Used for Calculations							

Notes:

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P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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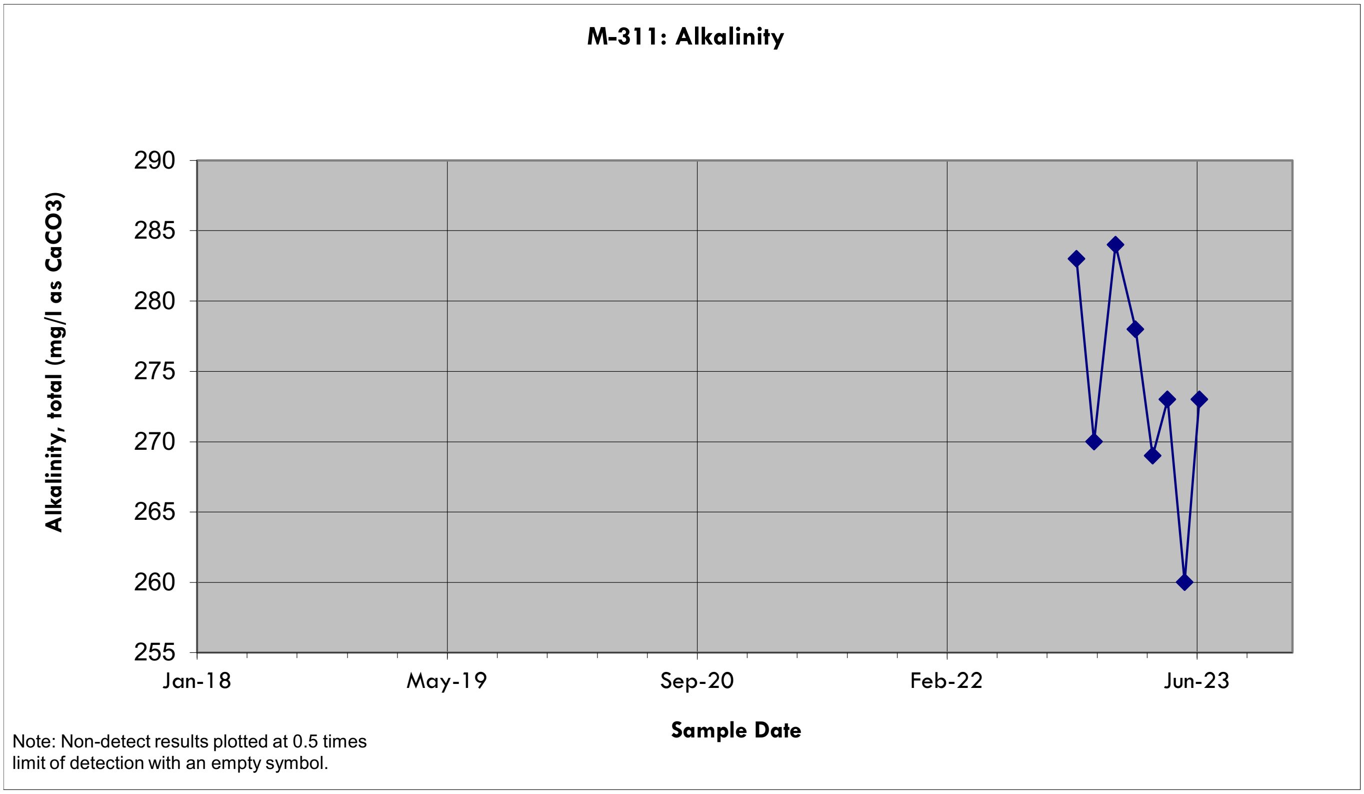

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
M-311	ALKALINITY, TOTAL (MG/L AS CACO3)	01	283	10/26/2022	283	283	
M-311	ALKALINITY, TOTAL (MG/L AS CACO3)	01	270	11/30/2022	270	270	
M-311	ALKALINITY, TOTAL (MG/L AS CACO3)	01	284	1/12/2023	284	284	
M-311	ALKALINITY, TOTAL (MG/L AS CACO3)	01	278	2/21/2023	278	278	
M-311	ALKALINITY, TOTAL (MG/L AS CACO3)	01	269	3/27/2023	269	269	
M-311	ALKALINITY, TOTAL (MG/L AS CACO3)	01	273	4/26/2023	273	273	
M-311	ALKALINITY, TOTAL (MG/L AS CACO3)	01	260	5/30/2023	260	260	
M-311	ALKALINITY, TOTAL (MG/L AS CACO3)	01	273	6/29/2023	273	273	
Calculations							
Count						8	
Mean						273.75	
Std Dev						7.89	
3 X SD (PAL)						23.66	
Min Increase (PAL)						100	
PAL, Calculated						373.75	
PAL, Rounded						380	

Duplicate Data Not Used for Calculations							

Calculated by: RM, 7/21/2023
Checked by:

Notes:

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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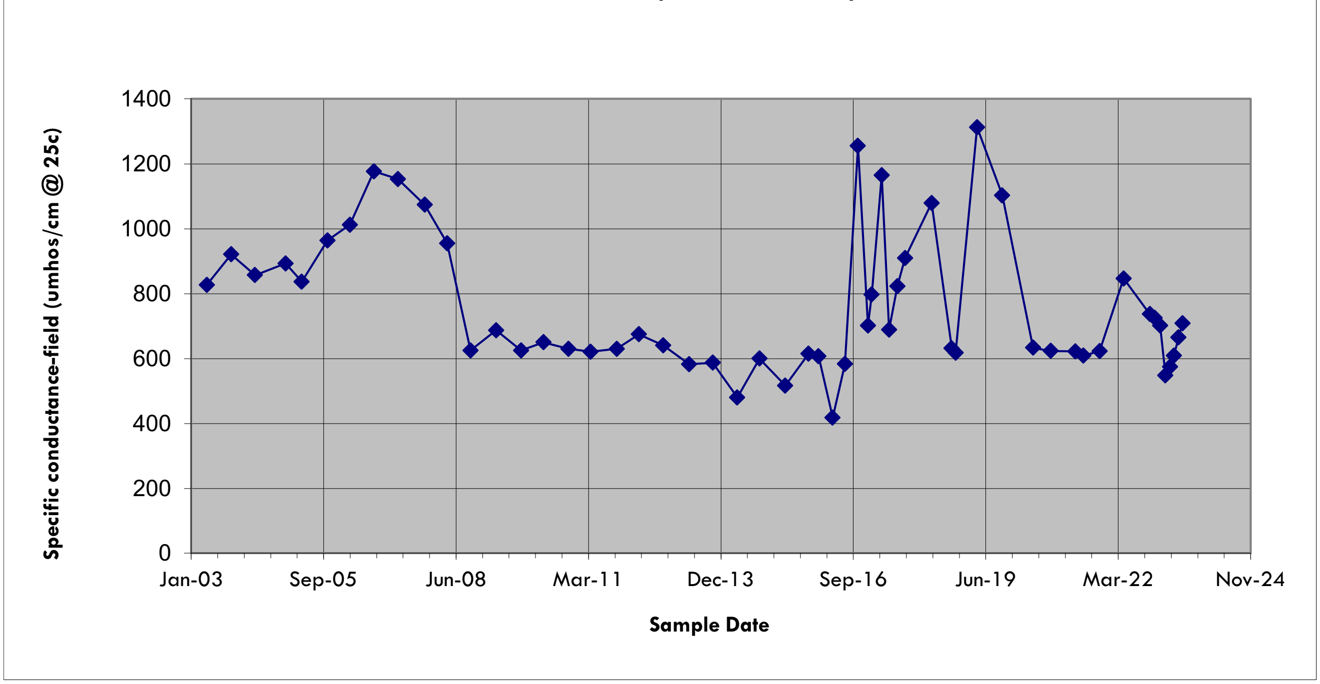
MW-33AR: Specific Conductivity

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	827	4/29/2003	827	827	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	921	10/30/2003	921	921	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	857	4/27/2004	857	857	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	893	12/14/2004	893	893	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	837	4/15/2005	837	837	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	964	10/26/2005	964	964	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1012	4/13/2006	1012	1012	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1177	10/12/2006	1177	1177	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1153	4/11/2007	1153	1153	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1074	10/31/2007	1074	1074	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	955	4/17/2008	955	955	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	625	10/10/2008	625	625	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	687	4/21/2009	687	687	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	625	10/27/2009	625	625	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	4/14/2010	650	650	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	630	10/20/2010	630	630	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	621	4/6/2011	621	621	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	630	10/20/2011	630	630	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	675	4/4/2012	675	675	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	641	10/4/2012	641	641	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	583	4/17/2013	583	583	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	587	10/14/2013	587	587	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	480	4/16/2014	480	480	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	10/2/2014	600	600	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	517	4/14/2015	517	517	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	615	10/7/2015	615	615	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	607	12/21/2015	607	607	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	417.6	4/5/2016	417.6	417.6	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	583.4	7/7/2016	583.4	583.4	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1255	10/13/2016	1255		*
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	702	12/29/2016	702	702	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	797	1/25/2017	797	797	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1165	4/11/2017	1165		*
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	689	6/6/2017	689	689	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	823	8/7/2017	823	823	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	910	10/4/2017	910	910	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1079	4/24/2018	1079	1079	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	632	9/21/2018	632	632	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	618.4	10/22/2018	618.4	618.4	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1312	4/2/2019	1312	1312	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1103	10/8/2019	1103	1103	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	633.4	5/28/2020	633.4	633.4	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	623.5	10/8/2020	623.5	623.5	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	622	4/13/2021	622	622	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	609	6/11/2021	609	609	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	623.2	10/12/2021	623.2	623.2	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	847	4/12/2022	847	847	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	737	10/27/2022	737	737	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	725	12/2/2022	725	725	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	702	1/13/2023	702	702	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	547.8	2/21/2023	547.8	547.8	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	574.5	3/28/2023	574.5	574.5	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	609.3	4/27/2023	609.3	609.3	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	665	5/31/2023	665	665	
MW-33AR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	709	6/30/2023	709	709	
Calculations							
Count						53	
Mean						742.21	
Std Dev						195.17	
3 X SD (PAL)						585.51	
Min Increase (PAL)						200	
PAL, Calculated						1327.72	
PAL, Rounded						1,400	

Duplicate Data Not Used for Calculations							

Notes: Data for all events through October 2022 downloaded from GEMS

*: Readings from October 2016 and April 2017 not included in calculations due to an apparent meter issue.

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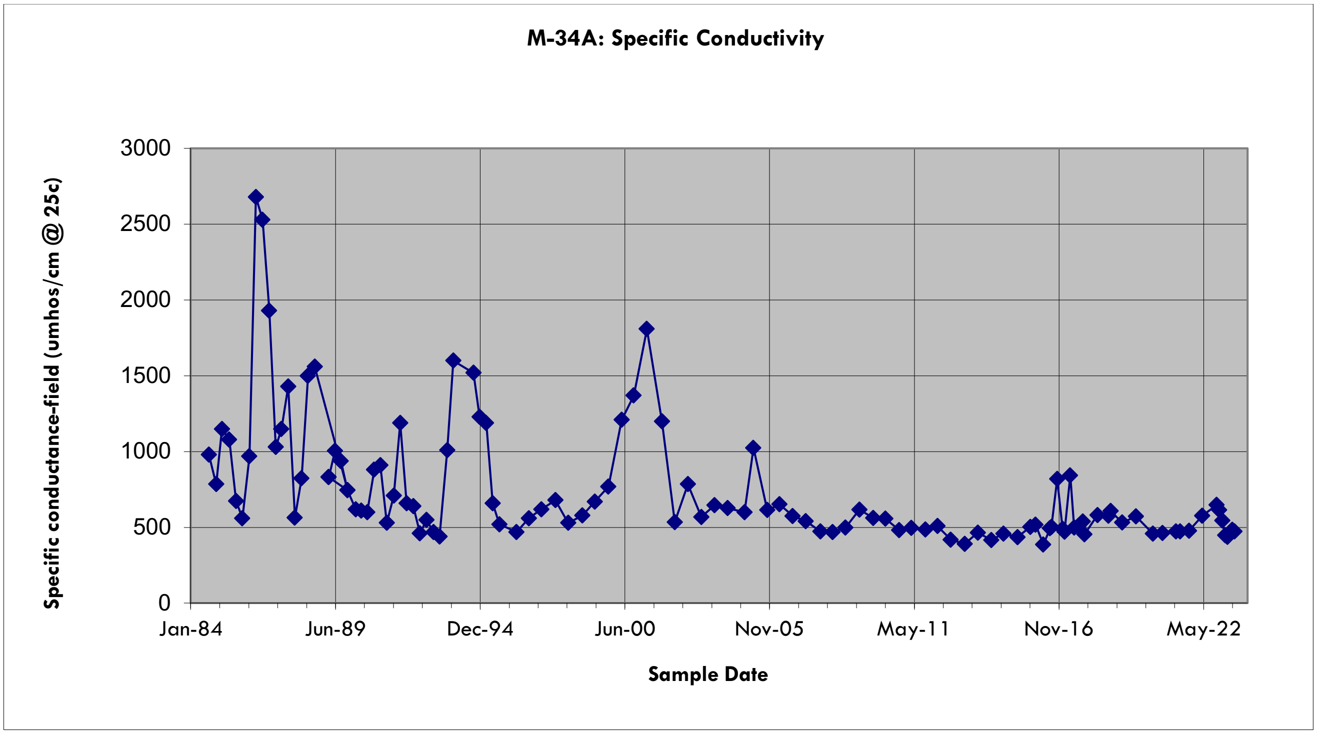


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	980	9/7/1984	980		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	785	12/17/1984	785		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1150	3/7/1985	1150		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1080	6/14/1985	1080		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	675	9/18/1985	675		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	560	12/12/1985	560		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	970	3/21/1986	970		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2680	6/20/1986	2680		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2530	9/18/1986	2530		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1930	12/19/1986	1930		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1030	3/20/1987	1030		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1150	6/5/1987	1150		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1430	9/9/1987	1430		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	565	12/9/1987	565		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	825	3/10/1988	825		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1500	6/7/1988	1500		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1560	9/9/1988	1560		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	745	12/7/1989	745		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	832	3/21/1989	832		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	832	3/22/1989	832		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1005	6/16/1989	1005		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	937	9/6/1989	937		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	746	12/5/1989	746		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	620	3/29/1990	620		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610	6/14/1990	610		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	9/5/1990	600		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	880	12/10/1990	880		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	910	3/5/1991	910		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	530	6/3/1991	530		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	710	9/6/1991	710		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1190	12/4/1991	1190		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	660	3/3/1992	660		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	640	6/2/1992	640		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	460	9/1/1992	460		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	12/2/1992	550		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470	3/10/1993	470		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	440	6/2/1993	440		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1010	9/14/1993	1010		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1600	12/7/1993	1600		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1520	9/13/1994	1520		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1230	12/6/1994	1230		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1190	3/7/1995	1190		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	660	6/6/1995	660		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	520	9/6/1995	520		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470	4/30/1996	470		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	560	10/16/1996	560		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	620	4/8/1997	620		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	680	10/20/1997	680		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	530	4/14/1998	530		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	580	10/27/1998	580		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	670	4/16/1999	670		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	770	10/21/1999	770		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1210	4/20/2000	1210		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1370	10/4/2000	1370		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1809	4/3/2001	1809		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1199	10/30/2001	1199		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	535	4/25/2002	535		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	785	10/24/2002	785		
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	569	4/29/2003	569	569	Using last 20 years of data for PAL calculation
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	647	10/29/2003	647	647	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	627	4/27/2004	627	627	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	601	12/14/2004	601	601	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1025	4/15/2005	1025	1025	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	614	10/26/2005	614	614	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	652	4/13/2006	652	652	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	575	10/12/2006	575	575	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	541	4/11/2007	541	541	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	473	10/31/2007	473	473	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470	4/17/2008	470	470	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	499	10/10/2008	499	499	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	617	4/21/2009	617	617	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	562	10/27/2009	562	562	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	559	4/14/2010	559	559	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	483	10/20/2010	483	483	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	496	4/6/2011	496	496	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	487	10/20/2011	487	487	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	509	4/4/2012	509	509	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	419	10/4/2012	419	419	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	391	4/16/2013	391	391	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	466	10/14/2013	466	466	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	417	4/16/2014	417	417	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	459	10/2/2014	459	459	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	436	4/14/2015	436	436	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	504	10/7/2015	504	504	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	517	12/21/2015	517	517	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	386.9	4/5/2016	386.9	386.9	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	494.3	7/7/2016	494.3	494.3	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	503.6	7/28/2016	503.6	503.6	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	819	10/13/2016	819		*
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	490	12/29/2016	490	490	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470.9	1/25/2017	470.9	470.9	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	843	4/11/2017	843		*
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	499.1	6/6/2017	499.1	499.1	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	510.6	8/7/2017	510.6	510.6	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	539.5	10/4/2017	539.5	539.5	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	454	10/24/2017	454	454	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	581.4	4/24/2018	581.4	581.4	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	578	9/21/2018	578	578	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	607.7	10/22/2018	607.7	607.7	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	531.7	4/2/2019	531.7	531.7	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	573	10/8/2019	573	573	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	459	5/29/2020	459	459	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	464	10/8/2020	464	464	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	472.6	4/13/2021	472.6	472.6	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	472.7	6/11/2021	472.7	472.7	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	478.1	10/12/2021	478.1	478.1	

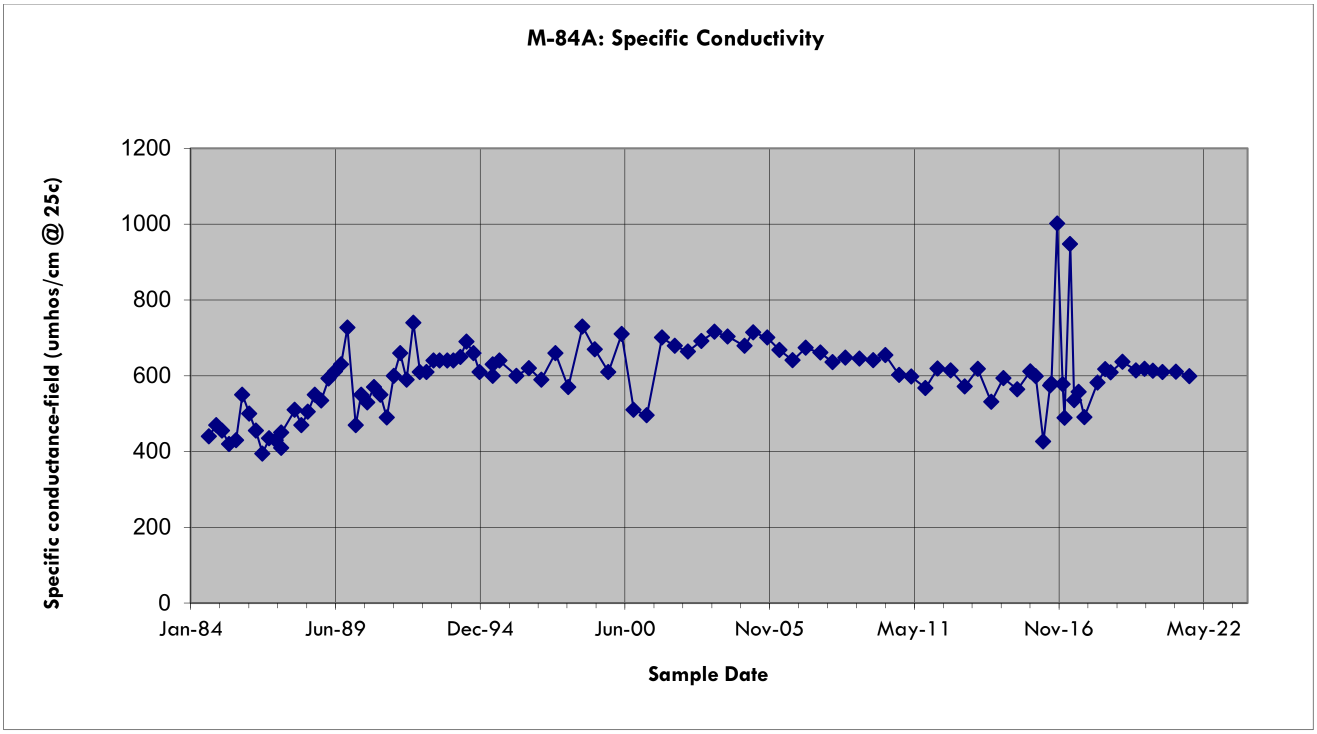
Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	577	4/12/2022	577	577	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	648	10/27/2022	648	648	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	614.3	12/2/2022	614.3	614.3	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	545.7	1/13/2023	545.7	545.7	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	447.9	2/21/2023	447.9	447.9	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	438.7	3/27/2023	438.7	438.7	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	465.8	4/26/2023	465.8	465.8	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	483.5	5/31/2023	483.5	483.5	
MW34A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	474.3	6/30/2023	474.3	474.3	

Calculations		
Count	55	
Mean	525.04	
Std Dev	96.01	
3 X SD (PAL)	288.02	
Min Increase (PAL)	200	
PAL, Calculated	813.06	
PAL, Rounded	820	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

*: Readings from October 2016 and April 2017 not included in calculations due to an apparent meter issue.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	440	9/7/1984	440	440	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470	12/17/1984	470	470	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	455	3/7/1985	455	455	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	420	6/14/1985	420	420	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	430	9/18/1985	430	430	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	12/12/1985	550	550	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	500	3/21/1986	500	500	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	455	6/20/1986	455	455	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	395	9/18/1986	395	395	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	435	12/19/1986	435	435	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	430	3/20/1987	430	430	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	410	6/5/1987	410	410	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	450	6/6/1987	450	450	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	510	12/9/1987	510	510	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470	3/10/1988	470	470	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	505	6/7/1988	505	505	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	9/9/1988	550	550	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	535	12/7/1988	535	535	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	593	3/21/1989	593	593	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	593	3/22/1989	593	593	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	612	6/16/1989	612	612	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	630	9/7/1989	630	630	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	727	12/6/1989	727	727	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470	3/29/1990	470	470	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	6/14/1990	550	550	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	530	9/6/1990	530	530	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	570	12/7/1990	570	570	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	3/6/1991	550	550	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	490	6/3/1991	490	490	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	9/6/1991	600	600	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	660	12/5/1991	660	660	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	590	3/2/1992	590	590	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	740	6/2/1992	740	740	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610	9/2/1992	610	610	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610	12/2/1992	610	610	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	640	3/10/1993	640	640	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	640	6/3/1993	640	640	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	640	9/14/1993	640	640	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	640	12/7/1993	640	640	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	3/15/1994	650	650	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	690	6/7/1994	690	690	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	660	9/13/1994	660	660	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610	12/6/1994	610	610	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	6/5/1995	600	600	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	630	6/5/1995	630	630	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	640	9/5/1995	640	640	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	4/29/1996	600	600	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	620	10/17/1996	620	620	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	590	4/8/1997	590	590	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	660	10/20/1997	660	660	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	570	4/14/1998	570	570	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	730	10/27/1998	730	730	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	670	4/16/1999	670	670	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610	10/21/1999	610	610	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	710	4/20/2000	710	710	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	510	10/4/2000	510	510	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	496	4/3/2001	496	496	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	701	10/30/2001	701	701	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	679	4/25/2002	679	679	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	664	10/25/2002	664	664	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	692	4/28/2003	692	692	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	716	10/29/2003	716	716	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	704	4/27/2004	704	704	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	679	12/14/2004	679	679	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	715	4/14/2005	715	715	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	701	10/26/2005	701	701	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	668	4/13/2006	668	668	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	641	10/12/2006	641	641	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	674	4/10/2007	674	674	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	661	10/30/2007	661	661	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	636	4/17/2008	636	636	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	648	10/10/2008	648	648	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	645	4/22/2009	645	645	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	641	10/27/2009	641	641	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	655	4/14/2010	655	655	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	602	10/20/2010	602	602	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	598	4/6/2011	598	598	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	568	10/21/2011	568	568	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	619	4/4/2012	619	619	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	614	10/4/2012	614	614	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	572	4/17/2013	572	572	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	618	10/14/2013	618	618	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	531	4/17/2014	531	531	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	594	10/2/2014	594	594	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	564	4/13/2015	564	564	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	612	10/8/2015	612	612	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	599	12/22/2015	599	599	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	427	4/5/2016	427	427	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	574.8	7/8/2016	574.8	574.8	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	579.3	7/28/2016	579.3	579.3	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1002	10/13/2016	1002		*
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	578.2	12/29/2016	578.2	578.2	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	489	1/25/2017	489	489	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	948	4/11/2017	948		*
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	535.3	6/6/2017	535.3	535.3	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	557.2	8/8/2017	557.2	557.2	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	491	10/24/2017	491	491	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	581.7	4/25/2018	581.7	581.7	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	617.1	8/8/2018	617.1	617.1	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	609	10/24/2018	609	609	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	637.2	4/3/2019	637.2	637.2	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	614.1	10/9/2019	614.1	614.1	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	618.4	2/3/2020	618.4	618.4	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	613.7	5/29/2020	613.7	613.7	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610.1	10/8/2020	610.1	610.1	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610.9	4/14/2021	610.9	610.9	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	598.9	10/14/2021	598.9	598.9	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	4/13/2022	600	600	
MW84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	585.2	10/27/2022	585.2	585.2	
MW-84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	595.4	12/2/2022	595.4	595.4	
MW-84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	582.9	1/12/2023	582.9	582.9	
MW-84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	516.1	2/21/2023	516.1	516.1	
MW-84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	578.4	3/28/2023	578.4	578.4	
MW-84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	556.6	4/27/2023	556.6	556.6	
MW-84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	507.9	5/30/2023	507.9	507.9	
MW-84A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	580	6/29/2023	580	580	

Calculations		
Count	114	
Mean	587.70	
Std Dev	78.79	
3 X SD (PAL)	236.38	
Min Increase (PAL)	200	
PAL, Calculated	824.07	
PAL, Rounded	830	

Duplicate Data Not Used for Calculations							

Note: Data for all events through October 2022 downloaded from GEMS

*: Readings from October 2016 and April 2017 not included in calculations due to an apparent meter issue.

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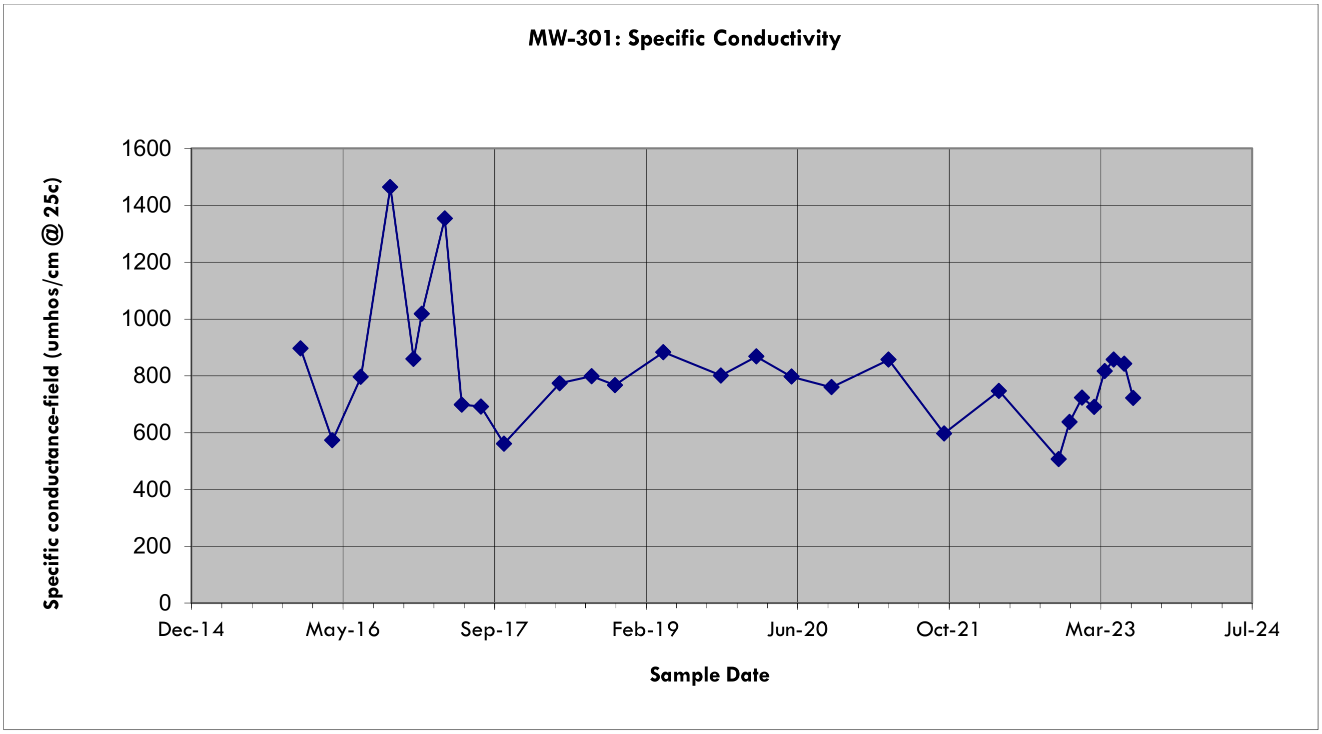

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	897	12/22/2015	897	897	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	573	4/5/2016	573	573	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	796	7/8/2016	796	796	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1464	10/13/2016	1464		*
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	859	12/29/2016	859	859	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1018	1/25/2017	1018	1018	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1354	4/11/2017	1354		*
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	698.4	6/6/2017	698.4	698.4	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	691.7	8/8/2017	691.7	691.7	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	561	10/23/2017	561	561	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	774	4/25/2018	774	774	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	799	8/8/2018	799	799	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	767	10/24/2018	767	767	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	883	4/2/2019	883	883	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	801	10/9/2019	801	801	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	868	2/3/2020	868	868	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	797	5/29/2020	797	797	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	760	10/8/2020	760	760	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	857	4/14/2021	857	857	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	597.2	10/14/2021	597.2	597.2	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	747	4/13/2022	747	747	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	507.5	10/27/2022	507.5	507.5	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	637.3	12/2/2022	637.3	637.3	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	723	1/12/2023	723	723	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	690	2/21/2023	690	690	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	817	3/28/2023	817	817	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	857	4/27/2023	857	857	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	843	5/31/2023	843	843	
MW-301	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	722	6/30/2023	722	722	
Calculations							
Count						27	
Mean						760.78	
Std Dev						116.55	
3 X SD (PAL)						349.66	
Min Increase (PAL)						200	
PAL, Calculated						1110.44	
PAL, Rounded						1,200	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
Duplicate Data Not Used for Calculations							

Note: Data from Chempoint and PacePort

*: Readings from October 2016 and April 2017 not included in calculations due to an apparent meter issue.

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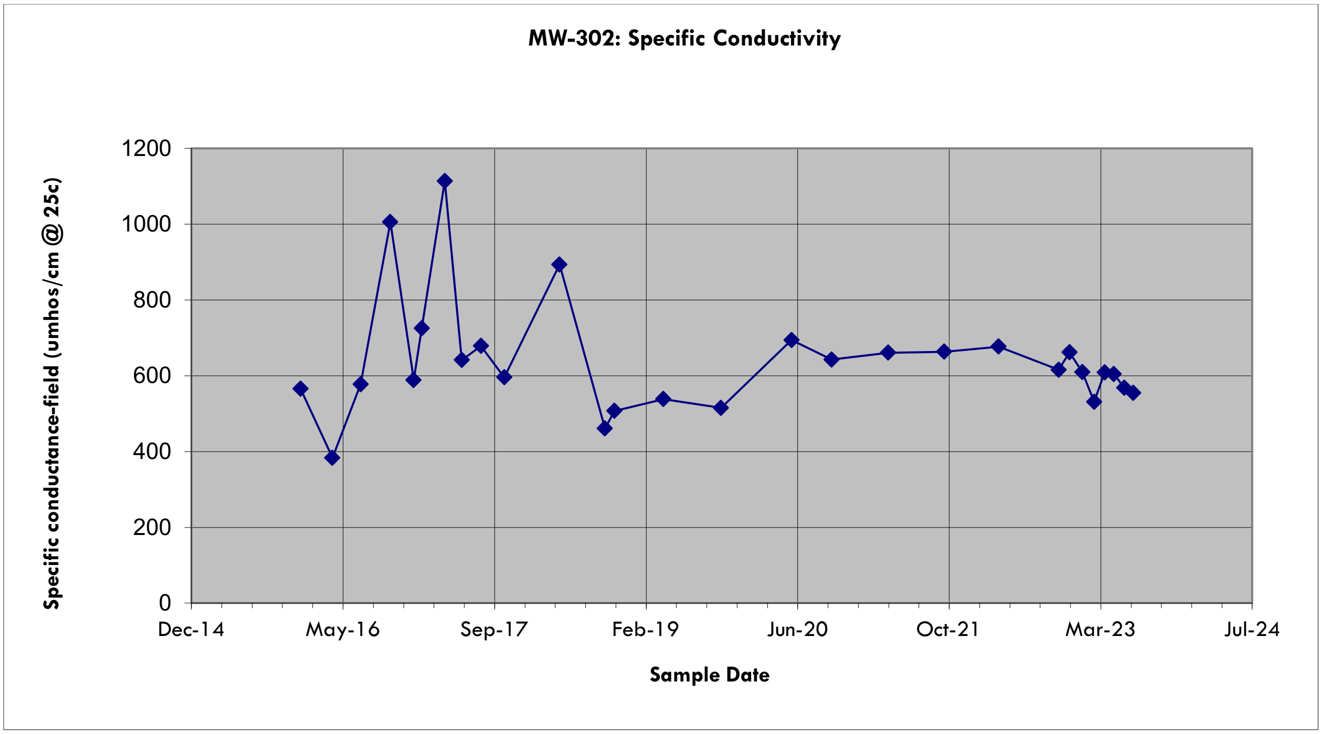

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-302	Field Specific Conductivity	01	566	12/22/2015	566	566	
MW-302	Field Specific Conductivity	01	383.6	4/5/2016	383.6	383.6	
MW-302	Field Specific Conductivity	01	578	7/7/2016	578	578	
MW-302	Field Specific Conductivity	01	1006	10/13/2016	1006		*
MW-302	Field Specific Conductivity	01	588.9	12/29/2016	588.9	588.9	
MW-302	Field Specific Conductivity	01	726	1/25/2017	726	726	
MW-302	Field Specific Conductivity	01	1114	4/11/2017	1114		*
MW-302	Field Specific Conductivity	01	641.8	6/6/2017	641.8	641.8	
MW-302	Field Specific Conductivity	01	679	8/8/2017	679	679	
MW-302	Field Specific Conductivity	01	596	10/24/2017	596	596	
MW-302	Field Specific Conductivity	01	894	4/24/2018	894	894	
MW-302	Field Specific Conductivity	01	461	9/21/2018	461	461	
MW-302	Field Specific Conductivity	01	507.6	10/22/2018	507.6	507.6	
MW-302	Field Specific Conductivity	01	538.6	4/2/2019	538.6	538.6	
MW-302	Field Specific Conductivity	01	515.4	10/9/2019	515.4	515.4	
MW-302	Field Specific Conductivity	01	694.7	5/29/2020	694.7	694.7	
MW-302	Field Specific Conductivity	01	643.1	10/8/2020	643.1	643.1	
MW-302	Field Specific Conductivity	01	661.3	4/13/2021	661.3	661.3	
MW-302	Field Specific Conductivity	01	663.7	10/14/2021	663.7	663.7	
MW-302	Field Specific Conductivity	01	677.1	4/12/2022	677.1	677.1	
MW-302	Field Specific Conductivity	01	616.1	10/27/2022	616.1	616.1	
MW-302	Field Specific Conductivity	01	662	12/2/2022	662	662	
MW-302	Field Specific Conductivity	01	610.1	1/13/2023	610.1	610.1	
MW-302	Field Specific Conductivity	01	531.8	2/21/2023	531.8	531.8	
MW-302	Field Specific Conductivity	01	609.4	3/28/2023	609.4	609.4	
MW-302	Field Specific Conductivity	01	605.2	4/27/2023	605.2	605.2	
MW-302	Field Specific Conductivity	01	568.3	5/31/2023	568.3	568.3	
MW-302	Field Specific Conductivity	01	555.3	6/30/2023	555.3	555.3	

Calculations

Count	26
Mean	606.69
Std Dev	96.56
3 X SD (PAL)	289.68
Min Increase (PAL)	200
PAL, Calculated	896.37
PAL, Rounded	900

Duplicate Data Not Used for Calculations

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

Note: Data from PacePort

*: Readings from October 2016 and April 2017 not included in calculations due to an apparent meter issue.

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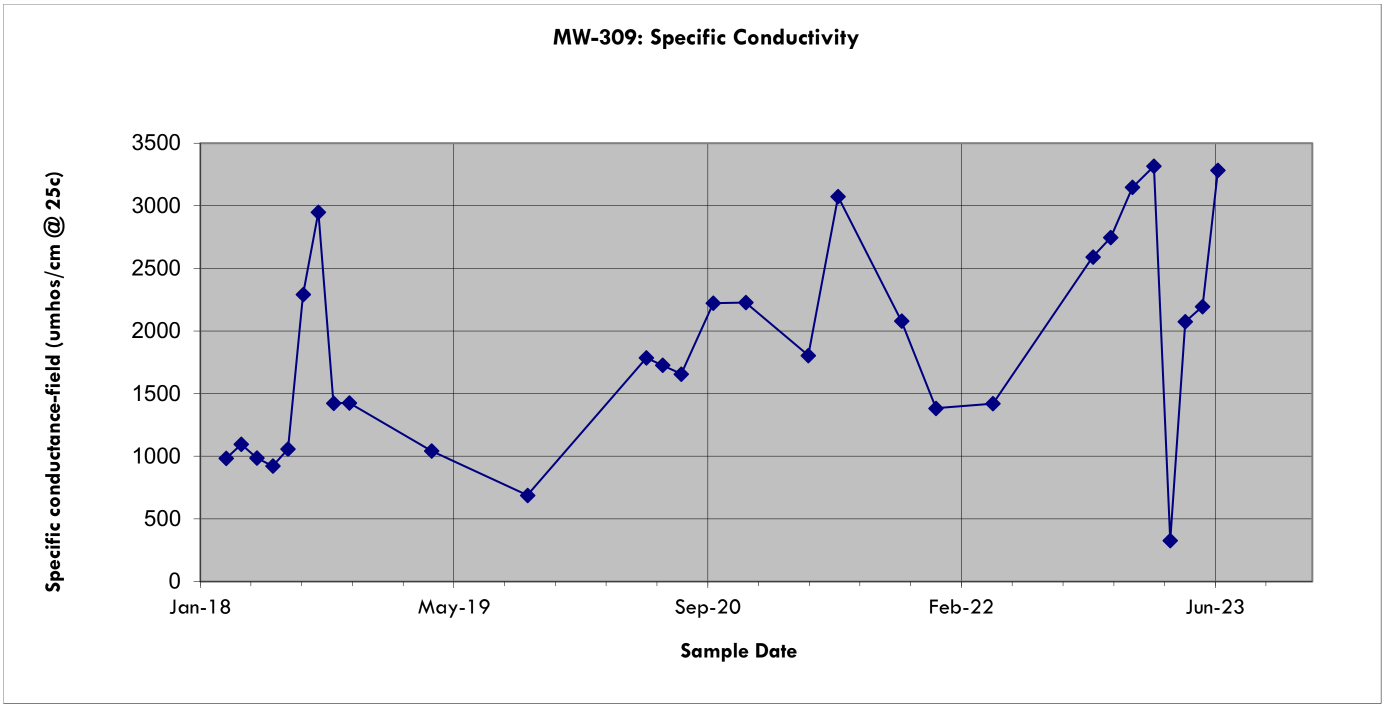

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	983	2/21/2018	983	983	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1094	3/23/2018	1094	1094	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	985	4/23/2018	985	985	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	921	5/24/2018	921	921	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1057	6/23/2018	1057	1057	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2290	7/23/2018	2290	2290	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2948	8/22/2018	2948	2948	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1423	9/21/2018	1423	1423	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1424	10/22/2018	1424	1424	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1041	4/2/2019	1041	1041	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	687	10/8/2019	687	687	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1785	5/29/2020	1785	1785	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1726	6/30/2020	1726	1726	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1656	8/6/2020	1656	1656	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2222	10/8/2020	2222	2222	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2227	12/11/2020	2227	2227	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1804	4/13/2021	1804	1804	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	3072	6/11/2021	3072	3072	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2079	10/14/2021	2079	2079	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1382	12/21/2021	1382	1382	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1420	4/12/2022	1420	1420	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2,591	10/26/2022	2591	2591	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2746	11/30/2022	2746	2746	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	3147	1/12/2023	3147	3147	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	3316	2/23/2023	3316	3316	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	326.7	3/27/2023	326.7		outlier
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2073	4/26/2023	2073	2073	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2195	5/30/2023	2195	2195	
MW-309	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	3282	6/29/2023	3282	3282	
Calculations							
Count						28	
Mean						1,913.43	
Std Dev						791.46	
3 X SD (PAL)						2,374.37	
Min Increase (PAL)						200	
PAL, Calculated						4,287.80	
PAL, Rounded						4,300	

Duplicate Data Not Used for Calculations							

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

Note:

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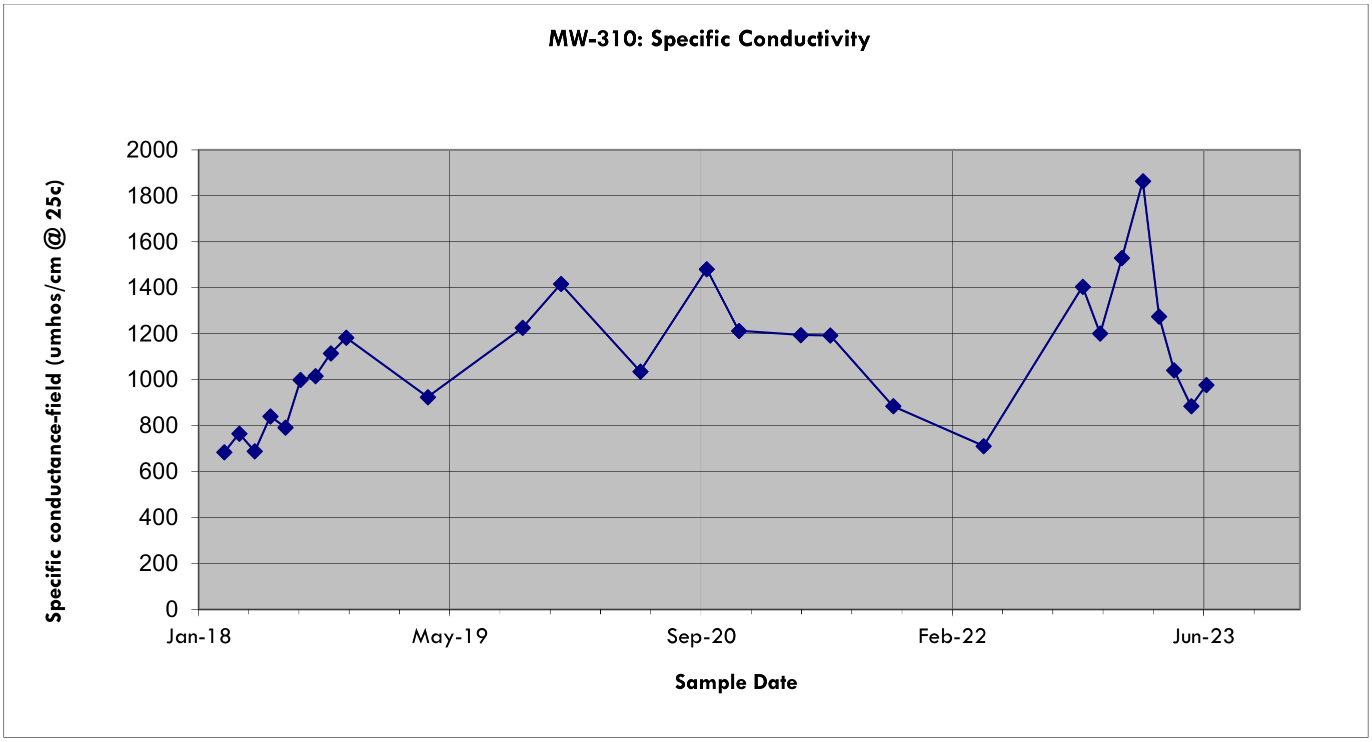

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	684	2/21/2018	684	684	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	765	3/23/2018	765	765	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	688	4/23/2018	688	688	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	840	5/24/2018	840	840	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	791	6/23/2018	791	791	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	998	7/23/2018	998	998	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1016	8/22/2018	1016	1016	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1114	9/21/2018	1114	1114	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1182	10/22/2018	1182	1182	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	924	4/2/2019	924	924	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1226	10/8/2019	1226	1226	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1416	12/23/2019	1416	1416	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1035	5/29/2020	1035	1035	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1481	10/8/2020	1481	1481	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1212	12/11/2020	1212	1212	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1194	4/13/2021	1194	1194	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1192	6/11/2021	1192	1192	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	884	10/14/2021	884	884	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	711	4/12/2022	711	711	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1,404	10/26/2022	1404	1404	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1200	11/30/2022	1200	1200	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1529	1/12/2023	1529	1529	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1863	2/23/2023	1863	1863	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1275	3/27/2023	1275	1275	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1040	4/26/2023	1040	1040	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	884	5/30/2023	884	884	
MW-310	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	977	6/29/2023	977	977	
Calculations							
Count						27	
Mean						1093.52	
Std Dev						286.22	
3 X SD (PAL)						858.65	
Min Increase (PAL)						200	
PAL, Calculated						1952.17	
PAL, Rounded						2000	

Duplicate Data Not Used for Calculations

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

Note:

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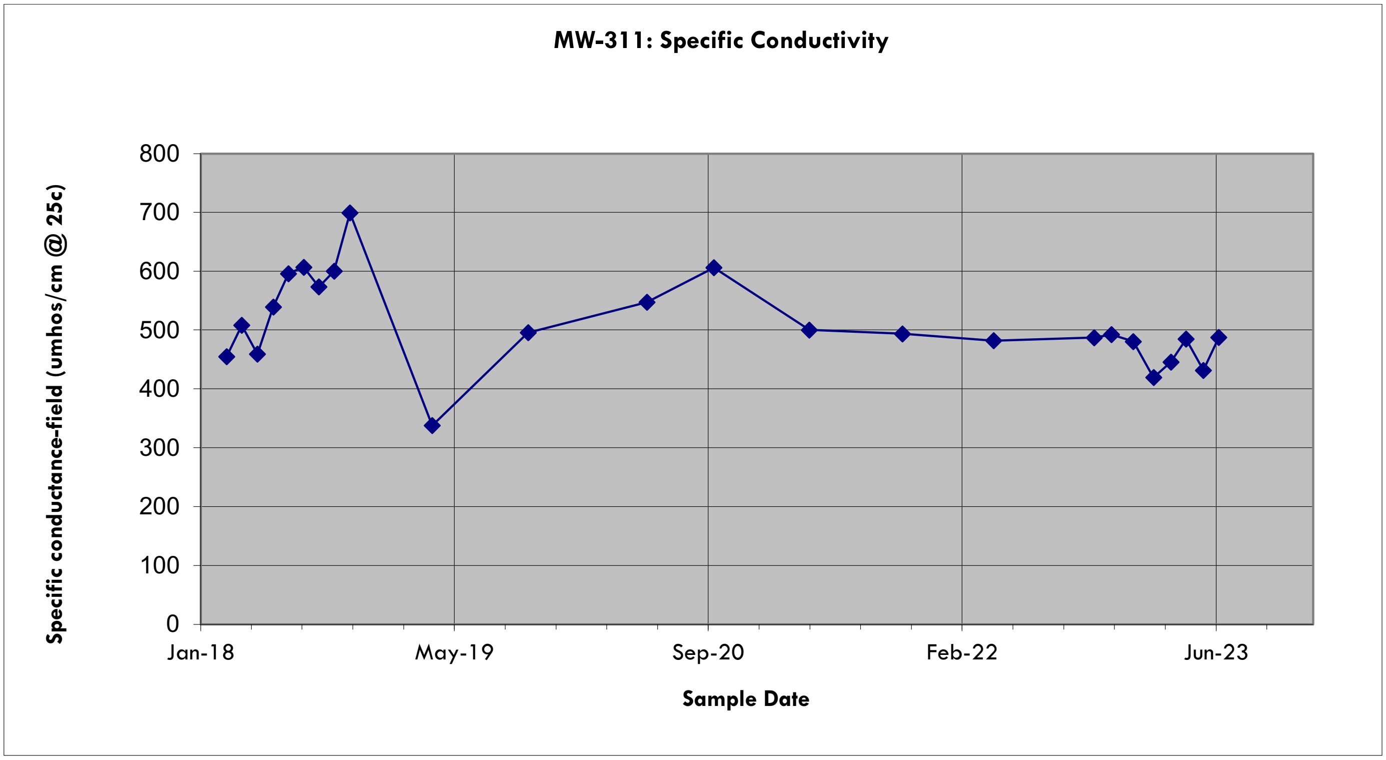

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	455	2/21/2018	455	455	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	508.1	3/23/2018	508.1	508.1	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	459.1	4/23/2018	459.1	459.1	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	539	5/24/2018	539	539	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	596	6/23/2018	596	596	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	606.8	7/23/2018	606.8	606.8	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	573.2	8/22/2018	573.2	573.2	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	9/21/2018	600	600	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	699	10/22/2018	699	699	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	337.8	4/2/2019	337.8	337.8	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	495.6	10/8/2019	495.6	495.6	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	547.2	5/29/2020	547.2	547.2	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	606.1	10/8/2020	606.1	606.1	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	500.2	4/14/2021	500.2	500.2	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	493.5	10/14/2021	493.5	493.5	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	482	4/12/2022	482	482	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	487	10/27/2022	487	487	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	492.2	11/30/2022	492.2	492.2	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	480.5	1/12/2023	480.5	480.5	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	419.2	2/21/2023	419.2	419.2	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	445.5	3/27/2023	445.5	445.5	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	484.7	4/26/2023	484.7	484.7	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	431.6	5/30/2023	431.6	431.6	
MW-311	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	487.2	6/29/2023	487.2	487.2	
Calculations							
Count						24	
Mean						509.44	
Std Dev						76.36	
3 X SD (PAL)						229.07	
Min Increase (PAL)						200	
PAL, Calculated						738.50	
PAL, Rounded						740	

Duplicate Data Not Used for Calculations							

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

Note:

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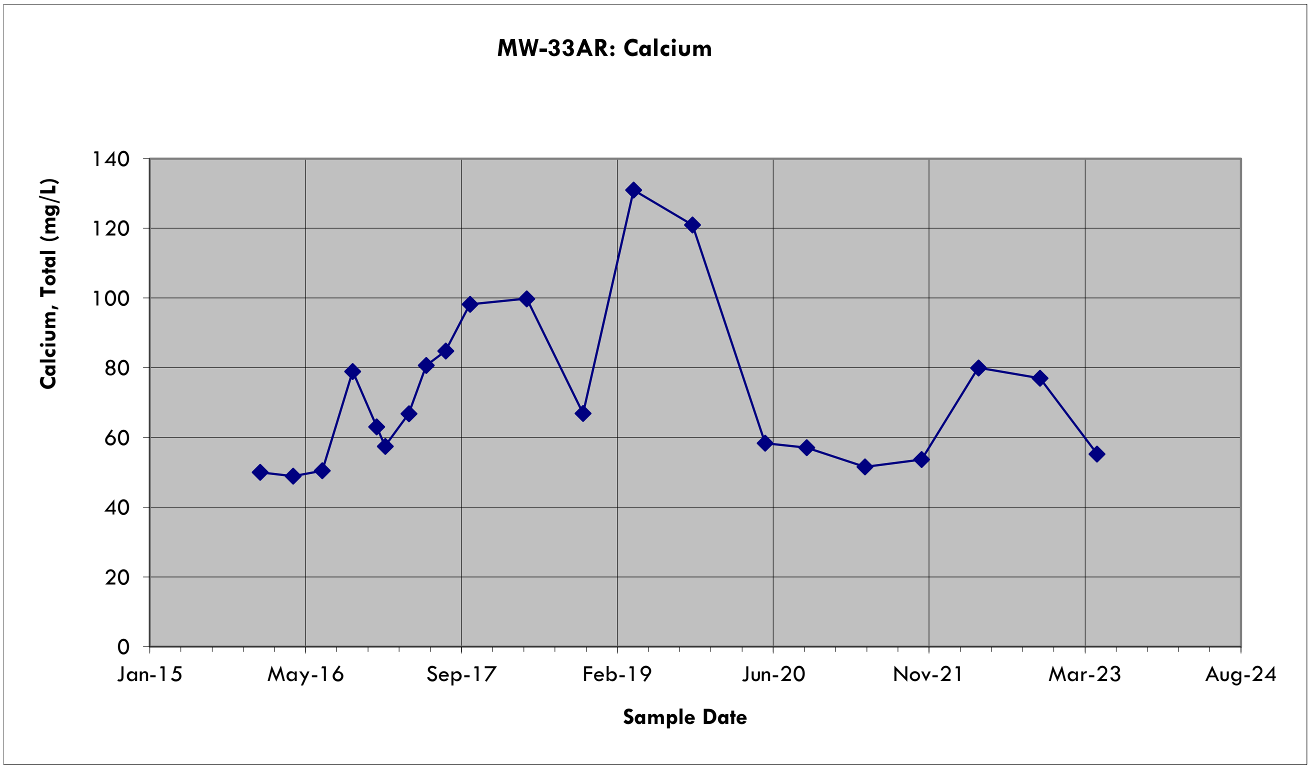


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	50	12/21/2015	50	50	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	48.9	4/5/2016	48.9	48.9	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	50.5	7/7/2016	50.5	50.5	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	79	10/13/2016	79	79	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	63.1	12/29/2016	63.1	63.1	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	57.5	1/25/2017	57.5	57.5	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	66.8	4/11/2017	66.8	66.8	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	80.7	6/6/2017	80.7	80.7	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	84.8	8/7/2017	84.8	84.8	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	98.2	10/24/2017	98.2	98.2	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	99.8	4/24/2018	99.8	99.8	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	66.9	10/22/2018	66.9	66.9	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	131	4/2/2019	131	131	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	121	10/8/2019	121	121	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	58.4	5/28/2020	58.4	58.4	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	57.1	10/8/2020	57.1	57.1	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	51.6	4/13/2021	51.6	51.6	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	53.7	10/12/2021	53.7	53.7	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	80	4/12/2022	80	80	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	77	10/27/2022	77	77	
MW-33AR	CALCIUM, TOTAL (MG/L CA)	01	55.3	4/27/2023	55.3	55.3	
Calculations							
Count						21	
Mean						72.92	
Std Dev						23.41	
3 X SD (PAL)						70.23	
Min Increase (PAL)						25	
PAL, Calculated						143.15	
PAL, Rounded						150	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from ChemPoint

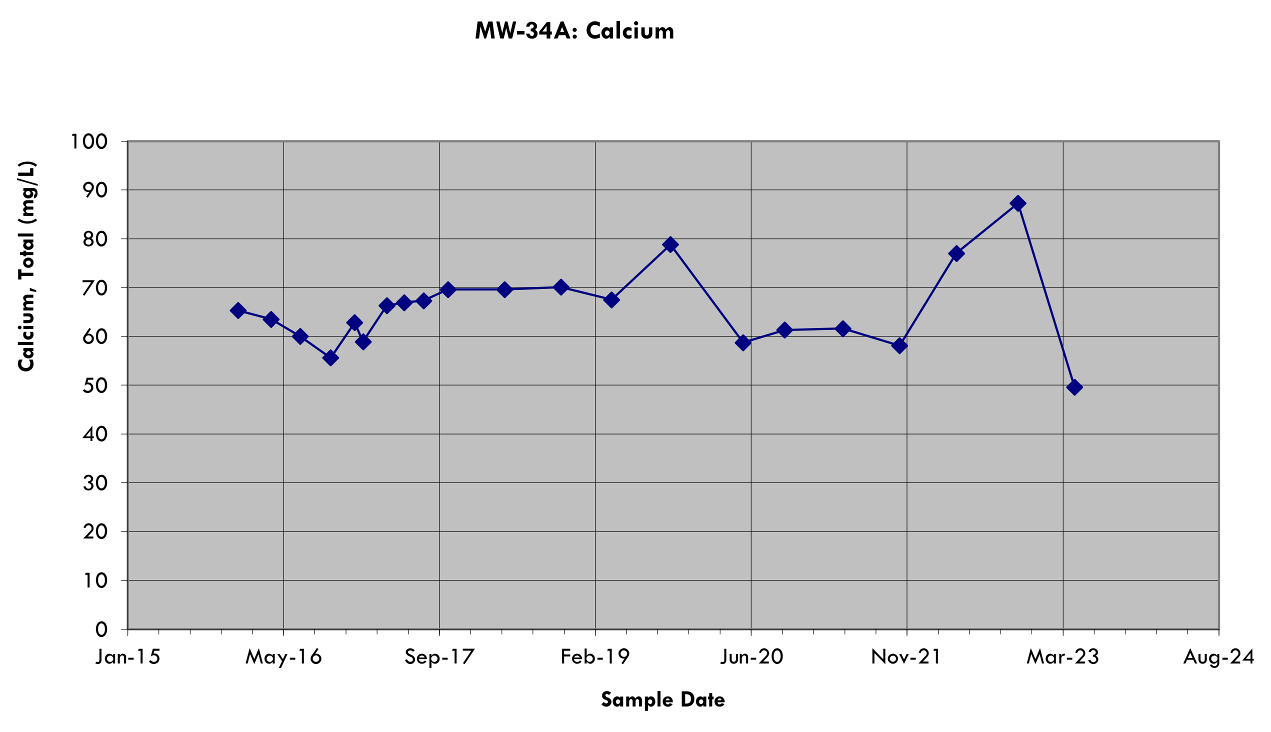
J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

B = Compound detected in blank.

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	65.3	12/21/2015	65.3	65.3	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	63.5	4/5/2016	63.5	63.5	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	60	7/7/2016	60	60	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	55.6	10/13/2016	55.6	55.6	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	62.8	12/29/2016	62.8	62.8	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	58.9	1/25/2017	58.9	58.9	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	66.3	4/11/2017	66.3	66.3	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	66.9	6/6/2017	66.9	66.9	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	67.3	8/7/2017	67.3	67.3	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	69.6	10/24/2017	69.6	69.6	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	69.6	4/24/2018	69.6	69.6	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	70.1	10/22/2018	70.1	70.1	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	67.5	4/2/2019	67.5	67.5	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	78.8	10/8/2019	78.8	78.8	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	58.7	5/28/2020	58.7	58.7	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	61.3	10/8/2020	61.3	61.3	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	61.6	4/13/2021	61.6	61.6	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	58.1	10/12/2021	58.1	58.1	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	77	4/12/2022	77	77	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	87.3	10/27/2022	87.3	87.3	
MW-34A	CALCIUM, TOTAL (MG/L CA)	01	49.6	4/26/2023	49.6	49.6	
Calculations							
Count						21	
Mean						65.51	
Std Dev						8.42	
3 X SD (PAL)						25.27	
Min Increase (PAL)						25	
PAL, Calculated						90.78	
PAL, Rounded						91	

Duplicate Data Not Used for Calculations							
MW-34A	Calcium	02	65.2	12/21/2015	65.2	65.2	

Note: Data downloaded from ChemPoint

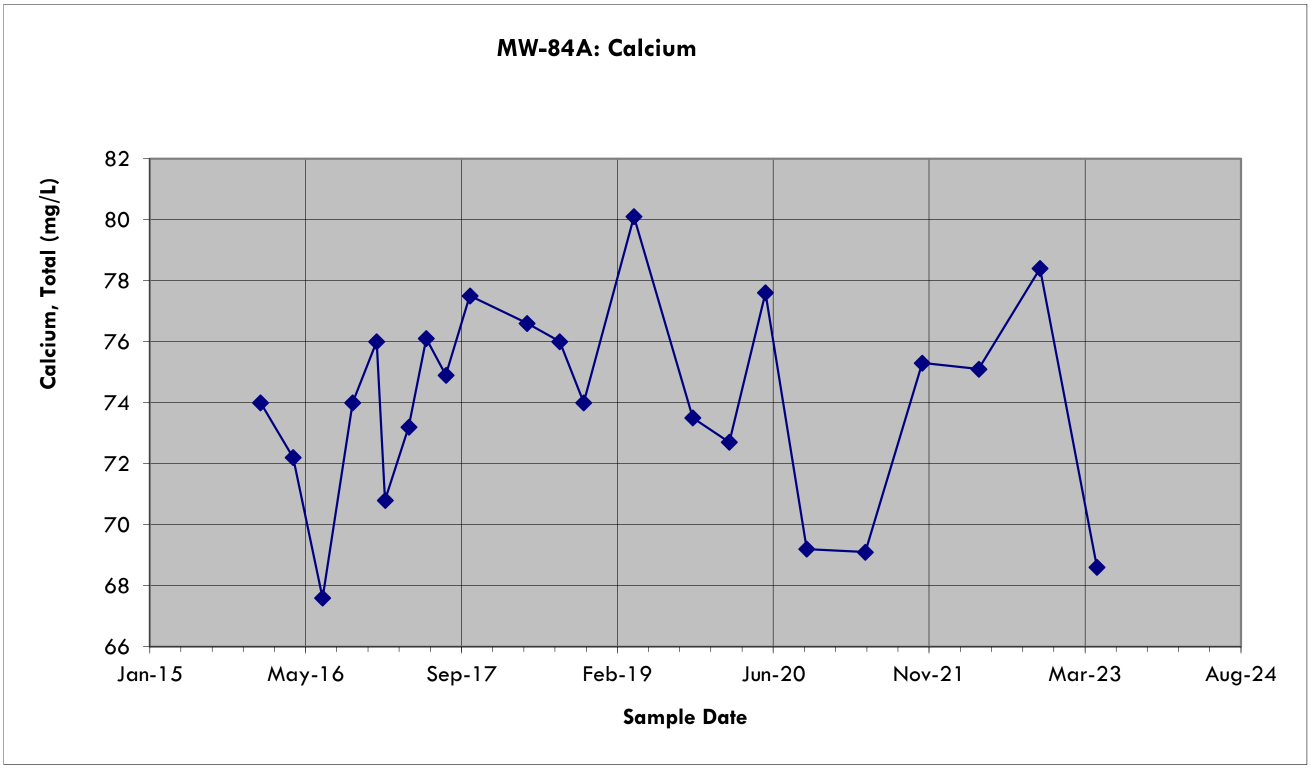
J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

B = Compound detected in blank.

M = Failed method QC check.


MW-84A: Calcium

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	74	12/22/2015	74	74	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	72.2	4/5/2016	72.2	72.2	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	67.6	7/8/2016	67.6	67.6	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	74	10/13/2016	74	74	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	76	12/29/2016	76	76	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	70.8	1/25/2017	70.8	70.8	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	73.2	4/11/2017	73.2	73.2	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	76.1	6/6/2017	76.1	76.1	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	74.9	8/8/2017	74.9	74.9	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	77.5	10/24/2017	77.5	77.5	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	76.6	4/25/2018	76.6	76.6	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	76	8/8/2018	76	76	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	74	10/24/2018	74	74	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	80.1	4/3/2019	80.1	80.1	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	73.5	10/9/2019	73.5	73.5	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	72.7	2/3/2020	72.7	72.7	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	77.6	5/29/2020	77.6	77.6	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	69.2	10/8/2020	69.2	69.2	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	69.1	4/14/2021	69.1	69.1	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	75.3	10/14/2021	75.3	75.3	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	75.1	4/13/2022	75.1	75.1	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	78.4	10/27/2022	78.4	78.4	
MW-84A	CALCIUM, TOTAL (MG/L CA)	01	68.6	4/27/2023	68.6	68.6	
Calculations							
Count						23	
Mean						74.02	
Std Dev						3.29	
3 X SD (PAL)						9.86	
Min Increase (PAL)						25	
PAL, Calculated						99.02	
PAL, Rounded						100	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from ChemPoint

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

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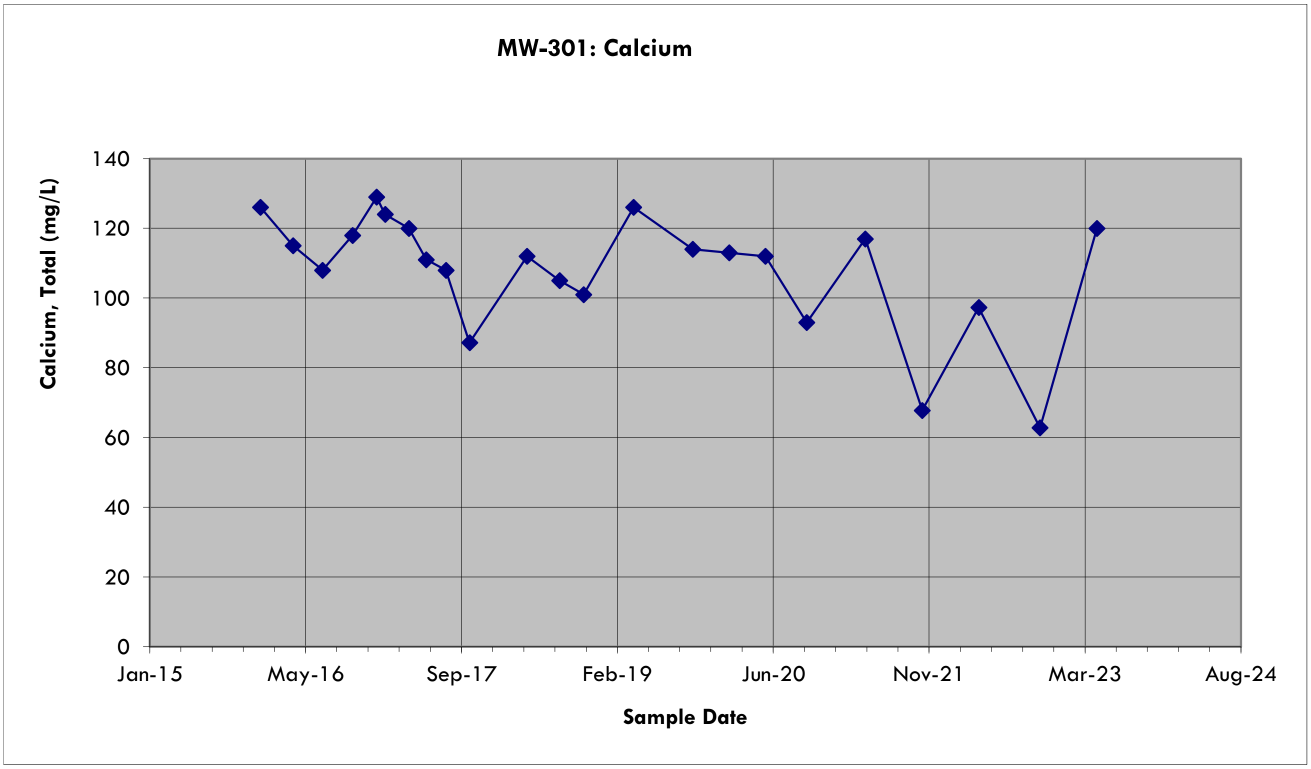

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-301	CALCIUM, TOTAL (MG/L CA)	01	126	12/22/2015	126	126	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	115	4/5/2016	115	115	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	108	7/8/2016	108	108	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	118	10/13/2016	118	118	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	129	12/29/2016	129	129	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	124	1/25/2017	124	124	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	120	4/11/2017	120	120	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	111	6/6/2017	111	111	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	108	8/8/2017	108	108	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	87.2	10/23/2017	87.2	87.2	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	112	4/25/2018	112	112	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	105	8/8/2018	105	105	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	101	10/24/2018	101	101	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	126	4/2/2019	126	126	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	114	10/9/2019	114	114	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	113	2/3/2020	113	113	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	112	5/29/2020	112	112	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	93	10/8/2020	93	93	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	117	4/14/2021	117	117	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	67.8	10/14/2021	67.8	67.8	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	97.3	4/13/2022	97.3	97.3	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	62.8	10/27/2022	62.8	62.8	
MW-301	CALCIUM, TOTAL (MG/L CA)	01	120	4/27/2023	120	120	
Calculations							
Count						23	
Mean						108.13	
Std Dev						17.13	
3 X SD (PAL)						51.38	
Min Increase (PAL)						25	
PAL, Calculated						159.52	
PAL, Rounded						160	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from ChemPoint

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

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P = Did not meet required preservation and/or hold time.
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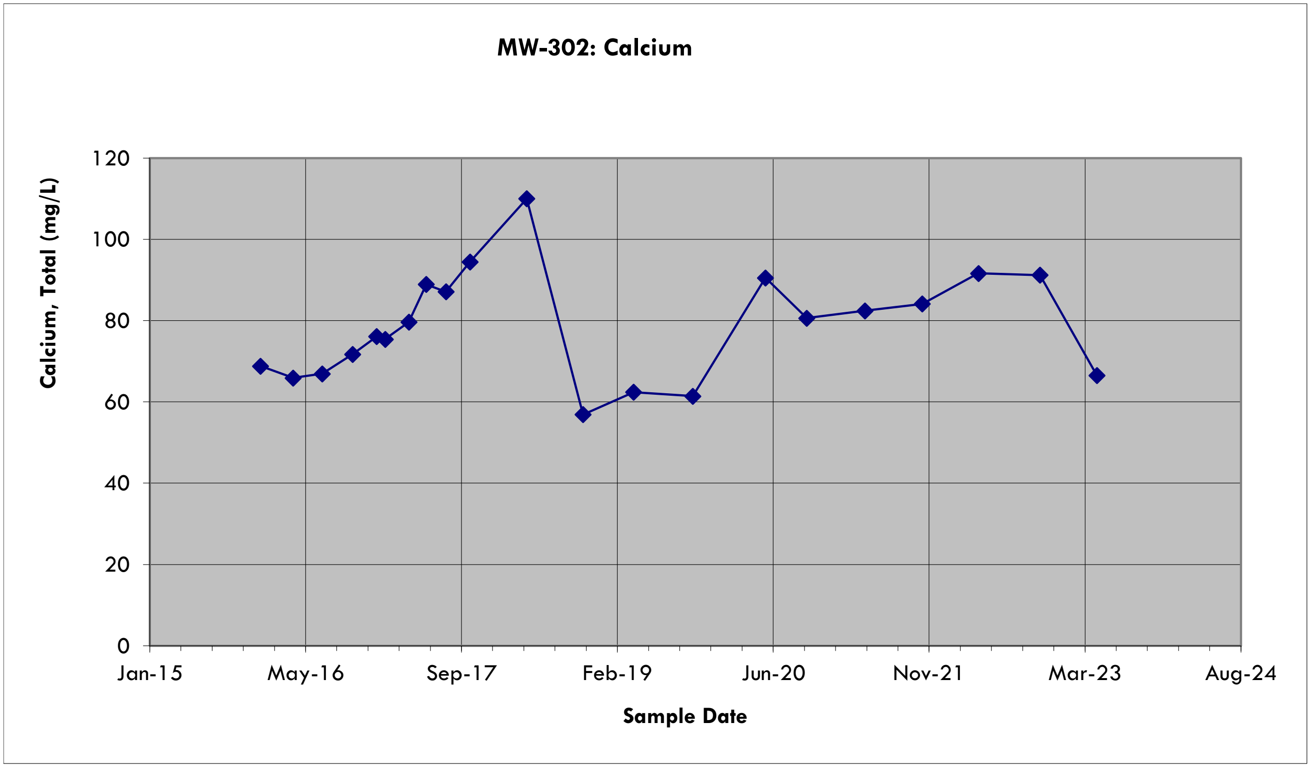


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-302	CALCIUM, TOTAL (MG/L CA)	01	68.8	12/22/2015	68.8	68.8	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	65.9	4/5/2016	65.9	65.9	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	66.9	7/7/2016	66.9	66.9	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	71.7	10/13/2016	71.7	71.7	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	76.1	12/29/2016	76.1	76.1	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	75.4	1/25/2017	75.4	75.4	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	79.6	4/11/2017	79.6	79.6	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	88.9	6/6/2017	88.9	88.9	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	87.1	8/8/2017	87.1	87.1	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	94.4	10/24/2017	94.4	94.4	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	110	4/24/2018	110	110	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	56.9	10/22/2018	56.9	56.9	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	62.4	4/2/2019	62.4	62.4	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	61.4	10/9/2019	61.4	61.4	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	90.5	5/29/2020	90.5	90.5	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	80.6	10/8/2020	80.6	80.6	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	82.4	4/13/2021	82.4	82.4	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	84.1	10/14/2021	84.1	84.1	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	91.6	4/12/2022	91.6	91.6	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	91.2	10/27/2022	91.2	91.2	
MW-302	CALCIUM, TOTAL (MG/L CA)	01	66.5	4/27/2023	66.5	66.5	
Calculations							
Count						21	
Mean						78.69	
Std Dev						13.35	
3 X SD (PAL)						40.06	
Min Increase (PAL)						25	
PAL, Calculated						118.75	
PAL, Rounded						120	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from ChemPoint

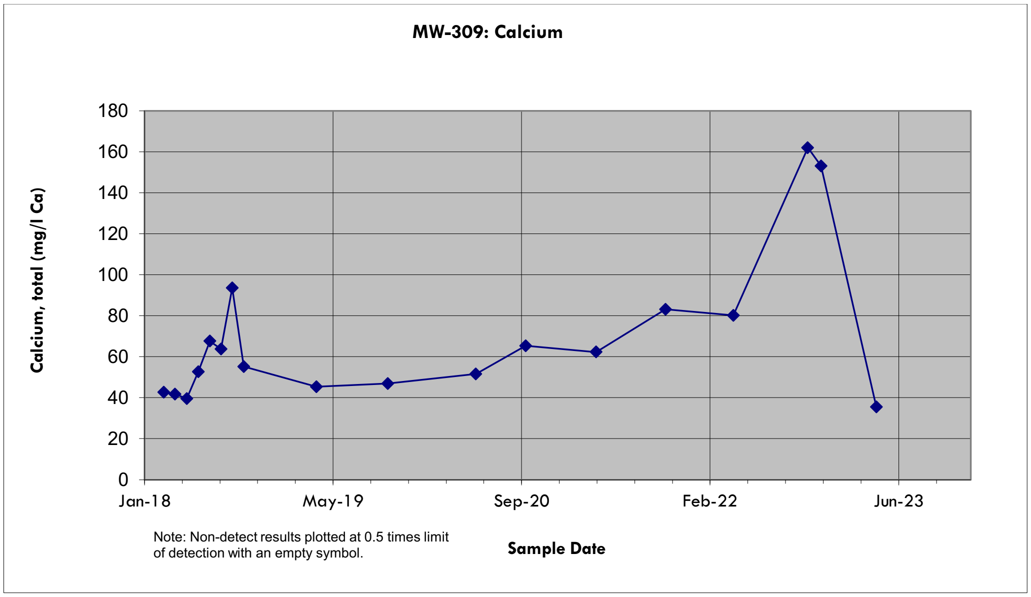
J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

B = Compound detected in blank.

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-309	CALCIUM, TOTAL (MG/L CA)	01	42.7	2/21/2018	42.7	42.7	M
MW-309	CALCIUM, TOTAL (MG/L CA)	01	41.8	3/23/2018	41.8	41.8	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	39.6	4/23/2018	39.6	39.6	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	52.7	5/24/2018	52.7	52.7	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	67.6	6/23/2018	67.6	67.6	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	63.8	7/23/2018	63.8	63.8	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	93.6	8/22/2018	93.6	93.6	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	55.2	9/21/2018	55.2	55.2	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	45.3	4/2/2019	45.3	45.3	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	46.9	10/8/2019	46.9	46.9	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	51.6	5/29/2020	51.6	51.6	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	65.3	10/8/2020	65.3	65.3	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	62.3	4/13/2021	62.3	62.3	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	83.1	10/14/2021	83.1	83.1	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	80.2	4/12/2022	80.2	80.2	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	162	10/26/2022	162	162	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	153	11/30/2022	153	153	
MW-309	CALCIUM, TOTAL (MG/L CA)	01	35.5	4/26/2023	35.5	35.5	
Calculations							
Count						18	
Mean						69.01	
Std Dev						35.93	
3 X SD (PAL)						107.80	
Min Increase (PAL)						25	
PAL, Calculated						176.81	
PAL, Rounded						180	

Duplicate Data Not Used for Calculations							

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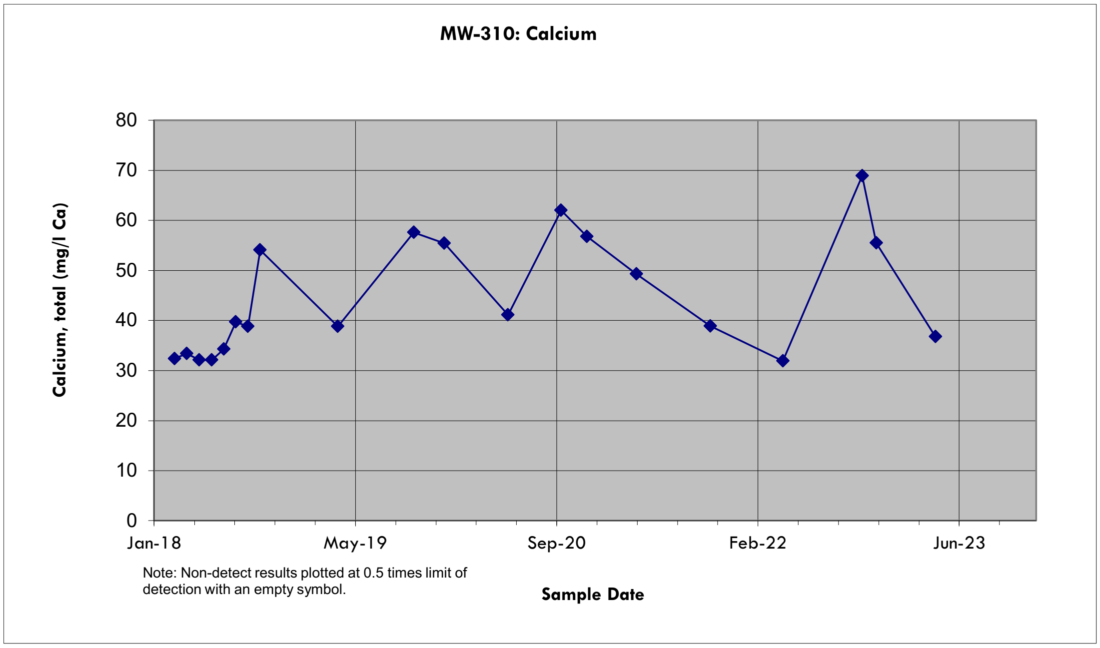
I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[PAL Calculations_CCR Wells Combined.xls]MW309_Ca_PAL



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-310	CALCIUM, TOTAL (MG/L CA)	01	32.4	2/21/2018	32.4	32.4	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	33.4	3/23/2018	33.4	33.4	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	32.1	4/23/2018	32.1	32.1	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	32.1	5/24/2018	32.1	32.1	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	34.3	6/23/2018	34.3	34.3	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	39.7	7/23/2018	39.7	39.7	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	38.8	8/22/2018	38.8	38.8	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	54.1	9/21/2018	54.1	54.1	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	38.8	4/2/2019	38.8	38.8	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	57.6	10/8/2019	57.6	57.6	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	55.4	12/23/2019	55.4	55.4	M
MW-310	CALCIUM, TOTAL (MG/L CA)	01	41.1	5/29/2020	41.1	41.1	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	62	10/8/2020	62	62	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	56.8	12/11/2020	56.8	56.8	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	49.3	4/13/2021	49.3	49.3	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	38.9	10/14/2021	38.9	38.9	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	31.9	4/12/2022	31.9	31.9	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	68.9	10/26/2022	68.9	68.9	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	55.5	11/30/2022	55.5	55.5	
MW-310	CALCIUM, TOTAL (MG/L CA)	01	36.8	4/26/2023	36.8	36.8	
Calculations							
Count						20	
Mean						44.50	
Std Dev						11.72	
3 X SD (PAL)						35.16	
Min Increase (PAL)						25	
PAL, Calculated						79.65	
PAL, Rounded						80	

32400	32.4
33400	33.4
32100	32.1
32100	32.1
34300	34.3
39700	39.7
38800	38.8
54100	54.1

Duplicate Data Not Used for Calculations

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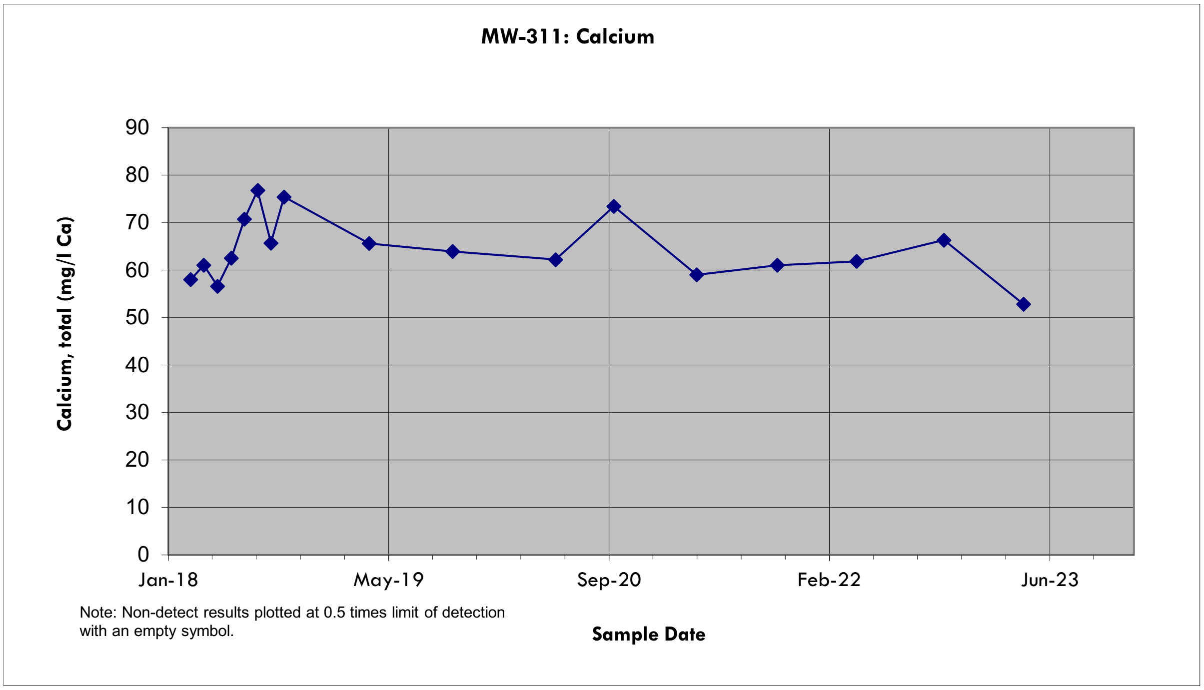
I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[PAL Calculations_CCR Wells Combined.xls]MW310_Ca_PAL



Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-311	CALCIUM, TOTAL (MG/L CA)	01	58	2/21/2018	58	58	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	61	3/23/2018	61	61	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	56.6	4/23/2018	56.6	56.6	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	62.5	5/24/2018	62.5	62.5	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	70.7	6/23/2018	70.7	70.7	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	76.8	7/23/2018	76.8	76.8	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	65.7	8/22/2018	65.7	65.7	M
MW-311	CALCIUM, TOTAL (MG/L CA)	01	75.4	9/21/2018	75.4	75.4	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	65.6	4/2/2019	65.6	65.6	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	63.9	10/8/2019	63.9	63.9	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	62.2	5/29/2020	62.2	62.2	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	73.4	10/8/2020	73.4	73.4	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	59	4/14/2021	59	59	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	61	10/14/2021	61	61	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	61.8	4/12/2022	61.8	61.8	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	66.3	10/27/2022	66.3	66.3	
MW-311	CALCIUM, TOTAL (MG/L CA)	01	52.8	4/26/2023	52.8	52.8	
Calculations							
Count						17	
Mean						64.28	
Std Dev						6.64	
3 X SD (PAL)						19.93	
Min Increase (PAL)						25	
PAL, Calculated						89.28	
PAL, Rounded						90	

Duplicate Data Not Used for Calculations							

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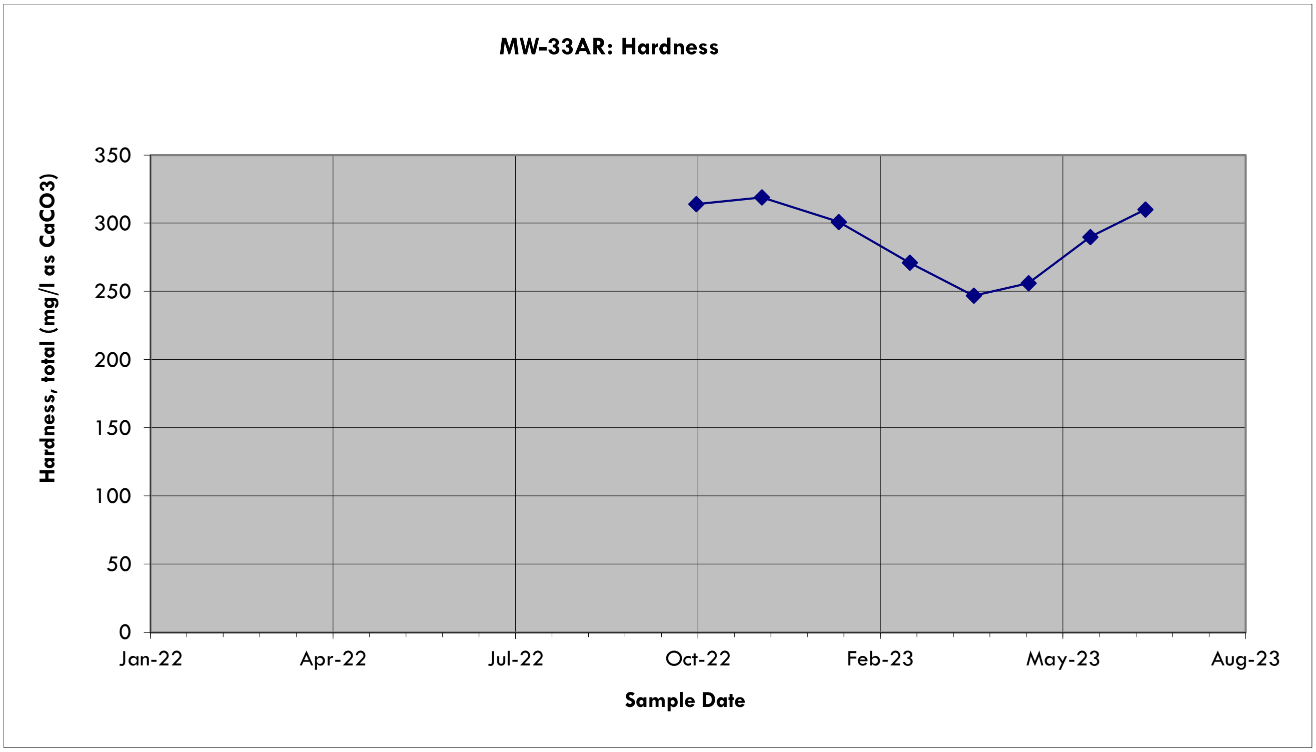

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	HARDNESS, TOTAL (MG/L AS CACO3)	01	314	10/27/2022	314	314	
MW-33AR	HARDNESS, TOTAL (MG/L AS CACO3)	01	319	12/2/2022	319	319	
MW-33AR	HARDNESS, TOTAL (MG/L AS CACO3)	01	301	1/13/2023	301	301	
MW-33AR	HARDNESS, TOTAL (MG/L AS CACO3)	01	271	2/21/2023	271	271	
MW-33AR	HARDNESS, TOTAL (MG/L AS CACO3)	01	247	3/28/2023	247	247	
MW-33AR	HARDNESS, TOTAL (MG/L AS CACO3)	01	256	4/27/2023	256	256	
MW-33AR	HARDNESS, TOTAL (MG/L AS CACO3)	01	290	5/31/2023	290	290	
MW-33AR	HARDNESS, TOTAL (MG/L AS CACO3)	01	310	6/30/2023	310	310	
Calculations							
Count						8	
Mean						288.50	
Std Dev						27.48	
3 X SD (PAL)						82.44	
Min Increase (PAL)						100	
PAL, Calculated						388.50	
PAL, Rounded						390	

Duplicate Data Not Used for Calculations							

Note:

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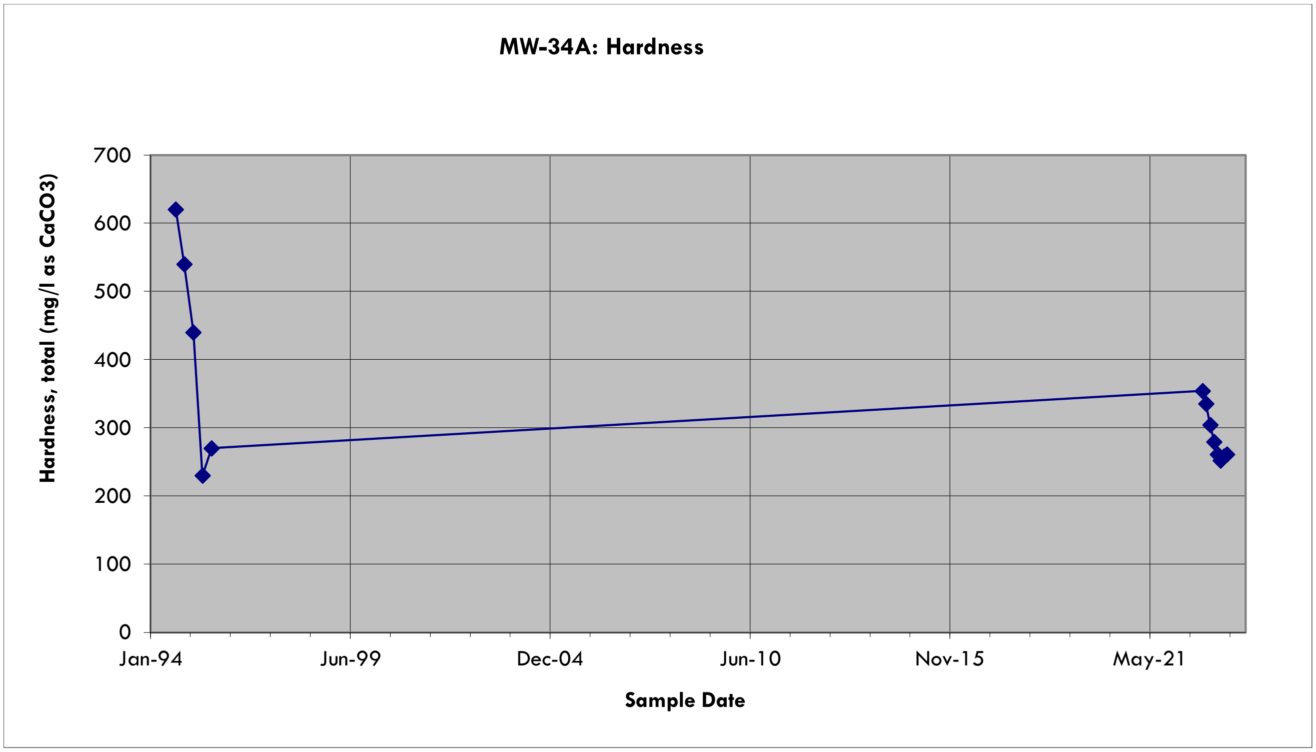
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	620	9/13/1994	620		
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	540	12/6/1994	540		
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	440	3/7/1995	440		
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	230	6/6/1995	230		
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	270	9/6/1995	270		
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	354	10/27/2022	354	354	Using last 20 years of data for PAL calculation
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	335	12/2/2022	335	335	
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	304	1/13/2023	304	304	
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	279	2/21/2023	279	279	
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	261	3/27/2023	261	261	
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	252	4/26/2023	252	252	
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	258	5/31/2023	258	258	
MW34A	HARDNESS, TOTAL (MG/L AS CACO3)	01	261	6/30/2023	261	261	
Calculations							
Count						8	
Mean						288.00	
Std Dev						38.83	
3 X SD (PAL)						116.50	
Min Increase (PAL)						100	
PAL, Calculated						404.50	
PAL, Rounded						410	

Duplicate Data Not Used for Calculations							

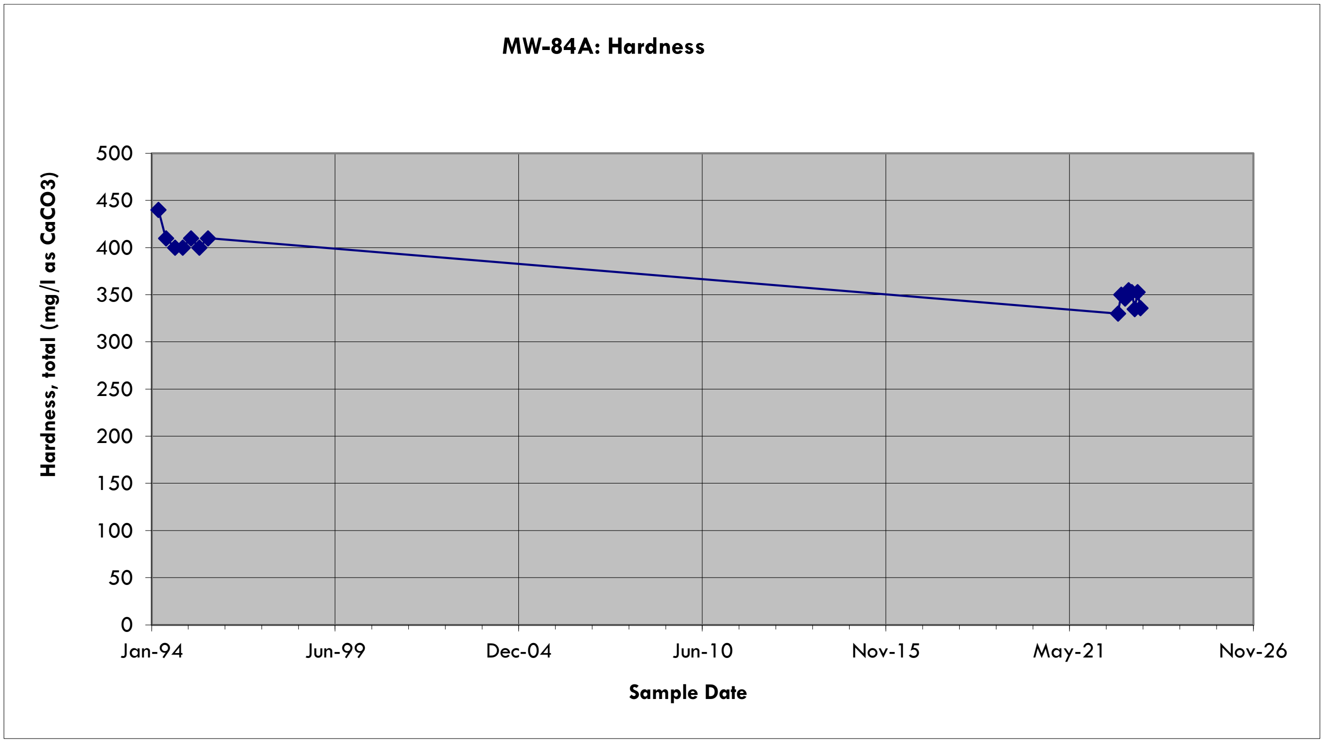
Note: 1994-1995 data from GEMS; 2022-2023 data from PacePort

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	440	3/15/1994	440	440	
MW84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	410	6/7/1994	410	410	
MW84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	400	9/13/1994	400	400	
MW84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	400	12/6/1994	400	400	
MW84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	410	3/7/1995	410	410	
MW84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	400	6/5/1995	400	400	
MW84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	410	9/5/1995	410	410	
MW-84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	330	10/27/2022	330	330	
MW-84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	350	12/2/2022	350	350	
MW-84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	346	1/12/2023	346	346	
MW-84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	355	2/21/2023	355	355	
MW-84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	353	3/28/2023	353	353	
MW-84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	335	4/27/2023	335	335	
MW-84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	353	5/30/2023	353	353	
MW-84A	HARDNESS, TOTAL (MG/L AS CACO3)	01	336	6/29/2023	336	336	

Calculations		
Count	15	
Mean	375.20	
Std Dev	35.61	
3 X SD (PAL)	106.83	
Min Increase (PAL)	100	
PAL, Calculated	482.03	
PAL, Rounded	490	

Duplicate Data Not Used for Calculations							

Note: 1994 and 1995 data downloaded from GEMS; 2022 & 2023 data from PacePort

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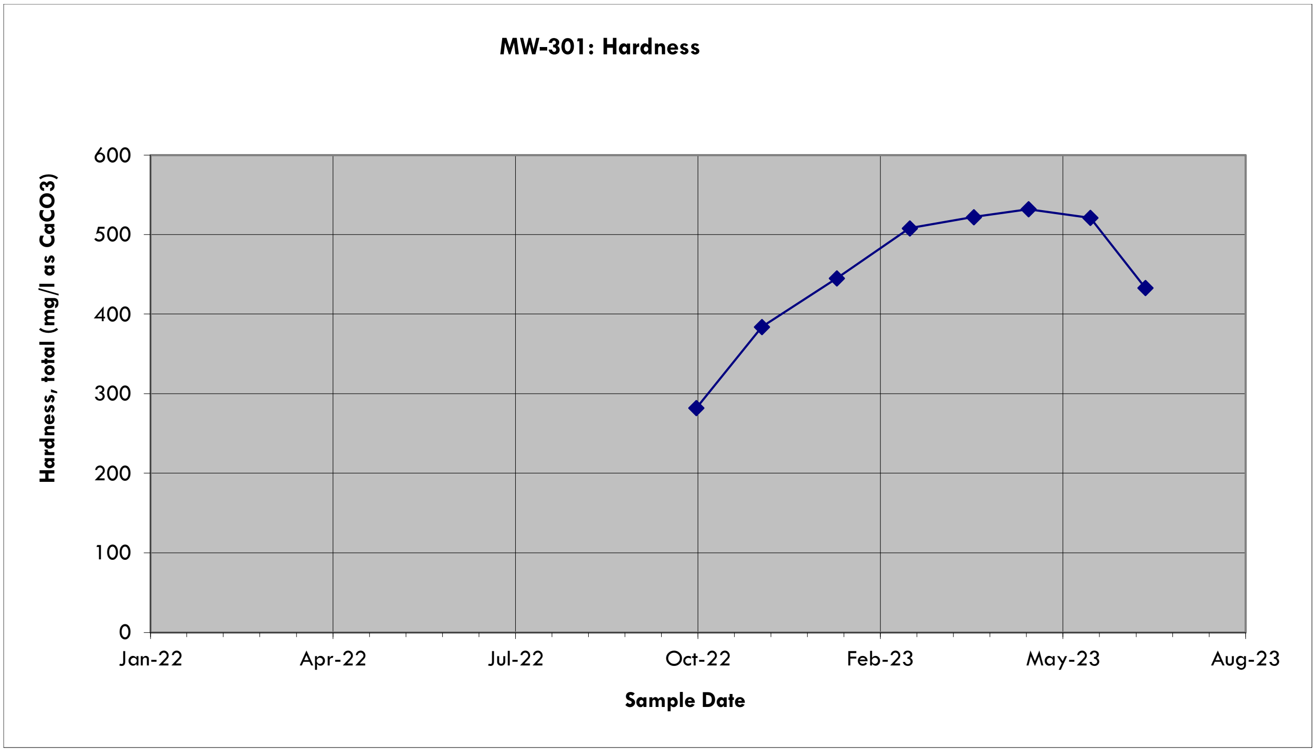
B = Compound detected in blank.

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-301	HARDNESS, TOTAL (MG/L AS CACO3)	01	282	10/27/2022	282	282	
MW-301	HARDNESS, TOTAL (MG/L AS CACO3)	01	384	12/2/2022	384	384	
MW-301	HARDNESS, TOTAL (MG/L AS CACO3)	01	445	1/12/2023	445	445	
MW-301	HARDNESS, TOTAL (MG/L AS CACO3)	01	508	2/21/2023	508	508	
MW-301	HARDNESS, TOTAL (MG/L AS CACO3)	01	522	3/28/2023	522	522	
MW-301	HARDNESS, TOTAL (MG/L AS CACO3)	01	532	4/27/2023	532	532	
MW-301	HARDNESS, TOTAL (MG/L AS CACO3)	01	521	5/31/2023	521	521	
MW-301	HARDNESS, TOTAL (MG/L AS CACO3)	01	433	6/30/2023	433	433	
Calculations							
Count						8	
Mean						453.38	
Std Dev						87.11	
3 X SD (PAL)						261.33	
Min Increase (PAL)						100	
PAL, Calculated						714.70	
PAL, Rounded						720	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from PacePort

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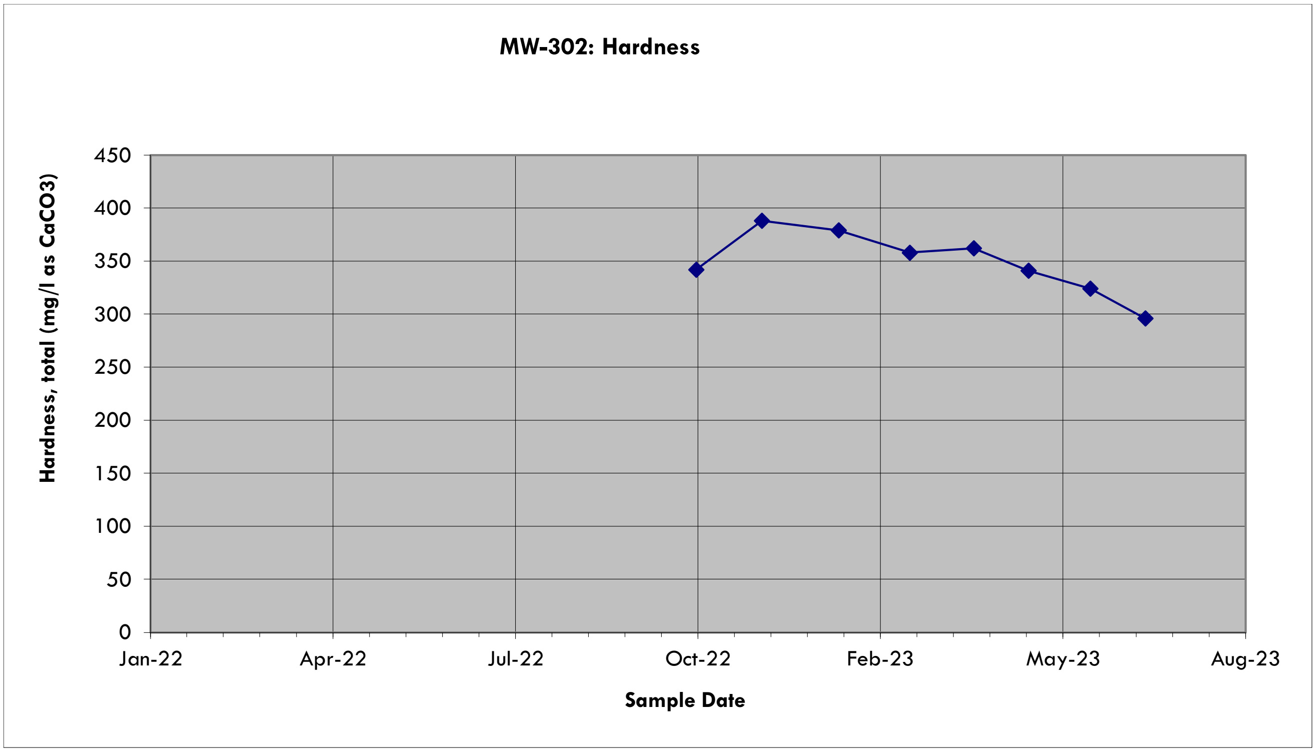
B = Compound detected in blank.

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-302	HARDNESS, TOTAL (MG/L AS CACO3)	01	342	10/27/2022	342	342	
MW-302	HARDNESS, TOTAL (MG/L AS CACO3)	01	388	12/2/2022	388	388	
MW-302	Total Hardness by 2340B	01	379	1/13/2023	379	379	
MW-302	Total Hardness by 2340B	01	358	2/21/2023	358	358	
MW-302	Total Hardness by 2340B	01	362	3/28/2023	362	362	
MW-302	Total Hardness by 2340B	01	341	4/27/2023	341	341	
MW-302	Total Hardness by 2340B	01	324	5/31/2023	324	324	
MW-302	Total Hardness by 2340B	01	296	6/30/2023	296	296	

Calculations		
Count	8	
Mean	348.75	
Std Dev	29.80	
3 X SD (PAL)	89.41	
Min Increase (PAL)	100	
PAL, Calculated	448.75	
PAL, Rounded	450	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from PacePort

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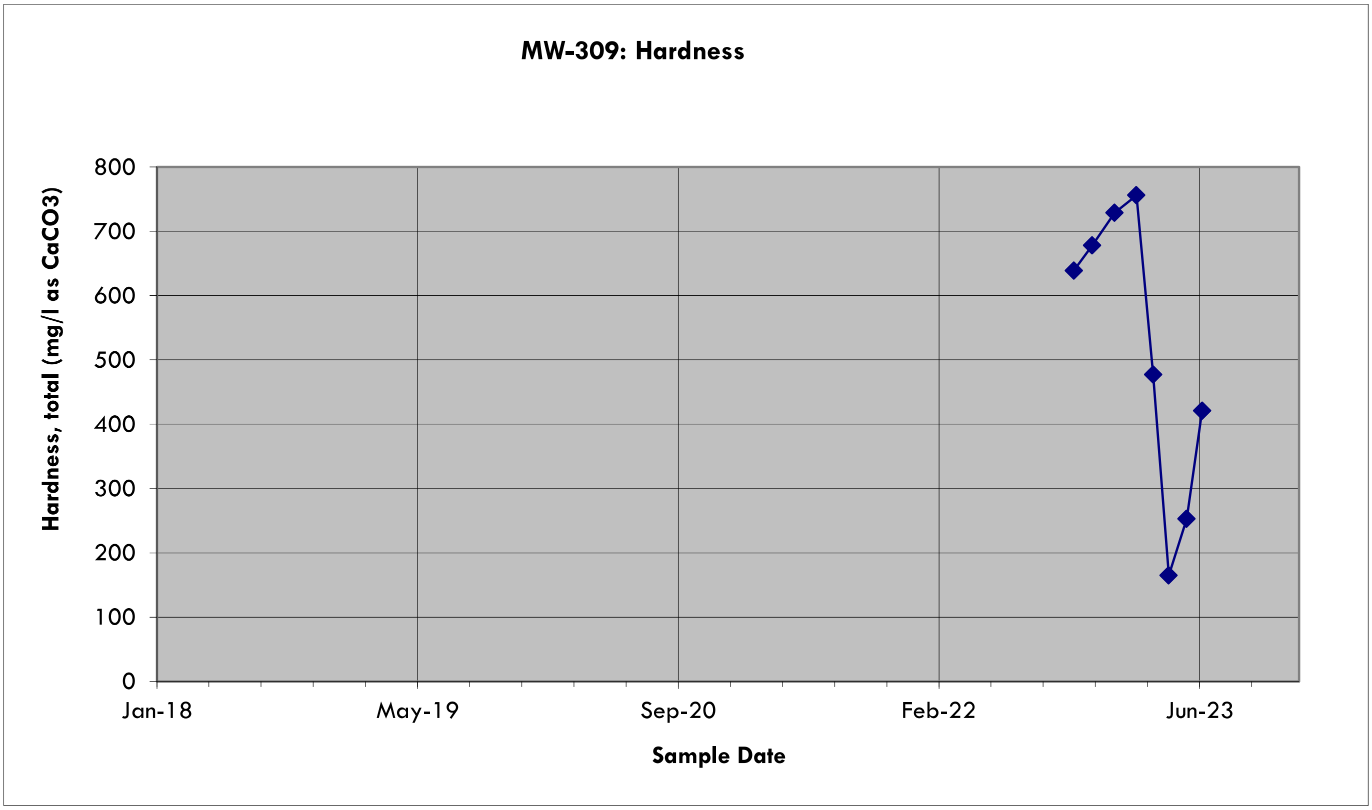
P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-309	HARDNESS, TOTAL (MG/L AS CACO3)	01	639	10/26/2022	639	639	
MW-309	HARDNESS, TOTAL (MG/L AS CACO3)	01	678	11/30/2022	678	678	
MW-309	HARDNESS, TOTAL (MG/L AS CACO3)	01	729	1/12/2023	729	729	
MW-309	HARDNESS, TOTAL (MG/L AS CACO3)	01	756	2/23/2023	756	756	
MW-309	HARDNESS, TOTAL (MG/L AS CACO3)	01	477	3/27/2023	477	477	
MW-309	HARDNESS, TOTAL (MG/L AS CACO3)	01	165	4/26/2023	165	165	
MW-309	HARDNESS, TOTAL (MG/L AS CACO3)	01	253	5/30/2023	253	253	
MW-309	HARDNESS, TOTAL (MG/L AS CACO3)	01	421	6/29/2023	421	421	
Calculations							
Count						8	
Mean						514.75	
Std Dev						222.73	
3 X SD (PAL)						668.18	
Min Increase (PAL)						100	
PAL, Calculated						1182.93	
PAL, Rounded						1,200	

Duplicate Data Not Used for Calculations							

Note:

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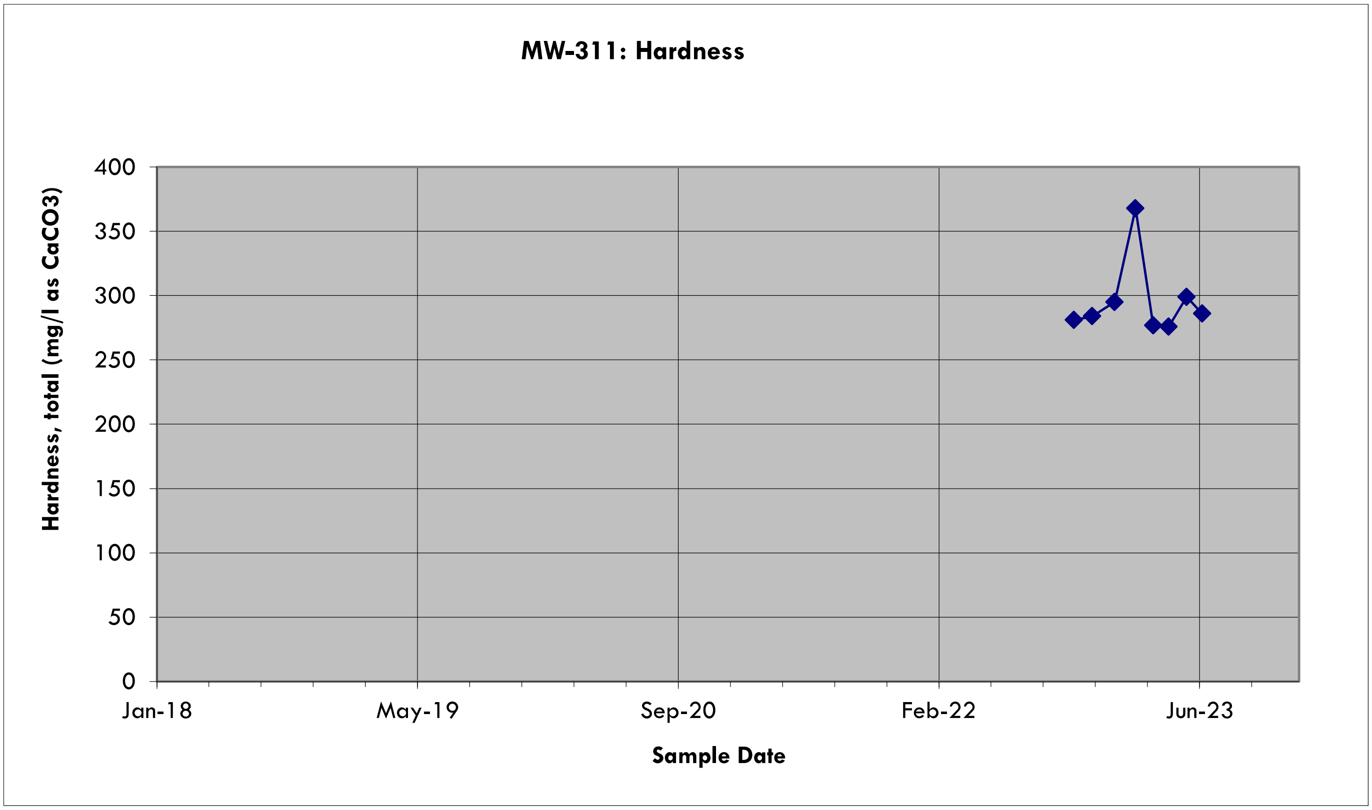
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

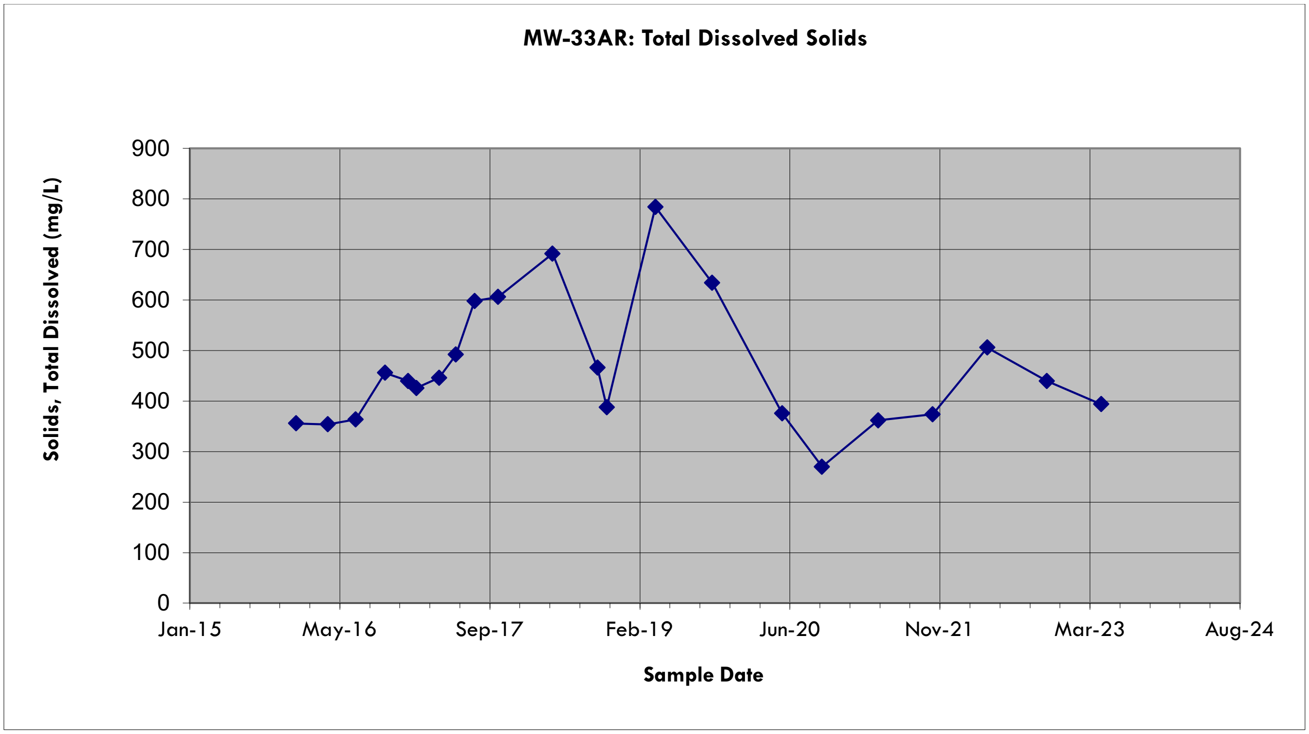


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-311	HARDNESS, TOTAL (MG/L AS CACO3)	01	281	10/26/2022	281	281	
MW-311	HARDNESS, TOTAL (MG/L AS CACO3)	01	284	11/30/2022	284	284	
MW-311	HARDNESS, TOTAL (MG/L AS CACO3)	01	295	1/12/2023	295	295	
MW-311	HARDNESS, TOTAL (MG/L AS CACO3)	01	368	2/21/2023	368	368	
MW-311	HARDNESS, TOTAL (MG/L AS CACO3)	01	277	3/27/2023	277	277	
MW-311	HARDNESS, TOTAL (MG/L AS CACO3)	01	276	4/26/2023	276	276	
MW-311	HARDNESS, TOTAL (MG/L AS CACO3)	01	299	5/30/2023	299	299	
MW-311	HARDNESS, TOTAL (MG/L AS CACO3)	01	286	6/29/2023	286	286	
Calculations							
Count						8	
Mean						295.75	
Std Dev						30.29	
3 X SD (PAL)						90.88	
Min Increase (PAL)						100	
PAL, Calculated						395.75	
PAL, Rounded						400	

Duplicate Data Not Used for Calculations							

Note:

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	356	12/21/2015	356	356	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	354	4/5/2016	354	354	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	364	7/7/2016	364	364	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	456	10/13/2016	456	456	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	440	12/29/2016	440	440	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	426	1/25/2017	426	426	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	446	4/11/2017	446	446	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	492	6/6/2017	492	492	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	598	8/7/2017	598	598	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	606	10/24/2017	606	606	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	692	4/24/2018	692	692	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	466	9/21/2018	466	466	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	388	10/22/2018	388	388	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	784	4/2/2019	784	784	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	634	10/8/2019	634	634	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	376	5/28/2020	376	376	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	270	10/8/2020	270	270	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	362	4/13/2021	362	362	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	374	10/12/2021	374	374	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	506	4/12/2022	506	506	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	440	10/27/2022	440	440	
MW-33AR	SOLIDS, TOTAL DISSOLVED (MG/L)	01	394	4/27/2023	394	394	
Calculations							
Count						22	
Mean						464.73	
Std Dev						126.35	
3 X SD (PAL)						379.05	
Min Increase (PAL)						200	
PAL, Calculated						843.78	
PAL, Rounded						850	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from ChemPoint

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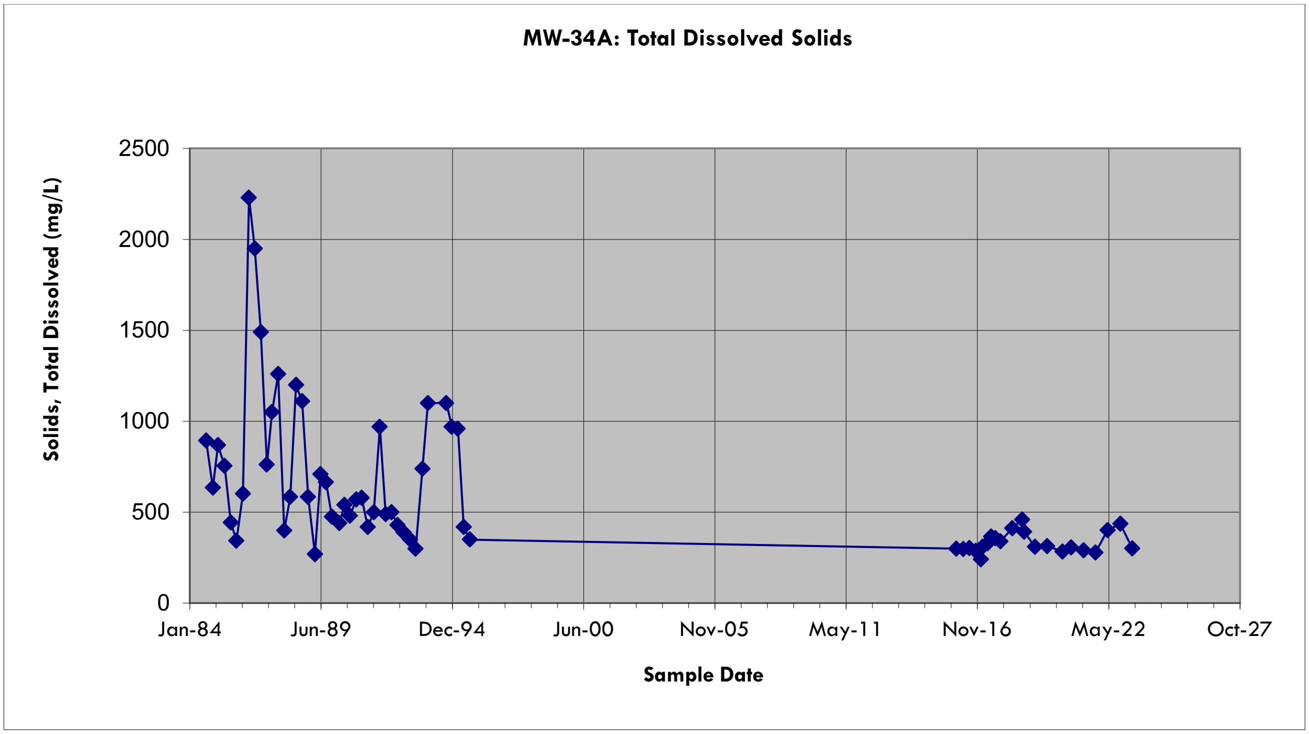

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	895	9/7/1984	895		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	635	12/17/1984	635		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	869	3/7/1985	869		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	755	6/14/1985	755		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	444	9/18/1985	444		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	344	12/12/1985	344		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	602	3/21/1986	602		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	2230	6/20/1986	2230		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1950	9/18/1986	1950		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1490	12/19/1986	1490		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	763	3/20/1987	763		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1050	6/5/1987	1050		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1260	9/9/1987	1260		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	400	12/9/1987	400		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	584	3/10/1988	584		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1200	6/7/1988	1200		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1110	9/9/1988	1110		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	584	12/7/1988	584		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	270	3/21/1989	270		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	270	3/22/1989	270		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	710	6/16/1989	710		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	665	9/6/1989	665		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	475	12/5/1989	475		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	440	3/29/1990	440		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	540	6/14/1990	540		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	480	9/5/1990	480		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	570	12/10/1990	570		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	580	3/5/1991	580		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	420	6/3/1991	420		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	500	9/6/1991	500		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	970	12/4/1991	970		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	490	3/3/1992	490		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	500	6/2/1992	500		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	430	9/1/1992	430		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	390	12/2/1992	390		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	350	3/10/1993	350		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	300	6/2/1993	300		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	740	9/14/1993	740		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1100	12/7/1993	1100		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1100	9/13/1994	1100		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	970	12/6/1994	970		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	960	3/7/1995	960		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	420	6/6/1995	420		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	350	9/6/1995	350		
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	300	12/21/2015	300	300	Using last 20 years of data for PAL calculation
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	298	4/5/2016	298	298	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	304	7/7/2016	304	304	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	288	10/13/2016	288	288	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	242	12/29/2016	242	242	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	310	1/25/2017	310	310	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	330	4/11/2017	330	330	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	366	6/6/2017	366	366	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	358	8/7/2017	358	358	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	340	10/24/2017	340	340	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	412	4/24/2018	412	412	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	460	9/21/2018	460	460	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	392	10/22/2018	392	392	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	310	4/2/2019	310	310	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	314	10/8/2019	314	314	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	284	5/28/2020	284	284	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	306	10/8/2020	306	306	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	290	4/13/2021	290	290	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	278	10/12/2021	278	278	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	402	4/12/2022	402	402	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	436	10/27/2022	436	436	
MW-34A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	302	4/26/2023	302	302	
Calculations							
Count						22	
Mean						332.82	
Std Dev						56.42	
3 X SD (PAL)						169.25	
Min Increase (PAL)						200	
PAL, Calculated						532.82	
PAL, Rounded						540	

Duplicate Data Not Used for Calculations							
MW-34A	Total Dissolved Solids	02	324	12/21/2015	324	324	

Note: Data downloaded from ChemPoint

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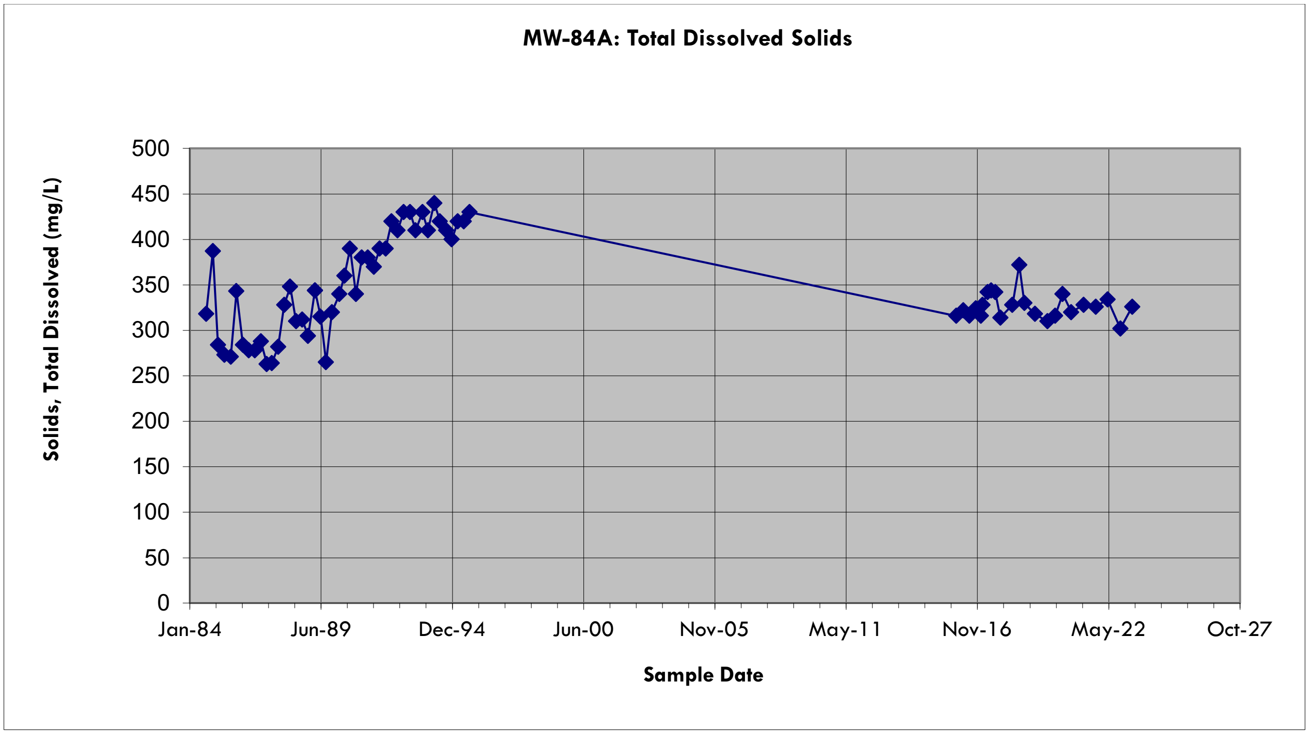
MW-84A: Total Dissolved Solids

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	318	9/7/1984	318	318	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	387	12/17/1984	387	387	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	284	3/7/1985	284	284	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	273	6/14/1985	273	273	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	271	9/18/1985	271	271	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	343	12/12/1985	343	343	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	284	3/21/1986	284	284	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	278	6/20/1986	278	278	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	278	9/18/1986	278	278	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	288	12/19/1986	288	288	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	263	3/20/1987	263	263	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	264	6/5/1987	264	264	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	282	9/9/1987	282	282	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	328	12/9/1987	328	328	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	348	3/10/1988	348	348	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	310	6/7/1988	310	310	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	312	9/9/1988	312	312	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	294	12/7/1988	294	294	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	344	3/21/1989	344	344	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	344	3/22/1989	344	344	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	315	6/16/1989	315	315	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	265	9/7/1989	265	265	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	320	12/6/1989	320	320	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	340	3/29/1990	340	340	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	360	6/14/1990	360	360	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	390	9/6/1990	390	390	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	340	12/7/1990	340	340	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	380	3/6/1991	380	380	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	380	6/3/1991	380	380	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	370	9/6/1991	370	370	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	390	12/5/1991	390	390	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	390	3/2/1992	390	390	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	420	6/2/1992	420	420	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	410	9/2/1992	410	410	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	430	12/2/1992	430	430	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	430	3/10/1993	430	430	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	410	6/3/1993	410	410	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	430	9/14/1993	430	430	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	410	12/7/1993	410	410	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	440	3/15/1994	440	440	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	420	6/7/1994	420	420	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	410	9/13/1994	410	410	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	400	12/6/1994	400	400	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	420	3/7/1995	420	420	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	420	6/5/1995	420	420	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	430	9/5/1995	430	430	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	316	12/22/2015	316	316	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	322	4/5/2016	322	322	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	316	7/8/2016	316	316	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	324	10/13/2016	324	324	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	316	12/29/2016	316	316	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	328	1/25/2017	328	328	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	342	4/11/2017	342	342	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	344	6/6/2017	344	344	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	342	8/8/2017	342	342	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	314	10/24/2017	314	314	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	328	4/25/2018	328	328	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	372	8/8/2018	372	372	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	330	10/24/2018	330	330	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	318	4/3/2019	318	318	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	310	10/9/2019	310	310	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	316	2/3/2020	316	316	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	340	5/29/2020	340	340	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	320	10/8/2020	320	320	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	328	4/14/2021	328	328	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	326	10/14/2021	326	326	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	334	4/13/2022	334	334	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	302	10/27/2022	302	302	
MW-84A	SOLIDS, TOTAL DISSOLVED (MG/L)	01	326	4/27/2023	326	326	
Calculations							
Count						69	
Mean						343.87	
Std Dev						49.31	
3 X SD (PAL)						147.93	
Min Increase (PAL)						200	
PAL, Calculated						543.87	
PAL, Rounded						550	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from ChemPoint

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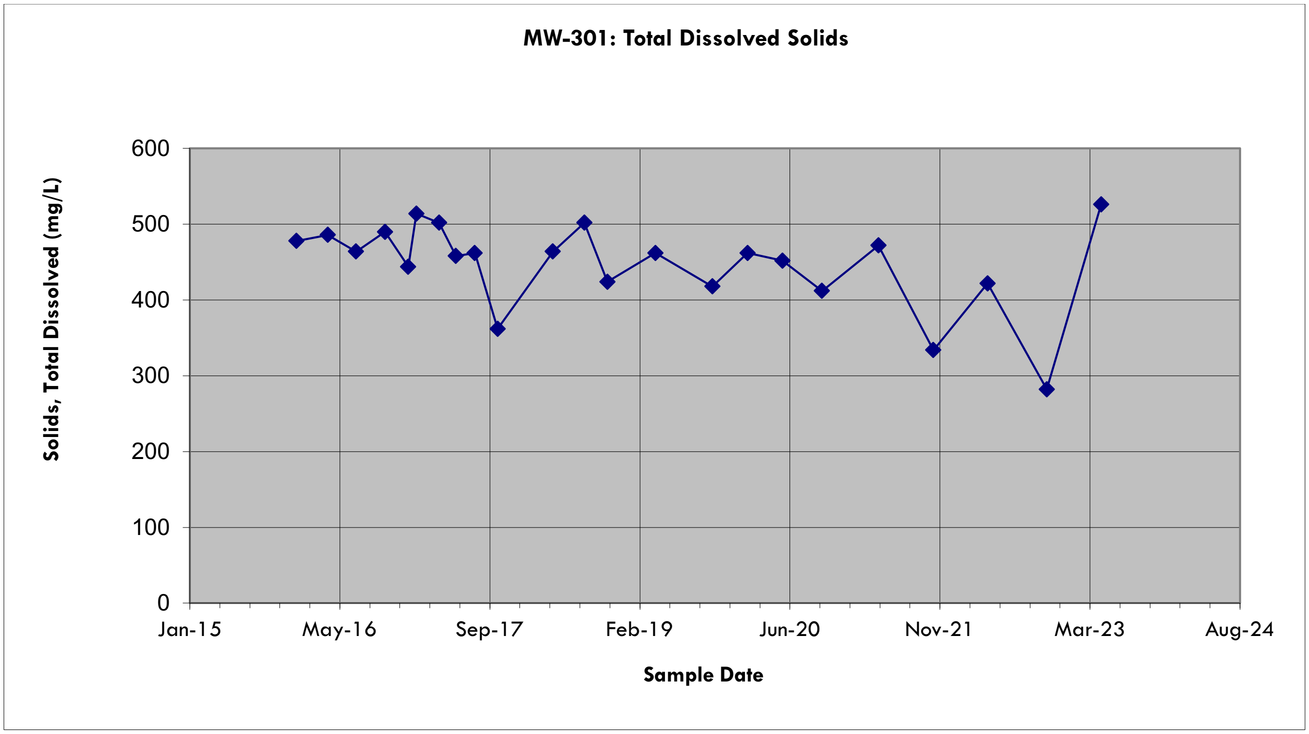

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	478	12/22/2015	478	478	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	486	4/5/2016	486	486	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	464	7/8/2016	464	464	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	490	10/13/2016	490	490	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	444	12/29/2016	444	444	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	514	1/25/2017	514	514	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	502	4/11/2017	502	502	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	458	6/6/2017	458	458	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	462	8/8/2017	462	462	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	362	10/23/2017	362	362	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	464	4/25/2018	464	464	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	502	8/8/2018	502	502	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	424	10/24/2018	424	424	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	462	4/2/2019	462	462	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	418	10/9/2019	418	418	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	462	2/3/2020	462	462	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	452	5/29/2020	452	452	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	412	10/8/2020	412	412	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	472	4/14/2021	472	472	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	334	10/14/2021	334	334	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	422	4/13/2022	422	422	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	282	10/27/2022	282	282	
MW-301	SOLIDS, TOTAL DISSOLVED (MG/L)	01	526	4/27/2023	526	526	
Calculations							
Count						23	
Mean						447.48	
Std Dev						57.83	
3 X SD (PAL)						173.49	
Min Increase (PAL)						200	
PAL, Calculated						647.48	
PAL, Rounded						650	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from ChemPoint

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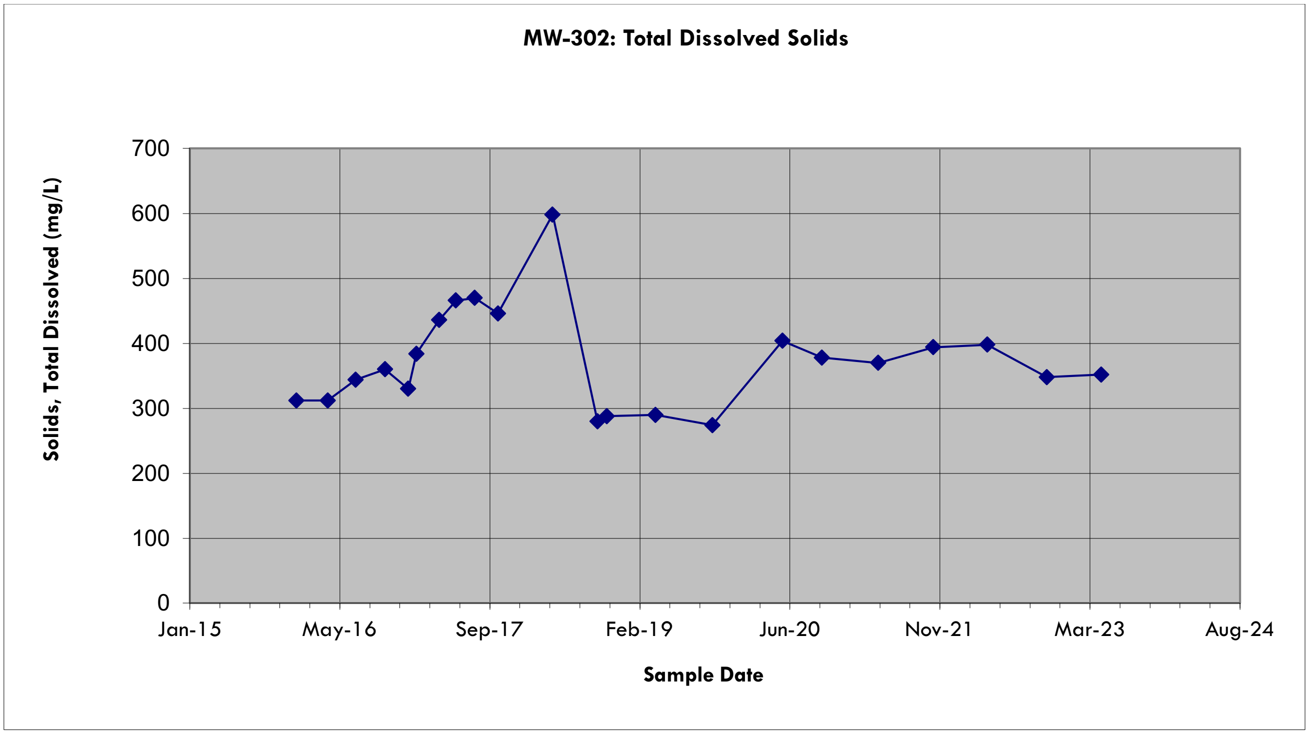

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	312	12/22/2015	312	312	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	312	4/5/2016	312	312	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	344	7/7/2016	344	344	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	360	10/13/2016	360	360	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	330	12/29/2016	330	330	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	384	1/25/2017	384	384	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	436	4/11/2017	436	436	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	466	6/6/2017	466	466	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	470	8/8/2017	470	470	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	446	10/24/2017	446	446	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	598	4/24/2018	598	598	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	280	9/21/2018	280	280	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	288	10/22/2018	288	288	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	290	4/2/2019	290	290	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	274	10/9/2019	274	274	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	404	5/29/2020	404	404	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	378	10/8/2020	378	378	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	370	4/13/2021	370	370	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	394	10/14/2021	394	394	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	398	4/12/2022	398	398	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	348	10/27/2022	348	348	
MW-302	SOLIDS, TOTAL DISSOLVED (MG/L)	01	352	4/27/2023	352	352	
Calculations							
Count						22	
Mean						374.27	
Std Dev						76.86	
3 X SD (PAL)						230.58	
Min Increase (PAL)						200	
PAL, Calculated						604.85	
PAL, Rounded						610	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from ChemPoint

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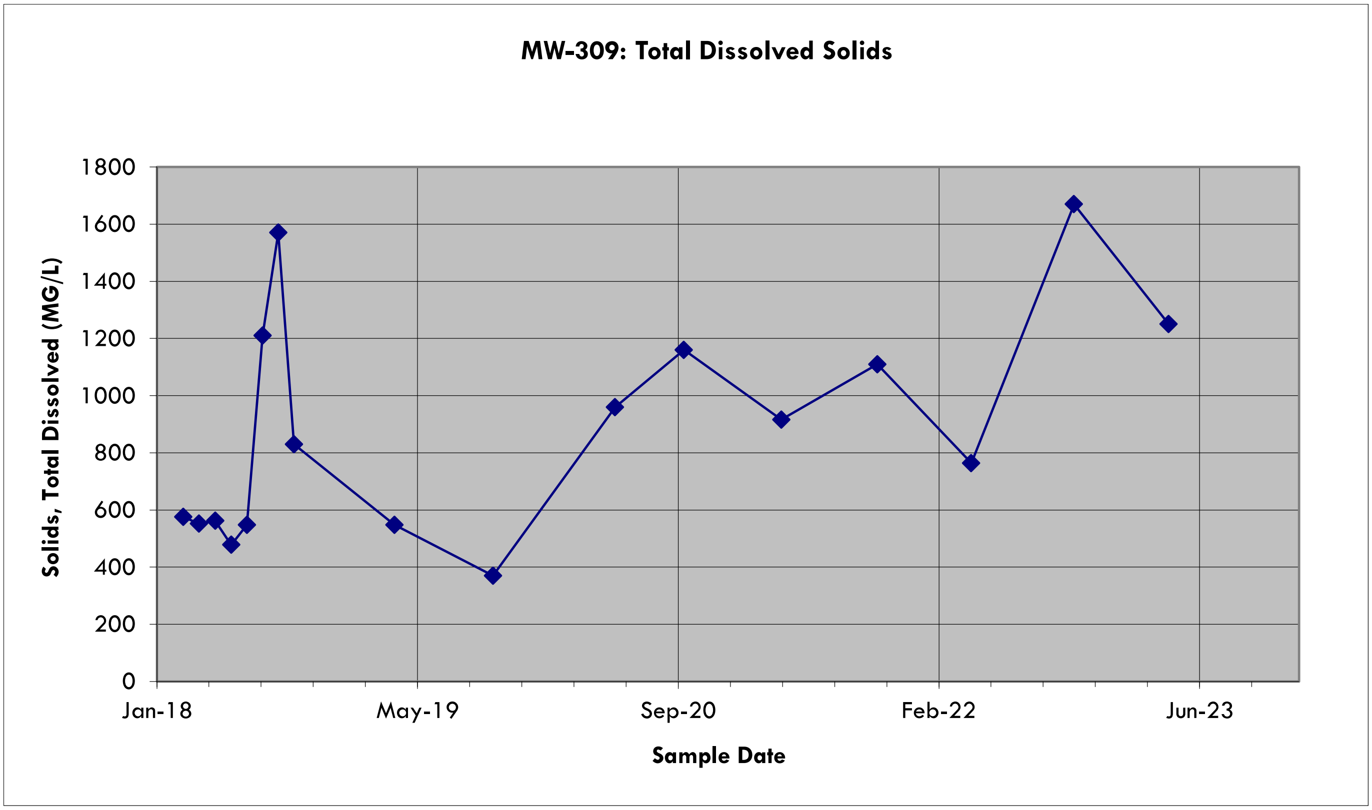


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	576	2/21/2018	576	576	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	552	3/23/2018	552	552	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	562	4/23/2018	562	562	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	478	5/24/2018	478	478	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	548	6/23/2018	548	548	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1210	7/23/2018	1210	1210	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1570	8/22/2018	1570	1570	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	830	9/21/2018	830	830	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	548	4/2/2019	548	548	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	370	10/8/2019	370	370	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	960	5/29/2020	960	960	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1160	10/8/2020	1160	1160	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	916	4/13/2021	916	916	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1110	10/14/2021	1110	1110	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	764	4/12/2022	764	764	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1670	10/26/2022	1670	1670	
MW-309	SOLIDS, TOTAL DISSOLVED (MG/L)	01	1250	4/26/2023	1250	1250	
Calculations							
Count						17	
Mean						886.71	
Std Dev						390.79	
3 X SD (PAL)						1172.37	
Min Increase (PAL)						200	
PAL, Calculated						2059.07	
PAL, Rounded						2,100	

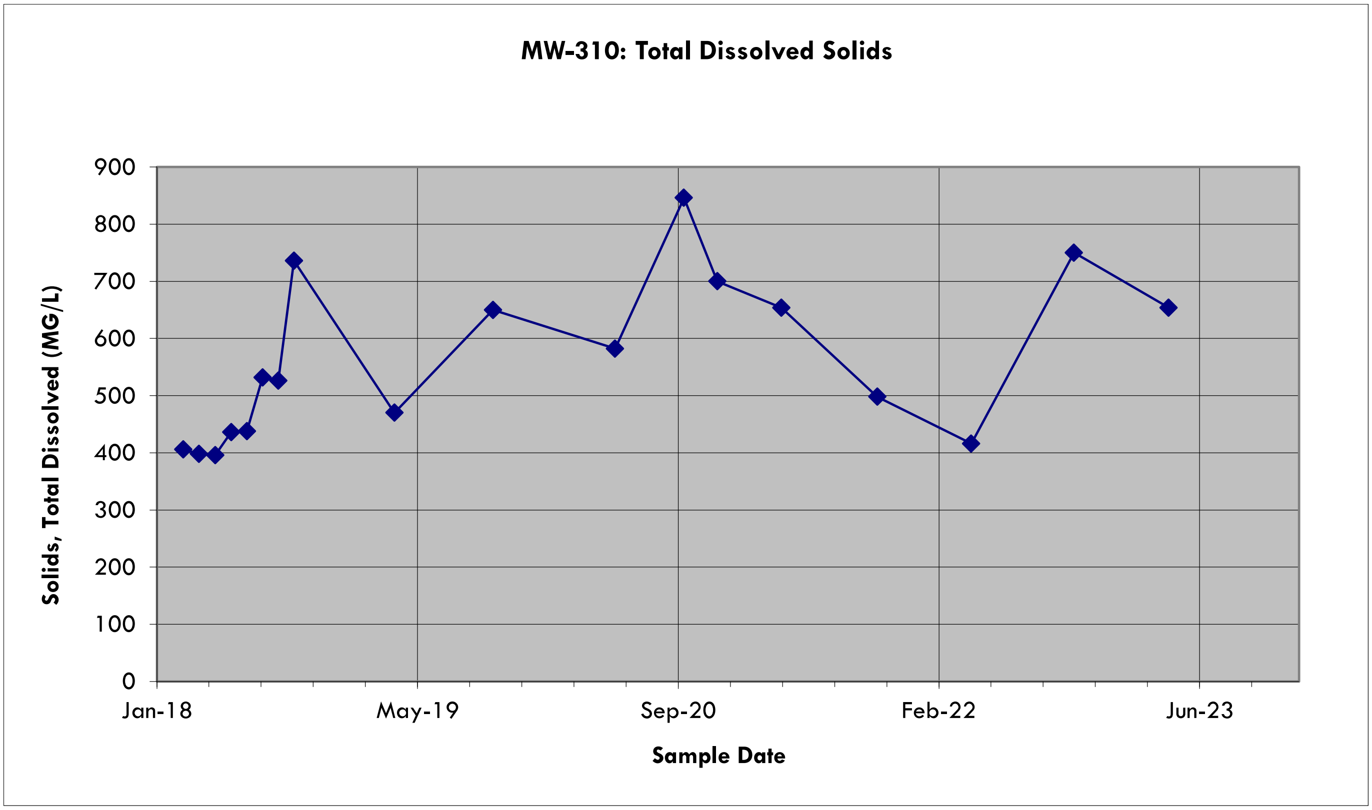
Duplicate Data Not Used for Calculations							

Note:

J = Result is an estimated value below the laboratory's limit of quantitation.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



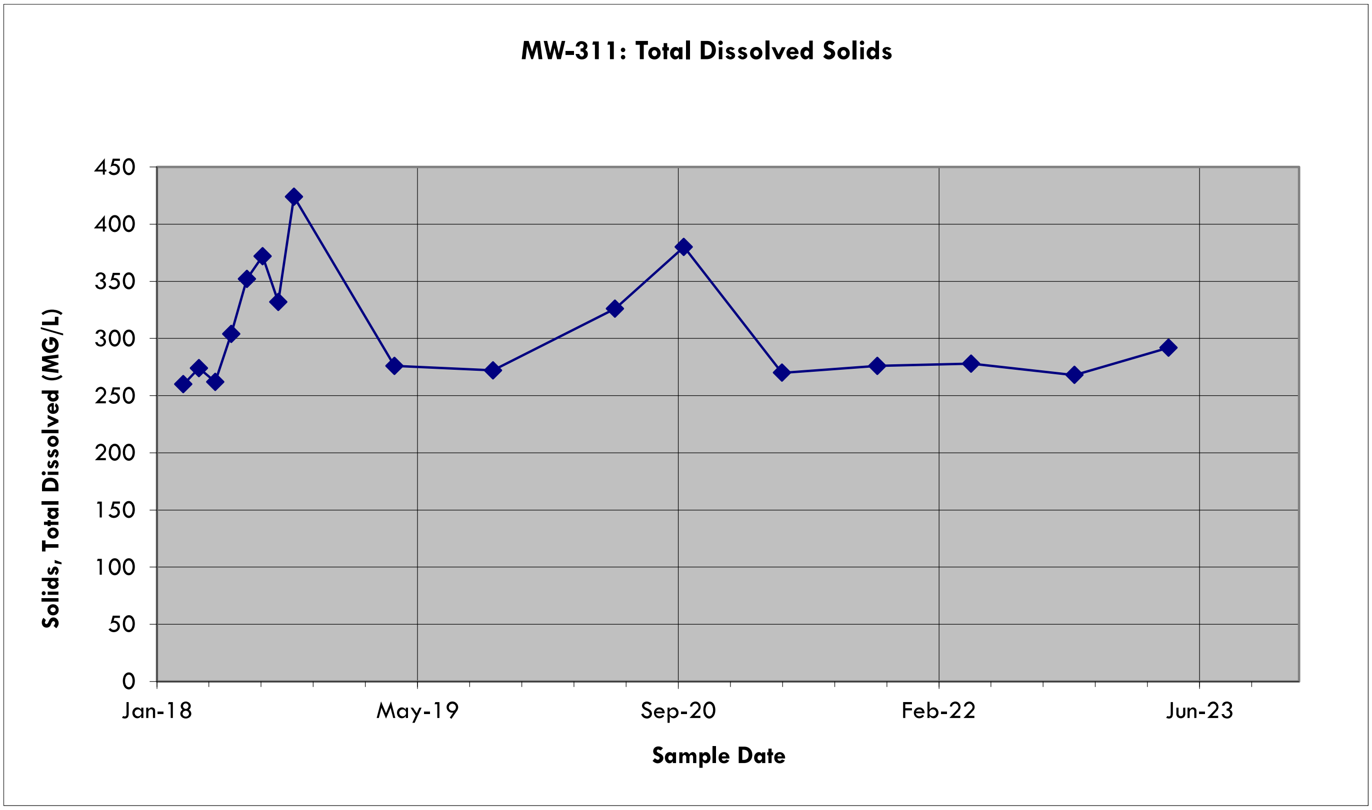
Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	406	2/21/2018	406	406	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	398	3/23/2018	398	398	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	396	4/23/2018	396	396	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	436	5/24/2018	436	436	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	438	6/23/2018	438	438	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	532	7/23/2018	532	532	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	526	8/22/2018	526	526	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	736	9/21/2018	736	736	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	470	4/2/2019	470	470	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	650	10/8/2019	650	650	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	582	5/29/2020	582	582	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	846	10/8/2020	846	846	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	700	12/11/2020	700	700	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	654	4/13/2021	654	654	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	498	10/14/2021	498	498	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	416	4/12/2022	416	416	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	750	10/26/2022	750	750	
MW-310	SOLIDS, TOTAL DISSOLVED (MG/L)	01	654	4/26/2023	654	654	
Calculations							
Count						18	
Mean						560.44	
Std Dev						140.68	
3 X SD (PAL)						422.05	
Min Increase (PAL)						200	
PAL, Calculated						982.49	
PAL, Rounded						990	

Duplicate Data Not Used for Calculations							

Note:

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	260	2/21/2018	260	260	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	274	3/23/2018	274	274	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	262	4/23/2018	262	262	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	304	5/24/2018	304	304	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	352	6/23/2018	352	352	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	372	7/23/2018	372	372	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	332	8/22/2018	332	332	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	424	9/21/2018	424	424	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	276	4/2/2019	276	276	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	272	10/8/2019	272	272	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	326	5/29/2020	326	326	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	380	10/8/2020	380	380	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	270	4/14/2021	270	270	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	276	10/14/2021	276	276	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	278	4/12/2022	278	278	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	268	10/27/2022	268	268	
MW-311	SOLIDS, TOTAL DISSOLVED (MG/L)	01	292	4/26/2023	292	292	
Calculations							
Count						17	
Mean						306.94	
Std Dev						49.17	
3 X SD (PAL)						147.52	
Min Increase (PAL)						200	
PAL, Calculated						506.94	
PAL, Rounded						510	

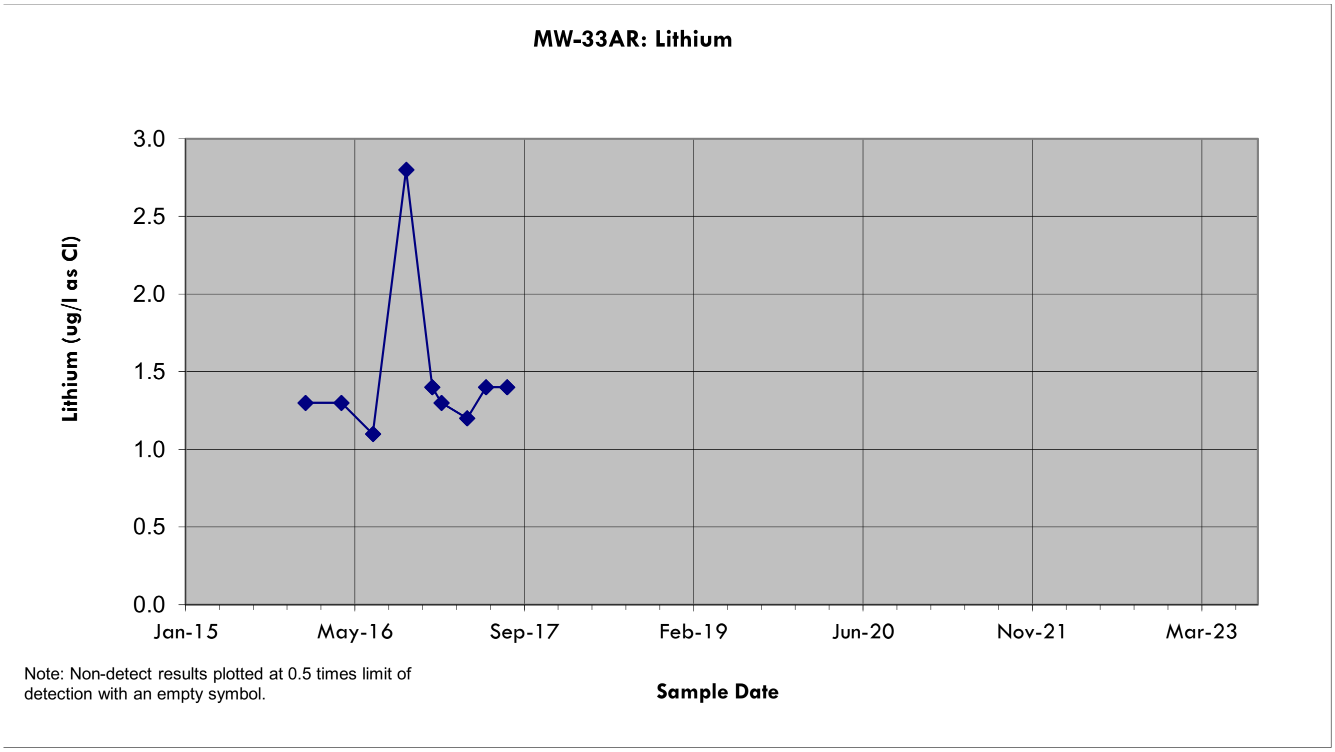
Duplicate Data Not Used for Calculations							

Note:

J = Result is an estimated value below the laboratory's limit of quantitation.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	Lithium, Total (ug/L)	01	1.3	12/21/2015	1.3	1.3	
MW-33AR	Lithium, Total (ug/L)	01	1.3	4/5/2016	1.3	1.3	
MW-33AR	Lithium, Total (ug/L)	01	1.1	7/7/2016	1.1	1.1	
MW-33AR	Lithium, Total (ug/L)	01	2.8	10/13/2016	2.8	2.8	
MW-33AR	Lithium, Total (ug/L)	01	1.4	12/29/2016	1.4	1.4	
MW-33AR	Lithium, Total (ug/L)	01	1.3	1/25/2017	1.3	1.3	
MW-33AR	Lithium, Total (ug/L)	01	1.2	4/11/2017	1.2	1.2	
MW-33AR	Lithium, Total (ug/L)	01	1.4	6/6/2017	1.4	1.4	
MW-33AR	Lithium, Total (ug/L)	01	1.4	8/7/2017	1.4	1.4	
Calculations							
Count						9	
Mean						1.5	
Std Dev						0.51	
3 X SD (PAL)						1.5	
PAL, Calculated						3.0	
PAL, Rounded						3.0	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l; data downloaded from ChemPoint
J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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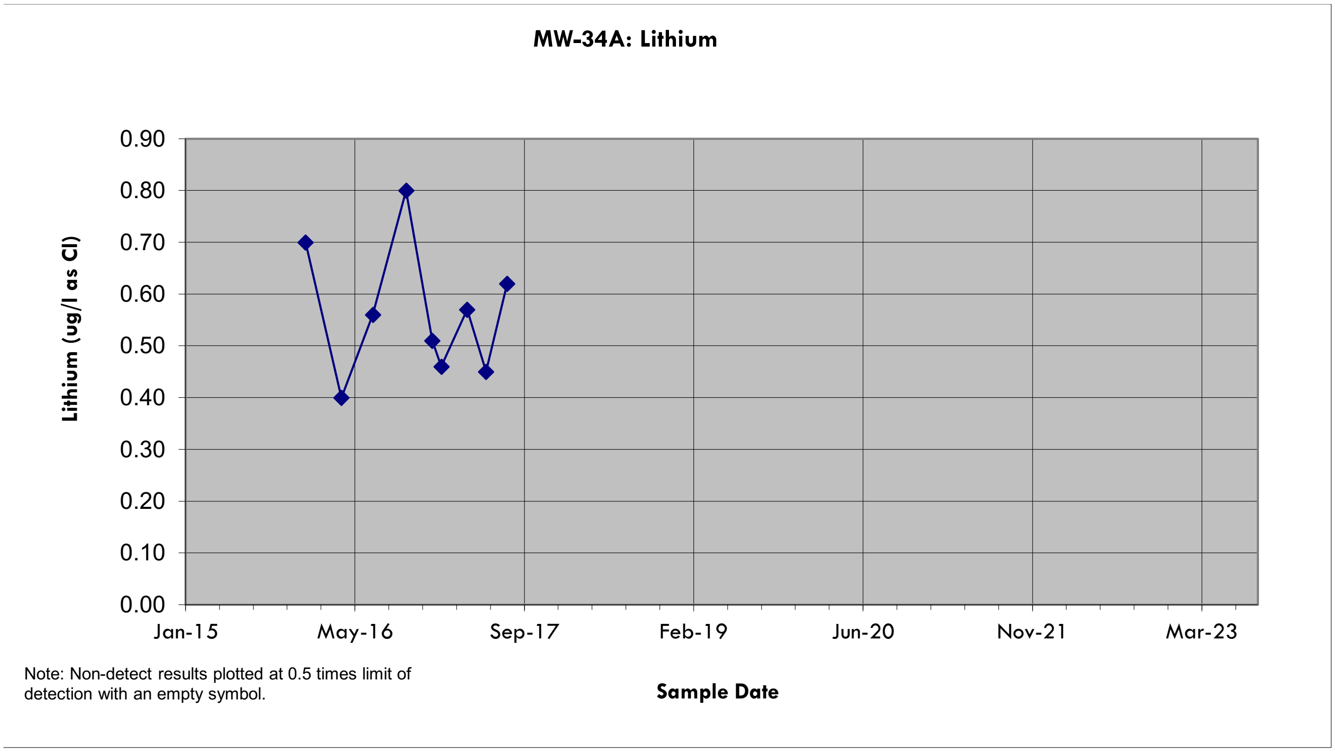

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	Lithium, Total (ug/L)	01	0.7	12/21/2015	0.7	0.7	J
MW-34A	Lithium, Total (ug/L)	01	0.4	4/5/2016	0.4	0.4	J
MW-34A	Lithium, Total (ug/L)	01	0.56	7/7/2016	0.56	0.56	J
MW-34A	Lithium, Total (ug/L)	01	0.8	10/13/2016	0.8	0.8	J
MW-34A	Lithium, Total (ug/L)	01	0.51	12/29/2016	0.51	0.51	J
MW-34A	Lithium, Total (ug/L)	01	0.46	1/25/2017	0.46	0.46	J
MW-34A	Lithium, Total (ug/L)	01	0.57	4/11/2017	0.57	0.57	J
MW-34A	Lithium, Total (ug/L)	01	0.45	6/6/2017	0.45	0.45	J
MW-34A	Lithium, Total (ug/L)	01	0.62	8/7/2017	0.62	0.62	J
Calculations							
Count						9	
Mean						0.56	
Std Dev						0.13	
3 X SD (PAL)						0.38	
PAL, Calculated						0.95	
PAL, Rounded						1.0	

Duplicate Data Not Used for Calculations							
MW-34A	Lithium, Total (ug/L)	02	0.64	12/21/2015	0.64	0.64	J

Note: Current PAL = 125 mg/l; ES = 250 mg/l; data downloaded from ChemPoint
J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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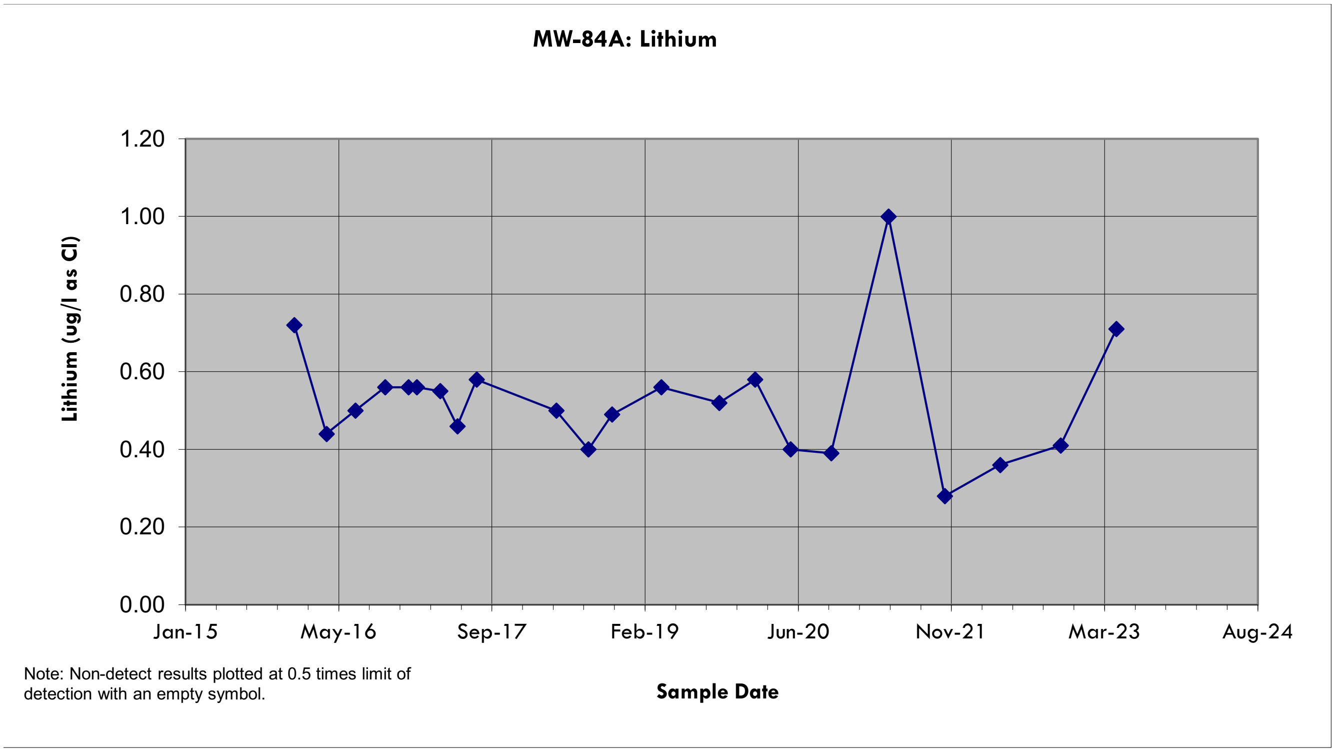


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84A	Lithium, Total (ug/L)	01	0.72	12/22/2015	0.72	0.72	J
MW-84A	Lithium, Total (ug/L)	01	0.44	4/5/2016	0.44	0.44	J
MW-84A	Lithium, Total (ug/L)	01	0.5	7/8/2016	0.5	0.5	J
MW-84A	Lithium, Total (ug/L)	01	0.56	10/13/2016	0.56	0.56	J
MW-84A	Lithium, Total (ug/L)	01	0.56	12/29/2016	0.56	0.56	J
MW-84A	Lithium, Total (ug/L)	01	0.56	1/25/2017	0.56	0.56	J
MW-84A	Lithium, Total (ug/L)	01	0.55	4/11/2017	0.55	0.55	J
MW-84A	Lithium, Total (ug/L)	01	0.46	6/6/2017	0.46	0.46	J
MW-84A	Lithium, Total (ug/L)	01	0.58	8/8/2017	0.58	0.58	J
MW-84A	Lithium, Total (ug/L)	01	0.5	4/25/2018	0.5	0.5	J
MW-84A	Lithium, Total (ug/L)	01	0.4	8/8/2018	0.4	0.4	J
MW-84A	Lithium, Total (ug/L)	01	0.49	10/24/2018	0.49	0.49	J
MW-84A	Lithium, Total (ug/L)	01	0.56	4/3/2019	0.56	0.56	J
MW-84A	Lithium, Total (ug/L)	01	0.52	10/9/2019	0.52	0.52	J
MW-84A	Lithium, Total (ug/L)	01	0.58	2/3/2020	0.58	0.58	J
MW-84A	Lithium, Total (ug/L)	01	0.4	5/29/2020	0.4	0.4	J
MW-84A	Lithium, Total (ug/L)	01	0.39	10/8/2020	0.39	0.39	J
MW-84A	Lithium, Total (ug/L)	01	1	4/14/2021	1	1	
MW-84A	Lithium, Total (ug/L)	01	0.28	10/14/2021	0.28	0.28	J
MW-84A	Lithium, Total (ug/L)	01	0.36	4/13/2022	0.36	0.36	J
MW-84A	Lithium, Total (ug/L)	01	0.41	10/27/2022	0.41	0.41	J
MW-84A	Lithium, Total (ug/L)	01	0.71	4/27/2023	0.71	0.71	J
Calculations							
Count						22	
Mean						0.52	
Std Dev						0.15	
3 X SD (PAL)						0.45	
PAL, Calculated						0.97	
PAL, Rounded						1.0	

Duplicate Data Not Used for Calculations							

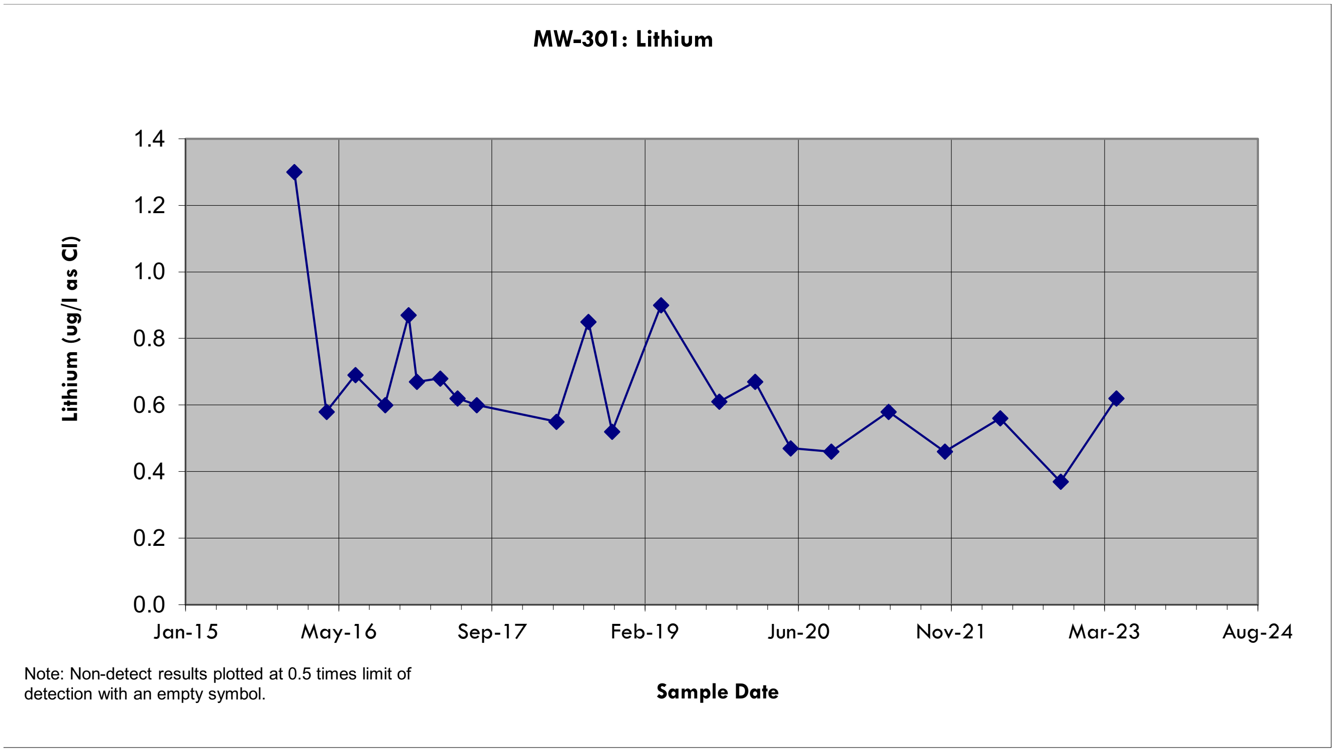
Note: Current PAL = 125 mg/l; ES = 250 mg/l; data downloaded from ChemPoint

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.



Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

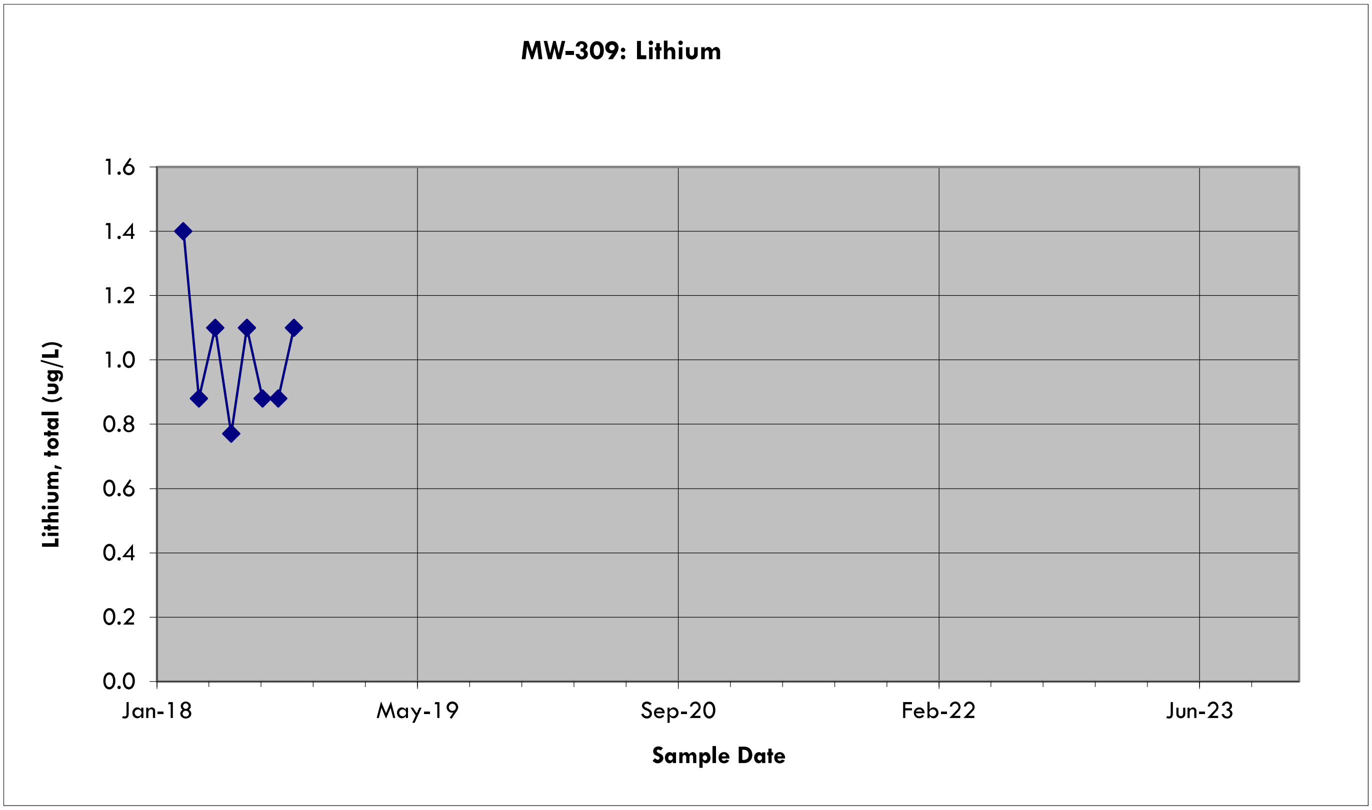
Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-301	Lithium, Total (ug/L)	01	1.3	12/22/2015	1.3	1.3	
MW-301	Lithium, Total (ug/L)	01	0.58	4/5/2016	0.58	0.58	J
MW-301	Lithium, Total (ug/L)	01	0.69	7/8/2016	0.69	0.69	J
MW-301	Lithium, Total (ug/L)	01	0.6	10/13/2016	0.6	0.6	J
MW-301	Lithium, Total (ug/L)	01	0.87	12/29/2016	0.87	0.87	J
MW-301	Lithium, Total (ug/L)	01	0.67	1/25/2017	0.67	0.67	J
MW-301	Lithium, Total (ug/L)	01	0.68	4/11/2017	0.68	0.68	J
MW-301	Lithium, Total (ug/L)	01	0.62	6/6/2017	0.62	0.62	J
MW-301	Lithium, Total (ug/L)	01	0.6	8/8/2017	0.6	0.6	J
MW-301	Lithium, Total (ug/L)	01	0.55	4/25/2018	0.55	0.55	J
MW-301	Lithium, Total (ug/L)	01	0.85	8/8/2018	0.85	0.85	J
MW-301	Lithium, Total (ug/L)	01	0.52	10/24/2018	0.52	0.52	J
MW-301	Lithium, Total (ug/L)	01	0.9	4/2/2019	0.9	0.9	J
MW-301	Lithium, Total (ug/L)	01	0.61	10/9/2019	0.61	0.61	J
MW-301	Lithium, Total (ug/L)	01	0.67	2/3/2020	0.67	0.67	J
MW-301	Lithium, Total (ug/L)	01	0.47	5/29/2020	0.47	0.47	J
MW-301	Lithium, Total (ug/L)	01	0.46	10/8/2020	0.46	0.46	J
MW-301	Lithium, Total (ug/L)	01	0.58	4/14/2021	0.58	0.58	J
MW-301	Lithium, Total (ug/L)	01	0.46	10/14/2021	0.46	0.46	J
MW-301	Lithium, Total (ug/L)	01	0.56	4/13/2022	0.56	0.56	J
MW-301	Lithium, Total (ug/L)	01	0.37	10/27/2022	0.37	0.37	J
MW-301	Lithium, Total (ug/L)	01	0.62	4/27/2023	0.62	0.62	J
Calculations							
Count						22	
Mean						0.65	
Std Dev						0.20	
3 X SD (PAL)						0.59	
PAL, Calculated						1.24	
PAL, Rounded						1.3	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l; data downloaded from ChemPoint
J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-309	LITHIUM, TOTAL (UG/L)	01	1.4	2/21/2018	1.4	1.4	
MW-309	LITHIUM, TOTAL (UG/L)	01	0.88	3/23/2018	0.88	0.88	J
MW-309	LITHIUM, TOTAL (UG/L)	01	1.1	4/23/2018	1.1	1.1	
MW-309	LITHIUM, TOTAL (UG/L)	01	0.77	5/24/2018	0.77	0.77	J
MW-309	LITHIUM, TOTAL (UG/L)	01	1.1	6/23/2018	1.1	1.1	
MW-309	LITHIUM, TOTAL (UG/L)	01	0.88	7/23/2018	0.88	0.88	J
MW-309	LITHIUM, TOTAL (UG/L)	01	1.1	8/22/2018	0.88	0.88	
MW-309	LITHIUM, TOTAL (UG/L)	01	0.76	9/21/2018	1.1	1.1	J
Calculations							
Count						8	
Mean						1.01	
Std Dev						0.20	
3 X SD (PAL)						0.60	
Min Increase (PAL)						N/A	
PAL, Calculated						1.62	
PAL, Rounded						1.7	

Duplicate Data Not Used for Calculations							

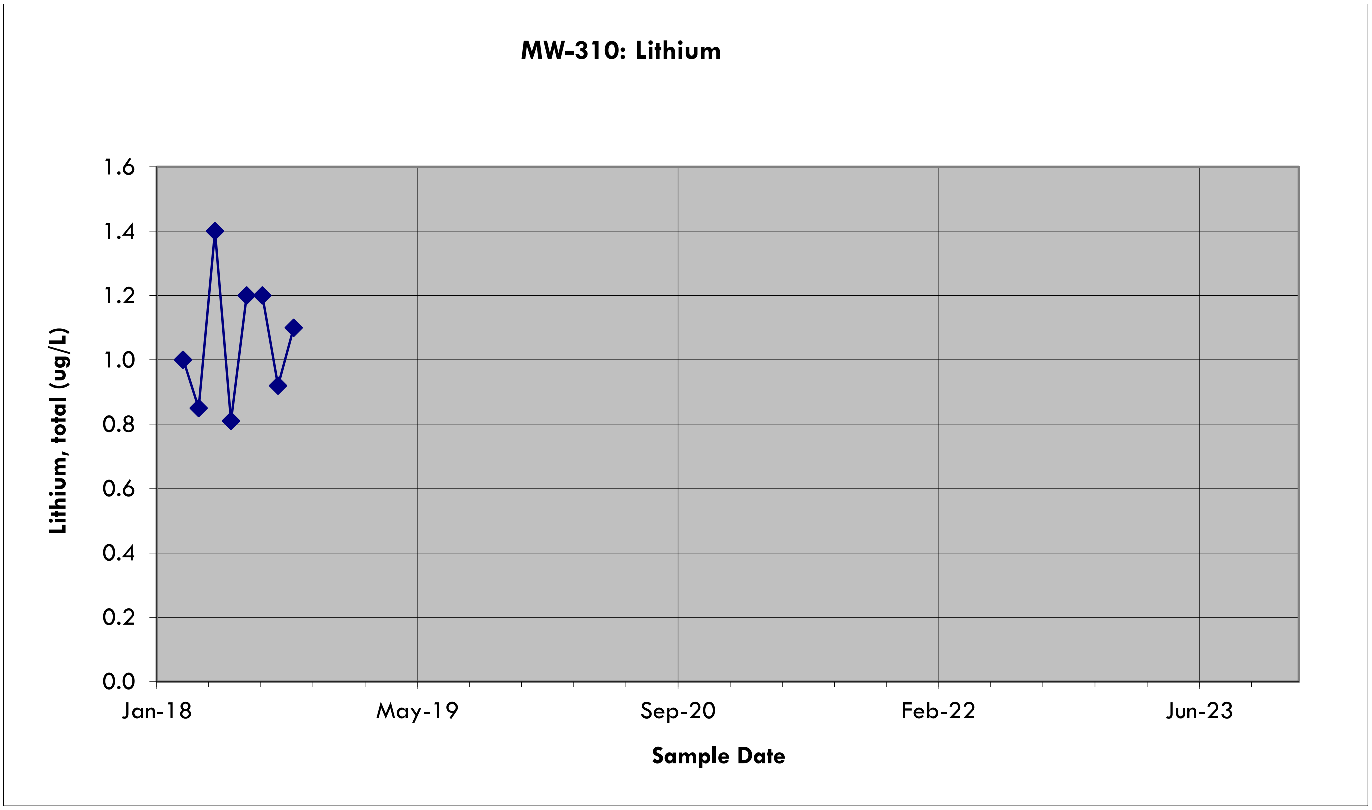
Note:

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

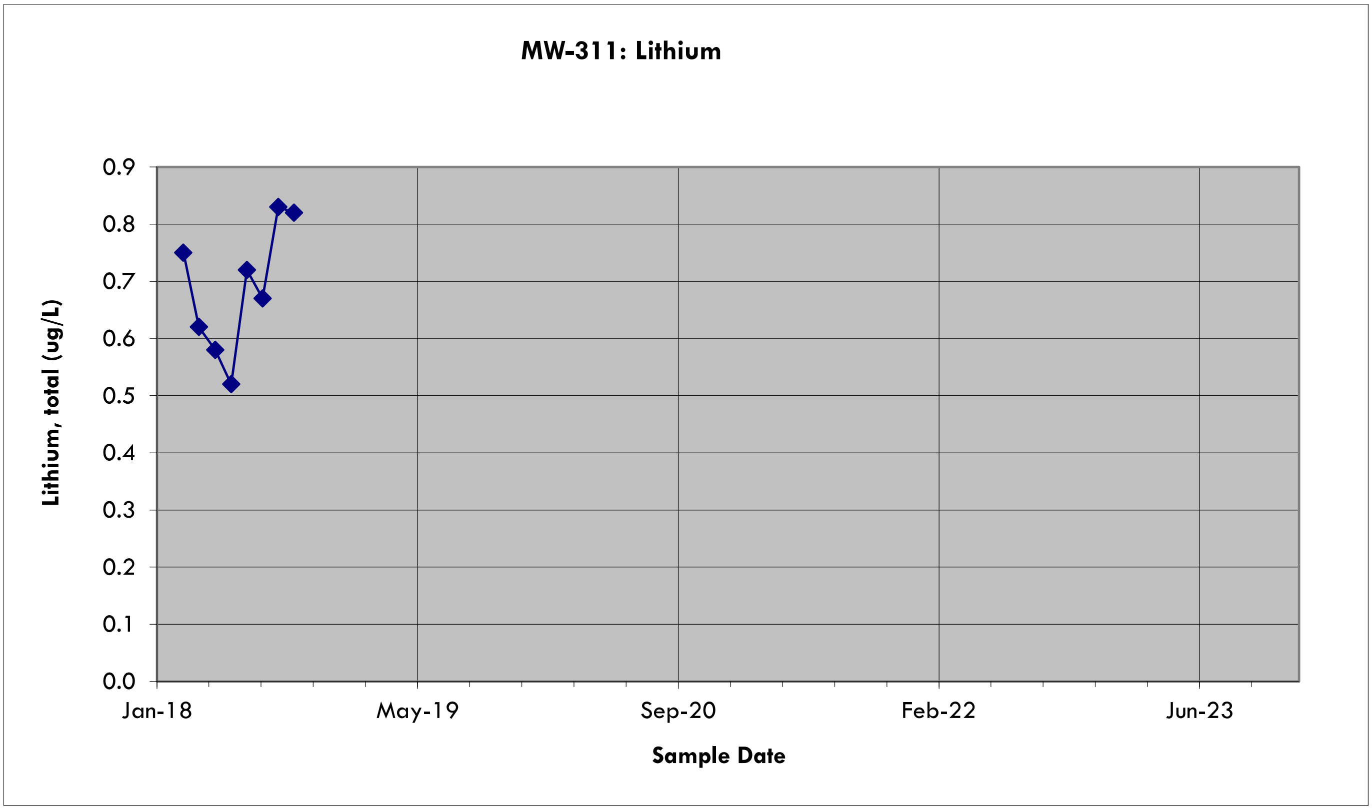


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-310	LITHIUM, TOTAL (UG/L)	01	1.0	2/21/2018	1.0	1.0	
MW-310	LITHIUM, TOTAL (UG/L)	01	0.85	3/23/2018	0.85	0.85	J
MW-310	LITHIUM, TOTAL (UG/L)	01	1.40	4/23/2018	1.40	1.40	
MW-310	LITHIUM, TOTAL (UG/L)	01	0.81	5/24/2018	0.81	0.81	J
MW-310	LITHIUM, TOTAL (UG/L)	01	1.20	6/23/2018	1.20	1.20	
MW-310	LITHIUM, TOTAL (UG/L)	01	1.20	7/23/2018	1.20	1.20	
MW-310	LITHIUM, TOTAL (UG/L)	01	0.92	8/22/2018	0.92	0.92	J
MW-310	LITHIUM, TOTAL (UG/L)	01	1.10	9/21/2018	1.10	1.10	
Calculations							
Count						8	
Mean						1.06	
Std Dev						0.20	
3 X SD (PAL)						0.61	
Min Increase (PAL)						N/A	
PAL, Calculated						1.67	
PAL, Rounded						1.7	

Duplicate Data Not Used for Calculations							

Note:

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-311	LITHIUM, TOTAL (UG/L)	01	0.75	2/21/2018	0.75	0.75	J
MW-311	LITHIUM, TOTAL (UG/L)	01	0.62	3/23/2018	0.62	0.62	J
MW-311	LITHIUM, TOTAL (UG/L)	01	0.58	4/23/2018	0.58	0.58	J
MW-311	LITHIUM, TOTAL (UG/L)	01	0.52	5/24/2018	0.52	0.52	J
MW-311	LITHIUM, TOTAL (UG/L)	01	0.72	6/23/2018	0.72	0.72	J
MW-311	LITHIUM, TOTAL (UG/L)	01	0.67	7/23/2018	0.67	0.67	J
MW-311	LITHIUM, TOTAL (UG/L)	01	0.83	8/22/2018	0.83	0.83	J
MW-311	LITHIUM, TOTAL (UG/L)	01	0.82	9/21/2018	0.82	0.82	J
Calculations							
Count						8	
Mean						0.69	
Std Dev						0.11	
3 X SD (PAL)						0.34	
Min Increase (PAL)						N/A	
PAL, Calculated						1.02	
PAL, Rounded						1.1	

Duplicate Data Not Used for Calculations							

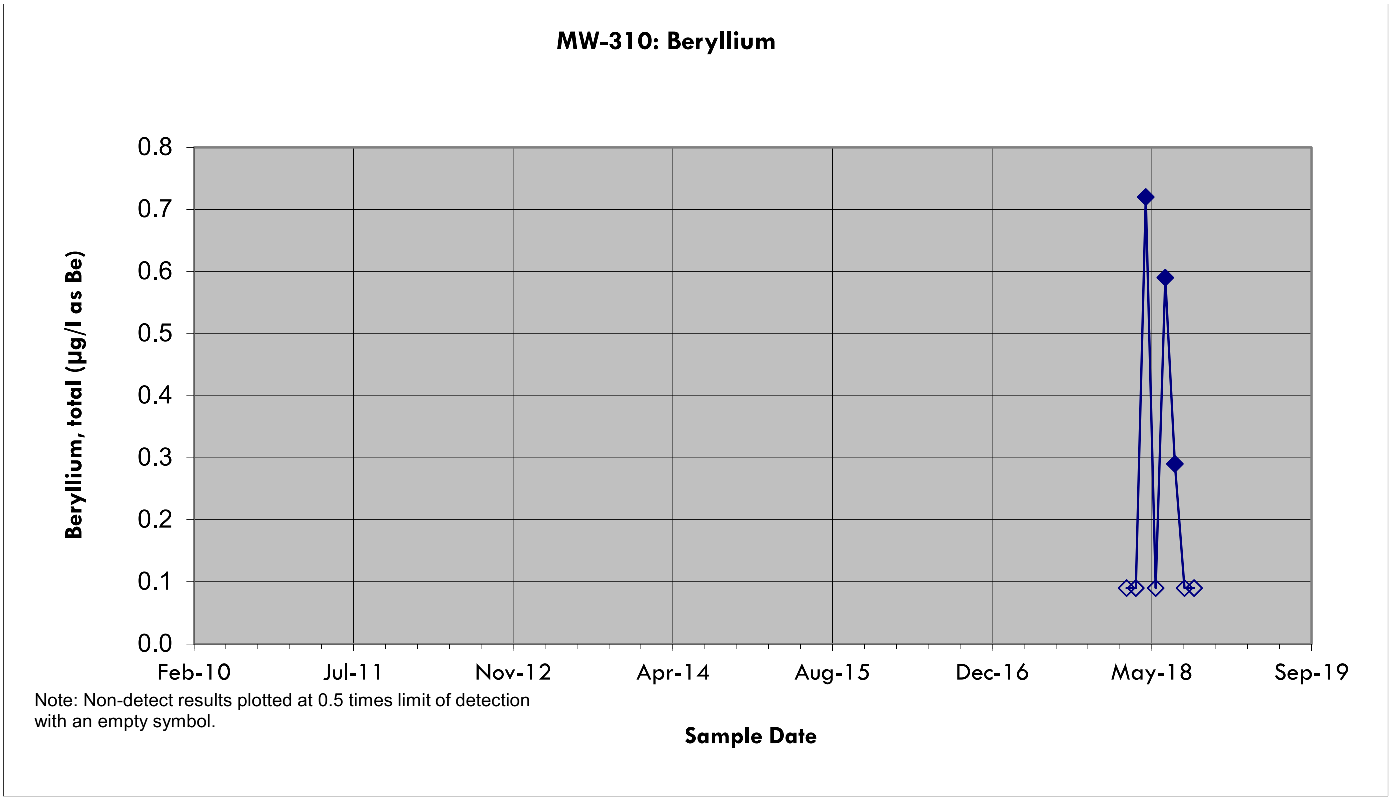
Note:

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-310	BERYLLIUM, TOTAL (UG/L B)	01	<0.18	2/21/2018	0.09	0.09	
MW-310	BERYLLIUM, TOTAL (UG/L B)	01	<0.18	3/23/2018	0.09	0.09	
MW-310	BERYLLIUM, TOTAL (UG/L B)	01	0.72	4/23/2018	0.72	0.72	J
MW-310	BERYLLIUM, TOTAL (UG/L B)	01	<0.18	5/24/2018	0.09	0.09	
MW-310	BERYLLIUM, TOTAL (UG/L B)	01	0.59	6/23/2018	0.59	0.59	J
MW-310	BERYLLIUM, TOTAL (UG/L B)	01	0.29	7/23/2018	0.29	0.29	J
MW-310	BERYLLIUM, TOTAL (UG/L B)	01	<0.18	8/22/2018	0.09	0.09	
MW-310	BERYLLIUM, TOTAL (UG/L B)	01	<0.18	9/21/2018	0.09	0.09	
Calculations							
Count						8	
Mean						0.26	
Std Dev						0.26	
2 X SD (ACL)						0.52	
ACL, Calculated						0.77	
ACL, Rounded						0.78	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 0.4 ug/l; ES = 4 ug/l

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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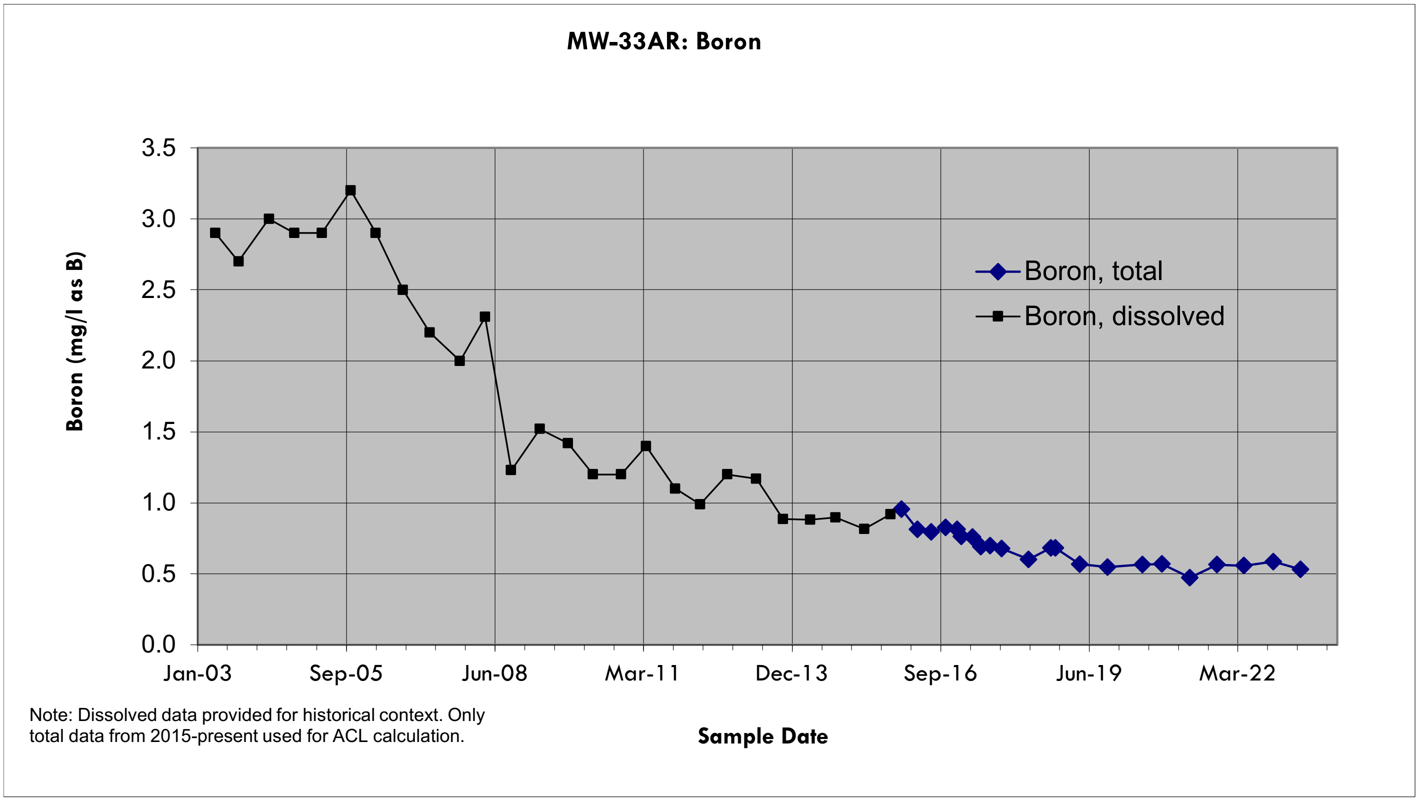

Note: Dissolved data provided for historical context. Only total data from 2015-present used for ACL calculation.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	BORON, DISSOLVED (MG/L B)	01	2.9	4/29/2003	2.9		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	2.7	10/3/2003	2.7		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	3	4/24/2004	3		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	2.9	10/12/2004	2.9		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	2.9	4/15/2005	2.9		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	3.2	10/26/2005	3.2		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	2.9	4/13/2006	2.9		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	2.5	10/12/2006	2.5		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	2.2	4/11/2007	2.2		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	2	10/31/2007	2		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	2.31	4/17/2008	2.31		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	1.23	10/10/2008	1.23		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	1.52	4/21/2009	1.52		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	1.42	10/27/2009	1.42		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	1.2	4/14/2010	1.2		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	1.2	10/20/2010	1.2		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	1.4	4/6/2011	1.4		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	1.1	10/20/2011	1.1		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	0.99	4/4/2012	0.99		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	1.2	10/4/2012	1.2		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	1.17	4/17/2013	1.17		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	0.886	10/14/2013	0.886		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	0.881	4/16/2014	0.881		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	0.897	10/2/2014	0.897		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	0.815	4/14/2015	0.815		
MW-33AR	BORON, DISSOLVED (MG/L B)	01	0.92	10/7/2015	0.92		
MW-33AR	BORON, TOTAL (MG/L B)	01	0.954	12/21/2015	0.954	0.954	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.813	4/5/2016	0.813	0.813	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.794	7/7/2016	0.794	0.794	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.827	10/13/2016	0.827	0.827	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.812	12/29/2016	0.812	0.812	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.763	1/25/2017	0.763	0.763	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.76	4/11/2017	0.76	0.76	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.692	6/6/2017	0.692	0.692	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.697	8/7/2017	0.697	0.697	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	BORON, TOTAL (MG/L B)	01	0.678	10/24/2017	0.678	0.678	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.601	4/24/2018	0.601	0.601	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.683	9/21/2018	0.683	0.683	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.682	10/22/2018	0.682	0.682	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.568	4/2/2019	0.568	0.568	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.548	10/8/2019	0.548	0.548	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.566	5/28/2020	0.566	0.566	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.569	10/8/2020	0.569	0.569	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.473	4/13/2021	0.473	0.473	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.564	10/12/2021	0.564	0.564	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.558	4/12/2022	0.558	0.558	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.586	10/27/2022	0.586	0.586	
MW-33AR	BORON, TOTAL (MG/L B)	01	0.532	4/27/2023	0.532	0.532	
Calculations							
Count						22	
Mean						0.67	
Std Dev						0.12	
2 X SD (ACL)						0.25	
ACL, Calculated						0.92	
ACL, Rounded						0.92	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 0.2 mg/l; ES = 1 mg/l, Data through 10/2015 downloaded from GEMS

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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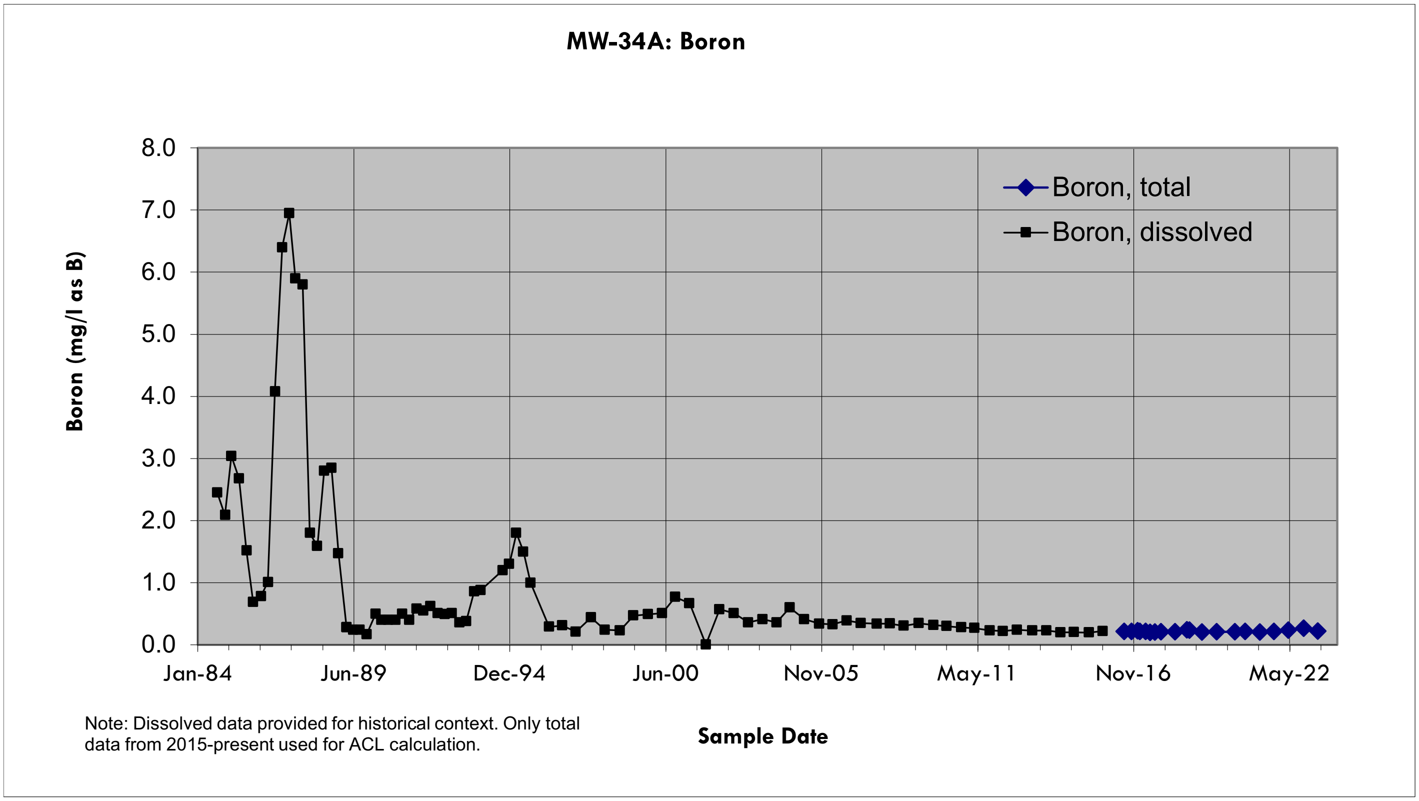

Note: Dissolved data provided for historical context. Only total data from 2015-present used for ACL calculation.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW34A	BORON, DISSOLVED (MG/L B)	01	2.45	9/7/1984	2.45		
MW34A	BORON, DISSOLVED (MG/L B)	01	2.09	12/17/1984	2.09		
MW34A	BORON, DISSOLVED (MG/L B)	01	3.04	3/7/1985	3.04		
MW34A	BORON, DISSOLVED (MG/L B)	01	2.68	6/14/1985	2.68		
MW34A	BORON, DISSOLVED (MG/L B)	01	1.52	9/18/1985	1.52		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.69	12/12/1985	0.69		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.78	3/21/1986	0.78		
MW34A	BORON, DISSOLVED (MG/L B)	01	1.01	6/20/1986	1.01		
MW34A	BORON, DISSOLVED (MG/L B)	01	4.08	9/18/1986	4.08		
MW34A	BORON, DISSOLVED (MG/L B)	01	6.4	12/19/1986	6.4		
MW34A	BORON, DISSOLVED (MG/L B)	01	6.95	3/20/1987	6.95		
MW34A	BORON, DISSOLVED (MG/L B)	01	5.9	6/5/1987	5.9		
MW34A	BORON, DISSOLVED (MG/L B)	01	5.8	9/9/1987	5.8		
MW34A	BORON, DISSOLVED (MG/L B)	01	1.8	12/9/1987	1.8		
MW34A	BORON, DISSOLVED (MG/L B)	01	1.59	3/10/1988	1.59		
MW34A	BORON, DISSOLVED (MG/L B)	01	2.8	6/7/1988	2.8		
MW34A	BORON, DISSOLVED (MG/L B)	01	2.85	9/9/1988	2.85		
MW34A	BORON, DISSOLVED (MG/L B)	01	1.47	12/7/1988	1.47		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.28	3/21/1989	0.28		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.28	3/22/1989	0.28		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.24	6/16/1989	0.24		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.24	9/6/1989	0.24		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.17	12/5/1989	0.17		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.5	3/29/1990	0.5		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.4	6/14/1990	0.4		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.4	9/5/1990	0.4		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.4	12/10/1990	0.4		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.5	3/5/1991	0.5		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.4	6/3/1991	0.4		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.58	9/6/1991	0.58		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.55	12/4/1991	0.55		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.62	3/3/1992	0.62		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.51	6/2/1992	0.51		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.49	9/1/1992	0.49		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.51	12/2/1992	0.51		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW34A	BORON, DISSOLVED (MG/L B)	01	0.36	3/10/1993	0.36		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.38	6/2/1993	0.38		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.86	9/14/1993	0.86		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.88	12/7/1993	0.88		
MW34A	BORON, DISSOLVED (MG/L B)	01	1.2	9/13/1994	1.2		
MW34A	BORON, DISSOLVED (MG/L B)	01	1.3	12/6/1994	1.3		
MW34A	BORON, DISSOLVED (MG/L B)	01	1.8	3/7/1995	1.8		
MW34A	BORON, DISSOLVED (MG/L B)	01	1.5	6/6/1995	1.5		
MW34A	BORON, DISSOLVED (MG/L B)	01	1	9/6/1995	1		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.29	4/30/1996	0.29		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.31	10/16/1996	0.31		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.21	4/8/1997	0.21		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.44	10/20/1997	0.44		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.24	4/14/1998	0.24		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.23	10/27/1998	0.23		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.47	4/16/1999	0.47		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.49	10/21/1999	0.49		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.51	4/20/2000	0.51		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.77	10/4/2000	0.77		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.67	4/3/2001	0.67		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.0038	10/31/2001	0.0038		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.57	4/25/2002	0.57		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.51	10/24/2002	0.51		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.36	4/29/2003	0.36		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.41	10/29/2003	0.41		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.36	4/27/2004	0.36		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.6	10/12/2004	0.6		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.41	4/15/2005	0.41		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.34	10/26/2005	0.34		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.33	4/13/2006	0.33		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.39	10/12/2006	0.39		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.35	4/11/2007	0.35		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.34	10/31/2007	0.34		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.342	4/17/2008	0.342		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.305	10/10/2008	0.305		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.347	4/21/2009	0.347		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.318	10/27/2009	0.318		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.3	4/14/2010	0.3		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.28	10/20/2010	0.28		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.27	4/6/2011	0.27		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.23	10/20/2011	0.23		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.22	4/4/2012	0.22		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.24	10/4/2012	0.24		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.228	4/16/2013	0.228		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.23	10/14/2013	0.23		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.201	4/16/2014	0.201		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.203	10/2/2014	0.203		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.197	4/14/2015	0.197		
MW34A	BORON, DISSOLVED (MG/L B)	01	0.221	10/7/2015	0.221		
MW34A	BORON, TOTAL (MG/L B)	01	0.216	7/7/2016	0.216	0.216	
MW34A	BORON, TOTAL (MG/L B)	01	0.212	10/13/2016	0.212	0.212	
MW34A	BORON, TOTAL (MG/L B)	01	0.224	12/29/2016	0.224	0.224	
MW34A	BORON, TOTAL (MG/L B)	01	0.214	1/25/2017	0.214	0.214	
MW34A	BORON, TOTAL (MG/L B)	01	0.214	4/11/2017	0.214	0.214	
MW34A	BORON, TOTAL (MG/L B)	01	0.201	6/6/2017	0.201	0.201	
MW34A	BORON, TOTAL (MG/L B)	01	0.205	8/7/2017	0.205	0.205	
MW34A	BORON, TOTAL (MG/L B)	01	0.208	10/24/2017	0.208	0.208	
MW34A	BORON, TOTAL (MG/L B)	01	0.209	4/24/2018	0.209	0.209	
MW34A	BORON, TOTAL (MG/L B)	01	0.241	9/21/2018	0.241	0.241	
MW34A	BORON, TOTAL (MG/L B)	01	0.233	10/22/2018	0.233	0.233	
MW34A	BORON, TOTAL (MG/L B)	01	0.204	4/2/2019	0.204	0.204	
MW34A	BORON, TOTAL (MG/L B)	01	0.207	10/8/2019	0.207	0.207	
MW34A	BORON, TOTAL (MG/L B)	01	0.21	5/28/2020	0.21	0.21	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW34A	BORON, TOTAL (MG/L B)	01	0.213	10/8/2020	0.213	0.213	
MW34A	BORON, TOTAL (MG/L B)	01	0.203	4/13/2021	0.203	0.203	
MW34A	BORON, TOTAL (MG/L B)	01	0.212	10/12/2021	0.212	0.212	
MW34A	BORON, TOTAL (MG/L B)	01	0.237	4/12/2022	0.237	0.237	
MW34A	BORON, TOTAL (MG/L B)	01	0.264	10/27/2022	0.264	0.264	
MW34A	BORON, TOTAL (MG/L B)	01	0.22	4/26/2023	0.22	0.22	
Calculations							
Count						20	
Mean						0.22	
Std Dev						0.02	
2 X SD (ACL)						0.03	
ACL, Calculated						0.25	
ACL, Rounded						0.25	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 0.2 mg/l; ES = 1 mg/l, Data through 10/2015 downloaded from GEMS

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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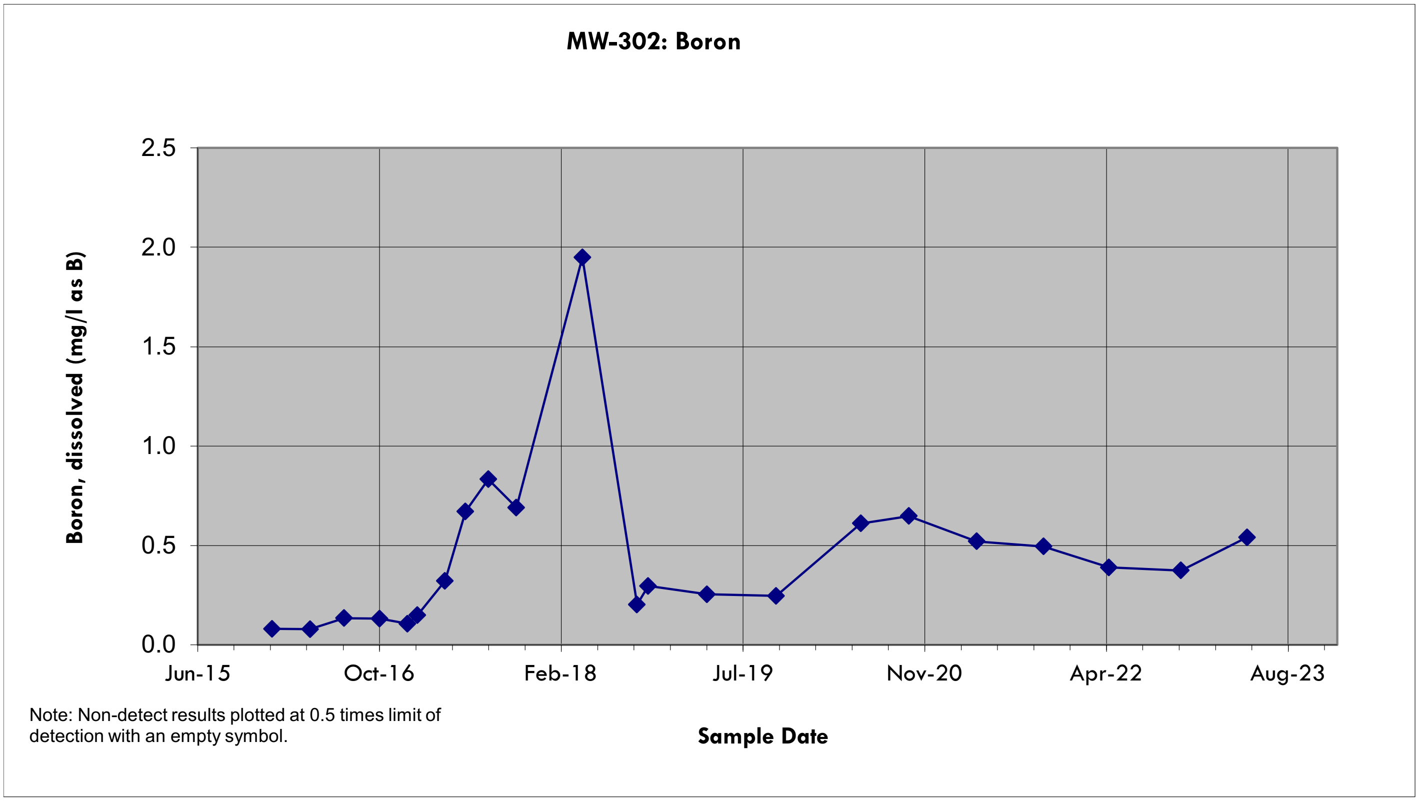

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-302	BORON, TOTAL (MG/L B)	01	0.08	12/22/2015	0.08	0.08	
MW-302	BORON, TOTAL (MG/L B)	01	0.0788	4/5/2016	0.0788	0.0788	
MW-302	BORON, TOTAL (MG/L B)	01	0.134	7/7/2016	0.134	0.134	
MW-302	BORON, TOTAL (MG/L B)	01	0.132	10/13/2016	0.132	0.132	
MW-302	BORON, TOTAL (MG/L B)	01	0.106	12/29/2016	0.106	0.106	
MW-302	BORON, TOTAL (MG/L B)	01	0.149	1/25/2017	0.149	0.149	
MW-302	BORON, TOTAL (MG/L B)	01	0.322	4/11/2017	0.322	0.322	
MW-302	BORON, TOTAL (MG/L B)	01	0.671	6/6/2017	0.671	0.671	
MW-302	BORON, TOTAL (MG/L B)	01	0.833	8/8/2017	0.833	0.833	
MW-302	BORON, TOTAL (MG/L B)	01	0.691	10/24/2017	0.691	0.691	
MW-302	BORON, TOTAL (MG/L B)	01	1.95	4/24/2018	1.95	1.95	
MW-302	BORON, TOTAL (MG/L B)	01	0.203	9/21/2018	0.203	0.203	
MW-302	BORON, TOTAL (MG/L B)	01	0.296	10/22/2018	0.296	0.296	
MW-302	BORON, TOTAL (MG/L B)	01	0.254	4/2/2019	0.254	0.254	
MW-302	BORON, TOTAL (MG/L B)	01	0.246	10/9/2019	0.246	0.246	
MW-302	BORON, TOTAL (MG/L B)	01	0.611	5/29/2020	0.611	0.611	
MW-302	BORON, TOTAL (MG/L B)	01	0.648	10/8/2020	0.648	0.648	
MW-302	BORON, TOTAL (MG/L B)	01	0.521	4/13/2021	0.521	0.521	
MW-302	BORON, TOTAL (MG/L B)	01	0.495	10/14/2021	0.495	0.495	
MW-302	BORON, TOTAL (MG/L B)	01	0.389	4/12/2022	0.389	0.389	
MW-302	BORON, TOTAL (MG/L B)	01	0.374	10/27/2022	0.374	0.374	
MW-302	BORON, TOTAL (MG/L B)	01	0.541	4/27/2023	0.541	0.541	
Calculations							
Count						22	
Mean						0.44	
Std Dev						0.41	
2 X SD (ACL)						0.81	
ACL, Calculated						1.25	
ACL, Rounded						1.3	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 0.2 mg/l; ES = 1 mg/l, data downloaded from ChemPoint

J = Result is an estimated value below the laboratory's limit of quantitation.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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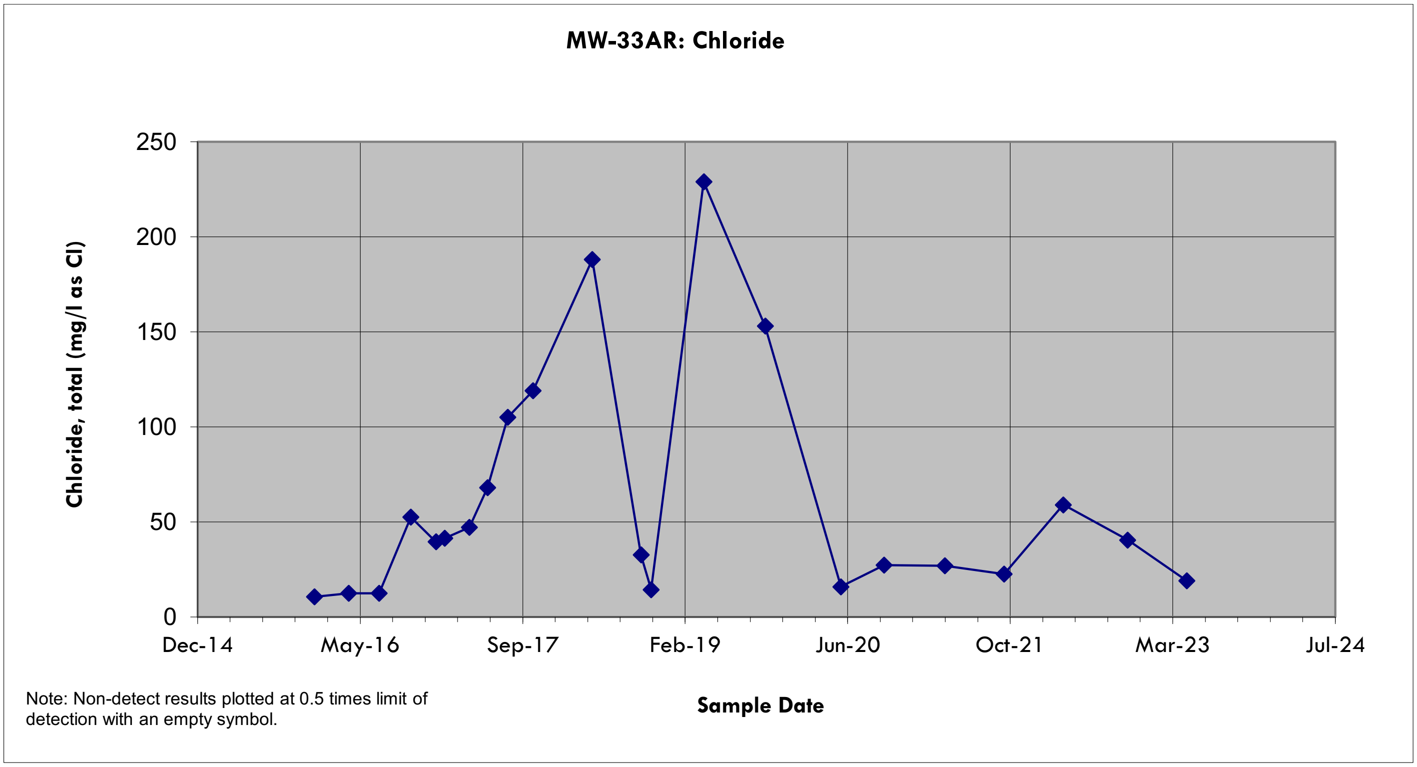


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	10.6	12/21/2015	10.6	10.6	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	12.5	4/5/2016	12.5	12.5	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	12.5	7/7/2016	12.5	12.5	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	52.5	10/13/2016	52.5	52.5	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	39.6	12/29/2016	39.6	39.6	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	41.4	1/25/2017	41.4	41.4	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	47.1	4/11/2017	47.1	47.1	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	68.1	6/6/2017	68.1	68.1	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	105	8/7/2017	105	105	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	119	10/24/2017	119	119	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	188	4/24/2018	188	188	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	32.6	9/21/2018	32.6	32.6	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	14.4	10/22/2018	14.4	14.4	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	229	4/2/2019	229	229	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	153	10/8/2019	153	153	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	15.9	5/28/2020	15.9	15.9	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	27.3	10/8/2020	27.3	27.3	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	26.9	4/13/2021	26.9	26.9	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	22.6	10/12/2021	22.6	22.6	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	59	4/12/2022	59	59	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	40.5	10/27/2022	40.5	40.5	
MW-33AR	CHLORIDE, TOTAL (MG/L CL)	01	19	4/27/2023	19	19	
Calculations							
Count						22	
Mean						60.75	
Std Dev						59.35	
2 X SD (ACL)						118.70	
ACL, Calculated						179.45	
ACL, Rounded						180	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l; Data downloaded from ChemPoint

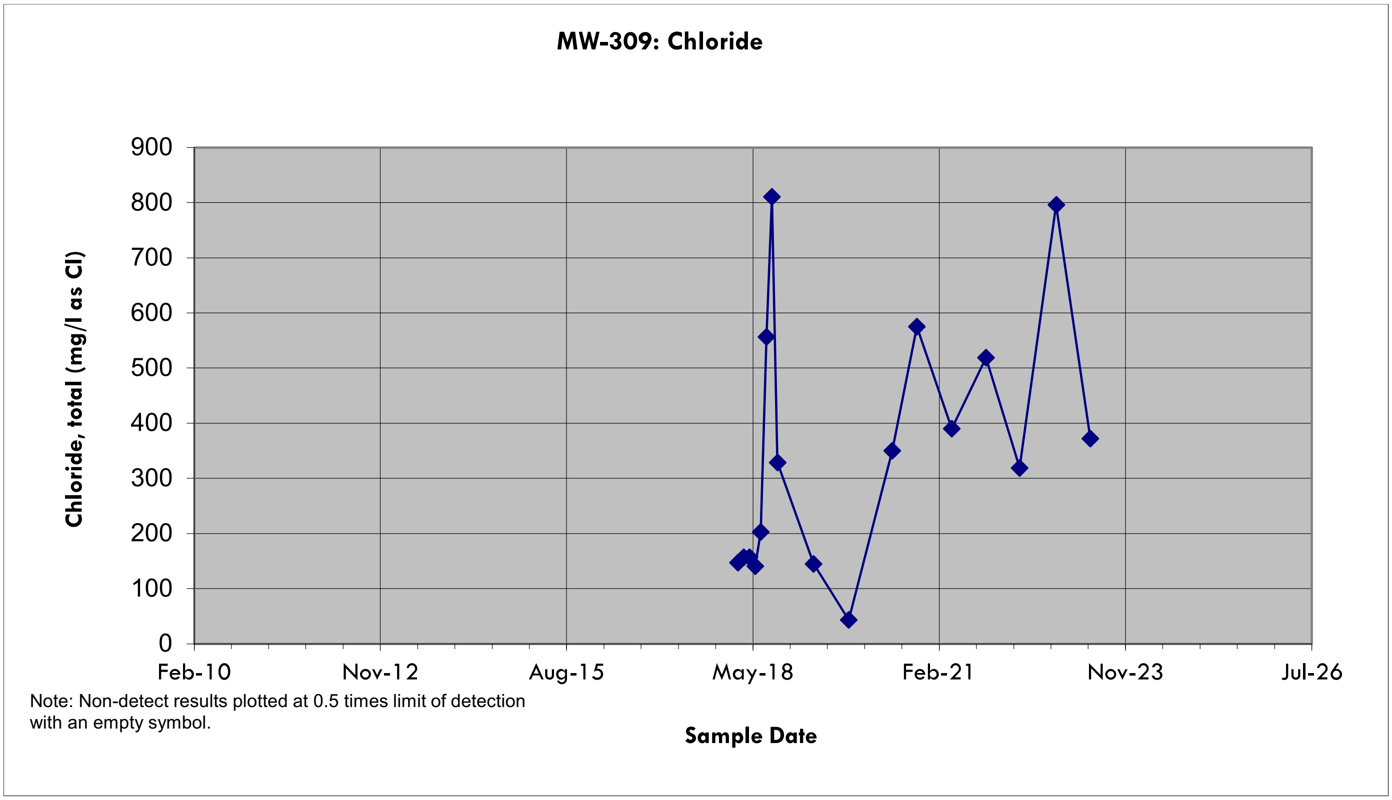
J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes


MW-309: Chloride

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-309	CHLORIDE, TOTAL (MG/L Cl)	01	147	2/21/2018	147	147	
MW-309	CHLORIDE, TOTAL (MG/L Cl)	01	157	3/23/2018	157	157	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	157	4/23/2018	157	157	
MW-311	CHLORIDE, TOTAL (MG/L Cl)	01	141	5/24/2018	141	141	
MW-312	CHLORIDE, TOTAL (MG/L Cl)	01	203	6/23/2018	203	203	
MW-313	CHLORIDE, TOTAL (MG/L Cl)	01	557	7/23/2018	557	557	
MW-314	CHLORIDE, TOTAL (MG/L Cl)	01	811	8/22/2018	811	811	
MW-315	CHLORIDE, TOTAL (MG/L Cl)	01	329	9/21/2018	329	329	
MW-316	CHLORIDE, TOTAL (MG/L Cl)	01	145	4/2/2019	145	145	
MW-317	CHLORIDE, TOTAL (MG/L Cl)	01	43.2	10/8/2019	43.2	43.2	
MW-318	CHLORIDE, TOTAL (MG/L Cl)	01	350	5/29/2020	350	350	
MW-319	CHLORIDE, TOTAL (MG/L Cl)	01	575	10/8/2020	575	575	
MW-320	CHLORIDE, TOTAL (MG/L Cl)	01	390	4/13/2021	390	390	
MW-321	CHLORIDE, TOTAL (MG/L Cl)	01	519	10/14/2021	519	519	
MW-322	CHLORIDE, TOTAL (MG/L Cl)	01	319	4/12/2022	319	319	
MW-309	CHLORIDE, TOTAL (MG/L Cl)	01	796	10/26/2022	796	796	
MW-309	CHLORIDE, TOTAL (MG/L Cl)	01	372	4/26/2023	372	372	
Calculations							
Count						17	
Mean						353.60	
Std Dev						231.01	
2 X SD (ACL)						462.03	
ACL, Calculated						815.63	
ACL, Rounded						820	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l

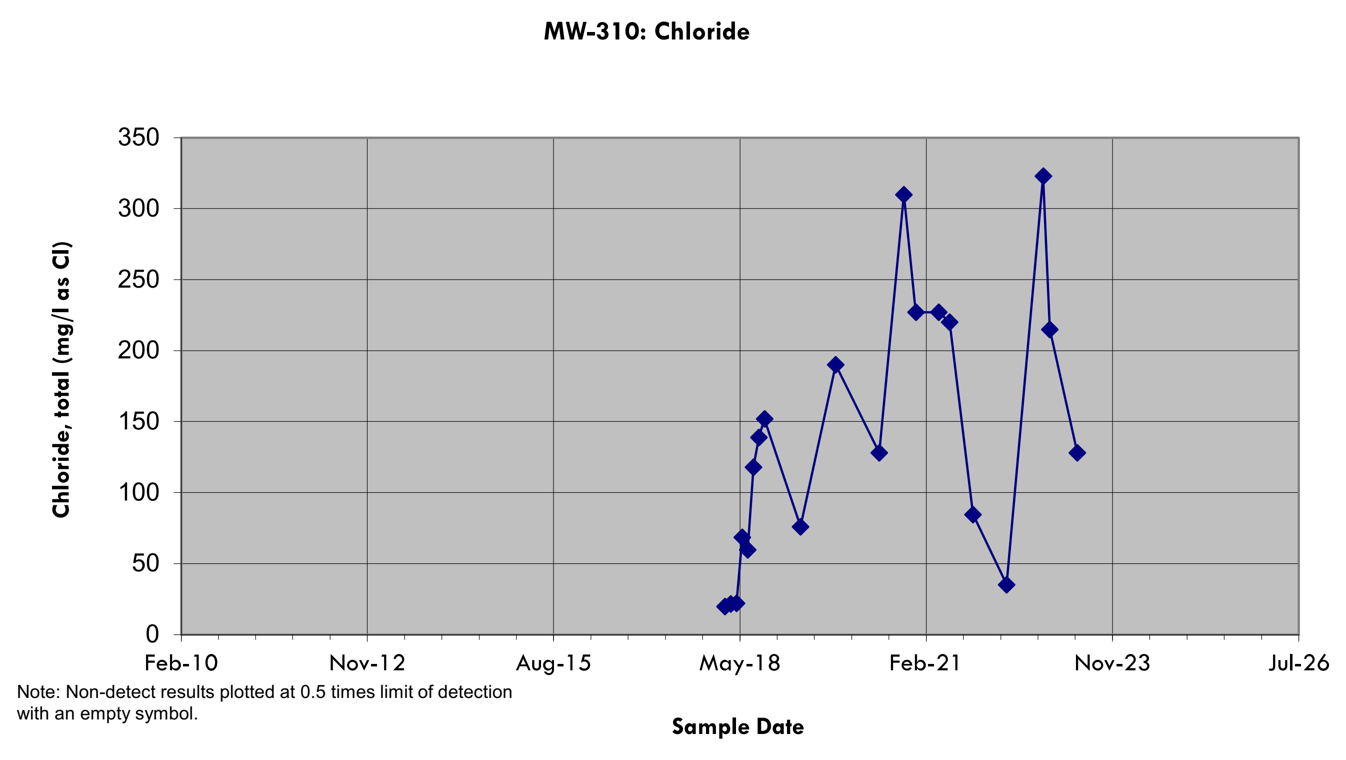
J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	19.8	2/21/2018	19.8	19.8	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	21.7	3/23/2018	21.7	21.7	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	22.1	4/23/2018	22.1	22.1	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	68.6	5/24/2018	68.6	68.6	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	59.8	6/23/2018	59.8	59.8	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	118	7/23/2018	118	118	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	139	8/22/2018	139	139	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	152	9/21/2018	152	152	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	76	4/2/2019	76	76	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	190	10/8/2019	190	190	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	128	5/29/2020	128	128	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	310	10/8/2020	310	310	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	227	12/11/2020	227	227	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	227	4/13/2021	227	227	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	220	6/11/2021	220	220	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	84.6	10/14/2021	84.6	84.6	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	35.2	4/12/2022	35.2	35.2	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	323	10/26/2022	323	323	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	215	11/30/2022	215	215	
MW-310	CHLORIDE, TOTAL (MG/L Cl)	01	128	4/26/2023	128	128	
Calculations							
Count						20	
Mean						138.24	
Std Dev						93.17	
2 X SD (ACL)						186.34	
ACL, Calculated						324.58	
ACL, Rounded						330	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

B = Compound detected in blank.
M = Failed method QC check.

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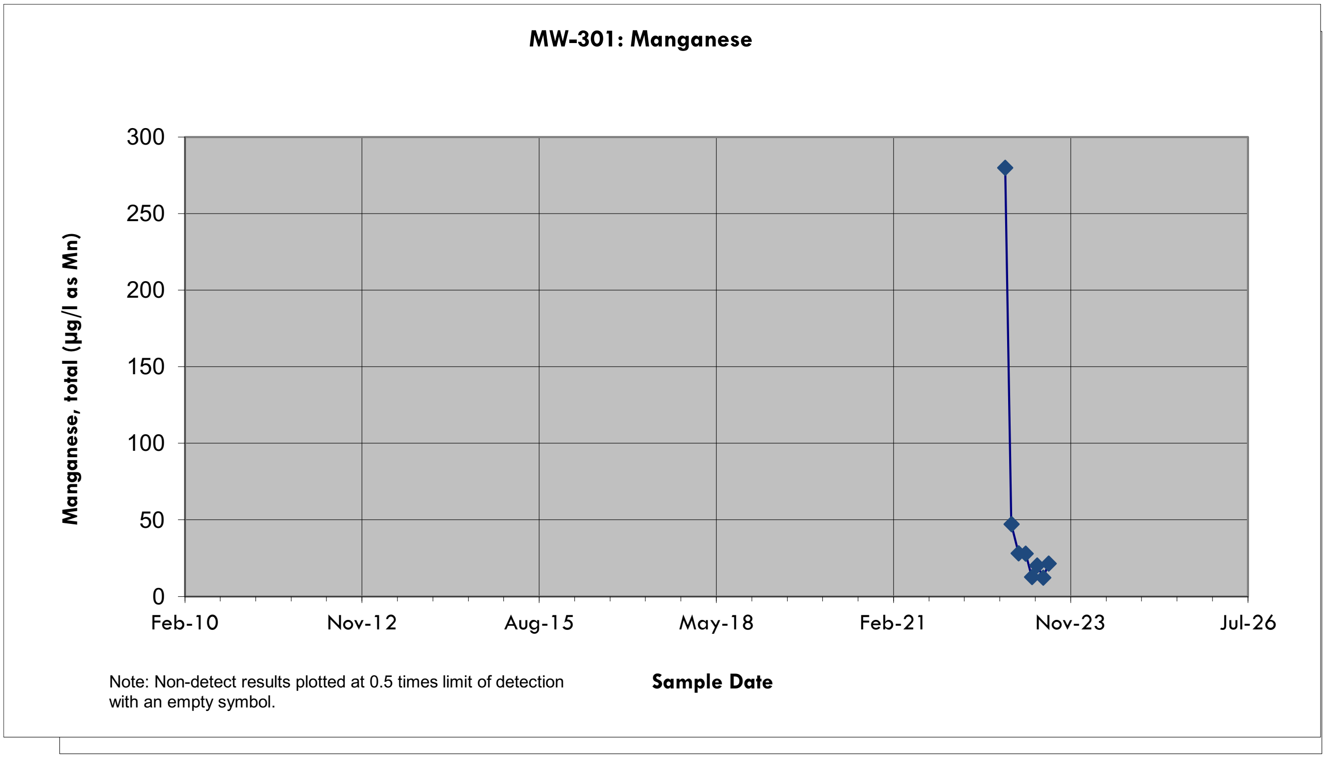

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-301	MANGANESE, TOTAL (UG/L MN)	01	280	10/27/2022	280		outlier
MW-301	MANGANESE, TOTAL (UG/L MN)	01	47.2	12/2/2022	47.2	47.2	
MW-301	MANGANESE, TOTAL (UG/L MN)	01	28.1	1/12/2023	28.1	28.1	
MW-301	MANGANESE, TOTAL (UG/L MN)	01	28	2/21/2023	28	28	
MW-301	MANGANESE, TOTAL (UG/L MN)	01	12.7	3/28/2023	12.7	12.7	
MW-301	MANGANESE, TOTAL (UG/L MN)	01	20.3	4/27/2023	20.3	20.3	
MW-301	MANGANESE, TOTAL (UG/L MN)	01	12.3	5/31/2023	12.3	12.3	
MW-301	MANGANESE, TOTAL (UG/L MN)	01	21.5	6/30/2023	21.5	21.5	
Calculations							
Count						7	
Mean						24.30	
Std Dev						11.94	
2 X SD (ACL)						23.87	
ACL, Calculated						48.17	
ACL, Rounded						48	

Duplicate Data Not Used for Calculations							

Note: Current Public Welfare PAL = 25 ug/l; ES = 50 ug/l
J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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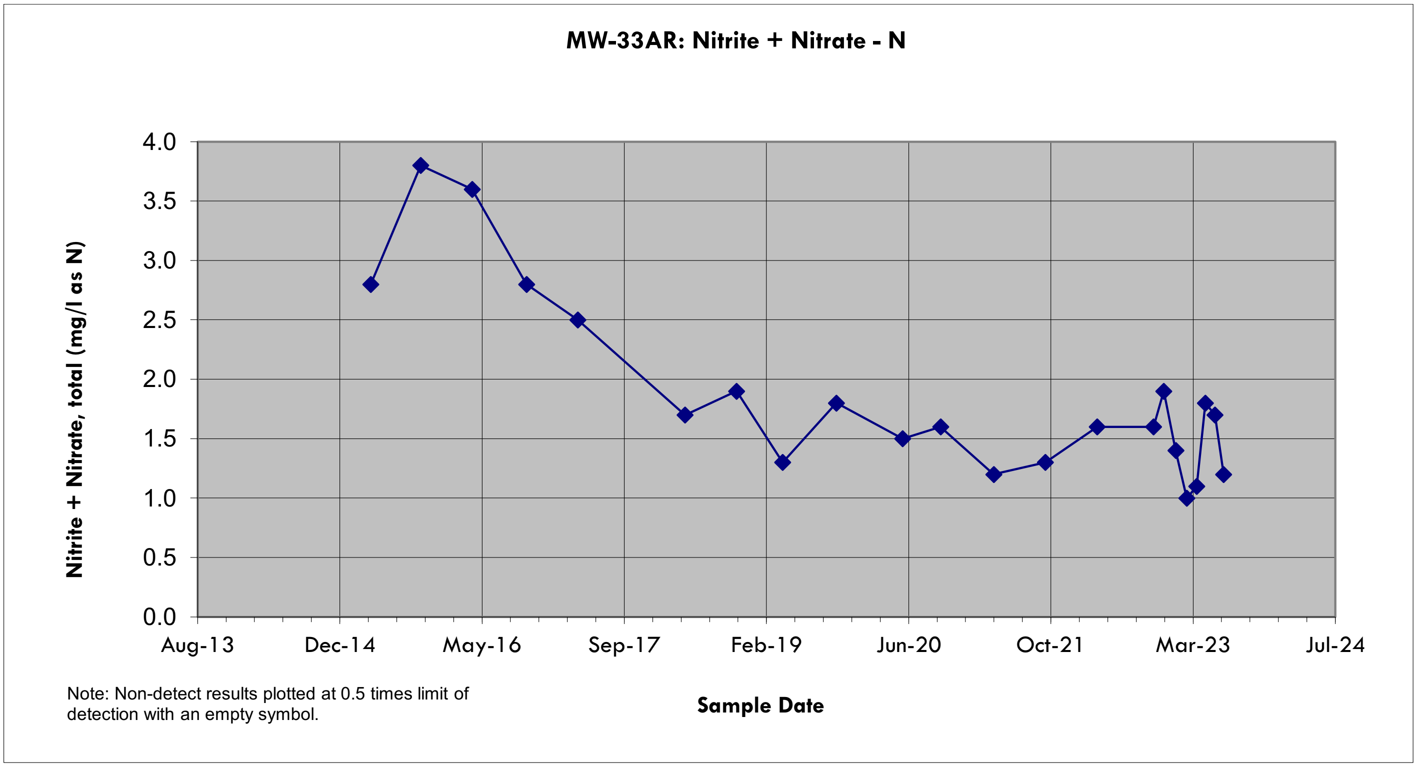

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	2.8	4/14/2015	2.8	2.8	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	3.8	10/7/2015	3.8	3.8	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	3.6	4/5/2016	3.6	3.6	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	2.8	10/13/2016	2.8	2.8	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	2.5	4/11/2017	2.5	2.5	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.7	4/24/2018	1.7	1.7	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.9	10/22/2018	1.9	1.9	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.3	4/2/2019	1.3	1.3	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.8	10/8/2019	1.8	1.8	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.5	5/28/2020	1.5	1.5	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.6	10/8/2020	1.6	1.6	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.2	4/13/2021	1.2	1.2	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.3	10/12/2021	1.3	1.3	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.6	4/12/2022	1.6	1.6	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.6	10/27/2022	1.6	1.6	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.9	12/2/2022	1.9	1.9	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.4	1/13/2023	1.4	1.4	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1	2/21/2023	1	1	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.1	3/28/2023	1.1	1.1	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.8	4/27/2023	1.8	1.8	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.7	5/31/2023	1.7	1.7	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.2	6/30/2023	1.2	1.2	
Calculations							
Count						22	
Mean						1.87	
Std Dev						0.75	
2 X SD (ACL)						1.50	
ACL, Calculated						3.37	
ACL, Rounded						3.4	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l; Data downloaded from ChemPoint

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

M = Failed method QC check.

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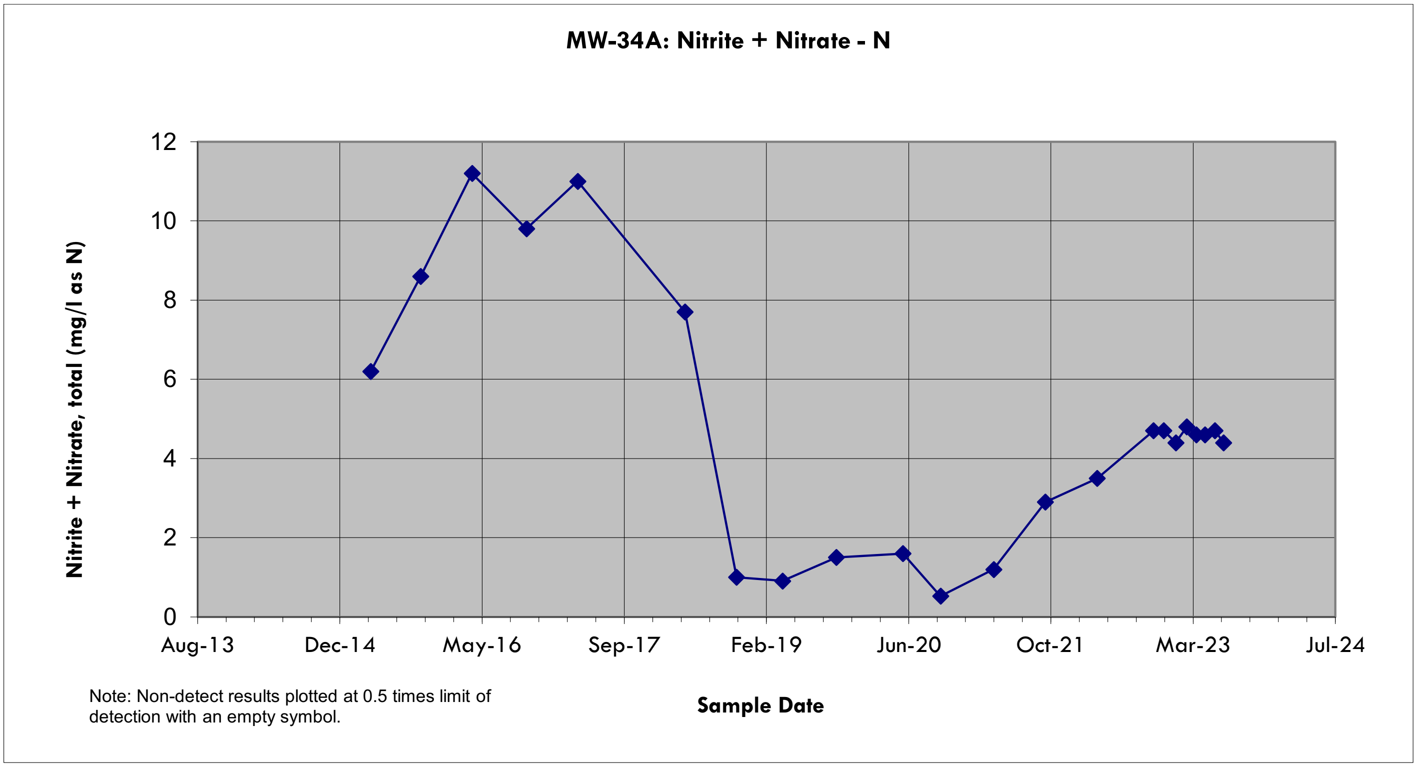

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	6.2	4/14/2015	6.2	6.2	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	8.6	10/7/2015	8.6	8.6	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	11.2	4/5/2016	11.2	11.2	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	9.8	10/13/2016	9.8	9.8	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	11	4/11/2017	11	11	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	7.7	4/24/2018	7.7	7.7	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1	10/22/2018	1	1	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	0.91	4/2/2019	0.91	0.91	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.5	10/8/2019	1.5	1.5	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.6	5/29/2020	1.6	1.6	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	0.53	10/8/2020	0.53	0.53	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.2	4/13/2021	1.2	1.2	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	2.9	10/12/2021	2.9	2.9	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	3.5	4/12/2022	3.5	3.5	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	4.7	10/27/2022	4.7	4.7	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	4.7	12/2/2022	4.7	4.7	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	4.4	1/13/2023	4.4	4.4	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	4.8	2/21/2023	4.8	4.8	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	4.6	3/27/2023	4.6	4.6	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	4.6	4/26/2023	4.6	4.6	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	4.7	5/31/2023	4.7	4.7	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	4.4	6/30/2023	4.4	4.4	
Calculations							
Count						22	
Mean						4.75	
Std Dev						3.14	
2 X SD (ACL)						6.28	
ACL, Calculated						11.03	
ACL, Rounded						12	

Duplicate Data Not Used for Calculations							
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	02	4.8	10/27/2022	4.8	4.8	
MW-34A	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	02	4.5	4/26/2023	4.5	4.5	

Note: Current PAL = 125 mg/l; ES = 250 mg/l; Data downloaded from ChemPoint
J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

B = Compound detected in blank.
M = Failed method QC check.

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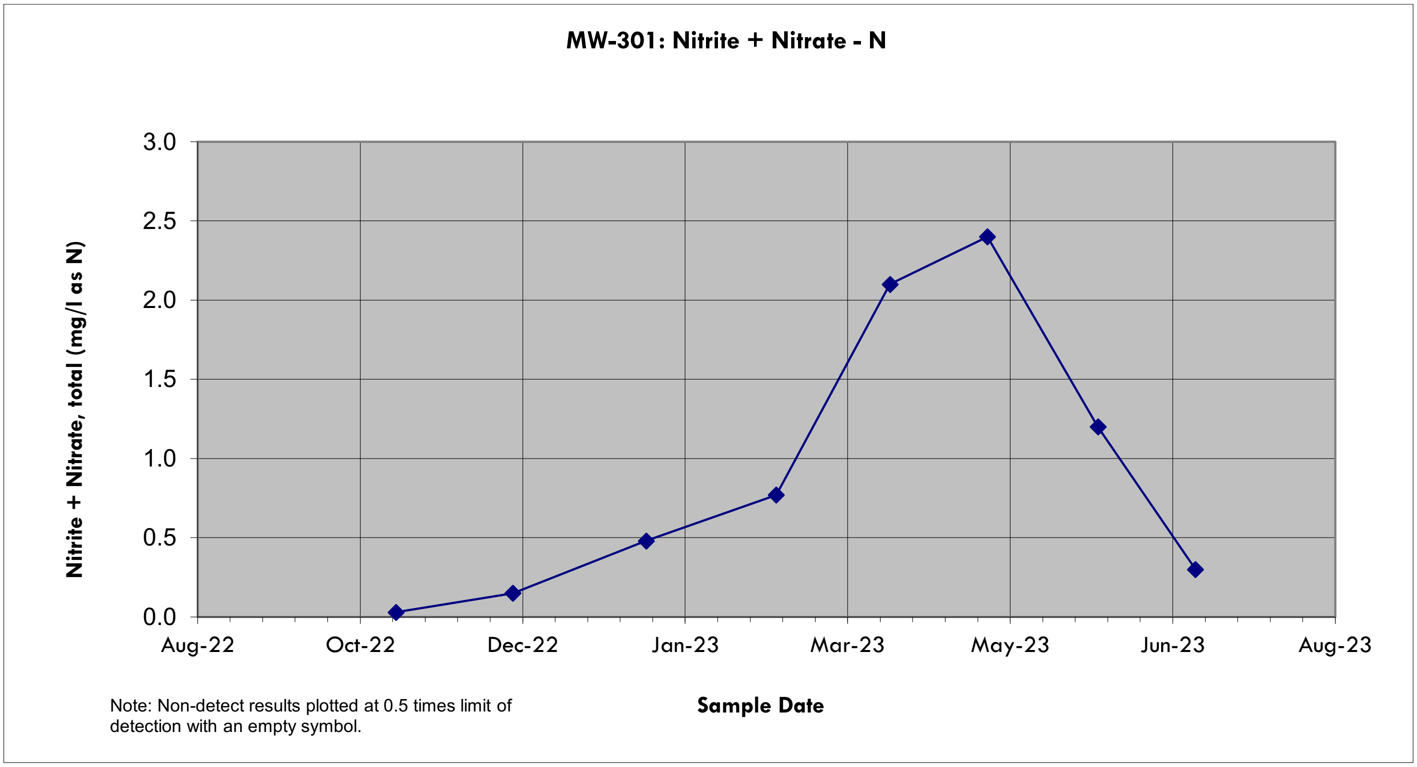

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	<0.059	10/27/2022	0.0295	0.0295	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	0.15	12/2/2022	0.15	0.15	J
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	0.48	1/12/2023	0.48	0.48	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	0.77	2/21/2023	0.77	0.77	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	2.1	3/28/2023	2.1	2.1	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	2.4	4/27/2023	2.4	2.4	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	1.2	5/31/2023	1.2	1.2	
MW-33AR	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	01	0.3	6/30/2023	0.3	0.3	
Calculations							
Count						8	
Mean						0.93	
Std Dev						0.84	
2 X SD (ACL)						1.68	
ACL, Calculated						2.61	
ACL, Rounded						2.7	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l; Data downloaded from ChemPoint

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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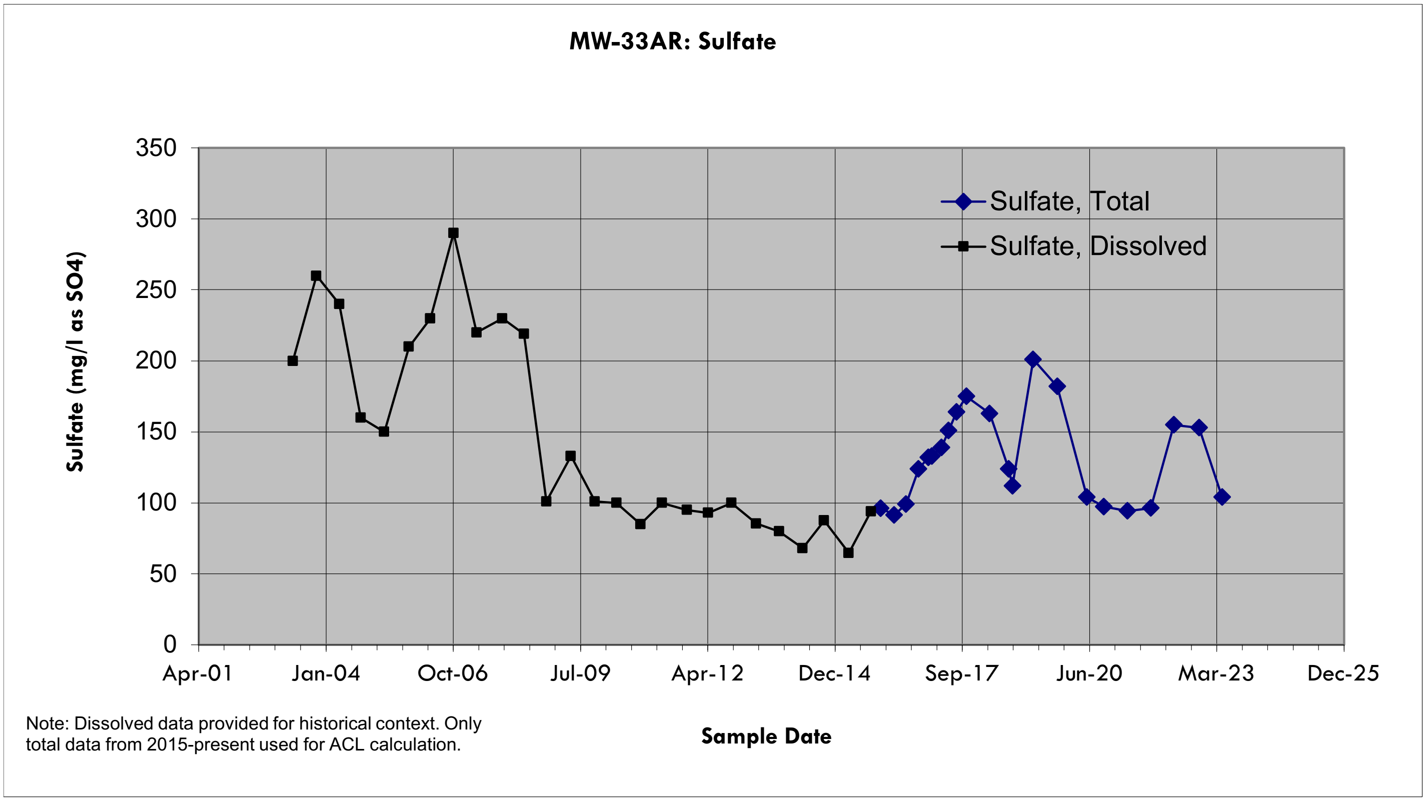

Note: Dissolved data provided for historical context. Only total data from 2015-present used for ACL calculation.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	200	4/29/2003	200		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	260	10/30/2003	260		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	240	4/27/2004	240		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	160	10/12/2004	160		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	150	4/15/2005	150		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	210	10/26/2005	210		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	230	4/13/2006	230		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	290	10/12/2006	290		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	220	4/11/2007	220		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	230	10/31/2007	230		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	219	4/17/2008	219		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	101	10/10/2008	101		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	133	4/21/2009	133		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	101	10/27/2009	101		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	100	4/14/2010	100		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	85	10/20/2010	85		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	100	4/6/2011	100		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	95	10/20/2011	95		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	93	4/4/2012	93		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	100	10/4/2012	100		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	85.4	4/17/2013	85.4		
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	79.9	10/14/2013	79.9		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	68.1	4/16/2014	68.1		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	87.6	10/2/2014	87.6		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	64.7	4/14/2015	64.7		
MW-33AR	SULFATE, DISSOLVED (MG/L SO4)	01	94	10/7/2015	94		
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	96.2	12/21/2015	96.2	96.2	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	91.5	4/5/2016	91.5	91.5	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	99.2	7/7/2016	99.2	99.2	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	124	10/13/2016	124	124	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	132	12/29/2016	132	132	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	133	1/25/2017	133	133	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	139	4/11/2017	139	139	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	151	6/6/2017	151	151	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	164	8/7/2017	164	164	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	175	10/24/2017	175	175	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	163	4/24/2018	163	163	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	124	9/21/2018	124	124	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	112	10/22/2018	112	112	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	201	4/2/2019	201	201	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	182	10/8/2019	182	182	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	104	5/28/2020	104	104	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	97.4	10/8/2020	97.4	97.4	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	94.3	4/13/2021	94.3	94.3	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	96.4	10/12/2021	96.4	96.4	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	155	4/12/2022	155	155	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	153	10/27/2022	153	153	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	104	4/27/2023	104	104	
Calculations							
Count						22	
Mean						131.41	
Std Dev						32.69	
2 X SD (ACL)						65.39	
ACL, Calculated						196.80	
ACL, Rounded						200	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l; Data through 10/2015 from GEMS, later data from Chempoint

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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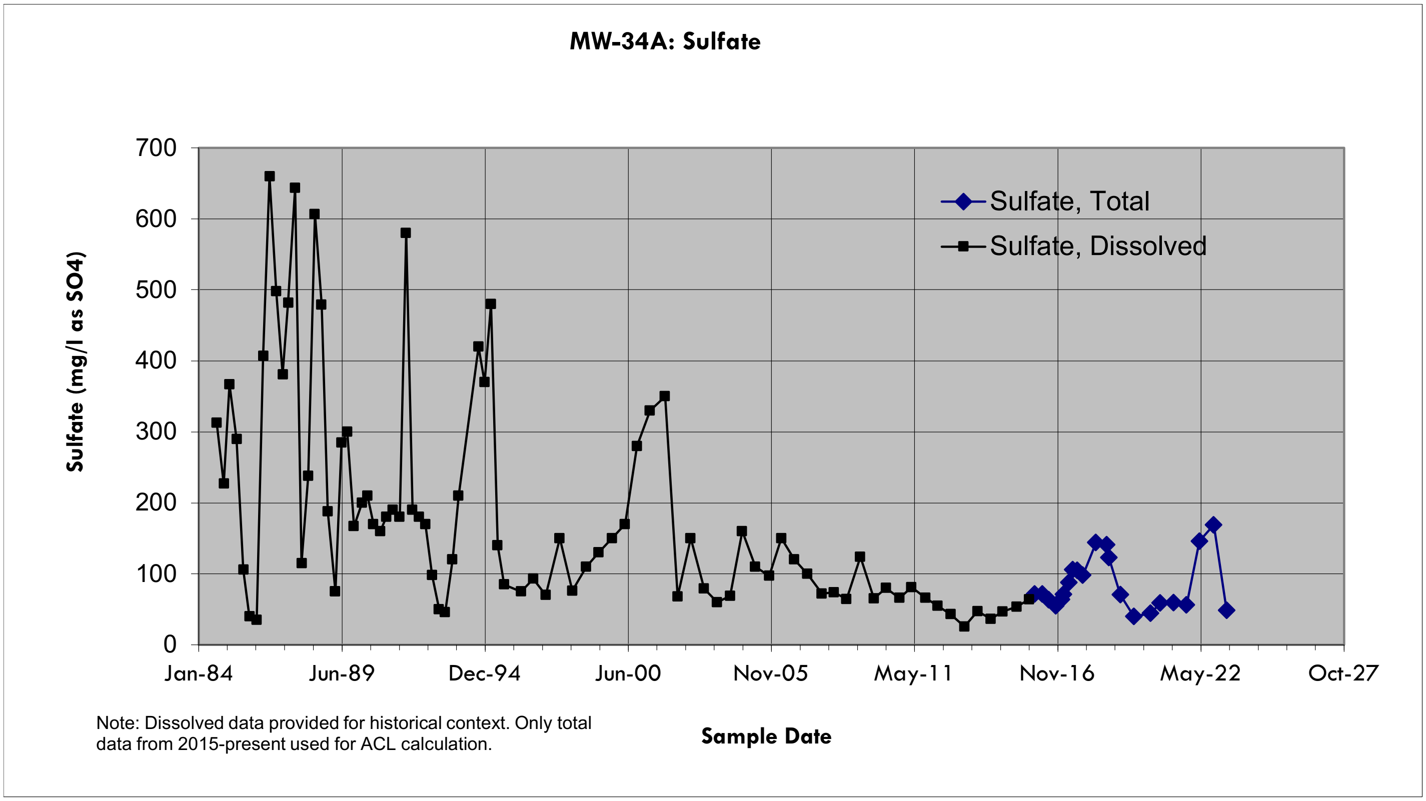

Note: Dissolved data provided for historical context. Only total data from 2015-present used for ACL calculation.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	313	9/7/1984	313		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	227	12/17/1984	227		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	367	3/7/1985	367		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	290	6/14/1985	290		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	106	9/18/1985	106		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	40	12/12/1985	40		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	35	3/21/1986	35		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	407	6/20/1986	407		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	660	9/18/1986	660		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	498	12/19/1986	498		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	381	3/20/1987	381		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	482	6/5/1987	482		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	644	9/9/1987	644		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	115	12/9/1987	115		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	238	3/10/1988	238		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	607	6/7/1988	607		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	479	9/9/1988	479		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	188	12/7/1988	188		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	75	3/21/1989	75		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	75	3/22/1989	75		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	285	6/16/1989	285		
MW-34A	SULFATE, TOTAL (MG/L SO4)	01	300	9/6/1989	300		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	167	12/5/1989	167		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	200	3/29/1990	200		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	210	6/14/1990	210		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	170	9/5/1990	170		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	160	12/10/1990	160		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	180	3/5/1991	180		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	190	6/3/1991	190		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	180	9/6/1991	180		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	580	12/4/1991	580		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	190	3/3/1992	190		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	180	6/2/1992	180		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	170	9/1/1992	170		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	98	12/2/1992	98		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	50	3/10/1993	50		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	46	6/2/1993	46		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	120	9/14/1993	120		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	210	12/7/1993	210		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	420	9/13/1994	420		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	370	12/6/1994	370		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	480	3/7/1995	480		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	140	6/6/1995	140		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	85	9/6/1995	85		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	75	4/30/1996	75		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	93	10/16/1996	93		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	70	4/8/1997	70		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	150	10/20/1997	150		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	76	4/14/1998	76		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	110	10/27/1998	110		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	130	4/16/1999	130		B
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	150	10/21/1999	150		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	170	4/20/2000	170		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	280	10/4/2000	280		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	330	4/3/2001	330		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	350	10/30/2001	350		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	68	4/25/2002	68		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	150	10/24/2002	150		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	79	4/29/2003	79		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	60	10/29/2003	60		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	69	4/27/2004	69		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	160	10/12/2004	160		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	110	4/15/2005	110		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	97	10/26/2005	97		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	150	4/13/2006	150		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	120	10/12/2006	120		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	100	4/11/2007	100		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	72	10/31/2007	72		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	73.9	4/17/2008	73.9		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	64.4	10/10/2008	64.4		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	124	4/21/2009	124		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	65.2	10/27/2009	65.2		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	80	4/14/2010	80		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	66	10/20/2010	66		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	81	4/6/2011	81		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	66	10/20/2011	66		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	55	4/4/2012	55		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	43	10/4/2012	43		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	25.7	4/16/2013	25.7		
MW-34A	SULFATE, TOTAL (MG/L SO4)	01	47.2	10/14/2013	47.2		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	36.4	4/16/2014	36.4		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	46.7	10/2/2014	46.7		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	53.6	4/14/2015	53.6		
MW-34A	SULFATE, DISSOLVED (MG/L SO4)	01	64	10/7/2015	64		
MW-33AR	SULFATE, TOTAL (MG/L SO4)	00	69.9	12/21/2015	69.9	69.9	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	71.3	12/21/2015	71.3	71.3	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	71.6	4/5/2016	71.6	71.6	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	63.4	7/7/2016	63.4	63.4	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	54.8	10/13/2016	54.8	54.8	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	63.9	12/29/2016	63.9	63.9	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	71.2	1/25/2017	71.2	71.2	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	87.6	4/11/2017	87.6	87.6	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	106	6/6/2017	106	106	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	105	8/7/2017	105	105	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	98	10/24/2017	98	98	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	144	4/24/2018	144	144	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	141	9/21/2018	141	141	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	123	10/22/2018	123	123	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	70.4	4/2/2019	70.4	70.4	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	39.8	10/8/2019	39.8	39.8	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	44.4	5/28/2020	44.4	44.4	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	58.7	10/8/2020	58.7	58.7	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	59.3	4/13/2021	59.3	59.3	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	56.1	10/12/2021	56.1	56.1	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	146	4/12/2022	146	146	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	169	10/27/2022	169	169	
MW-33AR	SULFATE, TOTAL (MG/L SO4)	01	48.4	4/26/2023	48.4	48.4	
Calculations							
Count						23	
Mean						85.34	
Std Dev						36.86	
2 X SD (ACL)						73.72	
ACL, Calculated						159.06	
ACL, Rounded						160	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l; Data through 10/2015 from GEMS, later data from Chempoint

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

QC1 = GEMS Quality Control Flag 1. Concentration of parameter in associated method, field, or trip blank exceeds highest of: limit of detection, 5% of PAL, or 10 % of sample concentration.

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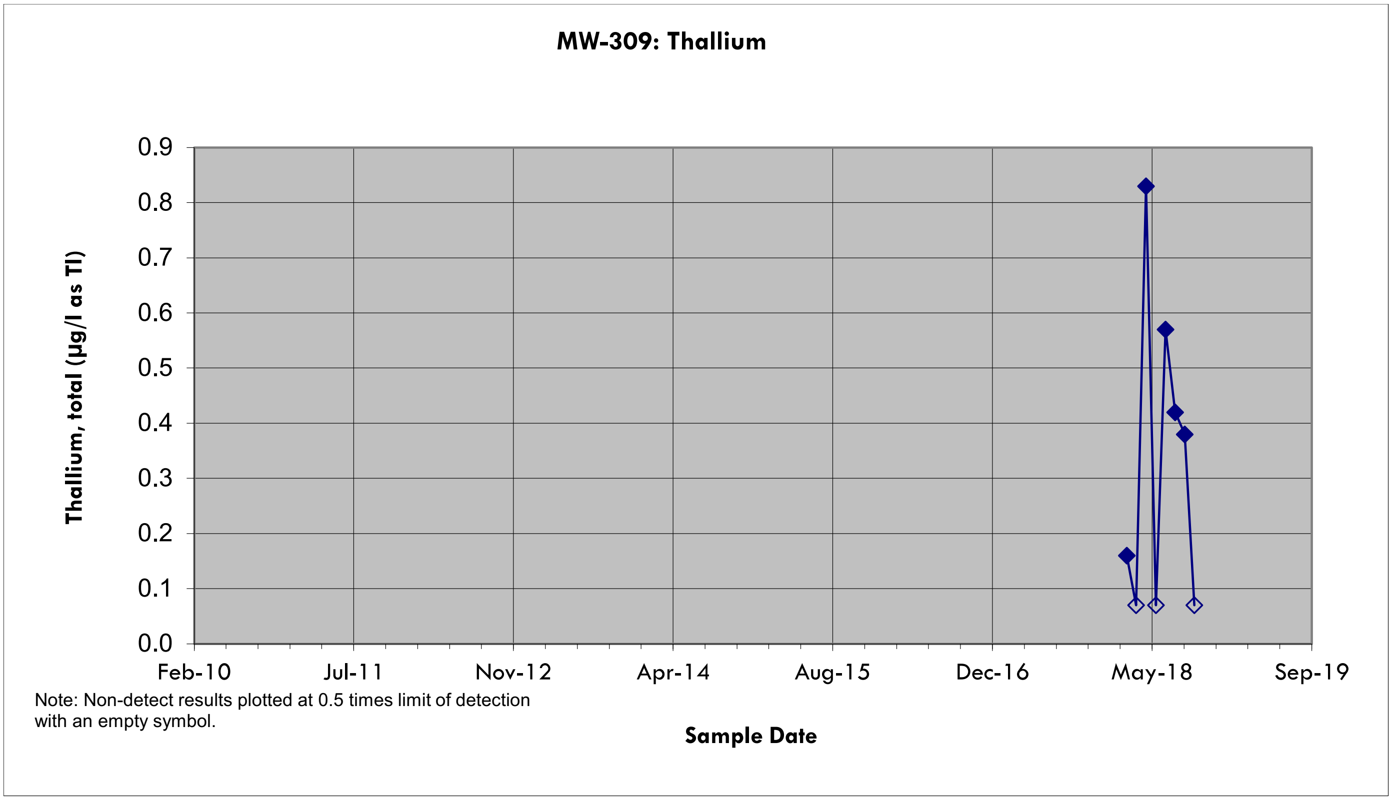

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-309	THALLIUM, TOTAL (UG/L TL)	01	0.16	2/21/2018	0.16	0.16	J
MW-309	THALLIUM, TOTAL (UG/L TL)	01	<0.14	3/23/2018	0.07	0.07	
MW-309	THALLIUM, TOTAL (UG/L TL)	01	0.83	4/23/2018	0.83	0.83	J
MW-309	THALLIUM, TOTAL (UG/L TL)	01	<0.14	5/24/2018	0.07	0.07	
MW-309	THALLIUM, TOTAL (UG/L TL)	01	0.57	6/23/2018	0.57	0.57	J
MW-309	THALLIUM, TOTAL (UG/L TL)	01	0.42	7/23/2018	0.42	0.42	J
MW-309	THALLIUM, TOTAL (UG/L TL)	01	0.38	8/22/2018	0.38	0.38	J
MW-309	THALLIUM, TOTAL (UG/L TL)	01	<0.14	9/21/2018	0.07	0.07	
Calculations							
Count						8	
Mean						0.32	
Std Dev						0.28	
2 X SD (ACL)						0.56	
ACL, Calculated						0.88	
ACL, Rounded						0.89	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 0.4 ug/l; ES = 2 ug/l

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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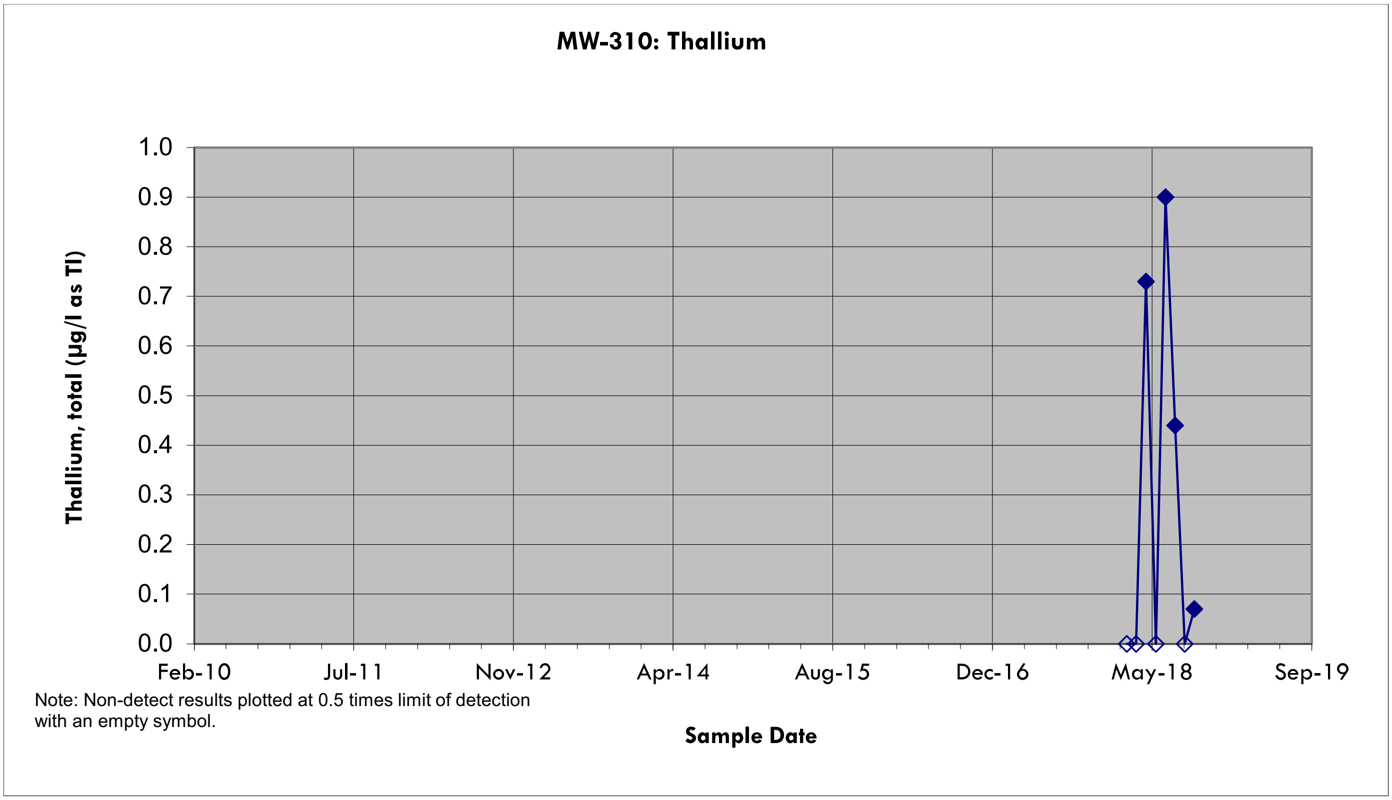

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-310	THALLIUM, TOTAL (UG/L TL)	01	<0.14	2/21/2018	<0.14	<0.14	
MW-310	THALLIUM, TOTAL (UG/L TL)	01	<0.14	3/23/2018	<0.14	<0.14	
MW-310	THALLIUM, TOTAL (UG/L TL)	01	0.73	4/23/2018	0.73	0.73	J
MW-310	THALLIUM, TOTAL (UG/L TL)	01	<0.14	5/24/2018	<0.14	<0.14	
MW-310	THALLIUM, TOTAL (UG/L TL)	01	0.9	6/23/2018	0.9	0.9	J
MW-310	THALLIUM, TOTAL (UG/L TL)	01	0.44	7/23/2018	0.44	0.44	J
MW-310	THALLIUM, TOTAL (UG/L TL)	01	<0.14	8/22/2018	<0.14	<0.14	
MW-310	THALLIUM, TOTAL (UG/L TL)	01	0.27	9/21/2018	0.07	0.07	J
Calculations							
Count						4	
Mean						0.54	
Std Dev						0.36	
2 X SD (ACL)						0.73	
ACL, Calculated						1.26	
ACL, Rounded						1.3	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 0.4 ug/l; ES = 2 ug/l

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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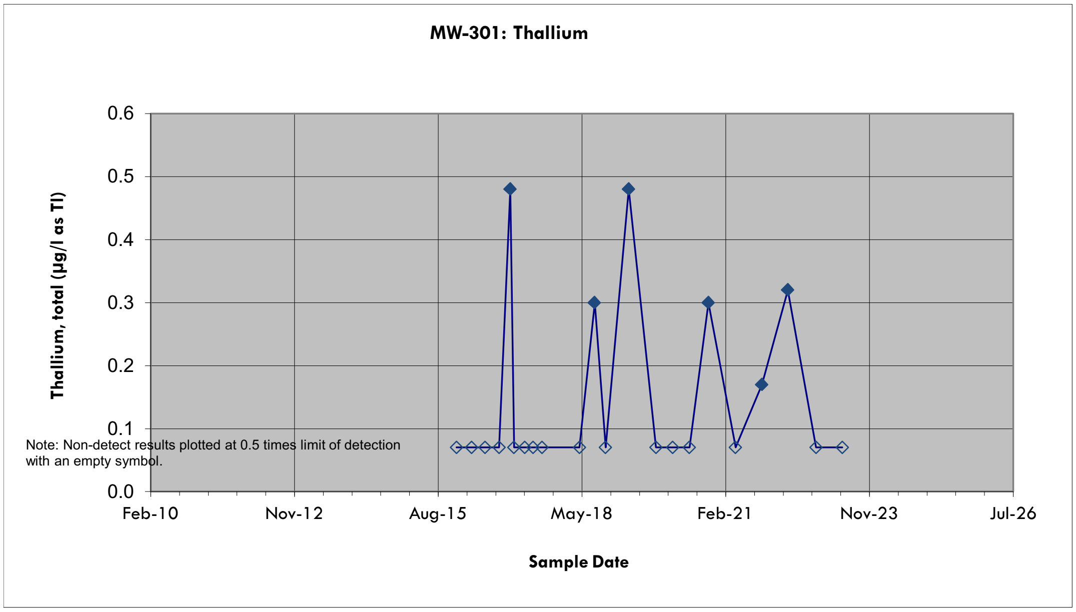

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	12/22/2015	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	4/5/2016	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	7/8/2016	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	10/13/2016	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	0.48	12/29/2016	0.48	0.48	J
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	1/25/2017	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	4/11/2017	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	6/6/2017	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	8/8/2017	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	4/25/2018	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	0.3	8/8/2018	0.3	0.3	J
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	10/24/2018	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	0.48	4/2/2019	0.48	0.48	J
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	10/9/2019	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	2/3/2020	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	5/29/2020	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	0.3	10/8/2020	0.3	0.3	J
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	4/14/2021	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	0.17	10/14/2021	0.17	0.17	J
MW-301	THALLIUM, TOTAL (UG/L TL)	01	0.32	4/13/2022	0.32	0.32	J
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	10/27/2022	0.07	0.07	
MW-301	THALLIUM, TOTAL (UG/L TL)	01	<0.14	4/27/2023	0.07	0.07	
Calculations							
Count						22	
Mean						0.14	
Std Dev						0.14	
2 X SD (ACL)						0.27	
ACL, Calculated						0.42	
ACL, Rounded						0.42	

All detects <LOQ, so no ACL?

Duplicate Data Not Used for Calculations							

Note: Current PAL = 0.4 ug/l; ES = 4 ug/l

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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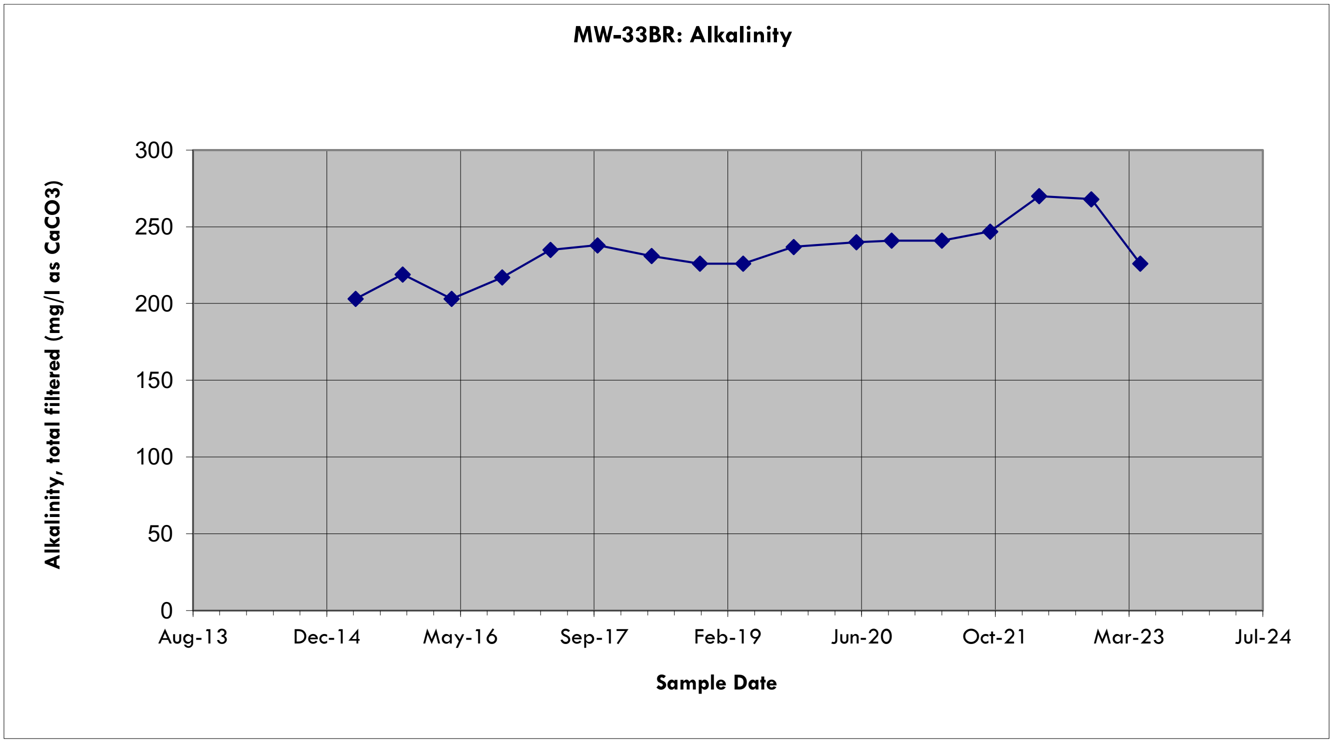
I.2 Non-CCR Well PAL and ACL Calcs



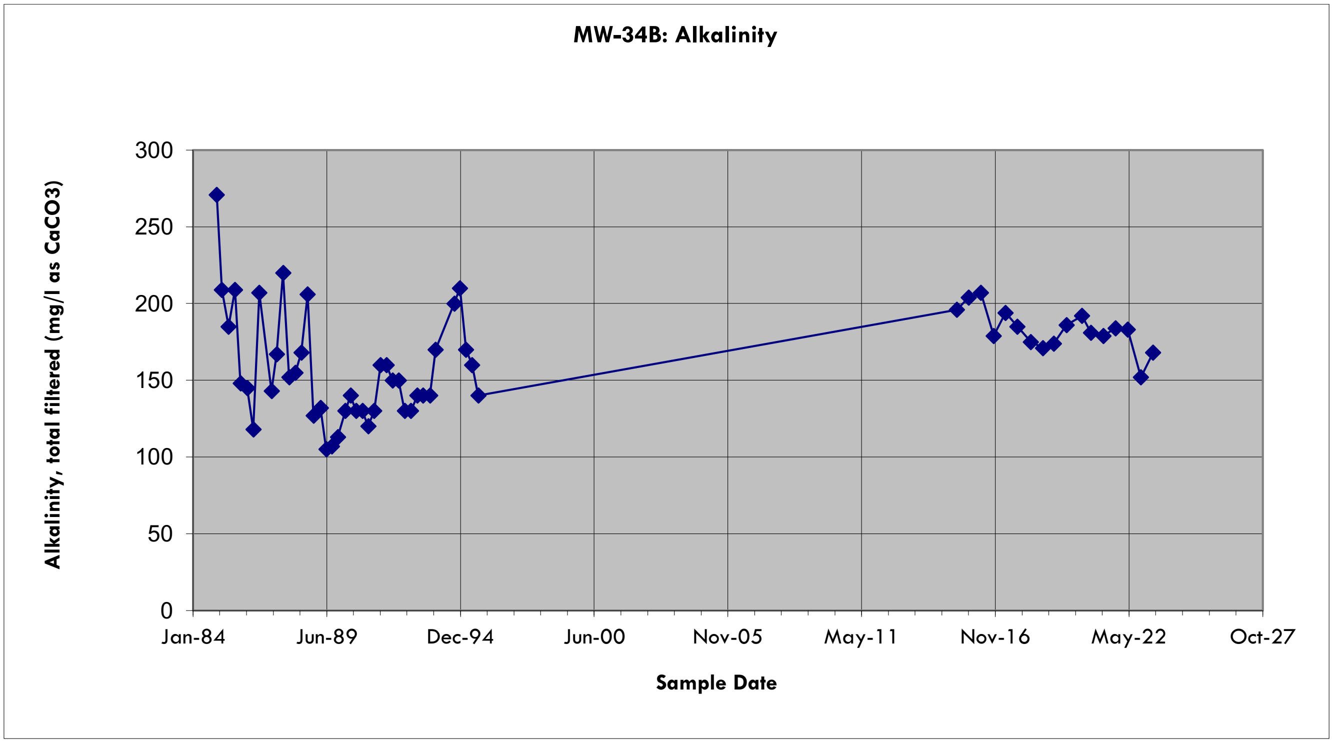
Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	203	4/13/2015	203	203	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	219	10/7/2015	219	219	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	203	4/7/2016	203	203	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	217	10/13/2016	217	217	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	235	4/11/2017	235	235	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	238	10/4/2017	238	238	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	231	4/24/2018	231	231	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	226	10/22/2018	226	226	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	226	4/2/2019	226	226	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	237	10/8/2019	237	237	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	240	5/29/2020	240	240	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	241	10/8/2020	241	241	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	241	4/14/2021	241	241	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	247	10/12/2021	247	247	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	270	4/13/2022	270	270	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	268	10/25/2022	268	268	
MW-33BR	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	226	4/26/2023	226	226	
Calculations							
Count						17	
Mean						233.41	
Std Dev						18.39	
3 X SD (PAL)						55.18	
Min Increase (PAL)						100	
PAL, Calculated						333.41	
PAL, Rounded						340	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from GEMS

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[PAL Calculations_Non CCR Wells.xlsx]MW-33BR_Alk_PAL



MW-34B: Alkalinity

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	271	12/17/1984	271		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	209	3/7/1985	209		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	185	6/14/1985	185		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	209	9/18/1985	209		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	148	12/12/1985	148		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	145	3/21/1986	145		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	118	6/20/1986	118		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	207	9/18/1986	207		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	143	3/20/1987	143		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	167	6/5/1987	167		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	220	9/9/1987	220		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	152	12/9/1987	152		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	155	3/10/1988	155		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	168	6/7/1988	168		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	206	9/9/1988	206		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	127	12/7/1988	127		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	132	3/21/1989	132		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	132	3/22/1989	132		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	105	6/16/1989	105		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	107	9/6/1989	107		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	113	12/5/1989	113		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	130	3/29/1990	130		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	140	6/14/1990	140		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	130	9/5/1990	130		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	130	12/10/1990	130		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	120	3/5/1991	120		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	130	6/3/1991	130		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	160	9/6/1991	160		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	160	12/4/1991	160		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	150	3/3/1992	150		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	150	6/2/1992	150		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	130	9/1/1992	130		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	130	12/2/1992	130		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	140	3/10/1993	140		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	140	6/2/1993	140		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	140	9/14/1993	140		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	170	12/7/1993	170		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	200	9/13/1994	200		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	210	12/6/1994	210		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	170	3/7/1995	170		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	160	6/6/1995	160		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	140	9/6/1995	140		
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	196	4/13/2015	196	196	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	204	10/7/2015	204	204	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	207	4/7/2016	207	207	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	179	10/13/2016	179	179	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	194	4/11/2017	194	194	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	185	10/4/2017	185	185	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	175	4/24/2018	175	175	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	171	10/22/2018	171	171	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	174	4/2/2019	174	174	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	186	10/8/2019	186	186	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	192	5/29/2020	192	192	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	181	10/8/2020	181	181	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	179	4/14/2021	179	179	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	184	10/12/2021	184	184	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	183	4/13/2022	183	183	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	152	10/25/2022	152	152	
MW-34B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	168	4/26/2023	168	168	
Calculations							
Count						17	
Mean						182.94	
Std Dev						13.49	
3 X SD (PAL)						40.48	
Min Increase (PAL)						100	
PAL, Calculated						282.94	
PAL, Rounded						290	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from GEMS

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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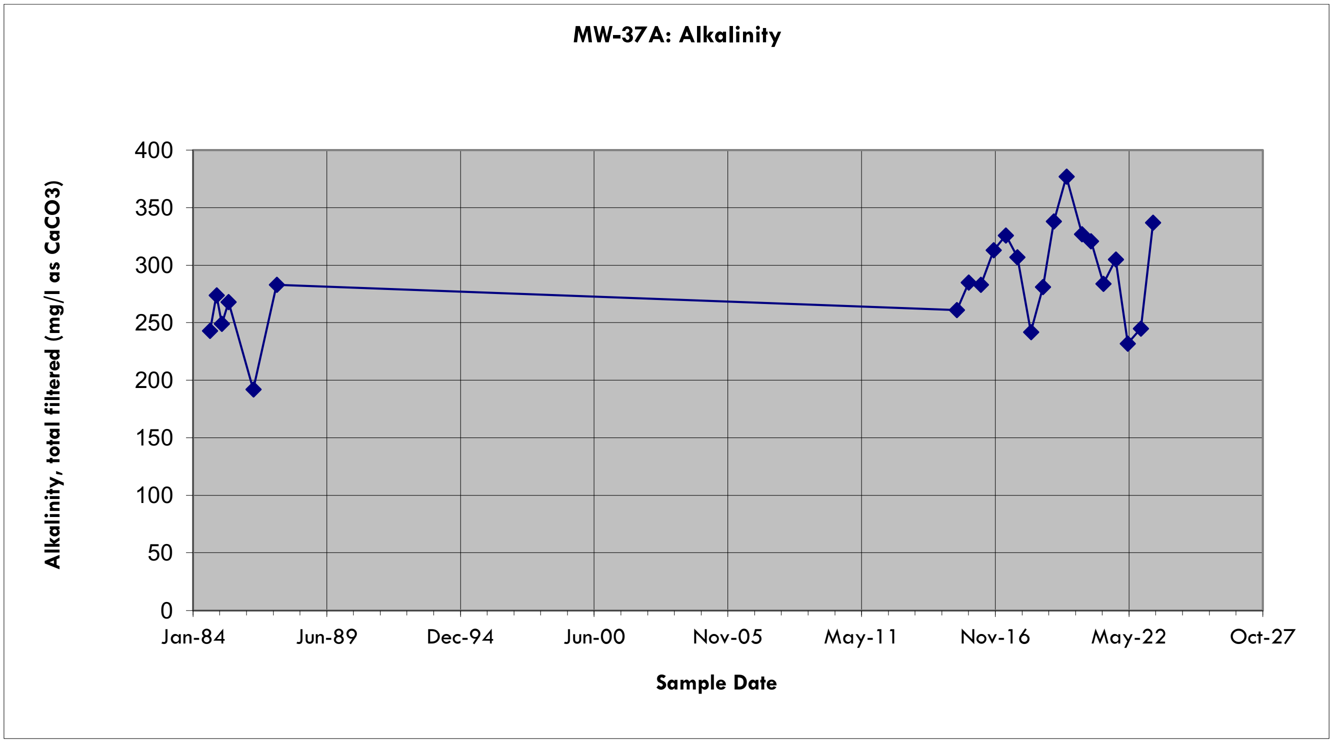


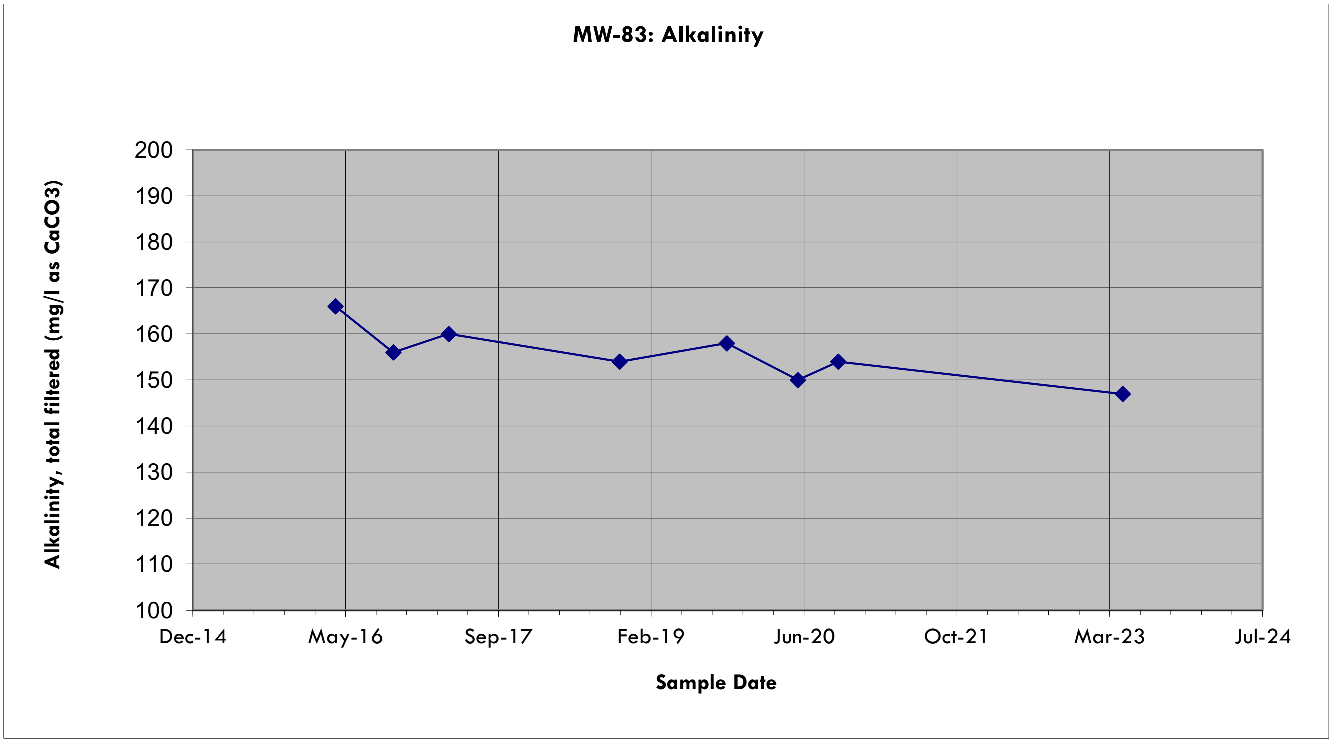
Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	243	9/7/1984	243		
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	274	12/17/1984	274		
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	249	3/7/1985	249		
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	268	6/14/1985	268		
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	192	6/20/1986	192		
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	283	6/5/1987	283		
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	261	4/14/2015	261	261	Using data from within the last 20 years for PAL calculation
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	285	10/8/2015	285	285	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	283	4/7/2016	283	283	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	313	10/13/2016	313	313	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	326	4/13/2017	326	326	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	307	10/5/2017	307	307	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	242	4/25/2018	242	242	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	281	10/23/2018	281	281	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	338	4/3/2019	338	338	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	377	10/9/2019	377	377	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	327	5/29/2020	327	327	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	321	10/8/2020	321	321	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	284	4/14/2021	284	284	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	305	10/14/2021	305	305	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	232	4/13/2022	232	232	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	245	10/25/2022	245	245	
MW-37A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	337	4/24/2023	337	337	
Calculations							
Count						17	
Mean						297.88	
Std Dev						39.07	
3 X SD (PAL)						117.20	
Min Increase (PAL)						100	
PAL, Calculated						415.08	
PAL, Rounded						420	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from GEMS

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-83	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	166	4/7/2016	166	166	
MW-83	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	156	10/13/2016	156	156	
MW-83	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	160	4/12/2017	160	160	
MW-83	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	154	10/24/2018	154	154	
MW-83	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	158	10/9/2019	158	158	
MW-83	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	150	5/29/2020	150	150	
MW-83	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	154	10/8/2020	154	154	
MW-83	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	147	4/27/2023	147	147	

Calculations		
Count	8	
Mean	155.63	
Std Dev	5.90	
3 X SD (PAL)	17.71	
Min Increase (PAL)	100	
PAL, Calculated	255.63	
PAL, Rounded	260	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from GEMS

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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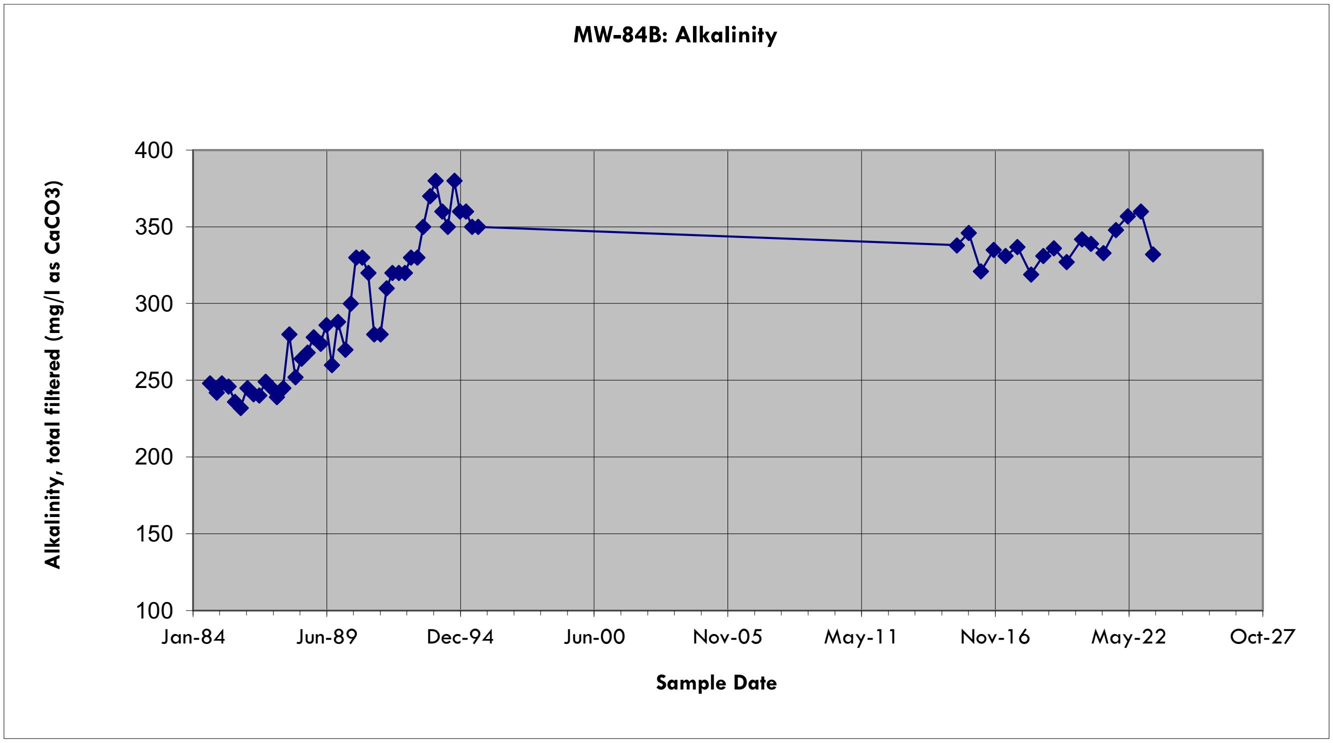

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	248	9/7/1984	248		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	242	12/17/1984	242		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	248	3/7/1985	248		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	246	6/14/1985	246		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	236	9/18/1985	236		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	232	12/12/1985	232		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	245	3/21/1986	245		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	241	6/20/1986	241		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	240	9/18/1986	240		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	249	12/19/1986	249		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	245	3/20/1987	245		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	239	6/5/1987	239		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	245	9/9/1987	245		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	280	12/9/1987	280		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	252	3/10/1988	252		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	264	6/7/1988	264		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	268	9/9/1988	268		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	278	12/7/1988	278		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	274	3/21/1989	274		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	274	3/22/1989	274		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	286	6/16/1989	286		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	260	9/7/1989	260		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	288	12/6/1989	288		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	270	3/29/1990	270		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	300	6/14/1990	300		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	330	9/5/1990	330		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	330	12/7/1990	330		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	320	3/6/1991	320		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	280	6/3/1991	280		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	280	9/6/1991	280		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	310	12/5/1991	310		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	320	3/2/1992	320		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	320	6/2/1992	320		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	320	9/2/1992	320		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	330	12/2/1992	330		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	330	3/10/1993	330		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	350	6/3/1993	350		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	370	9/14/1993	370		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	380	12/7/1993	380		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	360	3/15/1994	360		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	350	6/7/1994	350		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	380	9/13/1994	380		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	360	12/6/1994	360		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	360	3/7/1995	360		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	350	6/5/1995	350		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	350	9/5/1995	350		
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	338	4/13/2015	338	338	Using data from within the last 20 years for PAL calculation
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	346	10/8/2015	346	346	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	321	4/7/2016	321	321	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	335	10/13/2016	335	335	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	331	4/11/2017	331	331	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	337	10/5/2017	337	337	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	319	4/25/2018	319	319	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	331	10/24/2018	331	331	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	336	4/3/2019	336	336	M
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	327	10/9/2019	327	327	M
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	342	5/29/2020	342	342	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	339	10/9/2020	339	339	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	333	4/15/2021	333	333	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	348	10/14/2021	348	348	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	357	4/13/2022	357	357	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	360	10/25/2022	360	360	
MW-84B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	332	4/25/2023	332	332	
Calculations							
Count						17	
Mean						337.18	
Std Dev						11.06	
3 X SD (PAL)						33.19	
Min Increase (PAL)						100	
PAL, Calculated						437.18	
PAL, Rounded						440	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from GEMS

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P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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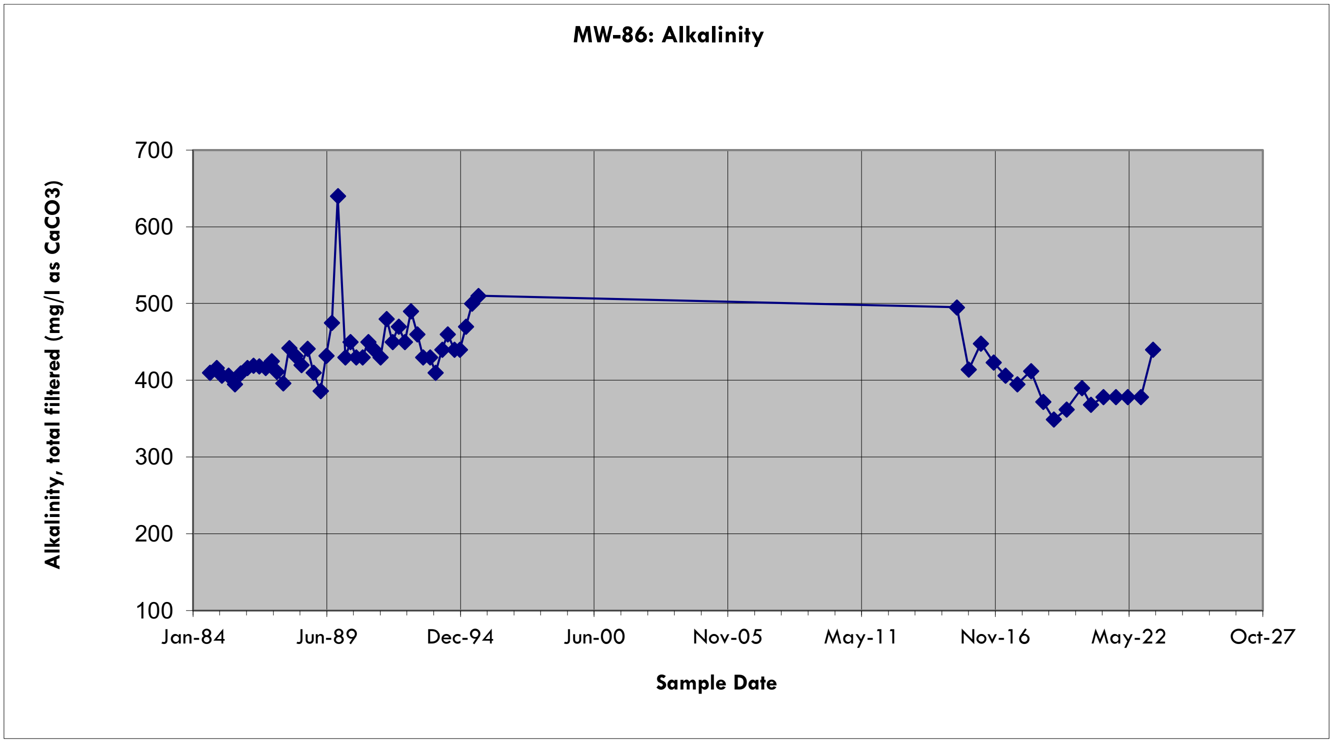

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	410	9/7/1984	410		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	416	12/17/1984	416		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	406	3/7/1985	406		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	406	6/14/1985	406		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	395	9/18/1985	395		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	409	12/12/1985	409		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	416	3/21/1986	416		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	419	6/20/1986	419		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	418	9/18/1986	418		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	416	12/19/1986	416		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	425	3/20/1987	425		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	411	6/5/1987	411		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	396	9/9/1987	396		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	442	12/9/1987	442		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	432	3/10/1988	432		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	420	6/7/1988	420		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	441	9/9/1988	441		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	410	12/7/1988	410		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	386	3/21/1989	386		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	386	3/22/1989	386		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	432	6/16/1989	432		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	475	9/7/1989	475		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	640	12/6/1989	640		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	430	3/29/1990	430		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	450	6/13/1990	450		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	430	9/7/1990	430		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	430	12/11/1990	430		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	450	3/6/1991	450		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	440	6/3/1991	440		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	430	9/6/1991	430		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	480	12/5/1991	480		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	450	3/3/1992	450		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	470	6/2/1992	470		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	450	9/2/1992	450		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	490	12/2/1992	490		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	460	3/10/1993	460		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	430	6/2/1993	430		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	430	9/14/1993	430		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	410	12/7/1993	410		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	440	3/15/1994	440		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	460	6/7/1994	460		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	440	9/13/1994	440		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	440	12/6/1994	440		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	470	3/7/1995	470		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	500	6/5/1995	500		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	510	9/6/1995	510		
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	495	4/14/2015	495	495	Using data from within the last 20 years for PAL calculation
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	414	10/8/2015	414	414	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	448	4/7/2016	448	448	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	423	10/13/2016	423	423	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	406	4/11/2017	406	406	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	395	10/5/2017	395	395	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	412	4/25/2018	412	412	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	372	10/24/2018	372	372	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	349	4/3/2019	349	349	M
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	362	10/9/2019	362	362	M
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	390	5/29/2020	390	390	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	368	10/9/2020	368	368	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	378	4/15/2021	378	378	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	378	10/14/2021	378	378	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	378	4/13/2022	378	378	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	378	10/25/2022	378	378	
MW-86	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	440	4/24/2023	440	440	
Count						17	
Mean						399.18	
Std Dev						36.86	
3 X SD (PAL)						110.57	
Min Increase (PAL)						100	
PAL, Calculated						509.75	
PAL, Rounded						510	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from GEMS

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P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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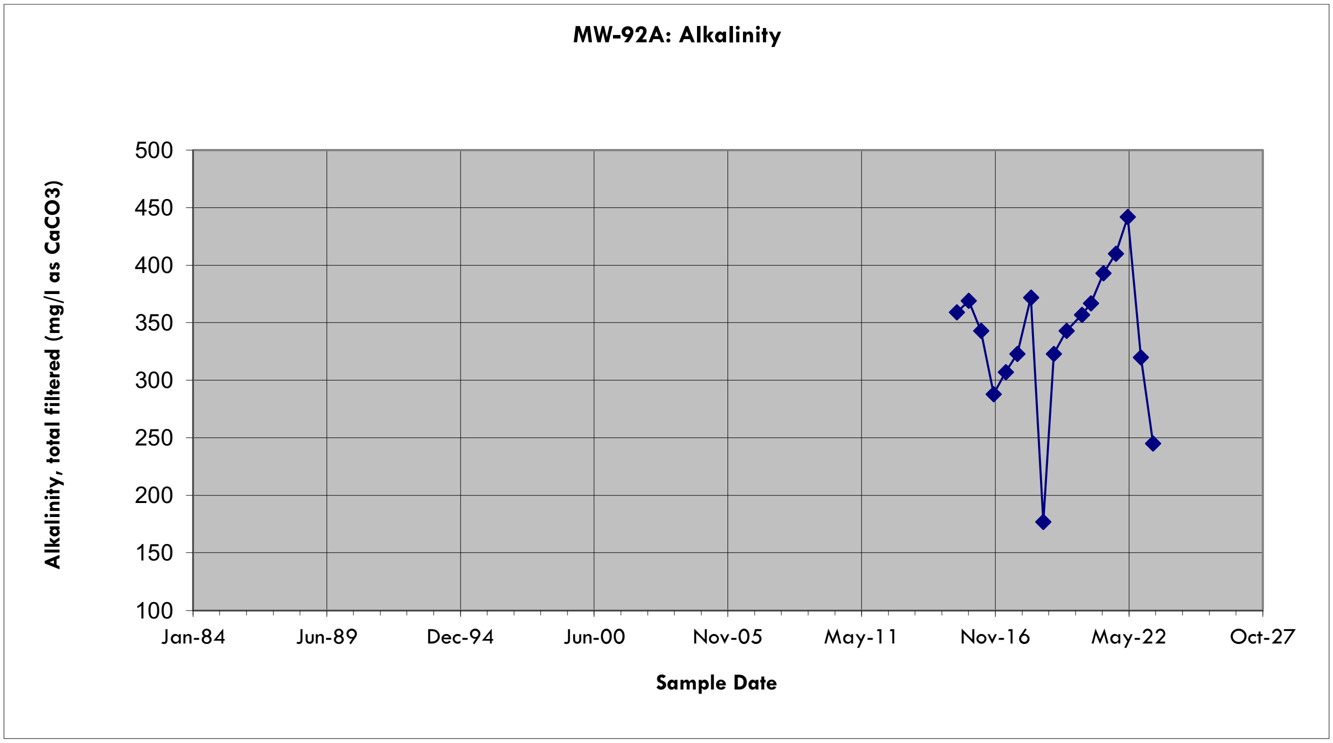

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	359	4/13/2015	359	359	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	369	10/8/2015	369	369	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	343	4/8/2016	343	343	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	288	10/13/2016	288	288	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	307	4/12/2017	307	307	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	323	10/5/2017	323	323	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	372	4/25/2018	372	372	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	177	10/25/2018	177	177	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	323	4/3/2019	323	323	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	343	10/9/2019	343	343	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	357	5/29/2020	357	357	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	367	10/9/2020	367	367	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	393	4/15/2021	393	393	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	410	10/14/2021	410	410	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	442	4/13/2022	442	442	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	320	10/25/2022	320	320	
MW-92A	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	245	4/24/2023	245	245	

Count	17	
Mean	337.53	
Std Dev	62.07	
3 X SD (PAL)	186.20	
Min Increase (PAL)	100	
PAL, Calculated	523.73	
PAL, Rounded	530	

Duplicate Data Not Used for Calculations							

Notes: Data downloaded from GEMS

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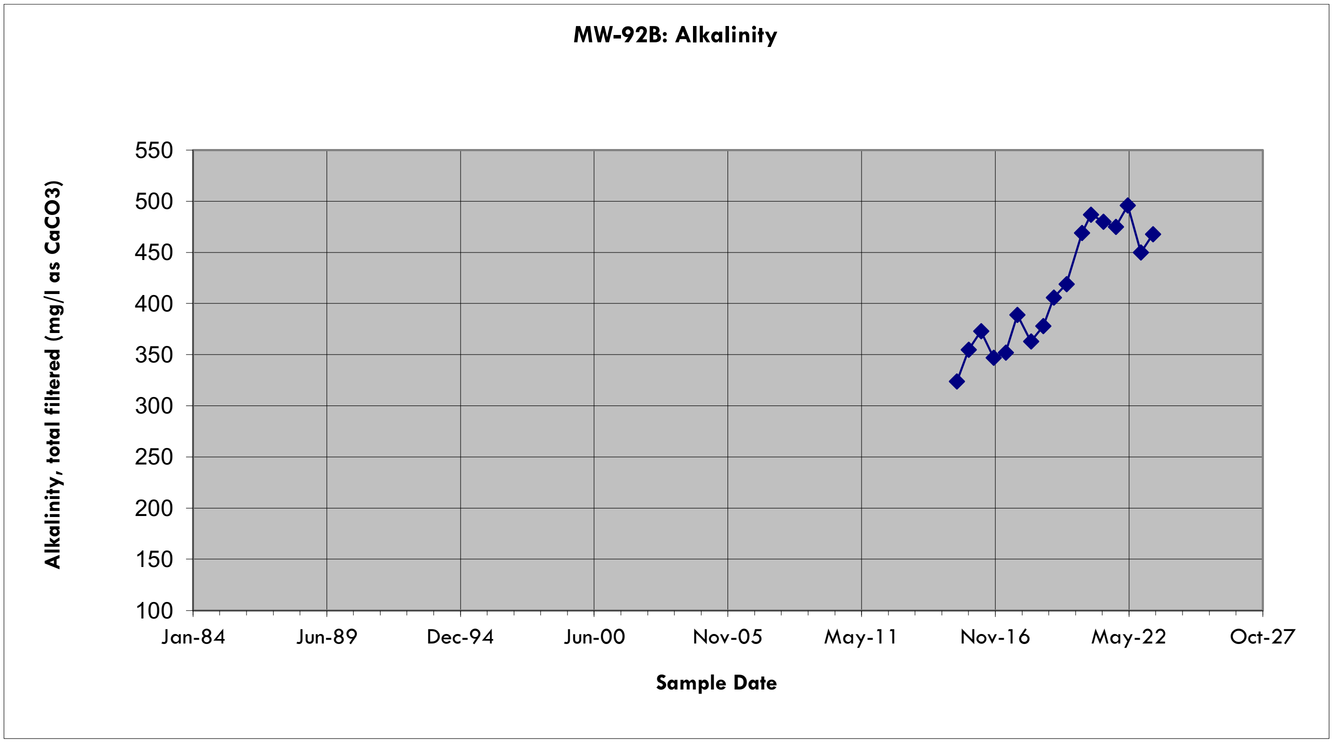
B = Compound detected in blank.
M = Failed method QC check.
QC3 = sample failed the quality control standards specified by the analyticalmethod or the requirements of NR 149.48



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	324	4/13/2015	324	324	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	355	10/8/2015	355	355	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	373	4/8/2016	373	373	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	347	10/13/2016	347	347	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	352	4/12/2017	352	352	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	389	10/5/2017	389	389	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	363	4/25/2018	363	363	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	378	10/25/2018	378	378	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	406	4/3/2019	406	406	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	419	10/9/2019	419	419	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	469	5/29/2020	469	469	M
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	487	10/9/2020	487	487	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	480	4/15/2021	480	480	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	475	10/14/2021	475	475	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	496	4/13/2022	496	496	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	450	10/25/2022	450	450	
MW-92B	ALKALINITY, TOTAL FILTERED (MG/L AS CACO3)	01	468	4/24/2023	468	468	

Count	17	
Mean	413.59	
Std Dev	57.86	
3 X SD (PAL)	173.59	
Min Increase (PAL)	100	
PAL, Calculated	587.18	
PAL, Rounded	590	

Duplicate Data Not Used for Calculations							

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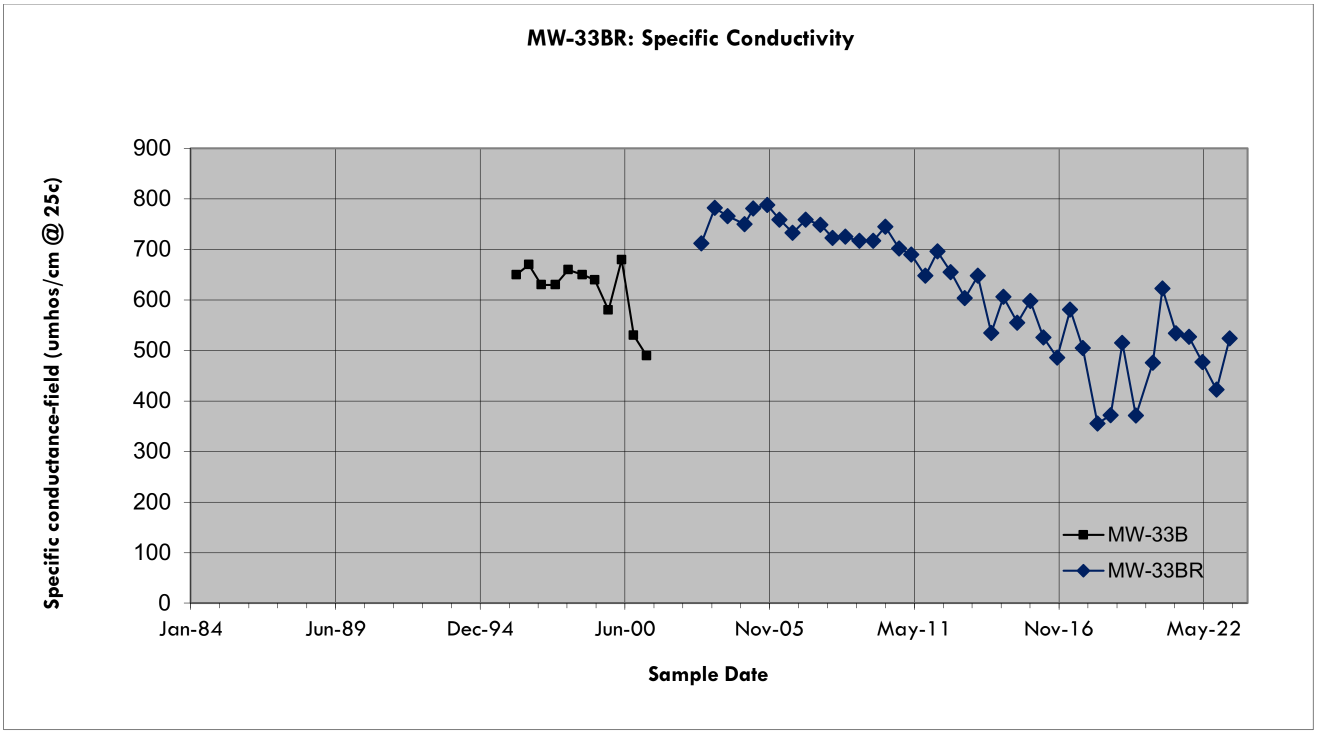

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	4/30/1996	650		
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	670	10/16/1996	670		
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	630	4/8/1997	630		
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	630	10/20/1997	630		
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	660	4/14/1998	660		
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	10/27/1998	650		
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	640	4/16/1999	640		
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	580	10/21/1999	580		
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	680	4/20/2000	680		
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	530	10/4/2000	530		
MW-33B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	490	4/3/2001	490		
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	712	4/29/2003	712	712	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	782	10/30/2003	782	782	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	766	4/27/2004	766	766	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	750	12/14/2004	750	750	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	781	4/15/2005	781	781	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	788	10/26/2005	788	788	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	759	4/13/2006	759	759	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	733	10/12/2006	733	733	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	759	4/11/2007	759	759	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	749	10/31/2007	749	749	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	723	4/17/2008	723	723	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	725	10/10/2008	725	725	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	717	4/21/2009	717	717	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	717	10/27/2009	717	717	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	745	4/14/2010	745	745	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	702	10/20/2010	702	702	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	690	4/6/2011	690	690	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	648	10/20/2011	648	648	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	696	4/4/2012	696	696	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	655	10/4/2012	655	655	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	604	4/17/2013	604	604	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	648	10/14/2013	648	648	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	535	4/16/2014	535	535	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	606	10/2/2014	606	606	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	555	4/13/2015	555	555	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	598	10/7/2015	598	598	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	526	4/7/2016	526	526	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	486	10/13/2016	486	486	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	580.9	4/11/2017	580.9	580.9	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	505	10/4/2017	505	505	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	355.5	4/24/2018	355.5	355.5	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	372	10/22/2018	372	372	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	515	4/2/2019	515	515	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	371	10/8/2019	371	371	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	476	5/29/2020	476	476	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	623	10/8/2020	623	623	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	534	4/14/2021	534	534	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	527	10/12/2021	527	527	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	477	4/13/2022	477	477	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	422.4	10/25/2022	422.4	422.4	
MW-33BR	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	524.1	4/26/2023	524.1	524.1	
Calculations							
Count						41	
Mean						620.44	
Std Dev						126.02	
3 X SD (PAL)						378.07	
Min Increase (PAL)						200	
PAL, Calculated						998.51	
PAL, Rounded						1000	

Duplicate Data Not Used for Calculations							

Note: Data for all events through October 2022 downloaded from GEMS

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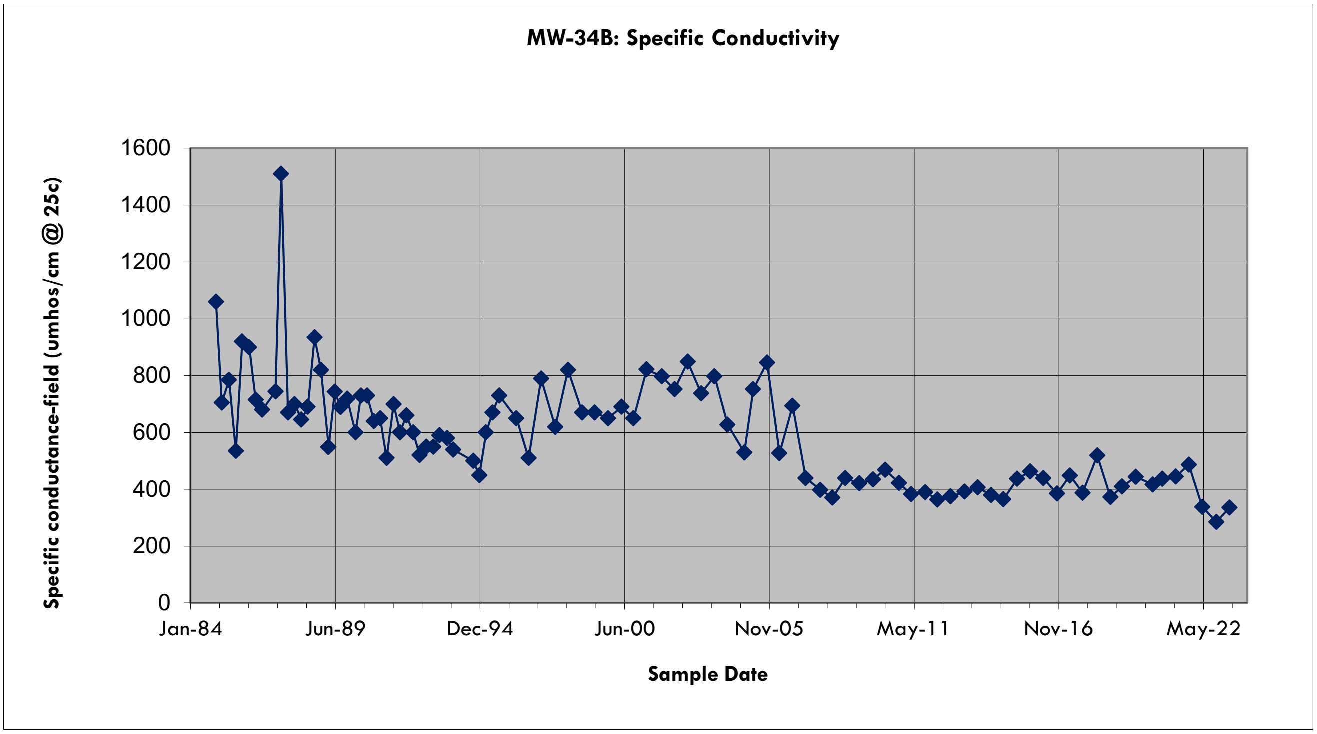

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1060	12/17/1984	1060		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	705	3/7/1985	705		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	785	6/14/1985	785		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	535	9/18/1985	535		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	920	12/12/1985	920		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	900	3/21/1986	900		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	715	6/20/1986	715		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	680	9/18/1986	680		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	745	3/20/1987	745		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1510	6/5/1987	1510		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	670	9/9/1987	670		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	700	12/9/1987	700		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	645	3/10/1988	645		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	690	6/7/1988	690		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	935	9/9/1988	935		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	820	12/7/1988	820		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	549	3/21/1989	549		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	549	3/22/1989	549		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	743	6/16/1989	743		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	689	9/6/1989	689		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	719	12/5/1989	719		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	3/29/1990	600		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	730	6/14/1990	730		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	730	9/5/1990	730		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	640	12/10/1990	640		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	3/5/1991	650		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	510	6/3/1991	510		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	700	9/6/1991	700		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	12/4/1991	600		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	660	3/3/1992	660		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	6/2/1992	600		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	520	9/1/1992	520		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	12/2/1992	550		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	3/10/1993	550		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	590	6/2/1993	590		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	580	9/14/1993	580		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	540	12/7/1993	540		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	500	9/13/1994	500		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	450	12/6/1994	450		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	3/7/1995	600		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	670	6/6/1995	670		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	730	9/6/1995	730		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	4/30/1996	650		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	510	10/16/1996	510		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	790	4/8/1997	790		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	620	10/20/1997	620		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	820	4/14/1998	820		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	670	10/27/1998	670		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	670	4/16/1999	670		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	10/21/1999	650		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	690	4/20/2000	690		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	10/4/2000	650		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	822	4/3/2001	822		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	797	10/30/2001	797		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	752	4/25/2002	752		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	849	10/24/2002	849		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	738	4/29/2003	738	738	Using data from within the last 20 years for PAL calculation
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	798	10/29/2003	798	798	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	628	4/27/2004	628	628	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	530	12/14/2004	530	530	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	752	4/15/2005	752	752	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	846	10/26/2005	846	846	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	527	4/13/2006	527	527	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	694	10/12/2006	694	694	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	440	4/11/2007	440	440	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	398	10/31/2007	398	398	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	371	4/17/2008	371	371	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	440	10/10/2008	440	440	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	421	4/21/2009	421	421	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	435	10/27/2009	435	435	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	469	4/14/2010	469	469	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	423	10/20/2010	423	423	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	383	4/6/2011	383	383	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	390	10/20/2011	390	390	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	364	4/4/2012	364	364	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	375	10/4/2012	375	375	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	392	4/16/2013	392	392	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	407	10/14/2013	407	407	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	380	4/16/2014	380	380	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	365	10/2/2014	365	365	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	437	4/13/2015	437	437	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	463	10/7/2015	463	463	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	440	4/7/2016	440	440	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	385	10/13/2016	385	385	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	448.9	4/11/2017	448.9	448.9	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	388	10/4/2017	388	388	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	519	4/24/2018	519	519	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	373	10/22/2018	373	373	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	410	4/2/2019	410	410	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	444	10/8/2019	444	444	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	417	5/29/2020	417	417	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	437	10/8/2020	437	437	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	445	4/14/2021	445	445	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	487	10/12/2021	487	487	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	338	4/13/2022	338	338	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	285.5	10/25/2022	285.5	285.5	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	335.4	4/26/2023	335.4	335.4	
Calculations							
Count						41	
Mean						463.87	
Std Dev						129.78	
3 X SD (PAL)						389.34	
Min Increase (PAL)						200	
PAL, Calculated						853.21	
PAL, Rounded						900	

Duplicate Data Not Used for Calculations							

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

Note: Data downloaded from GEMS

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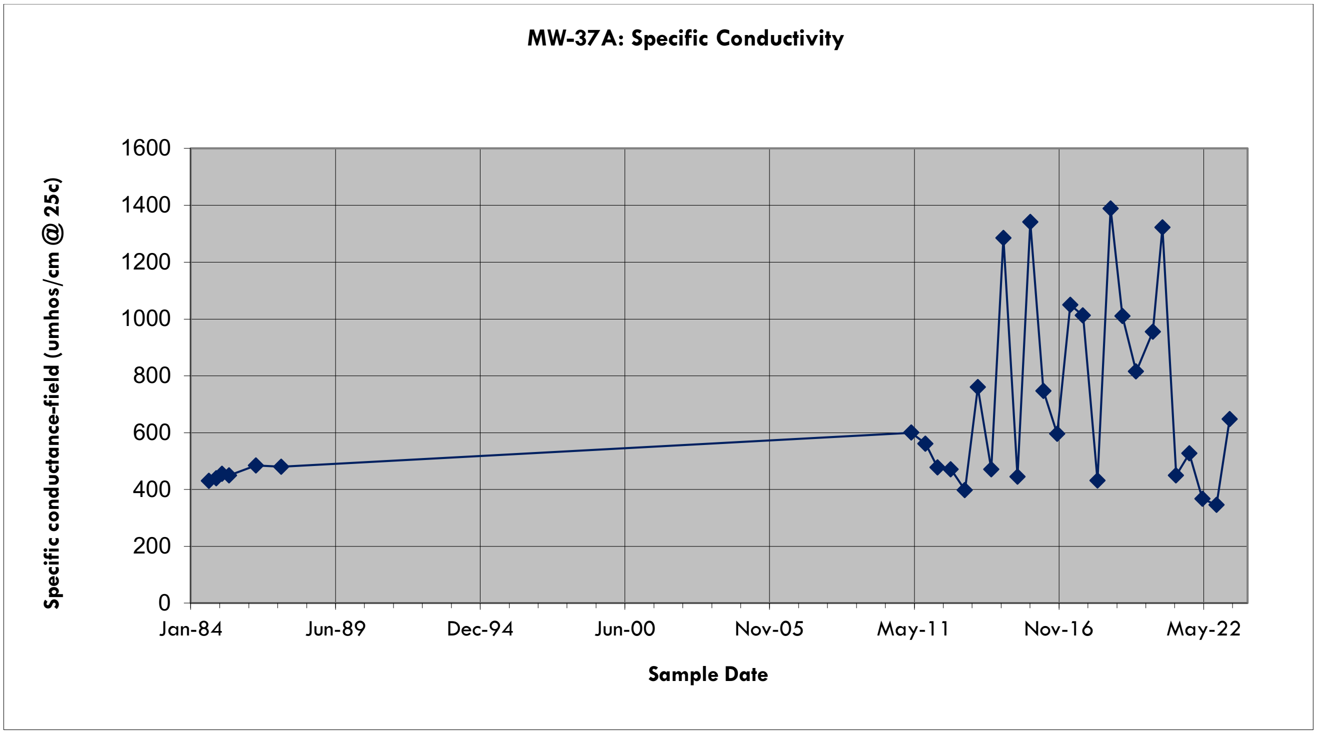

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	430	9/7/1984	430		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	440	12/17/1984	440		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	455	3/7/1985	455		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	450	6/14/1985	450		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	485	6/20/1986	485		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	480	6/5/1987	480		
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	4/6/2011	600	600	Using data from within the last 20 years for PAL calculation
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	561	10/21/2011	561	561	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	478	4/4/2012	478	478	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	471	10/4/2012	471	471	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	398	4/17/2013	398	398	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	760	10/14/2013	760	760	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	471	4/17/2014	471	471	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1285	10/2/2014	1285	1285	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	445	4/14/2015	445	445	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1341	10/8/2015	1341	1341	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	747	4/7/2016	747	747	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	596	10/13/2016	596	596	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1050	4/13/2017	1050	1050	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1012	10/5/2017	1012	1012	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	431.6	4/25/2018	431.6	431.6	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1389	10/23/2018	1389	1389	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1010	4/3/2019	1010	1010	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	815	10/9/2019	815	815	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	955	5/29/2020	955	955	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1322	10/8/2020	1322	1322	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	450	4/14/2021	450	450	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	527	10/14/2021	527	527	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	367	4/13/2022	367	367	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	346.3	10/25/2022	346.3	346.3	
MW-34B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	648	4/24/2023	648	648	
Calculations							
Count						25	
Mean						739.04	
Std Dev						337.29	
3 X SD (PAL)						1011.86	
Min Increase (PAL)						200	
PAL, Calculated						1750.90	
PAL, Rounded						1800	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

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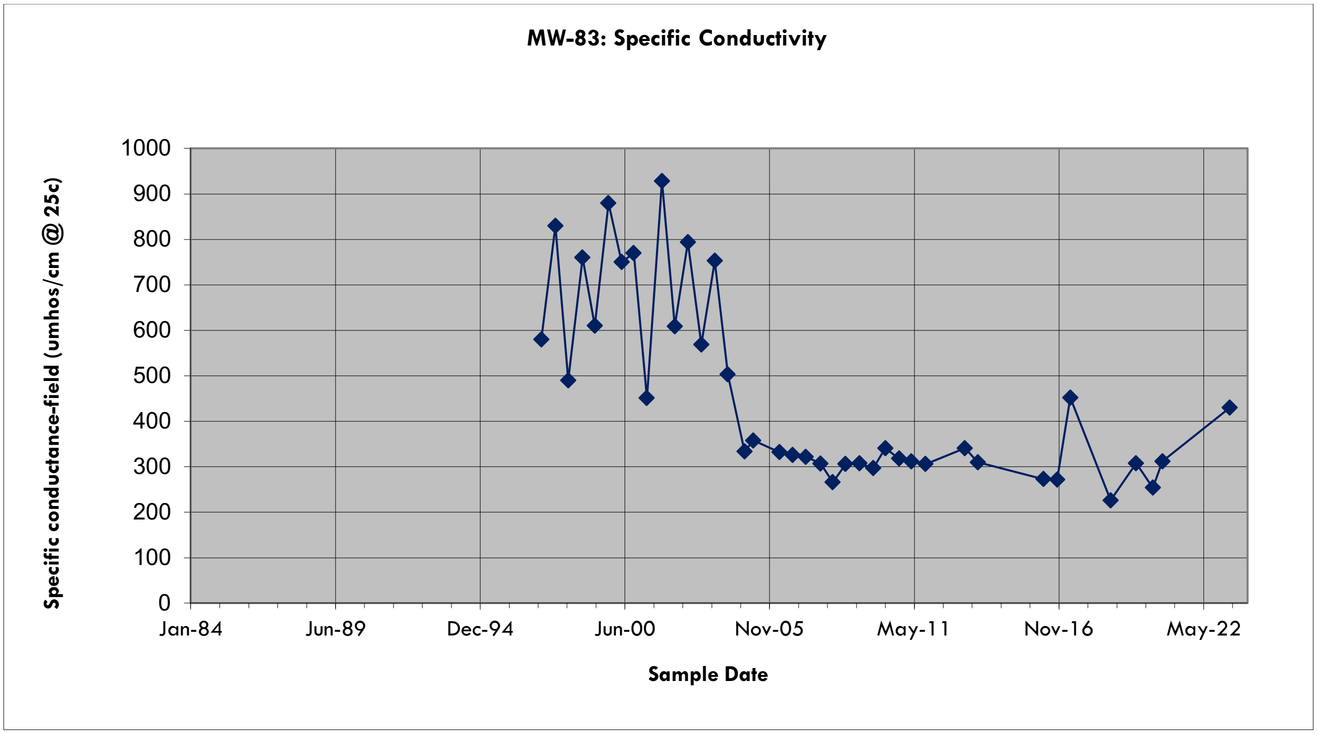


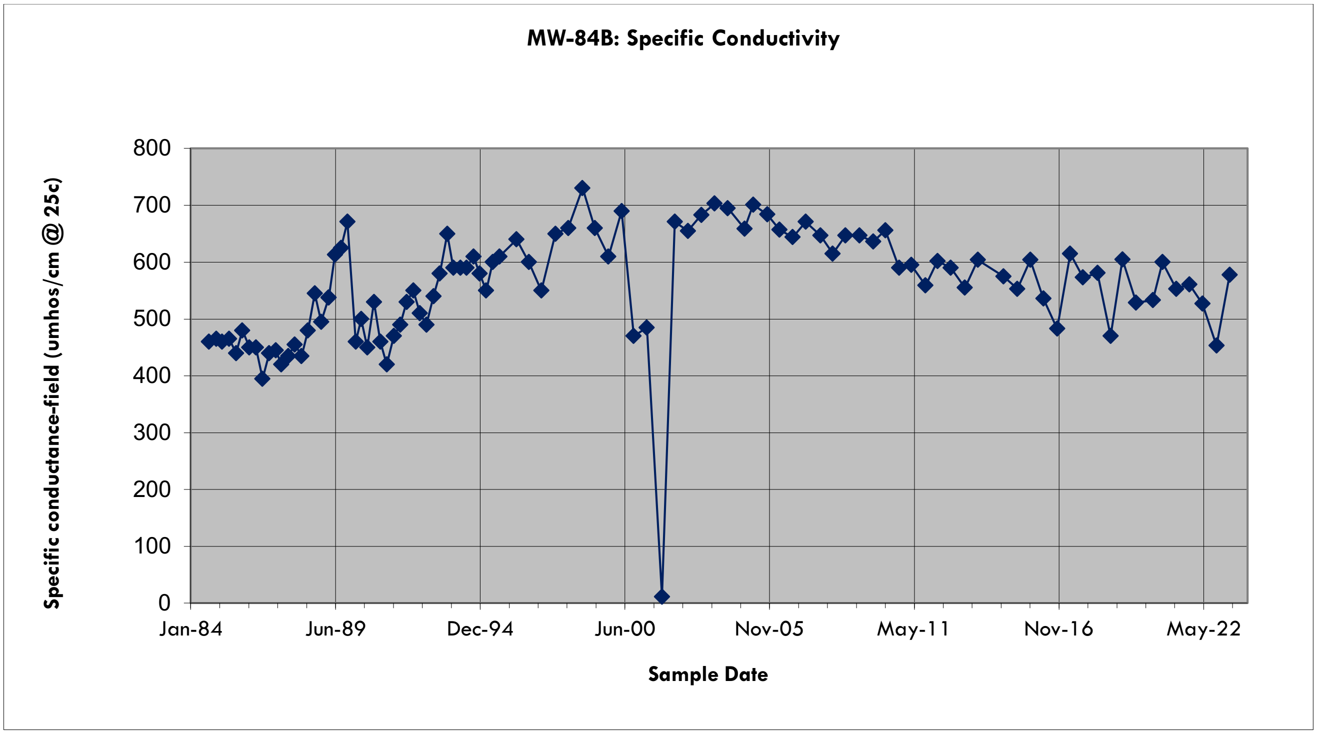
Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	580	4/8/1997	580		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	830	10/20/1997	830		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	490	4/14/1998	490		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	760	10/27/1998	760		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610	4/16/1999	610		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	880	10/21/1999	880		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	750	4/20/2000	750		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	770	10/4/2000	770		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	451	4/3/2001	451		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	928	10/30/2001	928		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	609	4/25/2002	609		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	794	10/24/2002	794		
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	569	4/29/2003	569	569	Using data from within the last 20 years for PAL calculation
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	753	10/30/2003	753	753	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	503	4/27/2004	503	503	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	334	12/14/2004	334	334	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	358	4/15/2005	358	358	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	332	4/13/2006	332	332	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	326	10/12/2006	326	326	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	322	4/11/2007	322	322	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	307	10/31/2007	307	307	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	266	4/17/2008	266	266	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	306	10/10/2008	306	306	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	308	4/21/2009	308	308	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	297	10/27/2009	297	297	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	341	4/15/2010	341	341	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	318	10/20/2010	318	318	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	312	4/6/2011	312	312	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	306	10/21/2011	306	306	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	341	4/17/2013	341	341	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	310	10/14/2013	310	310	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	273	4/7/2016	273	273	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	272	10/13/2016	272	272	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	452.3	4/12/2017	452.3	452.3	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	226	10/24/2018	226	226	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	308	10/9/2019	308	308	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	254	5/29/2020	254	254	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	312	10/8/2020	312	312	
MW-83	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	430	4/27/2023	430	430	
Calculations							
Count						27	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
Mean						349.49	
Std Dev						109.90	
3 X SD (PAL)						329.70	
Min Increase (PAL)						200	
PAL, Calculated						679.20	
PAL, Rounded						700	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[PAL Calculations_Non CCR Wells.xlsx]MW-83_Cond_PAL


MW-84B: Specific Conductivity

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	460	9/7/1984	460		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	465	12/17/1984	465		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	460	3/7/1985	460		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	465	6/14/1985	465		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	440	9/18/1985	440		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	480	12/12/1985	480		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	450	3/21/1986	450		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	450	6/20/1986	450		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	395	9/18/1986	395		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	440	12/19/1986	440		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	445	3/20/1987	445		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	420	6/5/1987	420		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	435	9/9/1987	435		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	455	12/9/1987	455		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	435	3/10/1988	435		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	480	6/7/1988	480		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	545	9/9/1988	545		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	495	12/7/1988	495		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	538	3/21/1989	538		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	538	3/22/1989	538		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	613	6/16/1989	613		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	625	9/7/1989	625		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	671	12/6/1989	671		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	460	3/29/1990	460		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	500	6/14/1990	500		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	450	9/5/1990	450		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	530	12/7/1990	530		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	460	3/6/1991	460		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	420	6/3/1991	420		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470	9/6/1991	470		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	490	12/5/1991	490		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	530	3/2/1992	530		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	6/2/1992	550		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	510	9/2/1992	510		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	490	12/2/1992	490		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	540	3/10/1993	540		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	580	6/3/1993	580		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	9/14/1993	650		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	590	12/7/1993	590		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	590	3/15/1994	590		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	590	6/7/1994	590		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610	9/13/1994	610		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	580	12/6/1994	580		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	3/7/1995	550		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	6/5/1995	600		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610	9/5/1995	610		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	640	4/29/1996	640		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	10/17/1996	600		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	4/8/1997	550		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	10/20/1997	650		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	660	4/14/1998	660		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	730	10/27/1998	730		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	660	4/16/1999	660		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610	10/21/1999	610		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	690	4/20/2000	690		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470	10/4/2000	470		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	485	4/3/2001	485		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	11.2	10/30/2001	11.2		outlier
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	671	4/25/2002	671		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	655	10/25/2002	655		
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	683	4/28/2003	683	683	Using data from within the last 20 years for PAL calculation
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	703	10/29/2003	703	703	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	695	4/27/2004	695	695	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	659	12/14/2004	659	659	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	701	4/14/2005	701	701	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	684	10/26/2005	684	684	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	657	4/13/2006	657	657	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	644	10/12/2006	644	644	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	671	4/10/2007	671	671	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	647	10/30/2007	647	647	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	615	4/17/2008	615	615	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	647	10/10/2008	647	647	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	647	4/22/2009	647	647	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	636	10/27/2009	636	636	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	656	4/14/2010	656	656	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	590	10/20/2010	590	590	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	595	4/6/2011	595	595	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	559	10/21/2011	559	559	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	602	4/4/2012	602	602	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	590	10/4/2012	590	590	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	555	4/17/2013	555	555	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	604	10/14/2013	604	604	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	575	10/2/2014	575	575	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	553	4/13/2015	553	553	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	604	10/8/2015	604	604	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	536	4/7/2016	536	536	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	483	10/13/2016	483	483	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	615	4/11/2017	615	615	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	573	10/5/2017	573	573	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	581	4/25/2018	581	581	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470	10/24/2018	470	470	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	605	4/3/2019	605	605	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	529	10/9/2019	529	529	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	533	5/29/2020	533	533	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	600	10/9/2020	600	600	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	553	4/15/2021	553	553	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	561	10/14/2021	561	561	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	527	4/13/2022	527	527	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	453.1	10/25/2022	453.1	453.1	
MW-84B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	577.7	4/25/2023	577.7	577.7	
Calculations							
Count						40	
Mean						599.22	
Std Dev						62.48	
3 X SD (PAL)						187.44	
Min Increase (PAL)						200	
PAL, Calculated						799.22	
PAL, Rounded						800	

Duplicate Data Not Used for Calculations

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

Note: Data downloaded from GEMS

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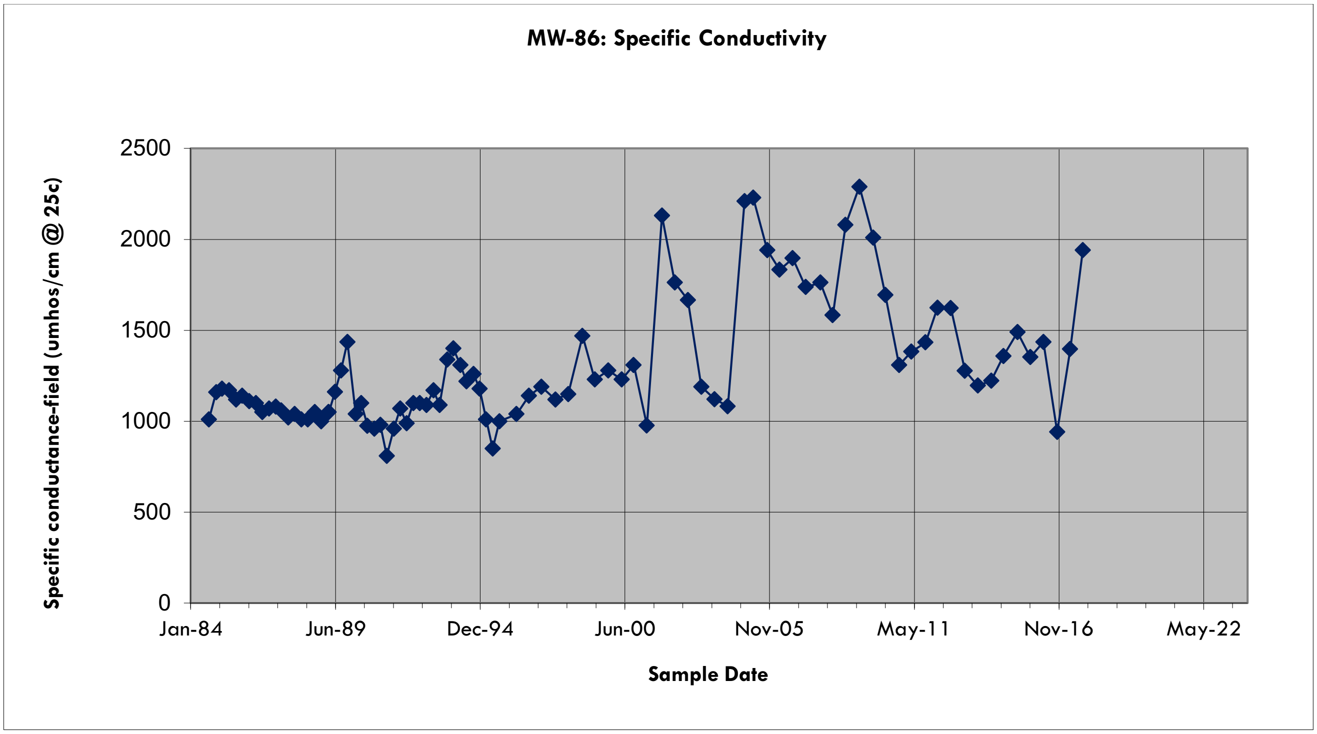

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1010	9/7/1984	1010		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1160	12/17/1984	1160		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1180	3/7/1985	1180		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1170	6/14/1985	1170		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1120	9/18/1985	1120		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1140	12/12/1985	1140		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1110	3/21/1986	1110		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1100	6/20/1986	1100		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1050	9/18/1986	1050		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1070	12/19/1986	1070		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1080	3/20/1987	1080		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1060	6/5/1987	1060		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1020	9/9/1987	1020		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1040	12/9/1987	1040		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1010	3/10/1988	1010		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1010	6/7/1988	1010		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1050	9/9/1988	1050		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1000	12/7/1988	1000		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1050	3/21/1989	1050		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1050	3/22/1989	1050		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1161	6/16/1989	1161		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1280	9/7/1989	1280		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1436	12/6/1989	1436		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1040	3/29/1990	1040		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1100	6/13/1990	1100		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	976	9/7/1990	976		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	960	12/11/1990	960		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	980	3/6/1991	980		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	810	6/3/1991	810		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	960	9/6/1991	960		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1070	12/5/1991	1070		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	990	3/3/1992	990		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1100	6/2/1992	1100		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1100	9/2/1992	1100		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1090	12/2/1992	1090		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1170	3/10/1993	1170		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1090	6/2/1993	1090		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1340	9/14/1993	1340		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1400	12/7/1993	1400		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1310	3/15/1994	1310		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1220	6/7/1994	1220		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1260	9/13/1994	1260		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1180	12/6/1994	1180		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1010	3/7/1995	1010		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	850	6/5/1995	850		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1000	9/6/1995	1000		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1040	4/29/1996	1040		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1140	10/17/1996	1140		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1190	4/8/1997	1190		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1120	10/20/1997	1120		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1150	4/14/1998	1150		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1470	10/27/1998	1470		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1230	4/16/1999	1230		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1280	10/21/1999	1280		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1230	4/20/2000	1230		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1310	10/4/2000	1310		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	977	4/3/2001	977		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2130	10/30/2001	2130		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1764	4/25/2002	1764		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1667	10/25/2002	1667		
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1190	4/28/2003	1190	1190	Using data from within the last 20 years for PAL calculation
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1121	10/28/2003	1121	1121	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1083	4/27/2004	1083	1083	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2210	12/14/2004	2210	2210	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2230	4/14/2005	2230	2230	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1941	10/26/2005	1941	1941	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1833	4/13/2006	1833	1833	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1896	10/12/2006	1896	1896	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1738	4/10/2007	1738	1738	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1763	10/30/2007	1763	1763	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1583	4/17/2008	1583	1583	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2080	10/10/2008	2080	2080	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2290	4/22/2009	2290	2290	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	2010	10/27/2009	2010	2010	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1695	4/14/2010	1695	1695	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1309	10/20/2010	1309	1309	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1383	4/6/2011	1383	1383	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1434	10/21/2011	1434	1434	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1625	4/4/2012	1625	1625	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1622	10/4/2012	1622	1622	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1278	4/17/2013	1278	1278	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1196	10/14/2013	1196	1196	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1223	4/17/2014	1223	1223	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1359	10/2/2014	1359	1359	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1490	4/14/2015	1490	1490	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1353	10/8/2015	1353	1353	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1436	4/7/2016	1436	1436	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	942	10/13/2016	942	942	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1397	4/11/2017	1397	1397	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1940	10/5/2017	1940	1940	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1624	4/25/2018	1624	1624	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1108	10/24/2018	1108	1108	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1600	4/3/2019	1600	1600	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1678	10/9/2019	1678	1678	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1638	5/29/2020	1638	1638	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1752	10/9/2020	1752	1752	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1547	4/15/2021	1547	1547	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1765	10/14/2021	1765	1765	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1833	4/13/2022	1833	1833	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1585	10/25/2022	1585	1585	
MW-86	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	1742	4/24/2023	1742	1742	
Calculations							
Count						41	
Mean						1598.10	
Std Dev						328.51	
3 X SD (PAL)						985.52	
Min Increase (PAL)						200	
PAL, Calculated						2583.62	
PAL, Rounded						2600	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

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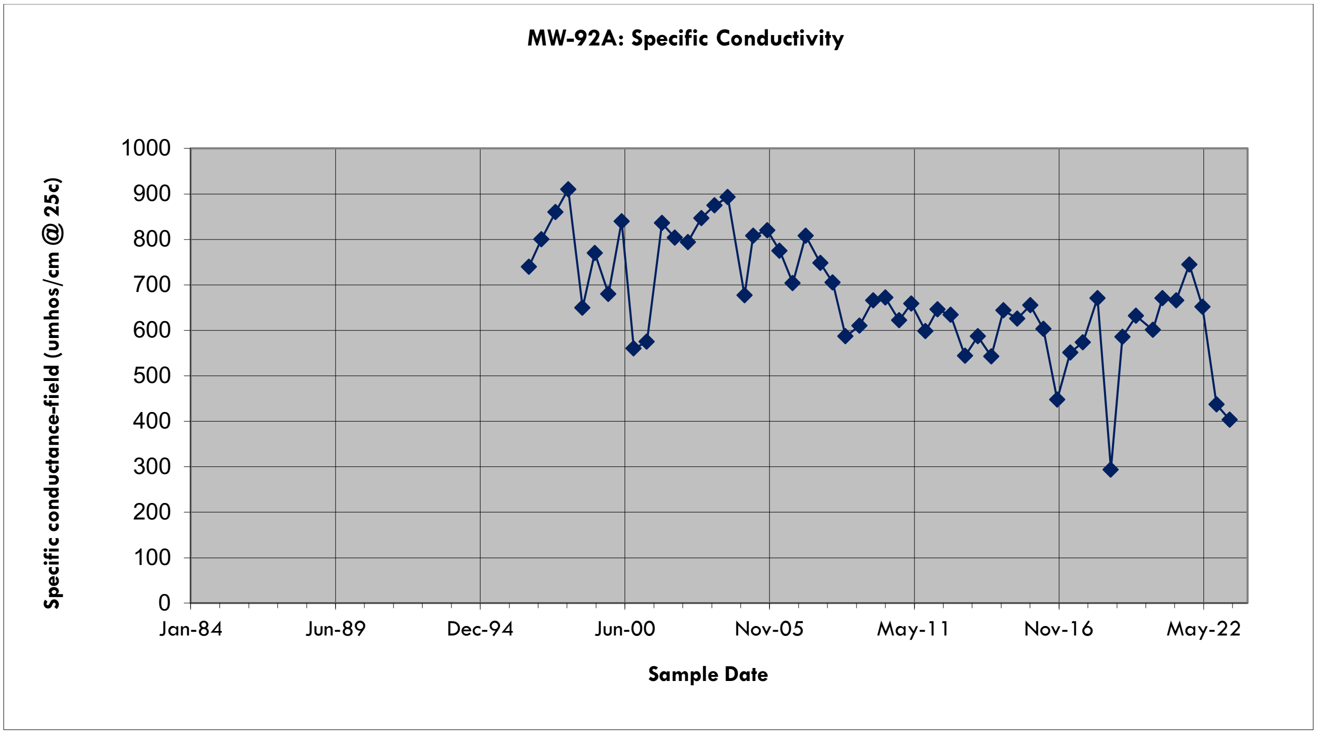

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	740	10/16/1996	740		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	800	4/8/1997	800		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	860	10/20/1997	860		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	910	4/14/1998	910		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	650	10/27/1998	650		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	770	4/16/1999	770		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	680	10/21/1999	680		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	840	4/20/2000	840		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	560	10/4/2000	560		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	575	4/3/2001	575		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	836	10/30/2001	836		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	804	4/25/2002	804		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	794	10/25/2002	794		
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	847	4/28/2003	847	847	Using data from within the last 20 years for PAL calculation
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	875	10/29/2003	875	875	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	893	4/27/2004	893	893	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	677	12/14/2004	677	677	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	808	4/14/2005	808	808	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	820	10/26/2005	820	820	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	775	4/13/2006	775	775	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	704	10/12/2006	704	704	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	808	4/10/2007	808	808	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	748	10/30/2007	748	748	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	705	4/17/2008	705	705	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	587	10/10/2008	587	587	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	610	4/22/2009	610	610	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	666	10/27/2009	666	666	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	672	4/14/2010	672	672	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	622	10/20/2010	622	622	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	659	4/6/2011	659	659	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	598	10/21/2011	598	598	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	646	4/4/2012	646	646	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	634	10/3/2012	634	634	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	544	4/18/2013	544	544	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	587	10/14/2013	587	587	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	543	4/17/2014	543	543	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	644	10/2/2014	644	644	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	626	4/13/2015	626	626	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	655	10/8/2015	655	655	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	603	4/8/2016	603	603	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	448	10/13/2016	448	448	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	551.4	4/12/2017	551.4	551.4	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	574	10/5/2017	574	574	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	671	4/25/2018	671	671	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	294	10/25/2018	294	294	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	586	4/3/2019	586	586	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	632	10/9/2019	632	632	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	601	5/29/2020	601	601	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	671	10/9/2020	671	671	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	666	4/15/2021	666	666	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	745	10/14/2021	745	745	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	652	4/13/2022	652	652	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	436.9	10/25/2022	436.9	436.9	
MW-92A	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	403.6	4/24/2023	403.6	403.6	
Calculations							
Count						41	
Mean						646.05	
Std Dev						122.92	
3 X SD (PAL)						368.76	
Min Increase (PAL)						200	
PAL, Calculated						1014.81	
PAL, Rounded						1100	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

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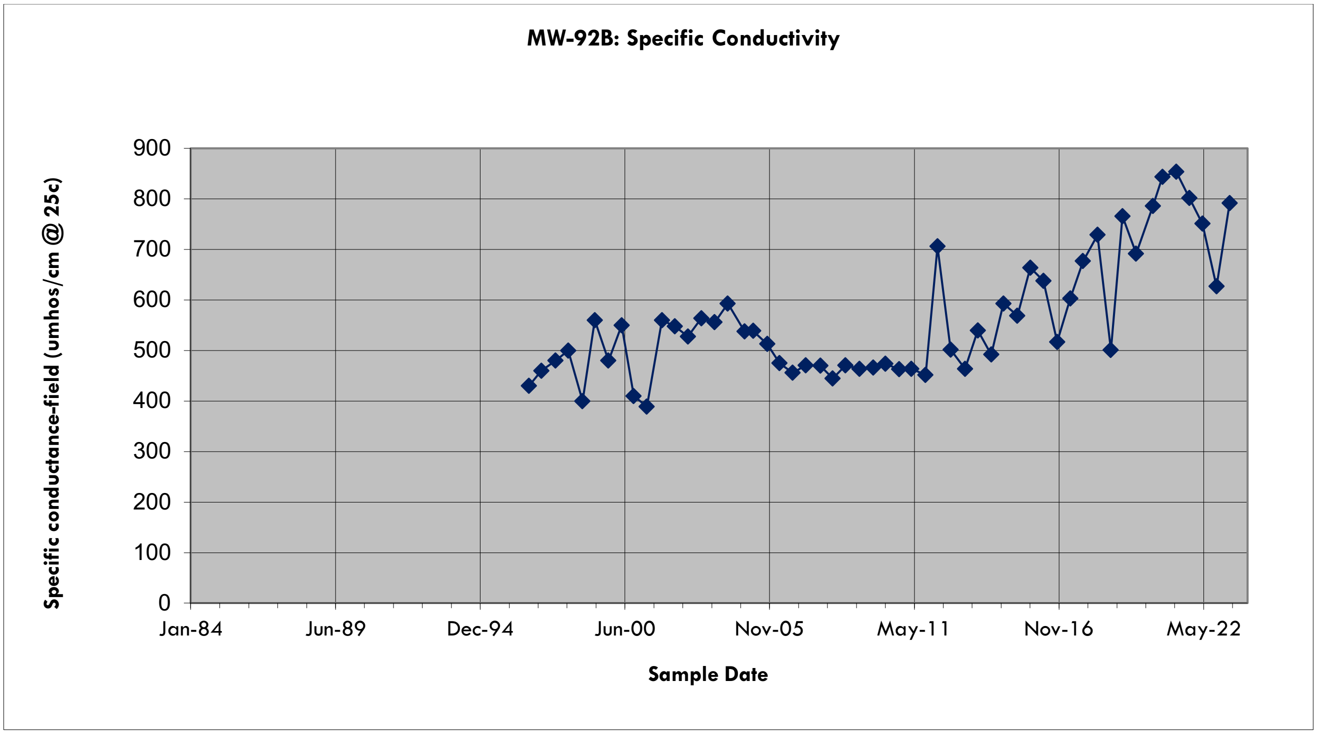

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	430	10/16/1996	430		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	460	4/8/1997	460		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	480	10/20/1997	480		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	500	4/14/1998	500		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	400	10/27/1998	400		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	560	4/16/1999	560		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	480	10/21/1999	480		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	550	4/20/2000	550		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	410	10/4/2000	410		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	389	4/3/2001	389		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	560	10/30/2001	560		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	548	4/25/2002	548		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	528	10/25/2002	528		
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	564	4/28/2003	564	564	Using data from within the last 20 years for PAL calculation
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	556	10/29/2003	556	556	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	593	4/27/2004	593	593	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	538	12/14/2004	538	538	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	539	4/14/2005	539	539	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	513	10/26/2005	513	513	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	475	4/13/2006	475	475	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	456	10/12/2006	456	456	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	471	4/10/2007	471	471	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	470	10/30/2007	470	470	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	445	4/17/2008	445	445	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	471	10/10/2008	471	471	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	464	4/22/2009	464	464	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	466	10/27/2009	466	466	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	474	4/14/2010	474	474	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	463	10/20/2010	463	463	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	464	4/6/2011	464	464	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	452	10/21/2011	452	452	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	706	4/4/2012	706	706	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	502	10/3/2012	502	502	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	464	4/18/2013	464	464	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	540	10/14/2013	540	540	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	492	4/17/2014	492	492	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	593	10/2/2014	593	593	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	569	4/13/2015	569	569	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	664	10/8/2015	664	664	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	638	4/8/2016	638	638	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	517	10/13/2016	517	517	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	603.3	4/12/2017	603.3	603.3	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	677	10/5/2017	677	677	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	729	4/25/2018	729	729	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	501	10/25/2018	501	501	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	766	4/3/2019	766	766	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	692	10/9/2019	692	692	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	786	5/29/2020	786	786	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	844	10/9/2020	844	844	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	854	4/15/2021	854	854	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	802	10/14/2021	802	802	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	751	4/13/2022	751	751	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	627	10/25/2022	627	627	
MW-92B	SPECIFIC CONDUCTANCE, FIELD (UMHO/CM @ 25C)	01	792	4/24/2023	792	792	
Calculations							
Count						41	
Mean						584.96	
Std Dev						125.25	
3 X SD (PAL)						375.75	
Min Increase (PAL)						200	
PAL, Calculated						960.71	
PAL, Rounded						970	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

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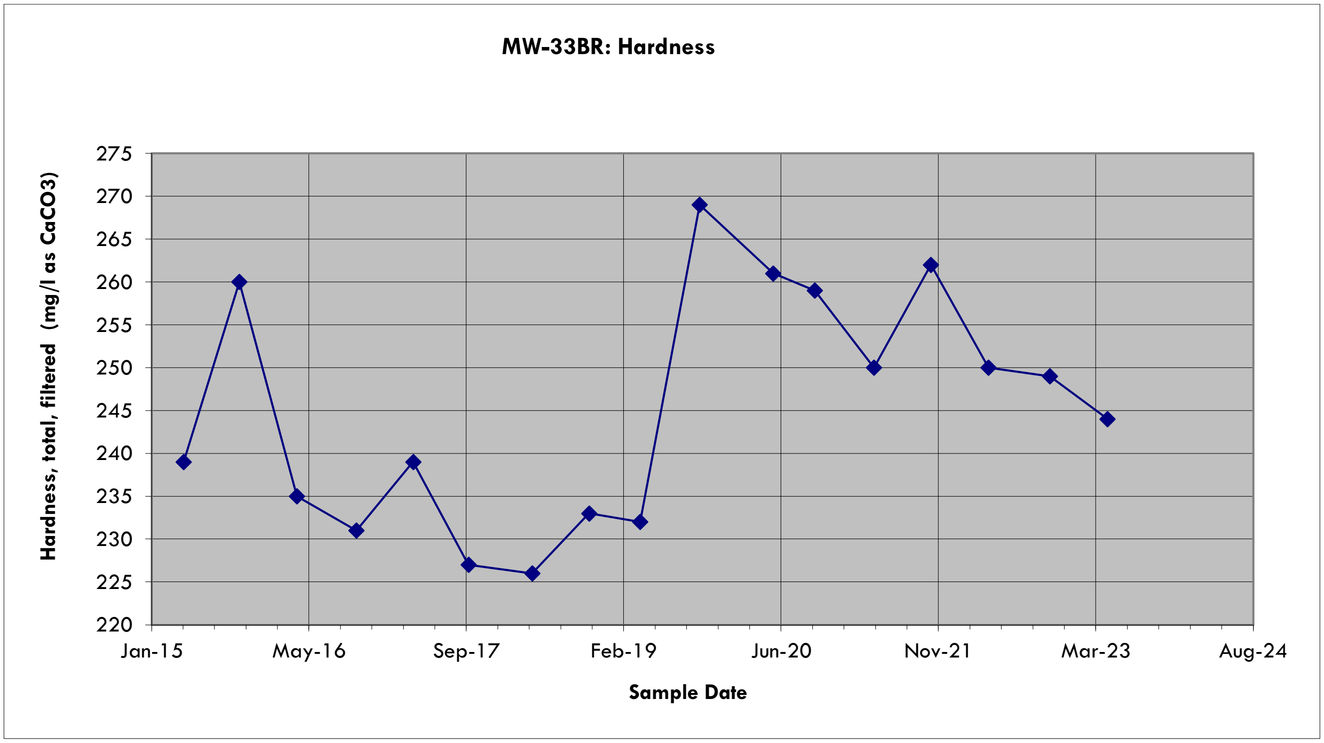


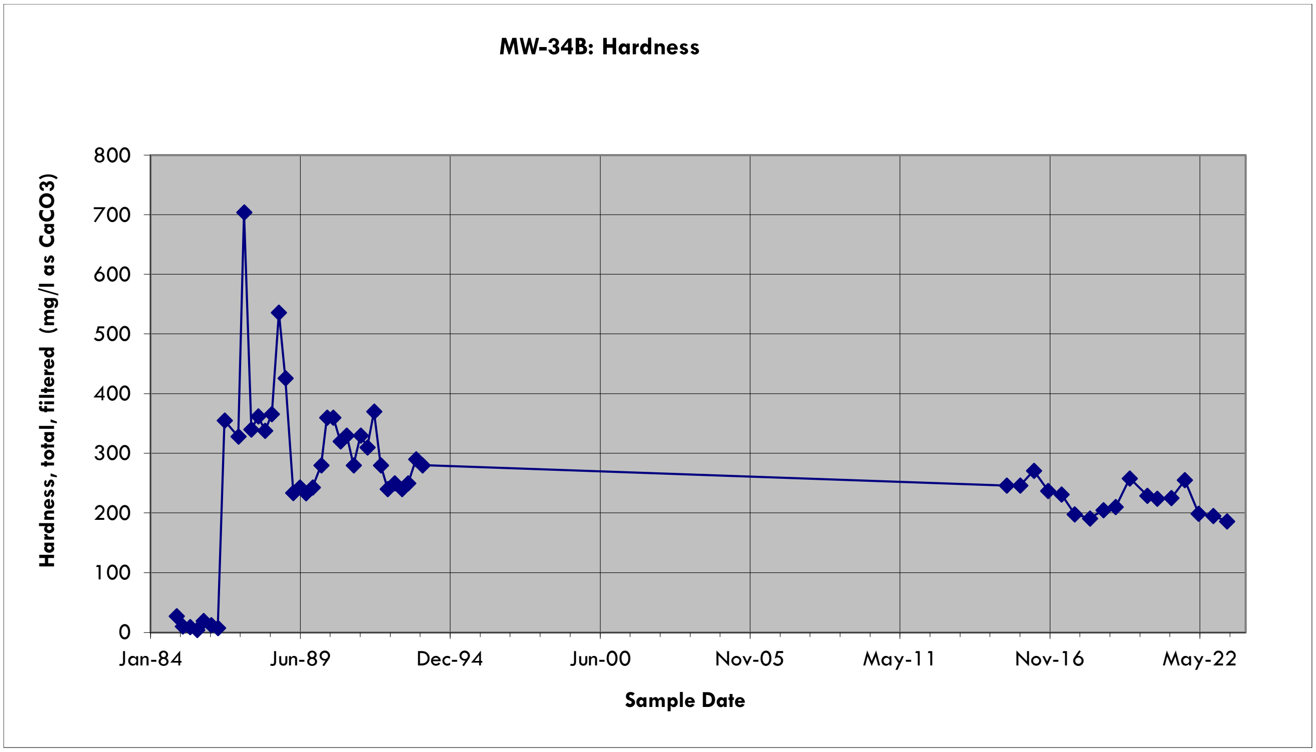
Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	239	4/13/2015	239	239	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	260	10/7/2015	260	260	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	235	4/7/2016	235	235	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	231	10/13/2016	231	231	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	239	4/11/2017	239	239	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	227	10/4/2017	227	227	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	226	4/24/2018	226	226	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	233	10/22/2018	233	233	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	232	4/2/2019	232	232	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	269	10/8/2019	269	269	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	261	5/29/2020	261	261	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	259	10/8/2020	259	259	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	250	4/14/2021	250	250	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	262	10/12/2021	262	262	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	250	4/13/2022	250	250	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	249	10/25/2022	249	249	
MW-33BR	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	244	4/26/2023	244	244	

Calculations		
Count	17	
Mean	245.06	
Std Dev	13.64	
3 X SD (PAL)	40.91	
Min Increase (PAL)	100	
PAL, Calculated	345.06	
PAL, Rounded	350	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	27	12/17/1984	27		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	10	3/7/1985	10		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	9	6/14/1985	9		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	4	9/18/1985	4		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	19	12/12/1985	19		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	12	3/21/1986	12		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	7	6/20/1986	7		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	355	9/18/1986	355		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	328	3/20/1987	328		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	704	6/5/1987	704		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	340	9/9/1987	340		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	362	12/9/1987	362		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	338	3/10/1988	338		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	366	6/7/1988	366		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	536	9/9/1988	536		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	426	12/7/1988	426		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	234	3/21/1989	234		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	234	3/22/1989	234		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	243	6/16/1989	243		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	233	9/6/1989	233		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	243	12/5/1989	243		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	280	3/29/1990	280		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	360	6/14/1990	360		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	360	9/5/1990	360		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	320	12/10/1990	320		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	330	3/5/1991	330		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	280	6/3/1991	280		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	330	9/6/1991	330		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	310	12/4/1991	310		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	370	3/3/1992	370		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	280	6/2/1992	280		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	240	9/1/1992	240		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	250	12/2/1992	250		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	240	3/10/1993	240		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	250	6/2/1993	250		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	290	9/14/1993	290		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	280	12/7/1993	280		
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	246	4/13/2015	246	246	Using data
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	246	10/7/2015	246	246	from within

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	271	4/7/2016	271	271	the last 20 years for PAL calculation
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	237	10/13/2016	237	237	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	231	4/11/2017	231	231	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	198	10/4/2017	198	198	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	191	4/24/2018	191	191	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	205	10/22/2018	205	205	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	210	4/2/2019	210	210	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	258	10/8/2019	258	258	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	229	5/29/2020	229	229	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	224	10/8/2020	224	224	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	225	4/14/2021	225	225	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	255	10/12/2021	255	255	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	199	4/13/2022	199	199	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	195	10/25/2022	195	195	
MW-34B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	186	4/26/2023	186	186	
Calculations							
Count						17	
Mean						223.88	
Std Dev						24.83	
3 X SD (PAL)						74.48	
Min Increase (PAL)						100	
PAL, Calculated						323.88	
PAL, Rounded						330	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

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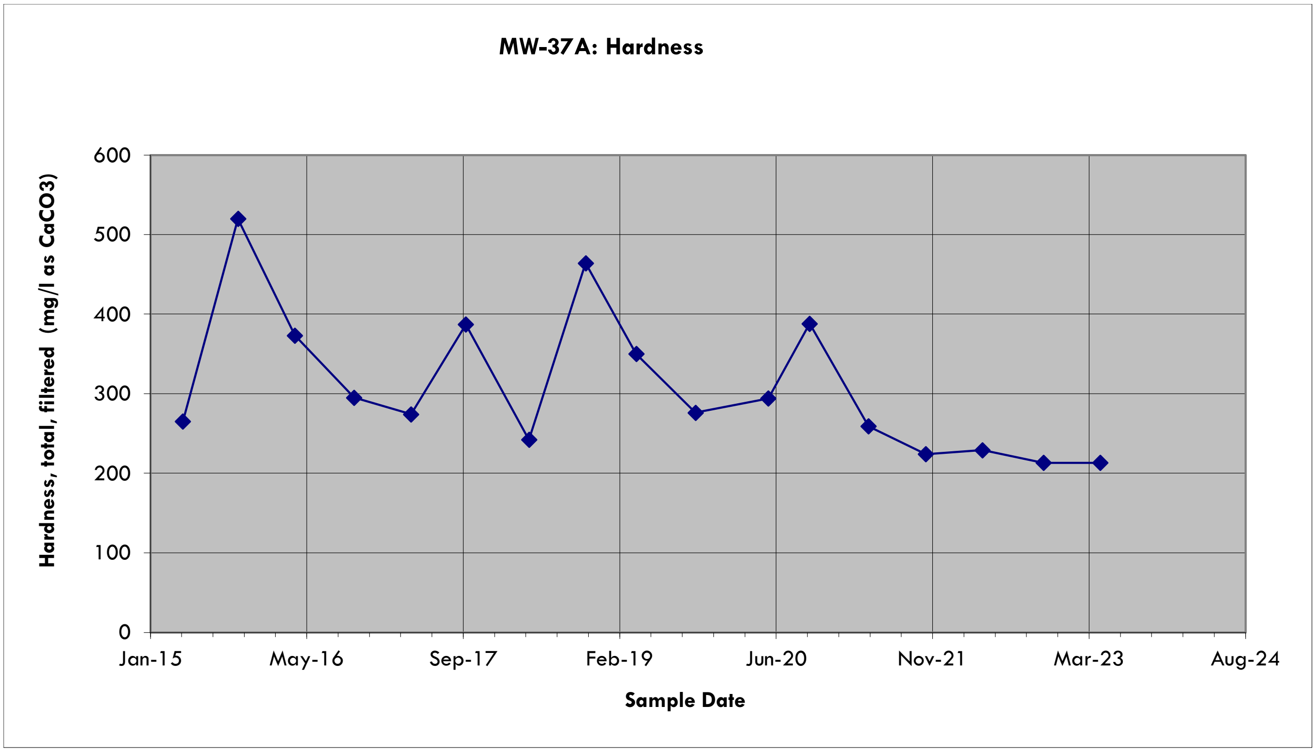
P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	265	4/14/2015	265	265	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	520	10/8/2015	520	520	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	373	4/7/2016	373	373	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	295	10/13/2016	295	295	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	274	4/13/2017	274	274	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	387	10/5/2017	387	387	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	242	4/25/2018	242	242	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	464	10/23/2018	464	464	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	350	4/3/2019	350	350	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	276	10/9/2019	276	276	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	294	5/29/2020	294	294	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	388	10/8/2020	388	388	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	259	4/14/2021	259	259	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	224	10/14/2021	224	224	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	229	4/13/2022	229	229	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	213	10/25/2022	213	213	
MW-37A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	220	4/24/2023	213	213	
Calculations							
Count						17	
Mean						309.76	
Std Dev						90.26	
3 X SD (PAL)						270.79	
Min Increase (PAL)						100	
PAL, Calculated						580.55	
PAL, Rounded						590	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

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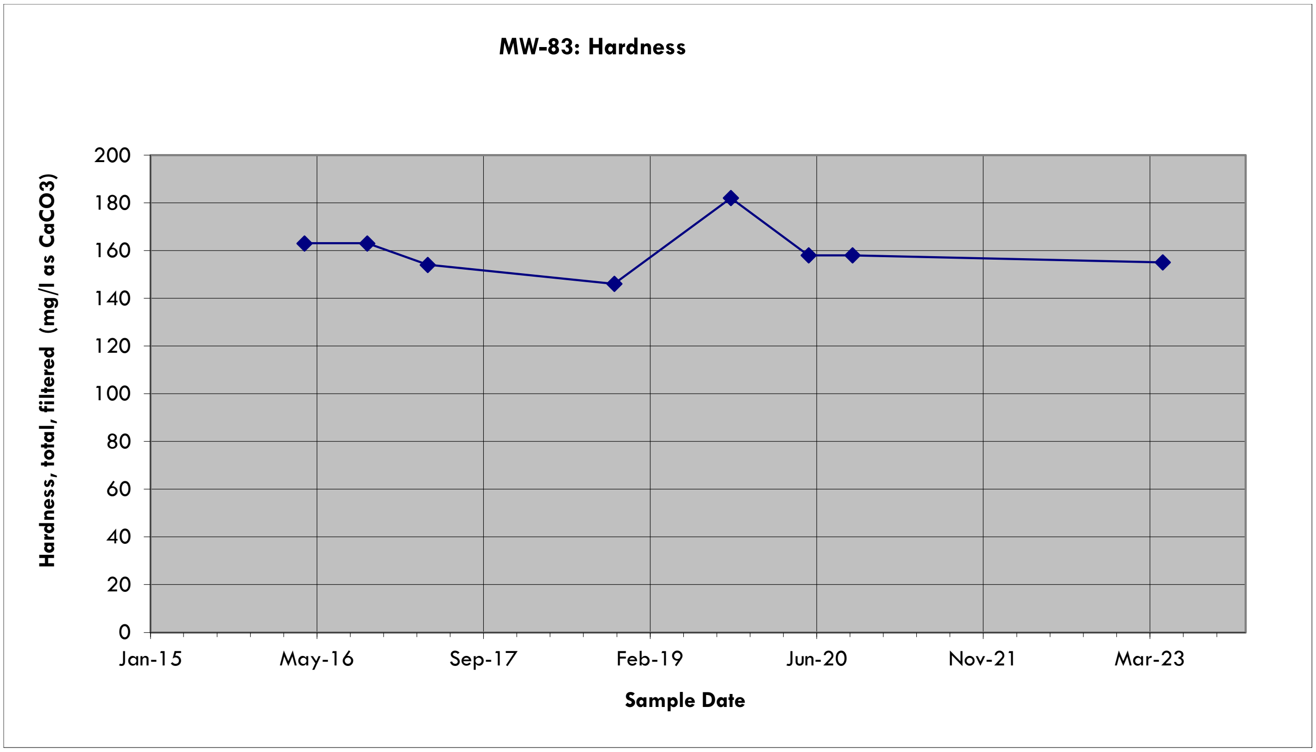
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-83	HARDNESS, TOTAL (MG/L AS CACO3)	01	163	4/7/2016	163	163	
MW-83	HARDNESS, TOTAL (MG/L AS CACO3)	01	163	10/13/2016	163	163	
MW-83	HARDNESS, TOTAL (MG/L AS CACO3)	01	154	4/12/2017	154	154	
MW-83	HARDNESS, TOTAL (MG/L AS CACO3)	01	146	10/24/2018	146	146	
MW-83	HARDNESS, TOTAL (MG/L AS CACO3)	01	182	10/9/2019	182	182	
MW-83	HARDNESS, TOTAL (MG/L AS CACO3)	01	158	5/29/2020	158	158	
MW-83	HARDNESS, TOTAL (MG/L AS CACO3)	01	158	10/8/2020	158	158	
MW-83	HARDNESS, TOTAL (MG/L AS CACO3)	01	155	4/27/2023	155	155	
Calculations							
Count						8	
Mean						159.88	
Std Dev						10.47	
3 X SD (PAL)						31.40	
Min Increase (PAL)						100	
PAL, Calculated						259.88	
PAL, Rounded						260	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

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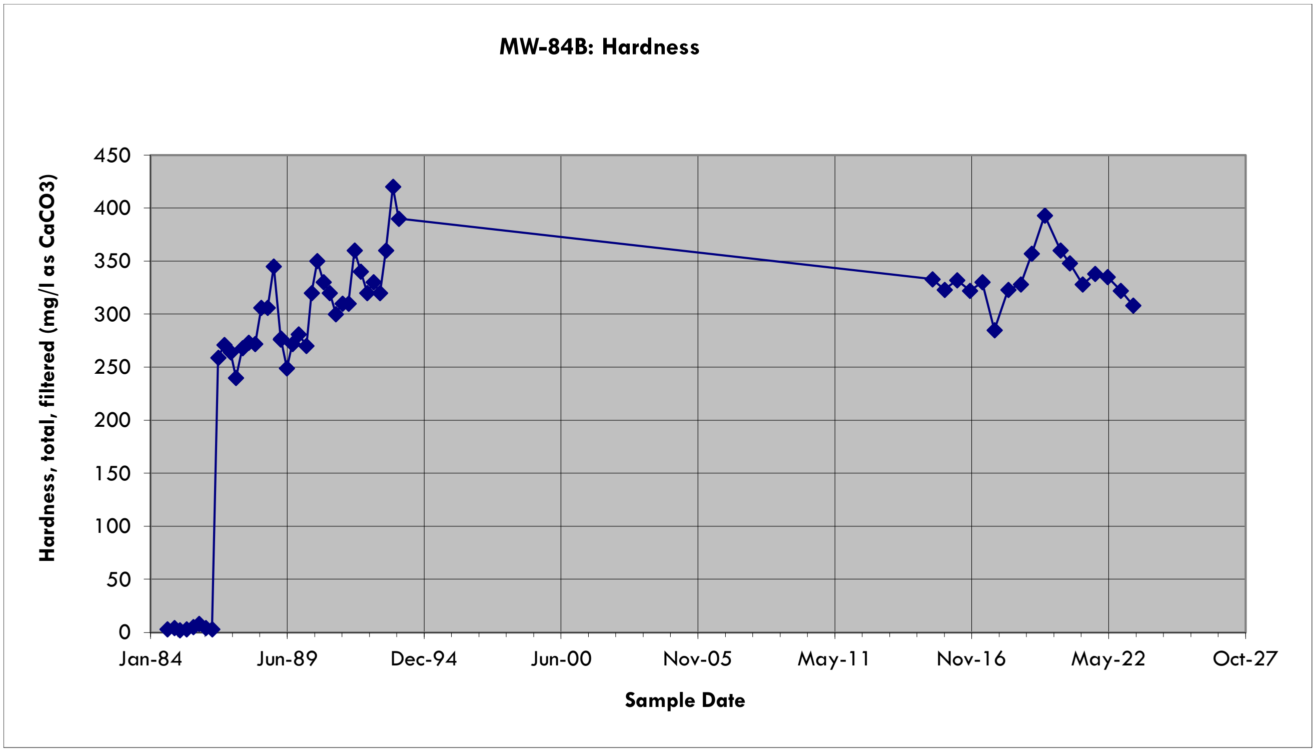
B = Compound detected in blank.
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	3	9/7/1984	3		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	4	12/17/1984	4		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	2	3/7/1985	2		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	3	6/14/1985	3		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	5	9/18/1985	5		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	8	12/12/1985	8		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	4	3/21/1986	4		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	3	6/20/1986	3		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	259	9/18/1986	259		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	271	12/19/1986	271		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	264	3/20/1987	264		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	240	6/5/1987	240		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	268	9/9/1987	268		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	273	12/9/1987	273		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	272	3/10/1988	272		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	306	6/7/1988	306		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	306	9/9/1988	306		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	345	12/7/1988	345		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	276	3/21/1989	276		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	277	3/22/1989	277		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	249	6/16/1989	249		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	272	9/7/1989	272		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	281	12/6/1989	281		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	270	3/29/1990	270		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	320	6/14/1990	320		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	350	9/5/1990	350		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	330	12/7/1990	330		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	320	3/6/1991	320		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	300	6/3/1991	300		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	310	9/6/1991	310		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	310	12/5/1991	310		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	360	3/2/1992	360		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	340	6/2/1992	340		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	320	9/2/1992	320		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	330	12/2/1992	330		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	320	3/10/1993	320		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	360	6/3/1993	360		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	420	9/14/1993	420		
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	390	12/7/1993	390		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	333	4/13/2015	333	333	Using data from within the last 20 years for PAL calculation
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	323	10/8/2015	323	323	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	332	4/7/2016	332	332	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	322	10/13/2016	322	322	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	330	4/11/2017	330	330	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	285	10/5/2017	285	285	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	323	4/25/2018	323	323	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	328	10/24/2018	328	328	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	357	4/3/2019	357	357	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	393	10/9/2019	393	393	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	360	5/29/2020	360	360	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	348	10/9/2020	348	348	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	328	4/15/2021	328	328	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	338	10/14/2021	338	338	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	335	4/13/2022	335	335	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	322	10/25/2022	322	322	
MW-84B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	308	4/25/2023	308	308	
Calculations							
Count						17	
Mean						333.24	
Std Dev						23.17	
3 X SD (PAL)						69.51	
Min Increase (PAL)						100	
PAL, Calculated						433.24	
PAL, Rounded						440	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

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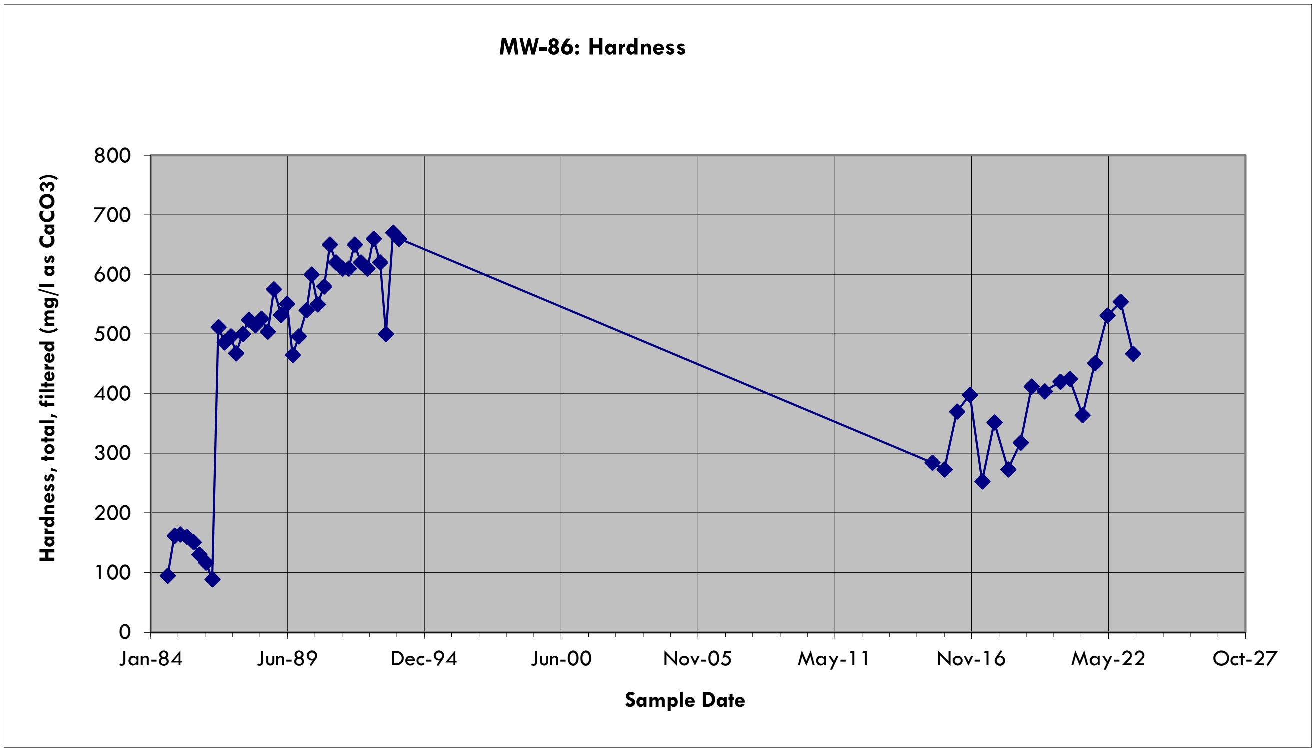
B = Compound detected in blank.
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	95	9/7/1984	95		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	162	12/17/1984	162		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	164	3/7/1985	164		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	160	6/14/1985	160		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	151	9/18/1985	151		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	130	12/12/1985	130		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	117	3/21/1986	117		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	89	6/20/1986	89		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	512	9/18/1986	512		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	486	12/19/1986	486		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	496	3/20/1987	496		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	468	6/5/1987	468		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	500	9/9/1987	500		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	524	12/9/1987	524		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	515	3/10/1988	515		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	526	6/7/1988	526		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	504	9/9/1988	504		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	575	12/7/1988	575		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	532	3/21/1989	532		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	532	3/22/1989	532		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	551	6/16/1989	551		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	465	9/7/1989	465		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	496	12/6/1989	496		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	540	3/29/1990	540		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	600	6/13/1990	600		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	550	9/7/1990	550		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	580	12/11/1990	580		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	650	3/6/1991	650		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	620	6/3/1991	620		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	610	9/6/1991	610		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	610	12/5/1991	610		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	650	3/3/1992	650		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	620	6/2/1992	620		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	610	9/2/1992	610		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	660	12/2/1992	660		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	620	3/10/1993	620		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	500	6/2/1993	500		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	670	9/14/1993	670		
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	660	12/7/1993	660		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	284	4/14/2015	284	284	Using data from within the last 20 years for PAL calculation
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	273	10/8/2015	273	273	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	370	4/7/2016	370	370	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	398	10/13/2016	398	398	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	253	4/11/2017	253	253	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	352	10/5/2017	352	352	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	273	4/25/2018	273	273	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	318	10/24/2018	318	318	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	412	4/3/2019	412	412	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	404	10/9/2019	404	404	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	420	5/29/2020	420	420	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	425	10/9/2020	425	425	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	364	4/15/2021	364	364	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	451	10/14/2021	451	451	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	531	4/13/2022	531	531	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	554	10/25/2022	554	554	
MW-86	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	467	4/24/2023	467	467	
Calculations							
Count						17	
Mean						385.24	
Std Dev						88.03	
3 X SD (PAL)						264.10	
Min Increase (PAL)						100	
PAL, Calculated						649.33	
PAL, Rounded						650	

Duplicate Data Not Used for Calculations							

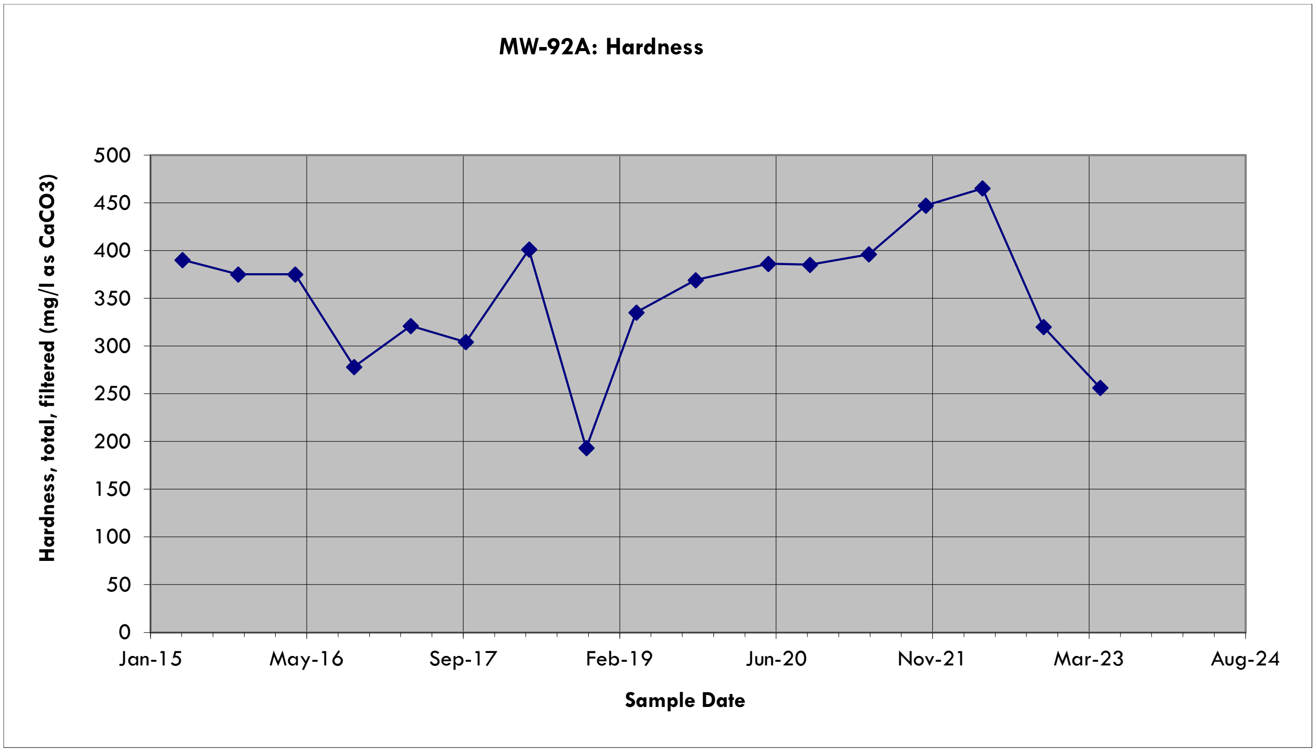
Note: Data downloaded from GEMS

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

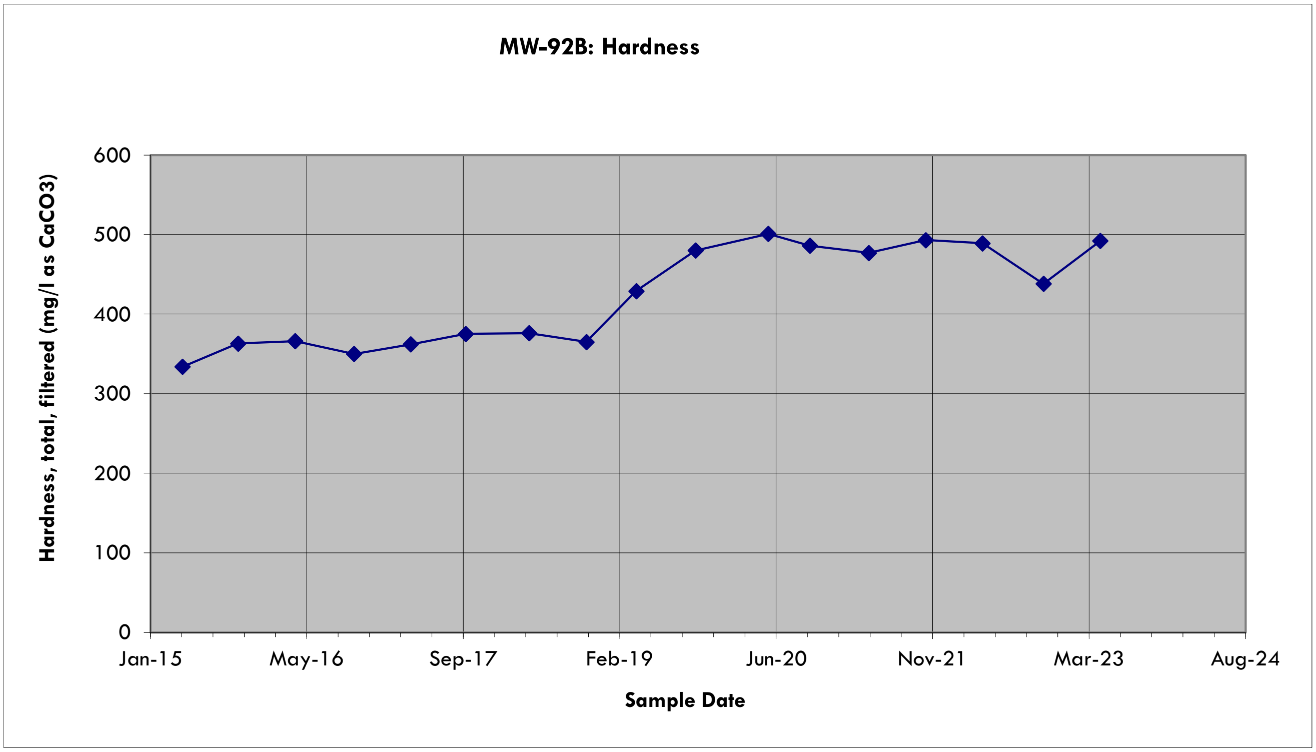
M = Failed method QC check.



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	390	4/13/2015	390	390	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	375	10/8/2015	375	375	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	375	4/8/2016	375	375	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	278	10/13/2016	278	278	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	321	4/12/2017	321	321	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	304	10/5/2017	304	304	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	401	4/25/2018	401	401	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	193	10/25/2018	193	193	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	335	4/3/2019	335	335	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	369	10/9/2019	369	369	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	386	5/29/2020	386	386	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	385	10/9/2020	385	385	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	396	4/15/2021	396	396	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	447	10/14/2021	447	447	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	465	4/13/2022	465	465	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	320	10/25/2022	320	320	
MW-92A	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	256	4/24/2023	256	256	
Calculations							
Count						17	
Mean						352.71	
Std Dev						68.79	
3 X SD (PAL)						206.37	
Min Increase (PAL)						100	
PAL, Calculated						559.07	
PAL, Rounded						560	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS
J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

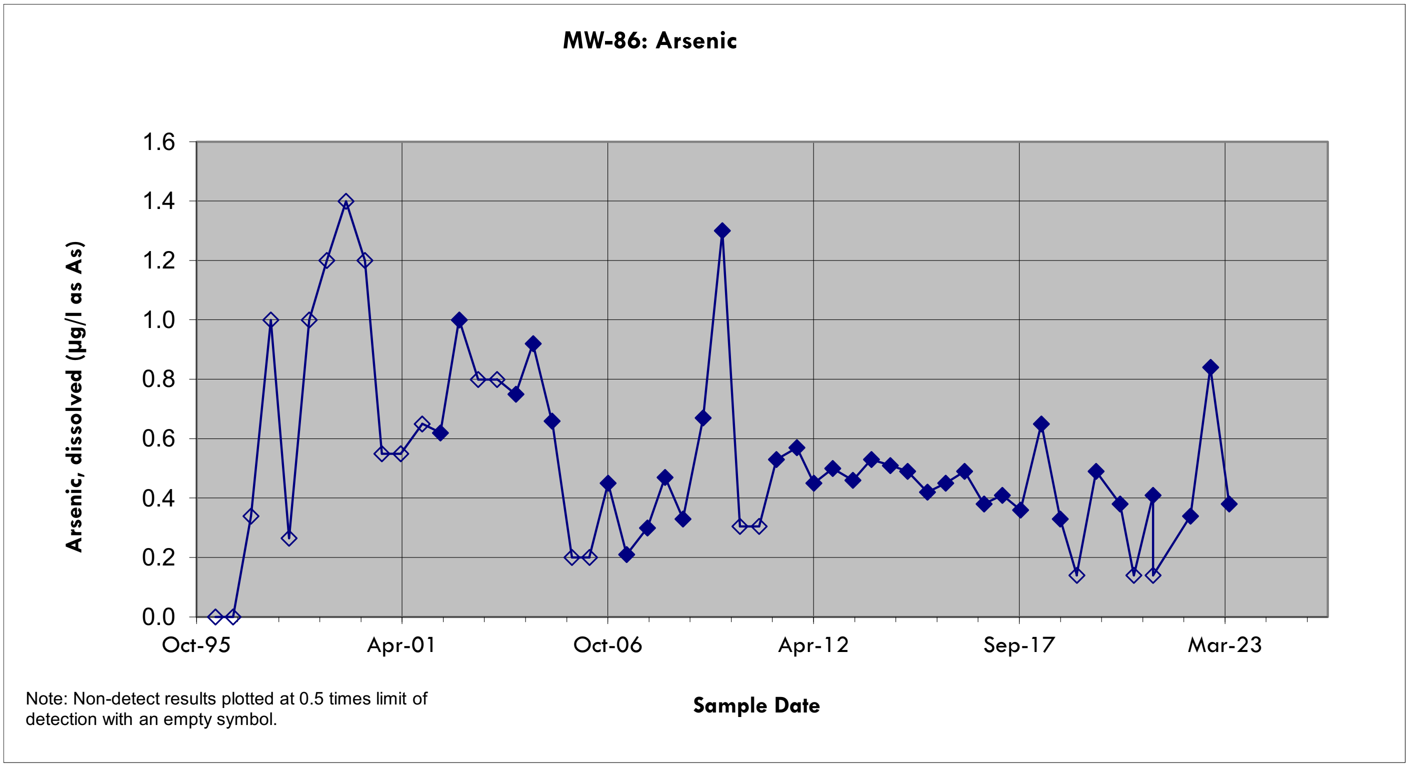


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	334	4/13/2015	334	334	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	363	10/8/2015	363	363	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	366	4/8/2016	366	366	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	350	10/13/2016	350	350	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	362	4/12/2017	362	362	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	375	10/5/2017	375	375	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	376	4/25/2018	376	376	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	365	10/25/2018	365	365	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	429	4/3/2019	429	429	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	480	10/9/2019	480	480	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	501	5/29/2020	501	501	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	486	10/9/2020	486	486	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	477	4/15/2021	477	477	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	493	10/14/2021	493	493	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	489	4/13/2022	489	489	
MW-92B	HARDNESS, TOTAL, FILTERED (MG/L AS CACO3)	01	438	10/25/2022	438	438	
MW-92B	Hardness, Total, Filtered (Mg/L As Caco3)	01	492	4/24/2023	492	492	
Calculations							
Count						17	
Mean						422.12	
Std Dev						62.34	
3 X SD (PAL)						187.02	
Min Increase (PAL)						100	
PAL, Calculated						609.14	
PAL, Rounded						610	

Duplicate Data Not Used for Calculations							

Note: Data downloaded from GEMS

J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



MW-86: Arsenic

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0	4/29/1996	0		
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0	10/17/1996	0		
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0.68	4/8/1997	0.34	0.34	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<2	10/20/1997	1	1	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0.53	4/14/1998	0.265	0.265	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<2	10/27/1998	1	1	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<2.4	4/16/1999	1.2	1.2	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<2.8	10/21/1999	1.4	1.4	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<2.4	4/20/2000	1.2	1.2	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<1.1	10/4/2000	0.55	0.55	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<1.1	4/3/2001	0.55	0.55	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<1.3	10/30/2001	0.65	0.65	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.62	4/25/2002	0.62	0.62	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	1	10/25/2002	1	1	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<1.6	4/28/2003	0.8	0.8	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<1.6	10/28/2003	0.8	0.8	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.75	4/27/2004	0.75	0.75	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.92	10/12/2004	0.92	0.92	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.66	4/14/2005	0.66	0.66	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0.4	10/26/2005	0.2	0.2	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0.4	4/13/2006	0.2	0.2	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.45	10/12/2006	0.45	0.45	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.21	4/10/2007	0.21	0.21	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.3	10/30/2007	0.3	0.3	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.47	4/17/2008	0.47	0.47	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.33	10/10/2008	0.33	0.33	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.67	4/22/2009	0.67	0.67	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	1.3	10/27/2009	1.3	1.3	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0.61	4/14/2010	0.305	0.305	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0.61	10/20/2010	0.305	0.305	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.53	4/6/2011	0.53	0.53	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.57	10/21/2011	0.57	0.57	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.45	4/4/2012	0.45	0.45	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.5	10/4/2012	0.5	0.5	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.46	4/17/2013	0.46	0.46	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.53	10/14/2013	0.53	0.53	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.51	4/17/2014	0.51	0.51	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.49	10/2/2014	0.49	0.49	J

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.42	4/14/2015	0.42	0.42	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.45	10/8/2015	0.45	0.45	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.49	4/7/2016	0.49	0.49	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.38	10/13/2016	0.38	0.38	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.41	4/11/2017	0.41	0.41	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.36	10/5/2017	0.36	0.36	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.65	4/25/2018	0.65	0.65	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.33	10/24/2018	0.33	0.33	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	4/3/2019	0.14	0.14	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.49	10/9/2019	0.49	0.49	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.38	5/29/2020	0.38	0.38	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	10/9/2020	0.14	0.14	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.41	4/15/2021	0.41	0.41	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	4/15/2021	0.14	0.14	
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.34	4/13/2022	0.34	0.34	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.84	10/25/2022	0.84	0.84	J
MW-86	ARSENIC, DISSOLVED (µG/L As)	01	0.38	4/24/2023	0.38	0.38	J
Calculations							
Count						53	
Mean						0.55	
Std Dev						0.30	
2 X SD (ACL)						0.60	
ACL, Calculated						1.15	
ACL, Rounded						1.2	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 1 µg/l; ES = 10 µg/l
Data downlaoded from GEMS
J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.

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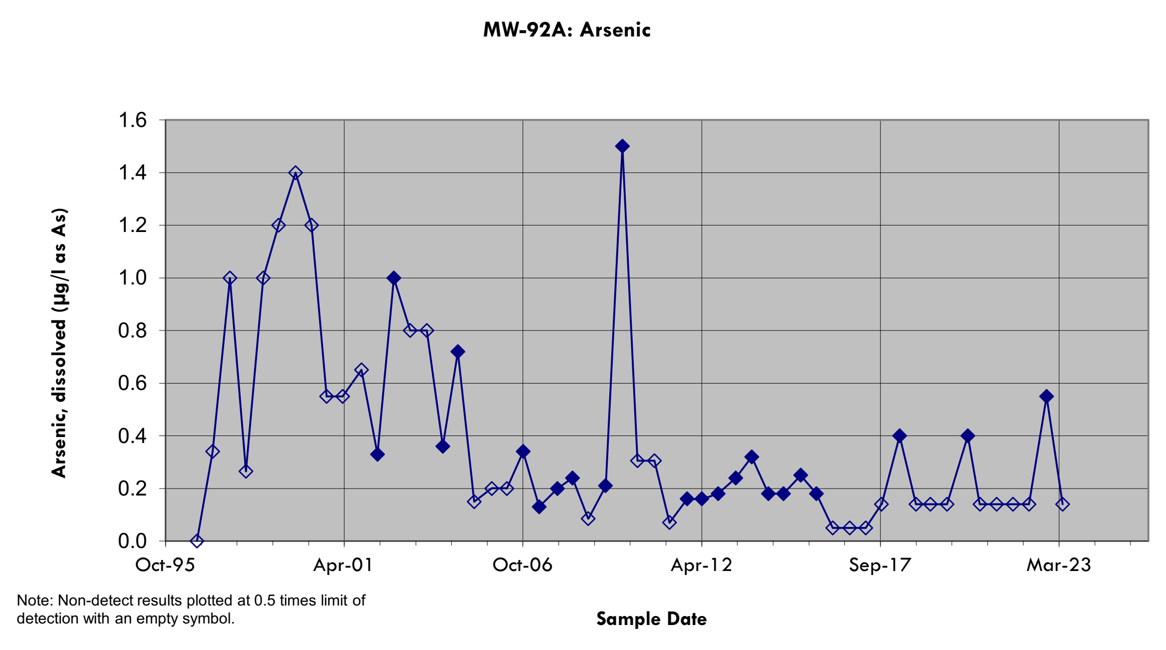

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0	10/16/1996	0		
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.68	4/8/1997	0.34	0.34	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<2	10/20/1997	1	1	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.53	4/14/1998	0.265	0.265	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<2	10/27/1998	1	1	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<2.4	4/16/1999	1.2	1.2	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<2.8	10/21/1999	1.4	1.4	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<2.4	4/20/2000	1.2	1.2	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<1.1	10/4/2000	0.55	0.55	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<1.1	4/3/2001	0.55	0.55	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<1.3	10/30/2001	0.65	0.65	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.33	4/25/2002	0.33	0.33	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	1	10/25/2002	1	1	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<1.6	4/28/2003	0.8	0.8	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<1.6	10/29/2003	0.8	0.8	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.36	4/27/2004	0.36	0.36	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.72	10/12/2004	0.72	0.72	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.3	4/14/2005	0.15	0.15	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.4	10/26/2005	0.2	0.2	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.4	4/13/2006	0.2	0.2	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.34	10/12/2006	0.34	0.34	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.13	4/10/2007	0.13	0.13	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.2	10/30/2007	0.2	0.2	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.24	4/17/2008	0.24	0.24	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.17	10/10/2008	0.085	0.085	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.21	4/22/2009	0.21	0.21	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	1.5	10/27/2009	1.5	1.5	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.61	4/14/2010	0.305	0.305	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.61	10/20/2010	0.305	0.305	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.14	4/6/2011	0.07	0.07	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.16	10/21/2011	0.16	0.16	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.16	4/4/2012	0.16	0.16	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.18	10/3/2012	0.18	0.18	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.24	4/18/2013	0.24	0.24	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.32	10/14/2013	0.32	0.32	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.18	4/17/2014	0.18	0.18	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.18	10/2/2014	0.18	0.18	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.25	4/13/2015	0.25	0.25	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.18	10/8/2015	0.18	0.18	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.1	4/8/2016	0.05	0.05	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.1	10/13/2016	0.05	0.05	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.1	4/12/2017	0.05	0.05	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	10/5/2017	0.14	0.14	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.4	4/25/2018	0.4	0.4	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	10/25/2018	0.14	0.14	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	4/3/2019	0.14	0.14	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	10/9/2019	0.14	0.14	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.4	5/29/2020	0.4	0.4	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	10/9/2020	0.14	0.14	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	4/15/2021	0.14	0.14	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	10/14/2021	0.14	0.14	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	4/13/2022	0.14	0.14	
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	0.55	10/25/2022	0.55	0.55	J
MW-92A	ARSENIC, DISSOLVED (µG/L As)	01	<0.28	4/24/2023	0.14	0.14	
Calculations							
Count						53	
Mean						0.39	
Std Dev						0.37	
2 X SD (ACL)						0.74	
ACL, Calculated						1.13	
ACL, Rounded						1.2	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 1 µg/l; ES = 10 µg/l

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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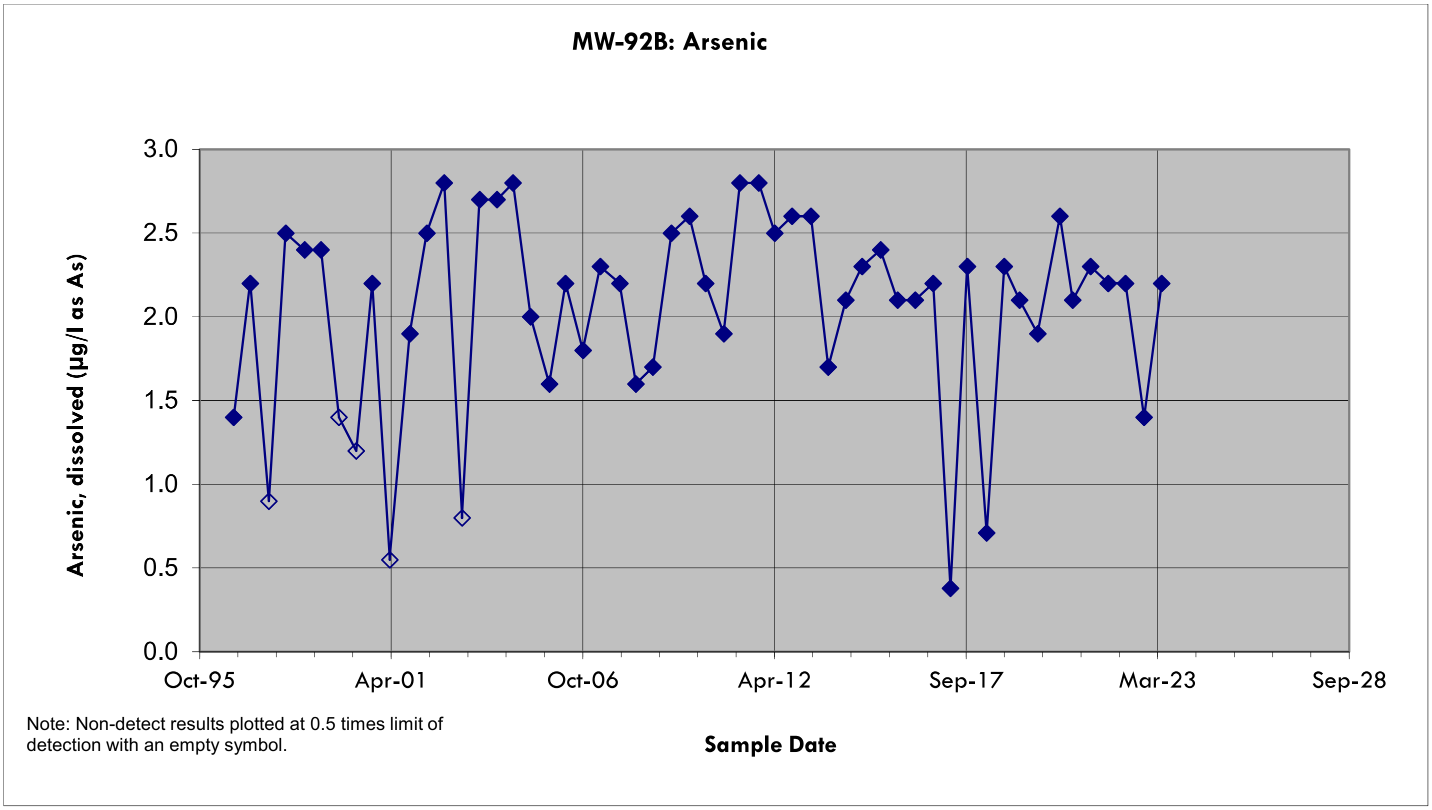


Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	1.4	10/16/1996	1.4	1.4	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.2	4/8/1997	2.2	2.2	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	<1.8	10/20/1997	0.9	0.9	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.5	4/14/1998	2.5	2.5	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.4	10/27/1998	2.4	2.4	J
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.4	4/16/1999	2.4	2.4	J
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	<2.8	10/21/1999	1.4	1.4	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	<2.4	4/20/2000	1.2	1.2	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.2	10/4/2000	2.2	2.2	J
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	<1.1	4/3/2001	0.55	0.55	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	1.9	10/30/2001	1.9	1.9	J
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.5	4/25/2002	2.5	2.5	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.8	10/25/2002	2.8	2.8	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	<1.6	4/28/2003	0.8	0.8	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.7	10/29/2003	2.7	2.7	J
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.7	4/27/2004	2.7	2.7	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.8	10/12/2004	2.8	2.8	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2	4/14/2005	2	2	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	1.6	10/26/2005	1.6	1.6	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.2	4/13/2006	2.2	2.2	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	1.8	10/12/2006	1.8	1.8	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.3	4/10/2007	2.3	2.3	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.2	10/30/2007	2.2	2.2	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	1.6	4/17/2008	1.6	1.6	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	1.7	10/10/2008	1.7	1.7	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.5	4/22/2009	2.5	2.5	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.6	10/27/2009	2.6	2.6	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.2	4/14/2010	2.2	2.2	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	1.9	10/20/2010	1.9	1.9	J
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.8	4/6/2011	2.8	2.8	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.8	10/21/2011	2.8	2.8	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.5	4/4/2012	2.5	2.5	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.6	10/3/2012	2.6	2.6	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.6	4/18/2013	2.6	2.6	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	1.7	10/14/2013	1.7	1.7	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.1	4/17/2014	2.1	2.1	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.3	10/2/2014	2.3	2.3	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.4	4/13/2015	2.4	2.4	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.1	10/8/2015	2.1	2.1	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.1	4/8/2016	2.1	2.1	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.2	10/13/2016	2.2	2.2	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	0.38	4/12/2017	0.38	0.38	J
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.3	10/5/2017	2.3	2.3	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	0.71	4/25/2018	0.71	0.71	J
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.3	10/25/2018	2.3	2.3	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.1	4/3/2019	2.1	2.1	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	1.9	10/9/2019	1.9	1.9	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.6	5/29/2020	2.6	2.6	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.1	10/9/2020	2.1	2.1	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.3	4/15/2021	2.3	2.3	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.2	10/14/2021	2.2	2.2	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.2	4/13/2022	2.2	2.2	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	1.4	10/25/2022	1.4	1.4	
MW-92B	ARSENIC, DISSOLVED (µG/L As)	01	2.2	4/24/2023	2.2	2.2	
Calculations							
Count						54	
Mean						2.05	
Std Dev						0.59	
2 X SD (ACL)						1.18	
ACL, Calculated						3.23	
ACL, Rounded						3.3	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 1 µg/l; ES = 10 µg/l

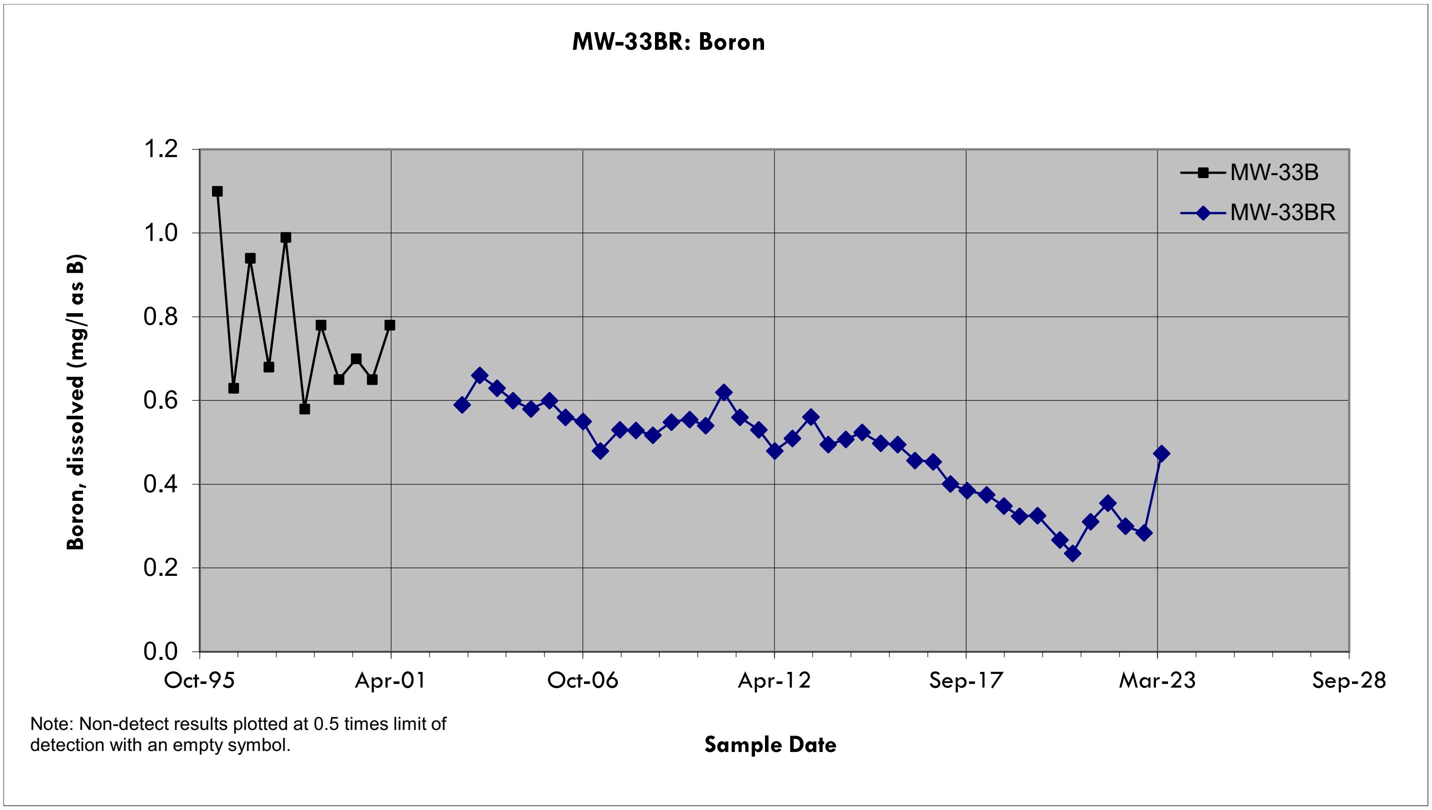
J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[ACL Calculations_Non CCR Wells.xls]MW92B_As_ACL



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33B	BORON, DISSOLVED (MG/L B)	01	1.1	4/30/1996	1.1		
MW-33B	BORON, DISSOLVED (MG/L B)	01	0.63	10/16/1996	0.63		
MW-33B	BORON, DISSOLVED (MG/L B)	01	0.94	4/8/1997	0.94		
MW-33B	BORON, DISSOLVED (MG/L B)	01	0.68	10/20/1997	0.68		
MW-33B	BORON, DISSOLVED (MG/L B)	01	0.99	4/14/1998	0.99		
MW-33B	BORON, DISSOLVED (MG/L B)	01	0.58	10/27/1998	0.58		
MW-33B	BORON, DISSOLVED (MG/L B)	01	0.78	4/16/1999	0.78		
MW-33B	BORON, DISSOLVED (MG/L B)	01	0.65	10/21/1999	0.65		
MW-33B	BORON, DISSOLVED (MG/L B)	01	0.7	4/20/2000	0.7		
MW-33B	BORON, DISSOLVED (MG/L B)	01	0.65	10/4/2000	0.65		
MW-33B	BORON, DISSOLVED (MG/L B)	01	0.78	4/3/2001	0.78		
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.59	4/29/2003	0.59	0.59	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.66	10/30/2003	0.66	0.66	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.63	4/27/2004	0.63	0.63	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.6	10/12/2004	0.6	0.6	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.58	4/15/2005	0.58	0.58	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.6	10/26/2005	0.6	0.6	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.56	4/13/2006	0.56	0.56	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.55	10/12/2006	0.55	0.55	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.48	4/11/2007	0.48	0.48	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.53	10/31/2007	0.53	0.53	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.529	4/17/2008	0.529	0.529	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.517	10/10/2008	0.517	0.517	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.549	4/21/2009	0.549	0.549	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.555	10/27/2009	0.555	0.555	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.54	4/14/2010	0.54	0.54	J
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.62	10/20/2010	0.62	0.62	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.56	4/6/2011	0.56	0.56	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.53	10/20/2011	0.53	0.53	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.48	4/4/2012	0.48	0.48	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.51	10/4/2012	0.51	0.51	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.561	4/17/2013	0.561	0.561	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.495	10/14/2013	0.495	0.495	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.507	4/16/2014	0.507	0.507	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.524	10/2/2014	0.524	0.524	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.498	4/13/2015	0.498	0.498	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.495	10/7/2015	0.495	0.495	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.457	4/7/2016	0.457	0.457	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.454	10/13/2016	0.454	0.454	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.401	4/11/2017	0.401	0.401	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.385	10/4/2017	0.385	0.385	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.375	4/24/2018	0.375	0.375	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.348	10/22/2018	0.348	0.348	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.324	4/2/2019	0.324	0.324	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.325	10/8/2019	0.325	0.325	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.267	5/29/2020	0.267	0.267	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.235	10/8/2020	0.235	0.235	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.311	4/14/2021	0.311	0.311	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.355	10/12/2021	0.355	0.355	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.3	4/13/2022	0.3	0.3	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.284	10/25/2022	0.284	0.284	
MW-33BR	BORON, DISSOLVED (MG/L B)	01	0.474	4/26/2023	0.474	0.474	
Calculations							
Count						41	
Mean						0.48	
Std Dev						0.11	
2 X SD (ACL)						0.22	
ACL, Calculated						0.70	
ACL, Rounded						0.70	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 0.2 mg/l; ES = 1 mg/l

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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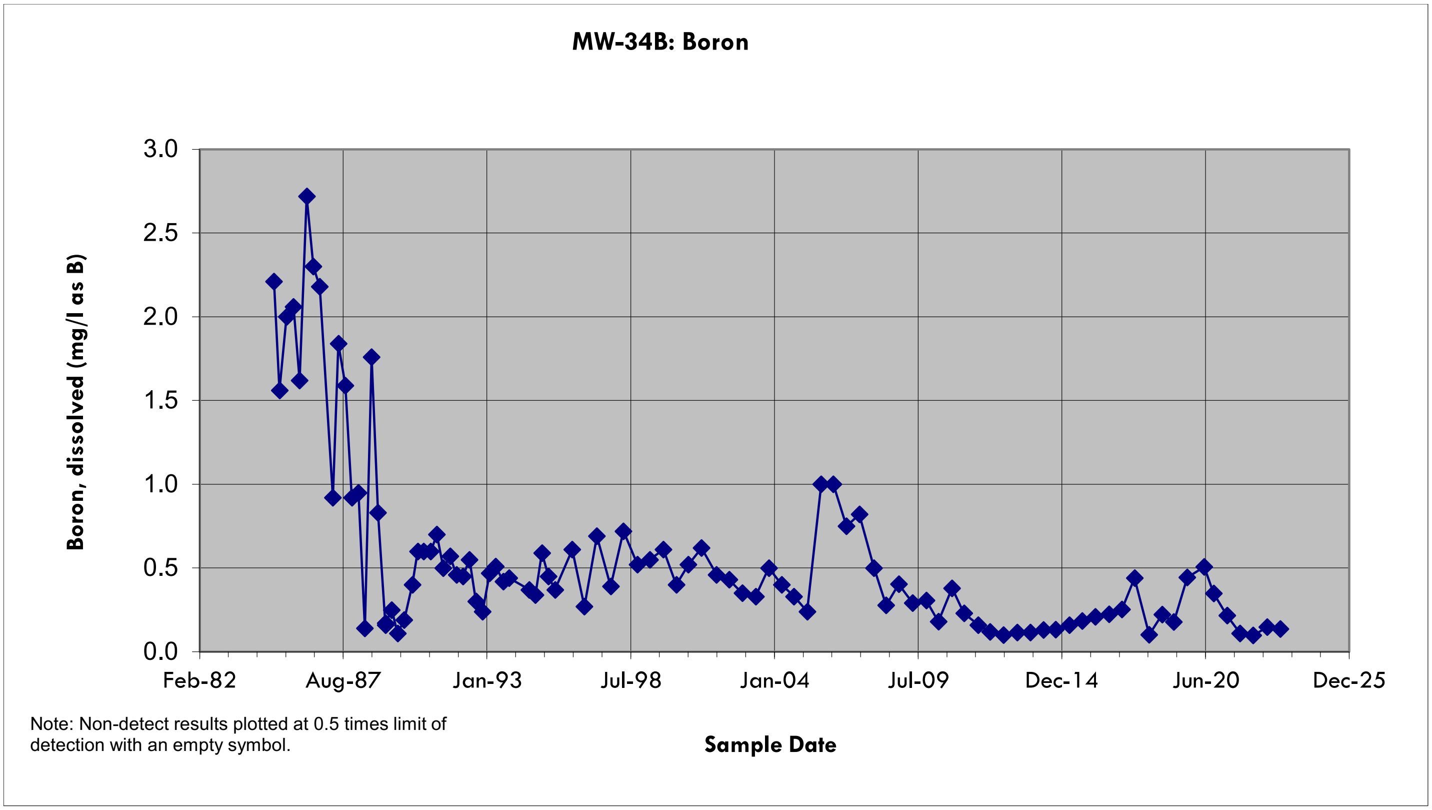

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	BORON, DISSOLVED (MG/L B)	01	2.21	12/17/1984	2.21		
MW-34B	BORON, DISSOLVED (MG/L B)	01	1.56	3/7/1985	1.56		
MW-34B	BORON, DISSOLVED (MG/L B)	01	2	6/14/1985	2		
MW-34B	BORON, DISSOLVED (MG/L B)	01	2.06	9/18/1985	2.06		
MW-34B	BORON, DISSOLVED (MG/L B)	01	1.62	12/12/1985	1.62		
MW-34B	BORON, DISSOLVED (MG/L B)	01	2.72	3/21/1986	2.72		
MW-34B	BORON, DISSOLVED (MG/L B)	01	2.3	6/20/1986	2.3		
MW-34B	BORON, DISSOLVED (MG/L B)	01	2.18	9/18/1986	2.18		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.92	3/20/1987	0.92		
MW-34B	BORON, DISSOLVED (MG/L B)	01	1.84	6/5/1987	1.84		
MW-34B	BORON, DISSOLVED (MG/L B)	01	1.59	9/9/1987	1.59		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.92	12/9/1987	0.92		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.95	3/10/1988	0.95		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.14	6/7/1988	0.14		
MW-34B	BORON, DISSOLVED (MG/L B)	01	1.76	9/9/1988	1.76		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.83	12/7/1988	0.83		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.16	3/21/1989	0.16		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.17	3/22/1989	0.17		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.25	6/16/1989	0.25		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.11	9/6/1989	0.11		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.19	12/5/1989	0.19		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.4	3/29/1990	0.4		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.6	6/14/1990	0.6		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.6	9/5/1990	0.6		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.6	12/10/1990	0.6		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.7	3/5/1991	0.7		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.5	6/3/1991	0.5		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.57	9/6/1991	0.57		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.46	12/4/1991	0.46		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.45	3/3/1992	0.45		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.55	6/2/1992	0.55		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.3	9/1/1992	0.3		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.24	12/2/1992	0.24		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.47	3/10/1993	0.47		

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.51	6/2/1993	0.51		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.42	9/14/1993	0.42		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.44	12/7/1993	0.44		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.37	9/13/1994	0.37		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.34	12/6/1994	0.34		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.59	3/7/1995	0.59		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.45	6/6/1995	0.45		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.37	9/6/1995	0.37		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.61	4/30/1996	0.61		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.27	10/16/1996	0.27		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.69	4/8/1997	0.69		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.39	10/20/1997	0.39		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.72	4/14/1998	0.72		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.52	10/27/1998	0.52		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.55	4/16/1999	0.55		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.61	10/21/1999	0.61		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.4	4/20/2000	0.4		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.52	10/4/2000	0.52		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.62	4/3/2001	0.62		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.46	10/30/2001	0.46		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.43	4/25/2002	0.43		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.35	10/24/2002	0.35		
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.33	4/29/2003	0.33	0.33	Using data from within the last 20 years for PAL calculation
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.5	10/29/2003	0.5	0.5	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.4	4/27/2004	0.4	0.4	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.33	10/12/2004	0.33	0.33	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.24	4/15/2005	0.24	0.24	
MW-34B	BORON, DISSOLVED (MG/L B)	01	1	10/26/2005	1	1	
MW-34B	BORON, DISSOLVED (MG/L B)	01	1	4/13/2006	1	1	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.75	10/12/2006	0.75	0.75	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.82	4/11/2007	0.82	0.82	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.5	10/31/2007	0.5	0.5	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.278	4/17/2008	0.278	0.278	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.404	10/10/2008	0.404	0.404	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.291	4/21/2009	0.291	0.291	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.307	10/27/2009	0.307	0.307	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.18	4/14/2010	0.18	0.18	J,B
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.38	10/20/2010	0.38	0.38	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.23	4/6/2011	0.23	0.23	B
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.16	10/20/2011	0.16	0.16	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.12	4/4/2012	0.12	0.12	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.1	10/4/2012	0.1	0.1	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.116	4/16/2013	0.116	0.116	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.116	10/14/2013	0.116	0.116	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.131	4/16/2014	0.131	0.131	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.132	10/2/2014	0.132	0.132	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.159	4/13/2015	0.159	0.159	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.184	10/7/2015	0.184	0.184	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.209	4/7/2016	0.209	0.209	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.224	10/13/2016	0.224	0.224	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.254	4/11/2017	0.254	0.254	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.44	10/4/2017	0.44	0.44	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.102	4/24/2018	0.102	0.102	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.222	10/22/2018	0.222	0.222	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.178	4/2/2019	0.178	0.178	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.444	10/8/2019	0.444	0.444	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.507	5/29/2020	0.507	0.507	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.349	10/8/2020	0.349	0.349	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.216	4/14/2021	0.216	0.216	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.11	10/12/2021	0.11	0.11	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.0981	4/13/2022	0.0981	0.0981	
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.148	10/25/2022	0.148	0.148	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	BORON, DISSOLVED (MG/L B)	01	0.136	4/26/2023	0.136	0.136	
Calculations							
Count						41	
Mean						0.31	
Std Dev						0.23	
2 X SD (ACL)						0.46	
ACL, Calculated						0.77	
ACL, Rounded						0.78	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 0.2 mg/l; ES = 1 mg/l

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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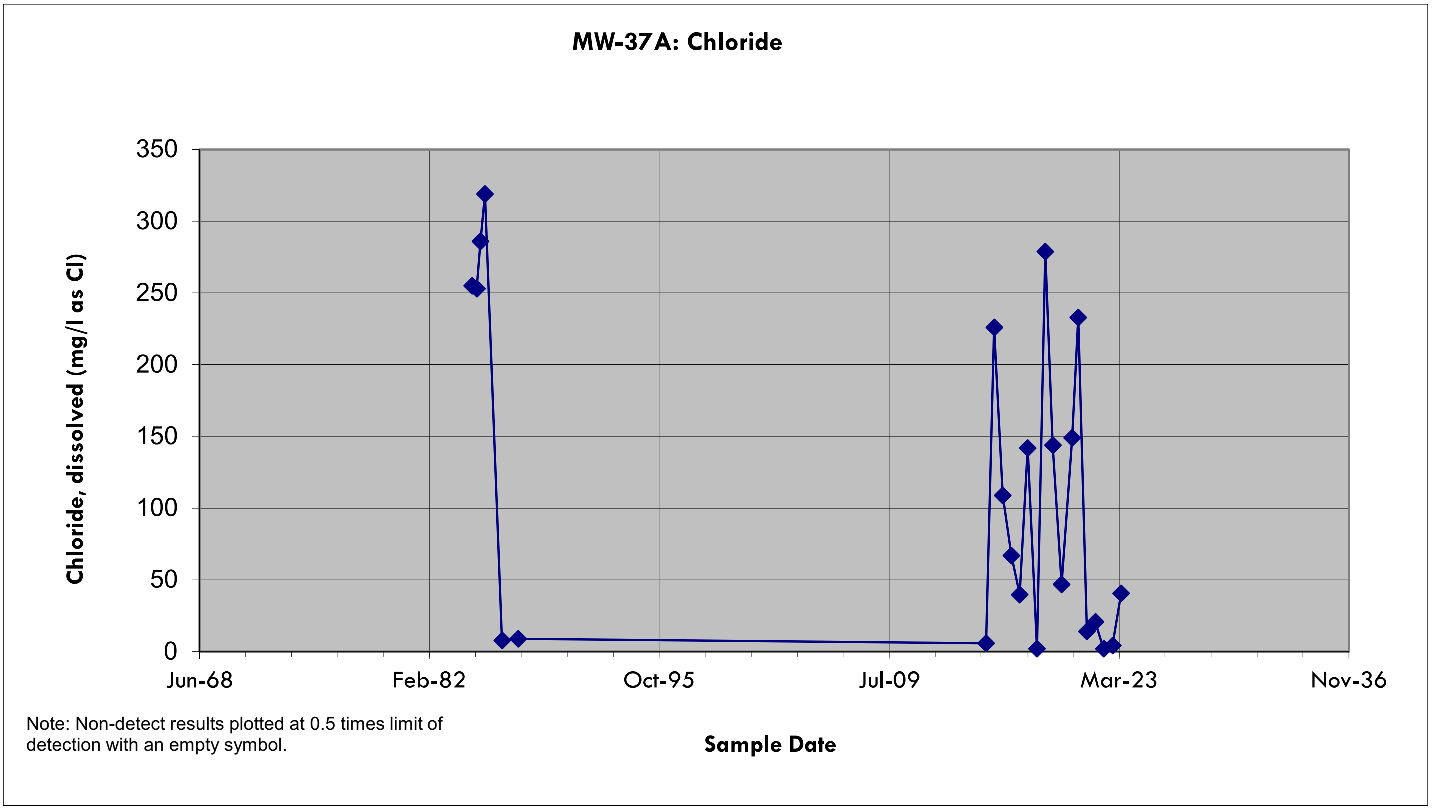
MW-37A: Chloride

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-37A	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	255	9/7/1984	255		
MW-37A	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	253	12/17/1984	253		
MW-37A	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	286	3/7/1985	286		
MW-37A	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	319	6/14/1985	319		
MW-37A	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	8	6/20/1986	8		
MW-37A	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	9	6/5/1987	9		
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	5.8	4/14/2015	5.8	5.8	Using data from within the last 20 years for PAL calculation
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	226	10/8/2015	226	226	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	109	4/7/2016	109	109	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	67.1	10/13/2016	67.1	67.1	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	39.9	4/13/2017	39.9	39.9	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	142	10/5/2017	142	142	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	2.2	4/25/2018	2.2	2.2	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	279	10/23/2018	279	279	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	144	4/3/2019	144	144	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	47	10/9/2019	47	47	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	149	5/29/2020	149	149	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	233	10/8/2020	233	233	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	14.1	4/14/2021	14.1	14.1	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	20.8	10/14/2021	20.8	20.8	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	2	4/13/2022	2	2	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	4.4	10/25/2022	4.4	4.4	
MW-37A	CHLORIDE, DISSOLVED (MG/L Cl)	01	40.7	4/24/2023	40.7	40.7	
Calculations							
Count						17	
Mean						89.76	
Std Dev						90.78	
2 X SD (ACL)						181.56	
ACL, Calculated						271.33	
ACL, Rounded						280	

Duplicate Data Not Used for Calculations							

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

Note: Current PAL = 125 mg/l; ES = 250 mg/l

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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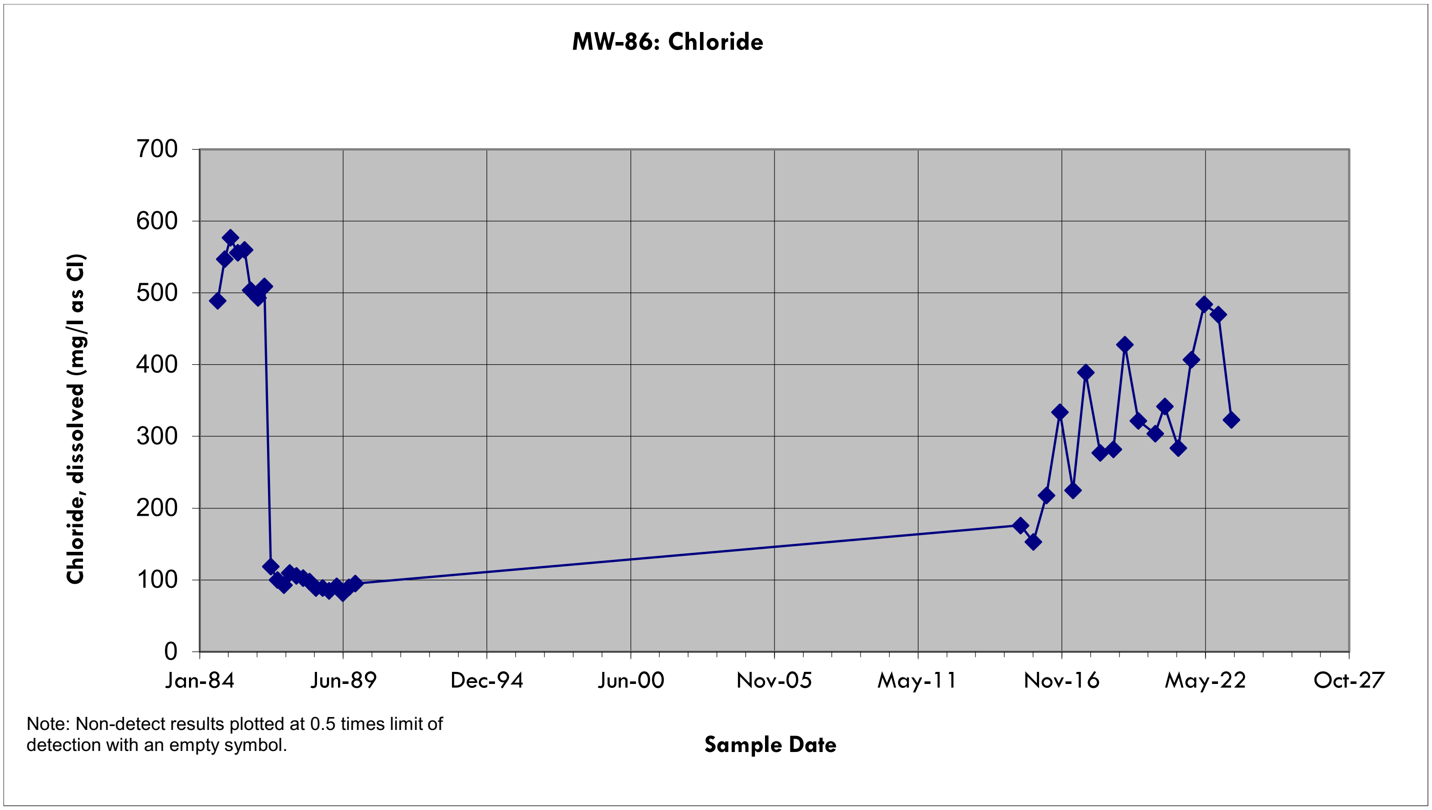
MW-86: Chloride

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	489	9/7/1984	489	489	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	547	12/17/1984	547	547	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	577	3/7/1985	577	577	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	556	6/14/1985	556	556	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	560	9/18/1985	560	560	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	504	12/12/1985	504	504	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	493	3/21/1986	493	493	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	509	6/20/1986	509	509	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	119	9/18/1986	119	119	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	100	12/19/1986	100	100	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	93	3/20/1987	93	93	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	110	6/5/1987	110	110	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	106	9/9/1987	106	106	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	103	12/9/1987	103	103	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	98	3/10/1988	98	98	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	89	6/7/1988	89	89	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	89	9/9/1988	89	89	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	85	12/7/1988	85	85	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	91	3/21/1989	91	91	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	91	3/22/1989	91	91	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	82	6/16/1989	82	82	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	90	9/7/1989	90	90	
MW-86	CHLORIDE, TOTAL OR DISSOLVED IN WTR SMPL (MG/L CL)	01	95	12/6/1989	95	95	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	176	4/14/2015	176	176	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	153	10/8/2015	153	153	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	218	4/7/2016	218	218	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	334	10/13/2016	334	334	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	225	4/11/2017	225	225	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	389	10/5/2017	389	389	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	277	4/25/2018	277	277	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	282	10/24/2018	282	282	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	428	4/3/2019	428	428	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	322	10/9/2019	322	322	
MW-86	CHLORIDE, DISSOLVED (MG/L CI)	01	304	5/29/2020	304	304	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-86	CHLORIDE, DISSOLVED (MG/L Cl)	01	342	10/9/2020	342	342	
MW-86	CHLORIDE, DISSOLVED (MG/L Cl)	01	284	4/15/2021	284	284	
MW-86	CHLORIDE, DISSOLVED (MG/L Cl)	01	407	10/14/2021	407	407	M
MW-86	CHLORIDE, DISSOLVED (MG/L Cl)	01	484	4/13/2022	484	484	
MW-86	CHLORIDE, DISSOLVED (MG/L Cl)	01	470	10/25/2022	470	470	M
MW-86	CHLORIDE, DISSOLVED (MG/L Cl)	01	323	4/24/2023	323	323	
Calculations							
Count						40	
Mean						277.35	
Std Dev						174.44	
2 X SD (ACL)						348.88	
ACL, Calculated						626.23	
ACL, Rounded						630	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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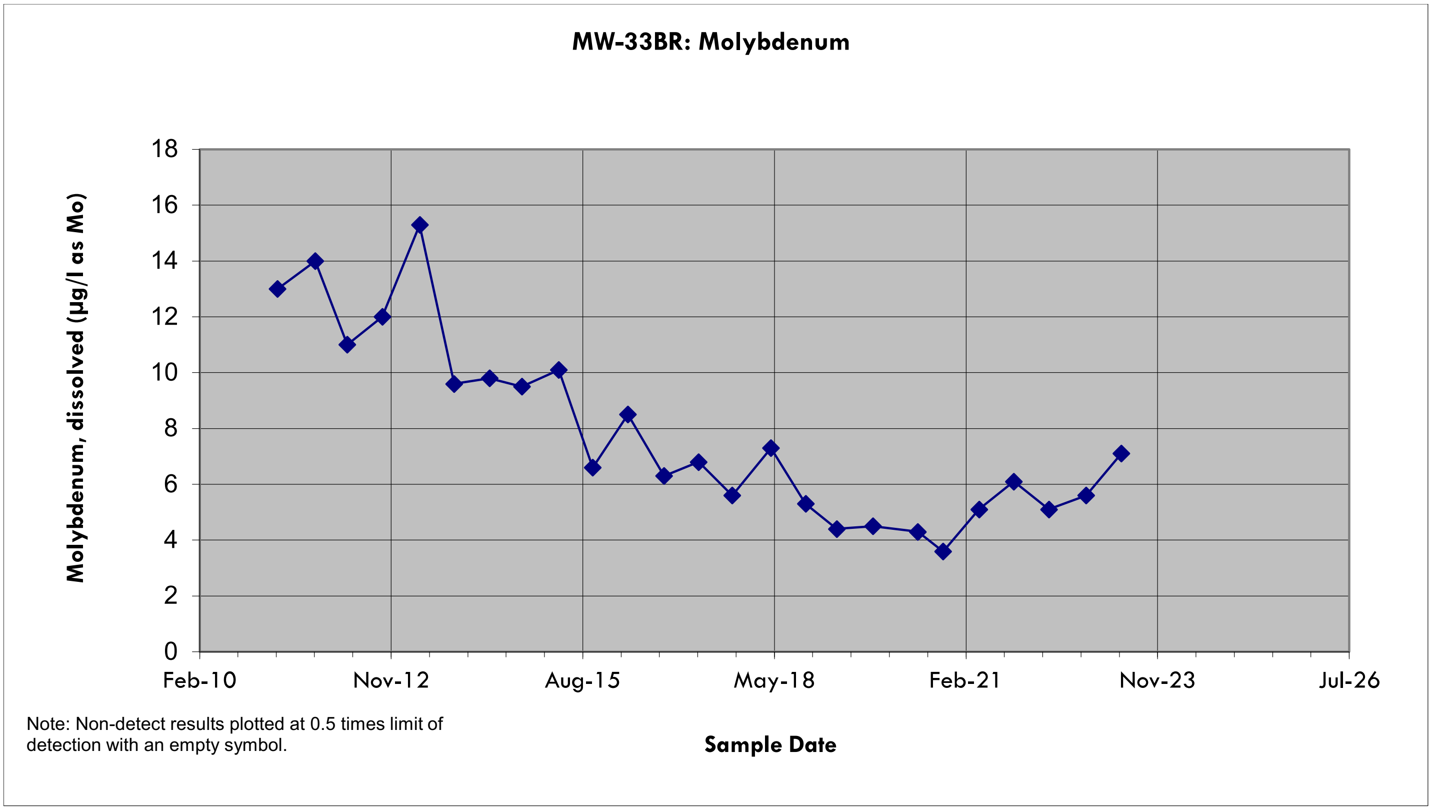

Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	13	4/6/2011	13	13	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	14	10/20/2011	14	14	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	11	4/4/2012	11	11	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	12	10/4/2012	12	12	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	15.3	4/17/2013	15.3	15.3	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	9.6	10/14/2013	9.6	9.6	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	9.8	4/16/2014	9.8	9.8	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	9.5	10/2/2014	9.5	9.5	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	10.1	4/13/2015	10.1	10.1	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	6.6	10/7/2015	6.6	6.6	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	8.5	4/7/2016	8.5	8.5	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	6.3	10/13/2016	6.3	6.3	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	6.8	4/11/2017	6.8	6.8	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	5.6	10/4/2017	5.6	5.6	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	7.3	4/24/2018	7.3	7.3	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	5.3	10/22/2018	5.3	5.3	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	4.4	4/2/2019	4.4	4.4	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	4.5	10/8/2019	4.5	4.5	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	4.3	5/29/2020	4.3	4.3	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	3.6	10/8/2020	3.6	3.6	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	5.1	4/14/2021	5.1	5.1	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	6.1	10/12/2021	6.1	6.1	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	5.1	4/13/2022	5.1	5.1	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	5.6	10/25/2022	5.6	5.6	
MW-33BR	MOLYBDENUM, DISSOLVED (µG/L Mo)	01	7.1	4/26/2023	7.1	7.1	
Calculations							
Count						25	
Mean						7.86	
Std Dev						3.27	
2 X SD (ACL)						6.54	
ACL, Calculated						14.40	
ACL, Rounded						15	

Duplicate Data Not Used for Calculations

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes

Note: Current PAL = 8 µg/l; ES = 40 µg/l

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

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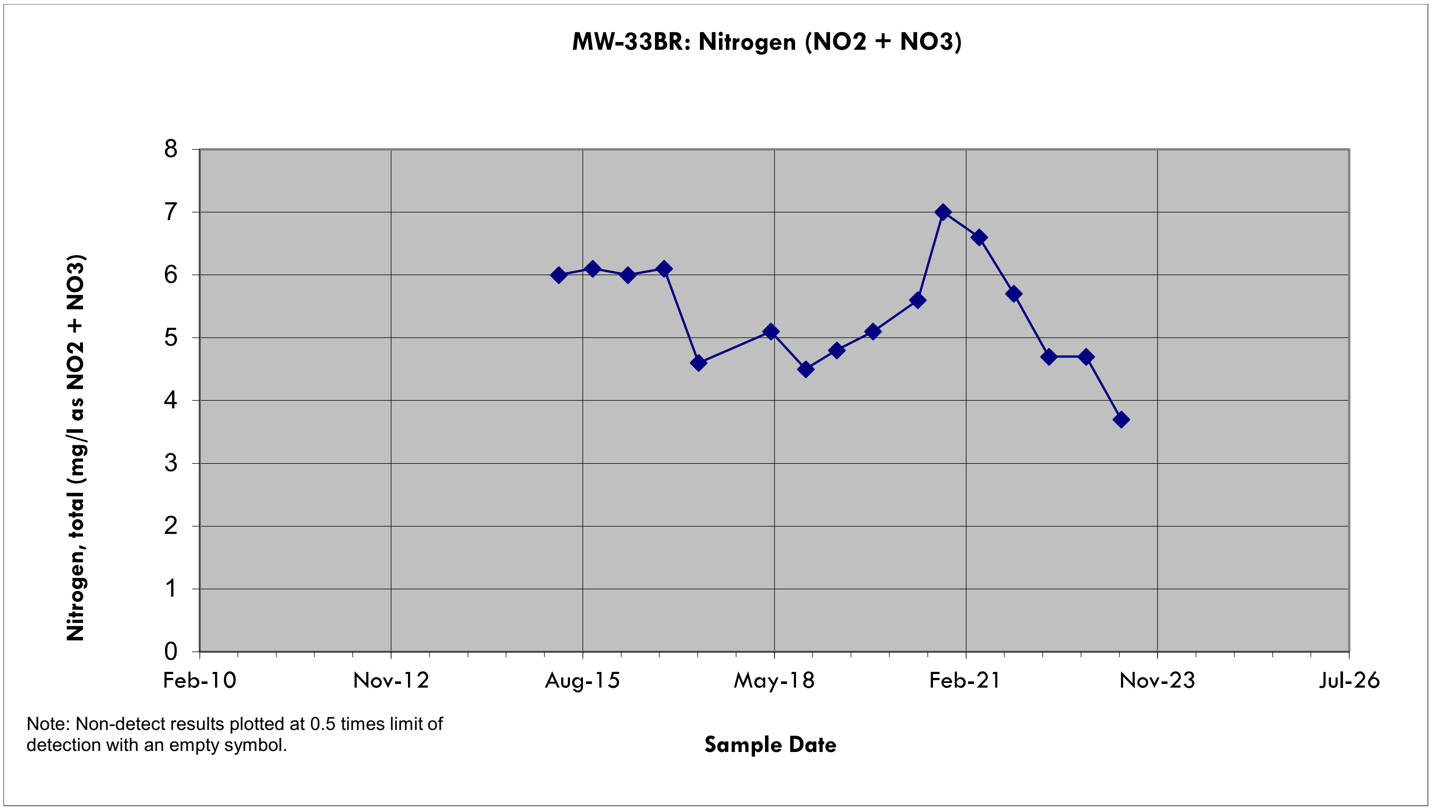
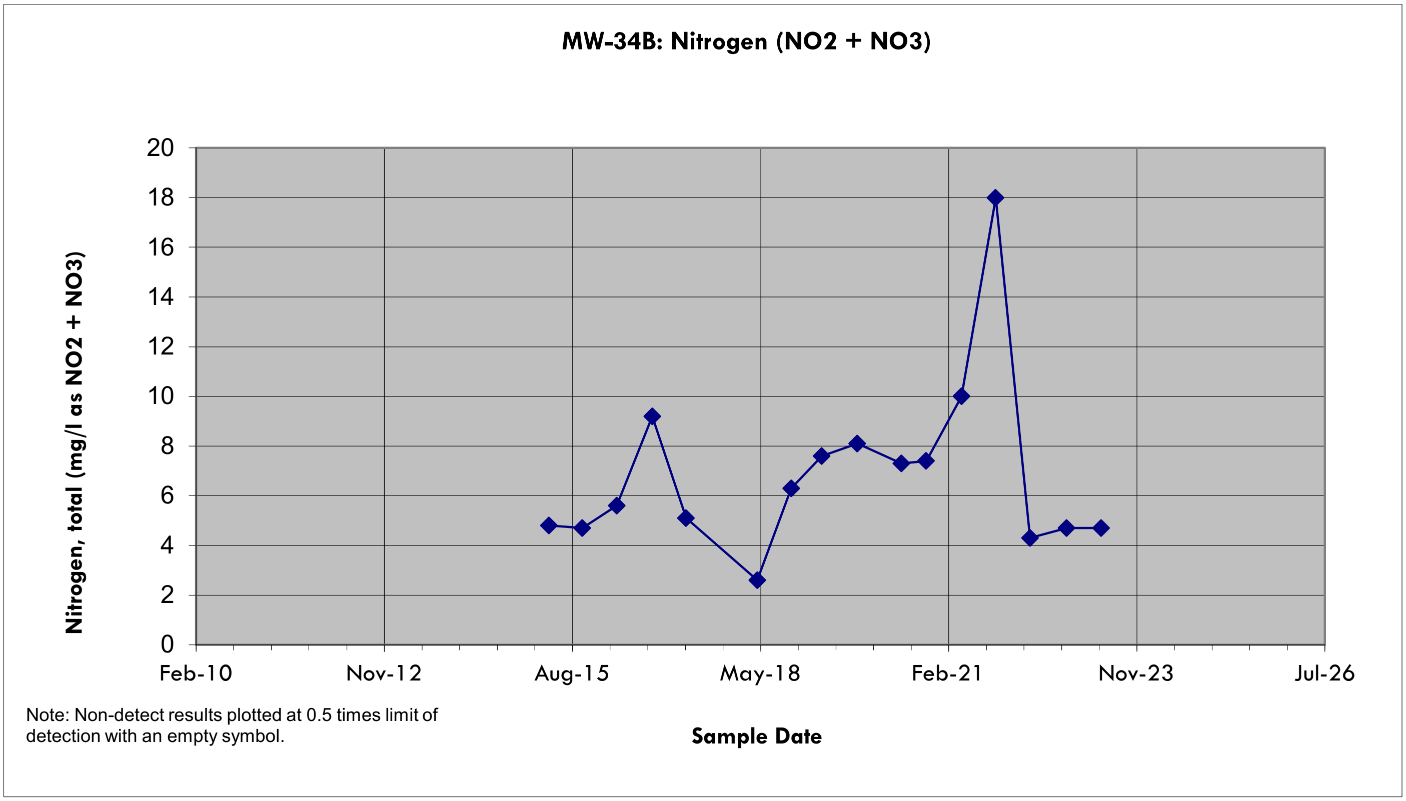


Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	6	4/13/2015	6	6	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	6.1	10/7/2015	6.1	6.1	M
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	6	4/7/2016	6	6	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	6.1	10/13/2016	6.1	6.1	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.6	4/11/2017	4.6	4.6	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	5.1	4/24/2018	5.1	5.1	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.5	10/22/2018	4.5	4.5	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.8	4/2/2019	4.8	4.8	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	5.1	10/8/2019	5.1	5.1	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	5.6	5/29/2020	5.6	5.6	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	7	10/8/2020	7	7	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	6.6	4/14/2021	6.6	6.6	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	5.7	10/12/2021	5.7	5.7	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.7	4/13/2022	4.7	4.7	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.7	10/25/2022	4.7	4.7	
MW-33BR	NITROGEN, TOTAL (MG/L NO2+NO3)	01	3.7	4/26/2023	3.7	3.7	
Calculations							
Count						16	
Mean						5.39	
Std Dev						0.88	
2 X SD (ACL)						1.77	
ACL, Calculated						7.16	
ACL, Rounded						7.2	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 2 mg/l; ES = 10 mg/l
J = Result is an estimated value below the laboratory's limit of quantitation.
P = Did not meet required preservation and/or hold time.
B = Compound detected in blank.
M = Failed method QC check.



Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.8	4/13/2015	4.8	4.8	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.7	10/7/2015	4.7	4.7	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	5.6	4/7/2016	5.6	5.6	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	9.2	10/13/2016	9.2	9.2	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	5.1	4/11/2017	5.1	5.1	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	2.6	4/24/2018	2.6	2.6	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	6.3	10/22/2018	6.3	6.3	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	7.6	4/2/2019	7.6	7.6	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	8.1	10/8/2019	8.1	8.1	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	7.3	5/29/2020	7.3	7.3	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	7.4	10/8/2020	7.4	7.4	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	10	4/14/2021	10	10	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	18	10/12/2021	18	18	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.3	4/13/2022	4.3	4.3	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.7	10/25/2022	4.7	4.7	
MW-34B	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.7	4/26/2023	4.7	4.7	
Calculations							
Count						16	
Mean						6.90	
Std Dev						3.56	
2 X SD (ACL)						7.12	
ACL, Calculated						14.02	
ACL, Rounded						15	

Duplicate Data Not Used for Calculations							

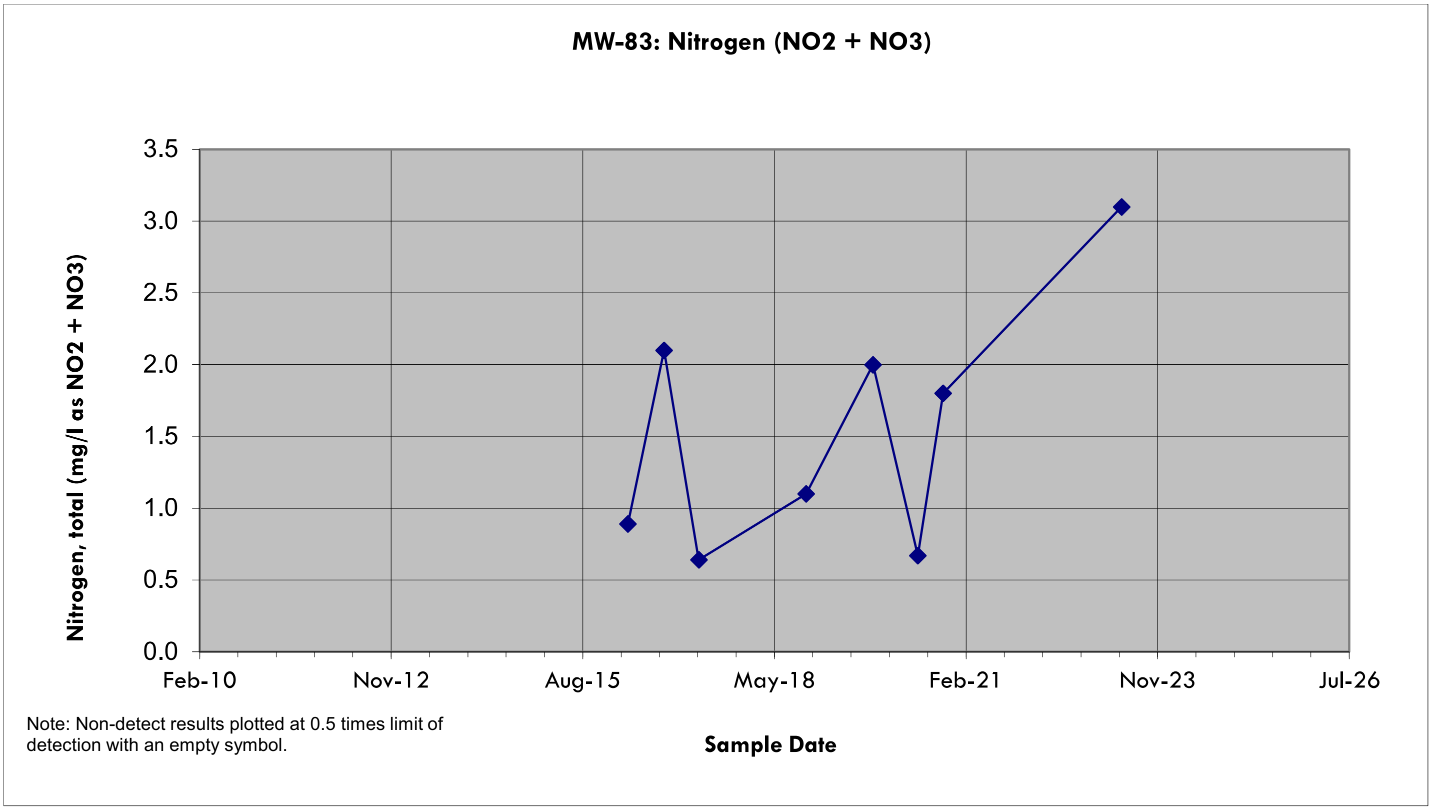
Note: Current PAL = 2 mg/l; ES = 10 mg/l

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.



Note: Non-detect results plotted at 0.5 times limit of detection with an empty symbol.

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-83	NITROGEN, TOTAL (MG/L NO2+NO3)	01	0.89	4/7/2016	0.89	0.89	
MW-83	NITROGEN, TOTAL (MG/L NO2+NO3)	01	2.1	10/13/2016	2.1	2.1	
MW-83	NITROGEN, TOTAL (MG/L NO2+NO3)	01	0.64	4/12/2017	0.64	0.64	
MW-83	NITROGEN, TOTAL (MG/L NO2+NO3)	01	1.1	10/24/2018	1.1	1.1	
MW-83	NITROGEN, TOTAL (MG/L NO2+NO3)	01	2	10/9/2019	2	2	
MW-83	NITROGEN, TOTAL (MG/L NO2+NO3)	01	0.67	5/29/2020	0.67	0.67	
MW-83	NITROGEN, TOTAL (MG/L NO2+NO3)	01	1.8	10/8/2020	1.8	1.8	
MW-83	NITROGEN, TOTAL (MG/L NO2+NO3)	01	3.1	4/27/2023	3.1	3.1	
Calculations							
Count						8	
Mean						1.54	
Std Dev						0.86	
2 X SD (ACL)						1.73	
ACL, Calculated						3.26	
ACL, Rounded						3.3	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 2 mg/l; ES = 10 mg/l

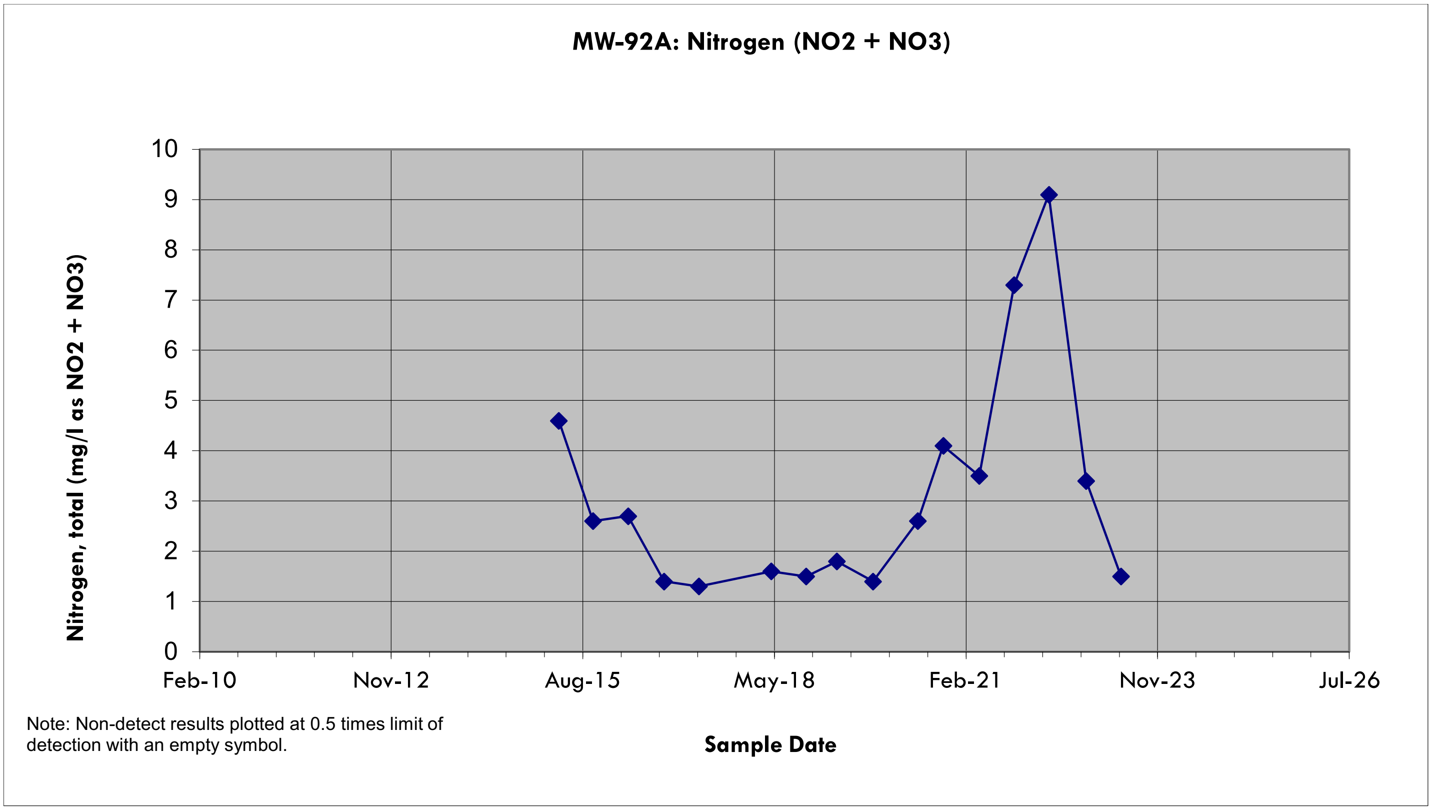
J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[ACL Calculations_Non CCR Wells.xls]MW83_N_ACL



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.6	4/13/2015	4.6	4.6	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	2.6	10/8/2015	2.6	2.6	M
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	2.7	4/8/2016	2.7	2.7	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	1.4	10/13/2016	1.4	1.4	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	1.3	4/12/2017	1.3	1.3	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	1.6	4/25/2018	1.6	1.6	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	1.5	10/25/2018	1.5	1.5	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	1.8	4/3/2019	1.8	1.8	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	1.4	10/9/2019	1.4	1.4	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	2.6	5/29/2020	2.6	2.6	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	4.1	10/9/2020	4.1	4.1	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	3.5	4/15/2021	3.5	3.5	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	7.3	10/14/2021	7.3	7.3	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	9.1	4/13/2022	9.1	9.1	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	3.4	10/25/2022	3.4	3.4	
MW-92A	NITROGEN, TOTAL (MG/L NO2+NO3)	01	1.5	4/24/2023	1.5	1.5	
Calculations							
Count						16	
Mean						3.15	
Std Dev						2.25	
2 X SD (ACL)						4.50	
ACL, Calculated						7.65	
ACL, Rounded						7.7	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 2 mg/l; ES = 10 mg/l

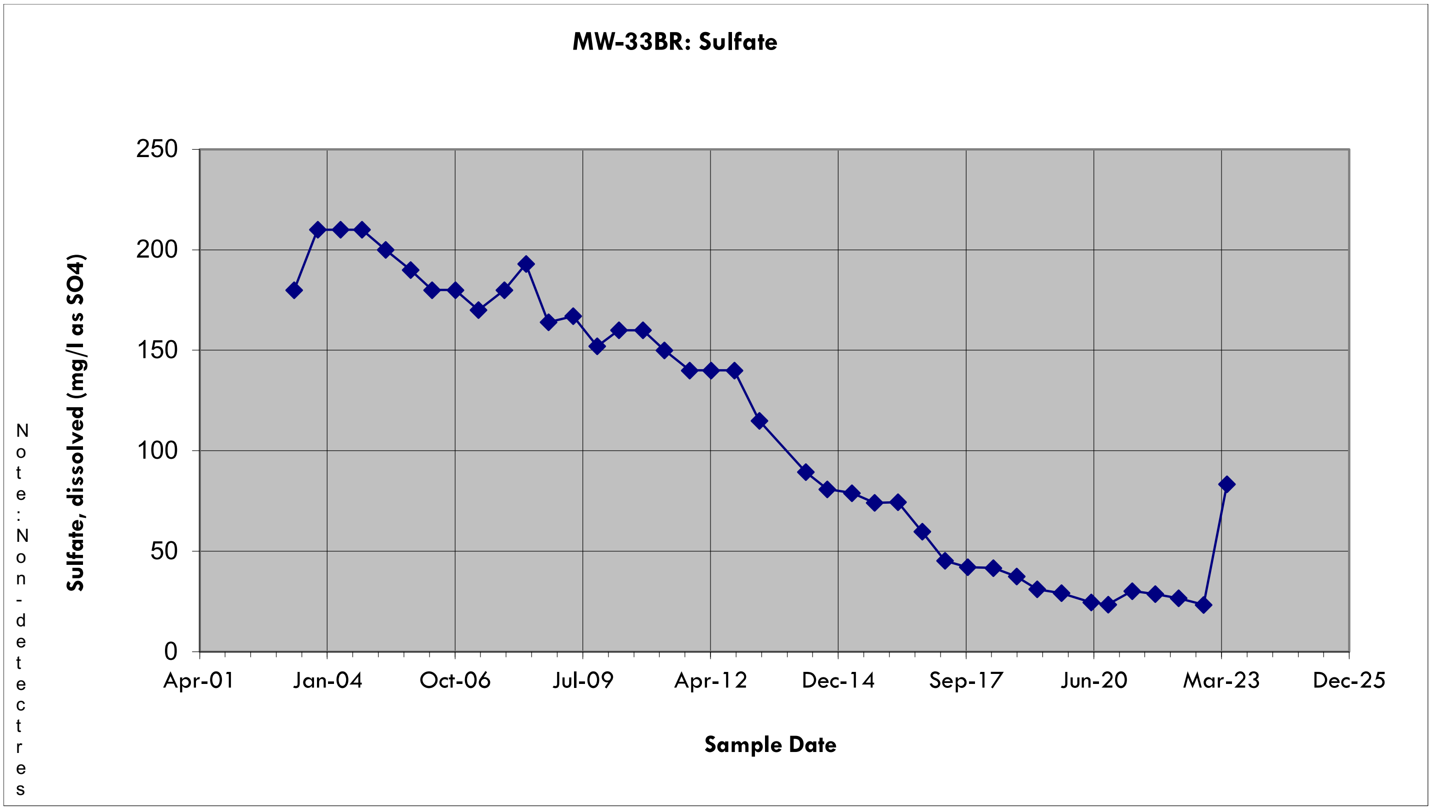
J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

M = Failed method QC check.

I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[ACL Calculations_Non CCR Wells.xls]MW92A_N_ACL



Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	180	4/29/2003	180	180	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	210	10/30/2003	210	210	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	210	4/27/2004	210	210	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	210	10/12/2004	210	210	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	200	4/15/2005	200	200	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	190	10/26/2005	190	190	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	180	4/13/2006	180	180	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	180	10/12/2006	180	180	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	170	4/11/2007	170	170	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	180	10/31/2007	180	180	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	193	4/17/2008	193	193	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	164	10/10/2008	164	164	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	167	4/21/2009	167	167	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	152	10/27/2009	152	152	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	160	4/14/2010	160	160	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	160	10/20/2010	160	160	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	150	4/6/2011	150	150	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	140	10/20/2011	140	140	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	140	4/4/2012	140	140	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	140	10/4/2012	140	140	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	115	4/17/2013	115	115	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	89.4	4/16/2014	89.4	89.4	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	80.9	10/2/2014	80.9	80.9	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	79	4/13/2015	79	79	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	74.1	10/7/2015	74.1	74.1	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	74.4	4/7/2016	74.4	74.4	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	59.8	10/13/2016	59.8	59.8	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	45.3	4/11/2017	45.3	45.3	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	42.1	10/4/2017	42.1	42.1	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	41.7	4/24/2018	41.7	41.7	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	37.5	10/22/2018	37.5	37.5	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	31.1	4/2/2019	31.1	31.1	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	29.2	10/8/2019	29.2	29.2	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	24.6	5/29/2020	24.6	24.6	

Point Name	Parameter	Mult Sample ID	Report Value	Sample Date	Graph Value	Calculation Value	Notes
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	23.5	10/8/2020	23.5	23.5	M
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	30.2	4/14/2021	30.2	30.2	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	28.7	10/12/2021	28.7	28.7	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	26.6	4/13/2022	26.6	26.6	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	23.4	10/25/2022	23.4	23.4	
MW-33BR	SULFATE, DISSOLVED (MG/L SO4)	01	83.4	4/26/2023	83.4	83.4	
Calculations							
Count						40	
Mean						112.90	
Std Dev						66.64	
2 X SD (ACL)						133.28	
ACL, Calculated						246.18	
ACL, Rounded						250	

Duplicate Data Not Used for Calculations							

Note: Current PAL = 125 mg/l; ES = 250 mg/l

J = Result is an estimated value below the laboratory's limit of quantitation.

P = Did not meet required preservation and/or hold time.

B = Compound detected in blank.

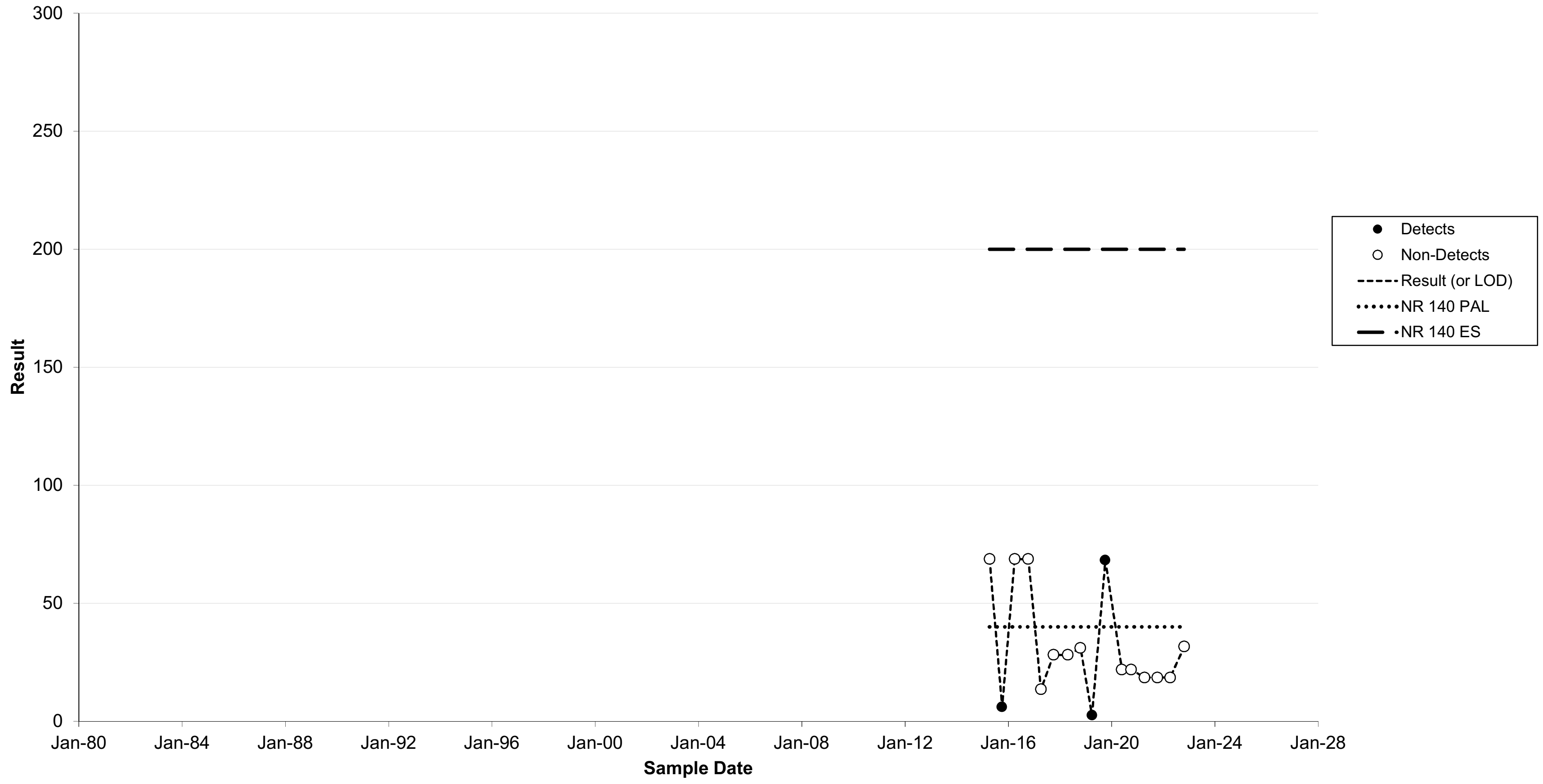
M = Failed method QC check.

I:\25222260.00\Data and Calculations\Groundwater PALs ACLs\[ACL Calculations_Non CCR Wells.xls]MW33BR_SO4_ACL

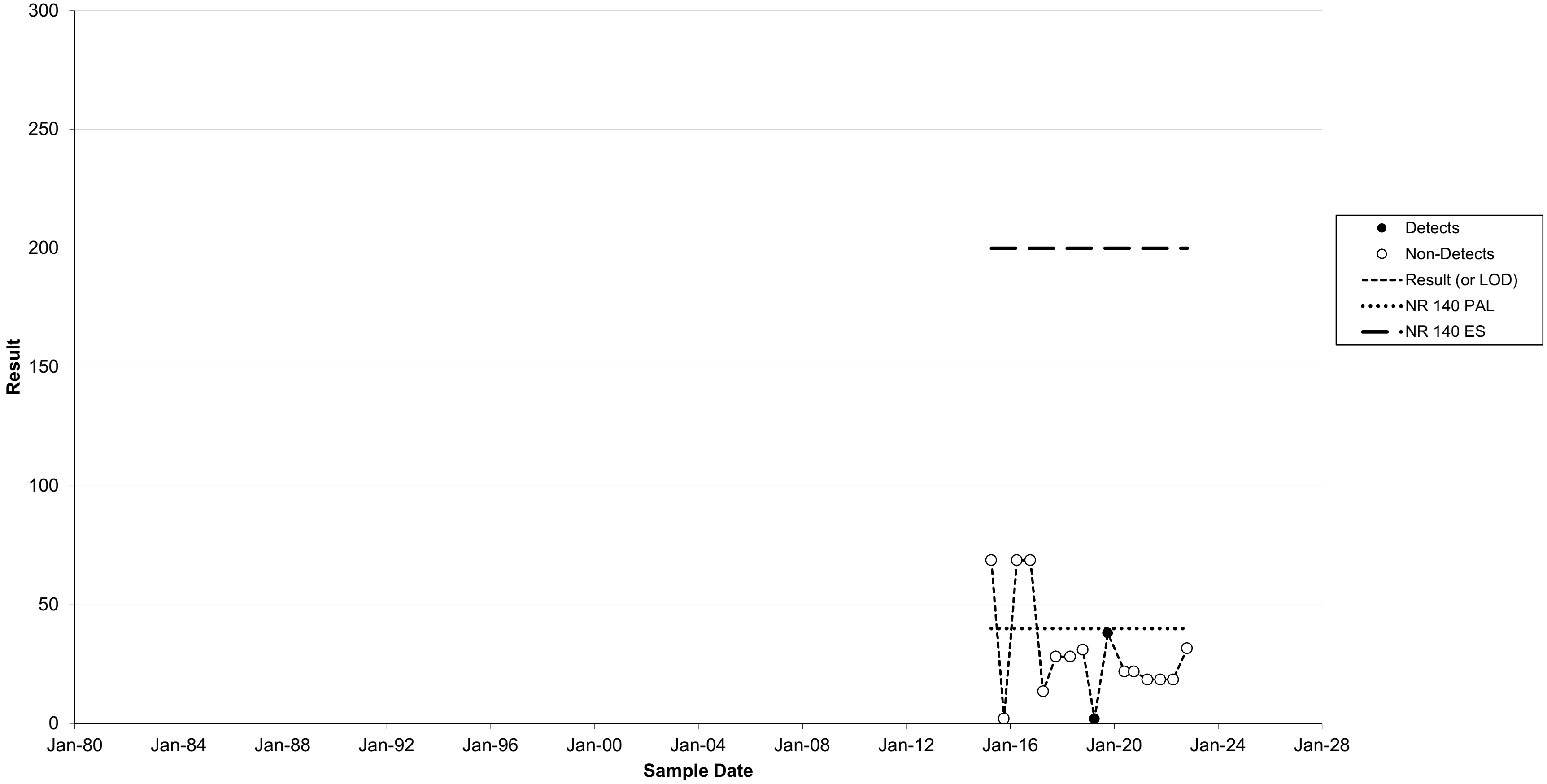
Appendix J

Historical Groundwater Results Graphs

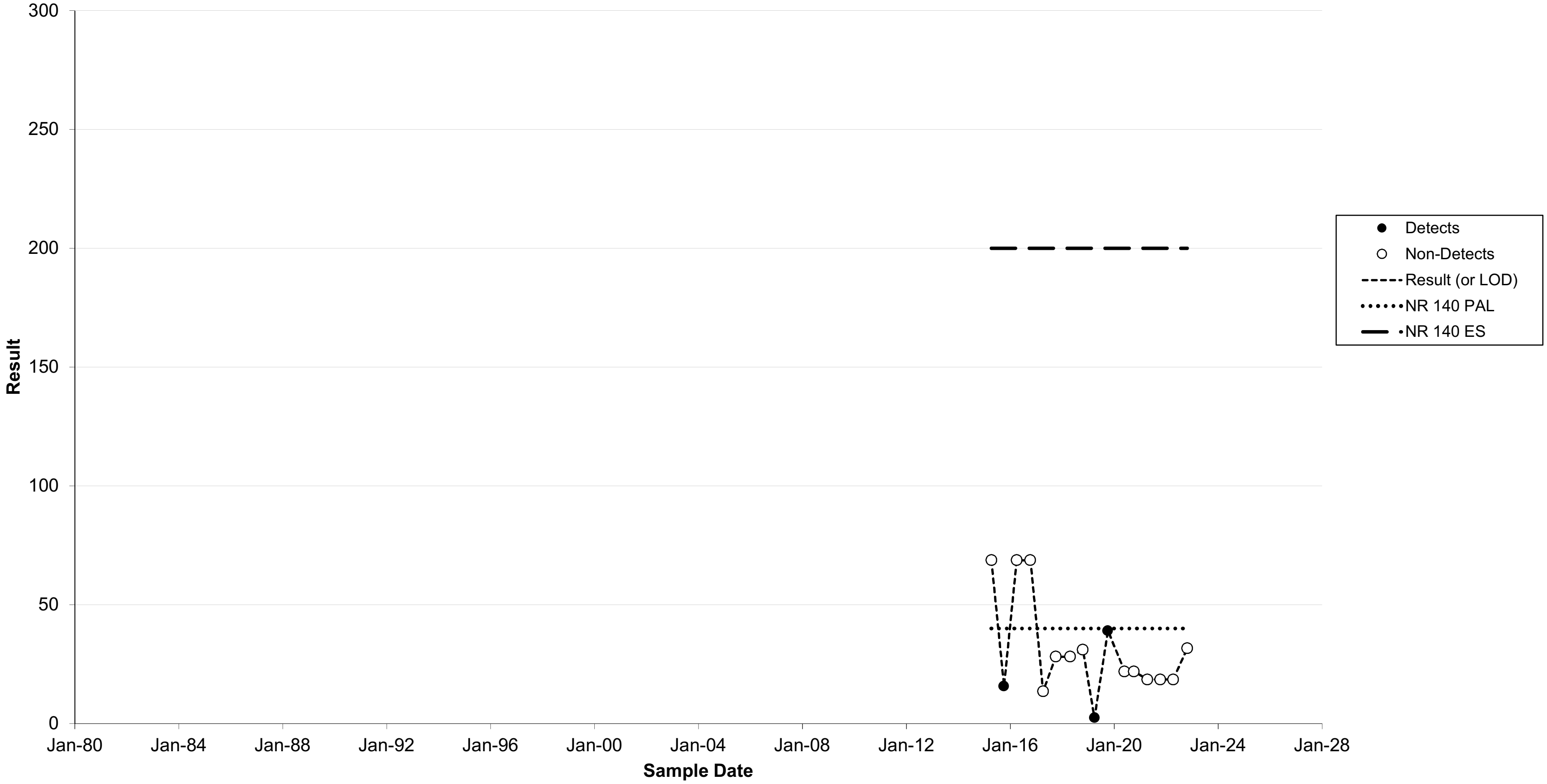
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33AR - Aluminum, dissolved (ug/l as Al)



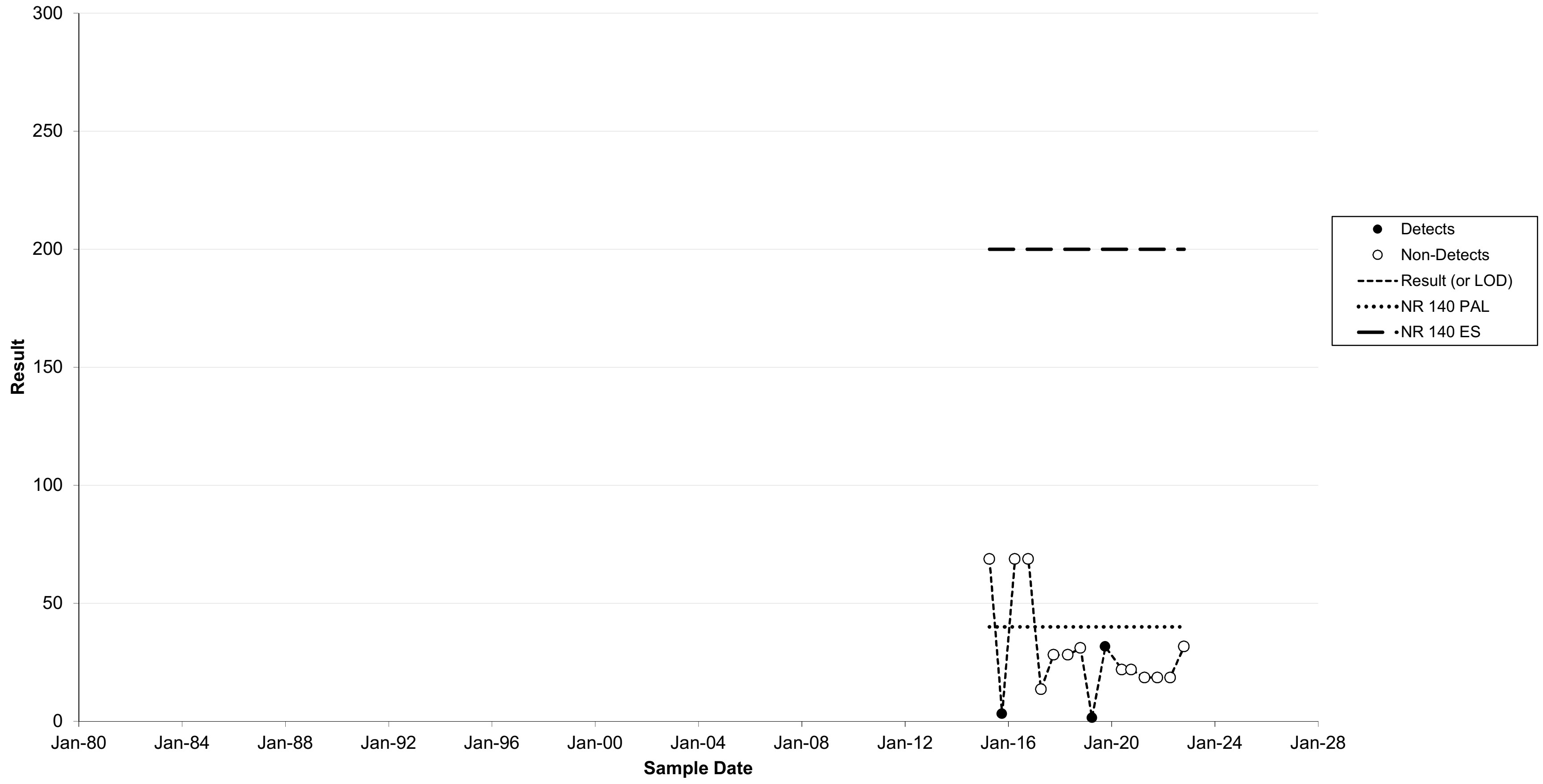
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33BR - Aluminum, dissolved (ug/l as Al)



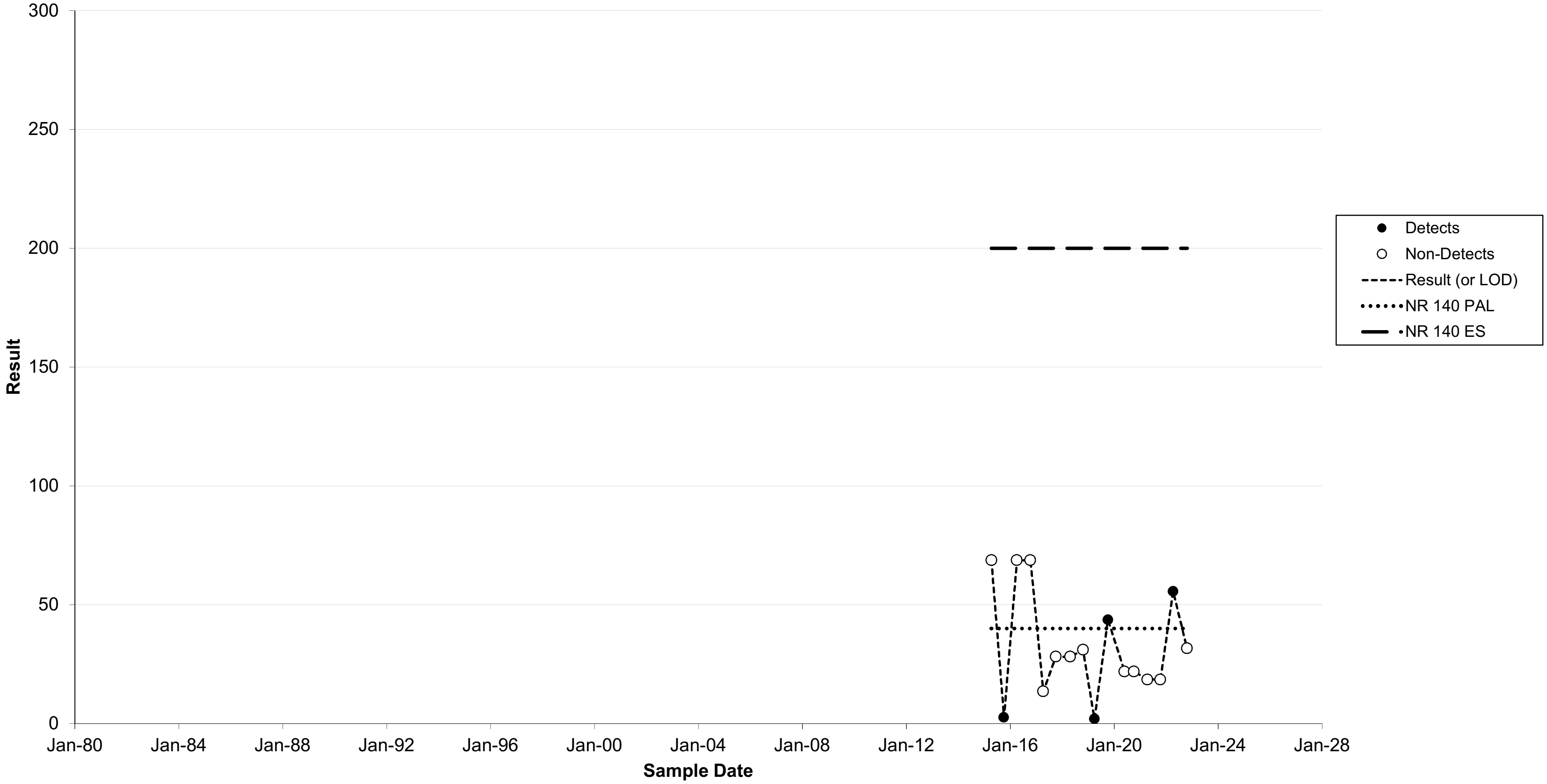
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW34A - Aluminum, dissolved (ug/l as Al)



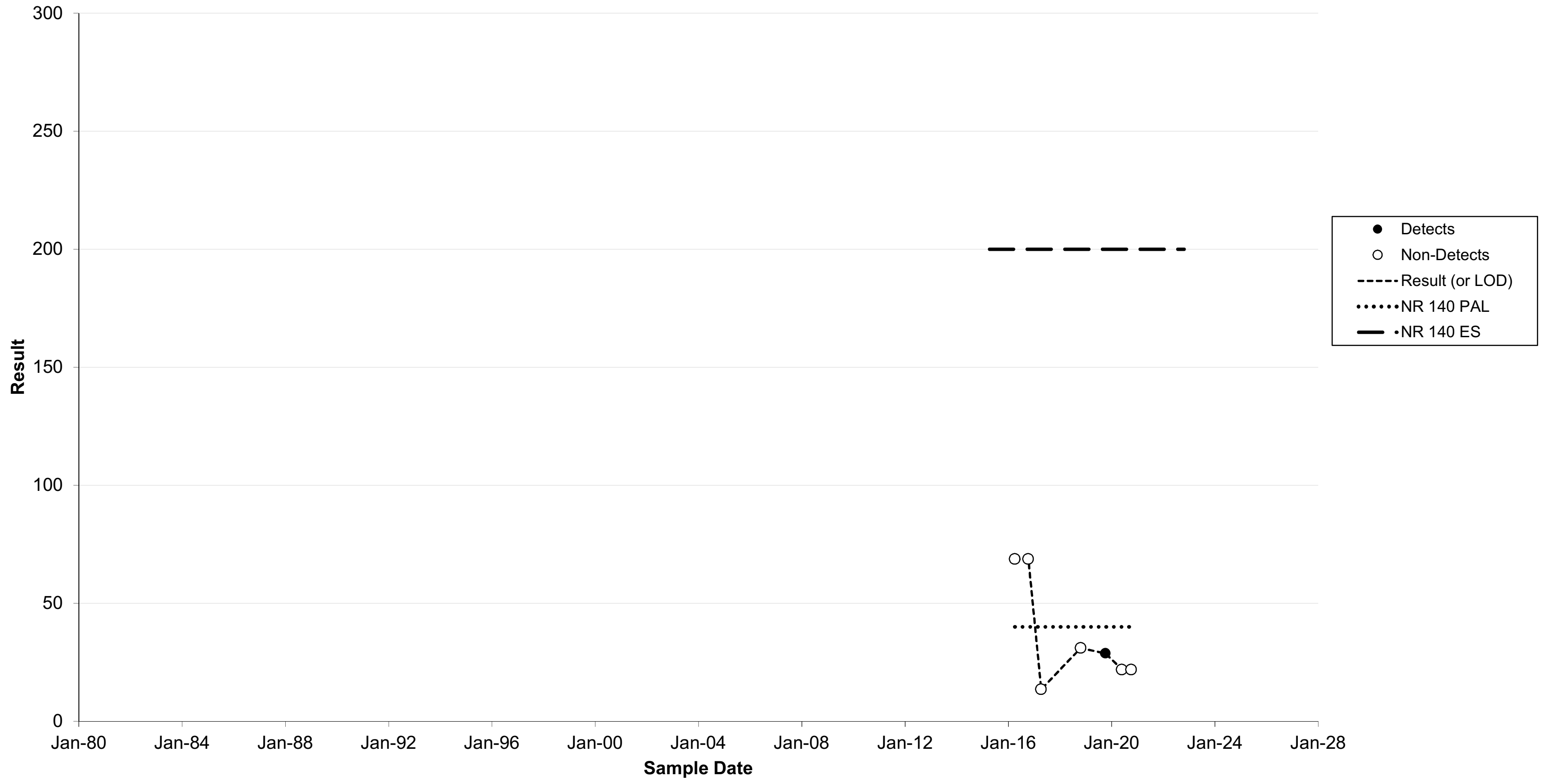
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW34B - Aluminum, dissolved (ug/l as Al)



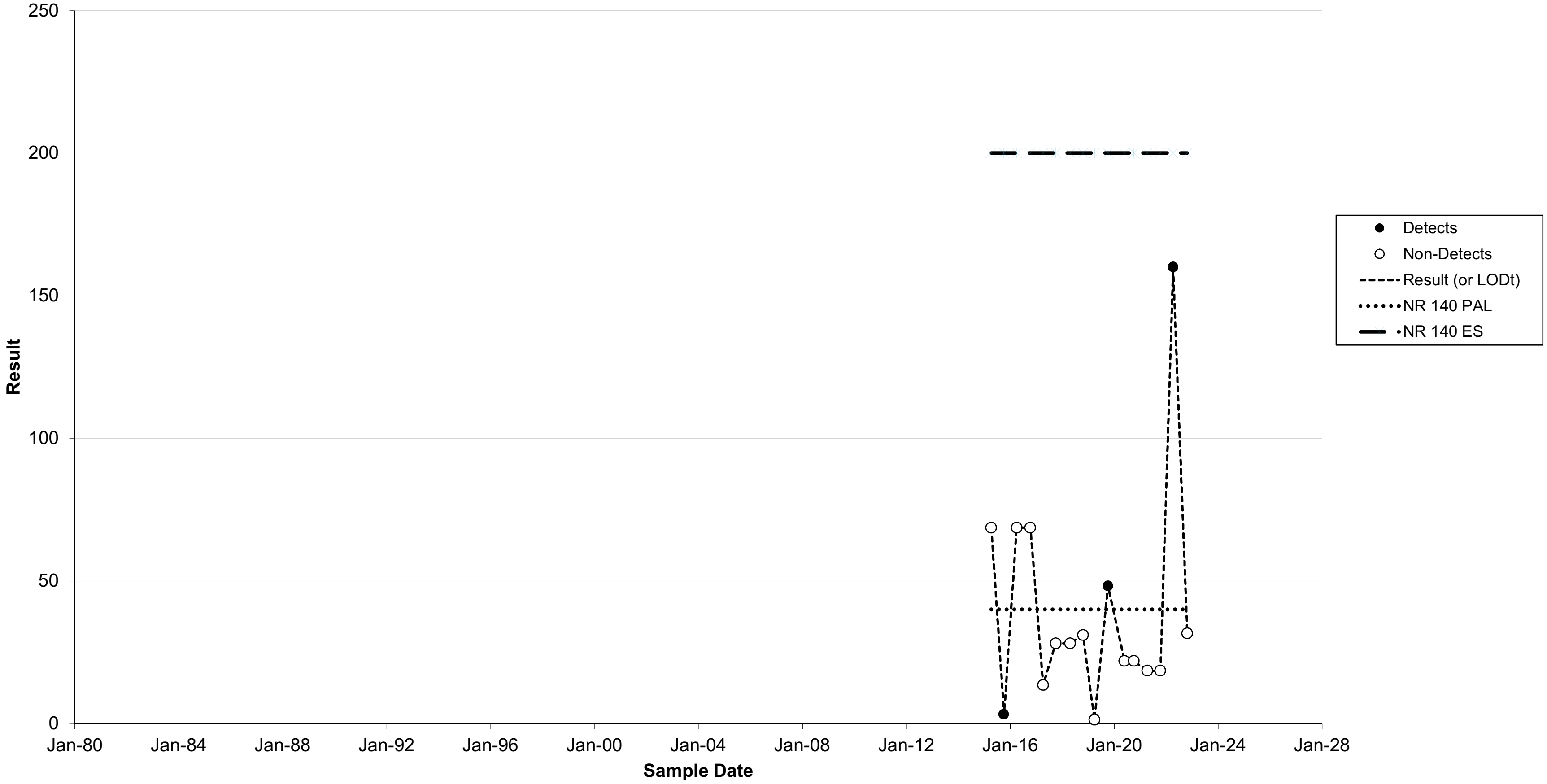
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW37A - Aluminum, dissolved (ug/l as Al)



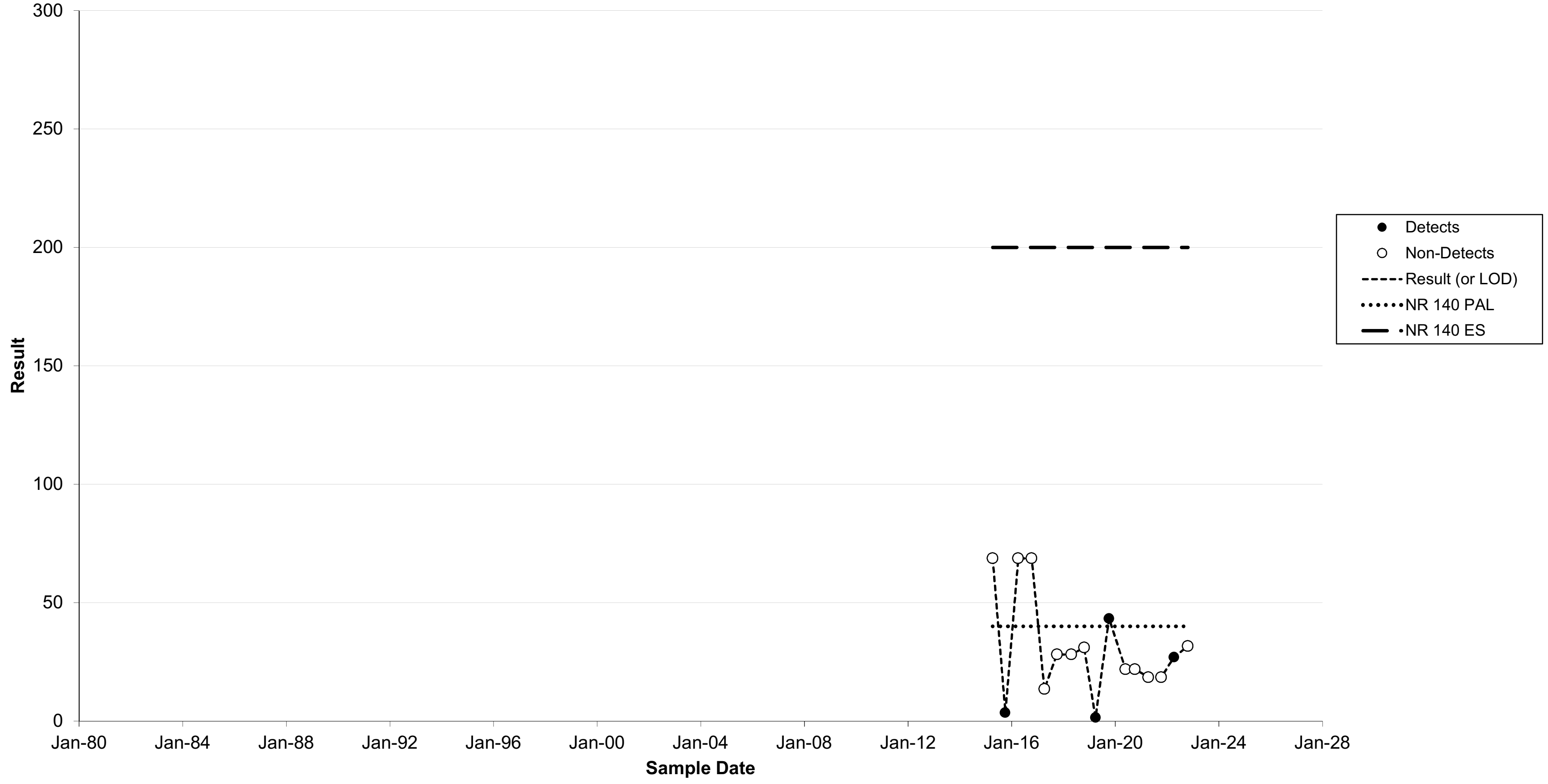
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-83 - Aluminum, dissolved (ug/l as Al)



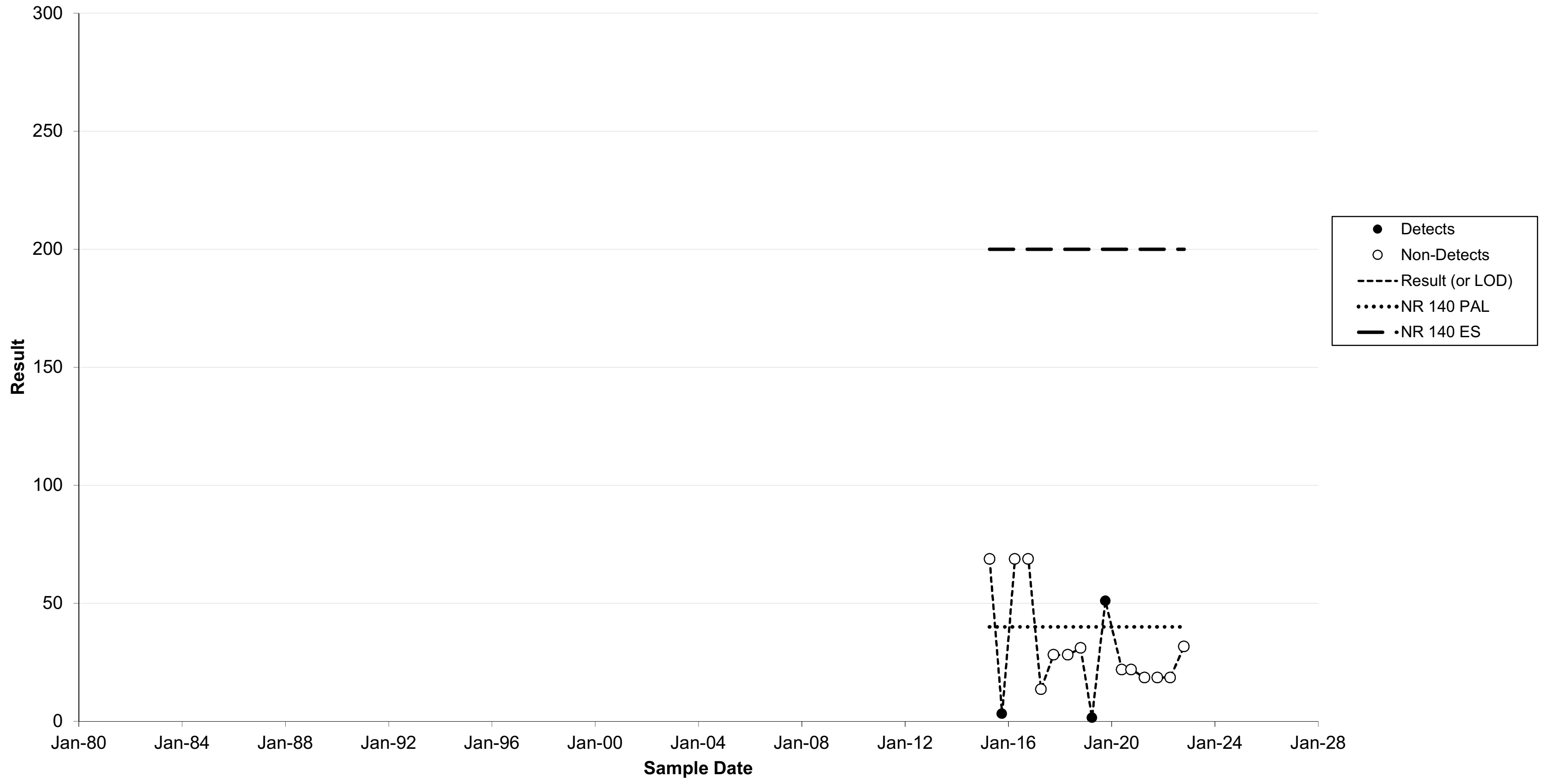
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW84A - Aluminum, dissolved (ug/l as Al)



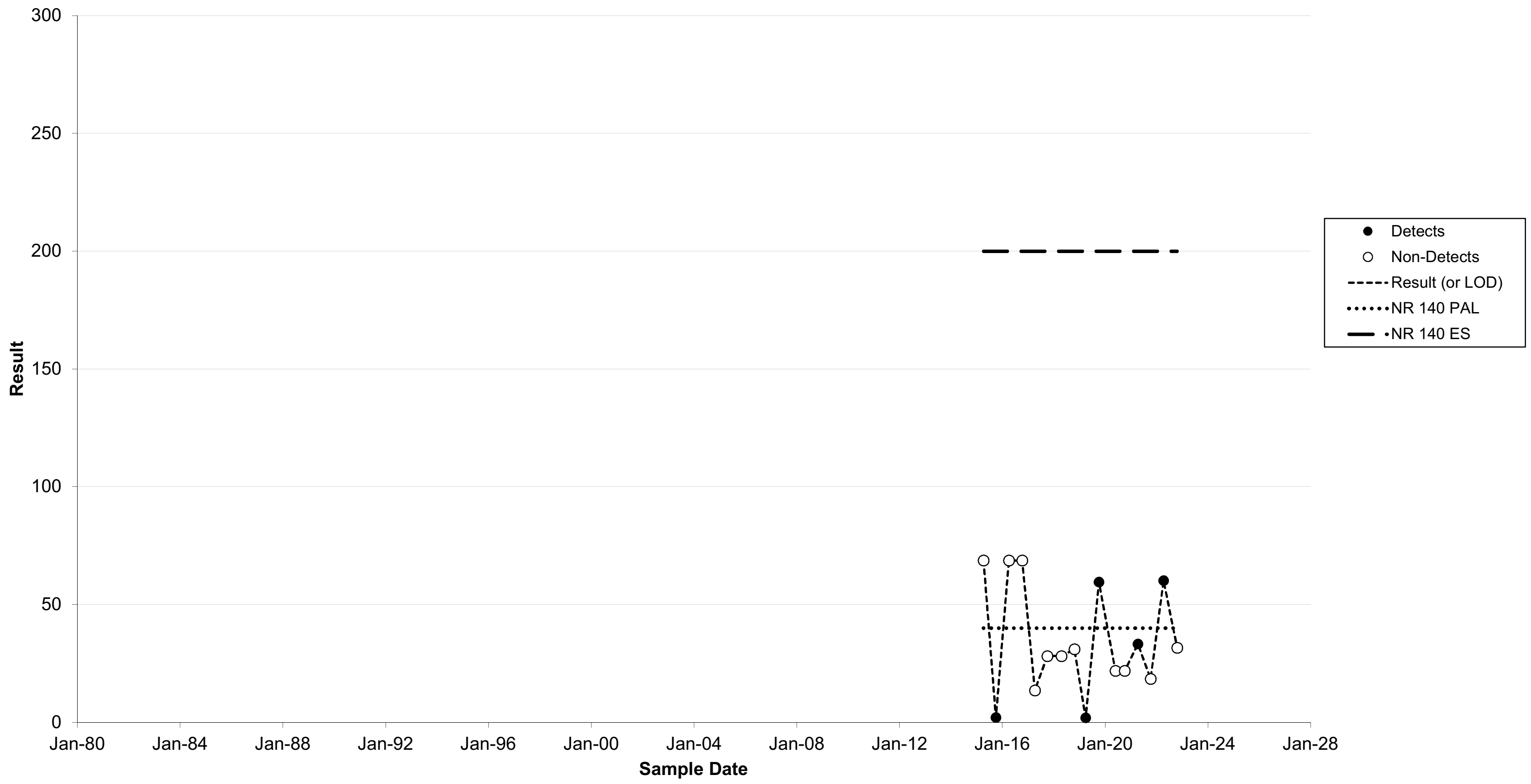
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW84B - Aluminum, dissolved (ug/l as Al)



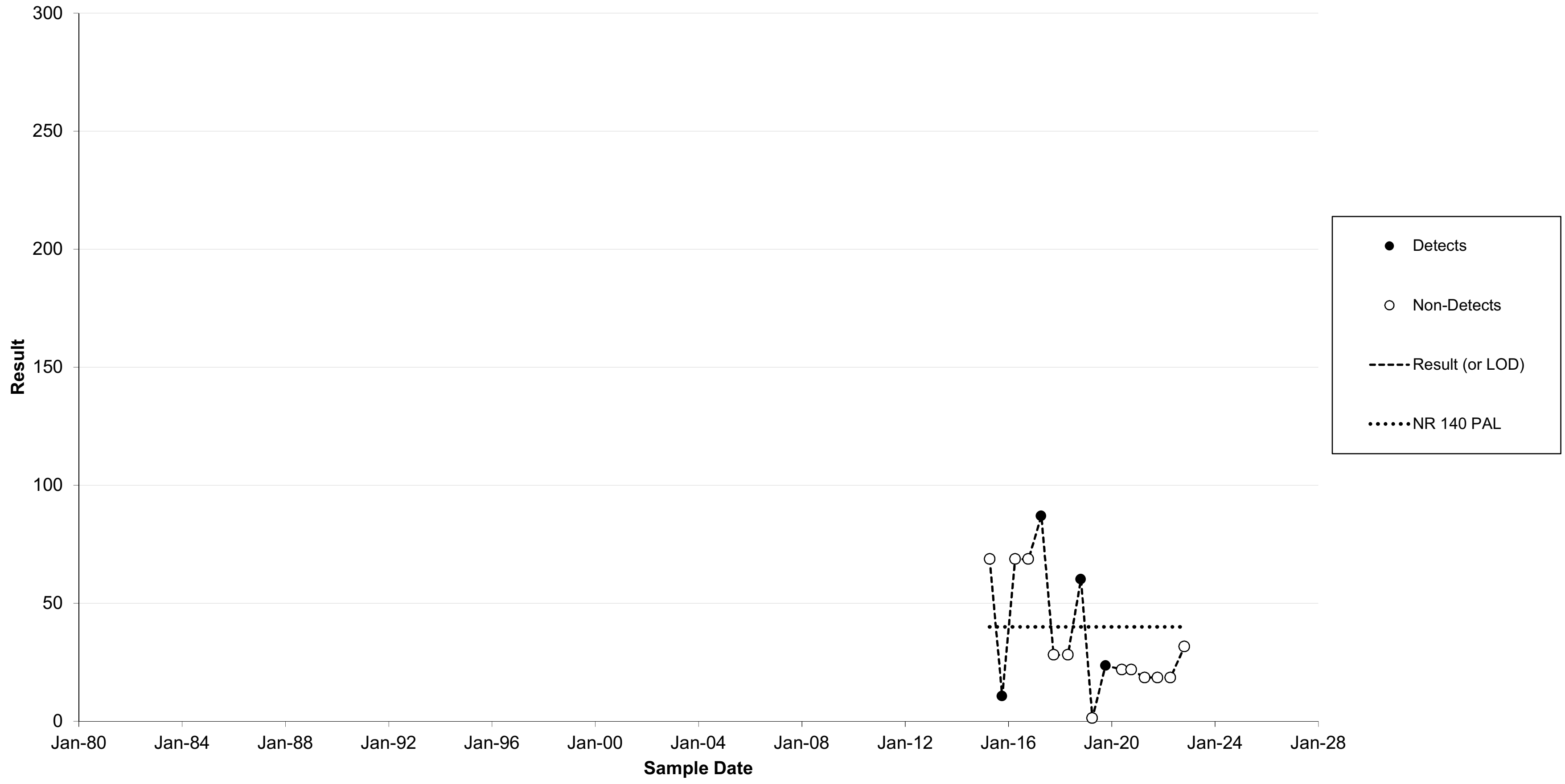
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW86 - Aluminum, dissolved (ug/l as Al)



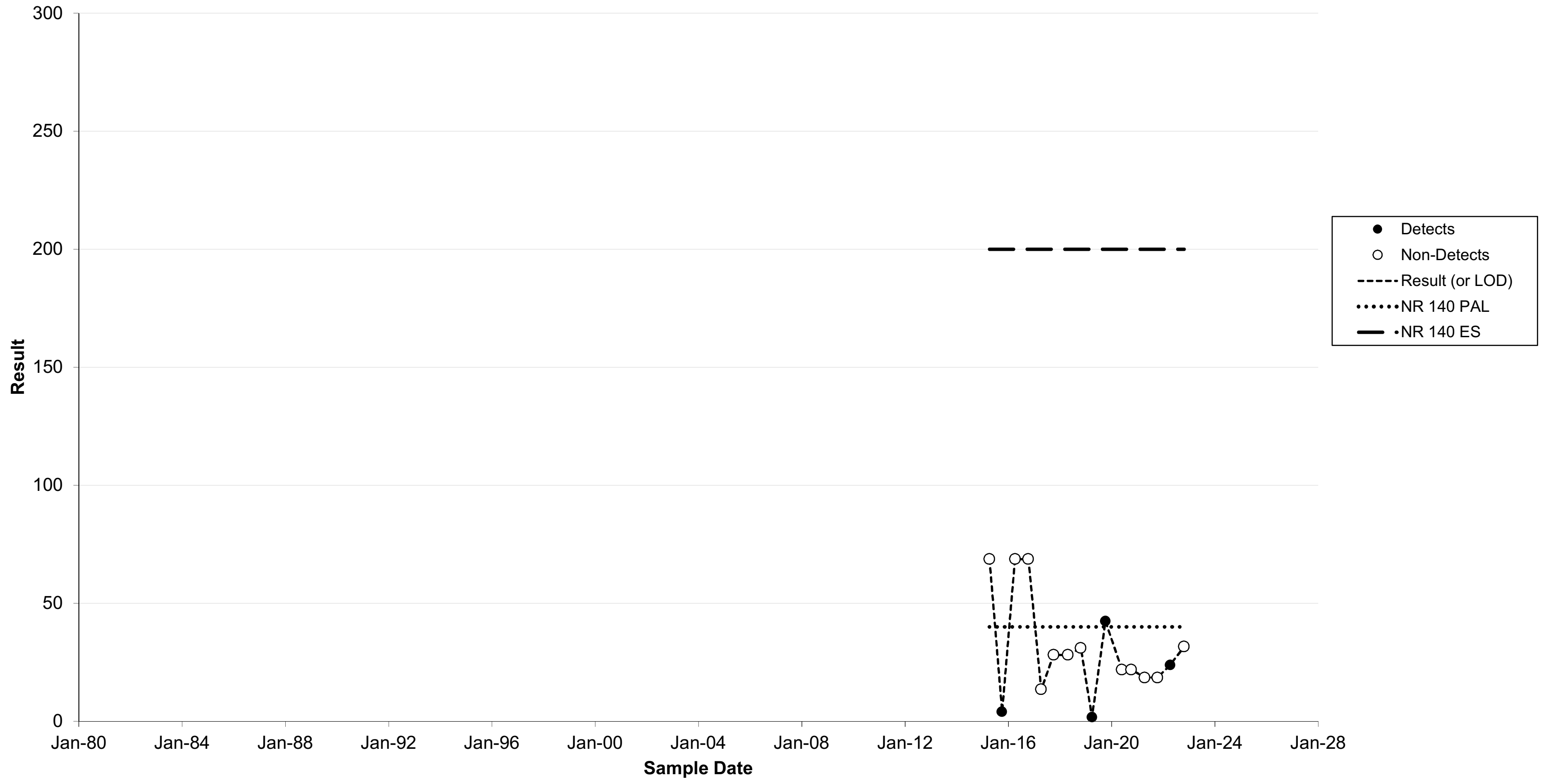
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-91AR - Aluminum, dissolved (ug/l as Al)



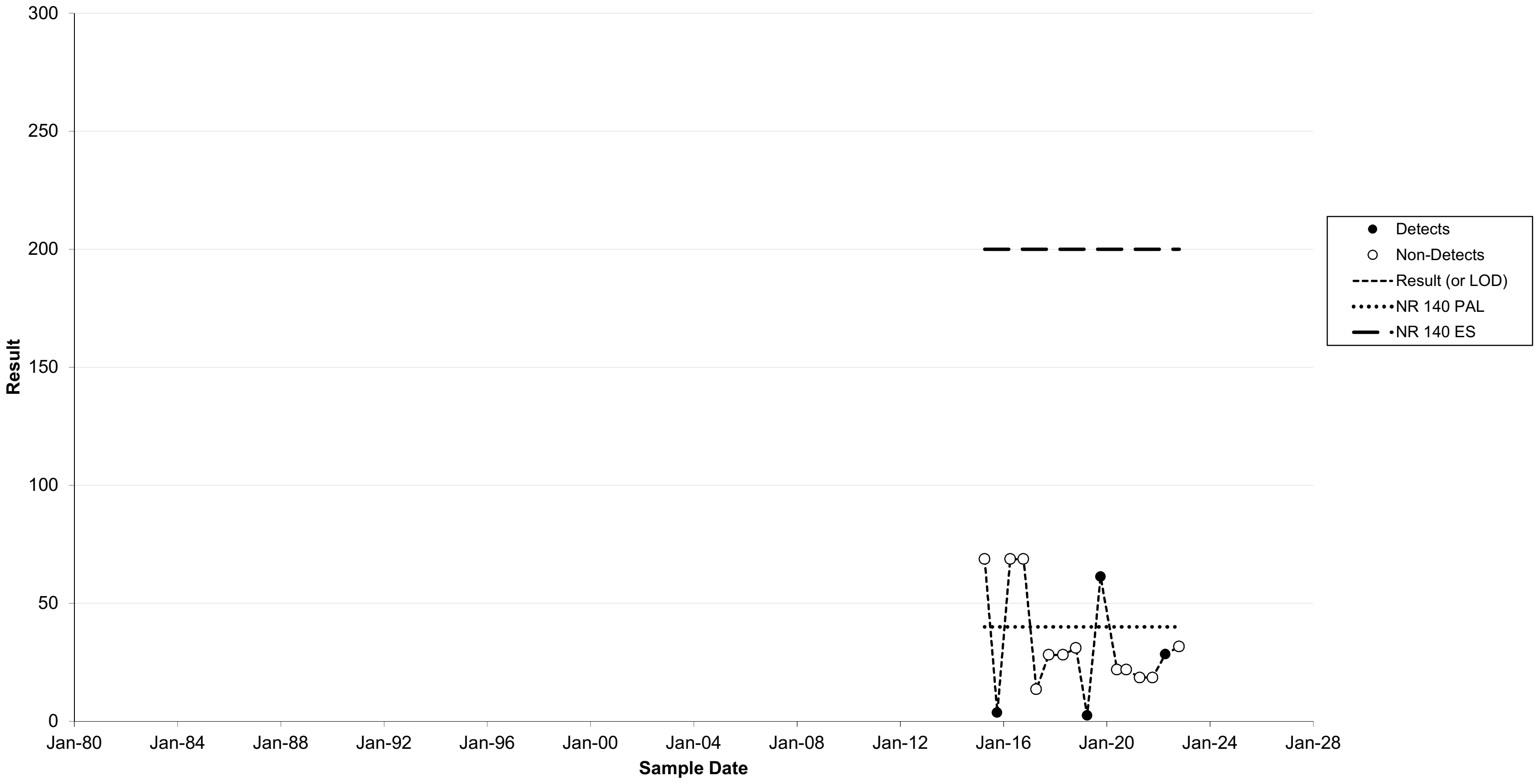
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-3 - Aluminum, total (ug/l as Al)



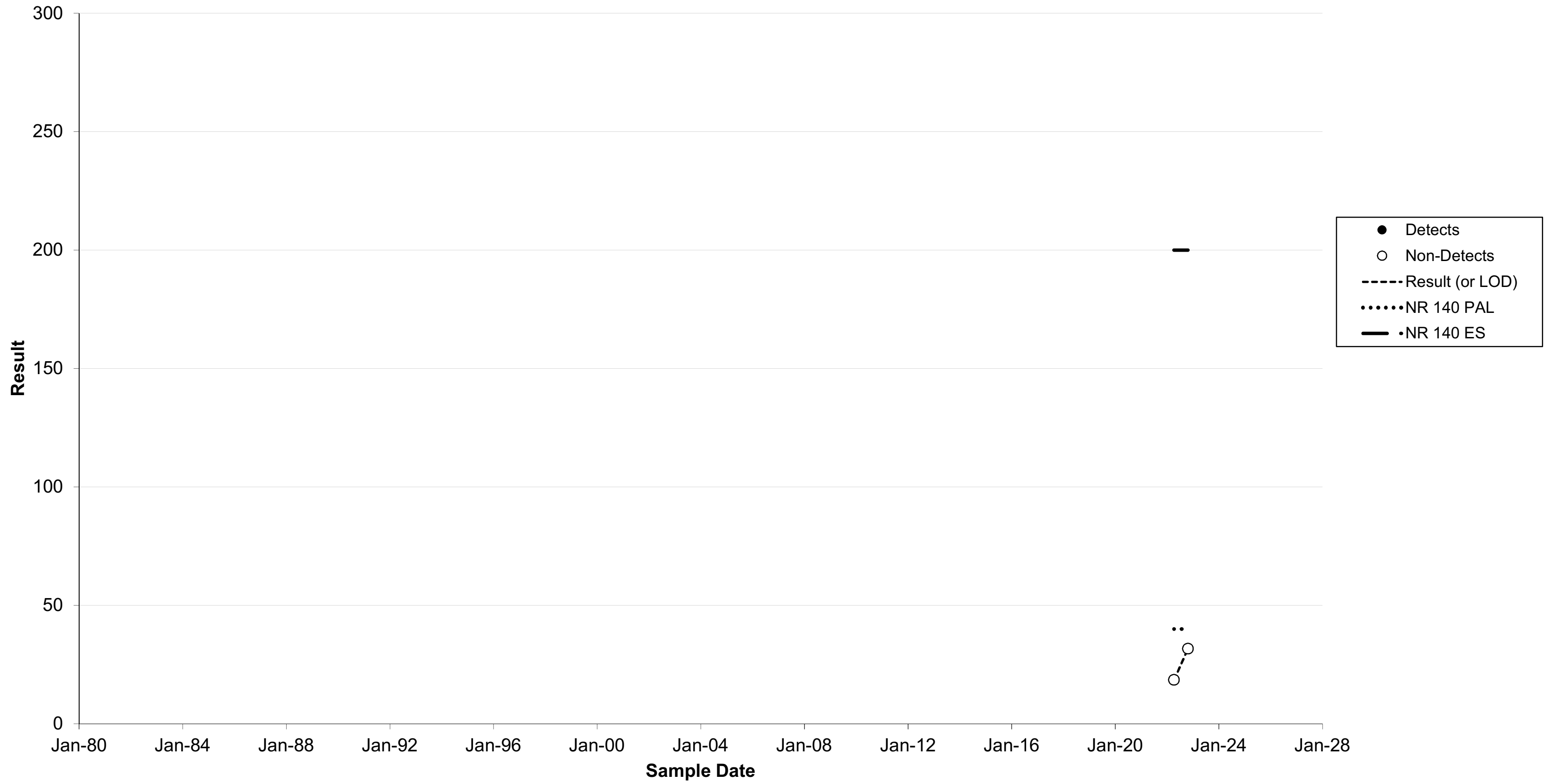
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92A - Aluminum, dissolved (ug/l as Al)



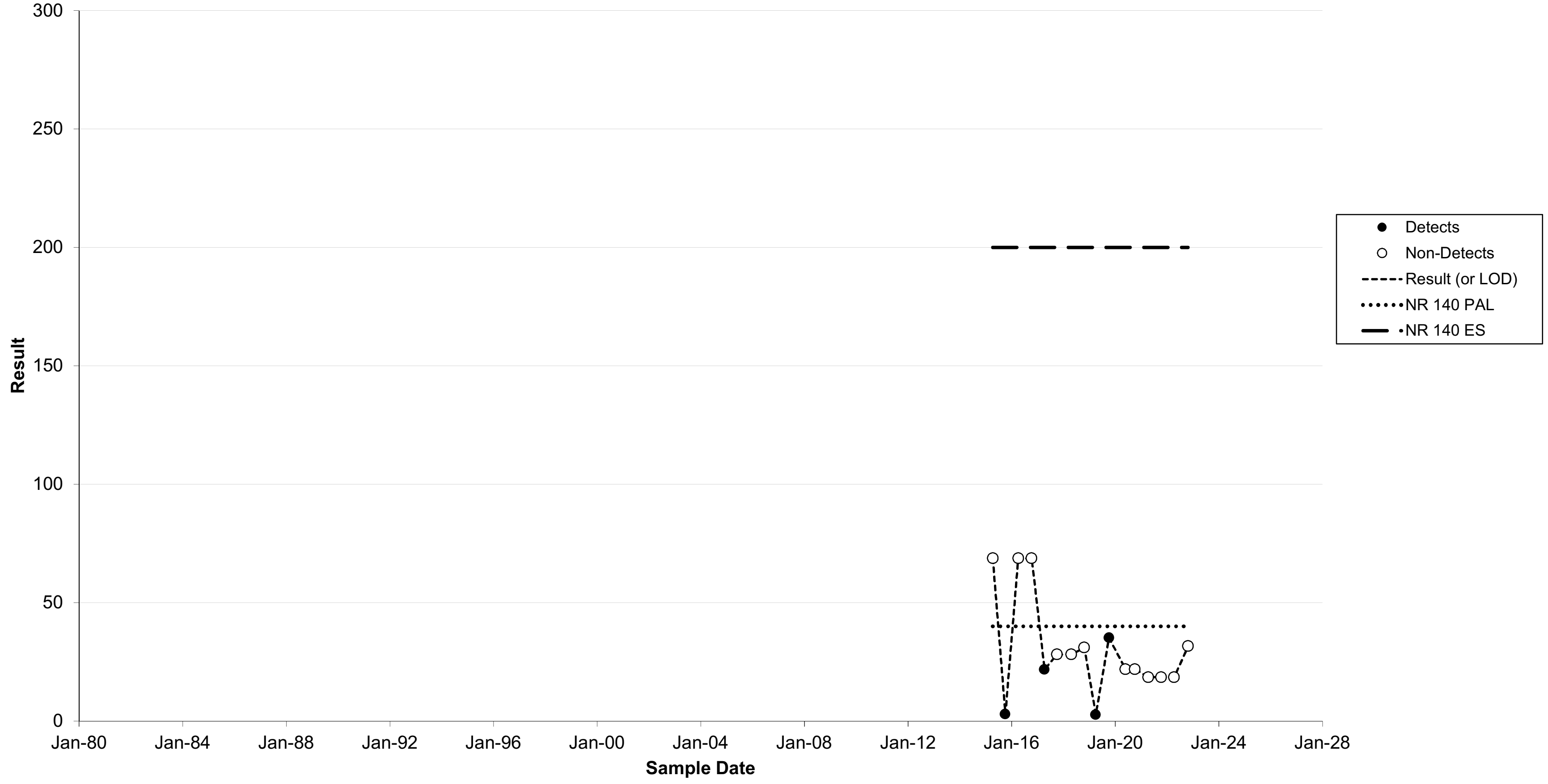
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92B - Aluminum, dissolved (ug/l as Al)



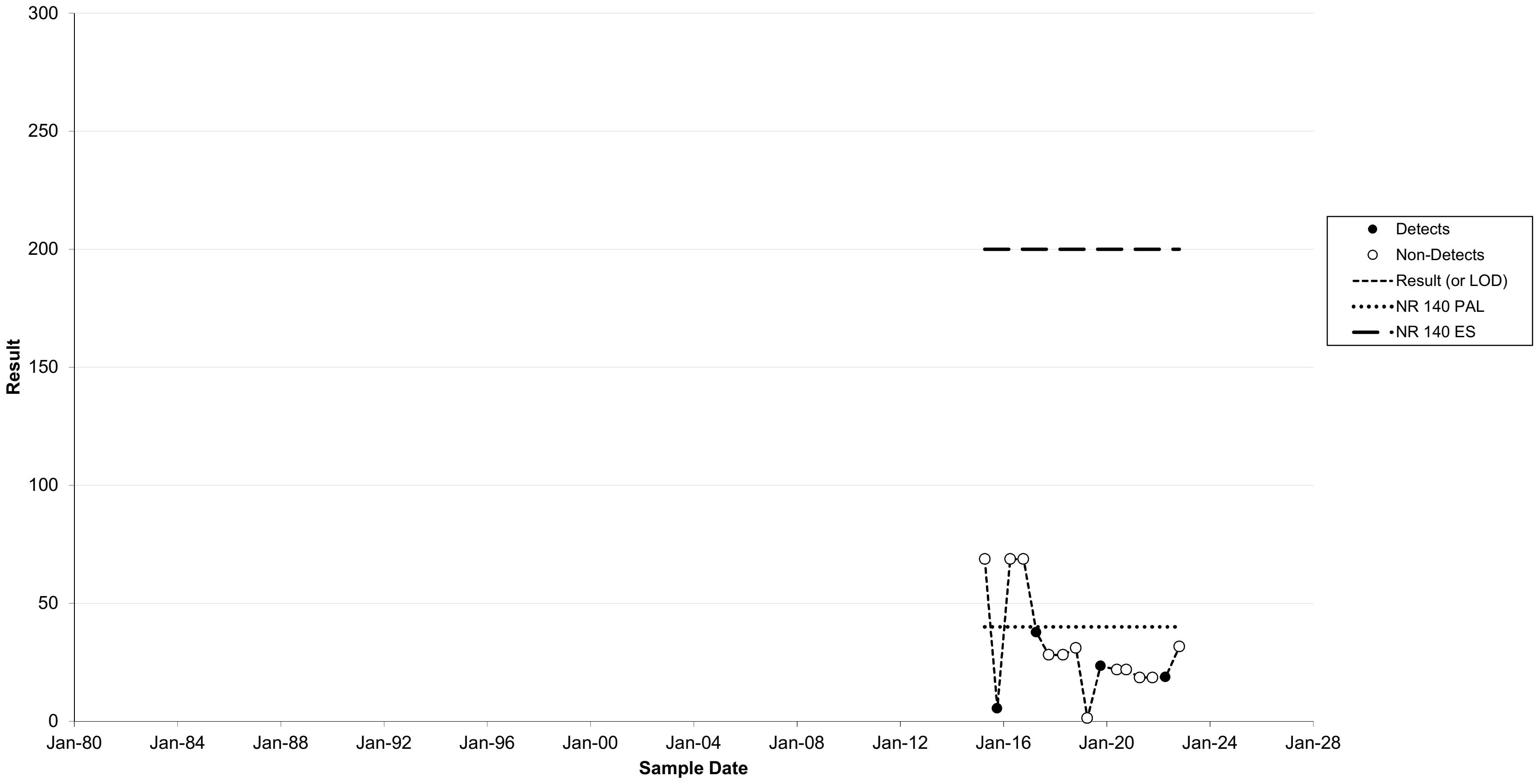
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-93A - Aluminum, dissolved (ug/l as Al)



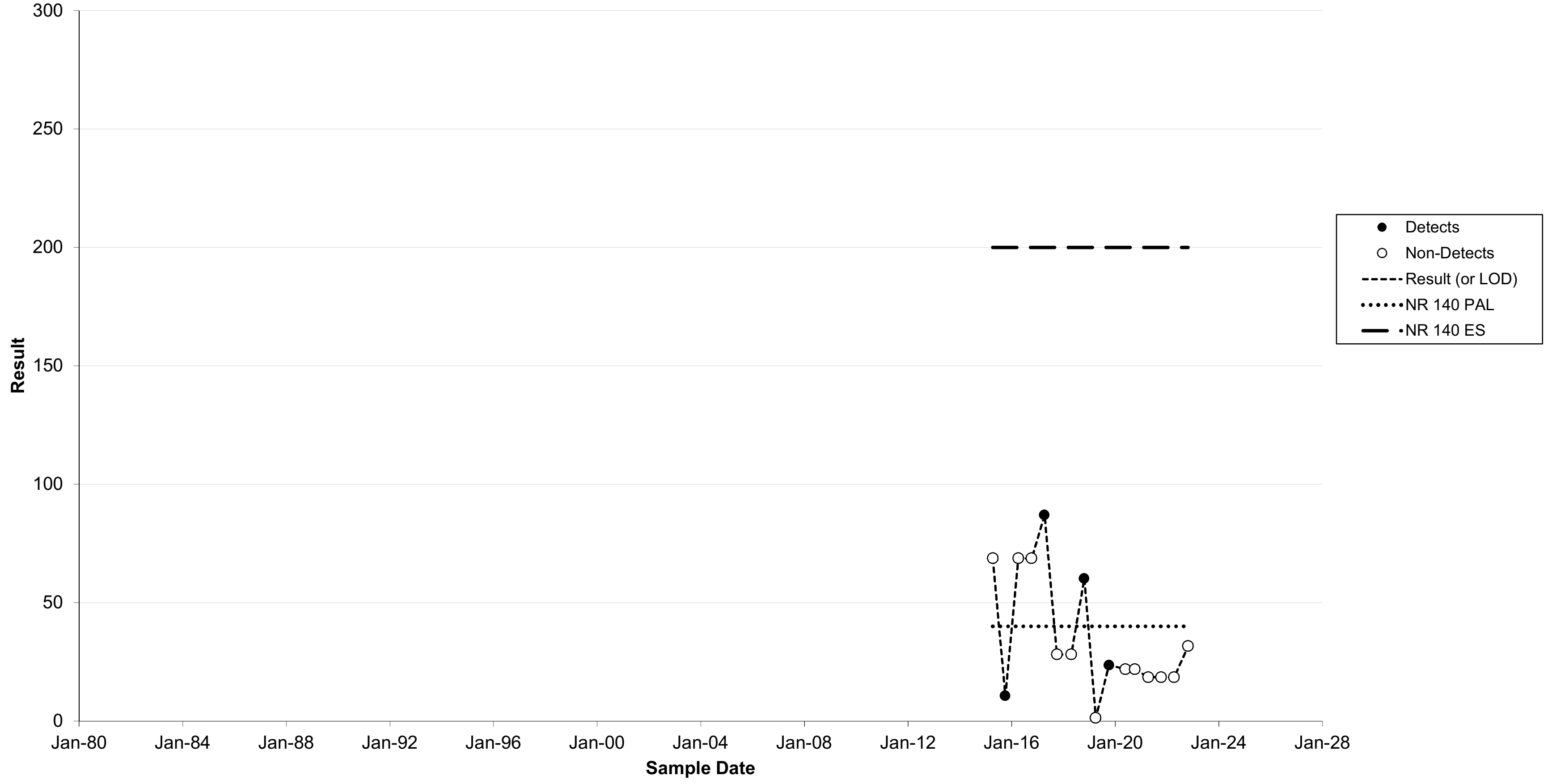
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-1 - Aluminum, total (ug/l as Al)



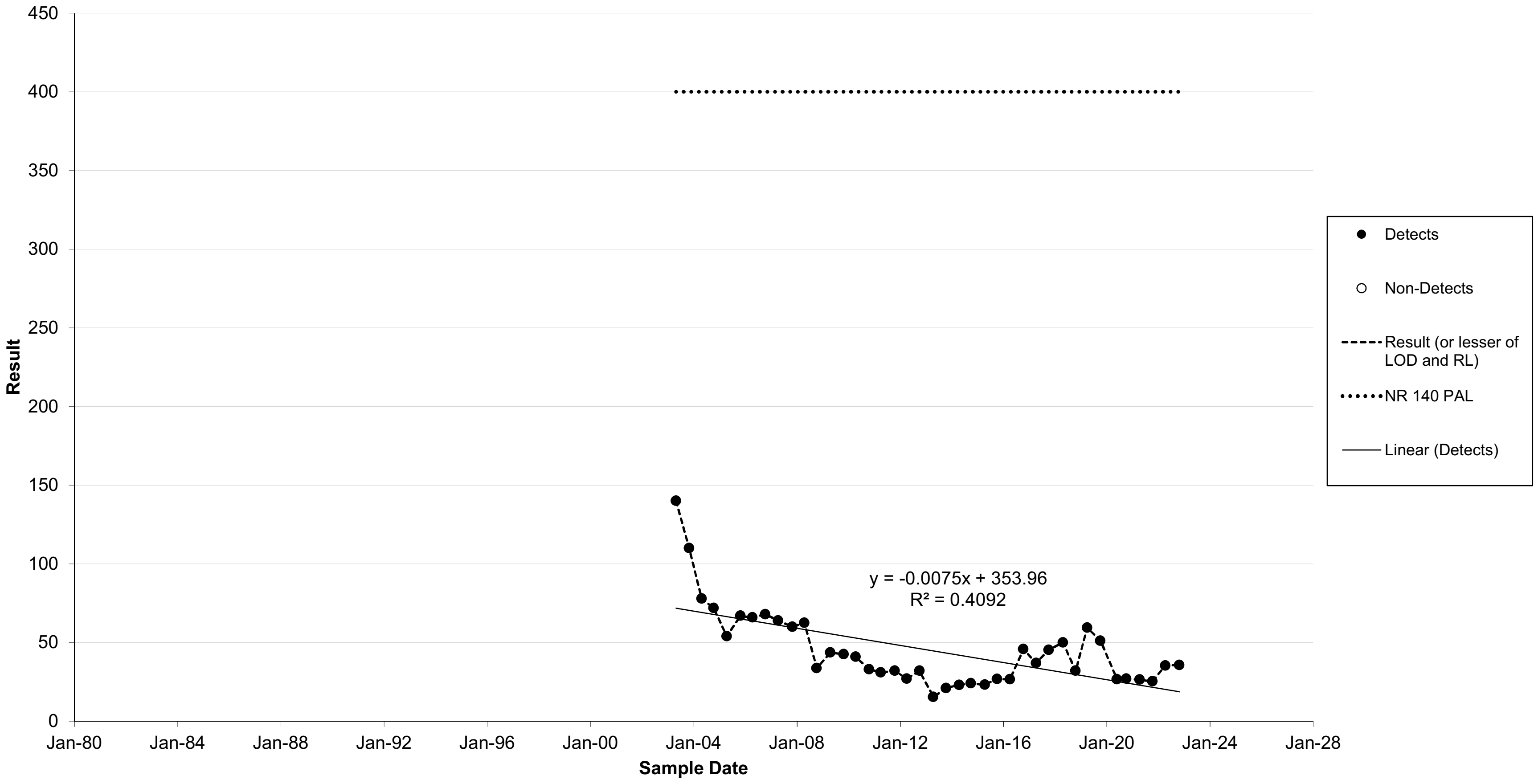
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-2 - Aluminum, total (ug/l as Al)



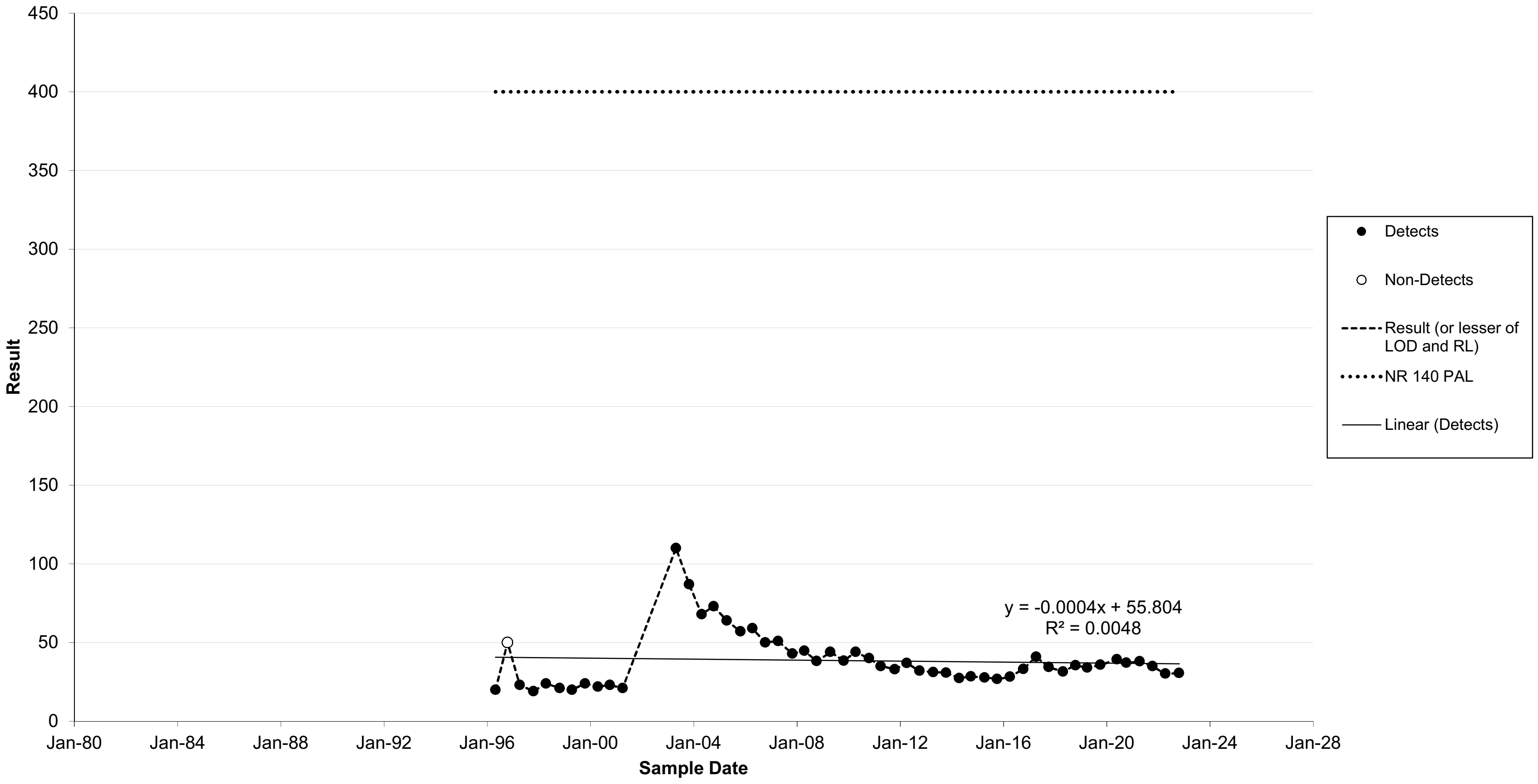
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-3 - Aluminum, total (ug/l as Al)



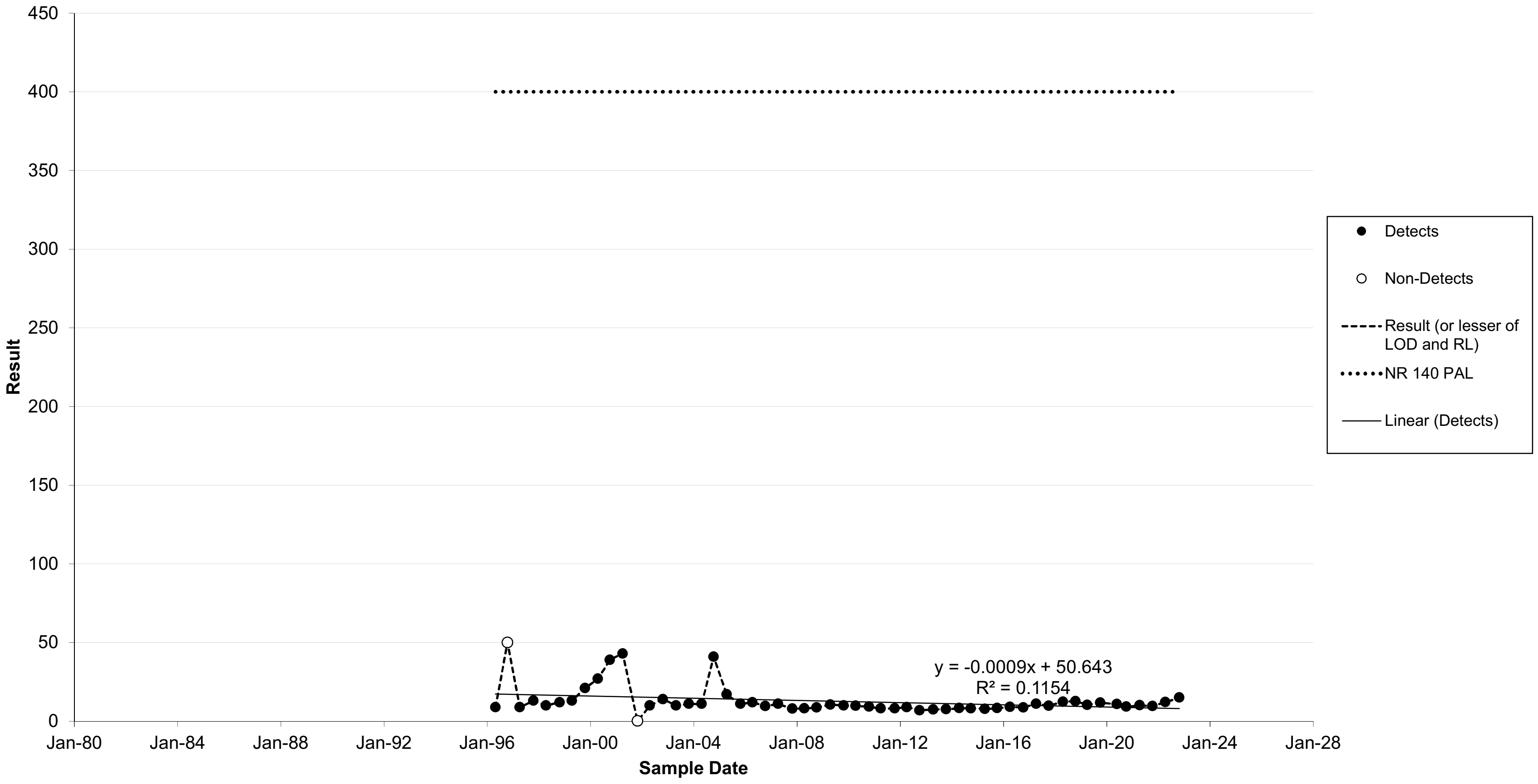
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33AR - Barium, dissolved (ug/l as Ba)



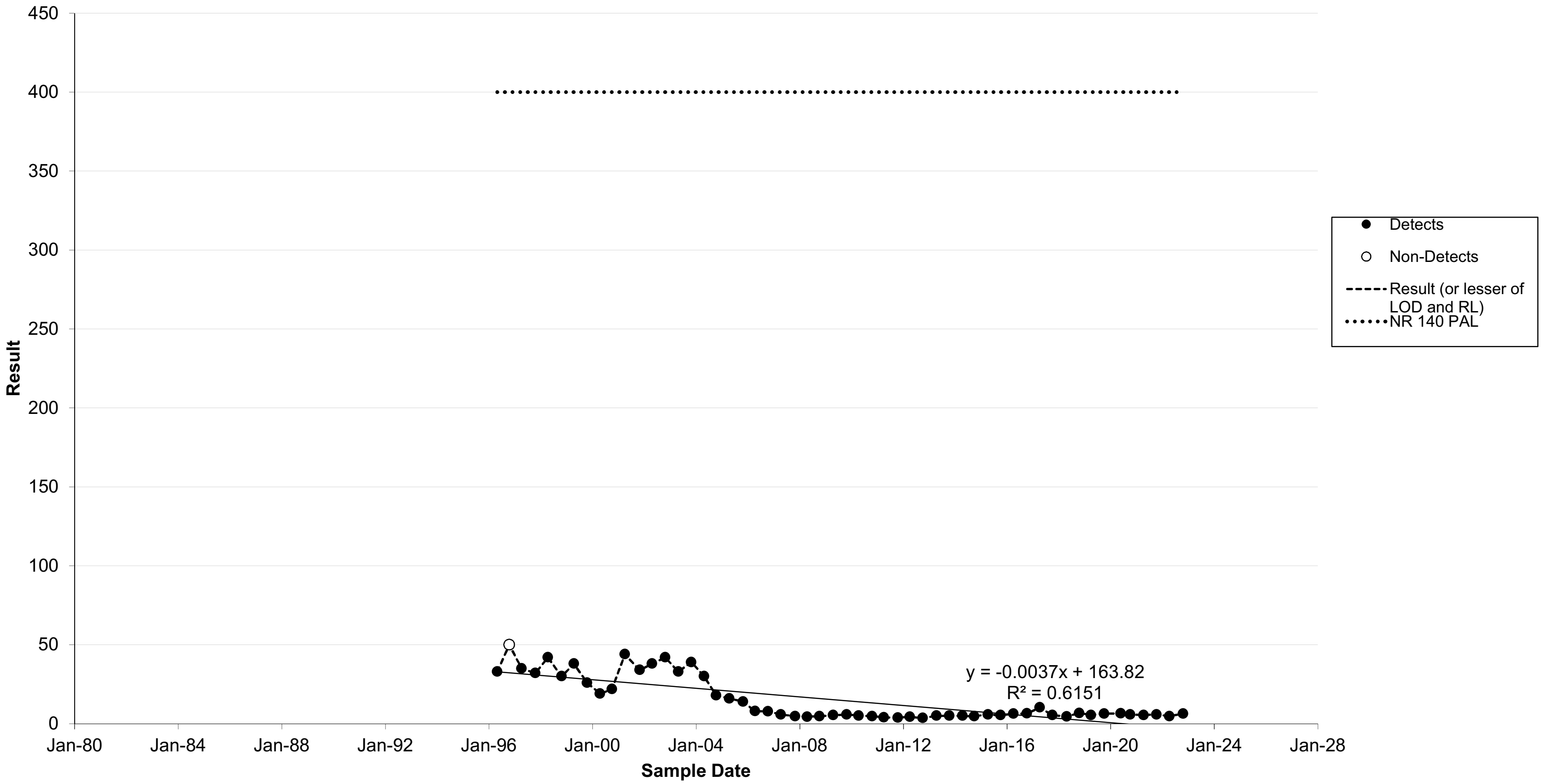
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33B - Barium, dissolved (ug/l as Ba)



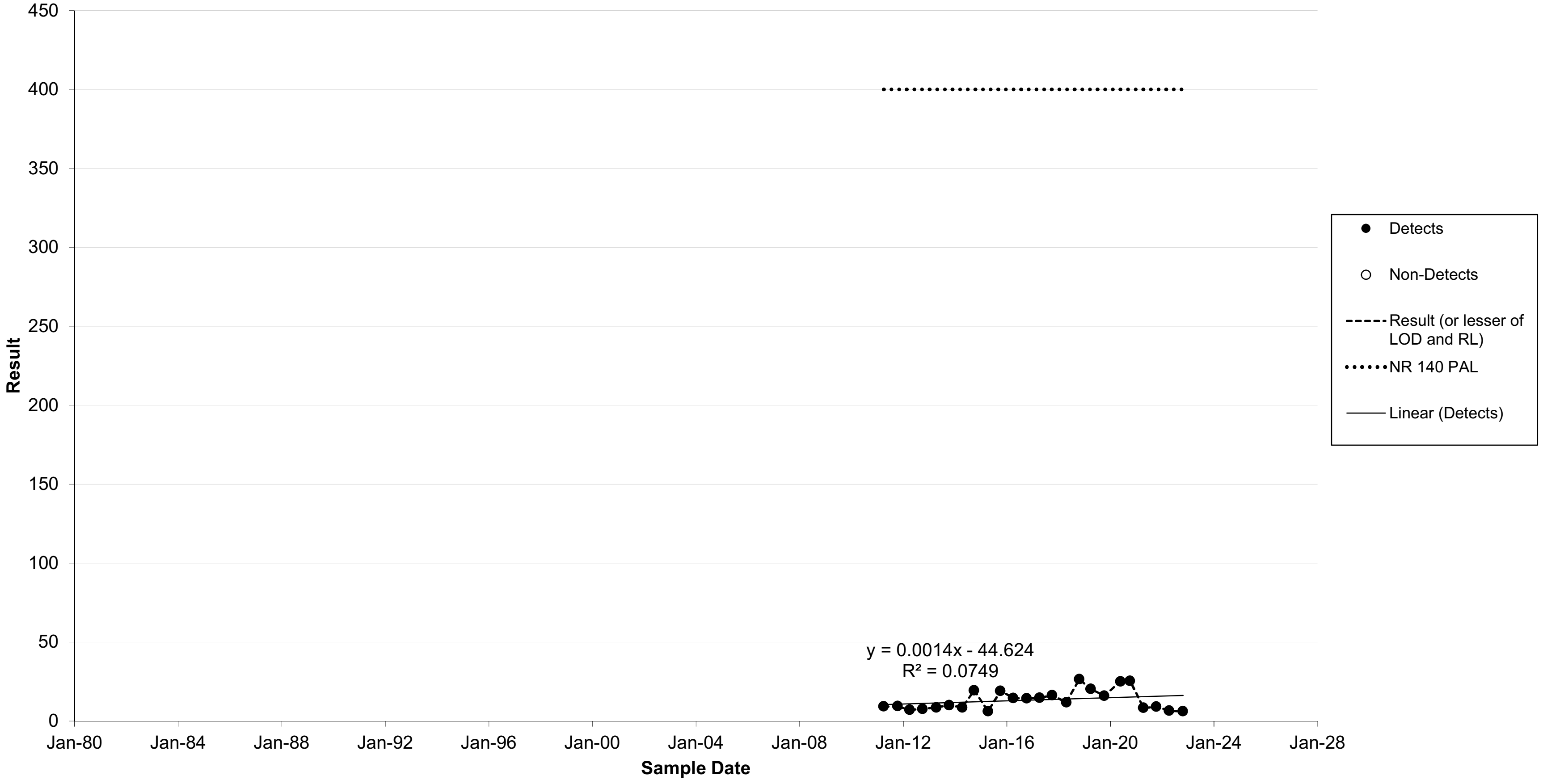
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-34A - Barium, dissolved (ug/l as Ba)



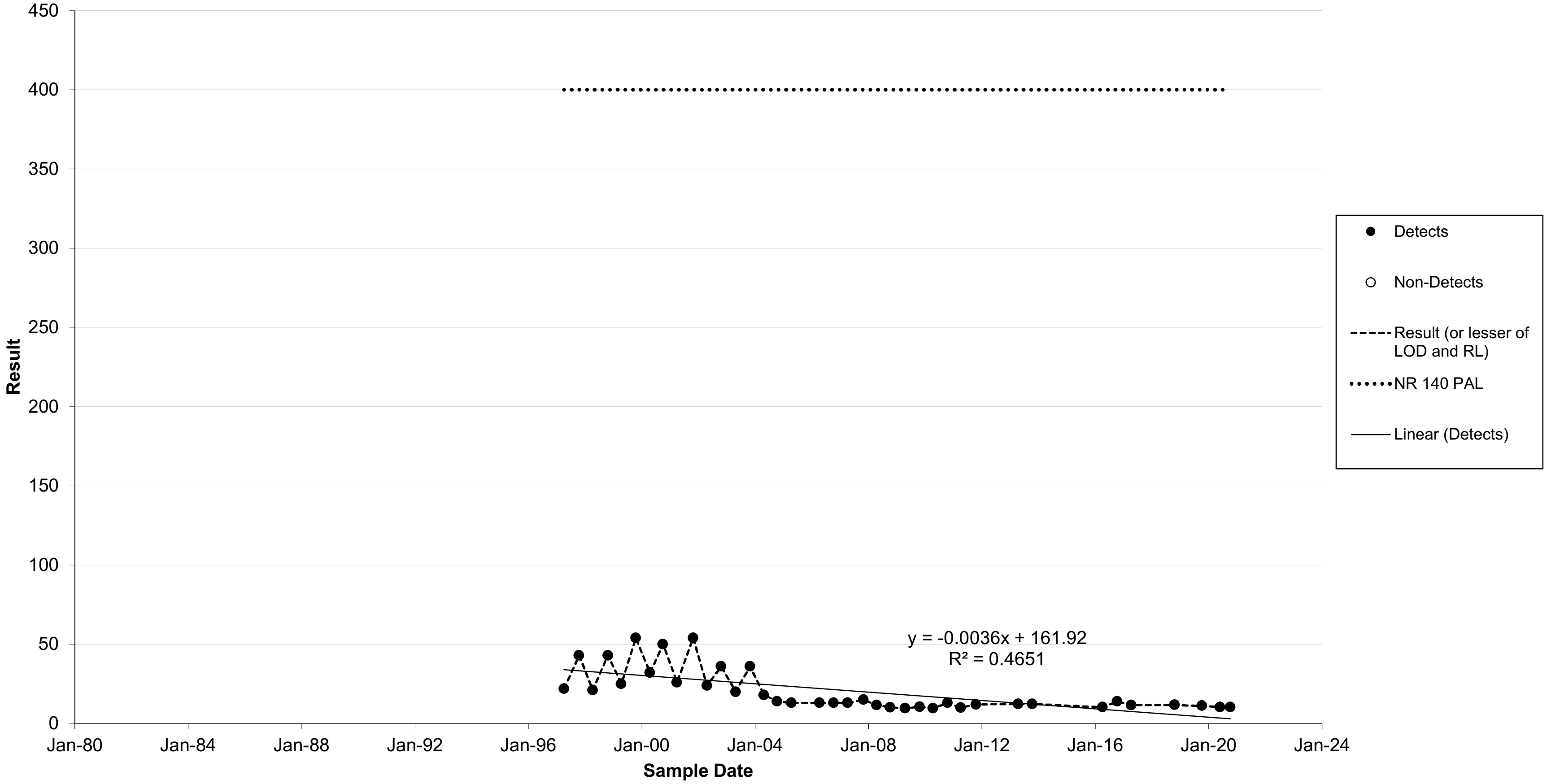
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-34B - Barium, dissolved (ug/l as Ba)



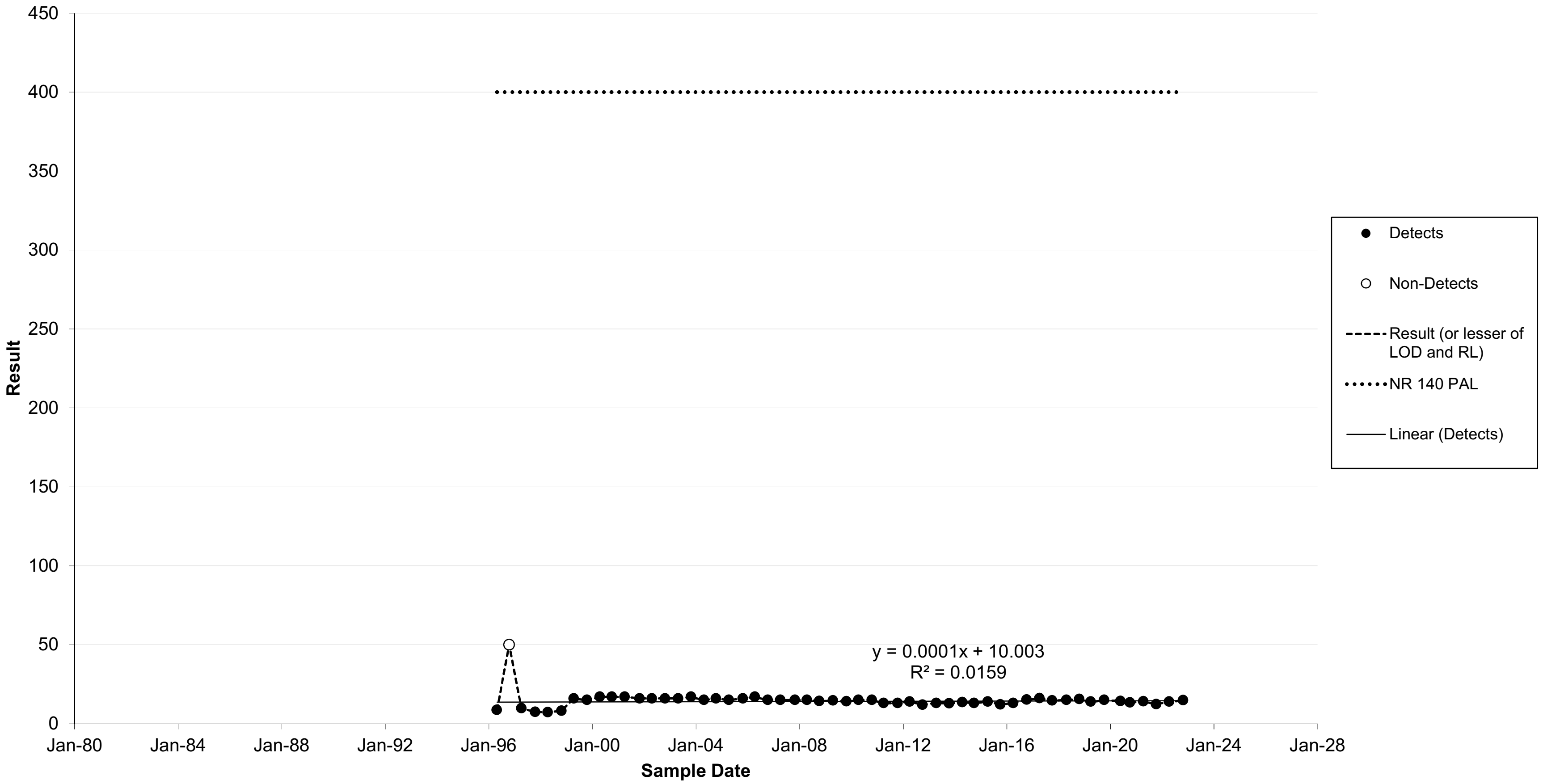
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-37A - Barium, dissolved (ug/l as Ba)



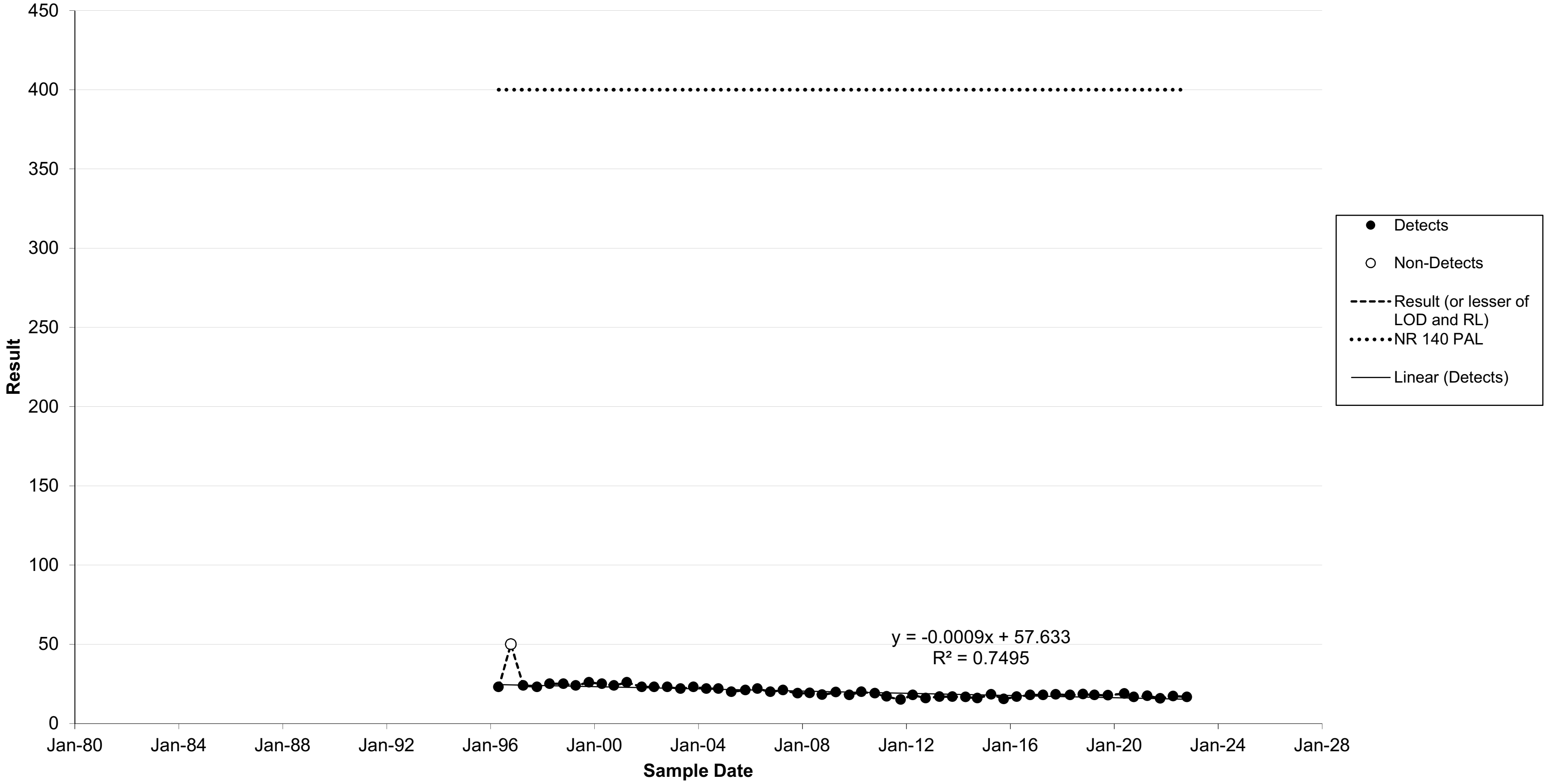
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-83 - Barium, dissolved (ug/l as Ba)



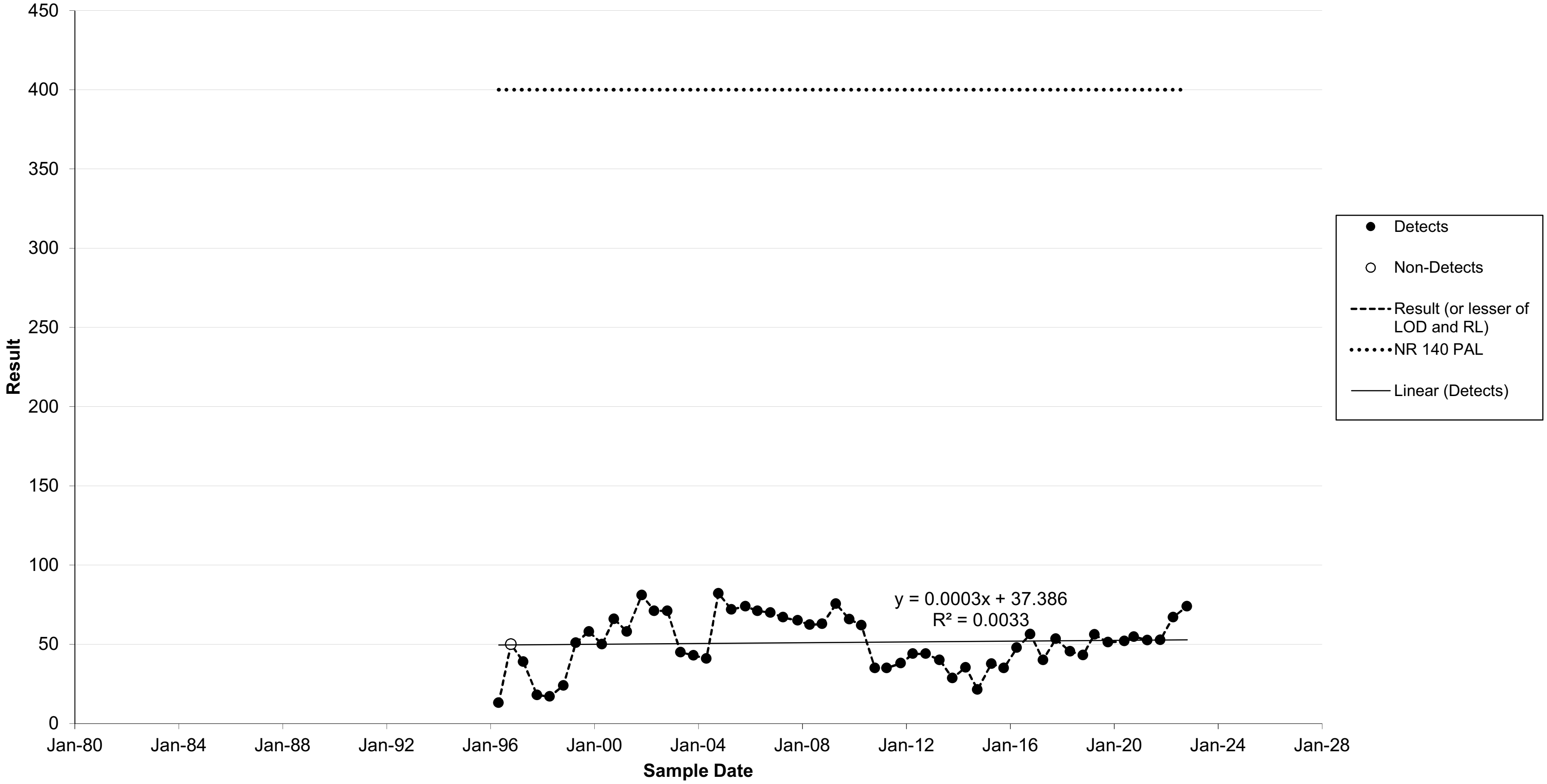
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-84A - Barium, dissolved (ug/l as Ba)



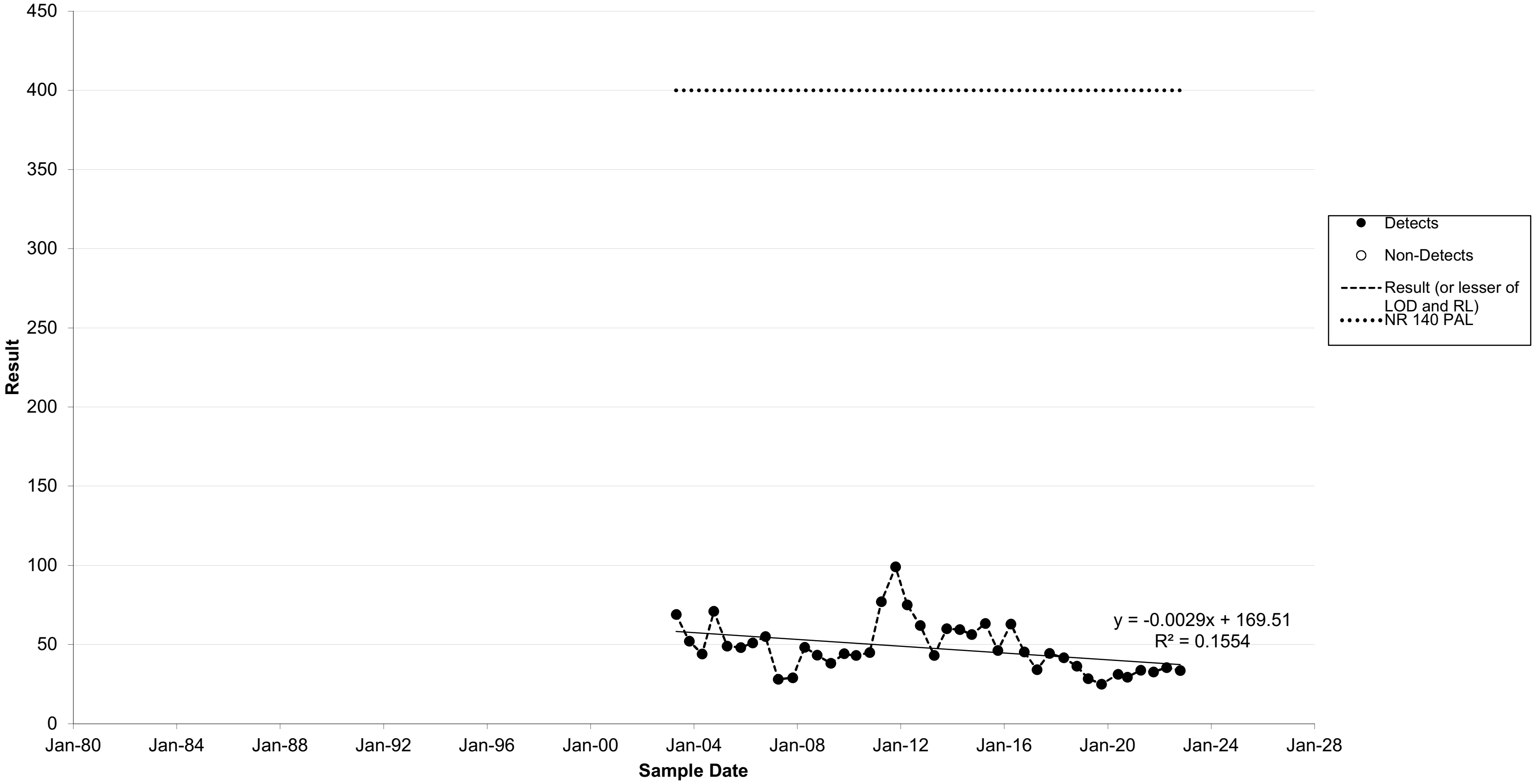
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-84B - Barium, dissolved (ug/l as Ba)



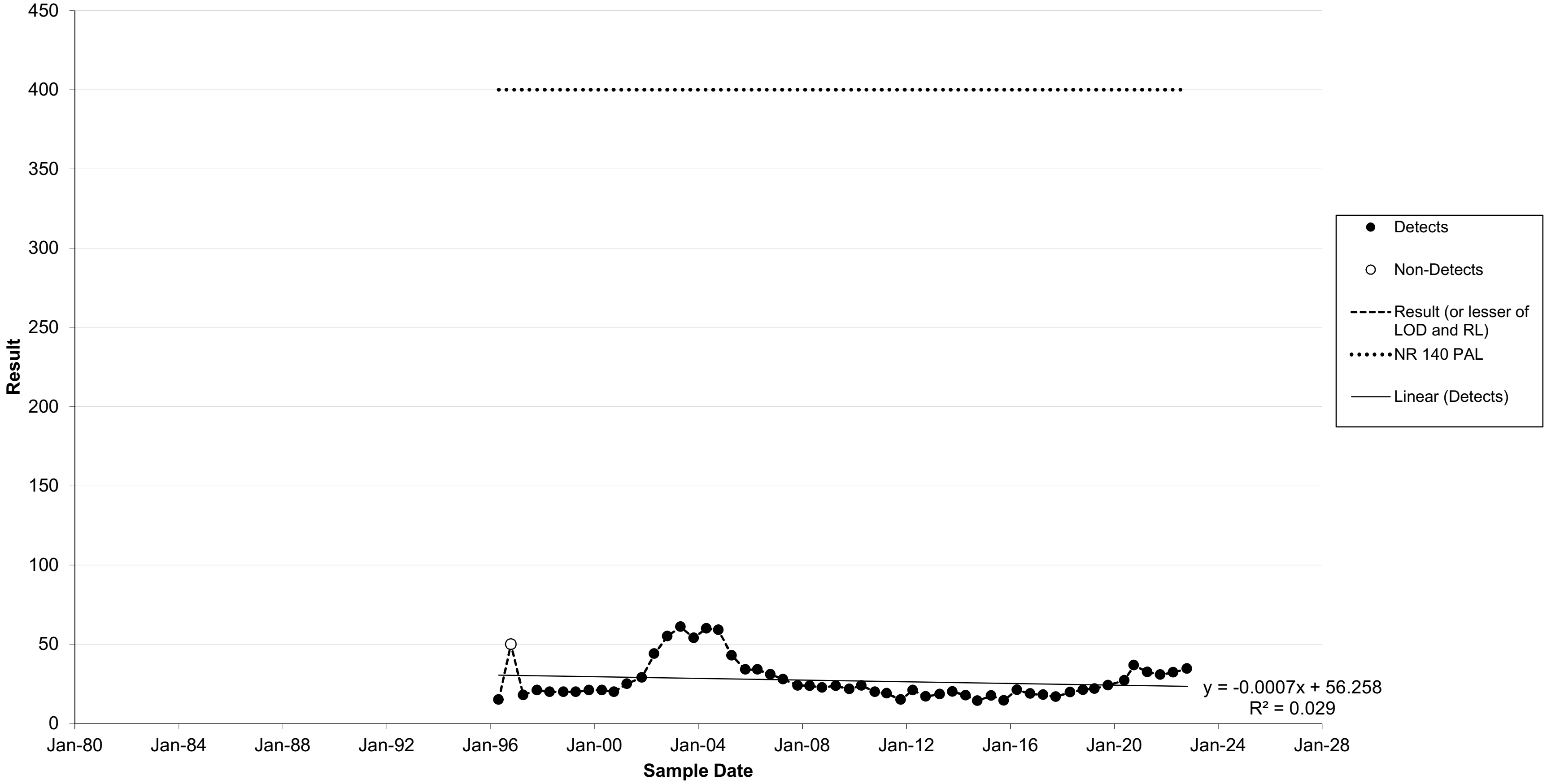
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-86 - Barium, dissolved (ug/l as Ba)



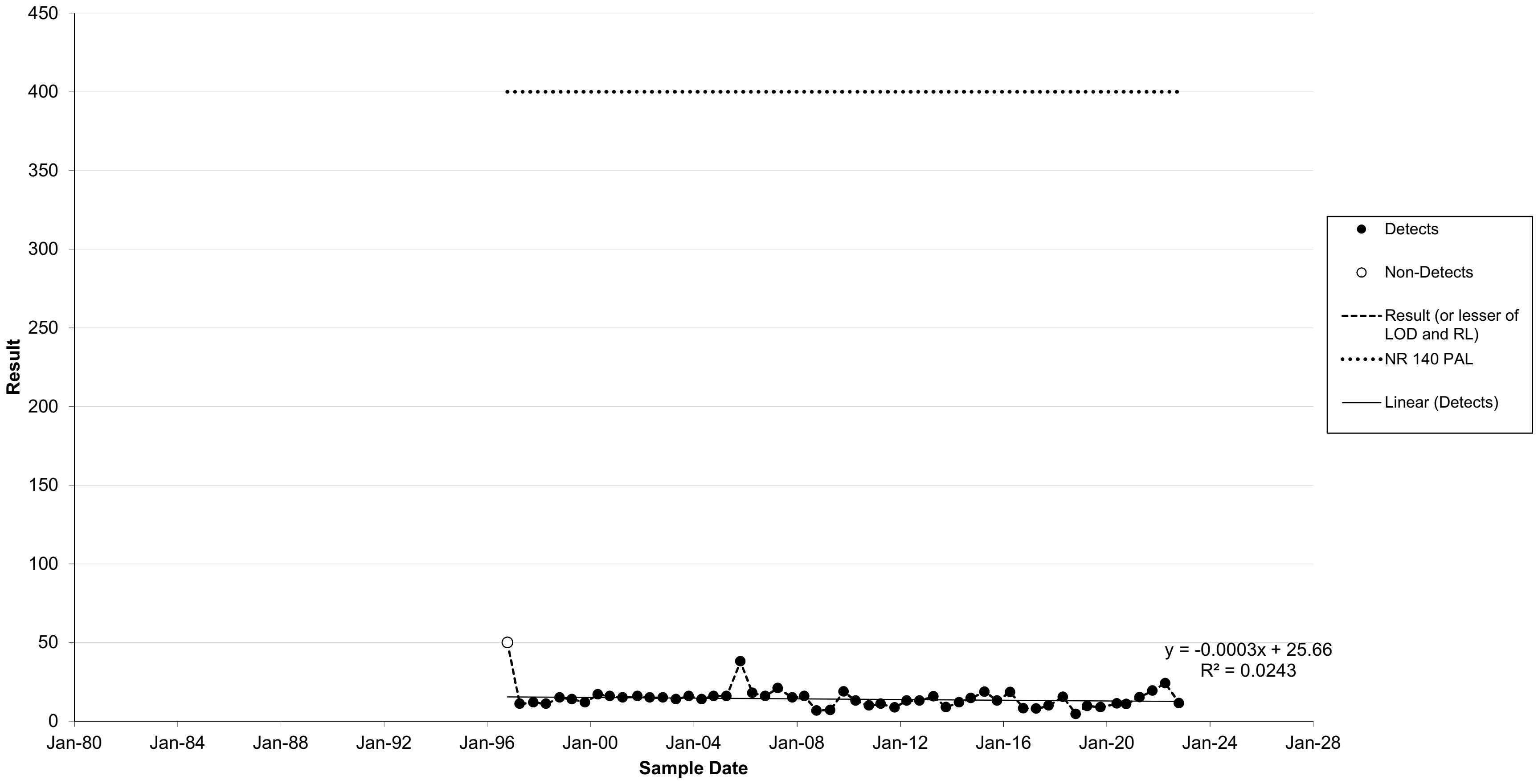
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-91AR - Barium, dissolved (ug/l as Ba)



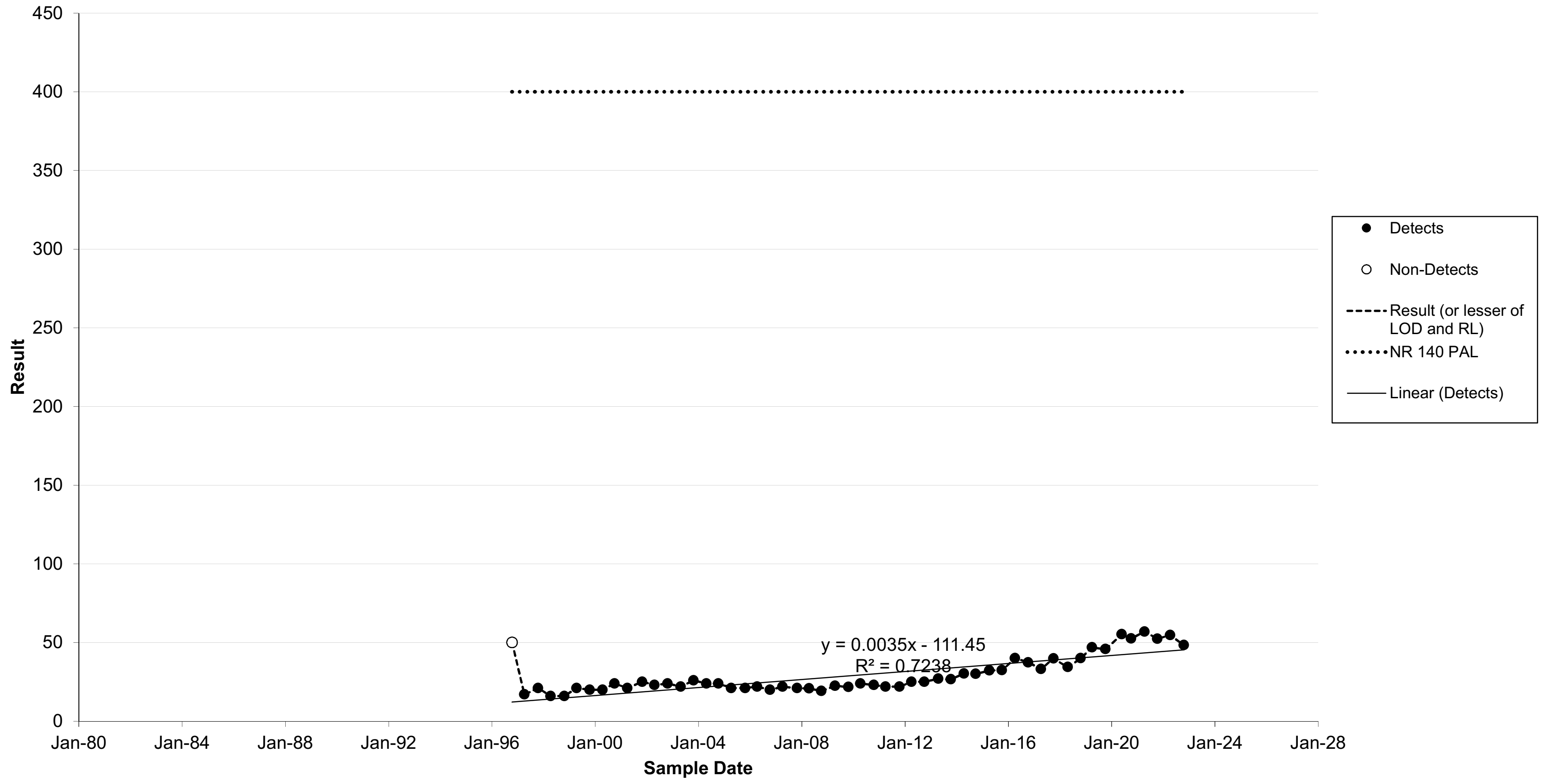
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-91B - Barium, dissolved (ug/l as Ba)



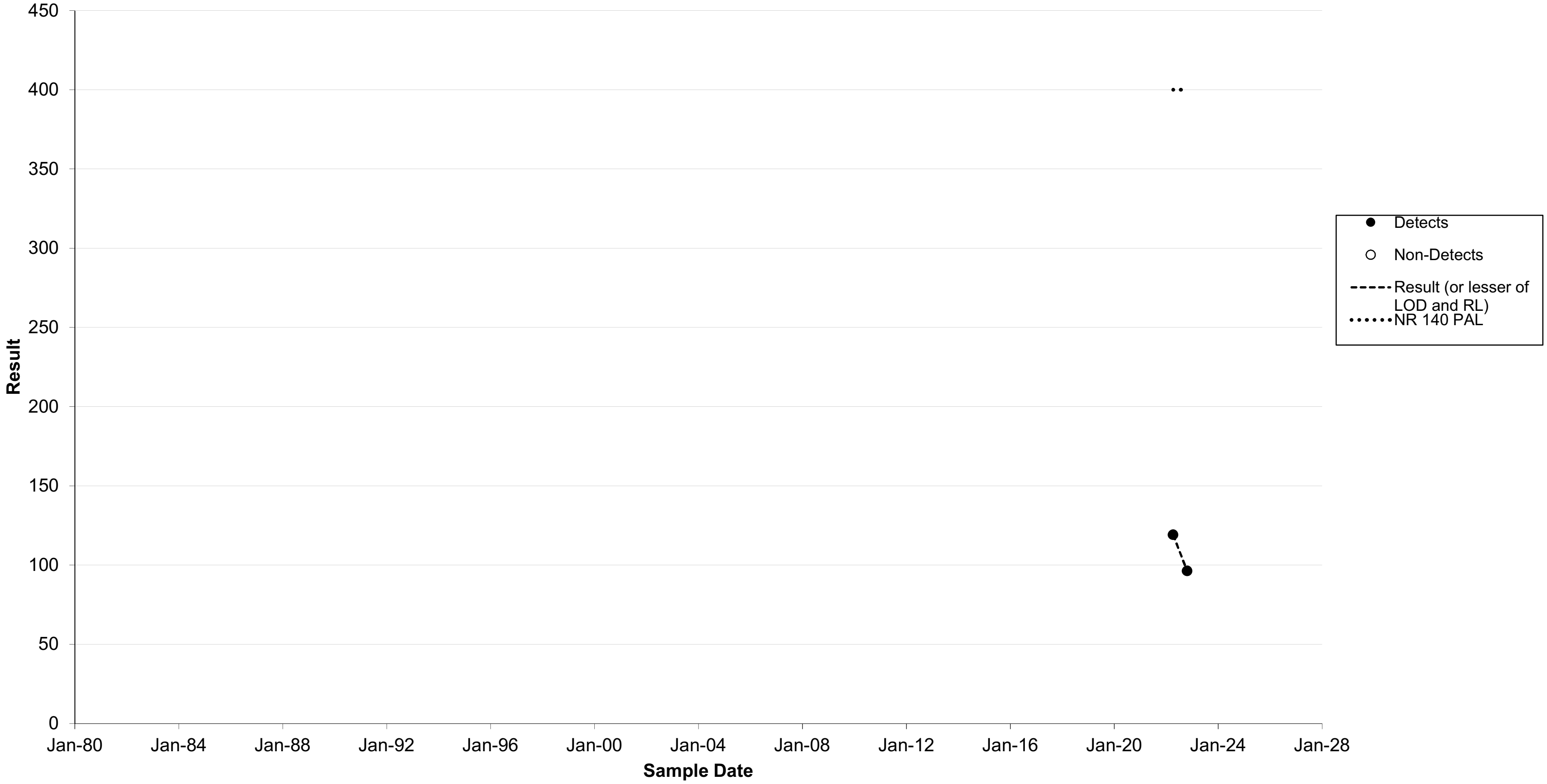
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92A - Barium, dissolved (ug/l as Ba)



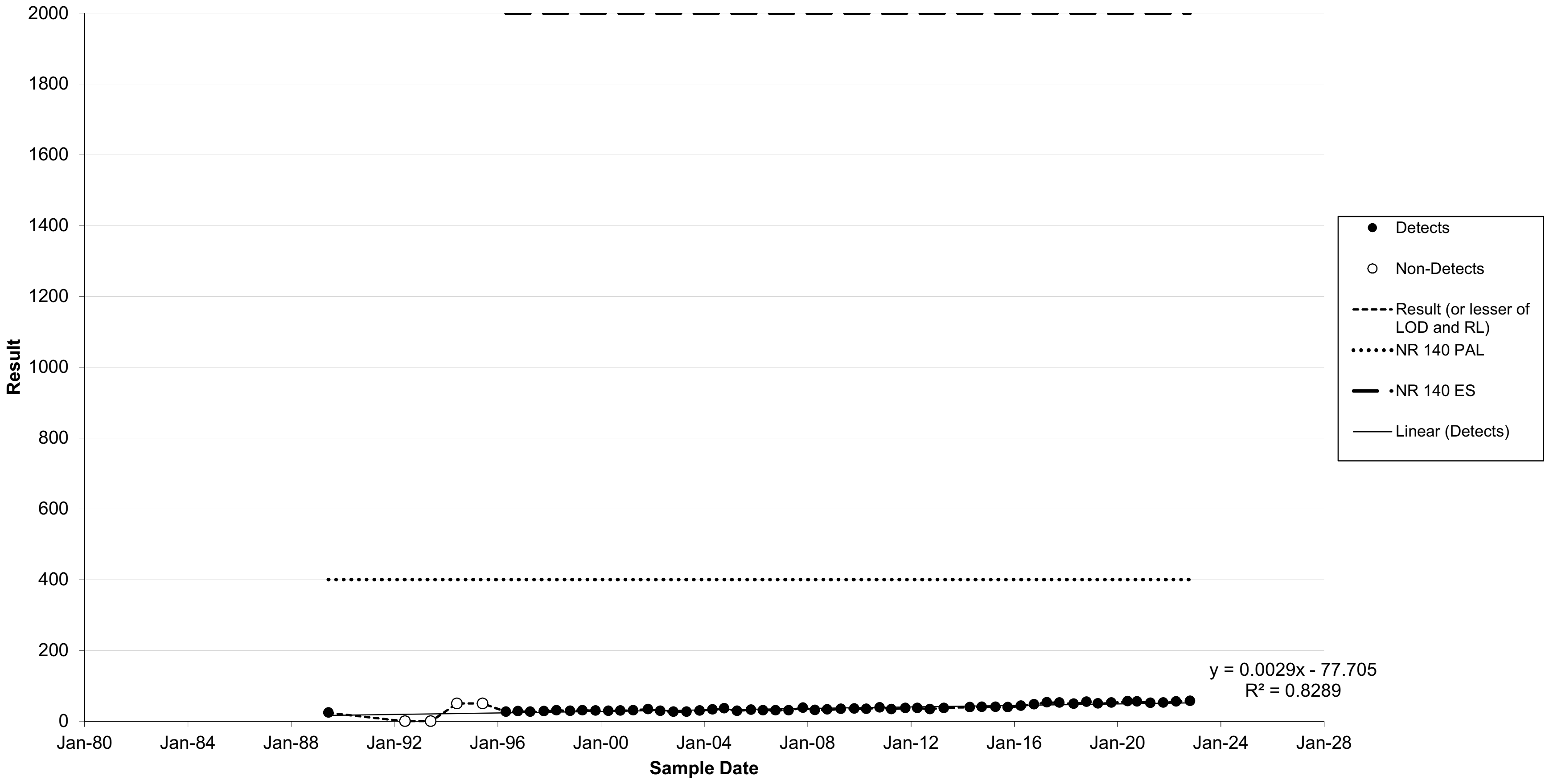
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92B - Barium, dissolved (ug/l as Ba)



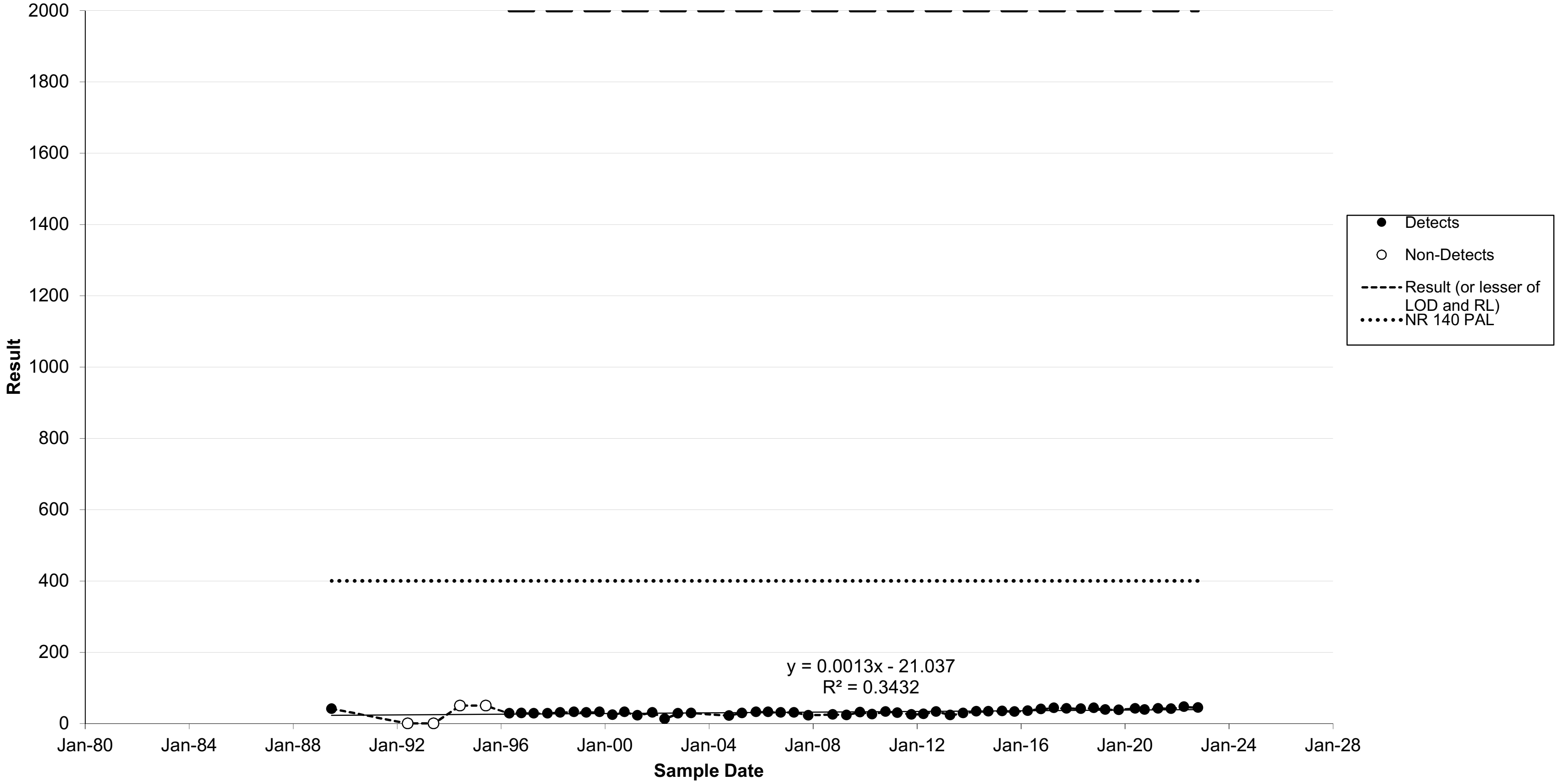
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-93A - Barium, dissolved (ug/l as Ba)



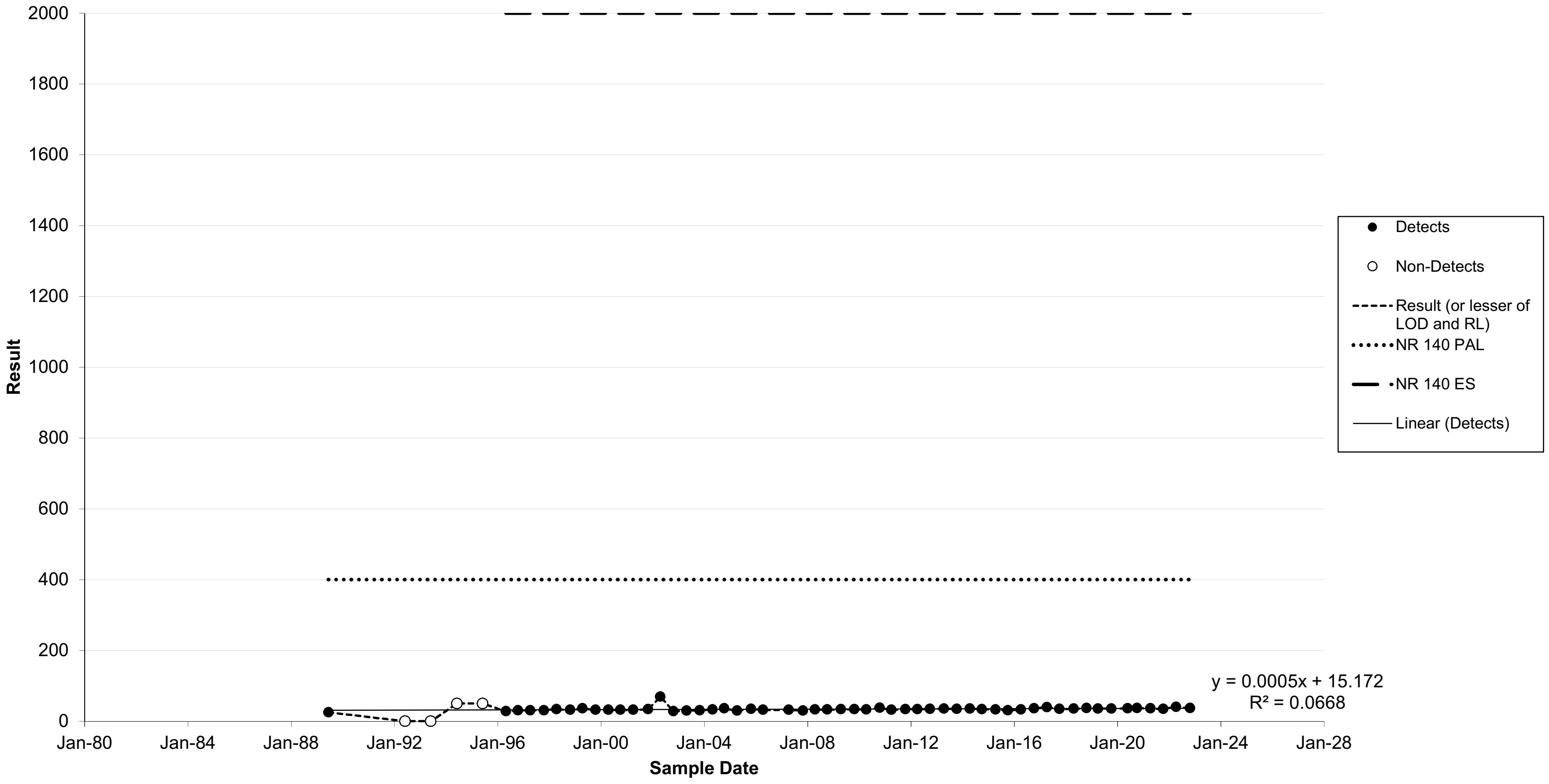
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-1 - Barium, total (ug/l Ba)



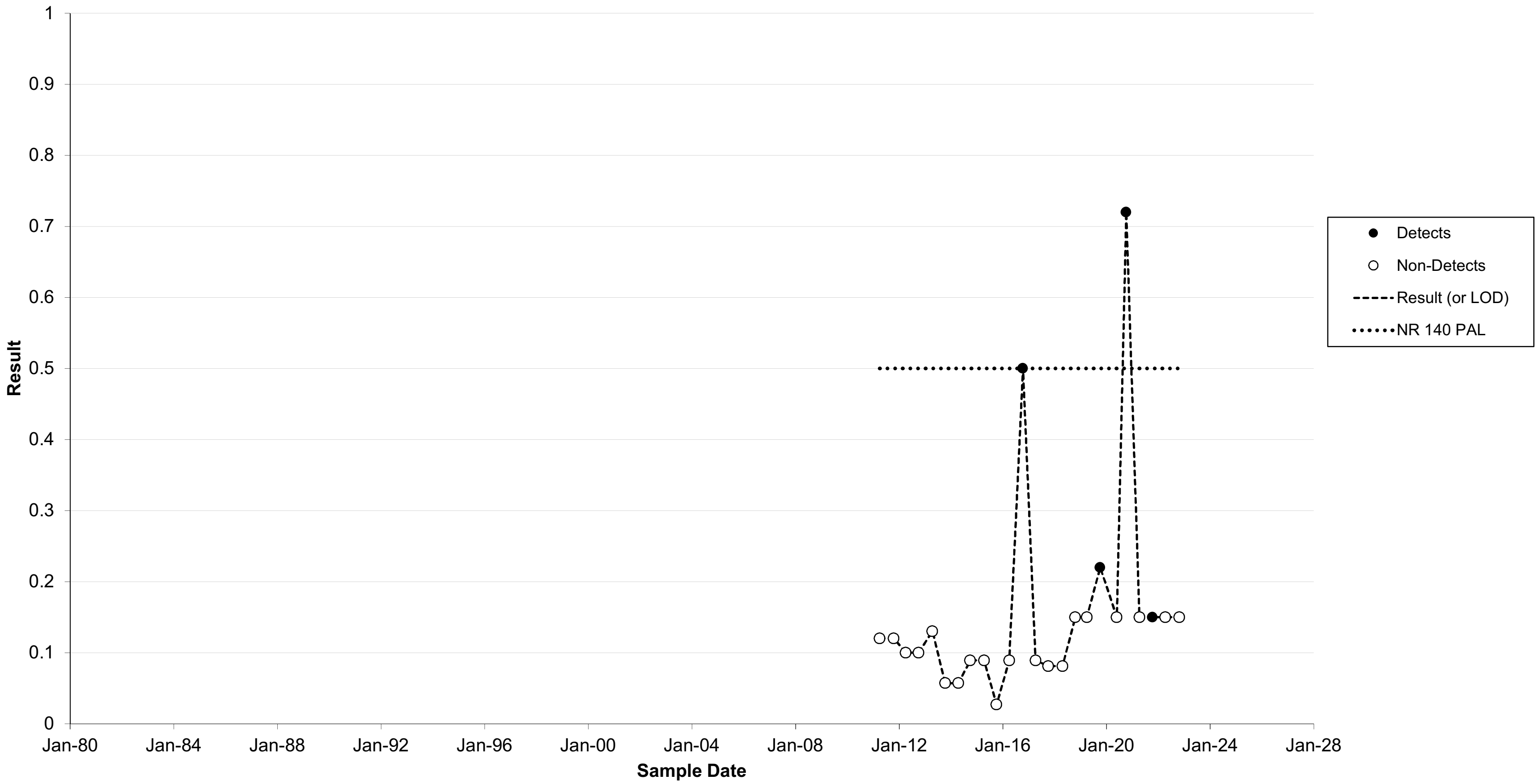
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-2 - Barium, total (ug/l Ba)



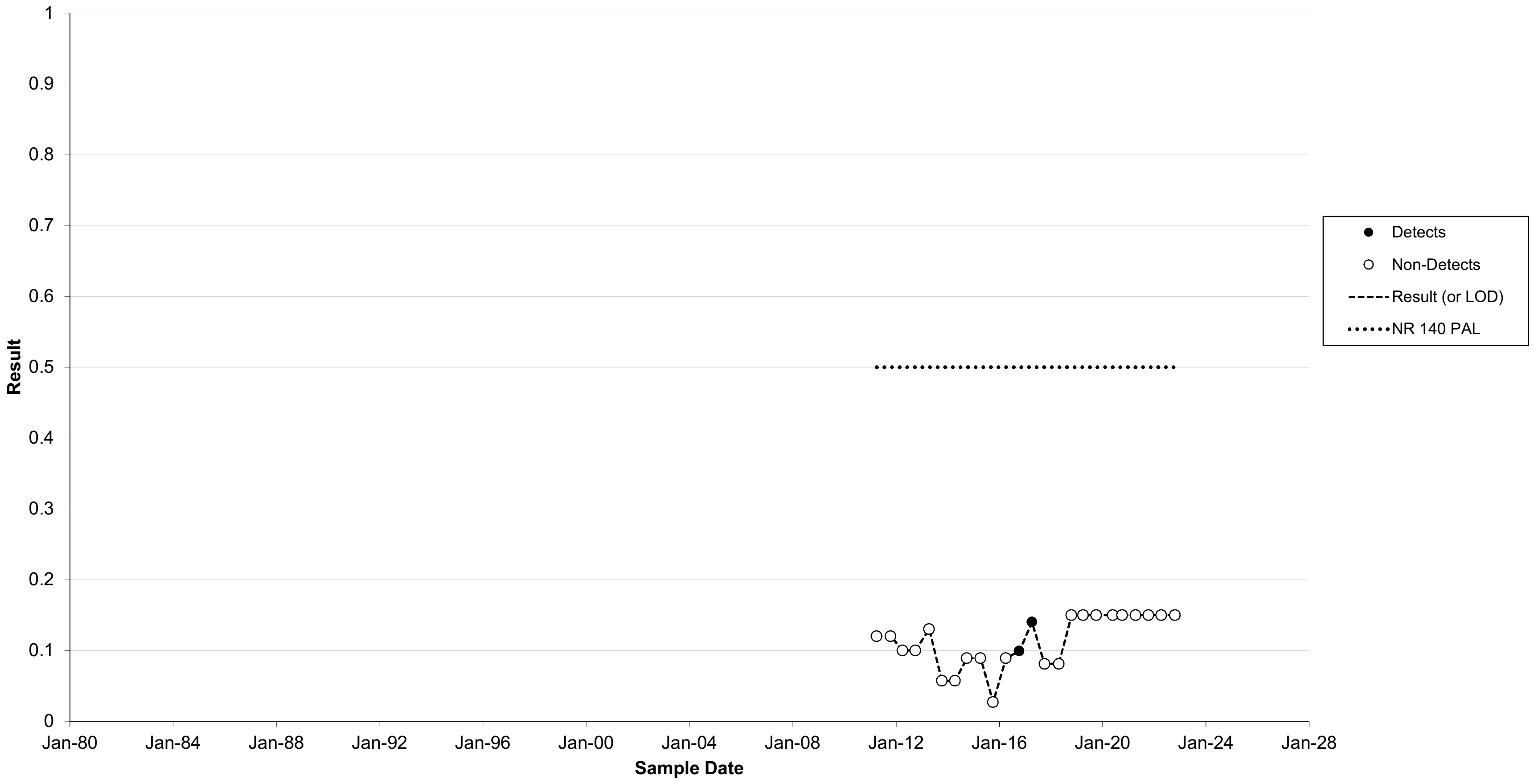
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-3 - Barium, total (ug/l Ba)



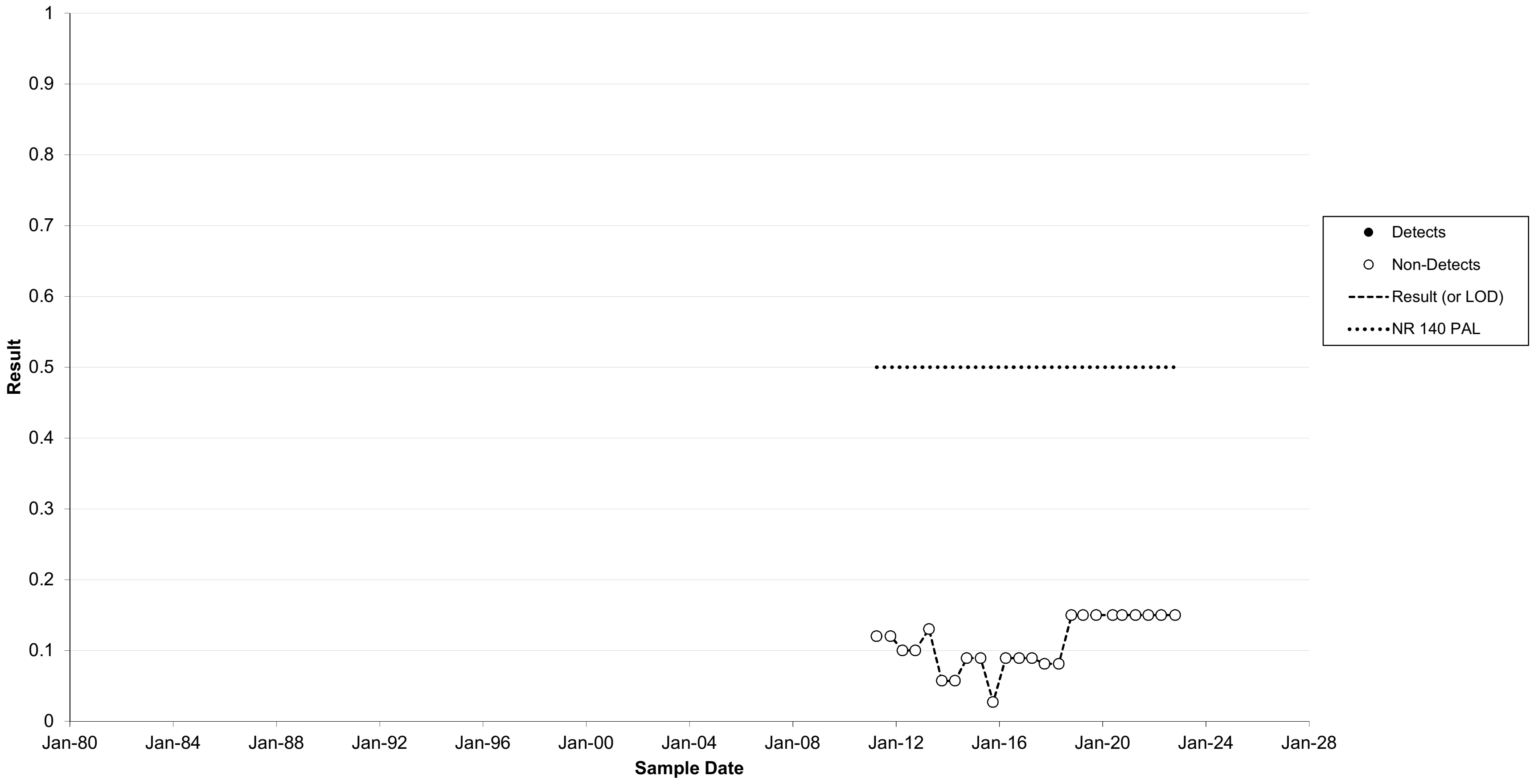
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33AR - Cadmium, dissolved (ug/l as Cd)



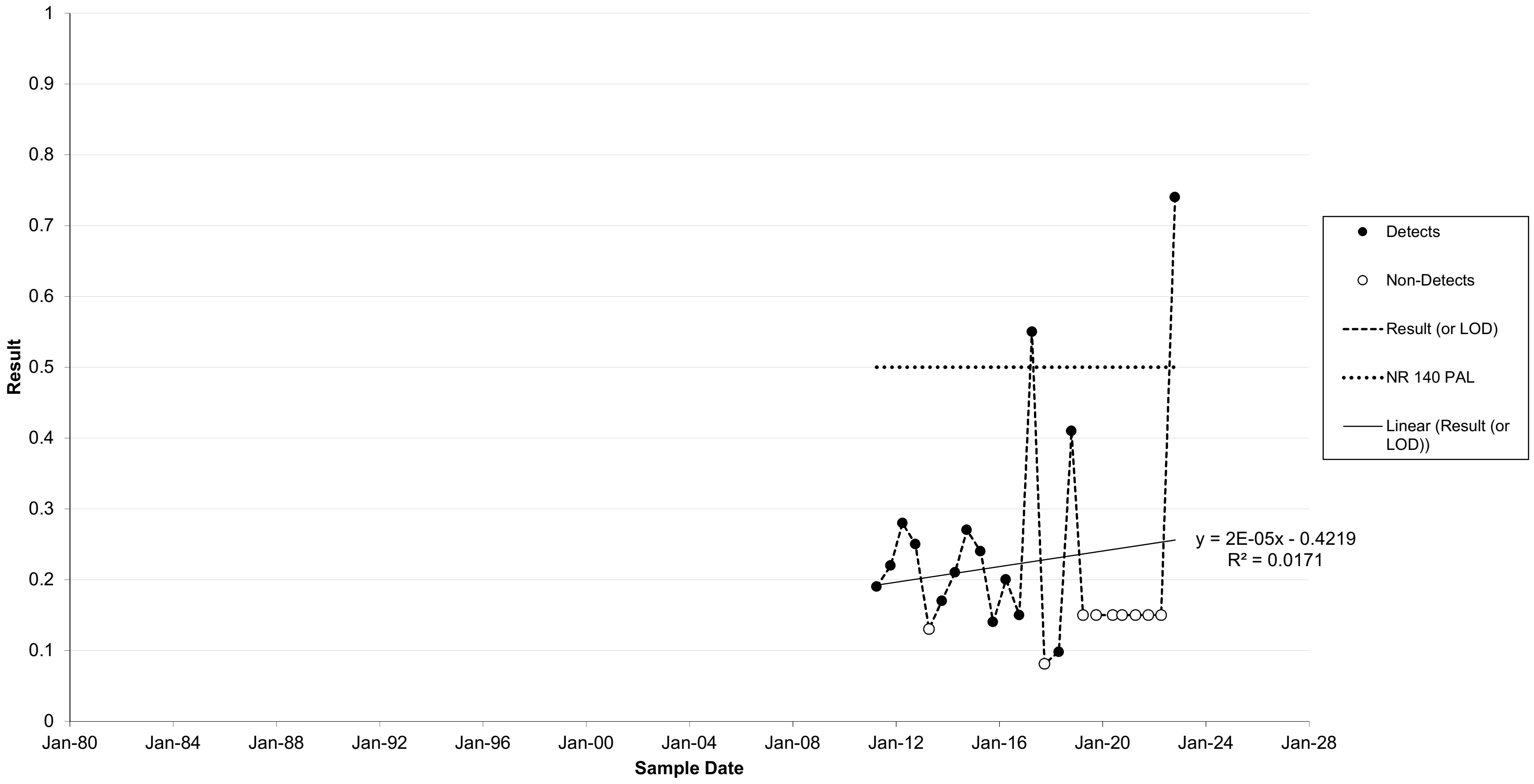
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33BR - Cadmium, dissolved (ug/l as Cd)



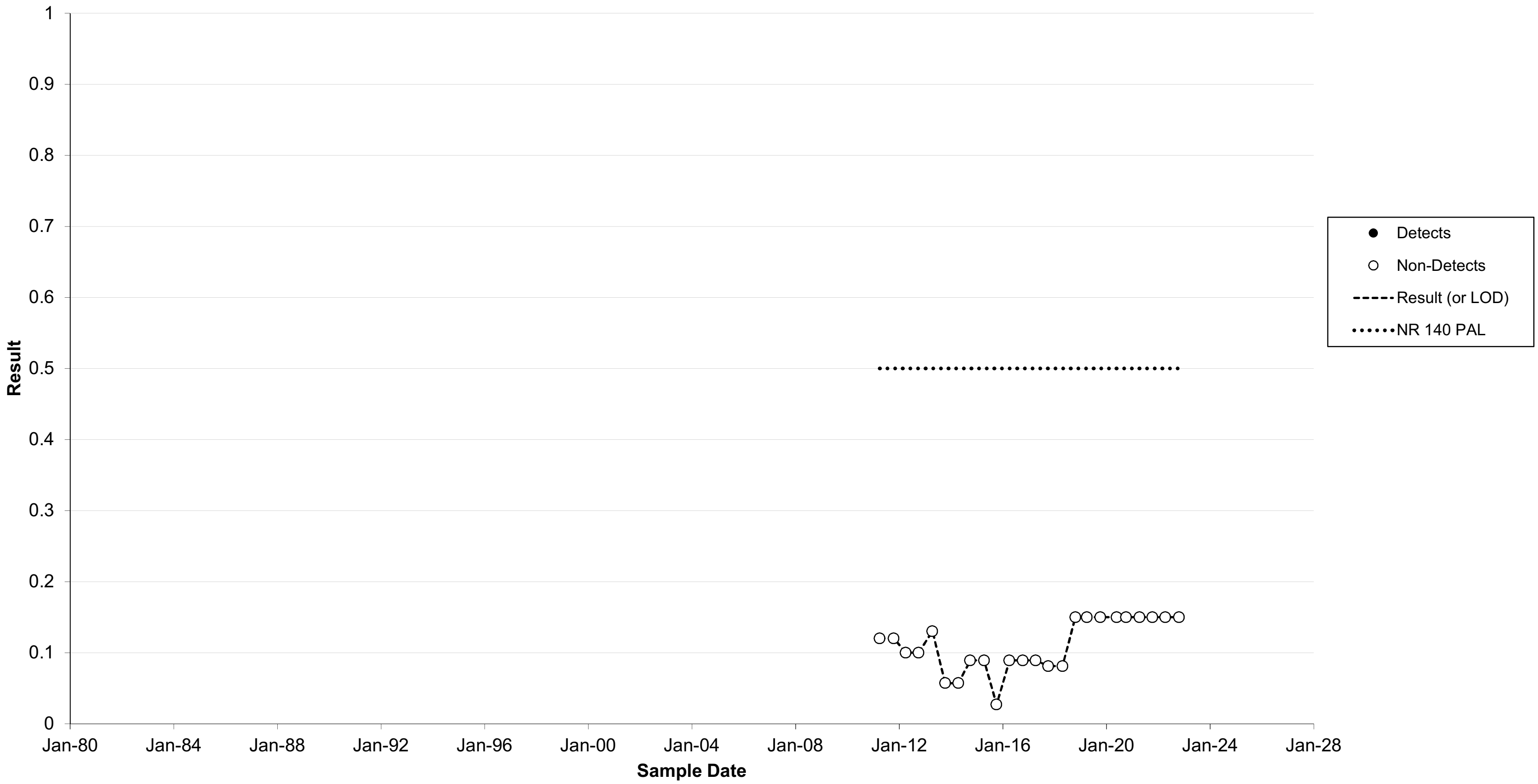
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-34A - Cadmium, dissolved (ug/l as Cd)



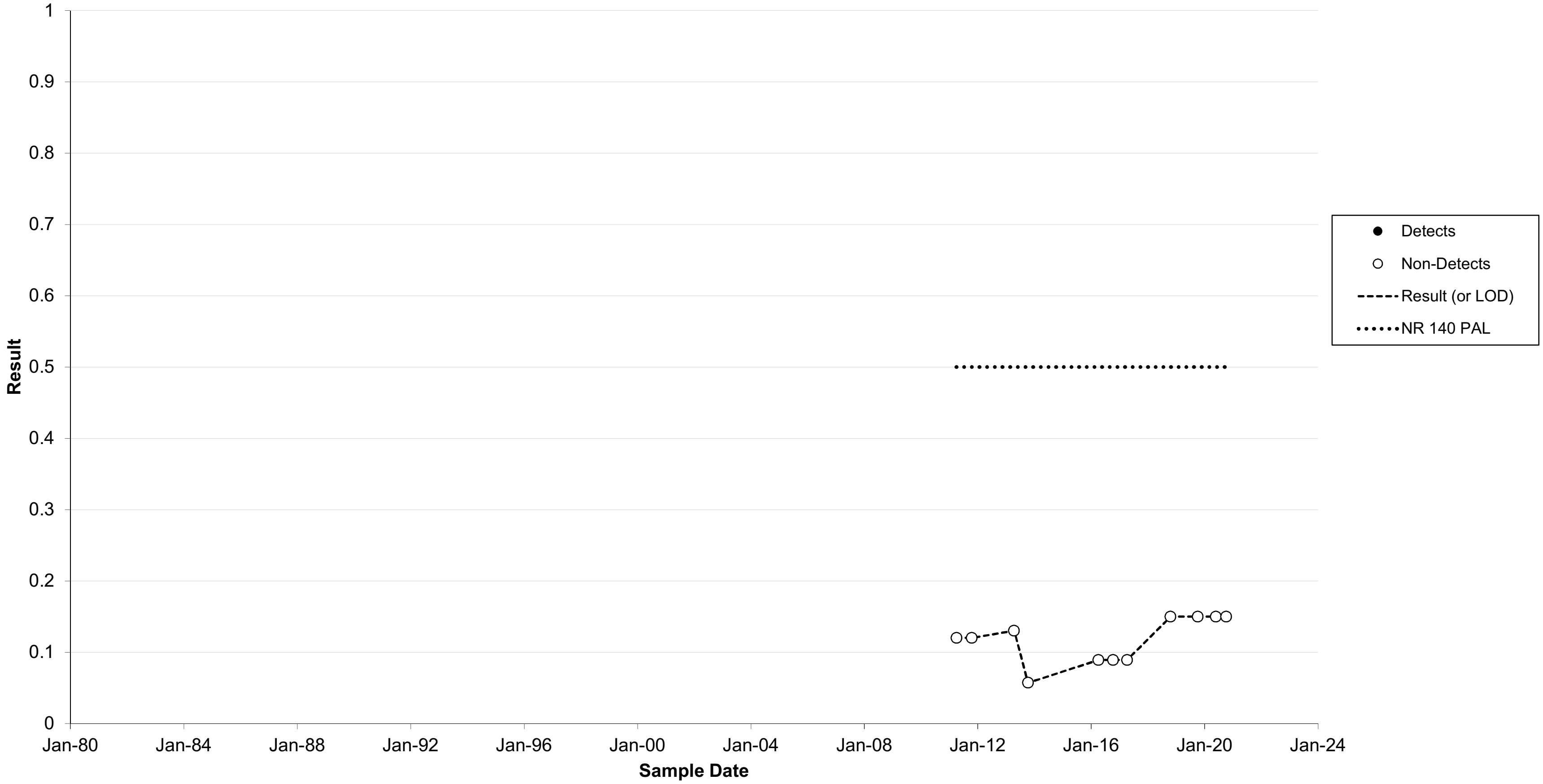
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-34B - Cadmium, dissolved (ug/l as Cd)



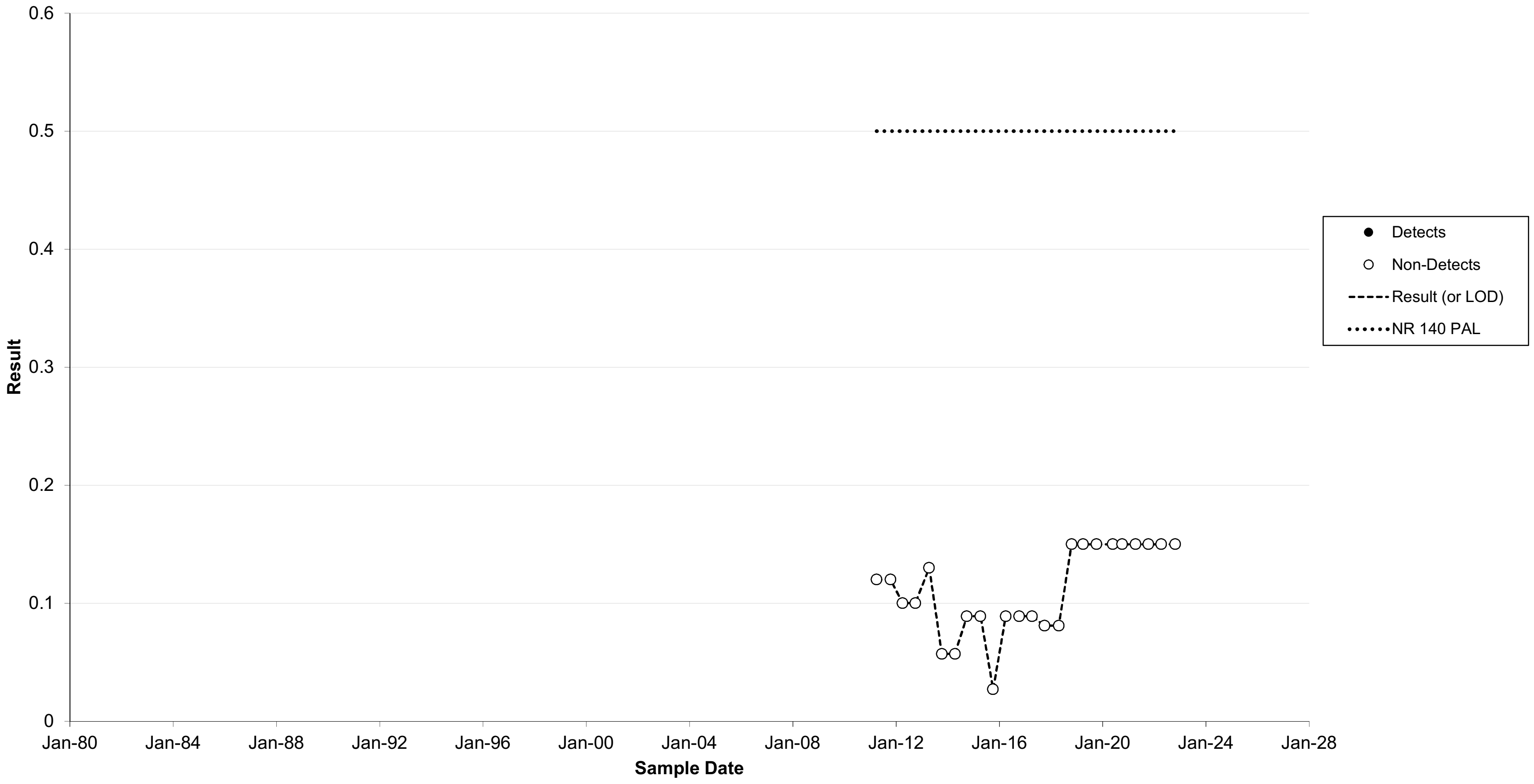
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-37A - Cadmium, dissolved (ug/l as Cd)



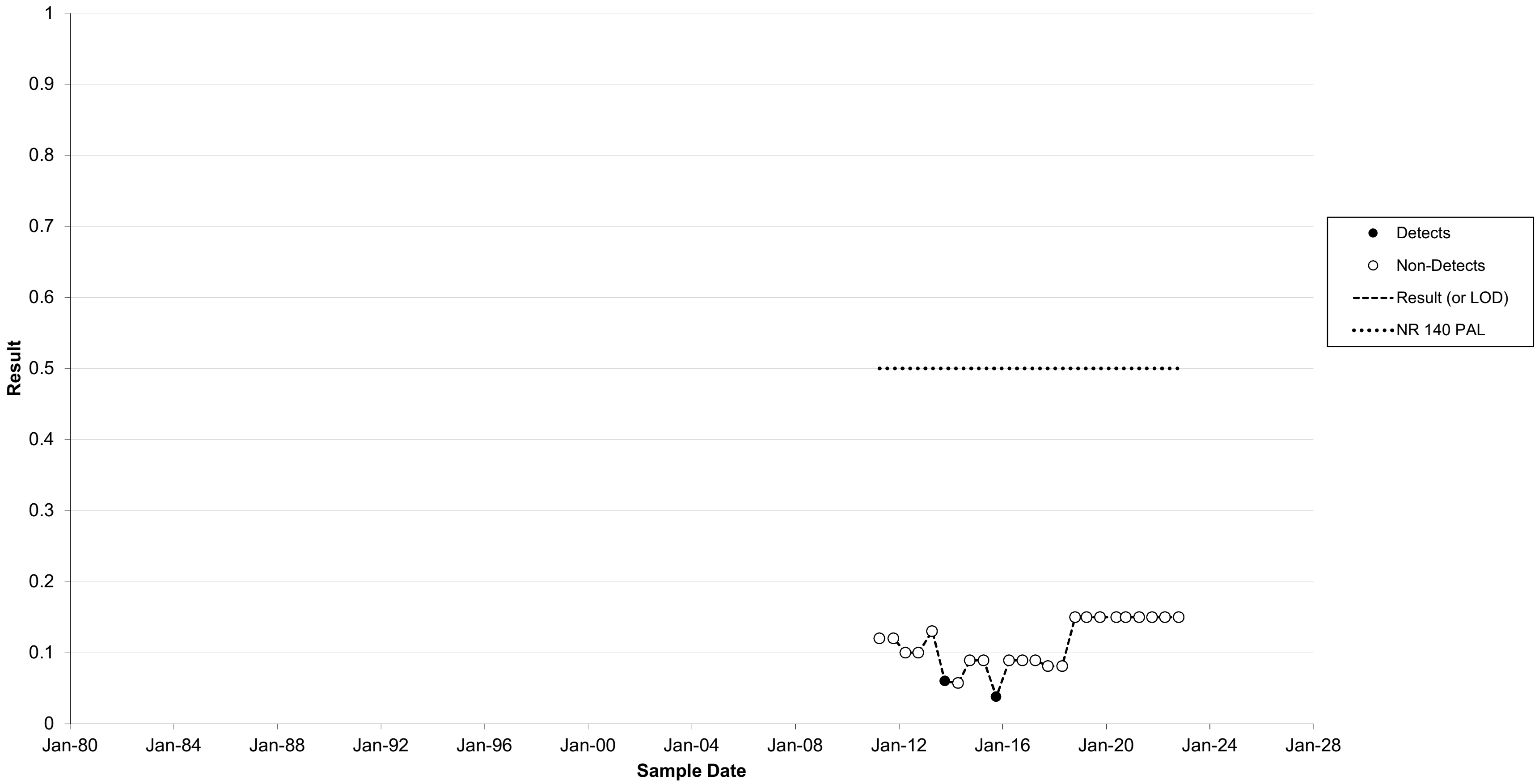
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-83 - Cadmium, dissolved (ug/l as Cd)



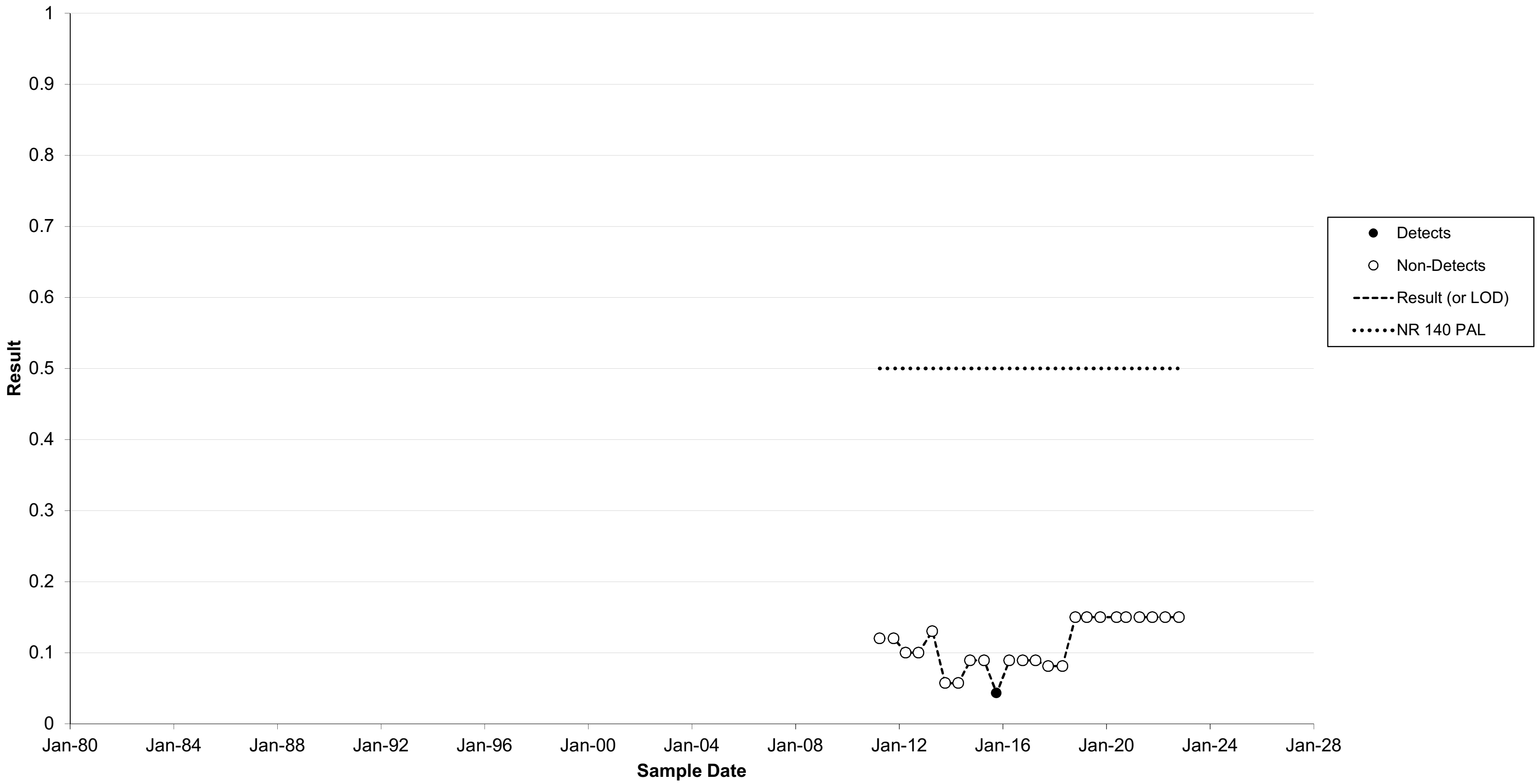
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-84A - Cadmium, dissolved (ug/l as Cd)



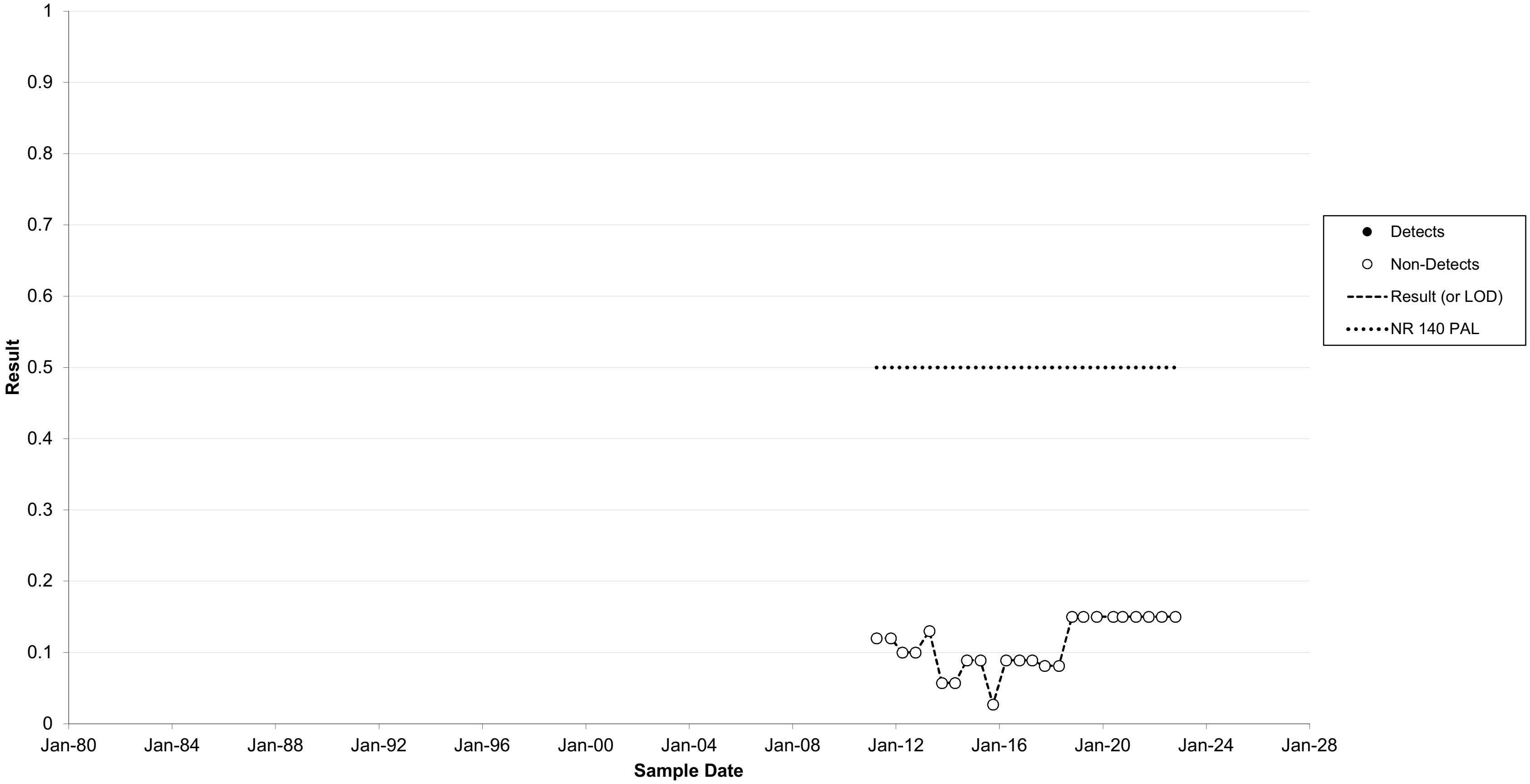
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-84B - Cadmium, dissolved (ug/l as Cd)



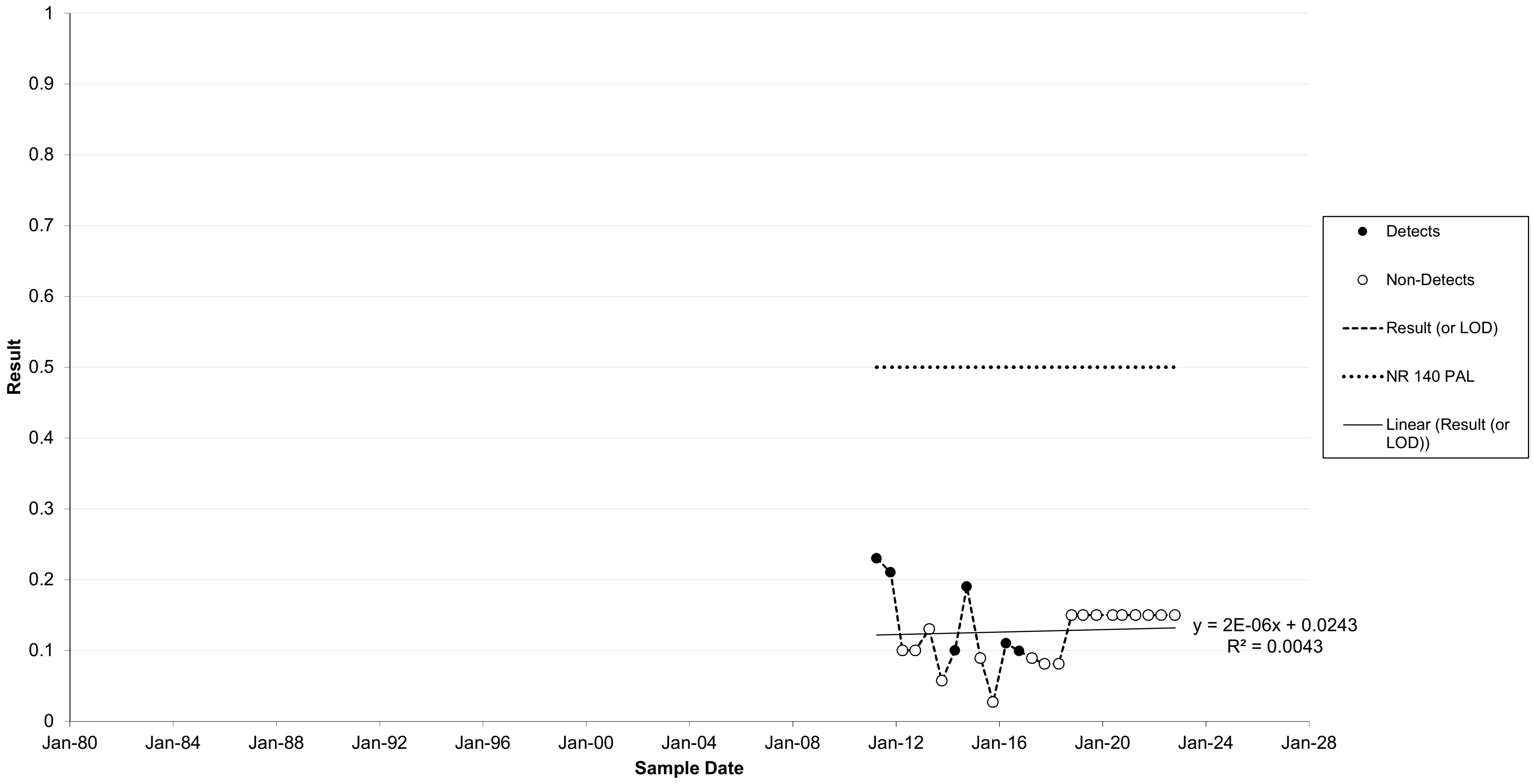
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-86 - Cadmium, dissolved (ug/l as Cd)



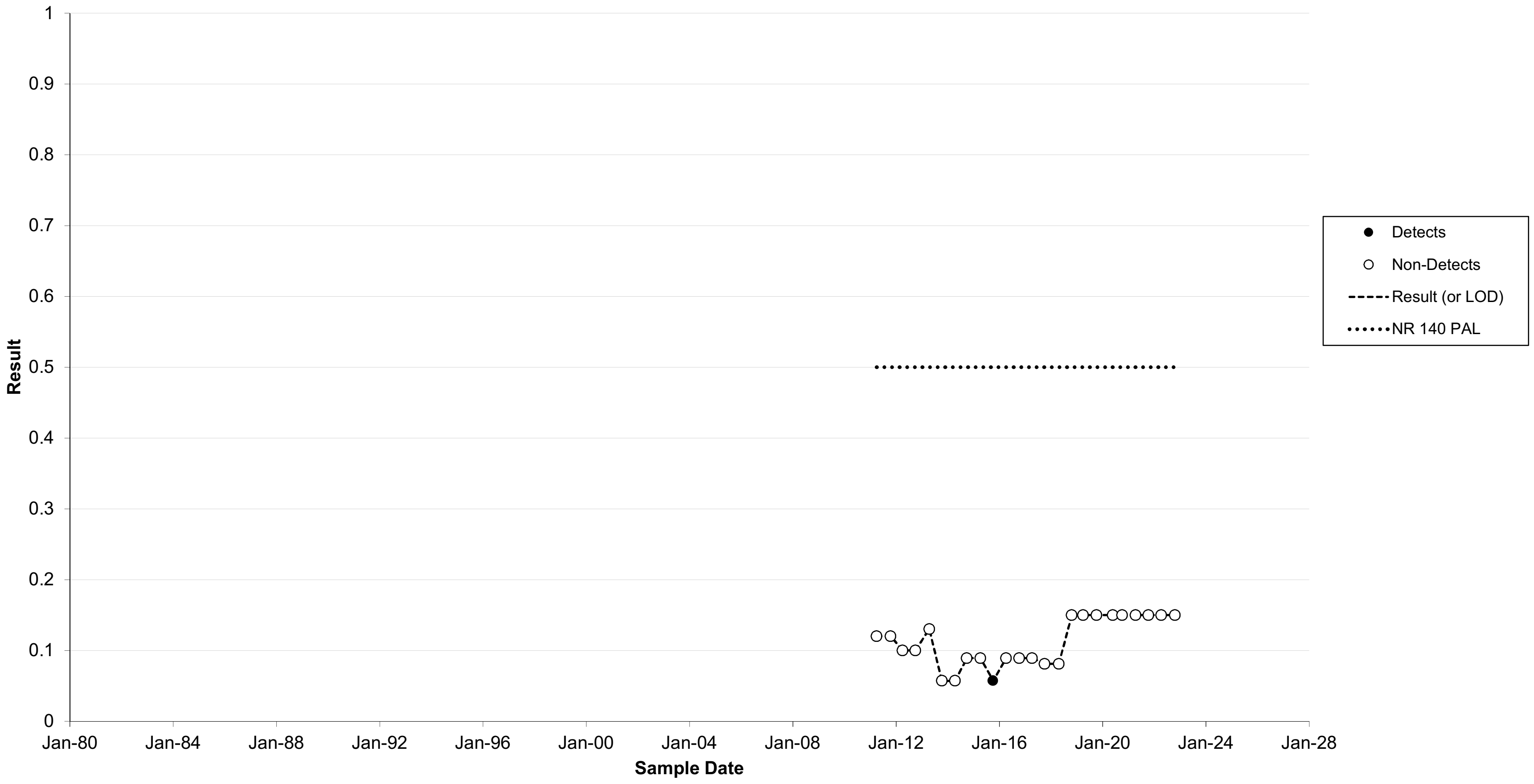
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-91AR - Cadmium, dissolved (ug/l as Cd)



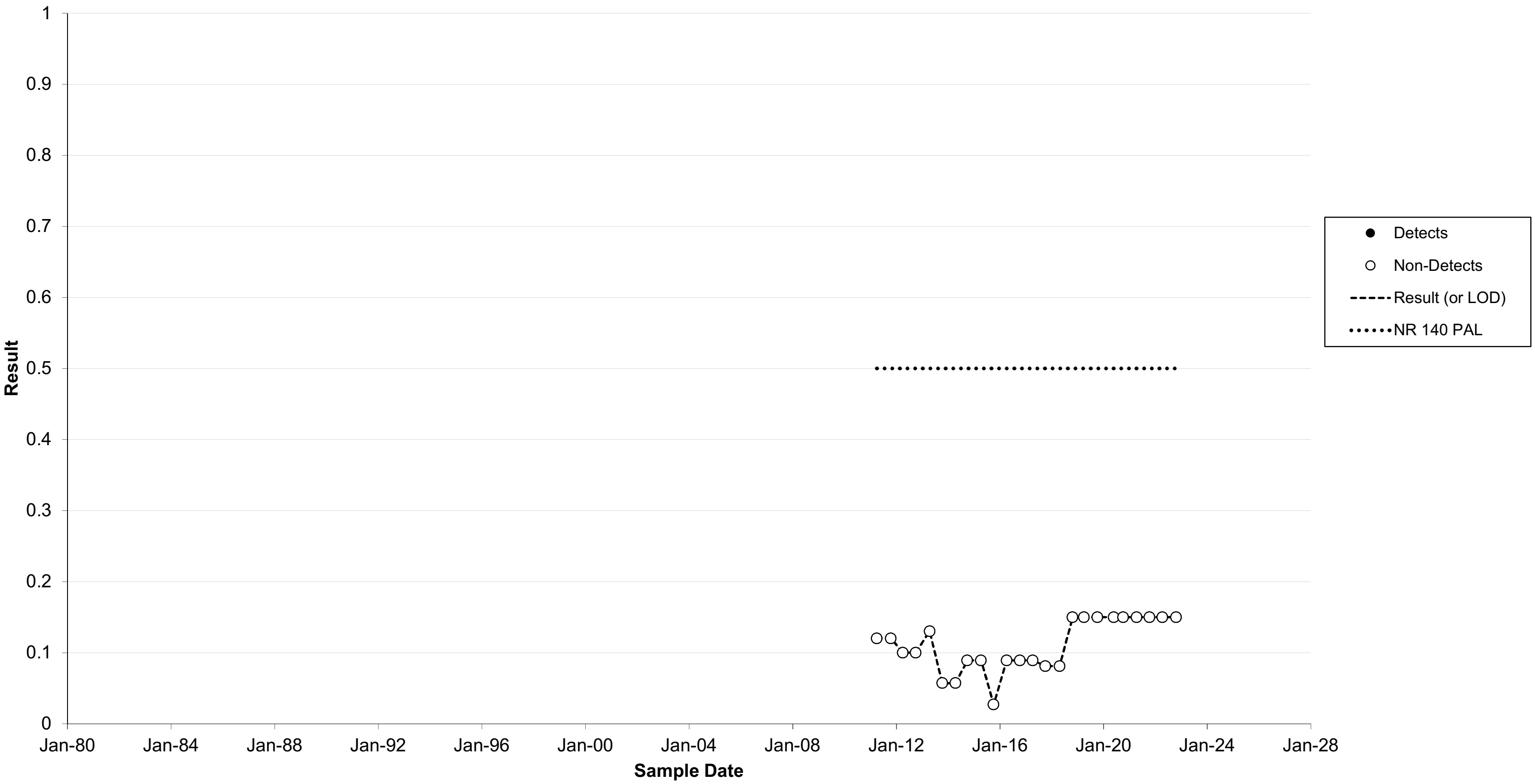
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-91B - Cadmium, dissolved (ug/l as Cd)



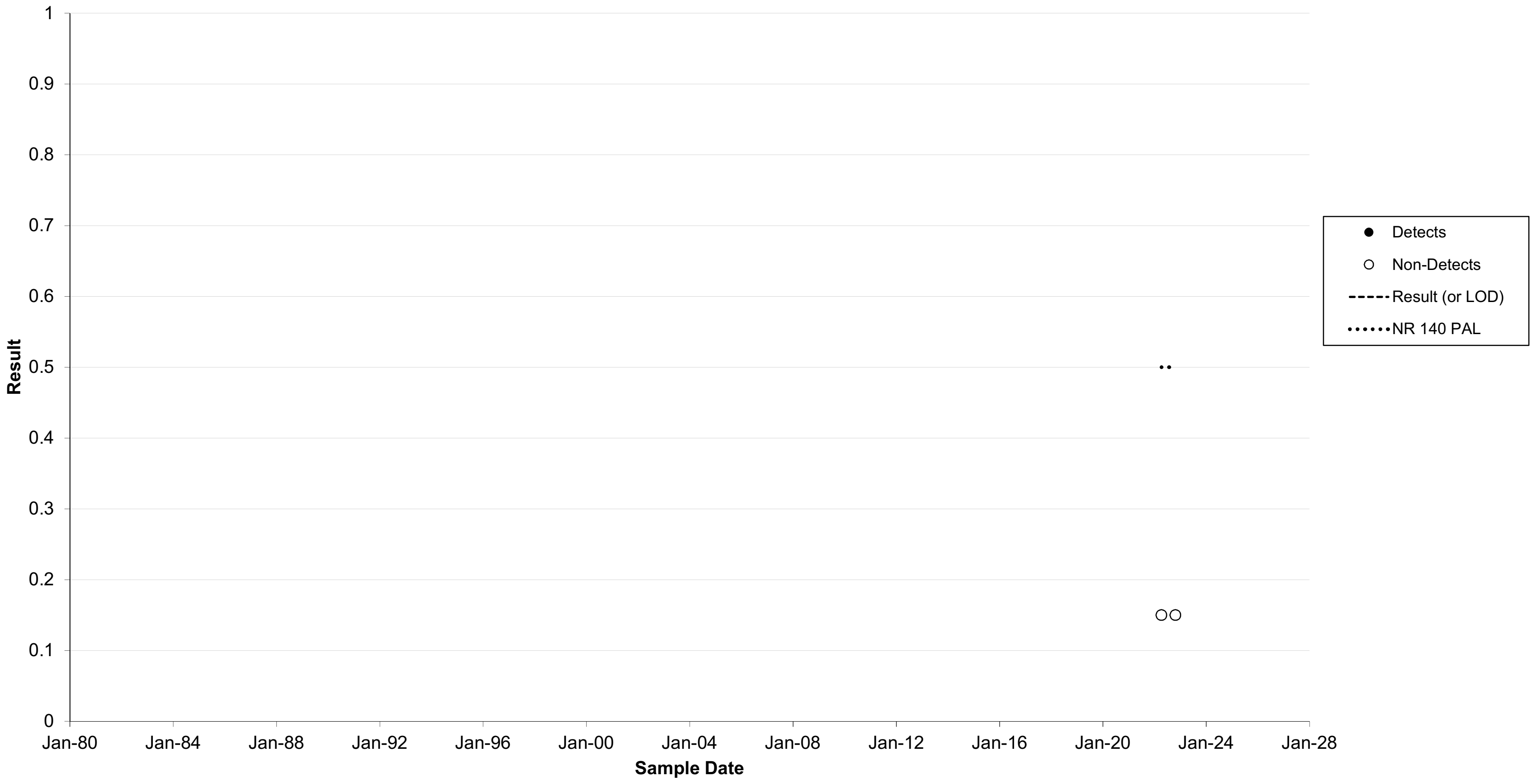
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92A - Cadmium, dissolved (ug/l as Cd)



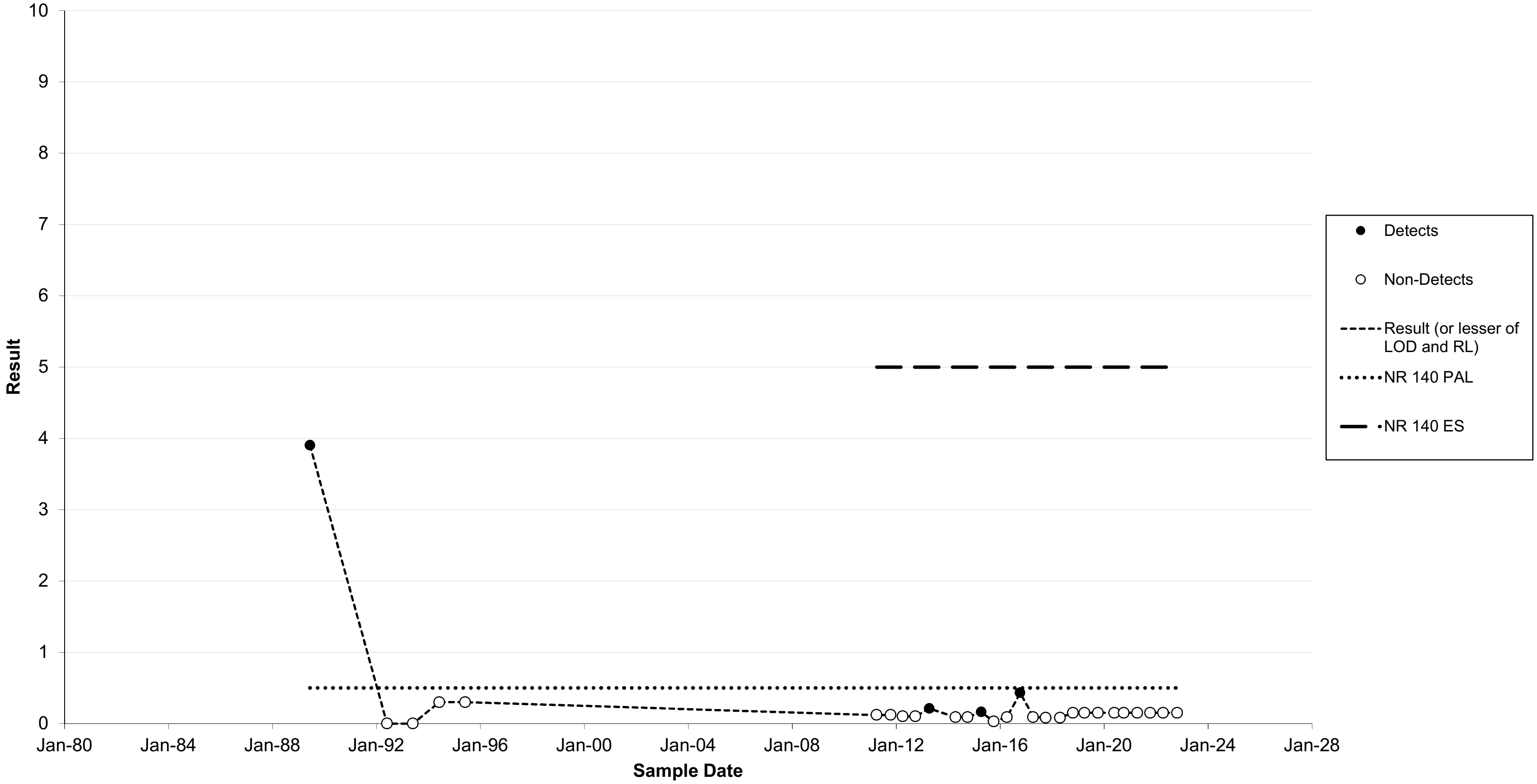
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92B - Cadmium, dissolved (ug/l as Cd)



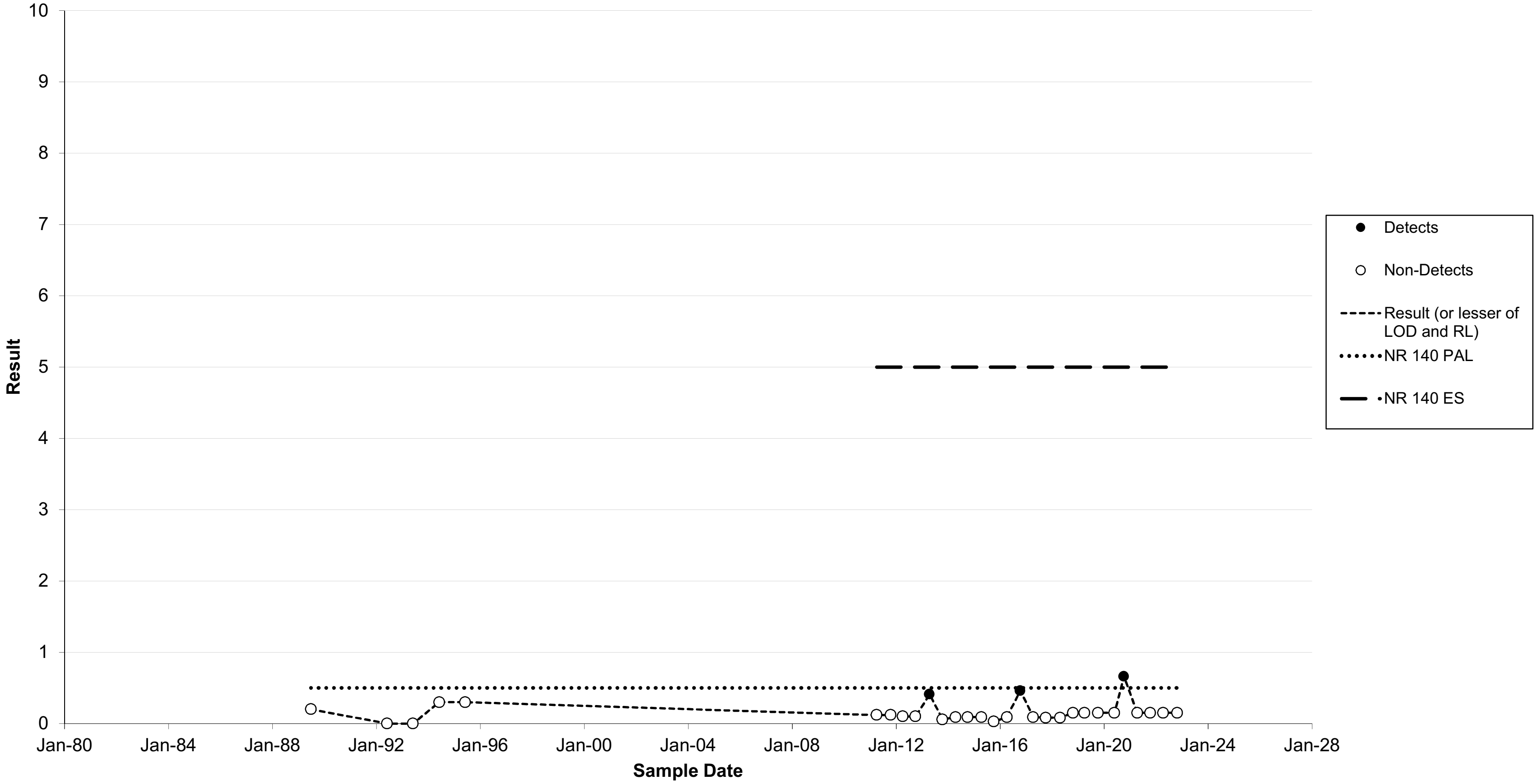
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-93A - Cadmium, dissolved (ug/l as Cd)



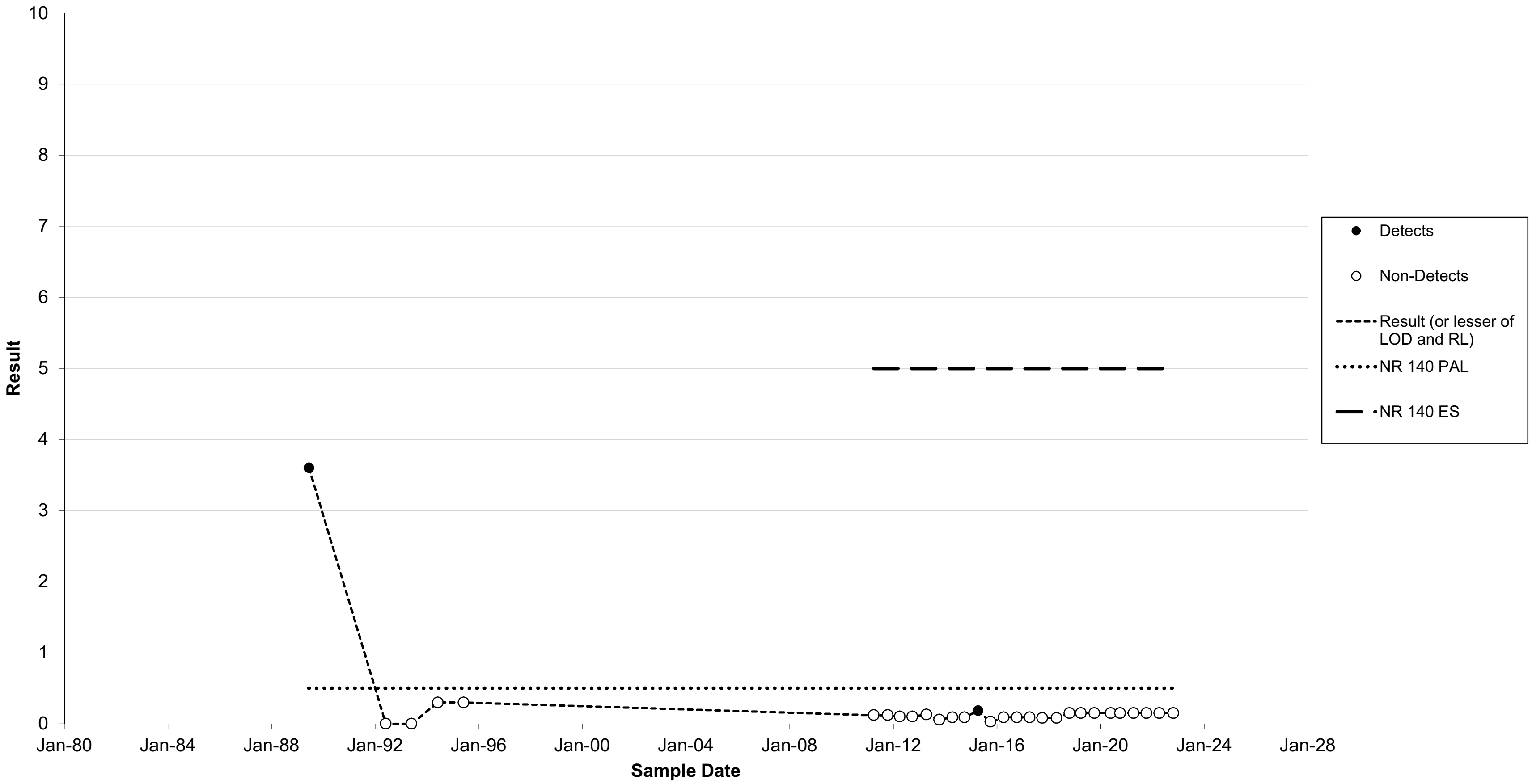
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-1 - Cadmium, total (ug/l as Cd)



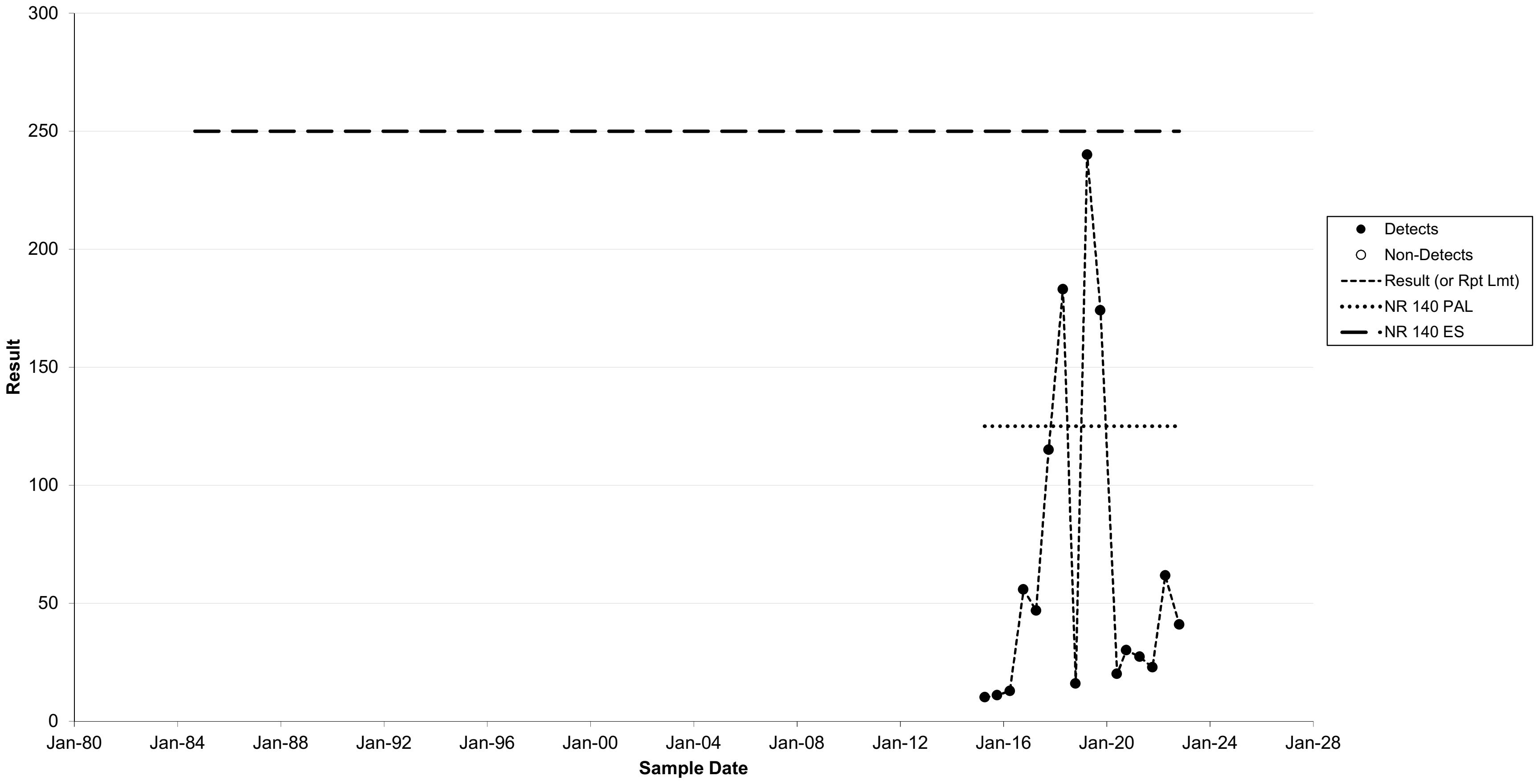
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-2 - Cadmium, total (ug/l as Cd)



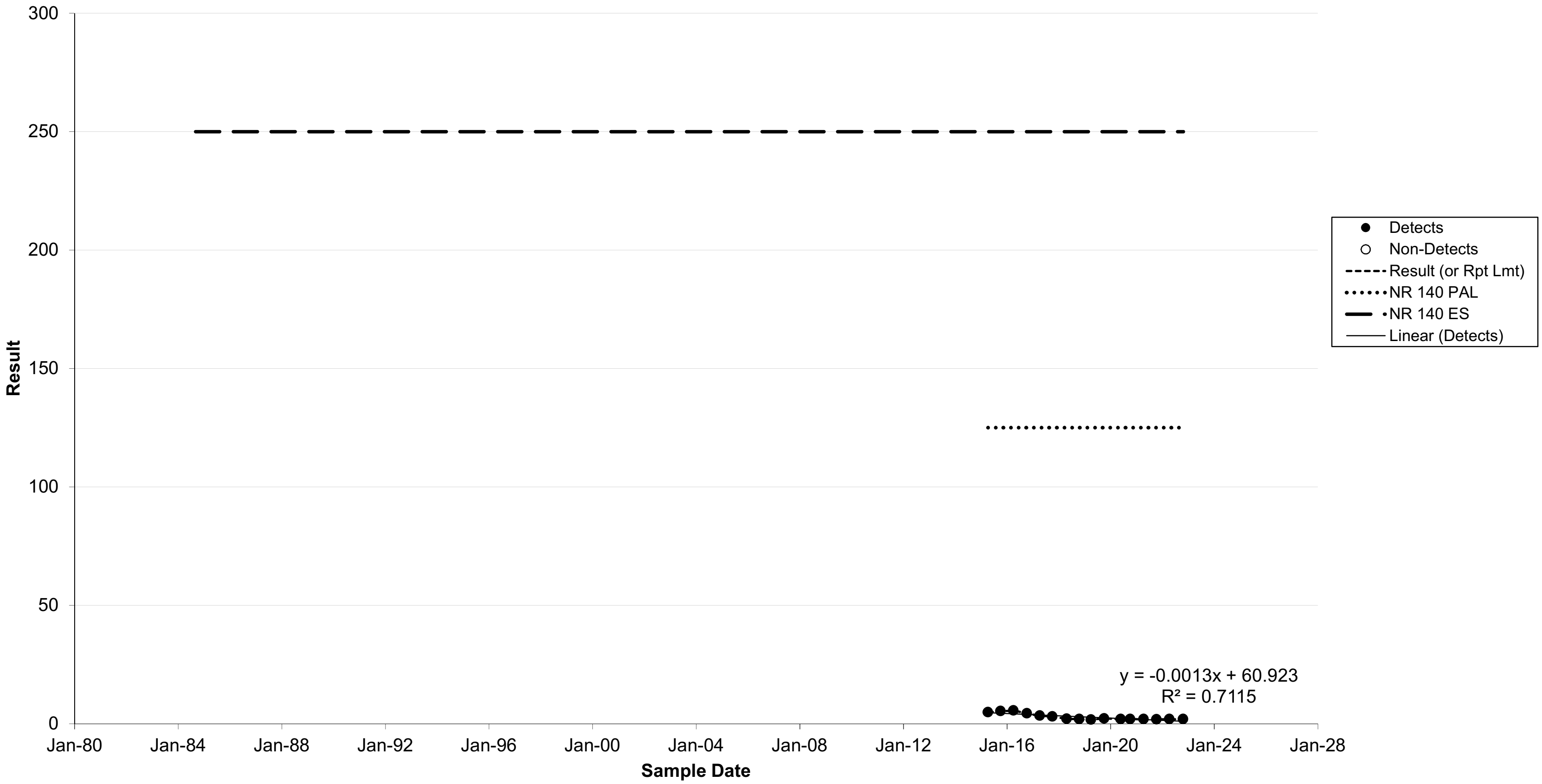
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-3 - Cadmium, total (ug/l as Cd)



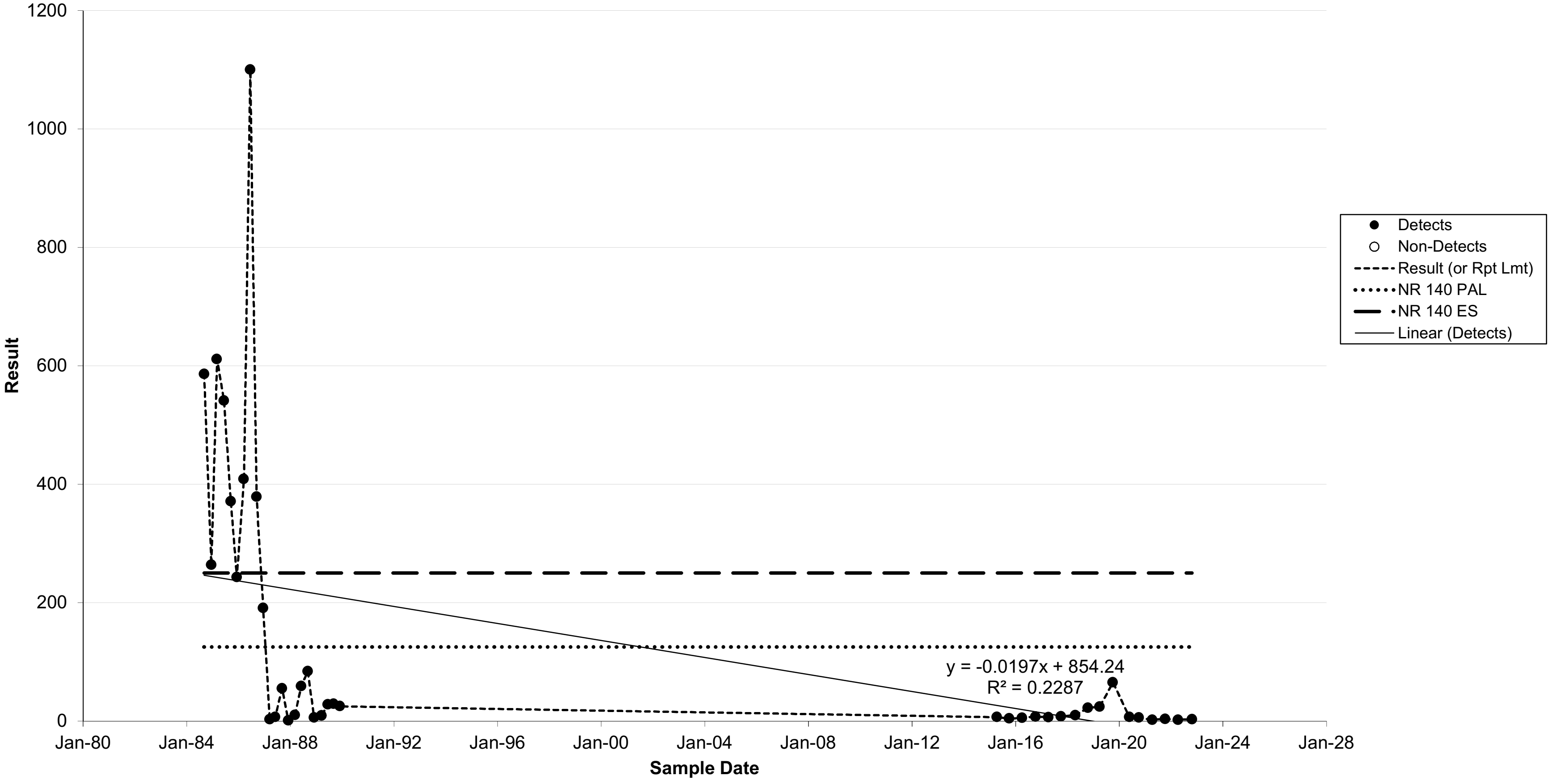
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33AR - Chloride, dissolved (mg/l as Cl)



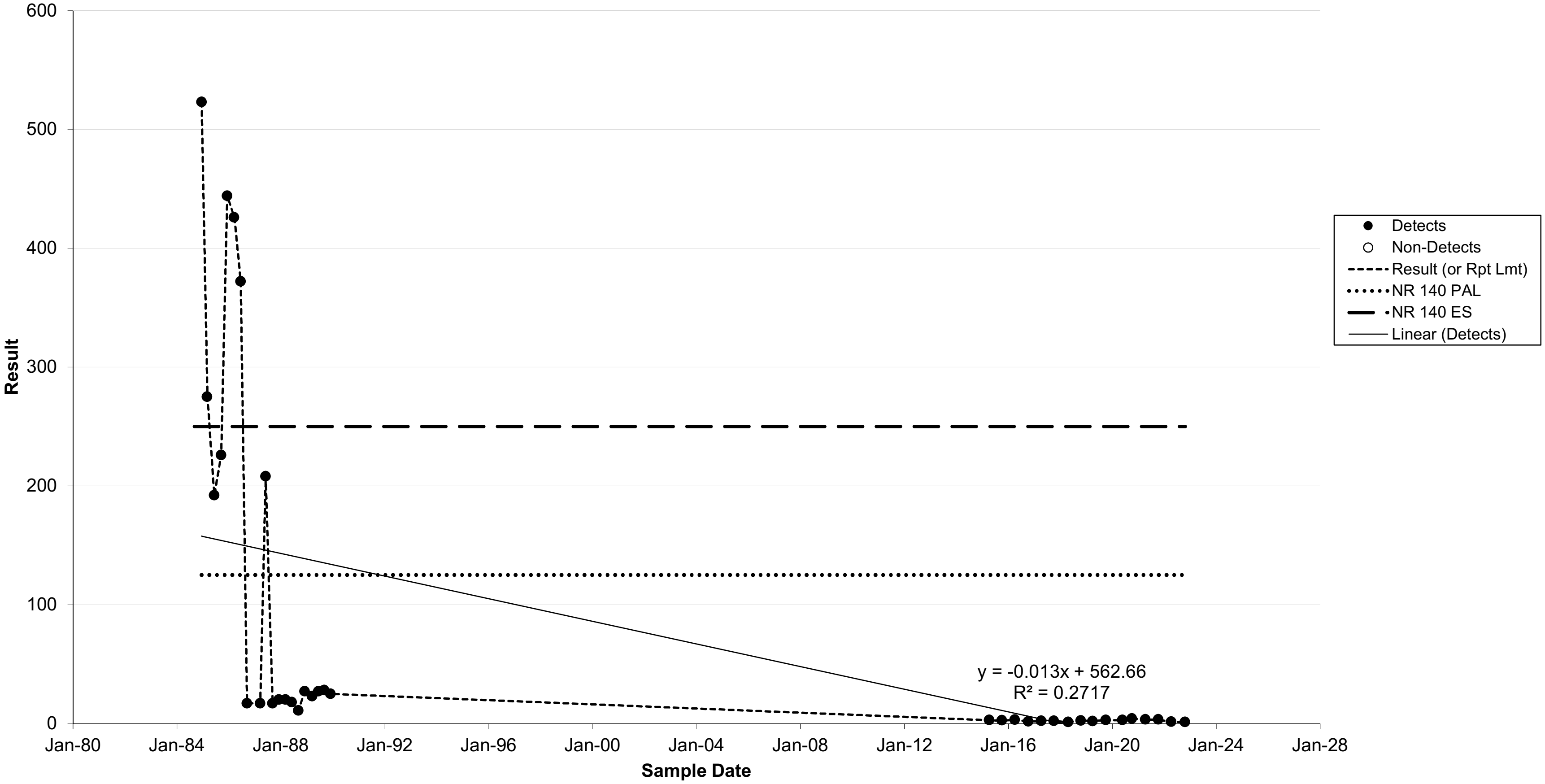
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33BR - Chloride, dissolved (mg/l as Cl)



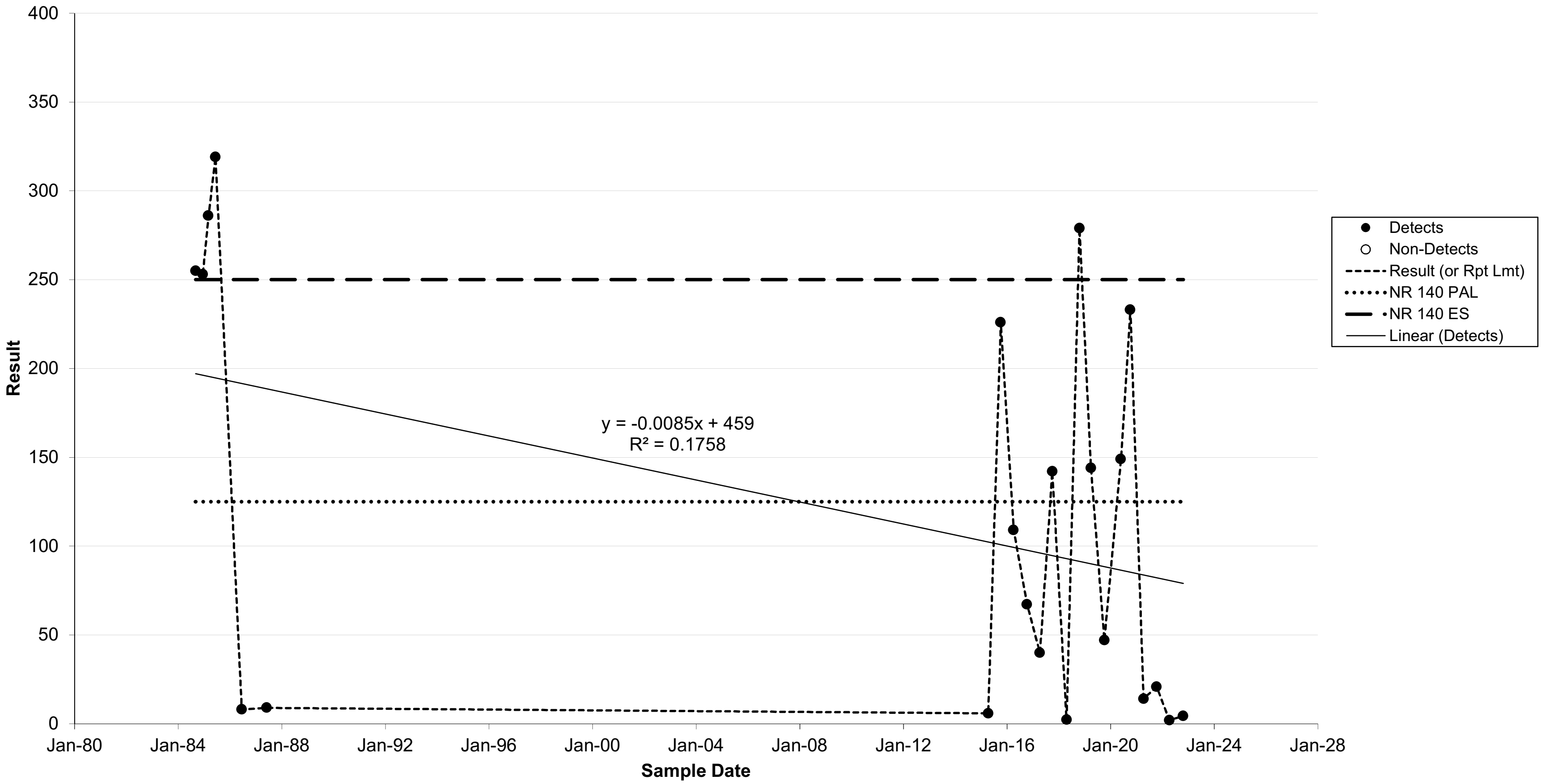
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-34A - Chloride, total (mg/l as Cl)



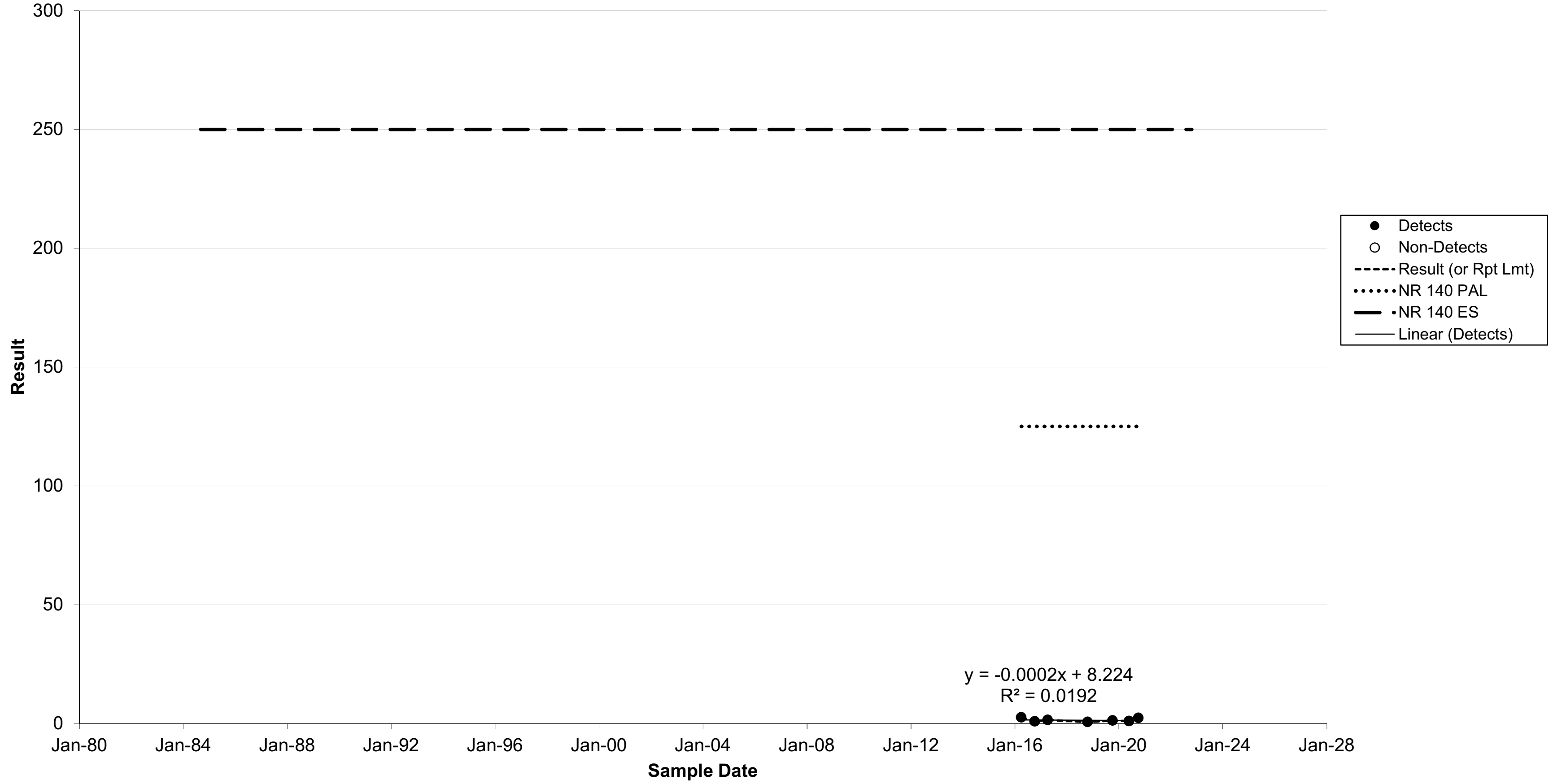
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-34B - Chloride, total (mg/l as Cl)



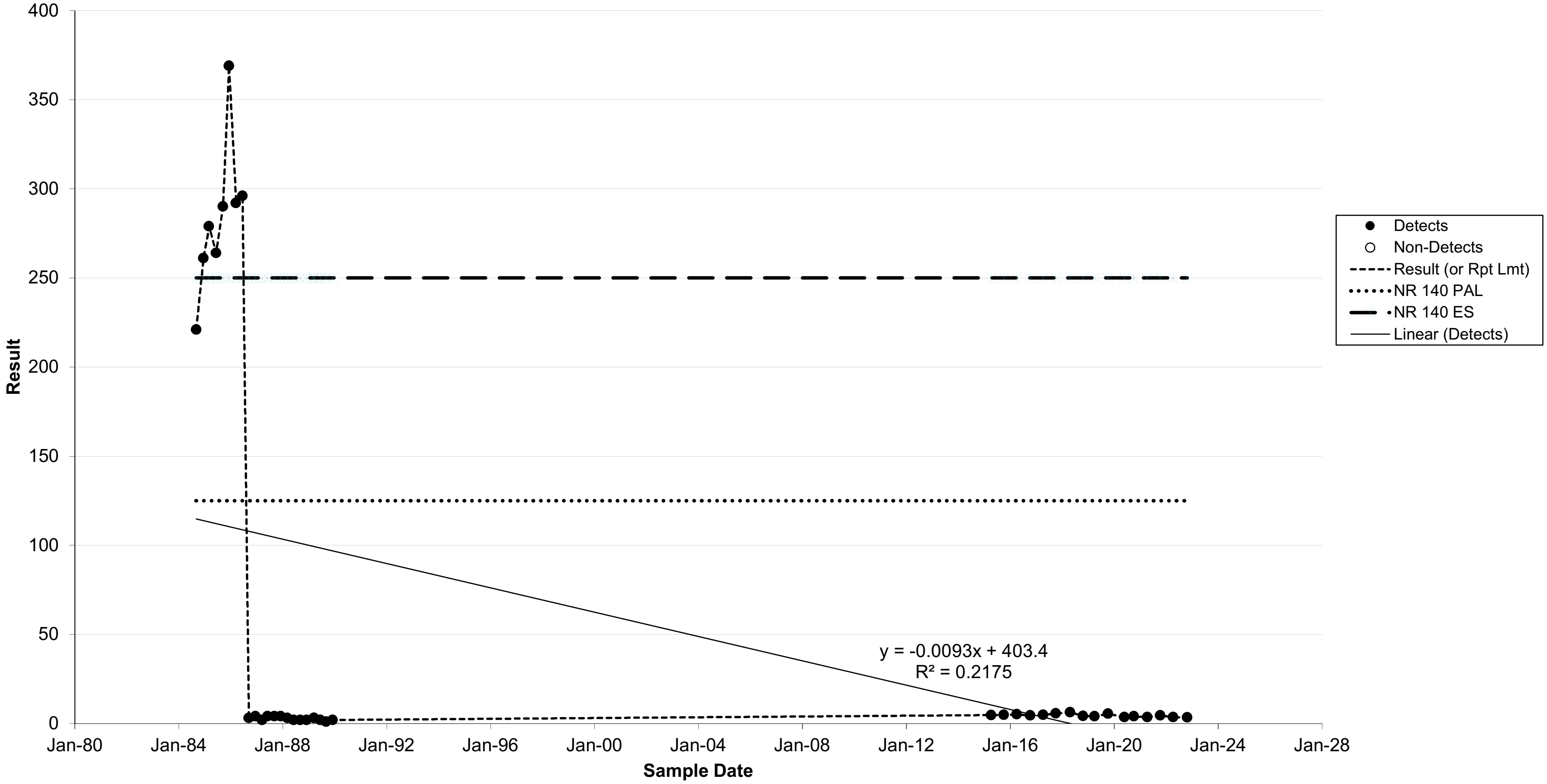
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW37A - Chloride, dissolved (mg/l as Cl)



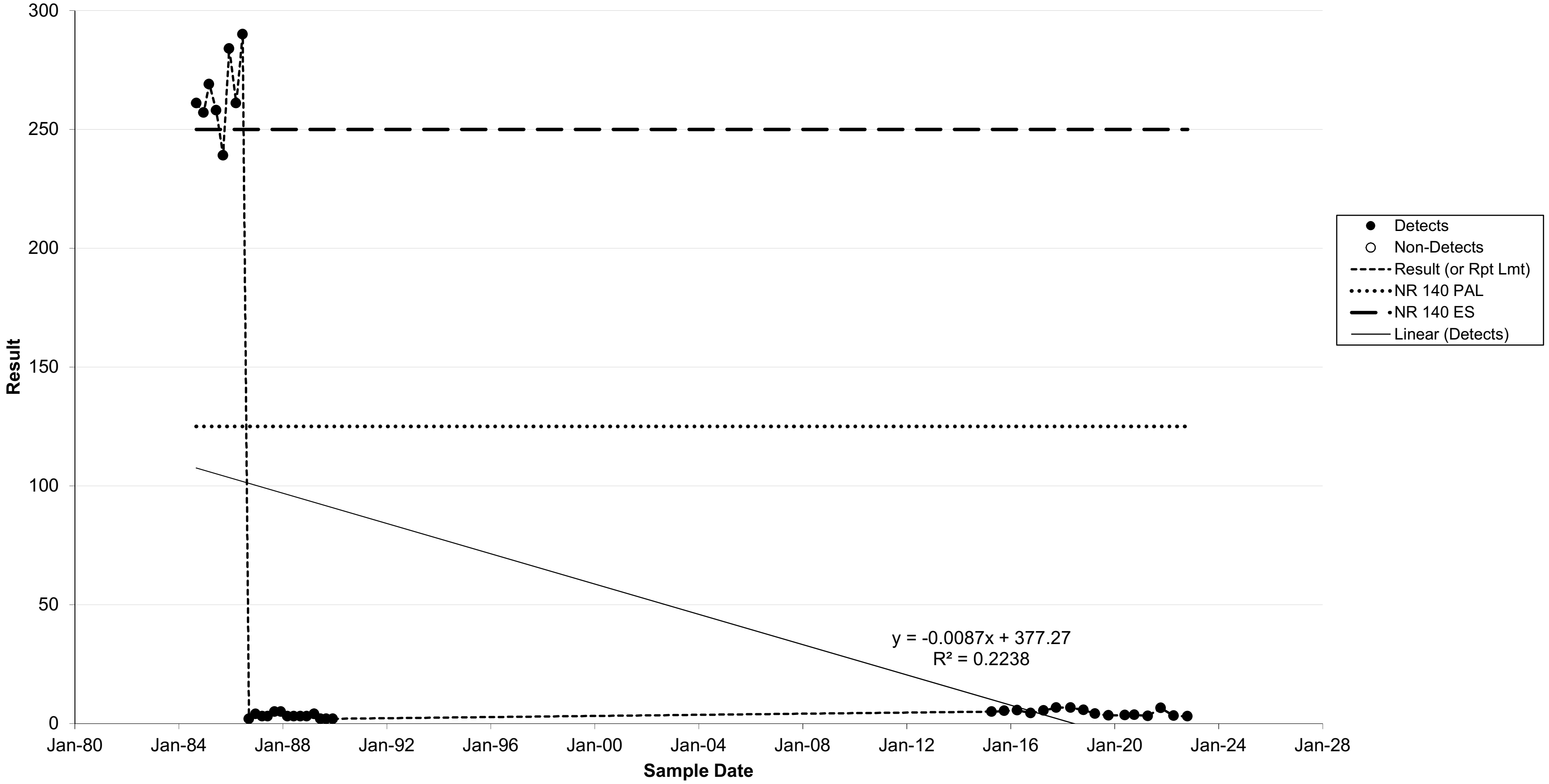
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-83 - Chloride, dissolved (mg/l as Cl)



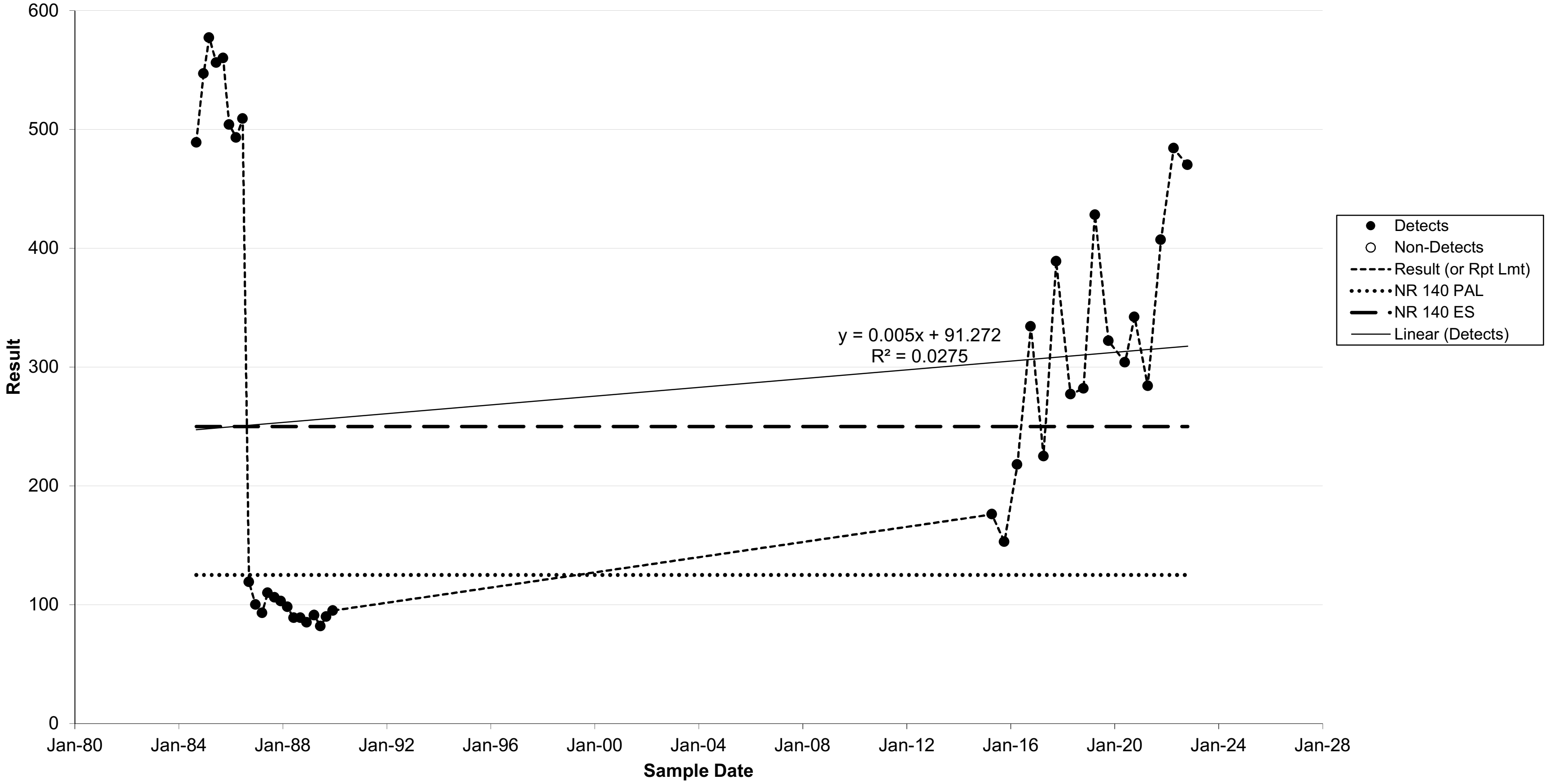
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-84A - Chloride, total (mg/l as Cl)



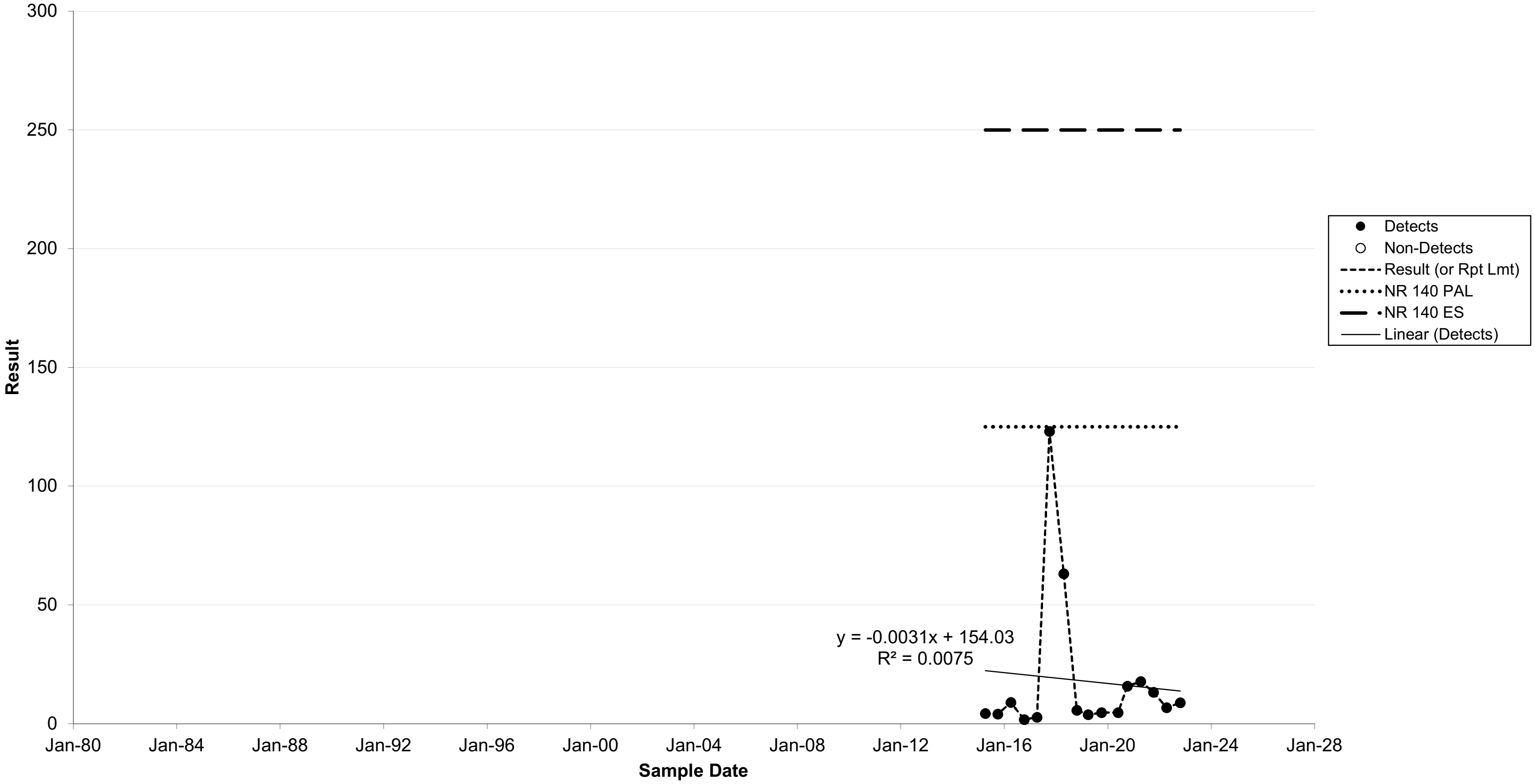
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-84B - Chloride, total (mg/l as Cl)



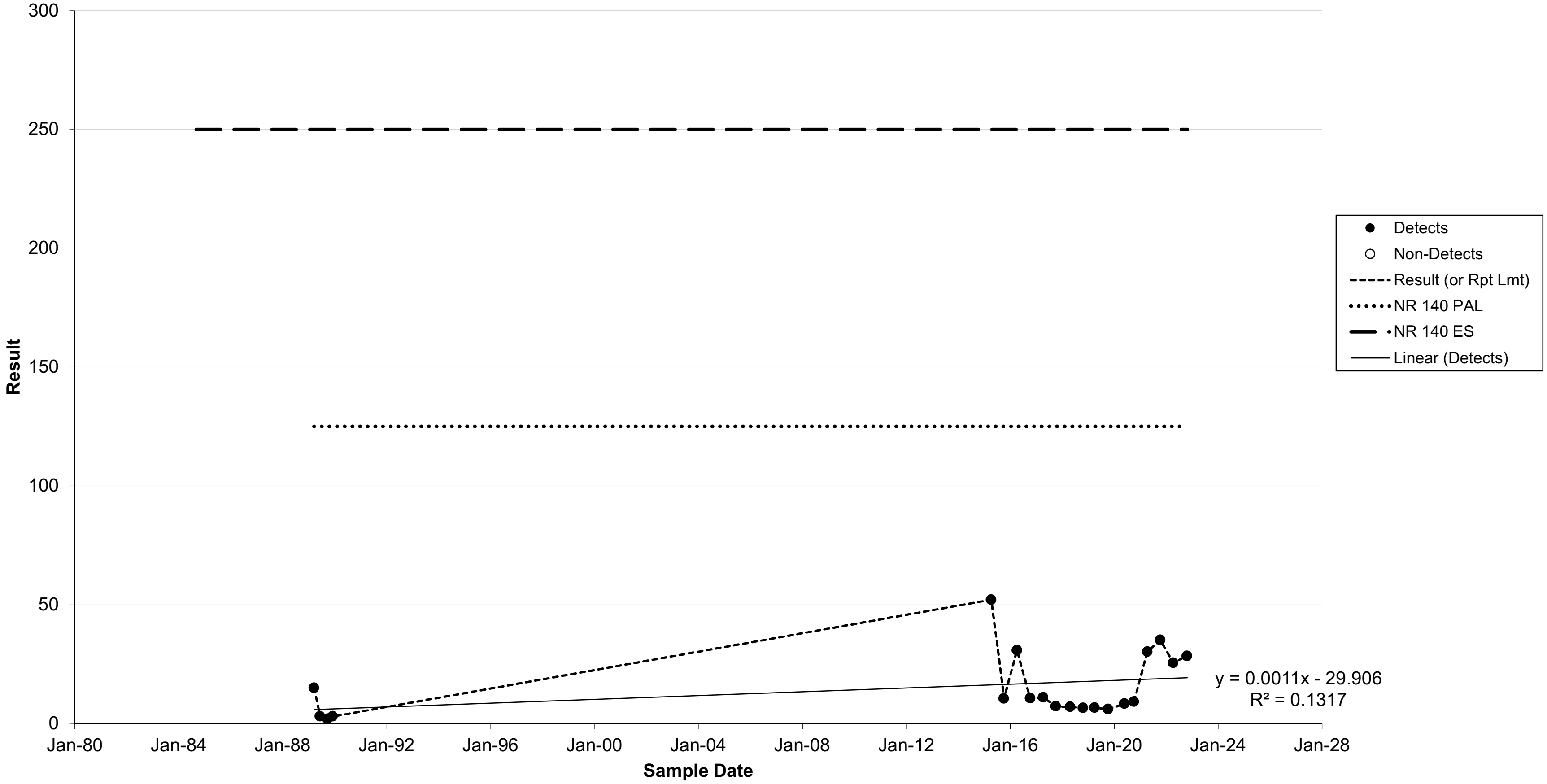
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-86 - Chloride, total (mg/l as Cl)



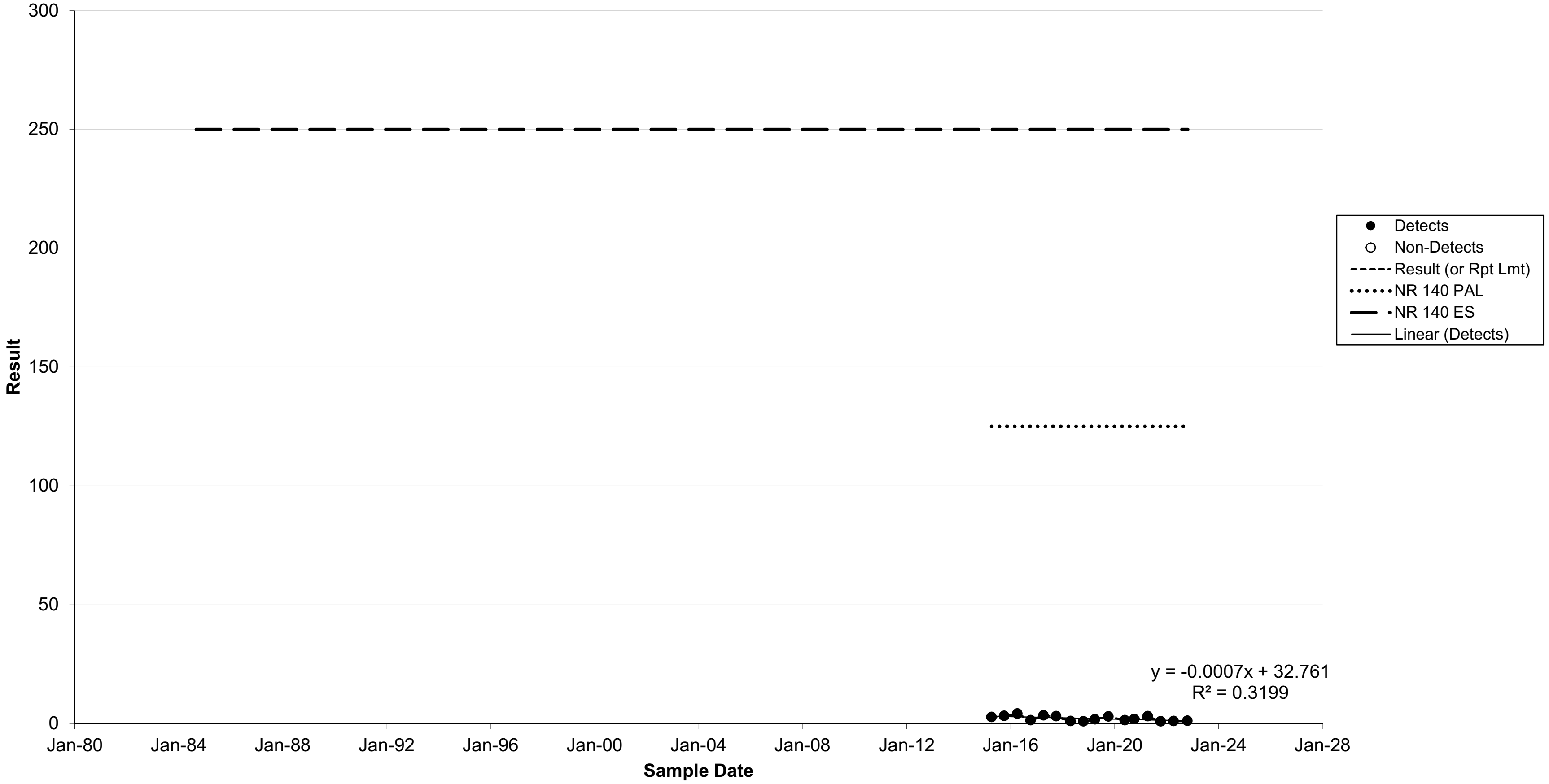
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-91AR - Chloride, dissolved (mg/l as Cl)



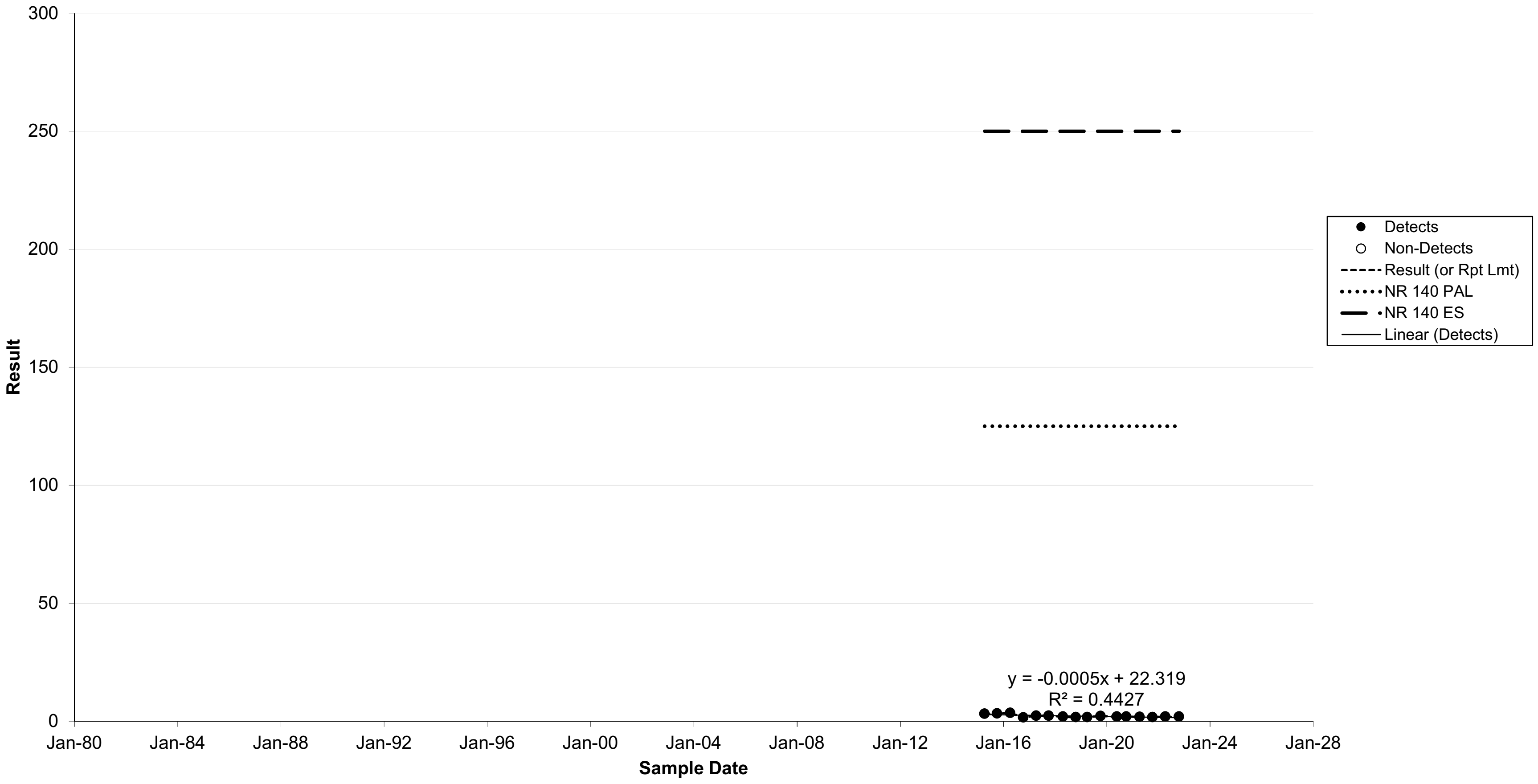
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-91B - Chloride, dissolved (mg/l as Cl)



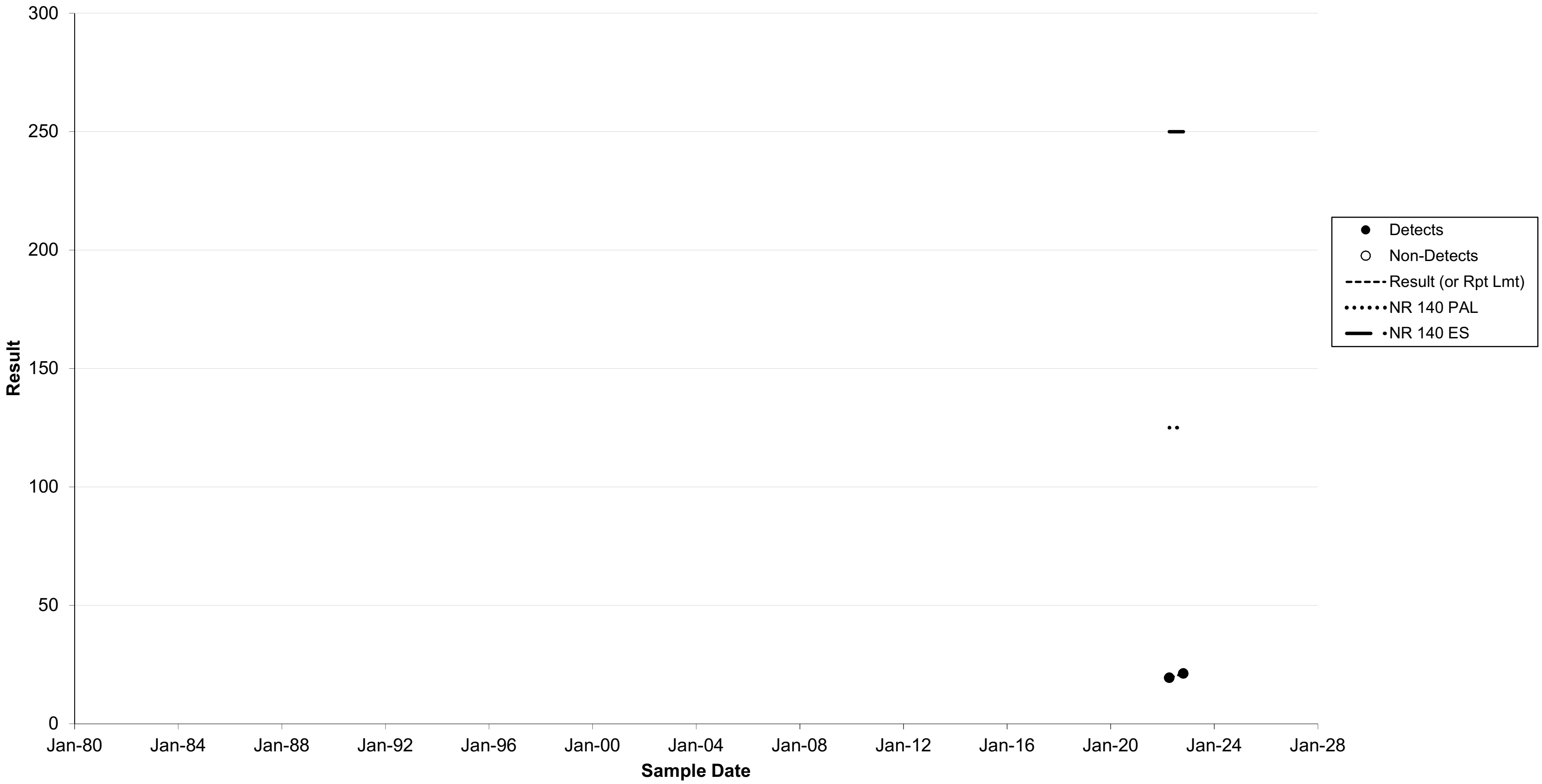
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92A - Chloride, dissolved (mg/l as Cl)



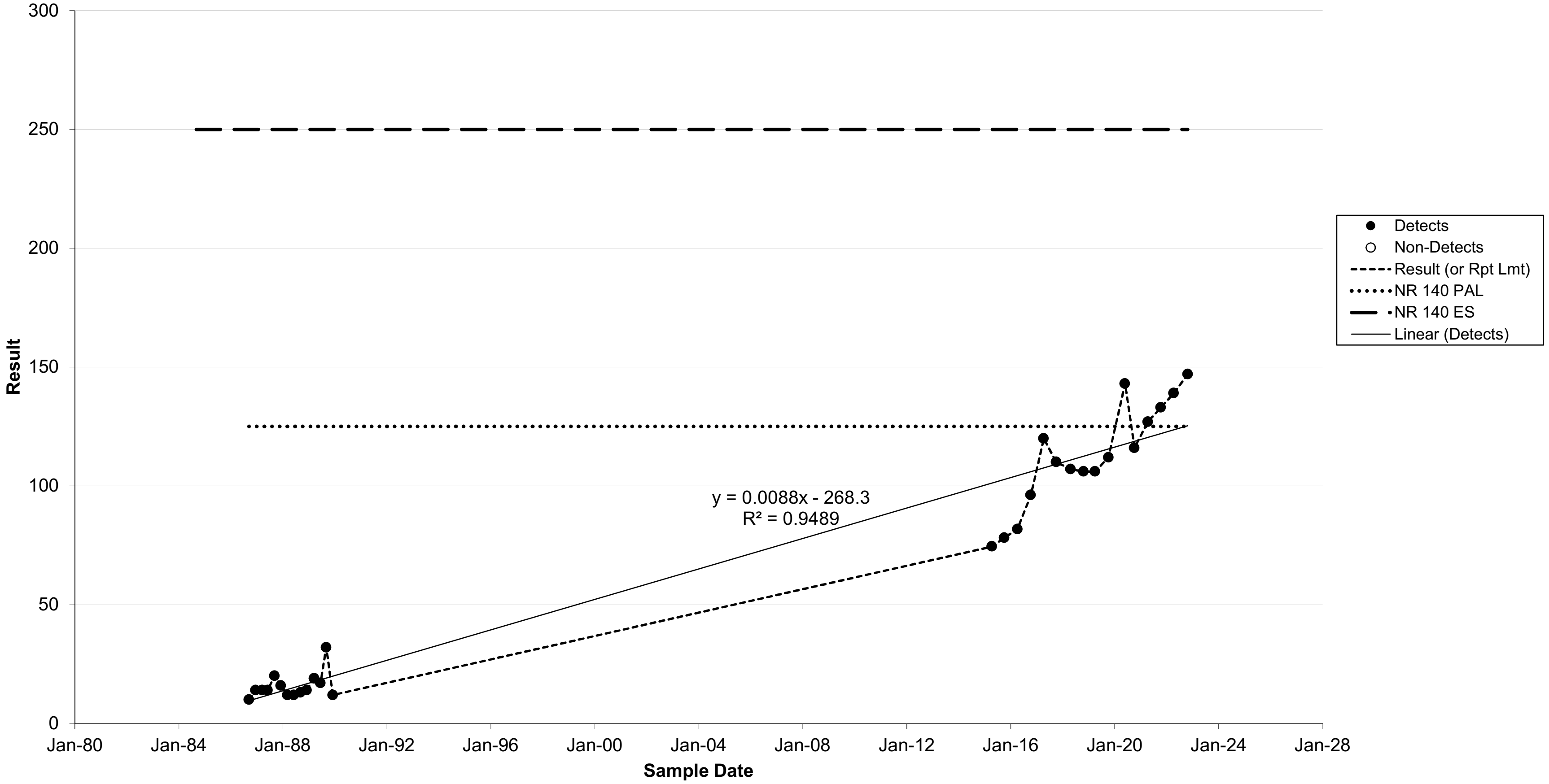
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92B - Chloride, dissolved (mg/l as Cl)



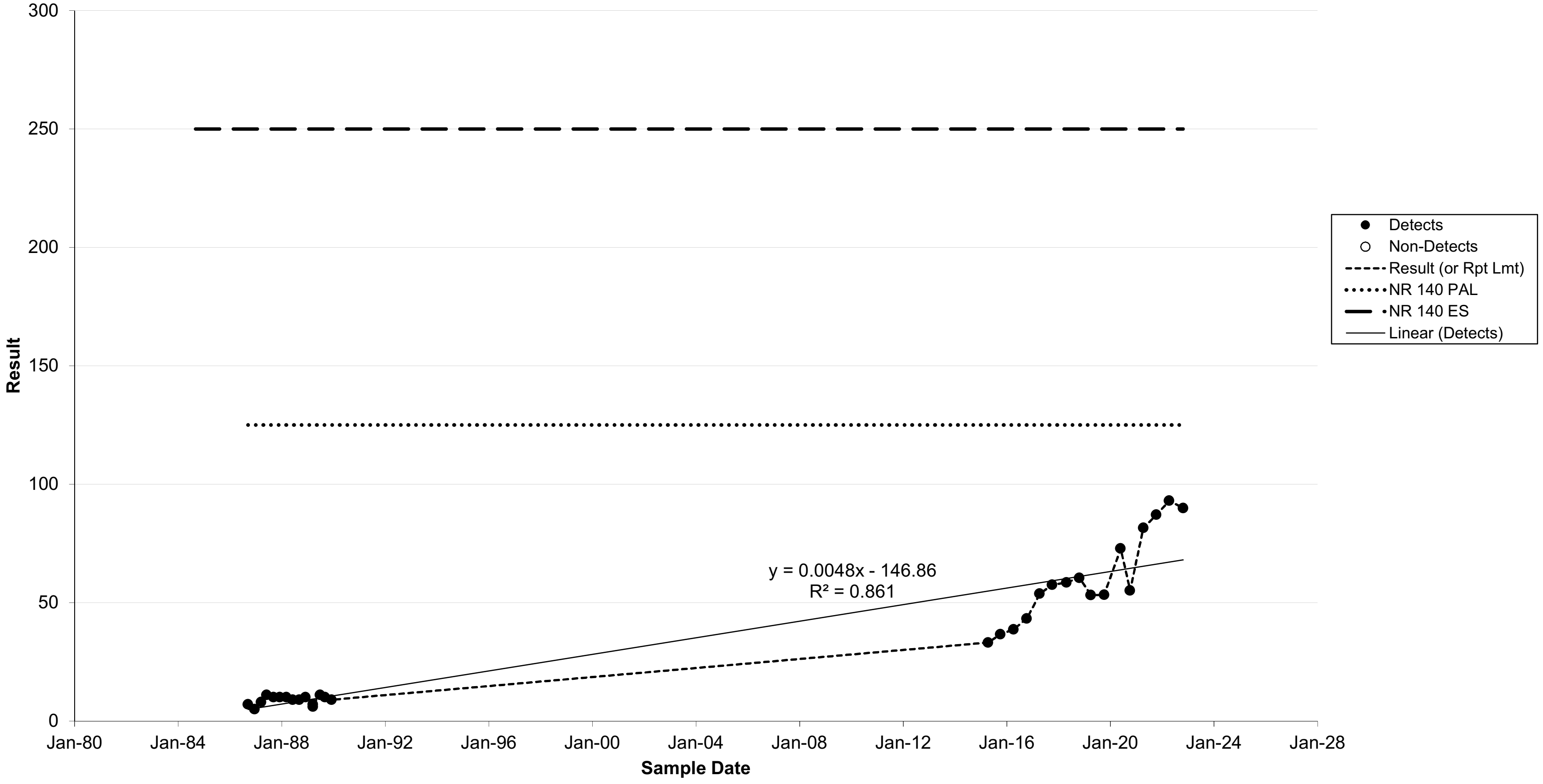
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-93A - Chloride, dissolved (mg/l as Cl)



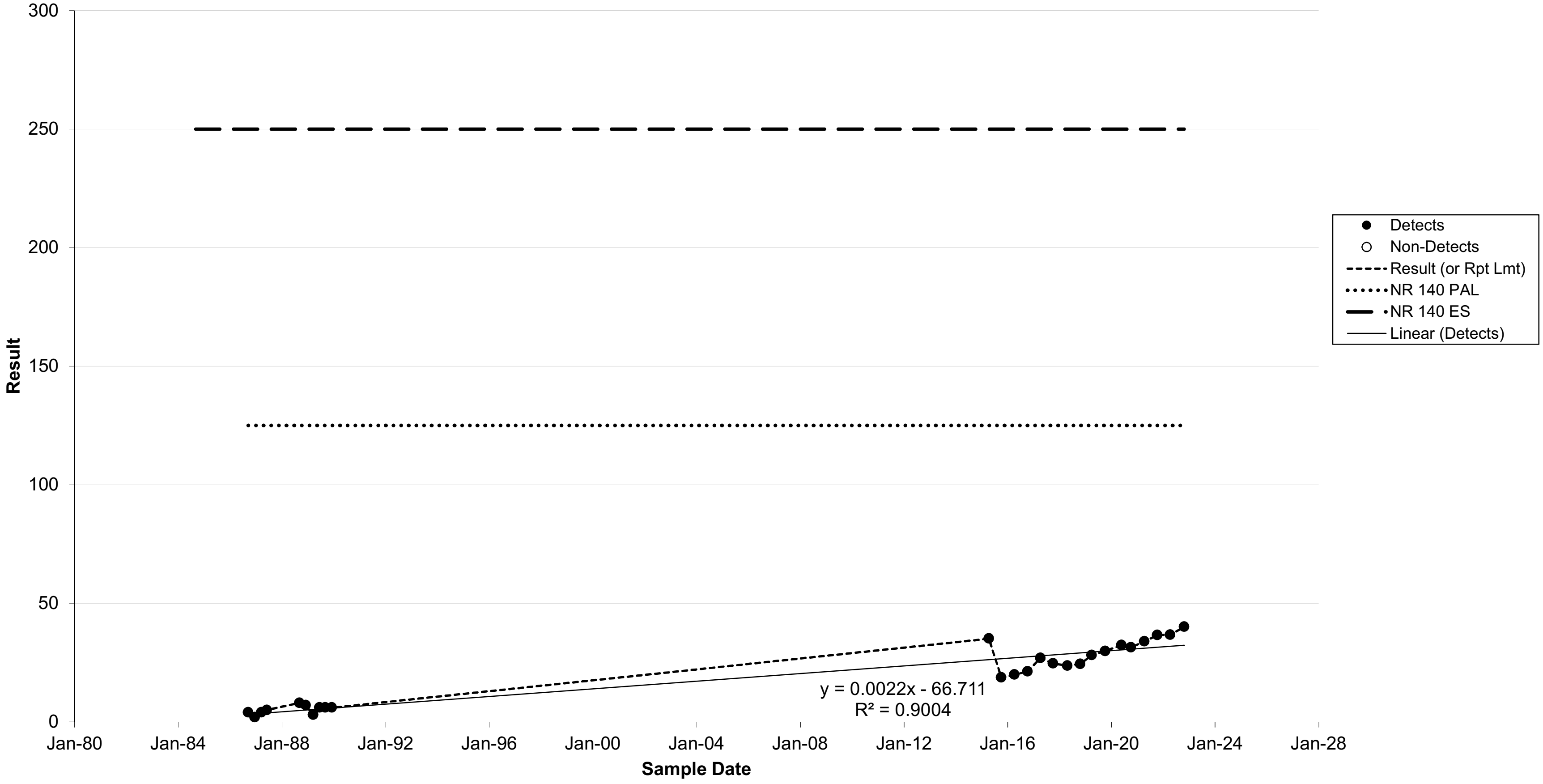
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-1 - Chloride, total (mg/l as Cl)



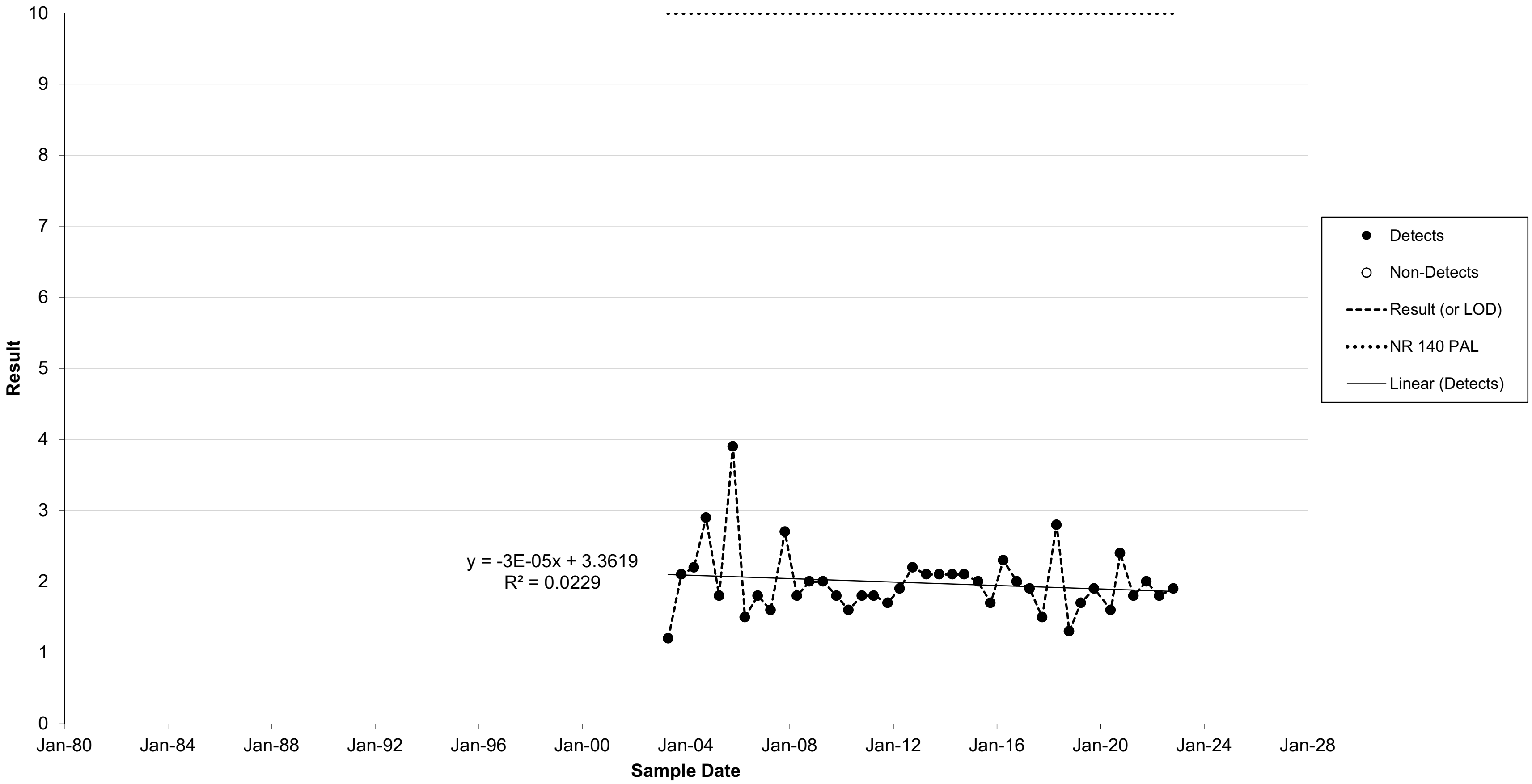
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-2 - Chloride, total (mg/l as Cl)



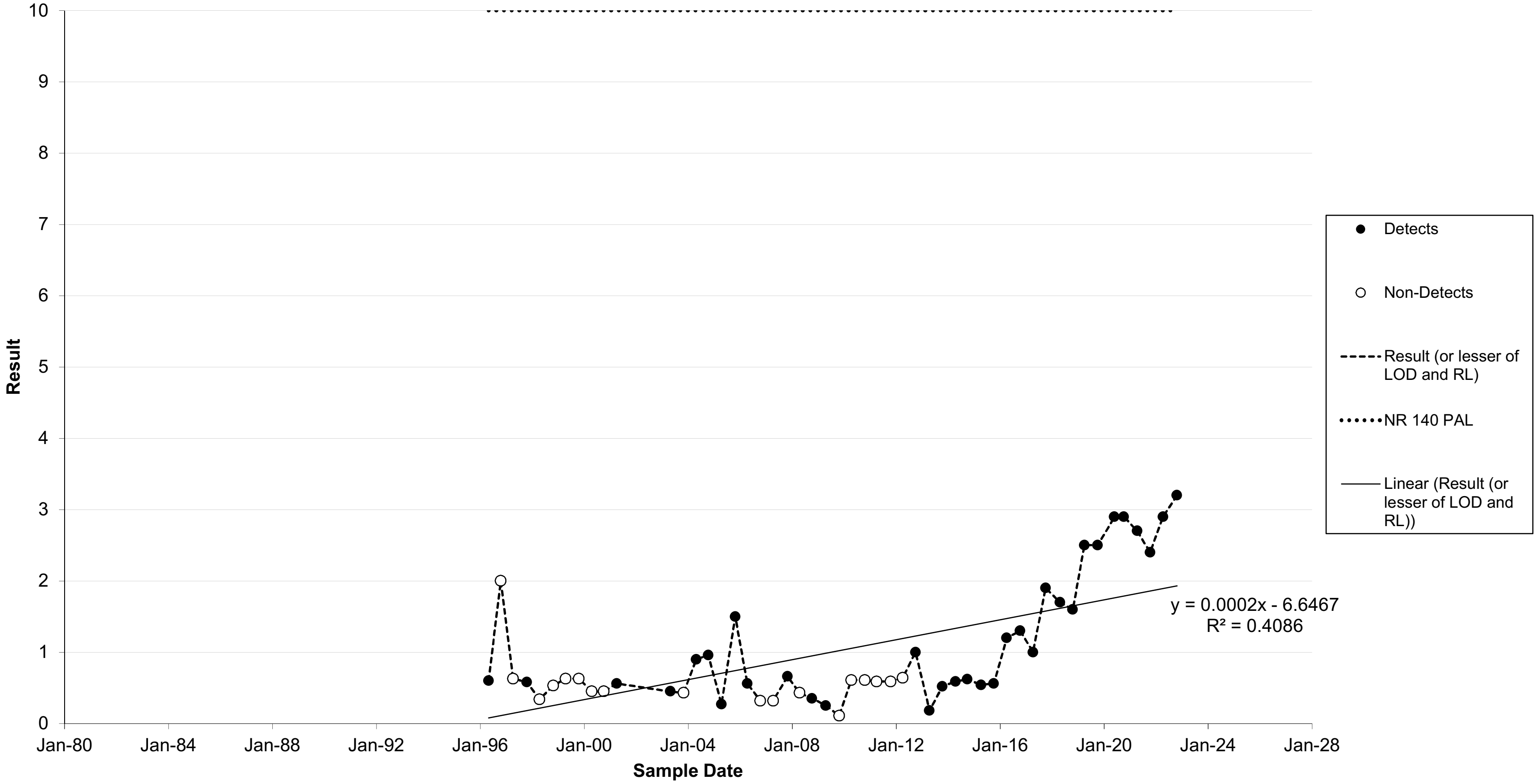
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-3 - Chloride, total (mg/l as Cl)



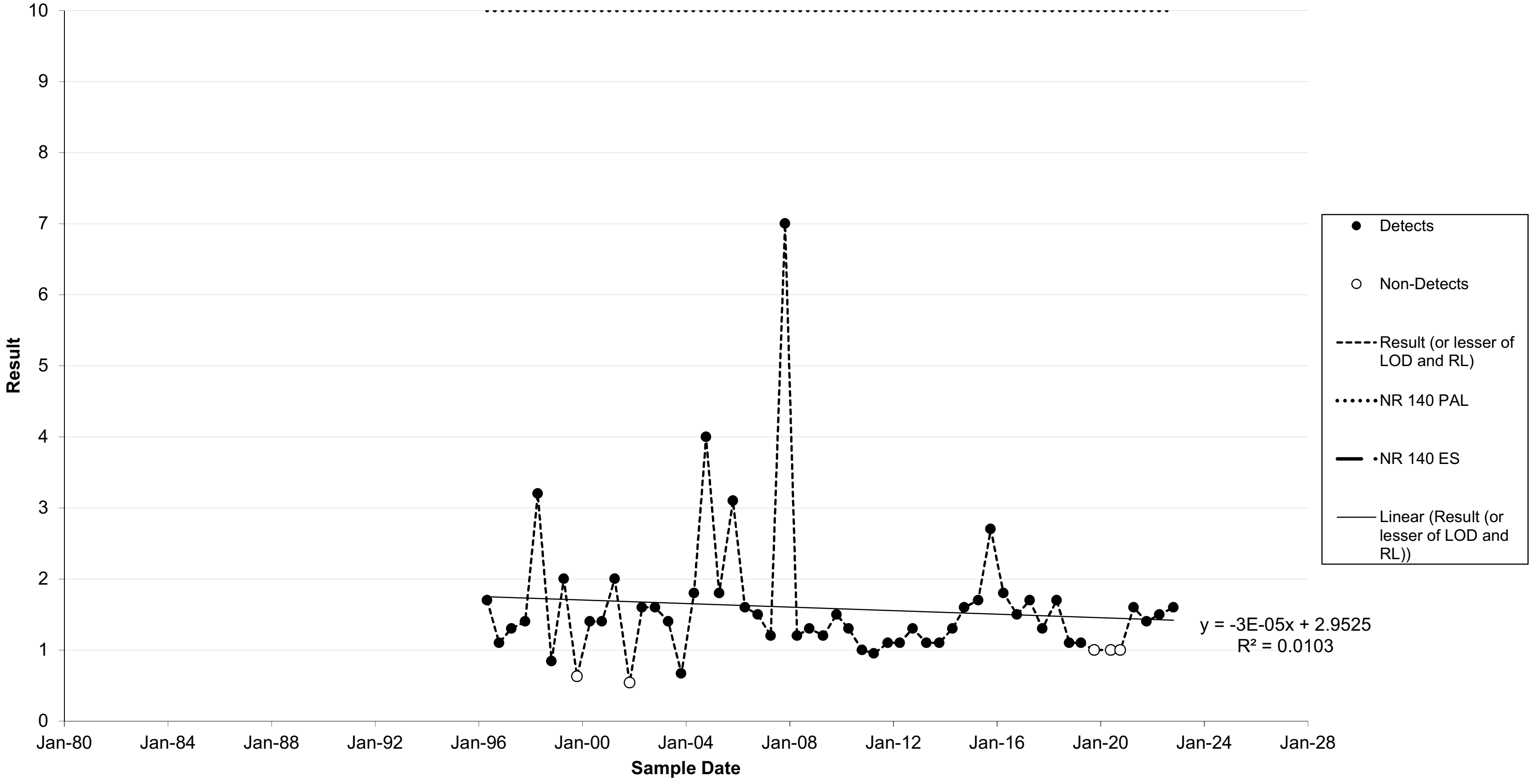
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33AR - Chromium, dissolved (ug/l as Cr)



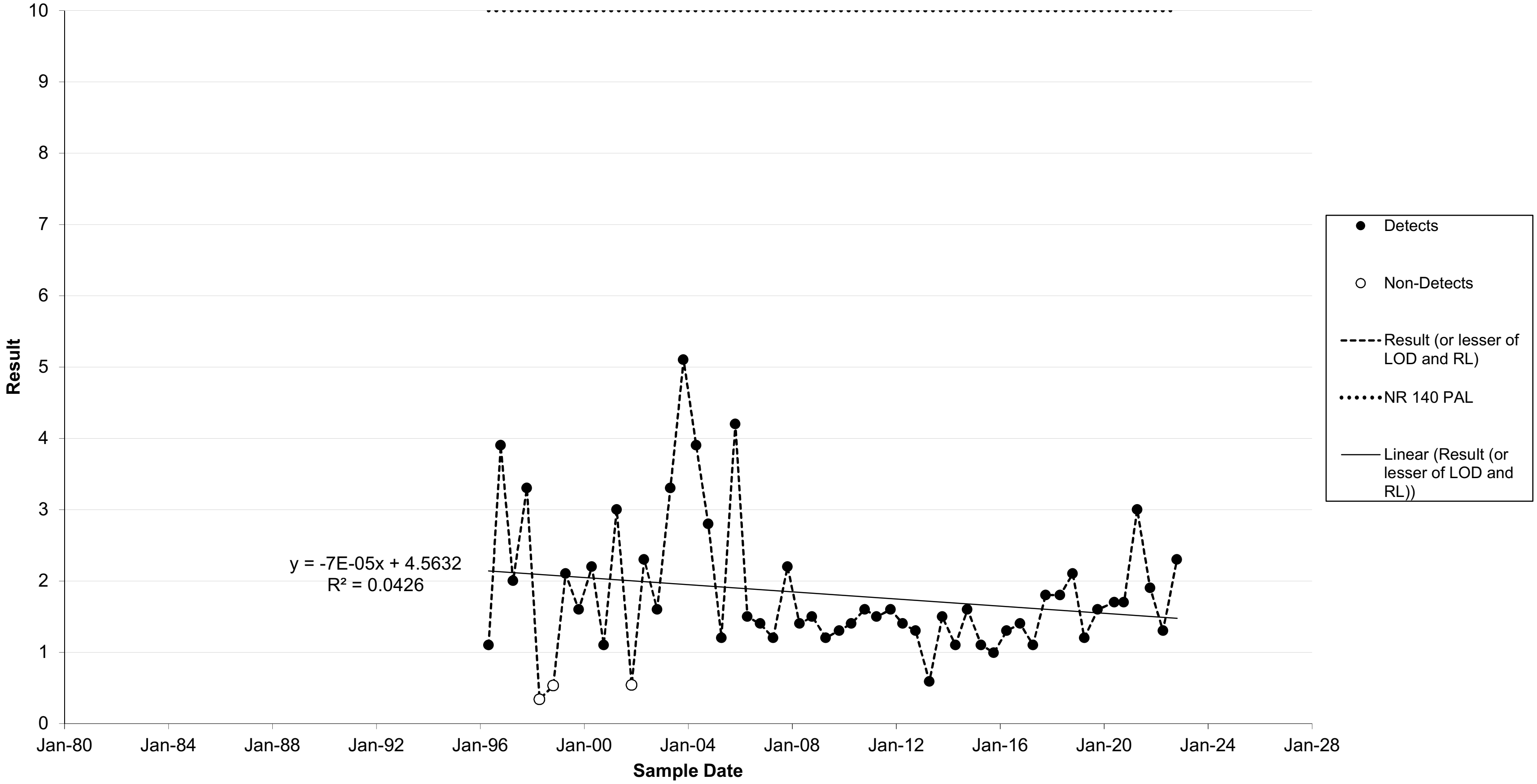
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33B - Chromium, dissolved (ug/l as Cr)



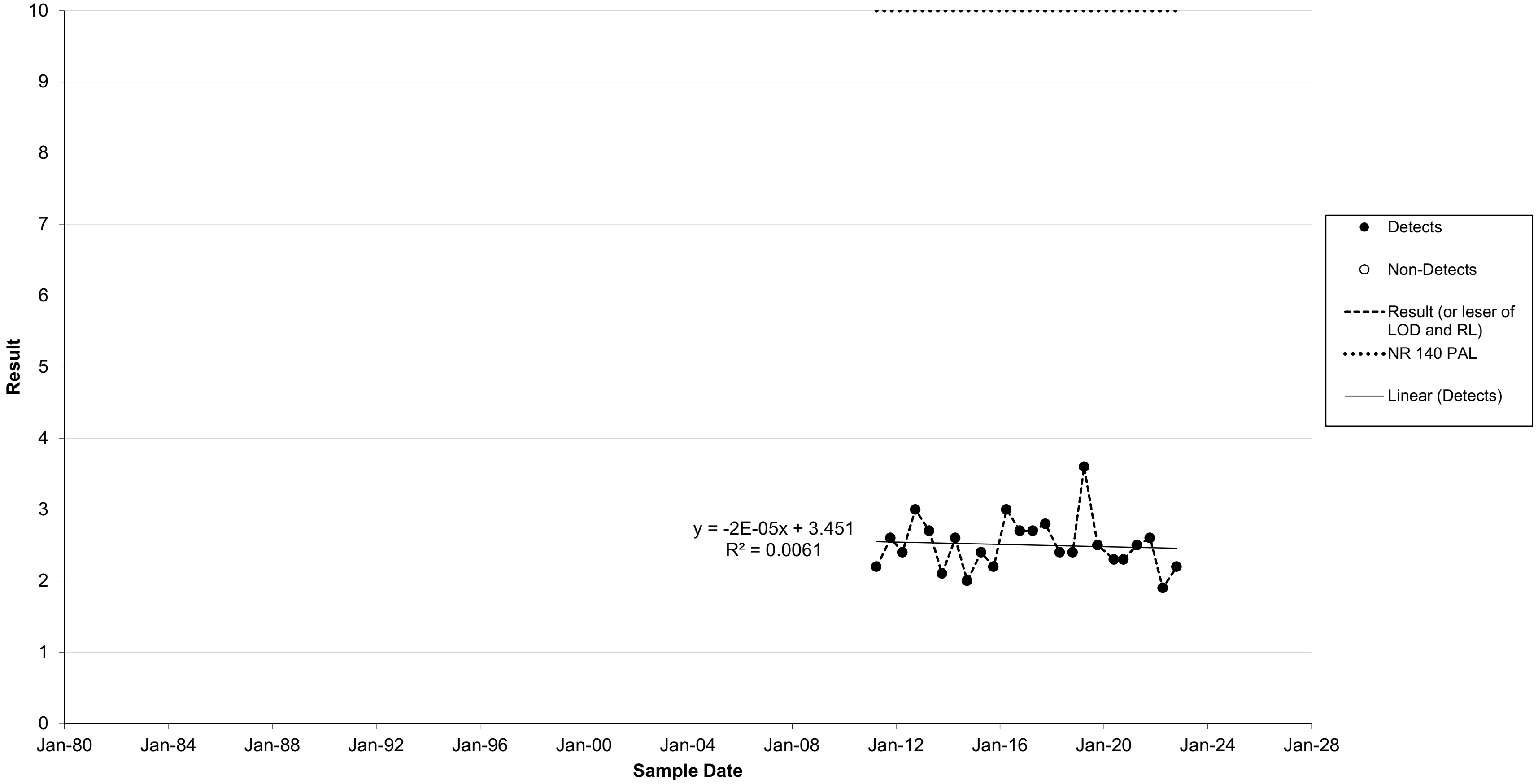
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-34A - Chromium, dissolved (ug/l as Cr)



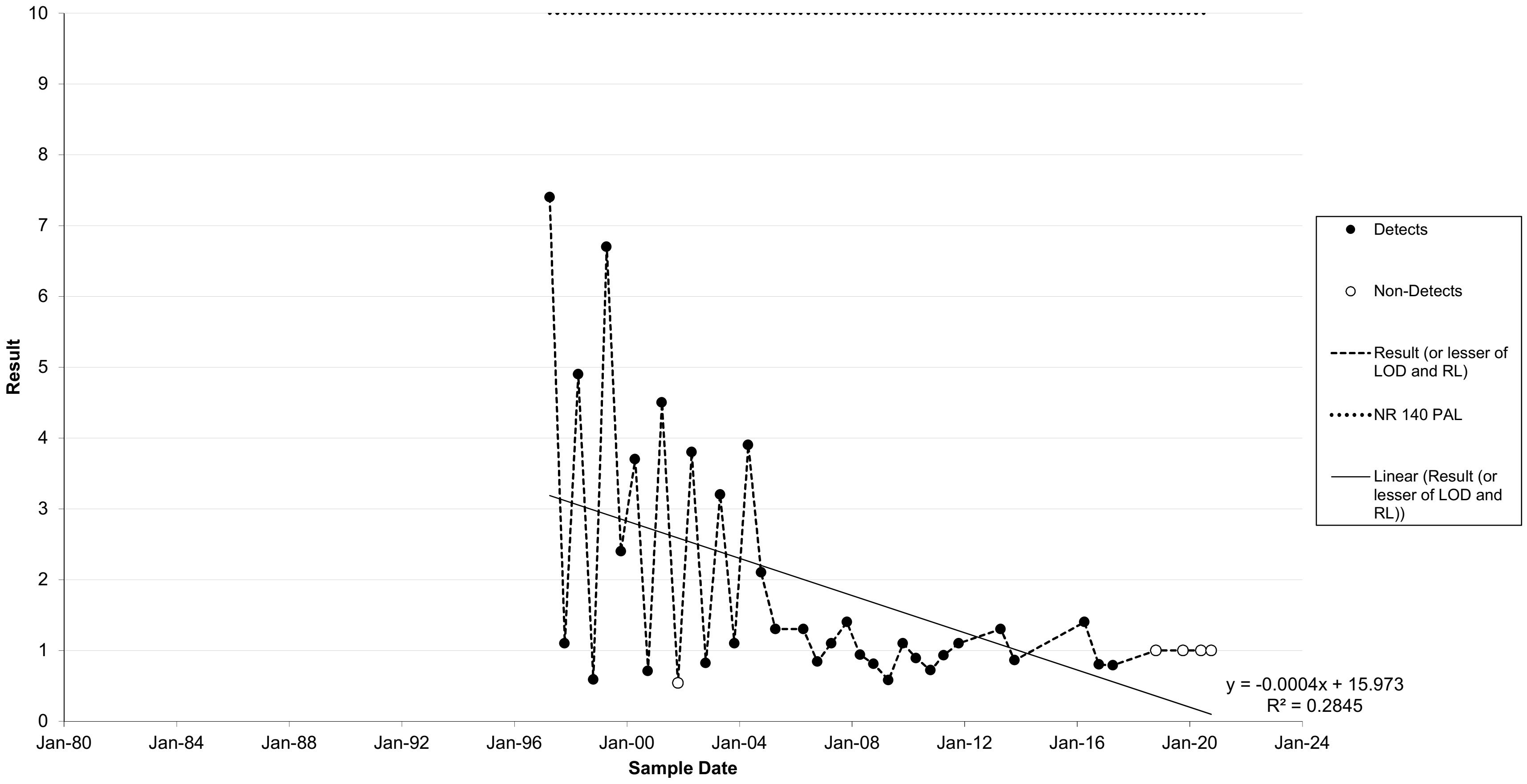
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-34B - Chromium, dissolved (ug/l as Cr)



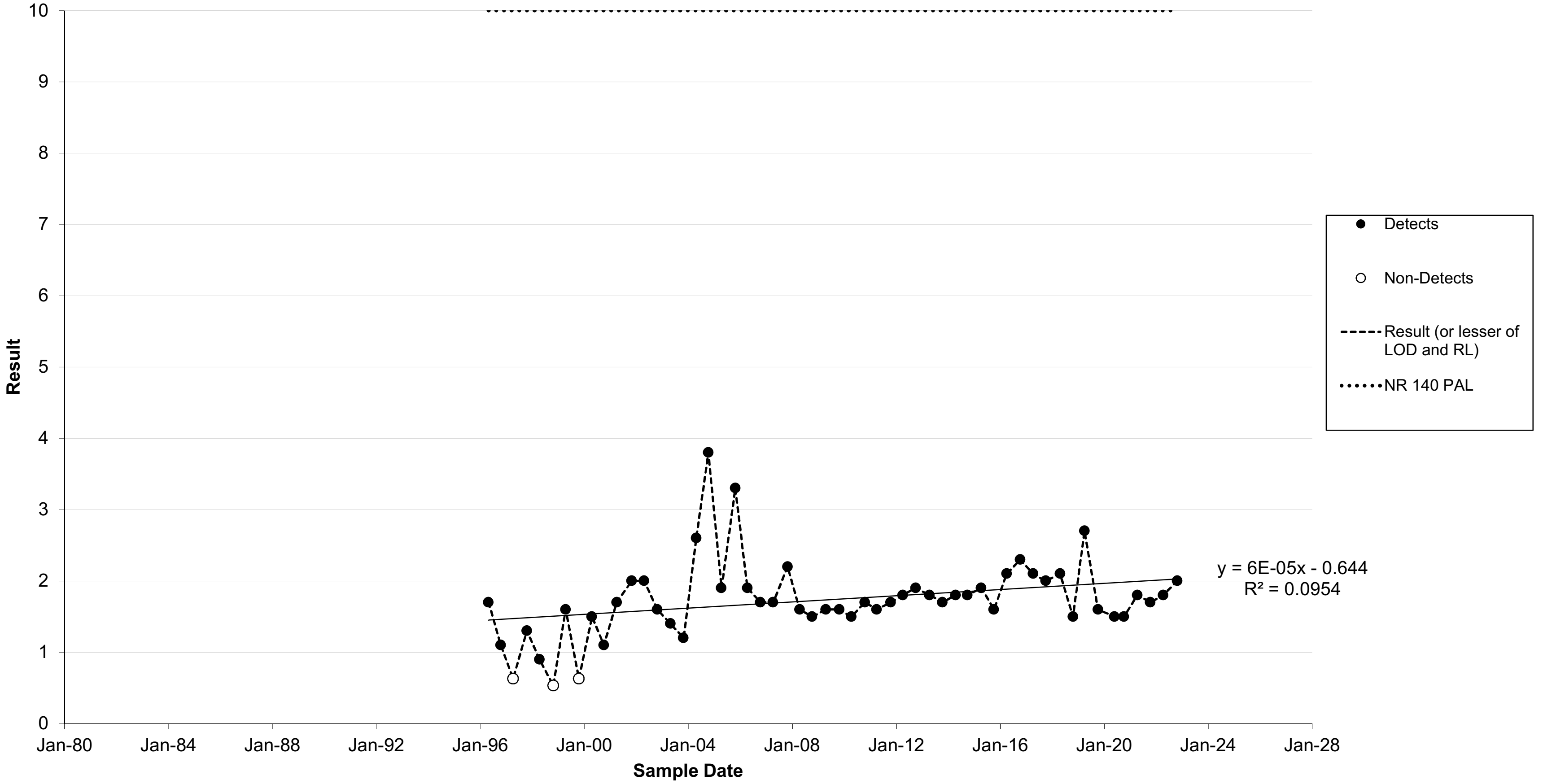
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-37A - Chromium, dissolved (ug/l as Cr)



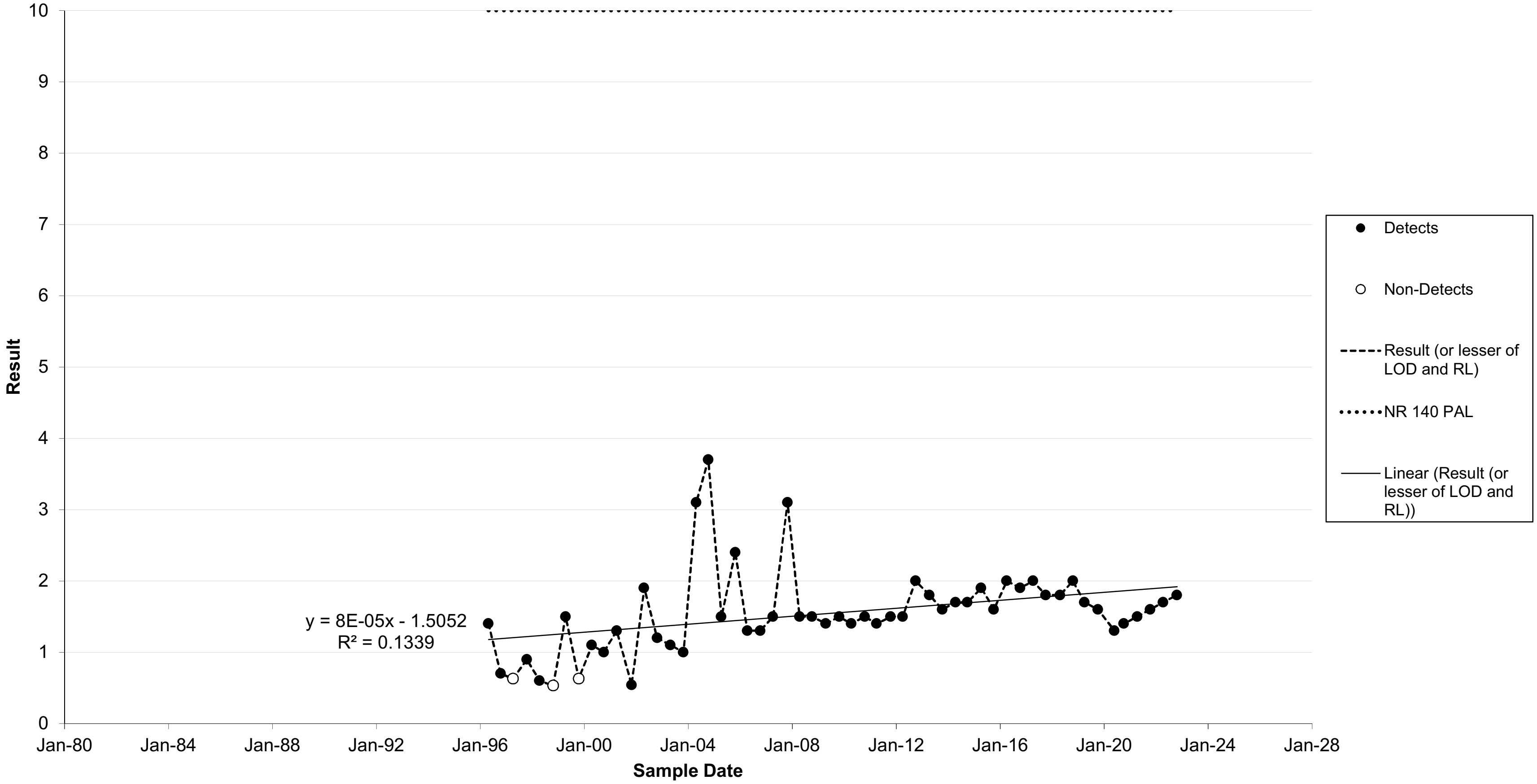
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-83 - Chromium, dissolved (ug/l as Cr)



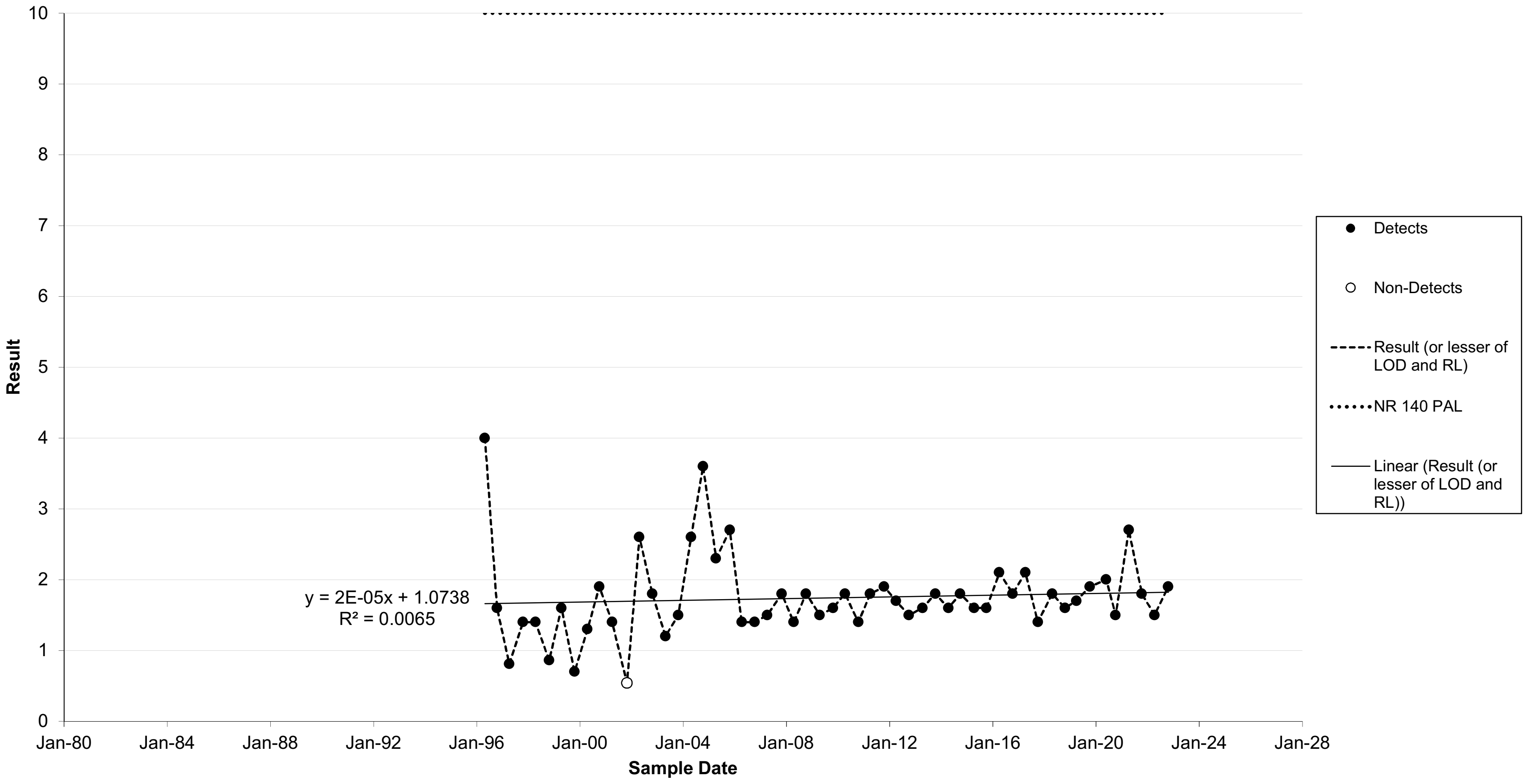
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-84A - Chromium, dissolved (ug/l as Cr)



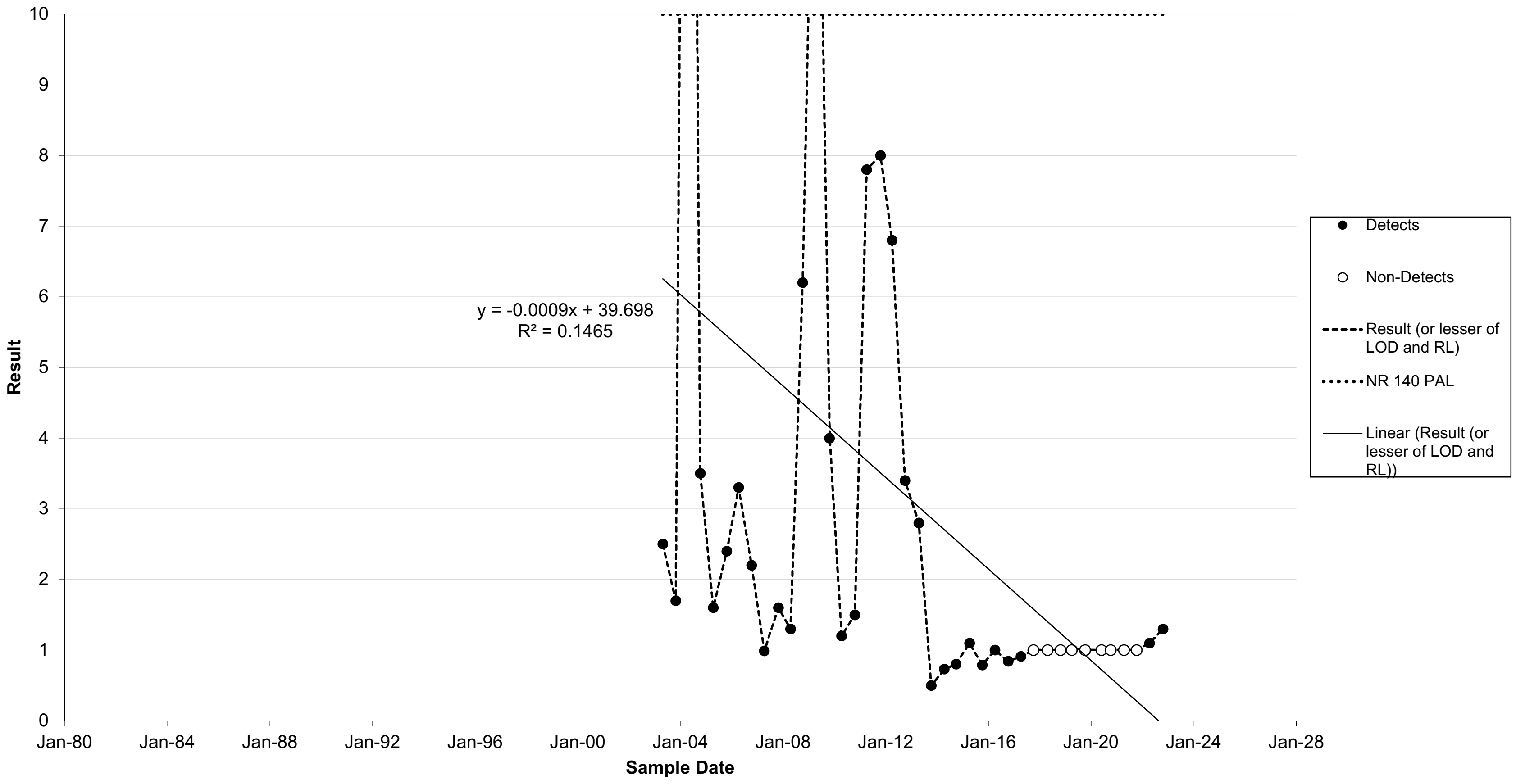
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-84B - Chromium, dissolved (ug/l as Cr)



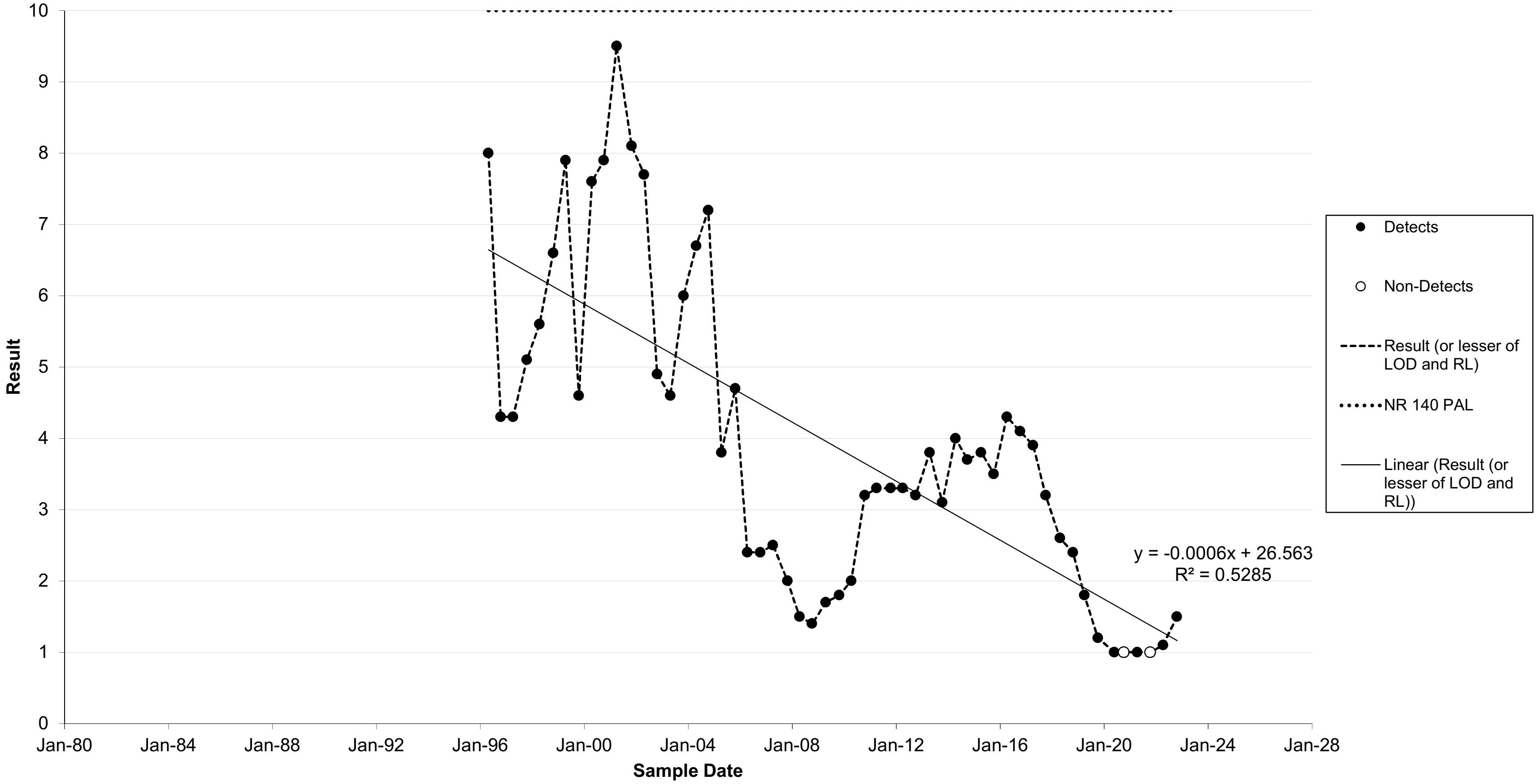
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-86 - Chromium, dissolved (ug/l as Cr)



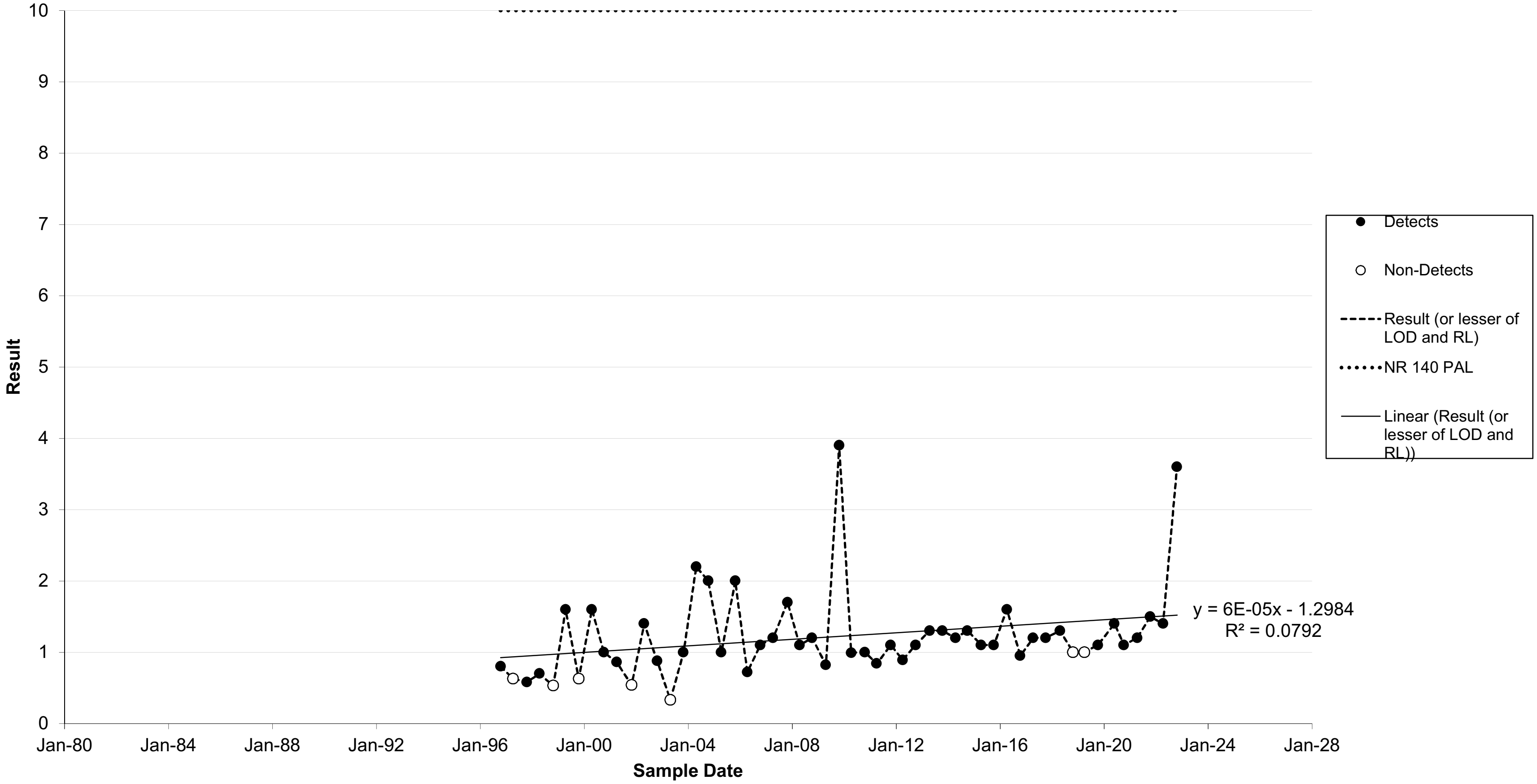
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-91AR - Chromium, dissolved (ug/l as Cr)



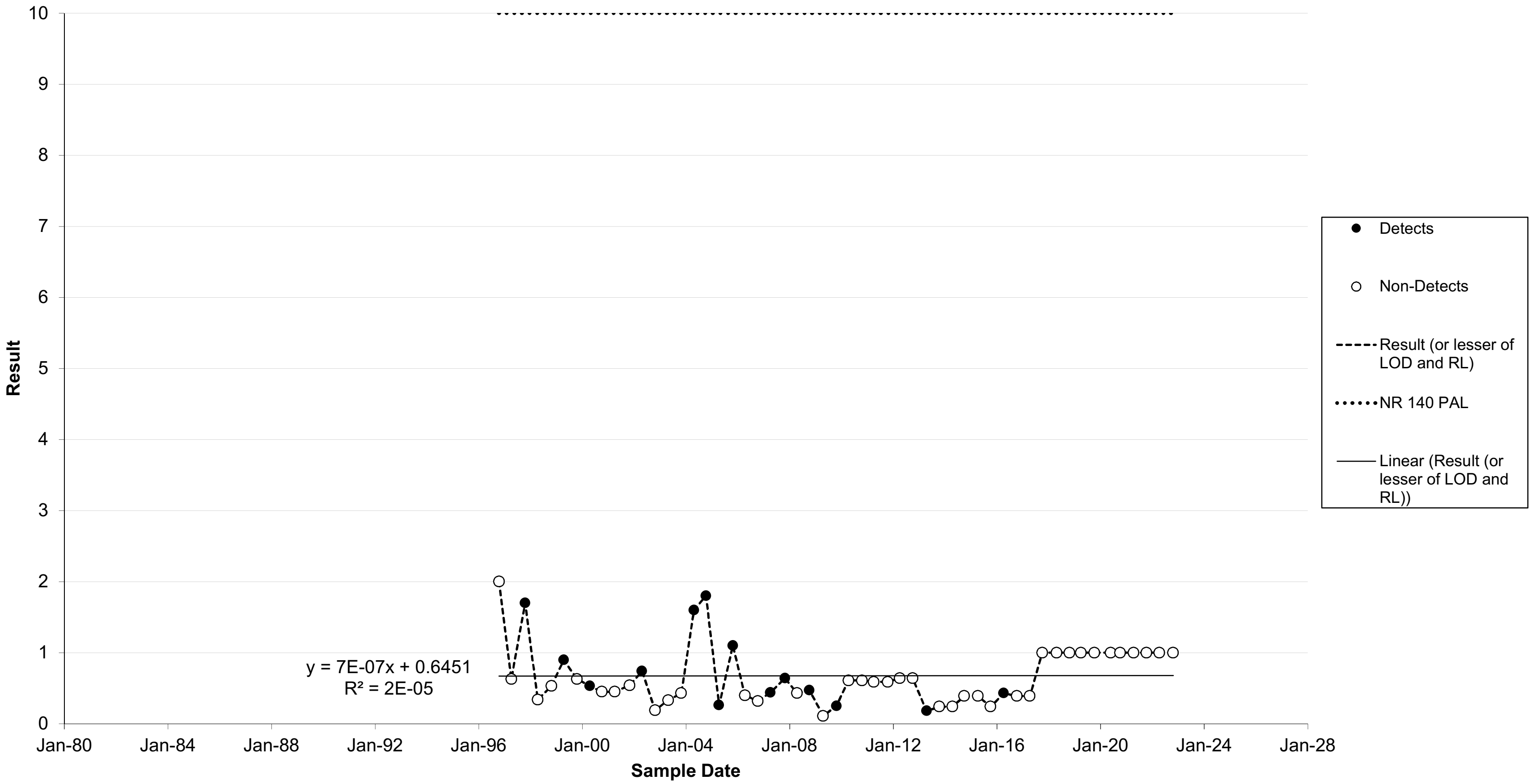
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-91B - Chromium, dissolved (ug/l as Cr)



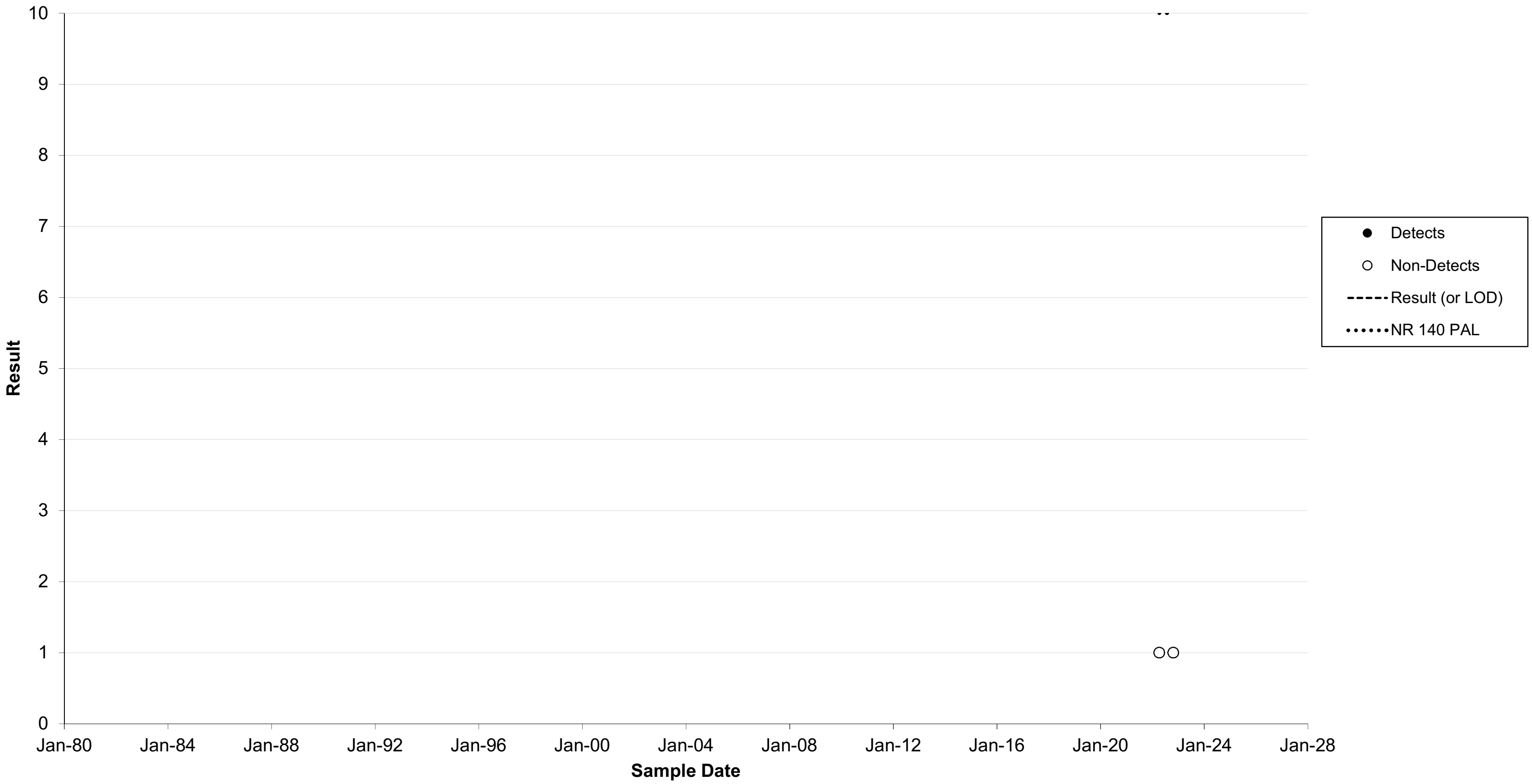
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92A - Chromium, dissolved (ug/l as Cr)



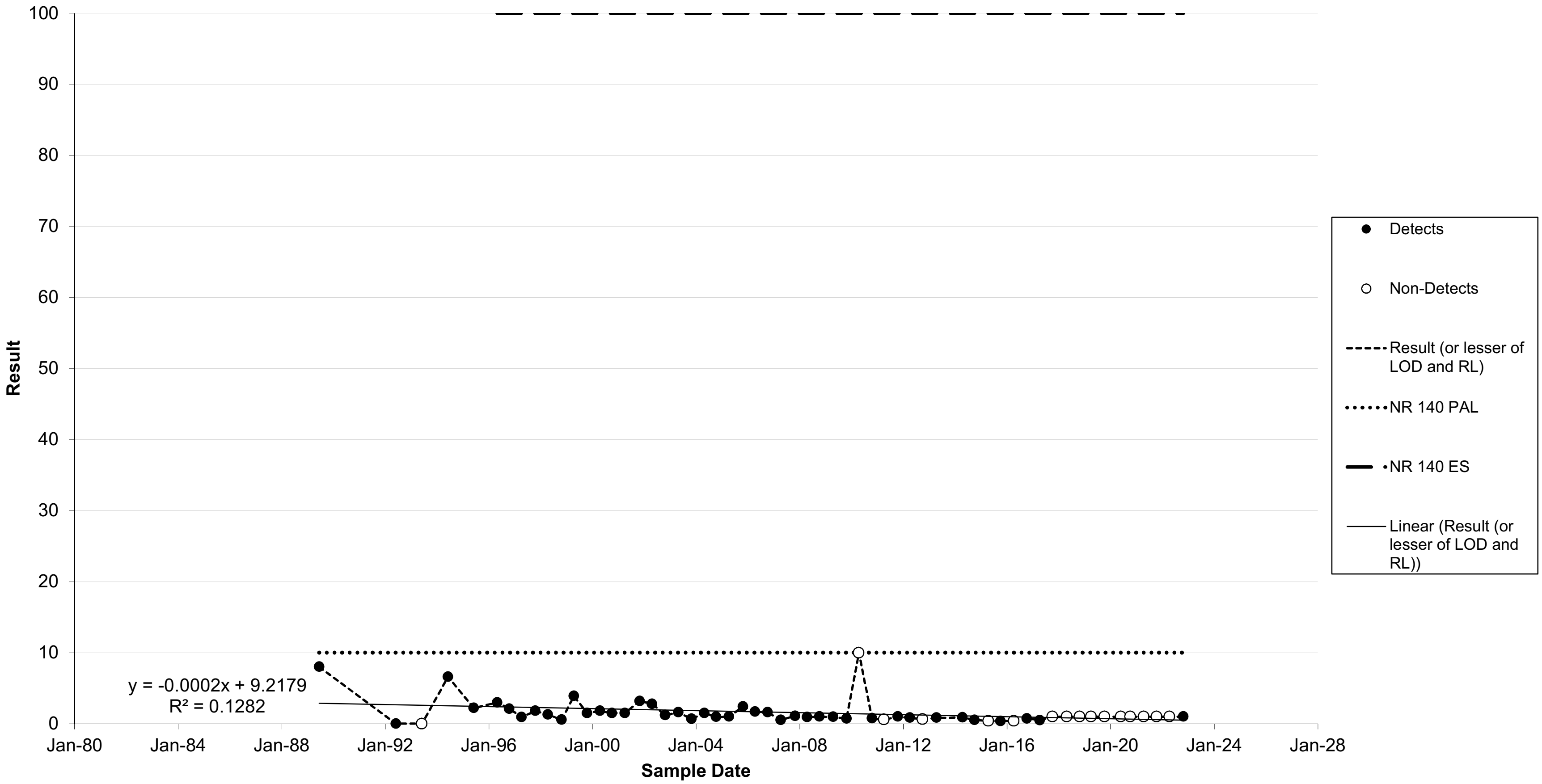
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92B - Chromium, dissolved (ug/l as Cr)



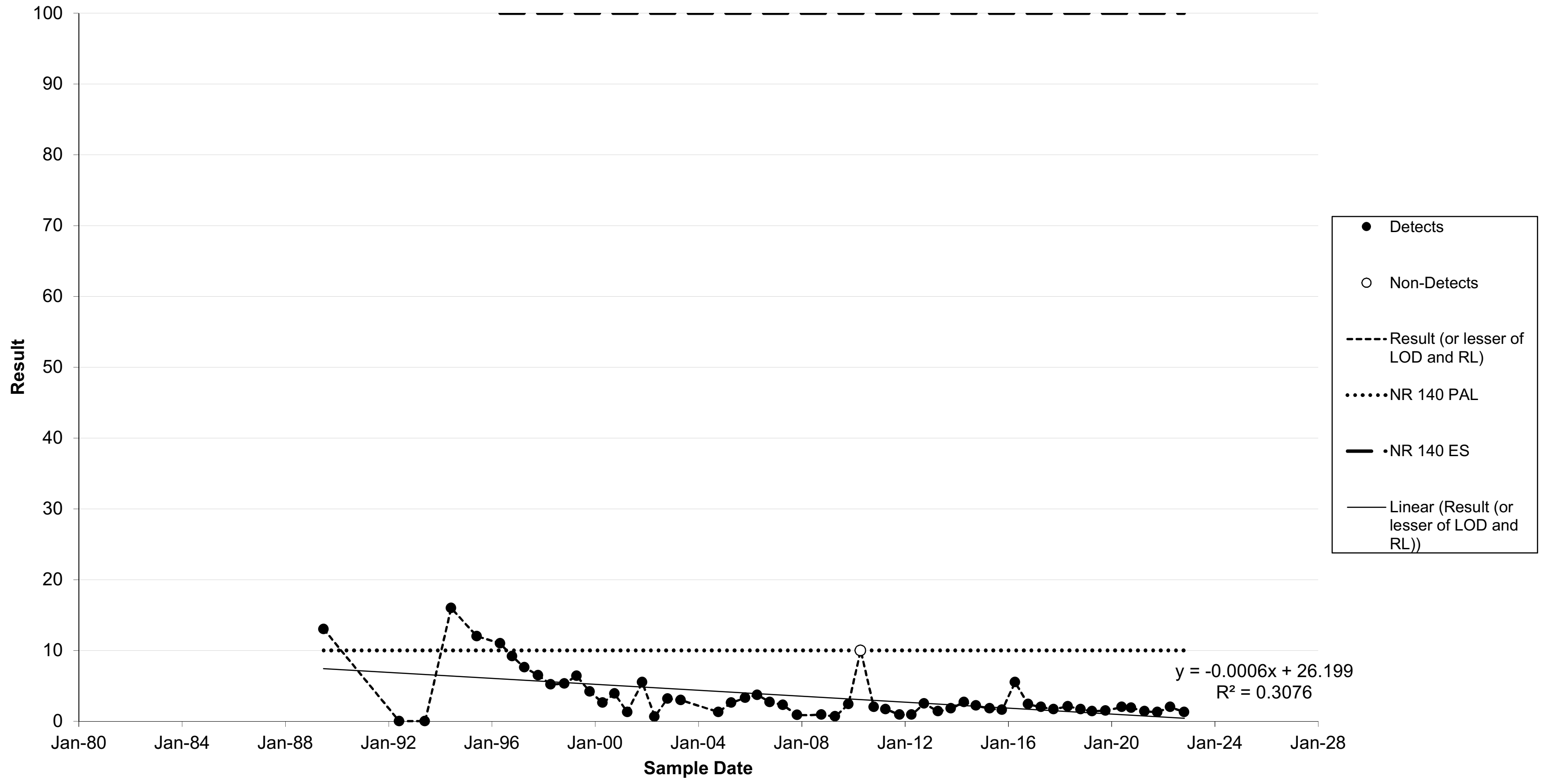
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-93A - Chromium, dissolved (ug/l as Cr)



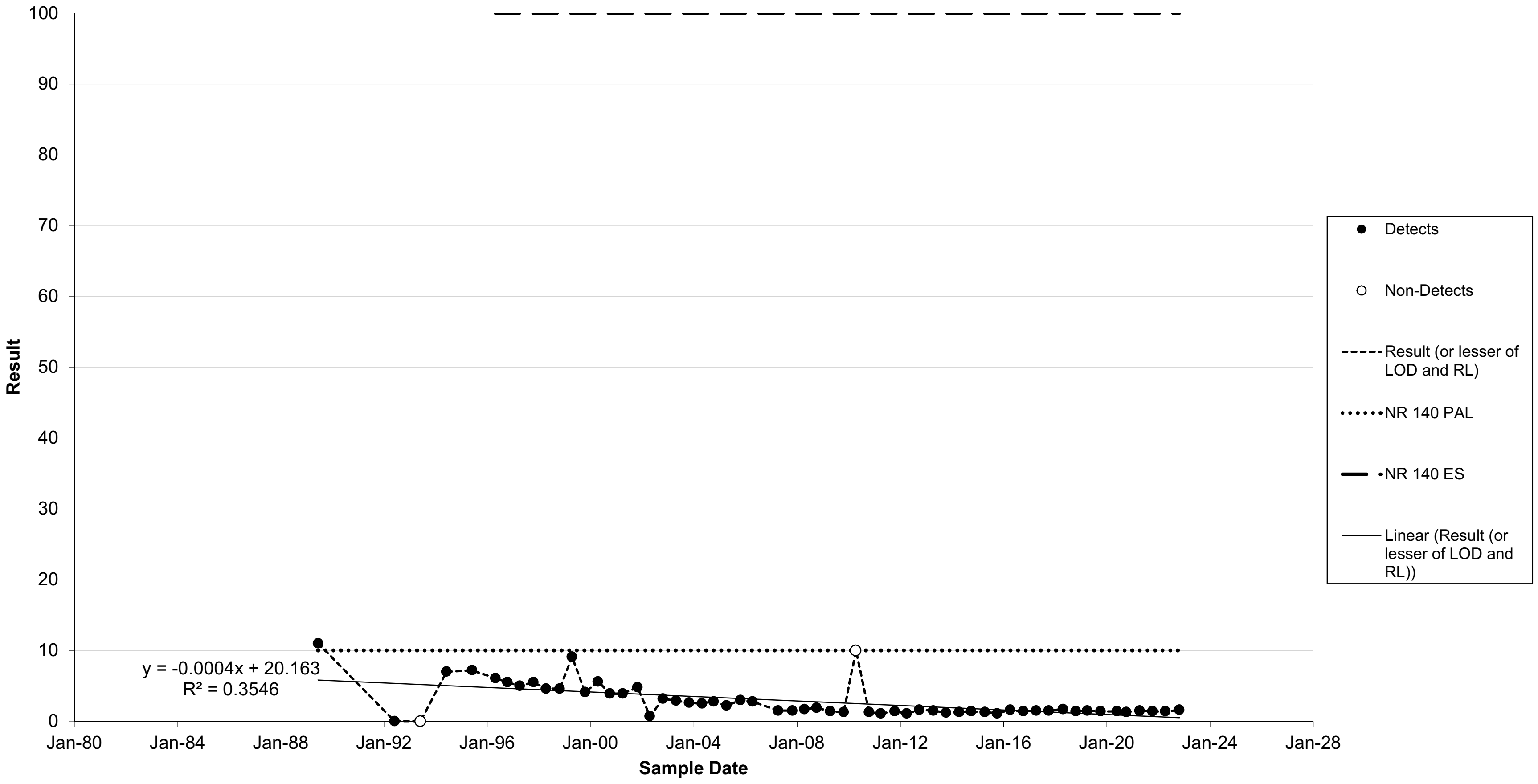
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-1 - Chromium, total (ug/l Cr)



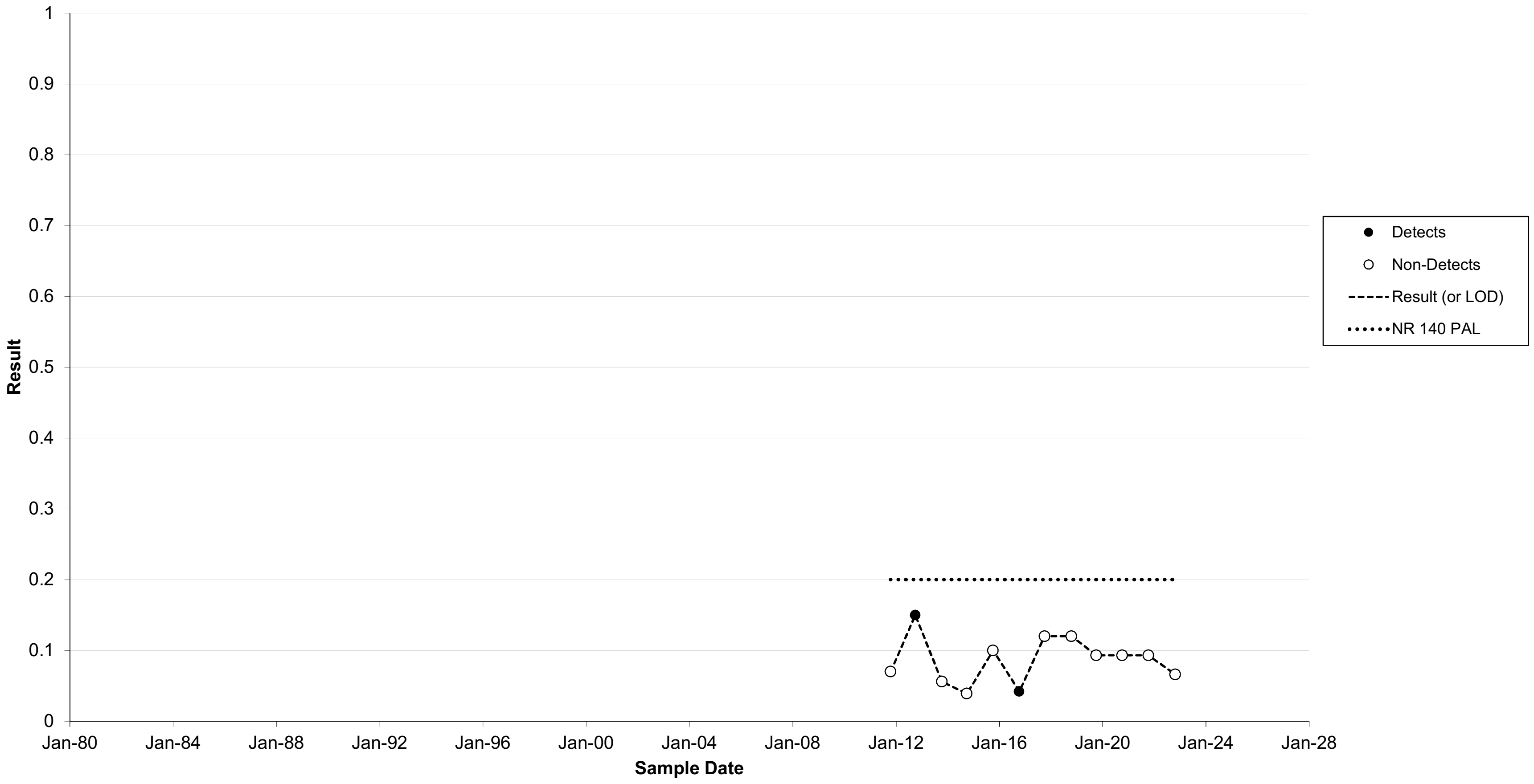
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-2 - Chromium, total (ug/l Cr)



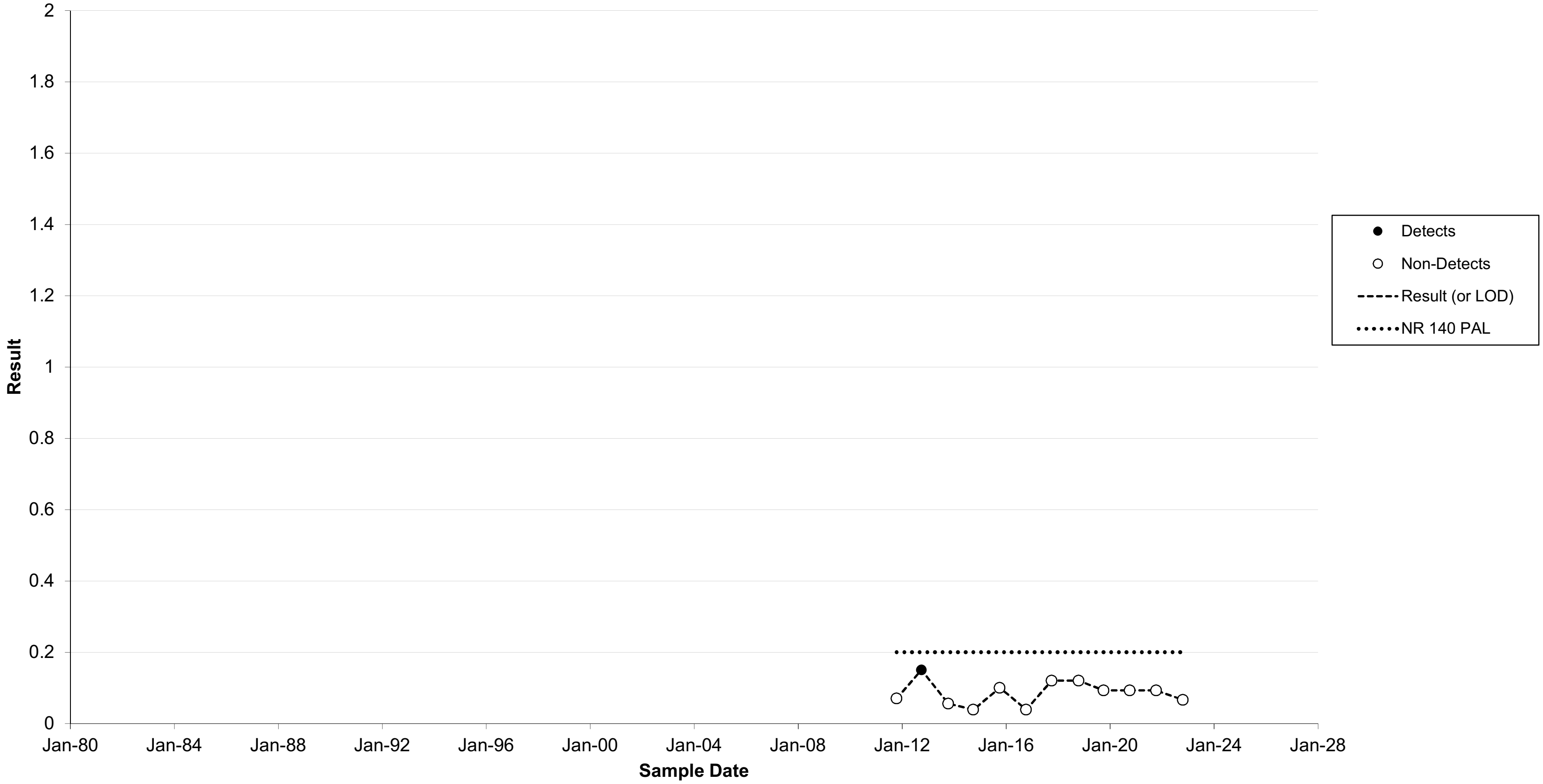
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-3 - Chromium, total (ug/l Cr)



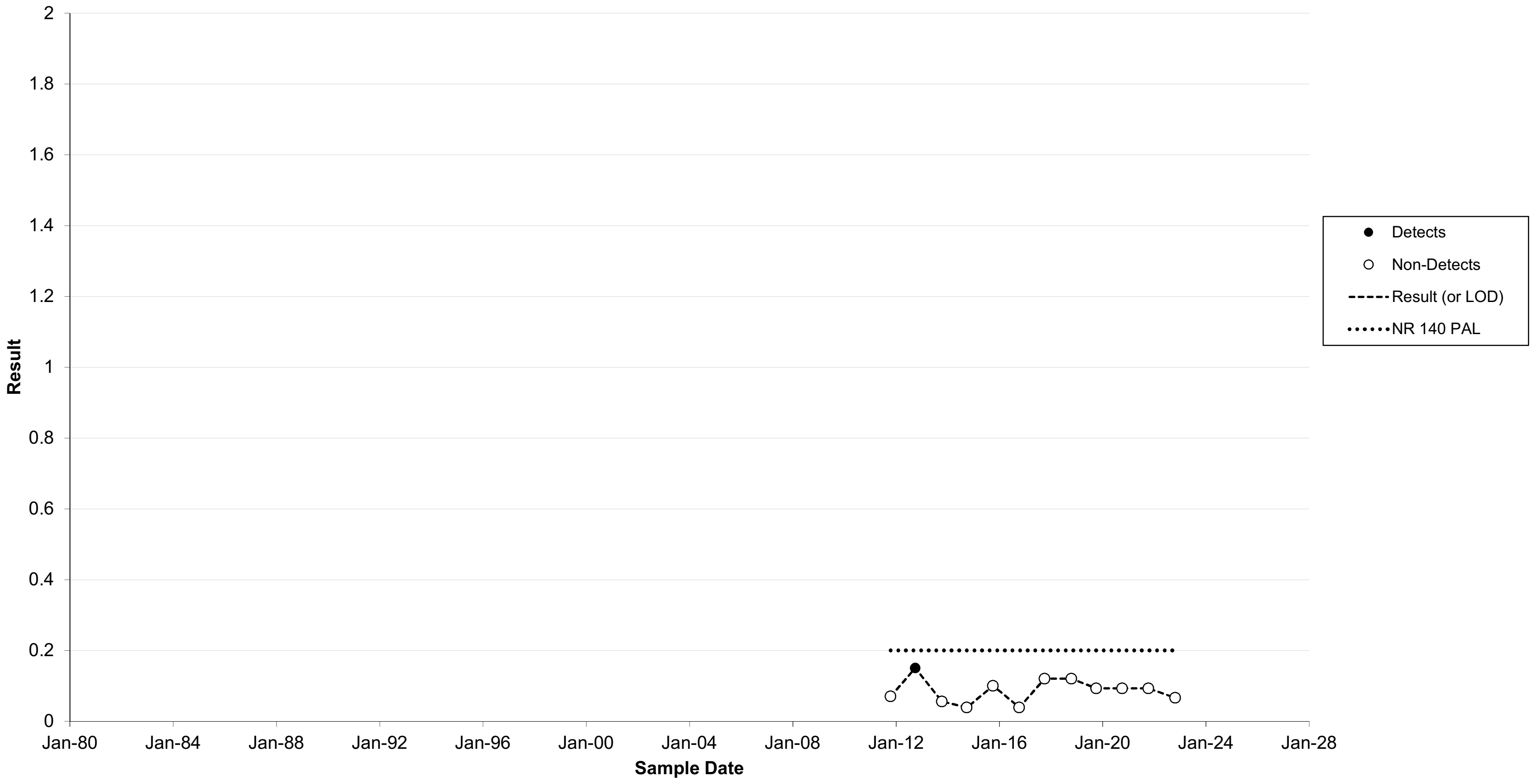
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33AR - Mercury, dissolved (ug/l as Hg)



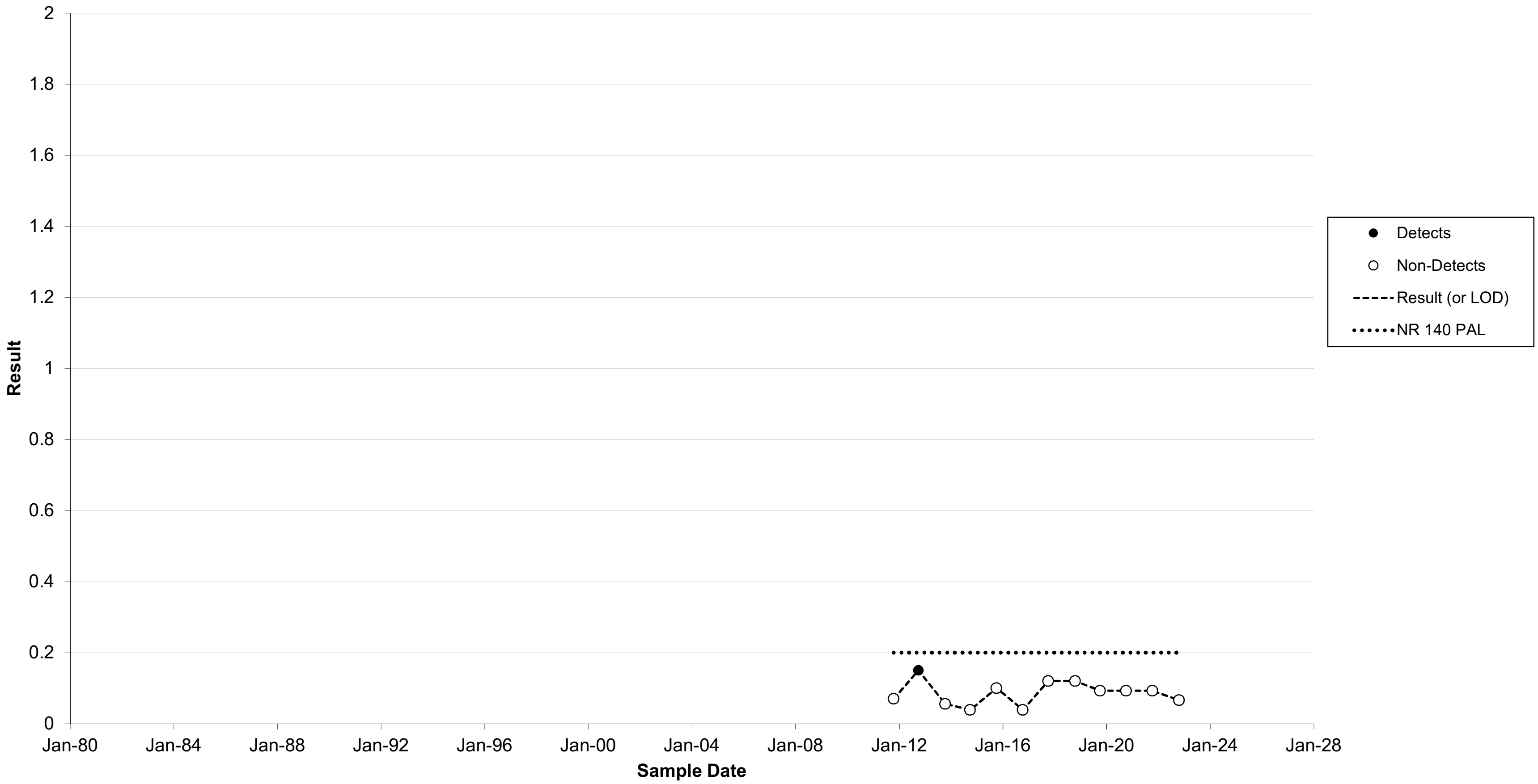
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33BR - Mercury, dissolved (ug/l as Hg)



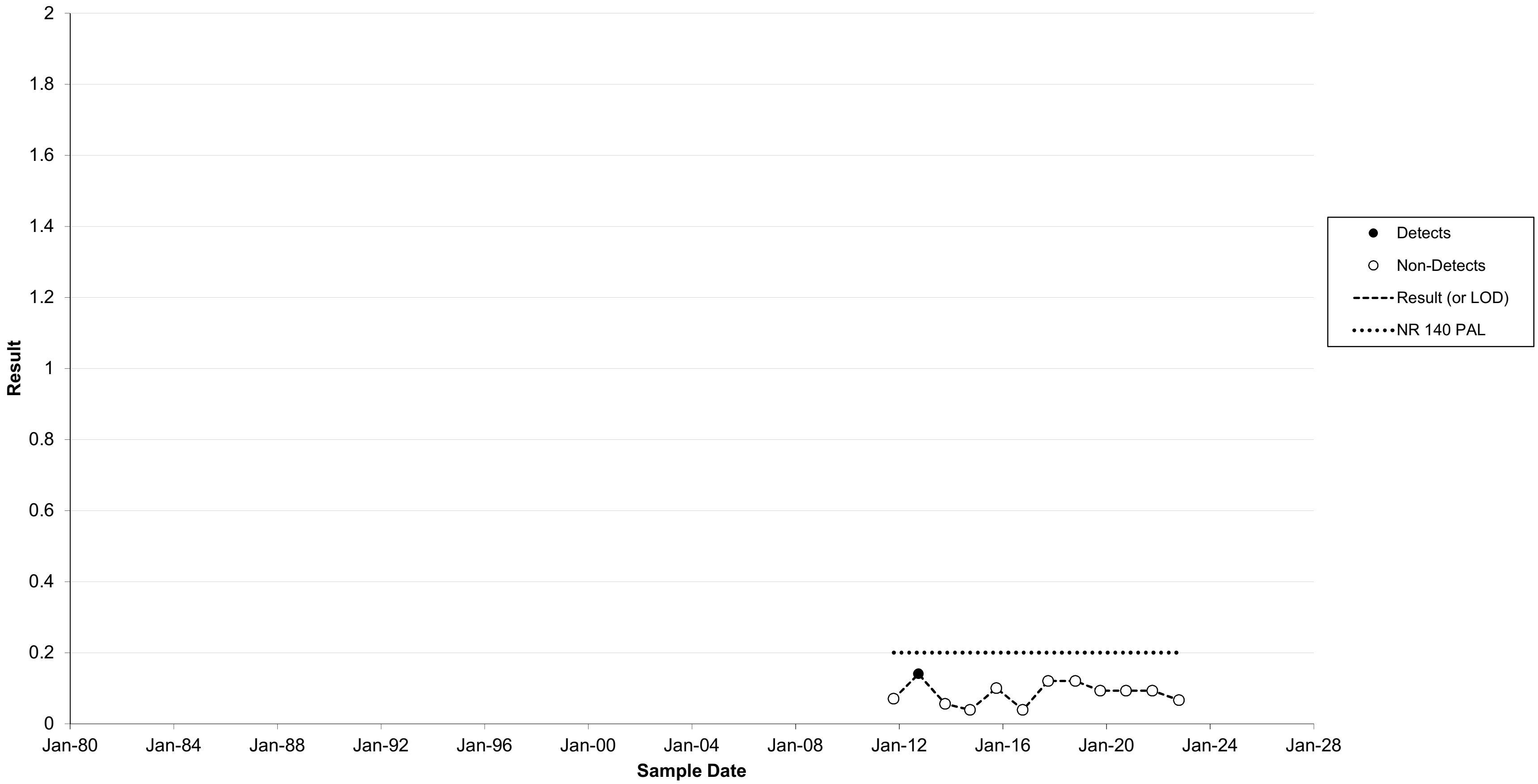
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-34A - Mercury, dissolved (ug/l as Hg)



Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-34B - Mercury, dissolved (ug/l as Hg)



Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW37A - Mercury, dissolved (ug/l as Hg)



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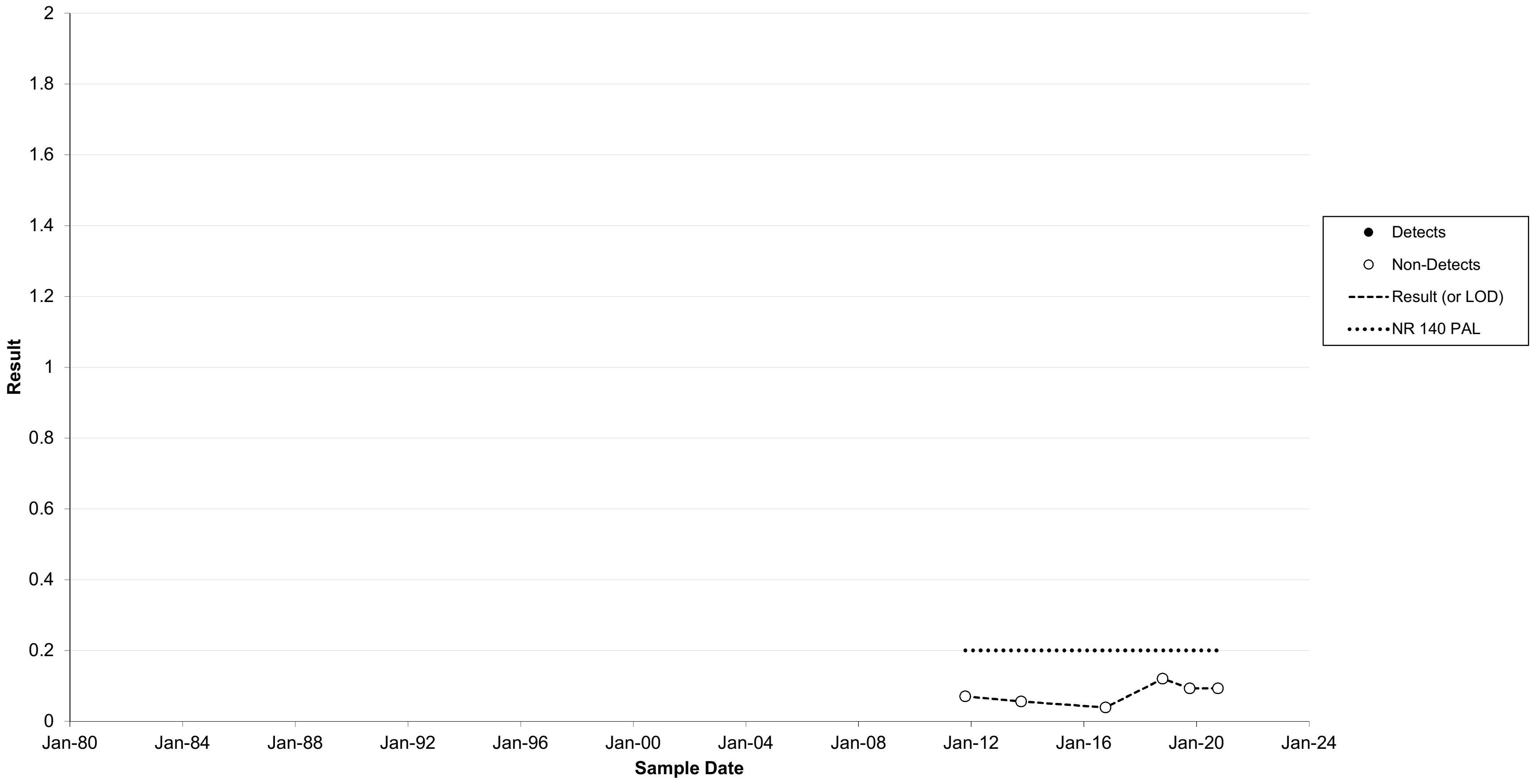
Columbia Dry Ash Disposal Facility
MW-83 - Mercury, dissolved (ug/l as Hg)



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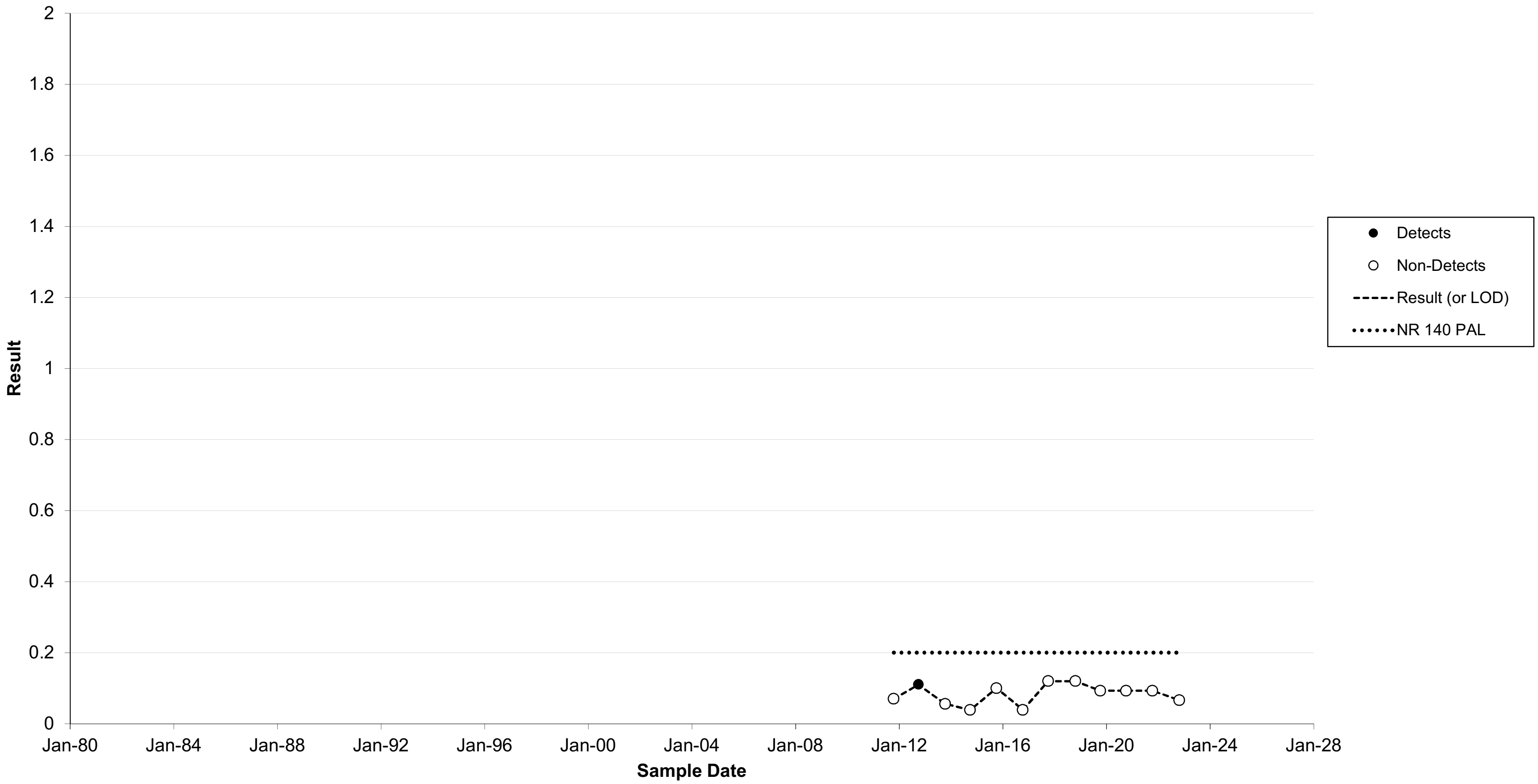
Columbia Dry Ash Disposal Facility
MW84A - Mercury, dissolved (ug/l as Hg)



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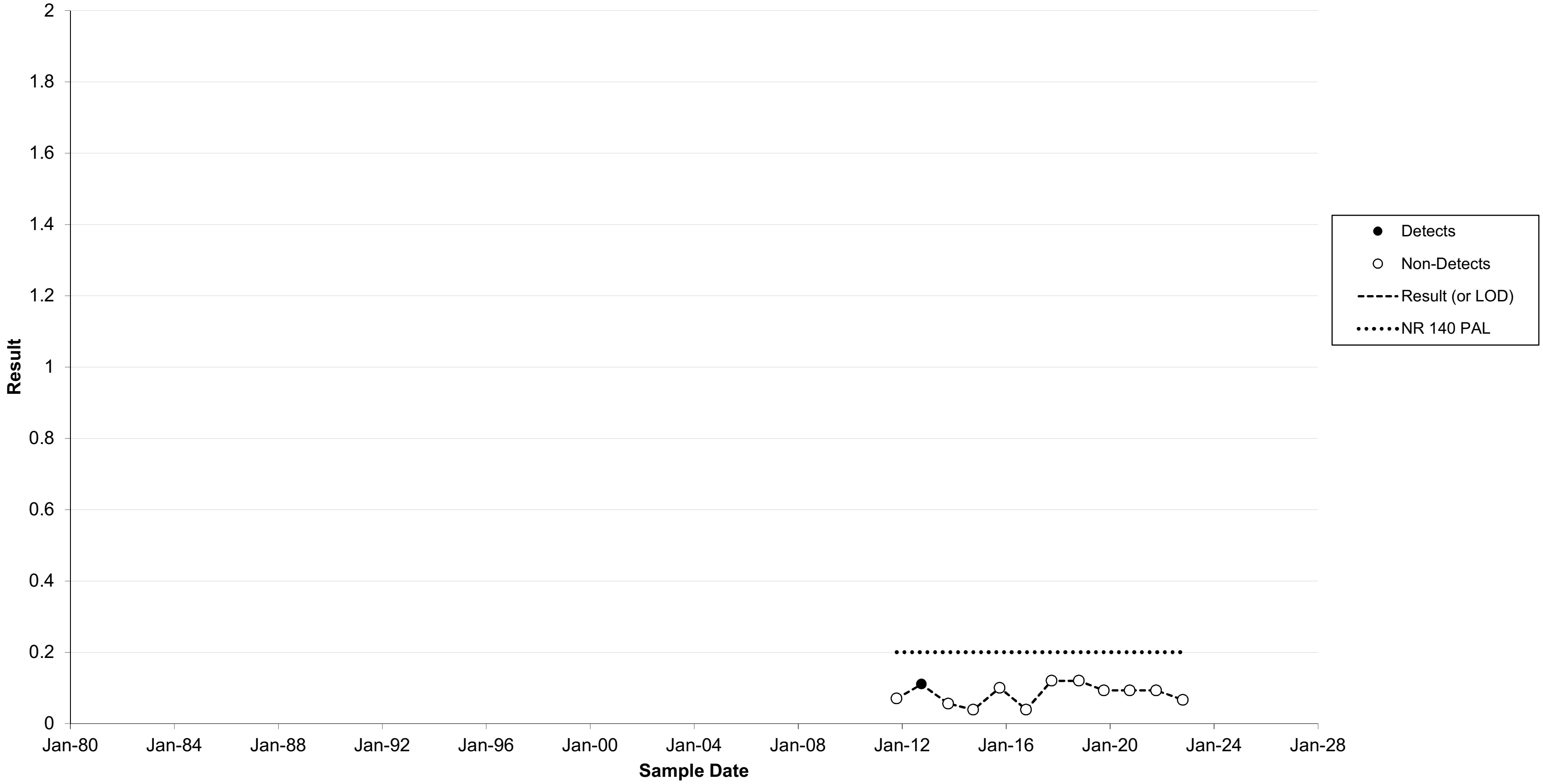

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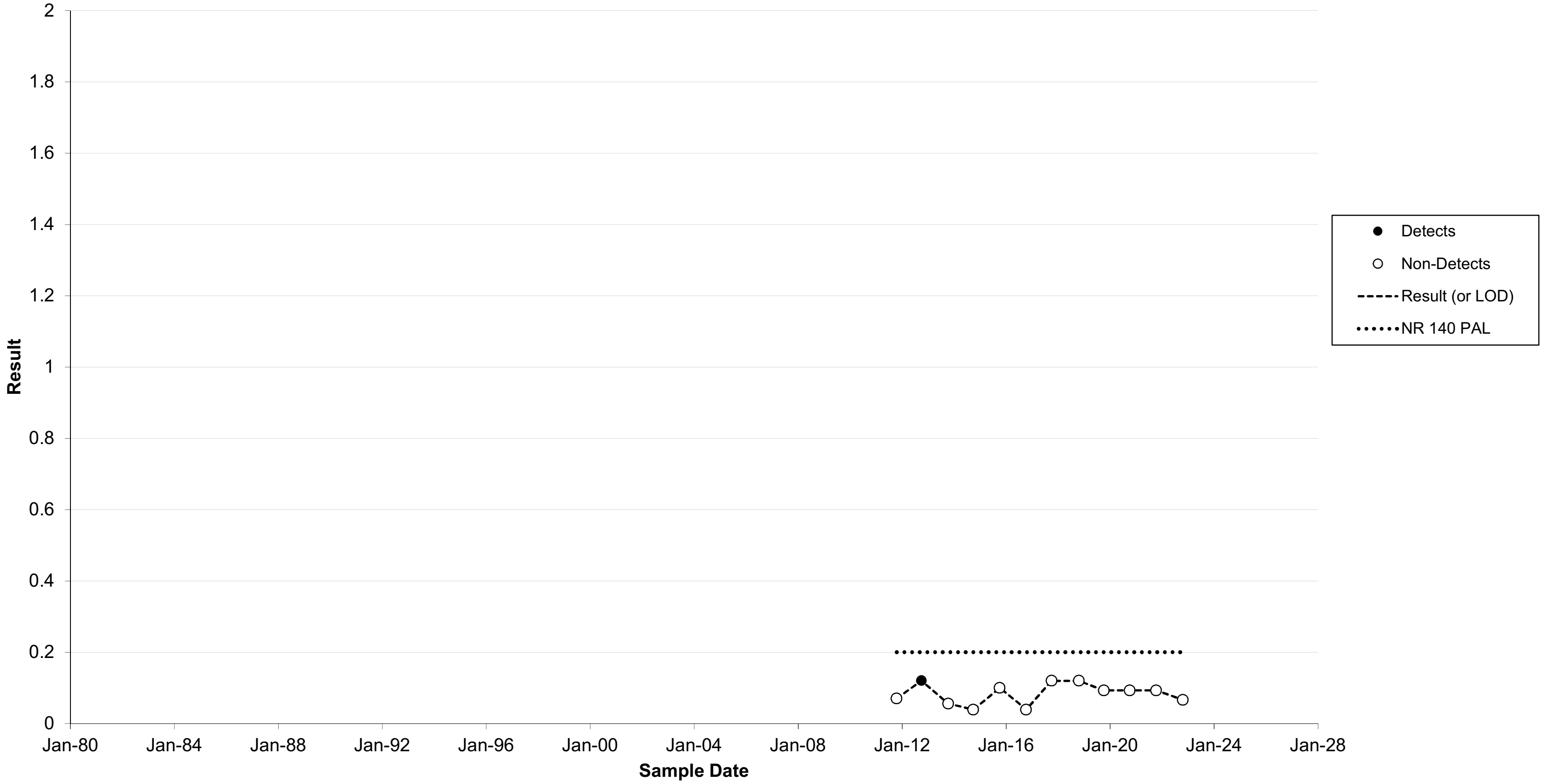
Columbia Dry Ash Disposal Facility
MW86 - Mercury, dissolved (ug/l as Hg)



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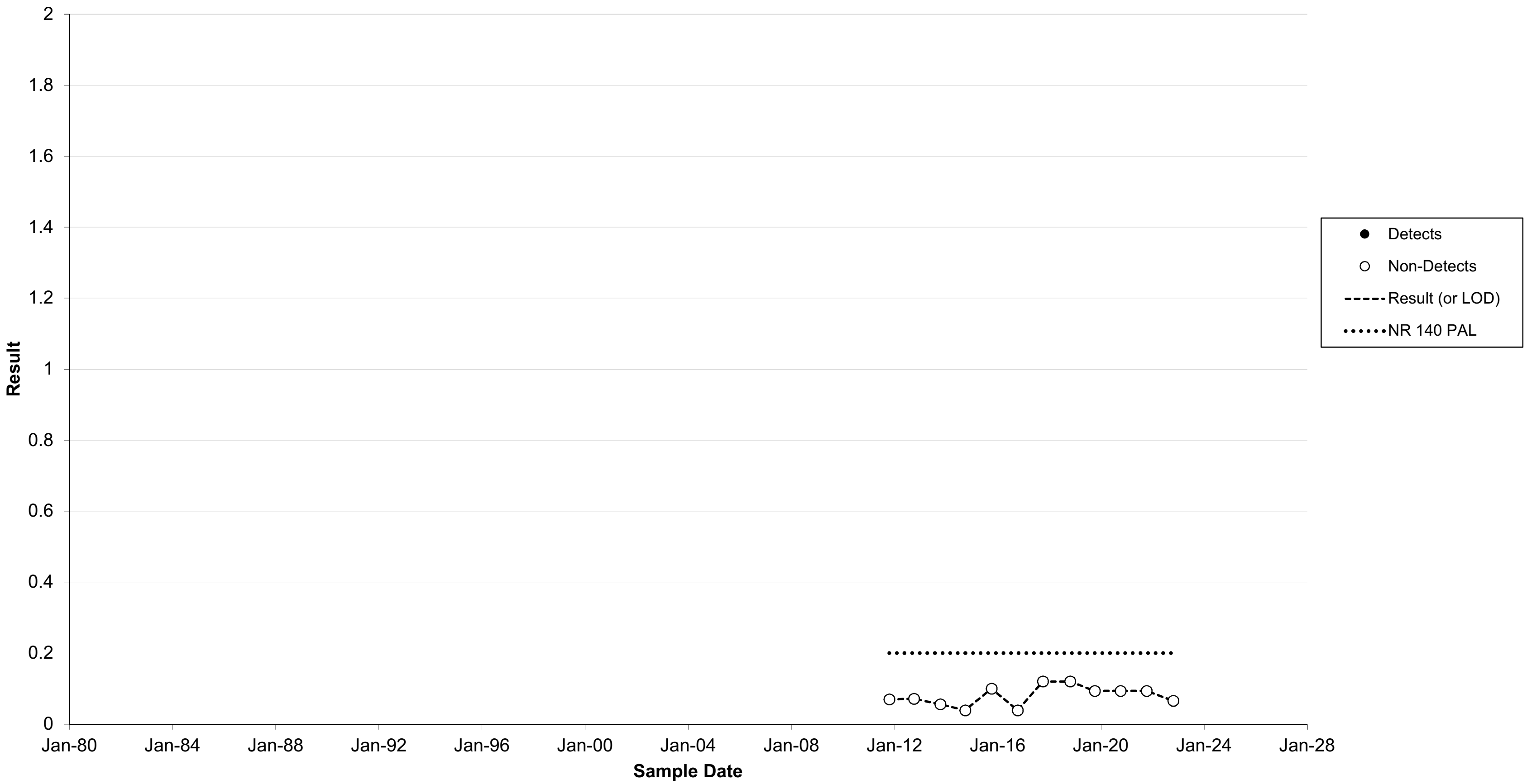

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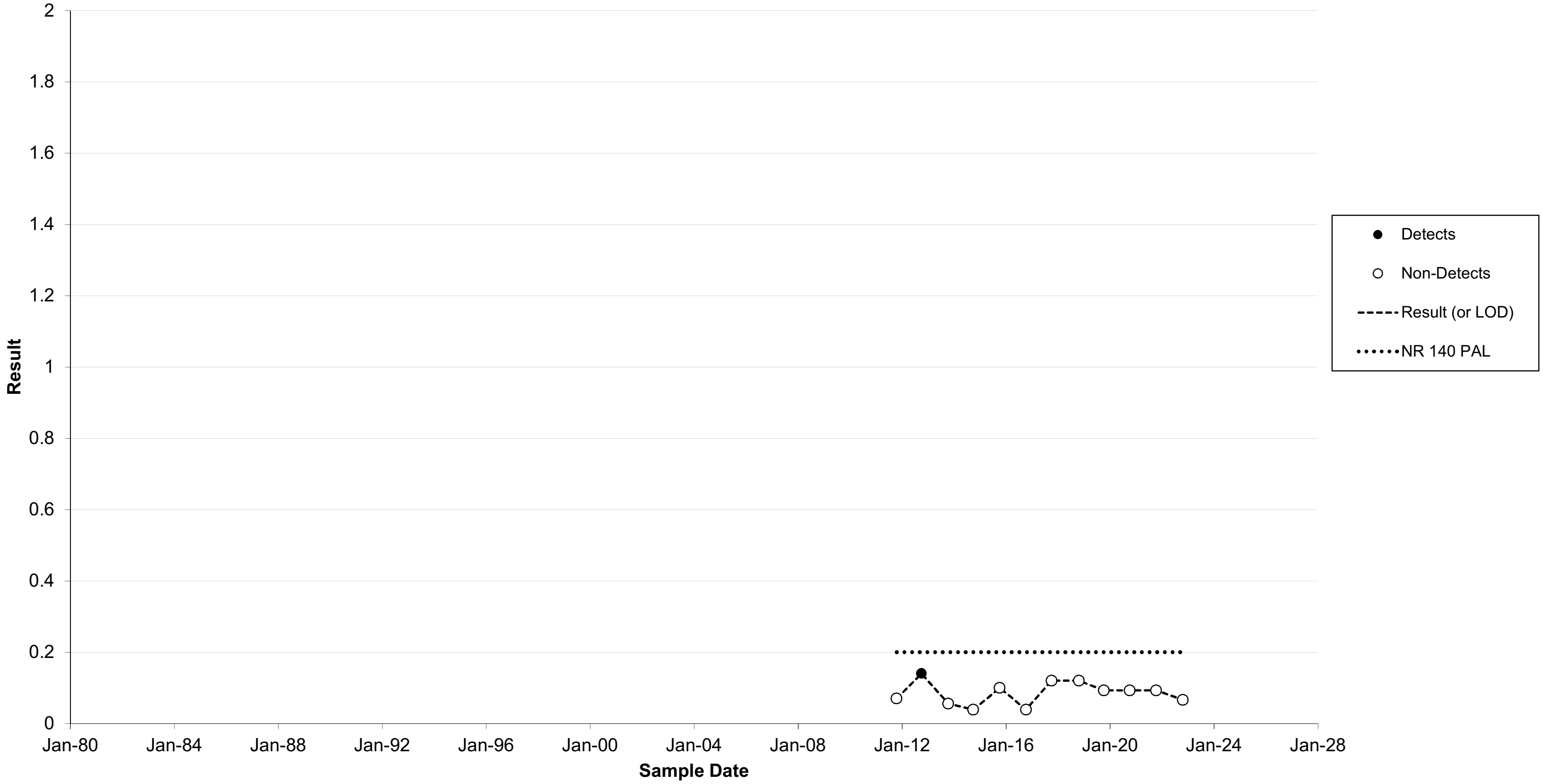
MW-91B - Mercury, dissolved (ug/l as Hg)



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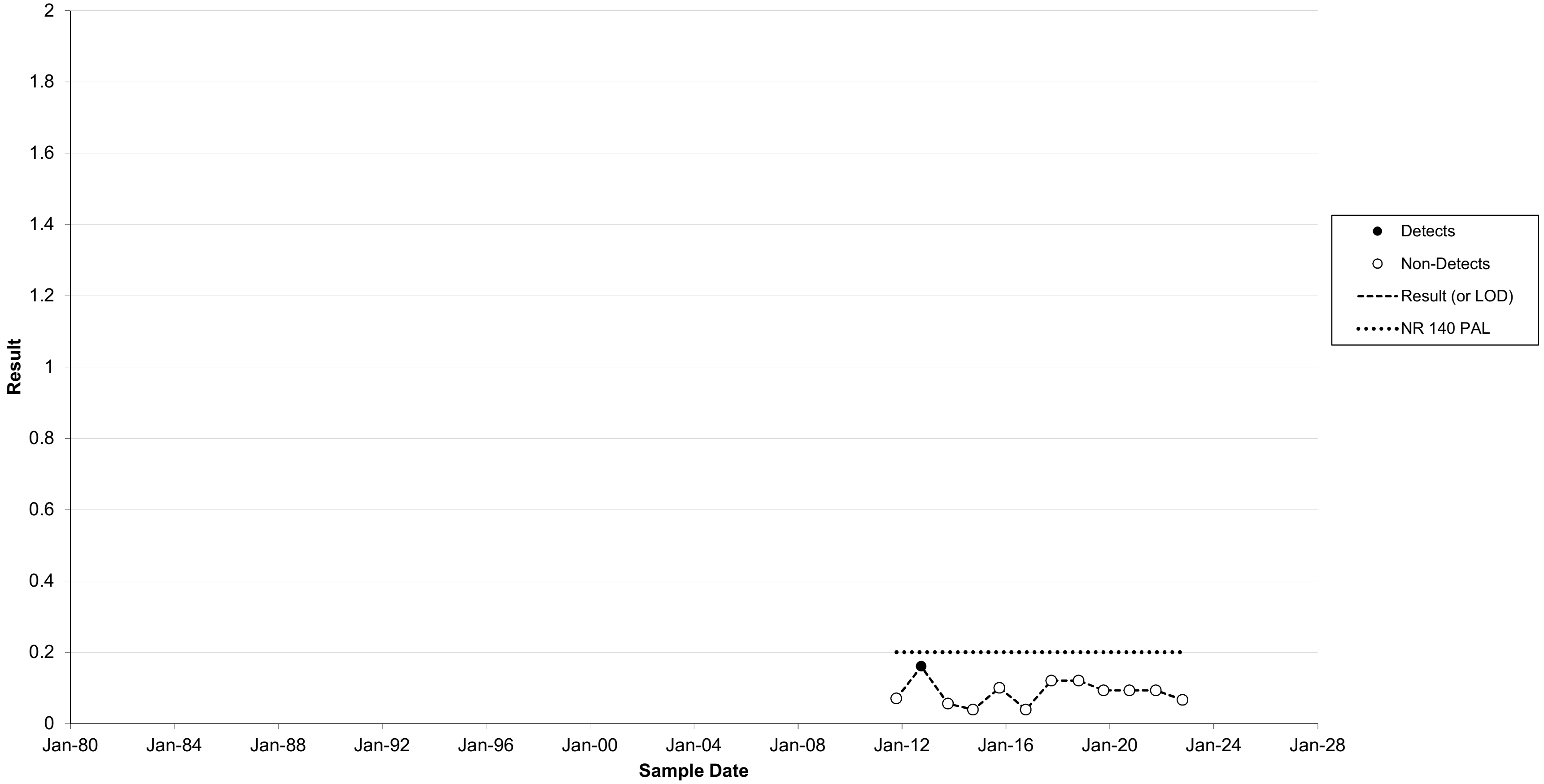
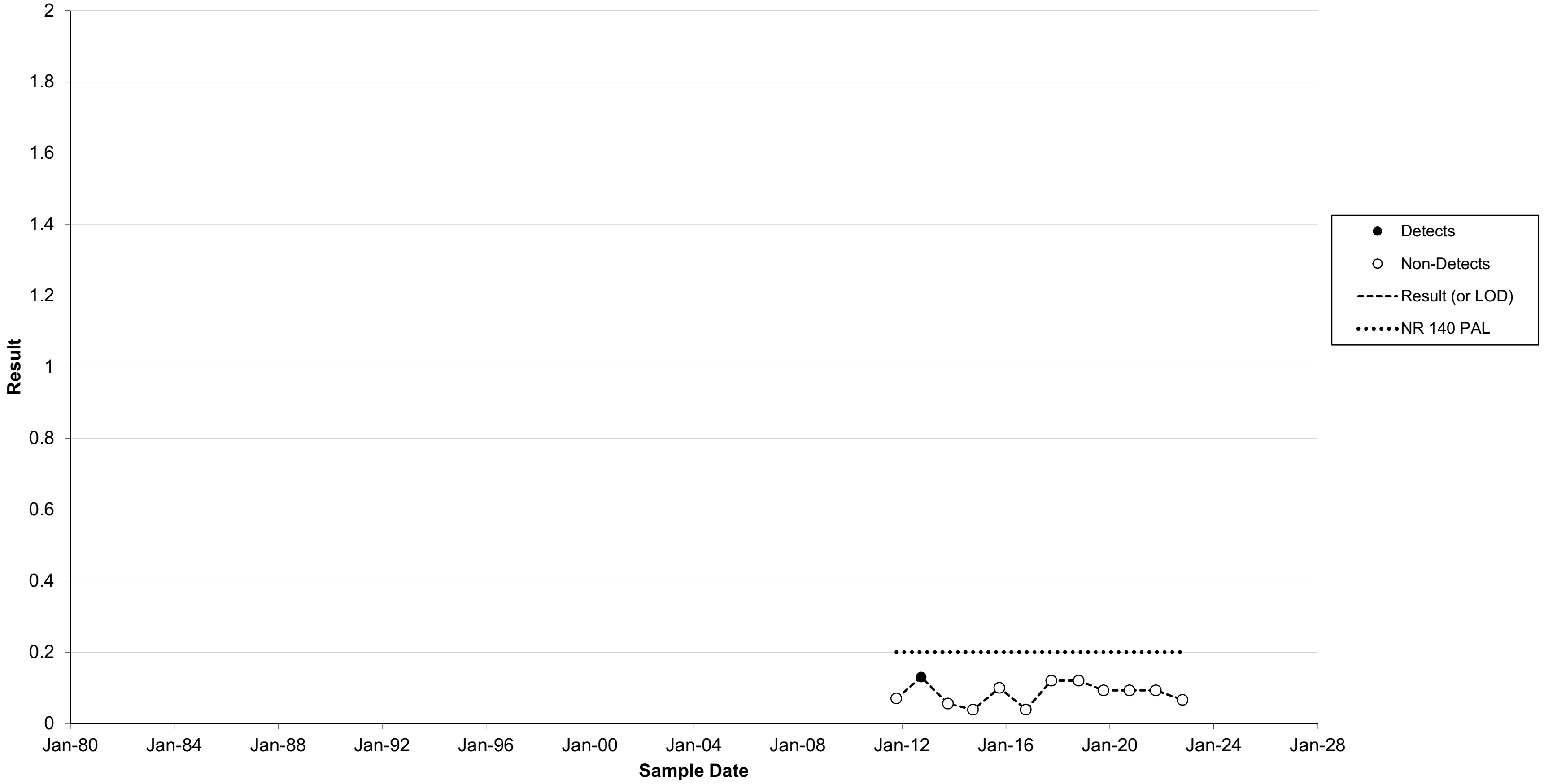
Columbia Dry Ash Disposal Facility
MW-92A - Mercury, dissolved (ug/l as Hg)



Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-92B - Mercury, dissolved (ug/l as Hg)



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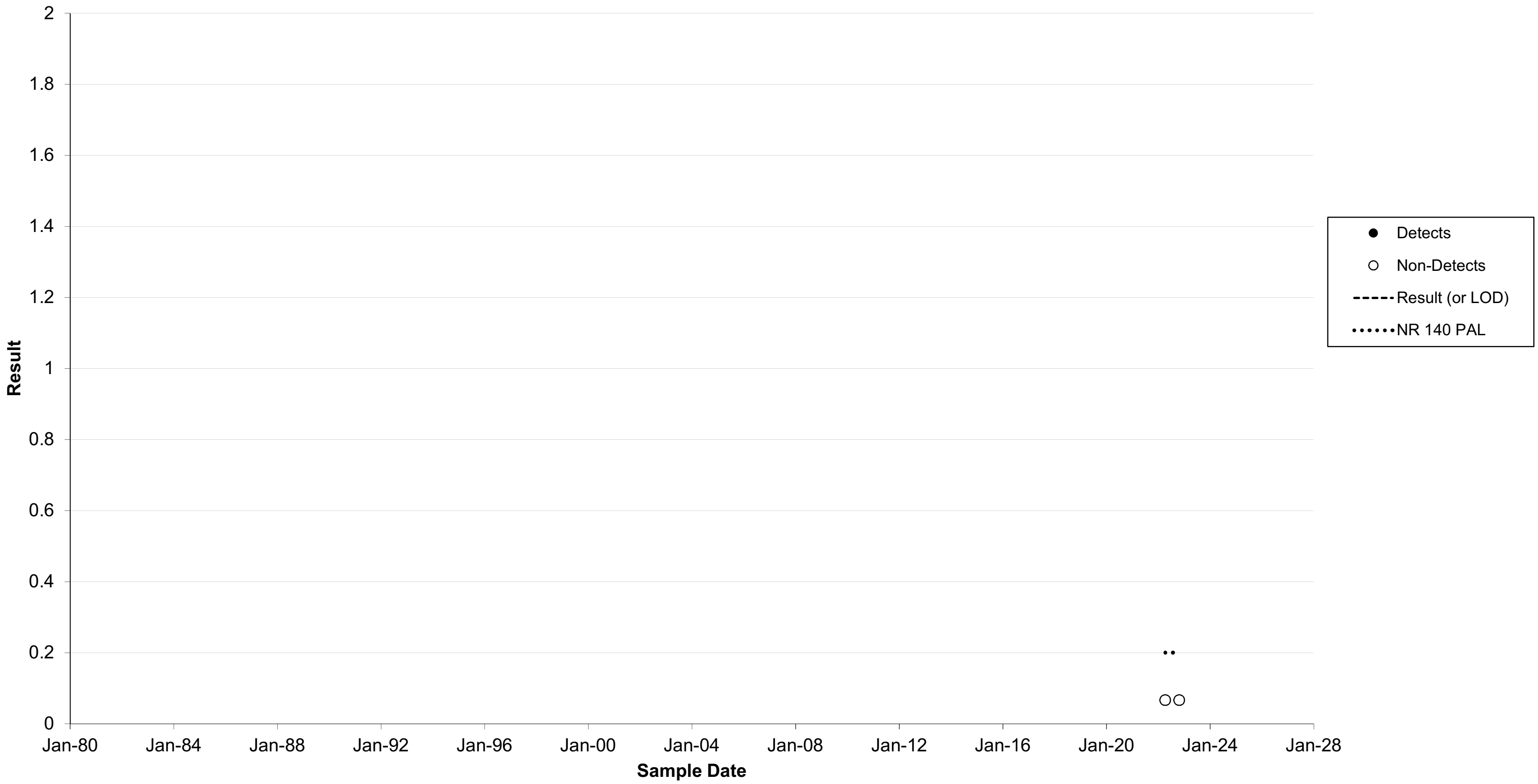
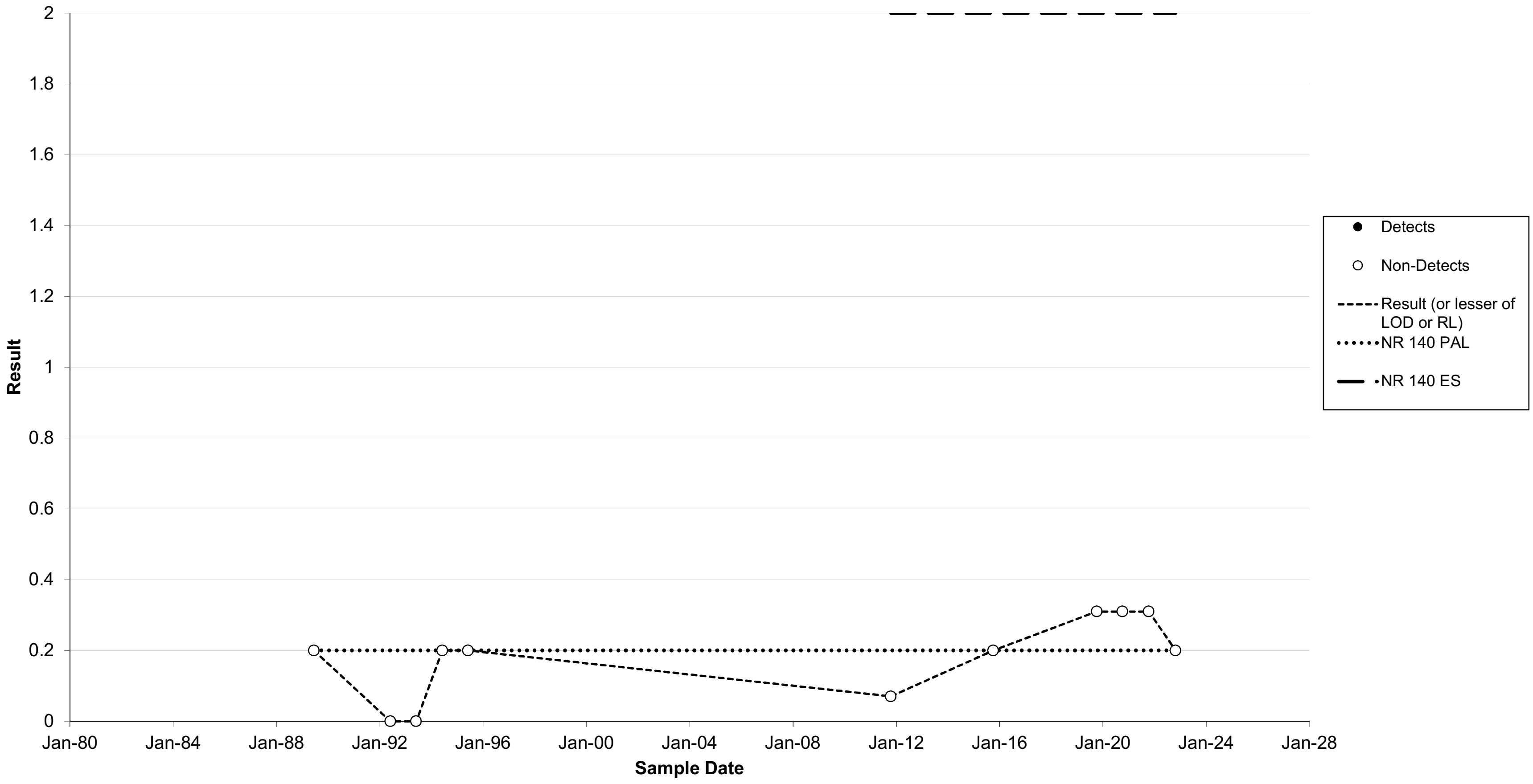
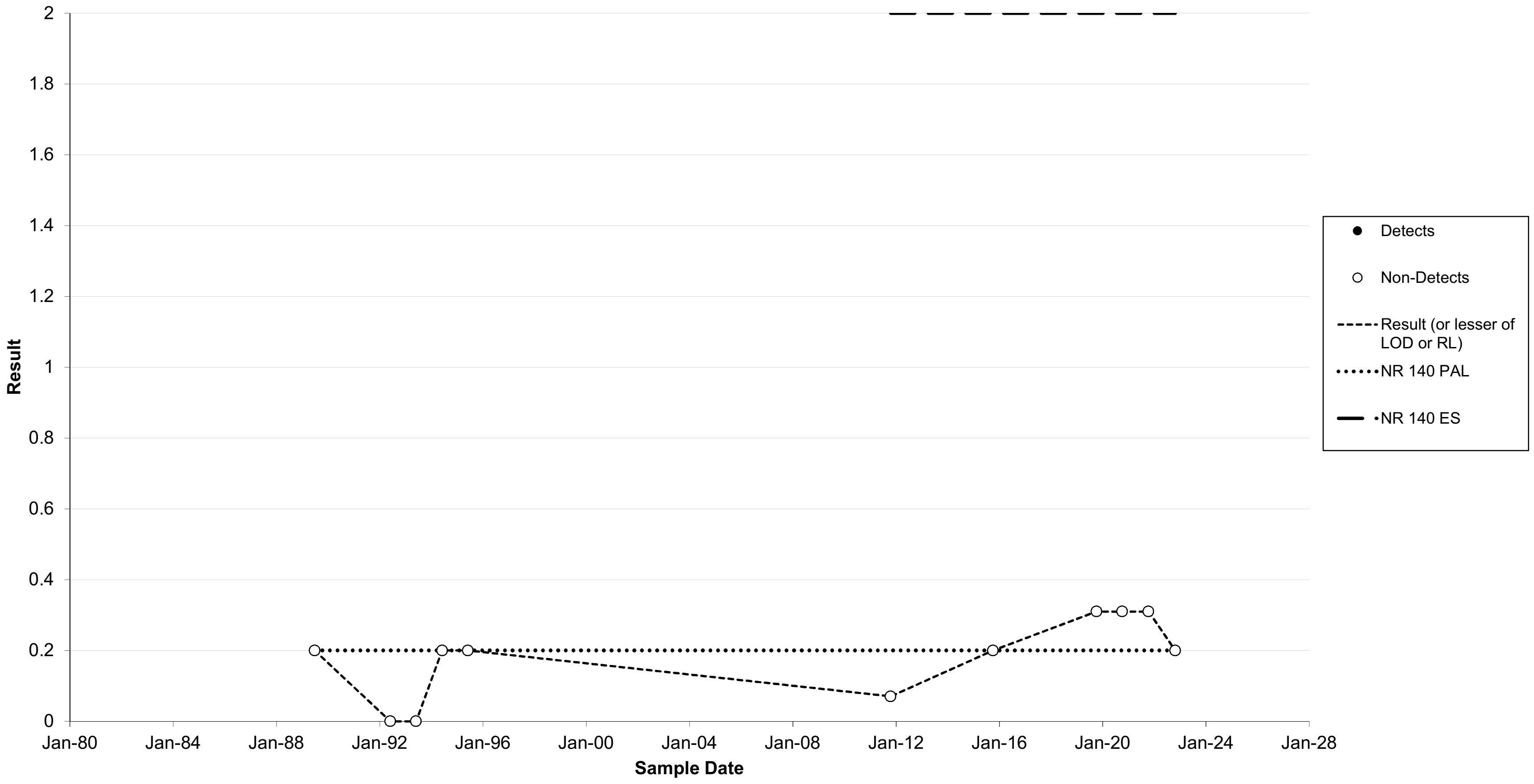
Columbia Dry Ash Disposal Facility
MW-93A - Mercury, total (ug/l Hg)



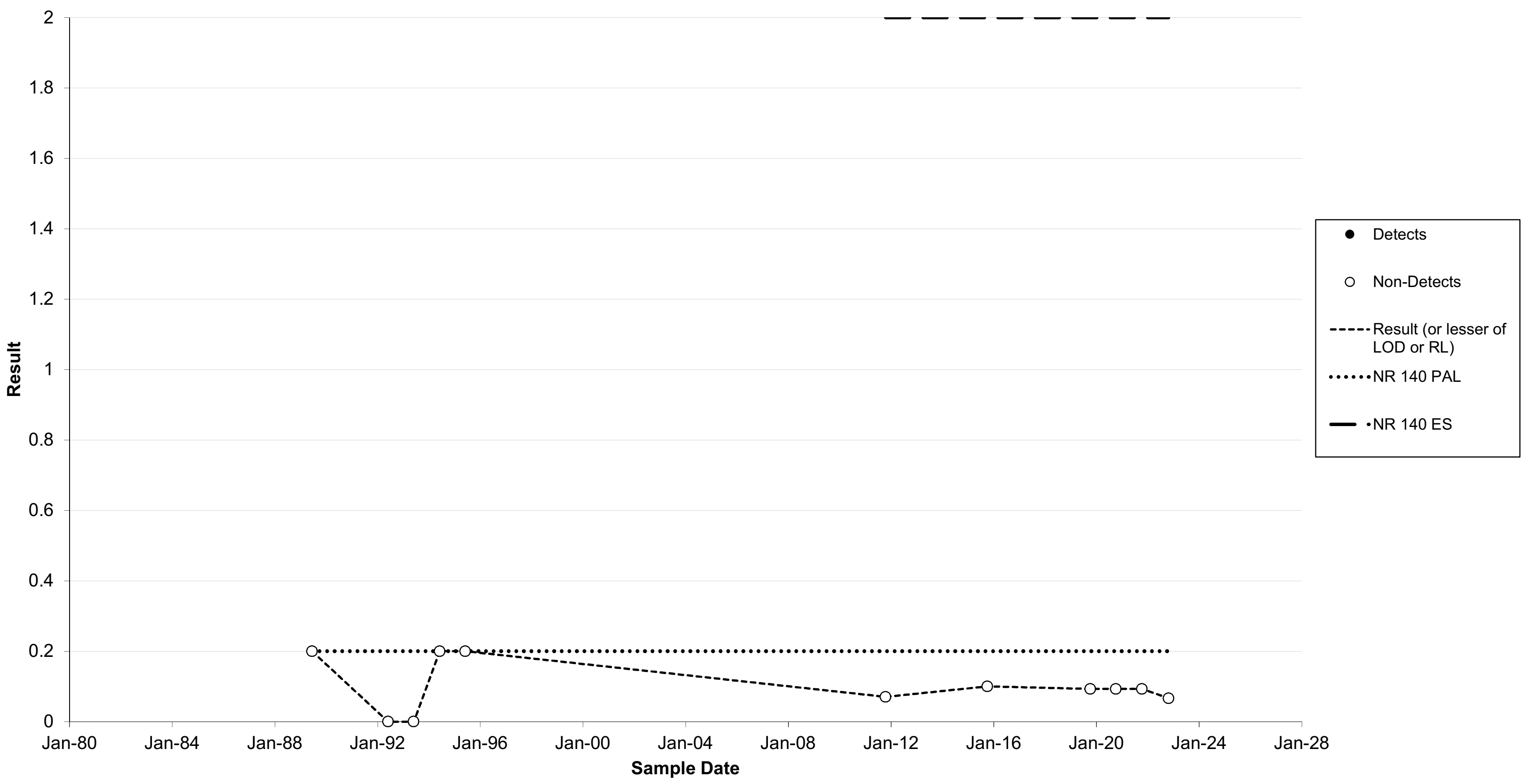
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-1 - Mercury, total (ug/l Hg)



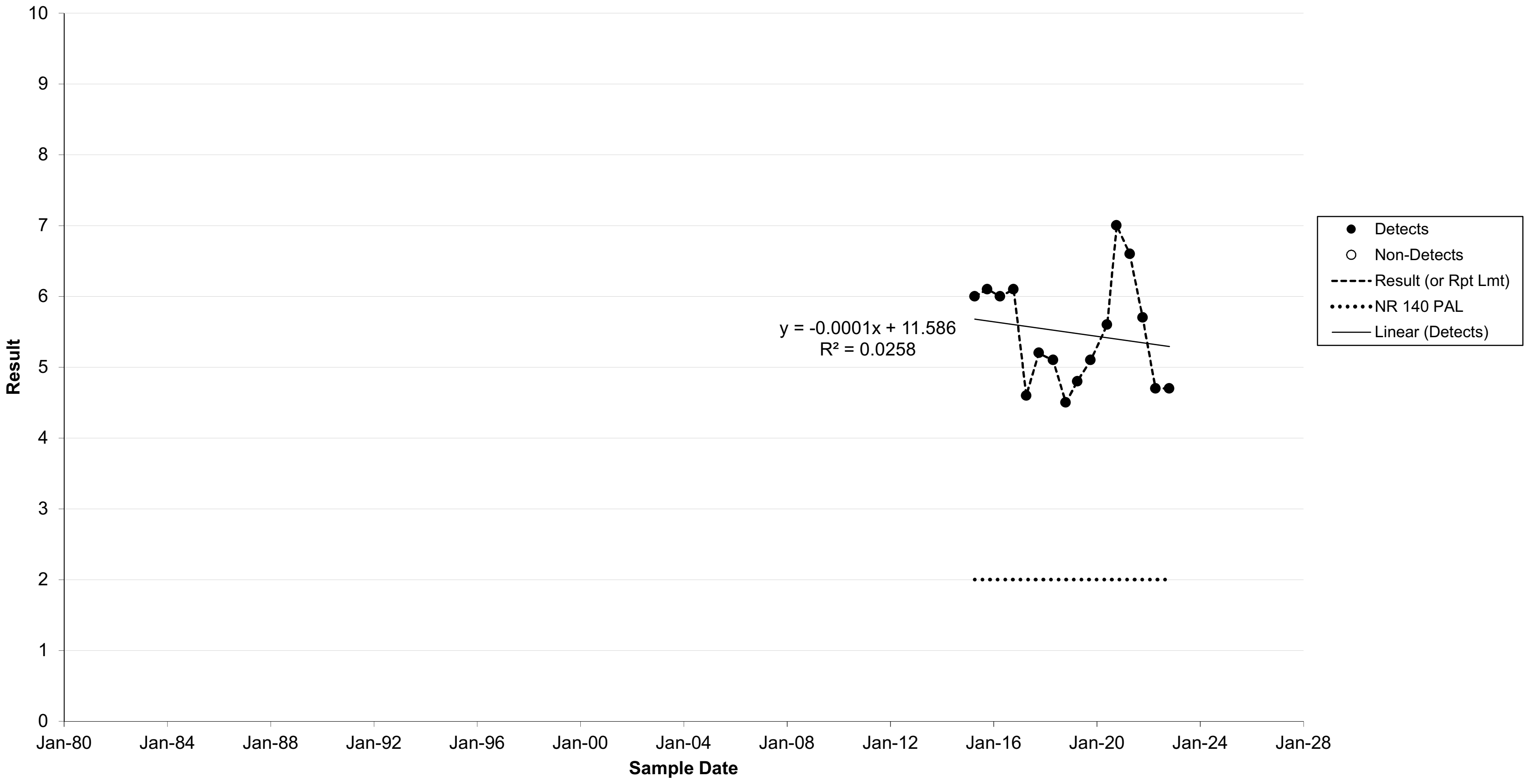
Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-2 - Mercury, total (ug/l Hg)



Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
HC-3 - Mercury, total (ug/l Hg)



Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW-33BR - Nitrite + Nitrate as N



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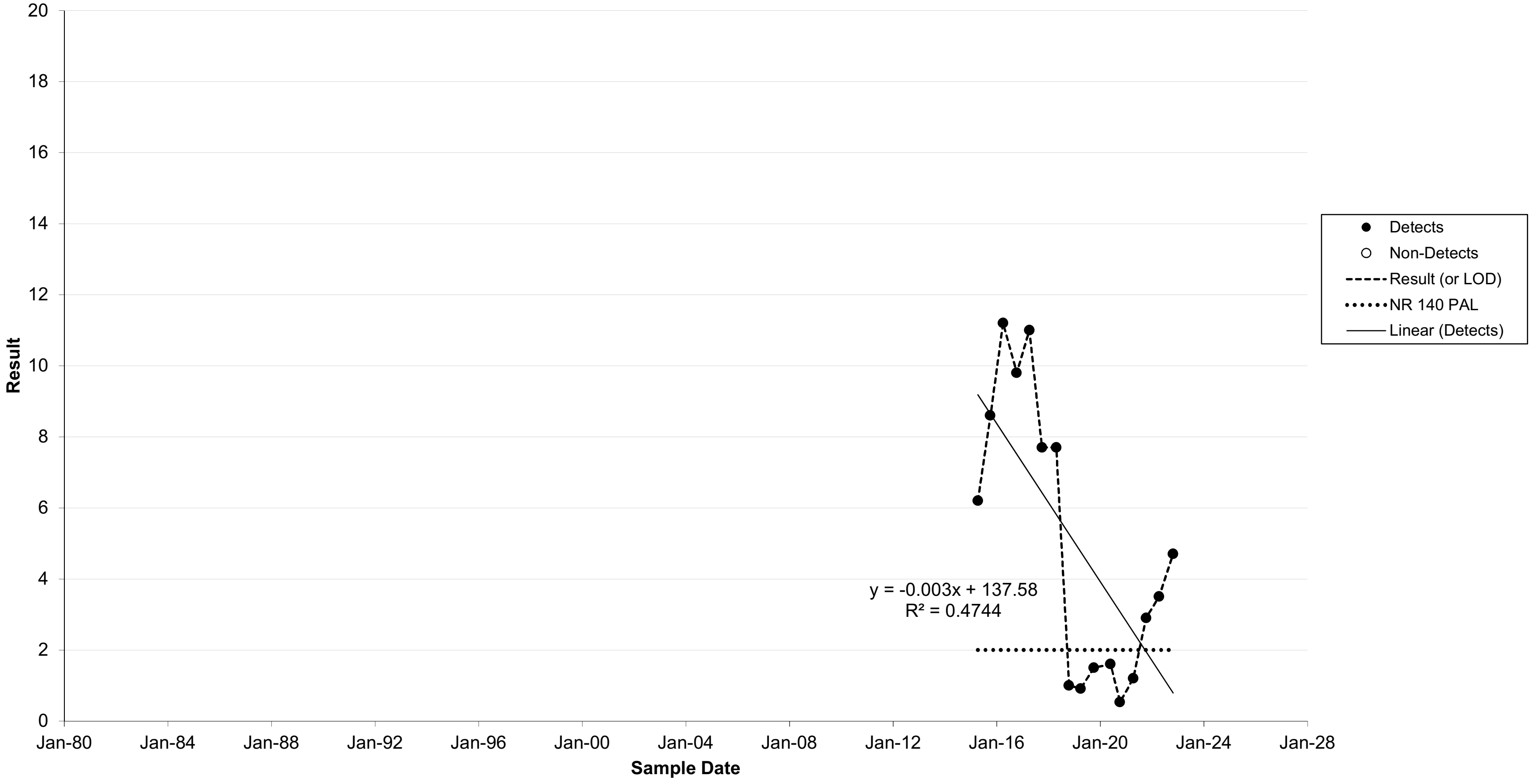
MW34A - Nitrite + Nitrate as N, mg/L



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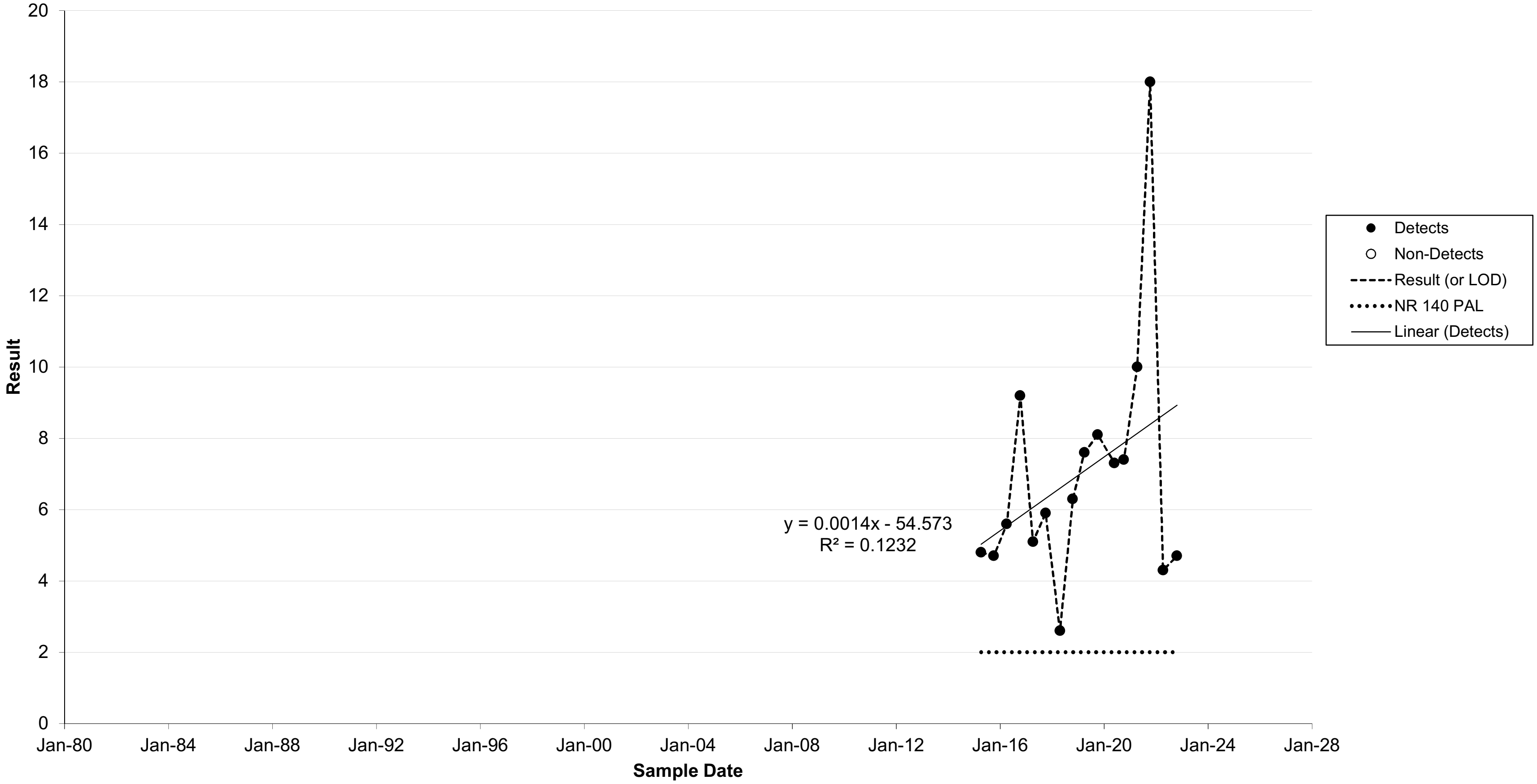

Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
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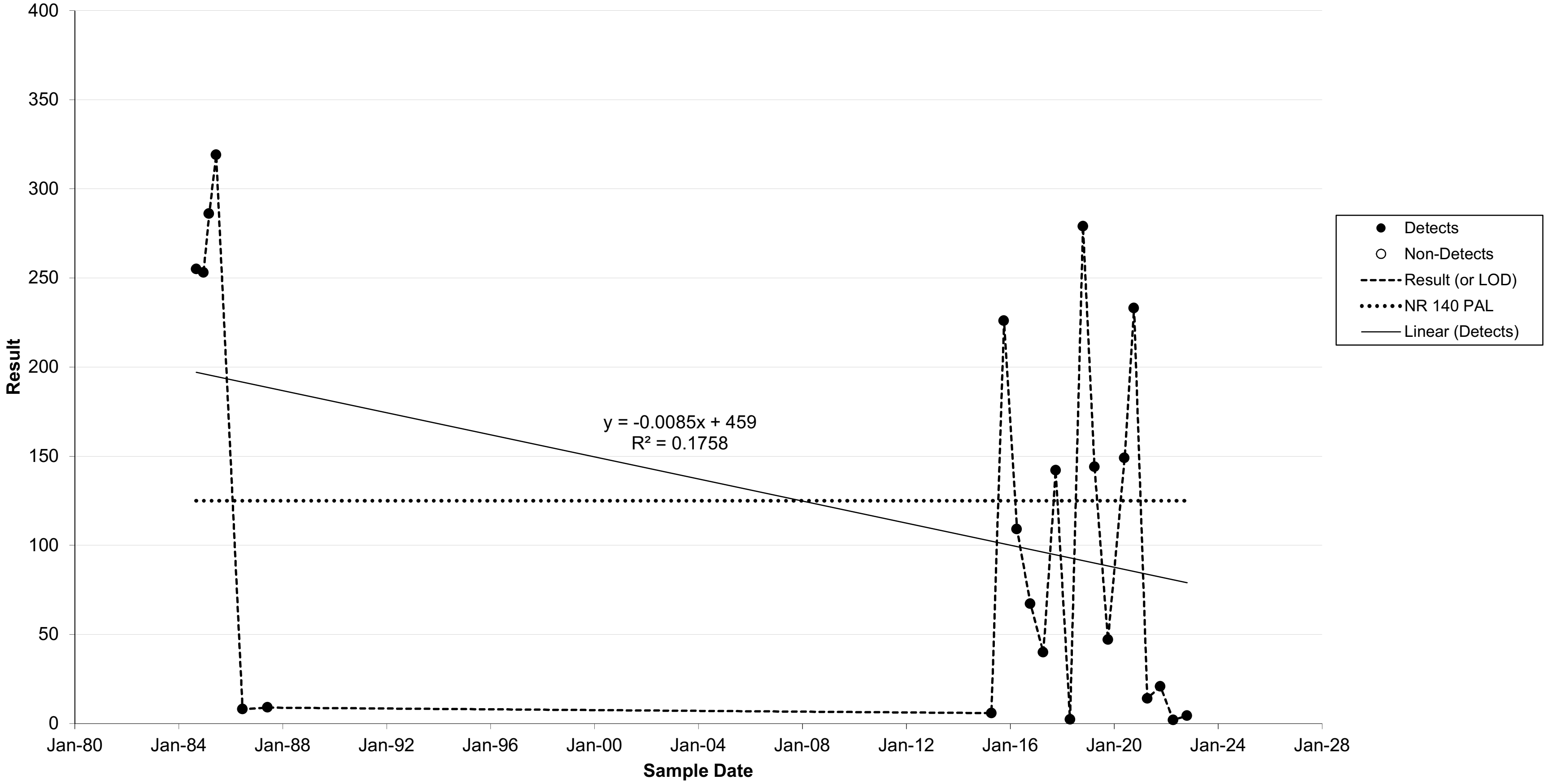

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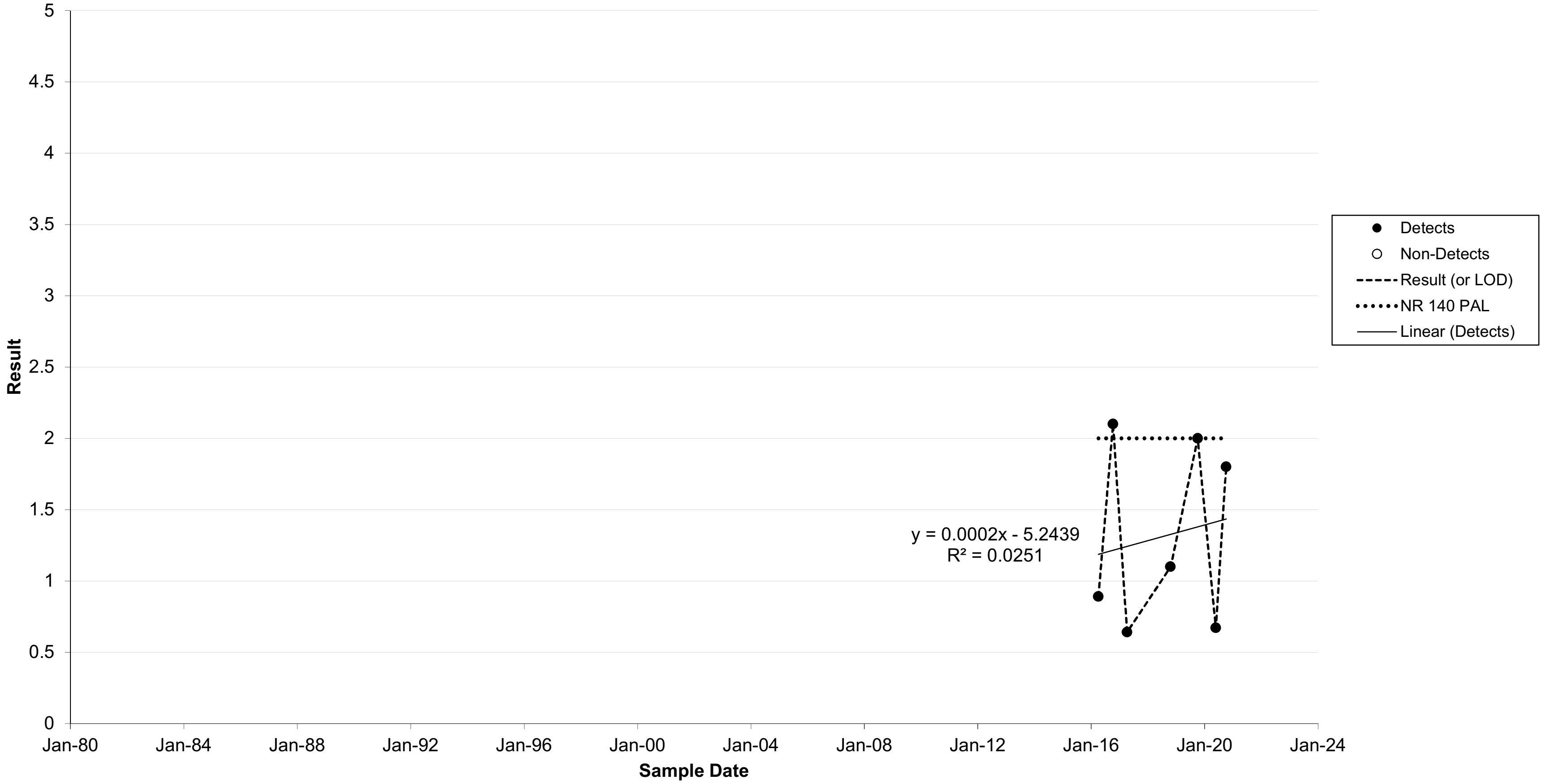
MW-83 - Nitrite + Nitrate as N, mg/L



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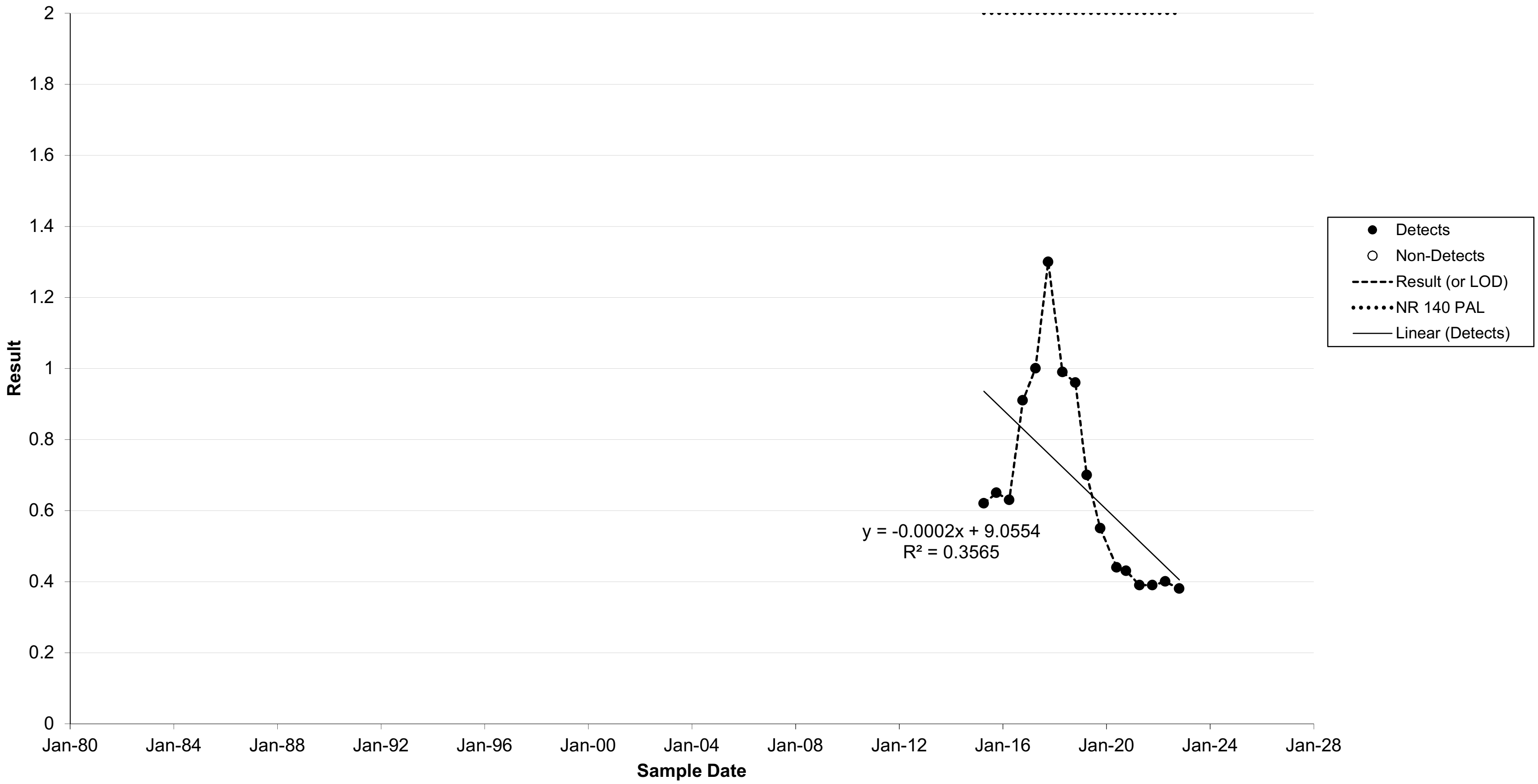
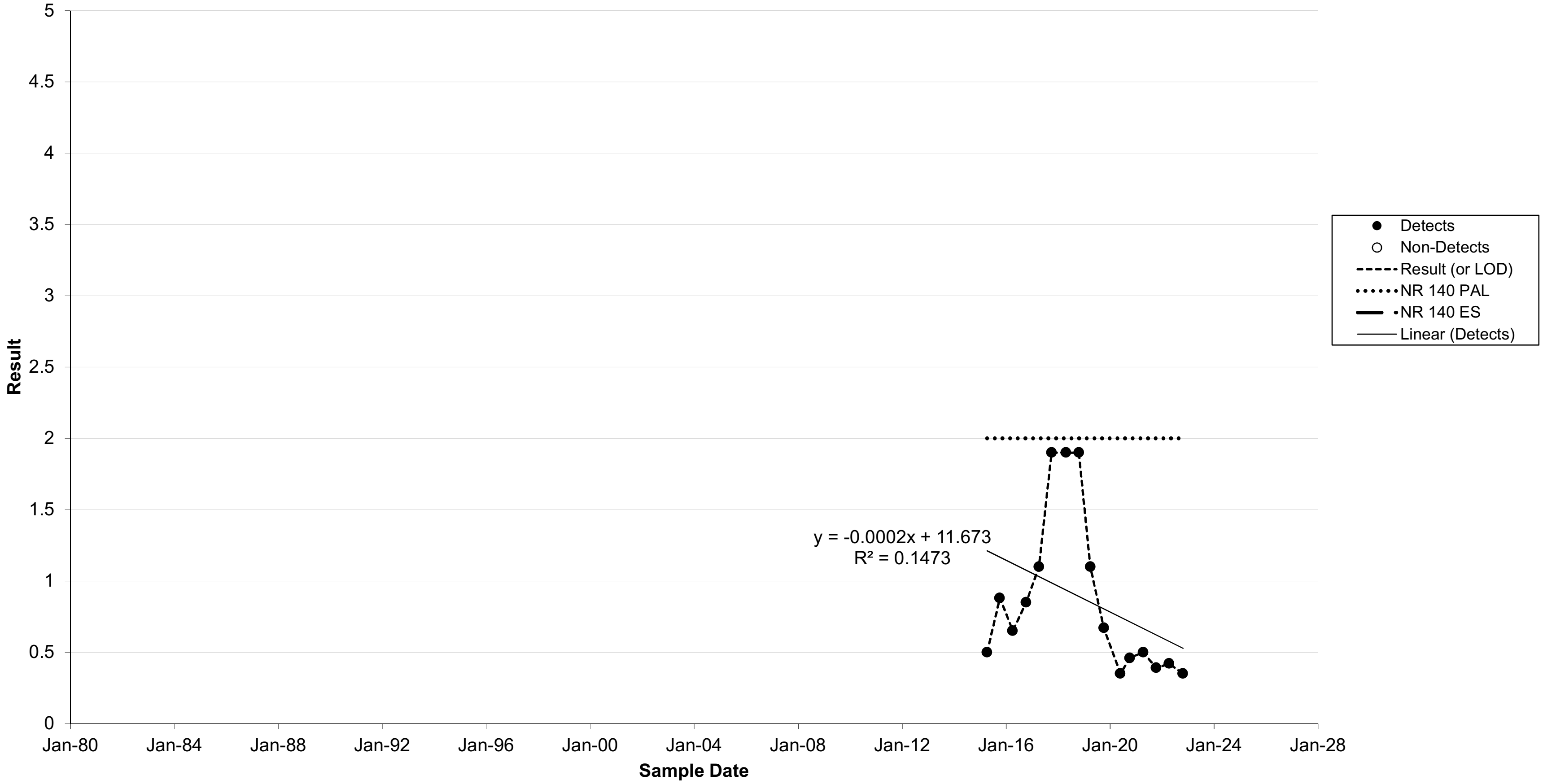
MW84A - Nitrite + Nitrate as N, mg/L



Wisconsin Power & Light Company
Columbia Dry Ash Disposal Facility
MW84B - Nitrite + Nitrate as N, mg/L



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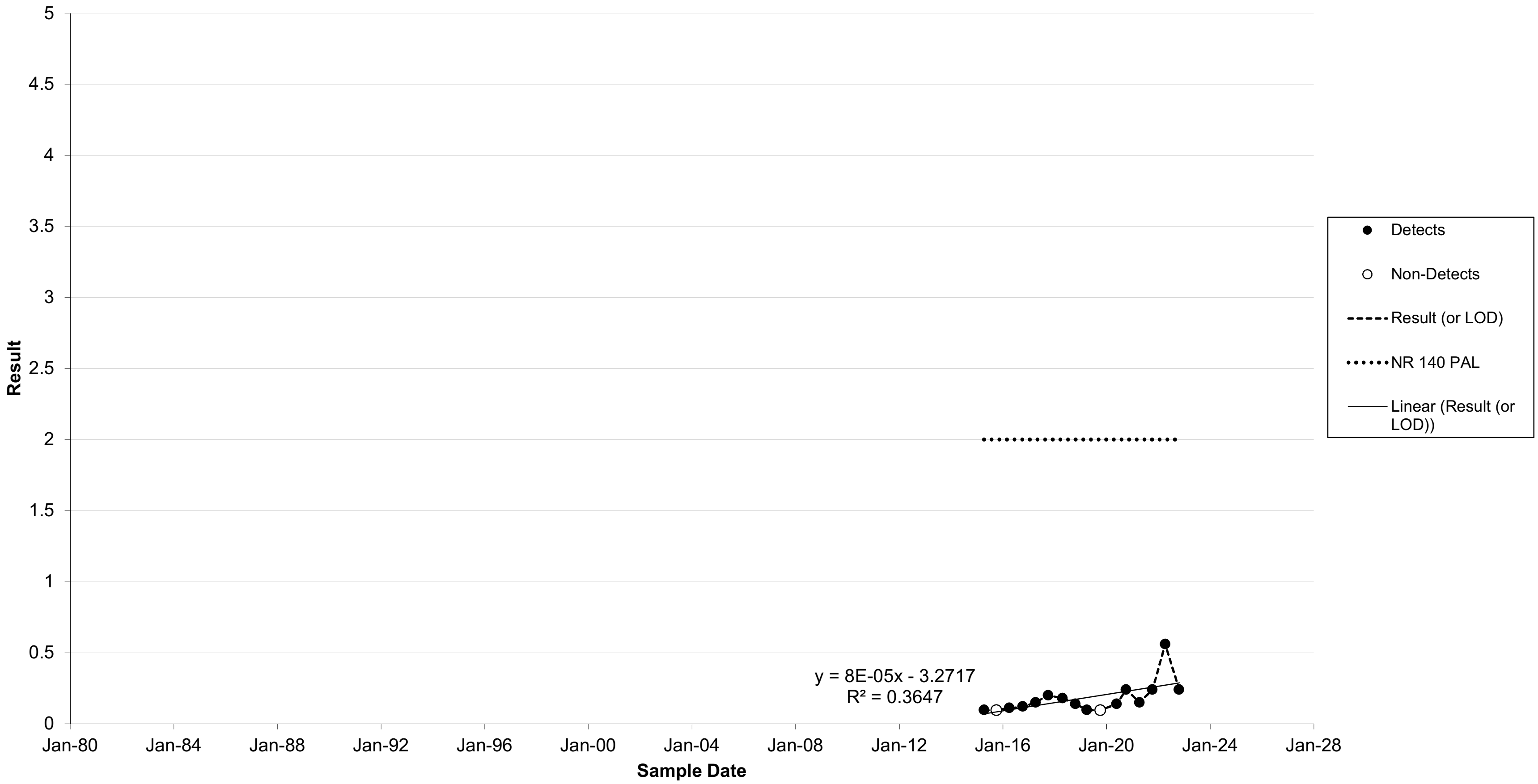
Columbia Dry Ash Disposal Facility
MW86 - Nitrite + Nitrate as N, mg/L



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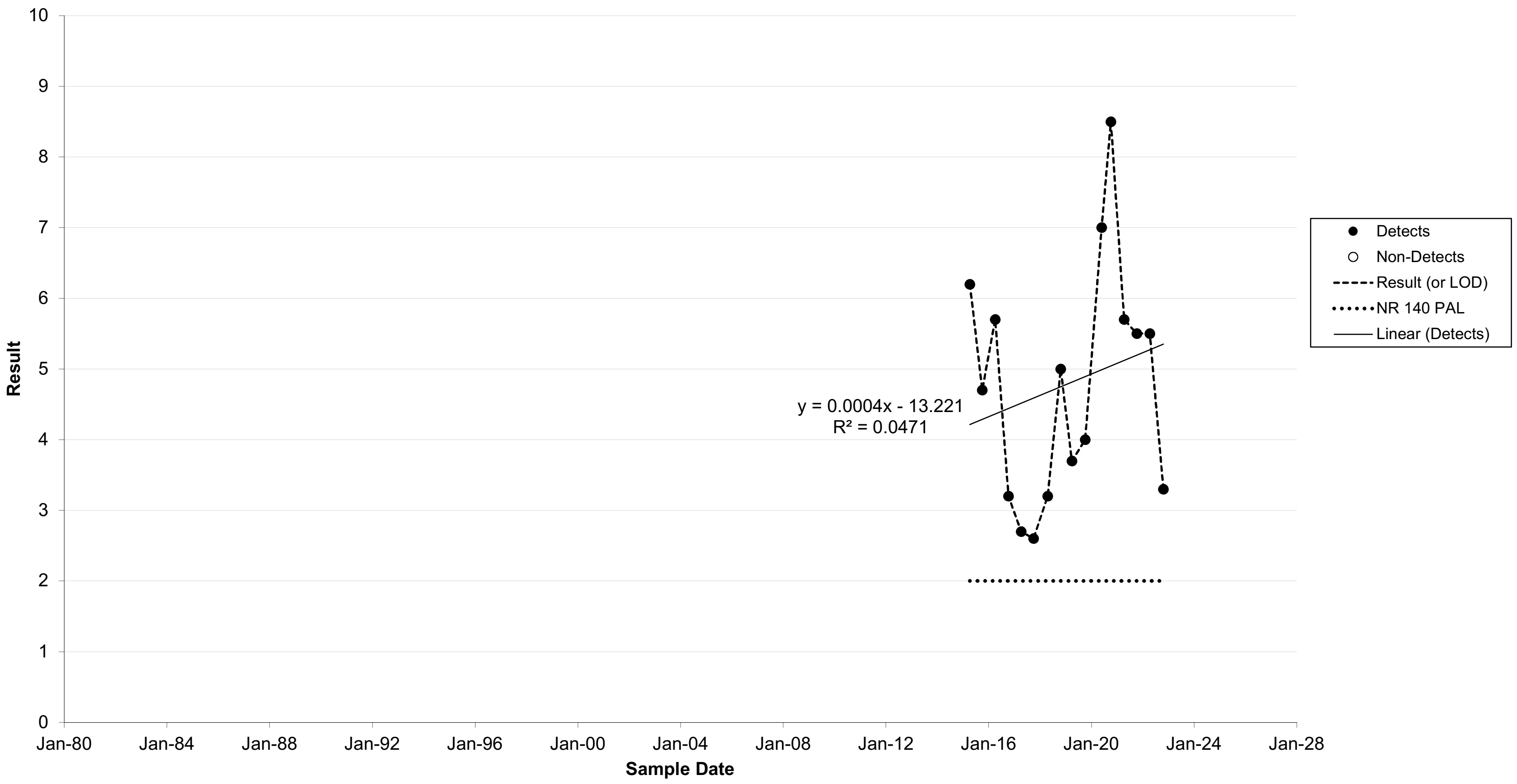
Columbia Dry Ash Disposal Facility
MW-91AR - Nitrite + Nitrate as N, mg/L



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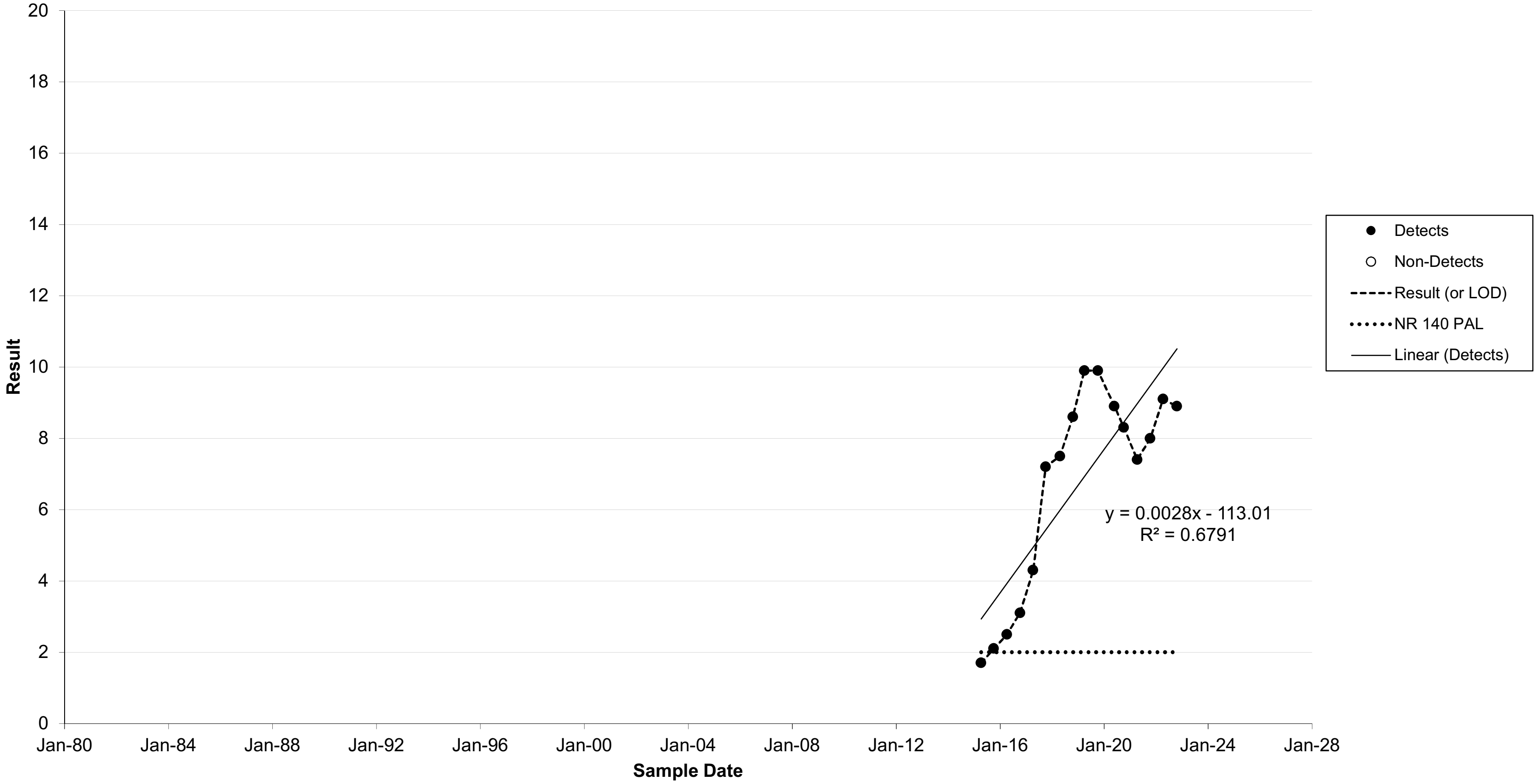
MW-91B - Nitrite + Nitrate as N, mg/L



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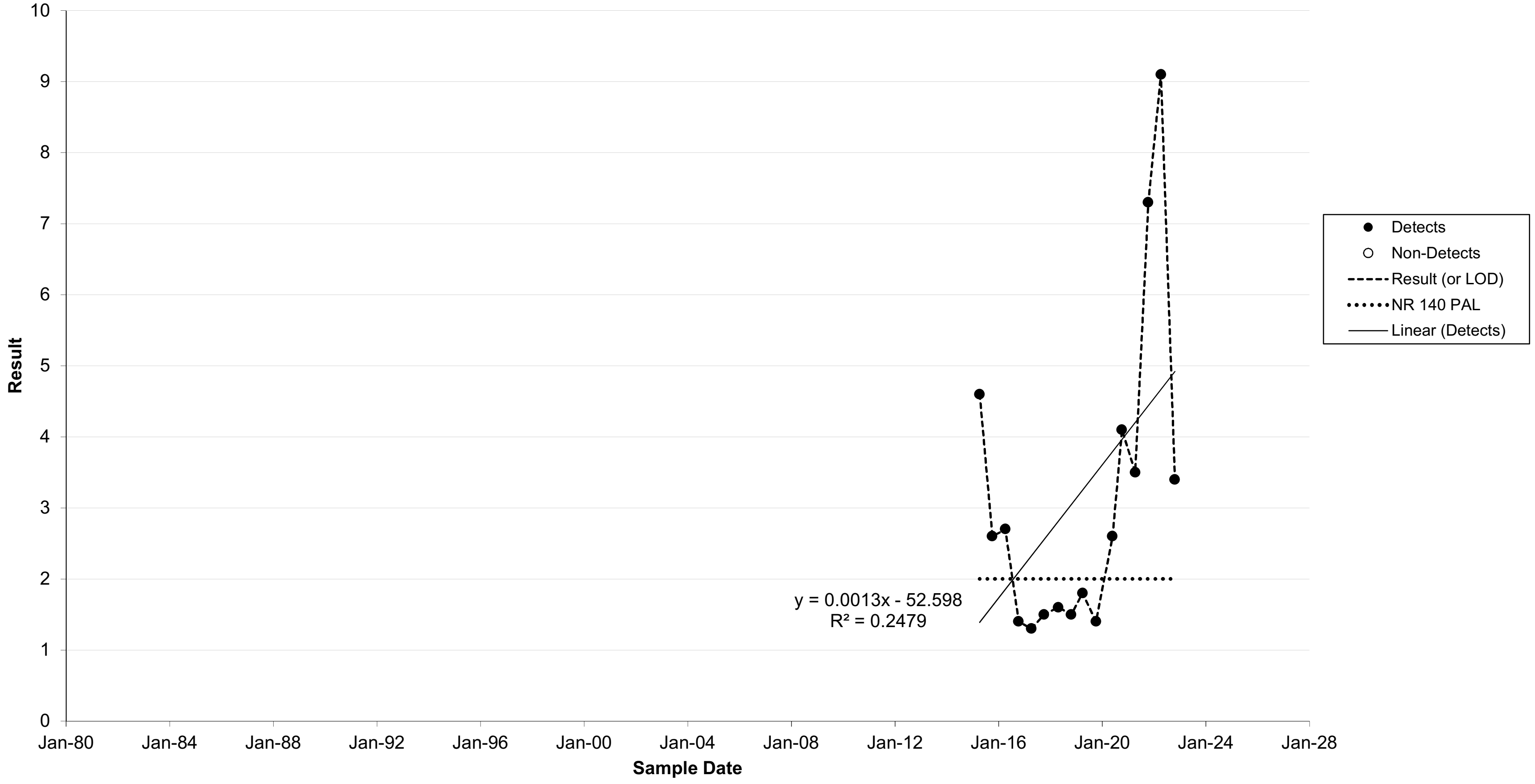
MW-92A - Nitrite + Nitrate as N, mg/L



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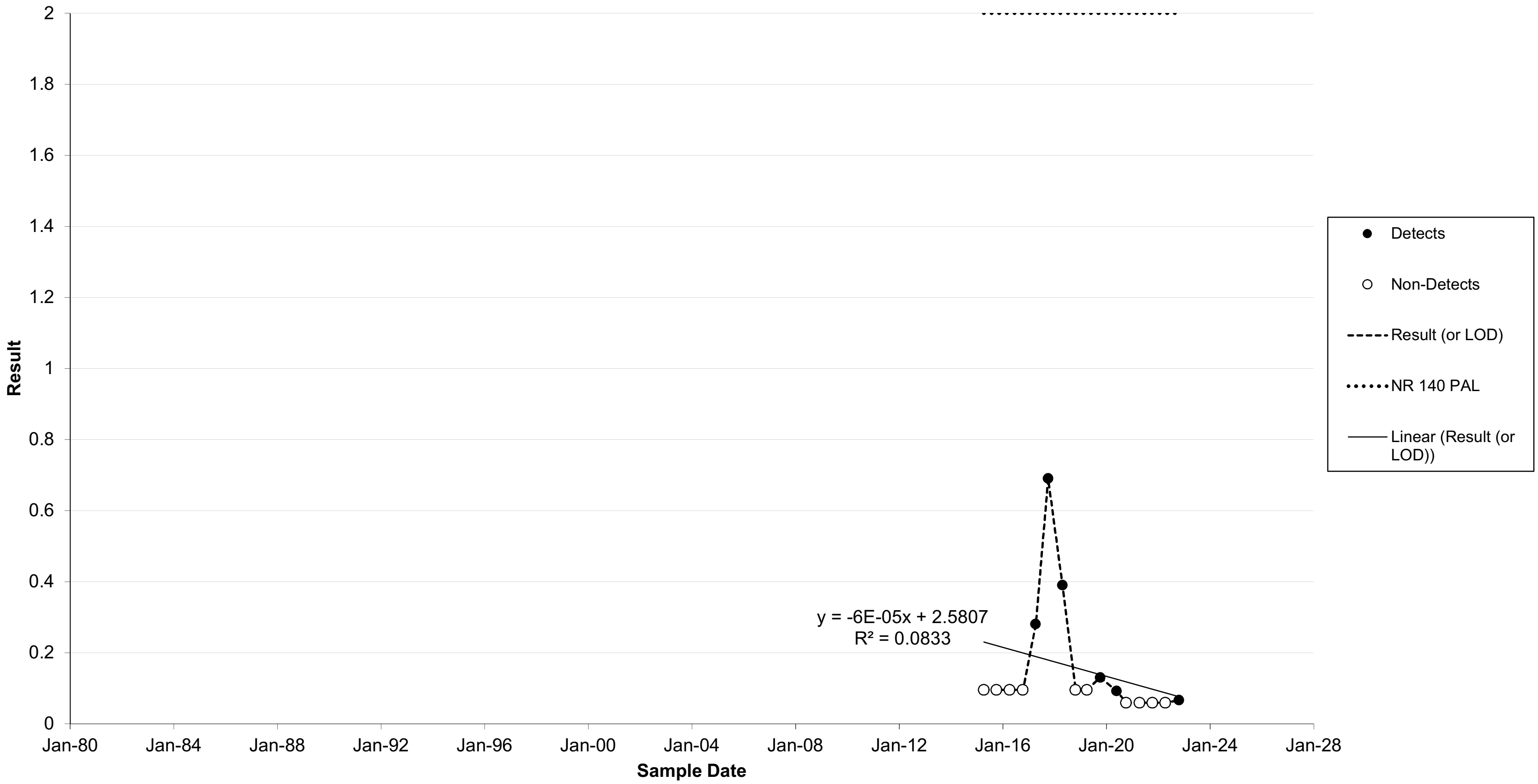
MW-92B - Nitrite + Nitrate as N, mg/L



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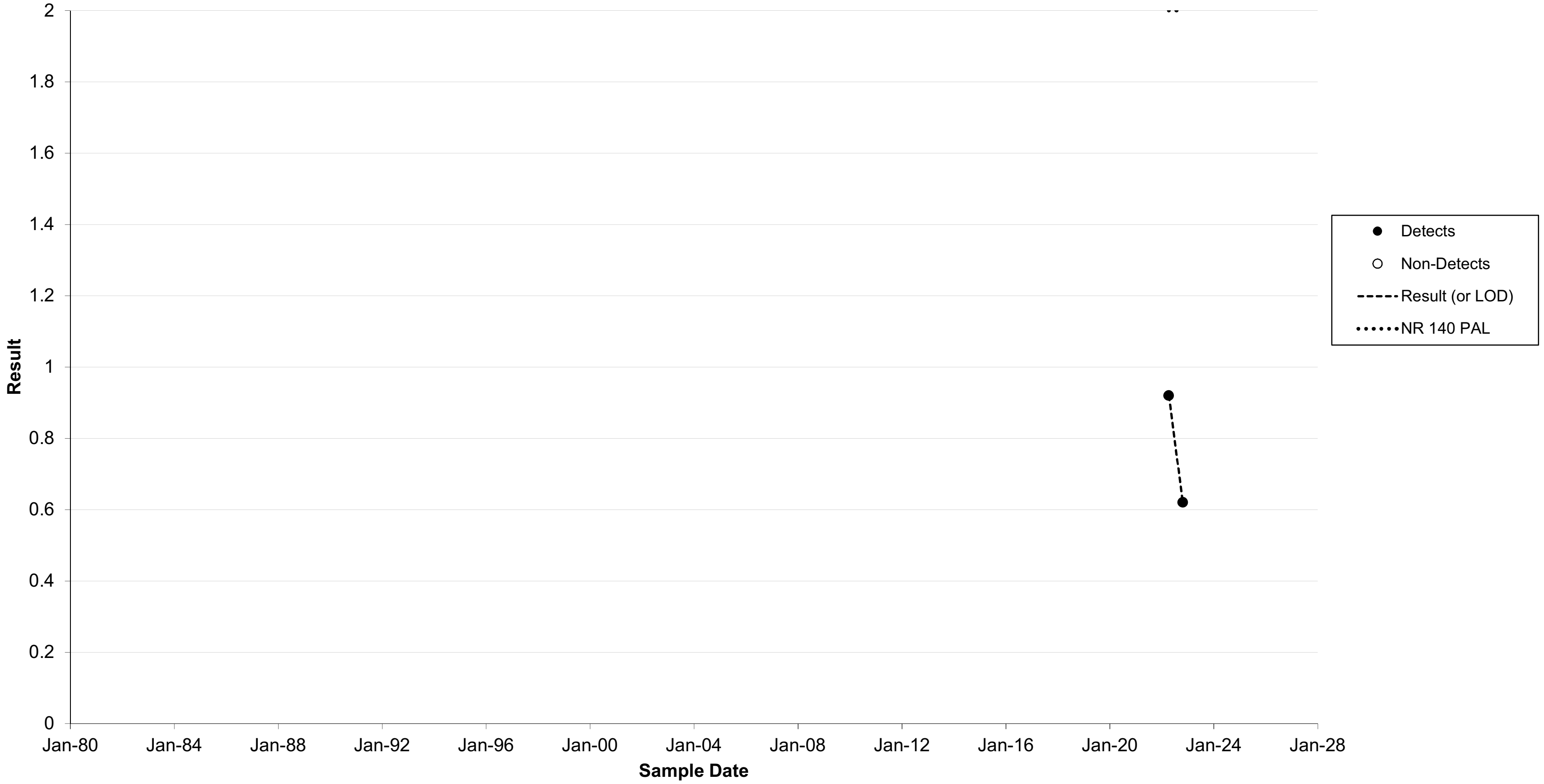
Columbia Dry Ash Disposal Facility
MW-93A - Nitrite + Nitrate as N, mg/L



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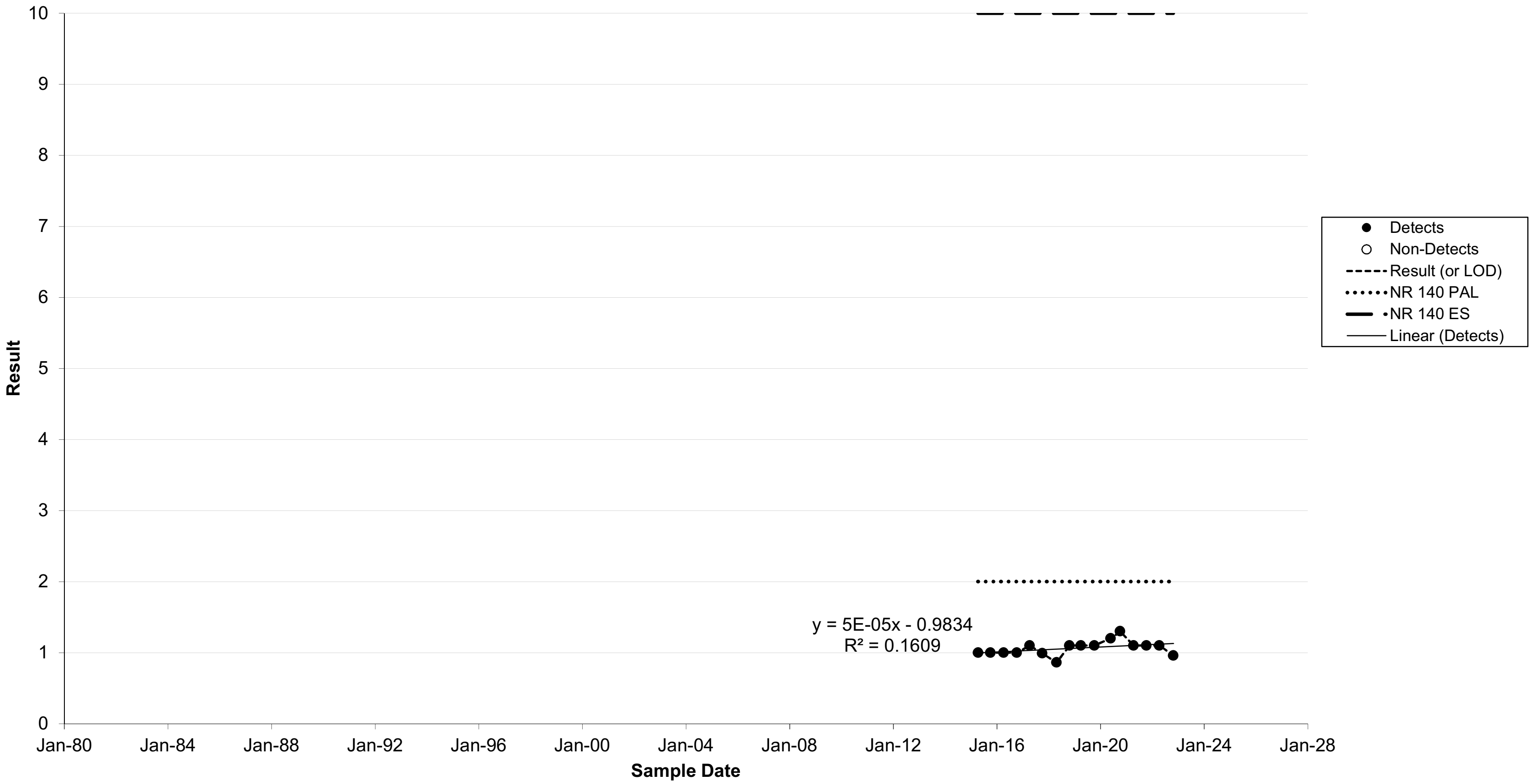
Columbia Dry Ash Disposal Facility
HC-1 - Nitrite + Nitrate as N, mg/L



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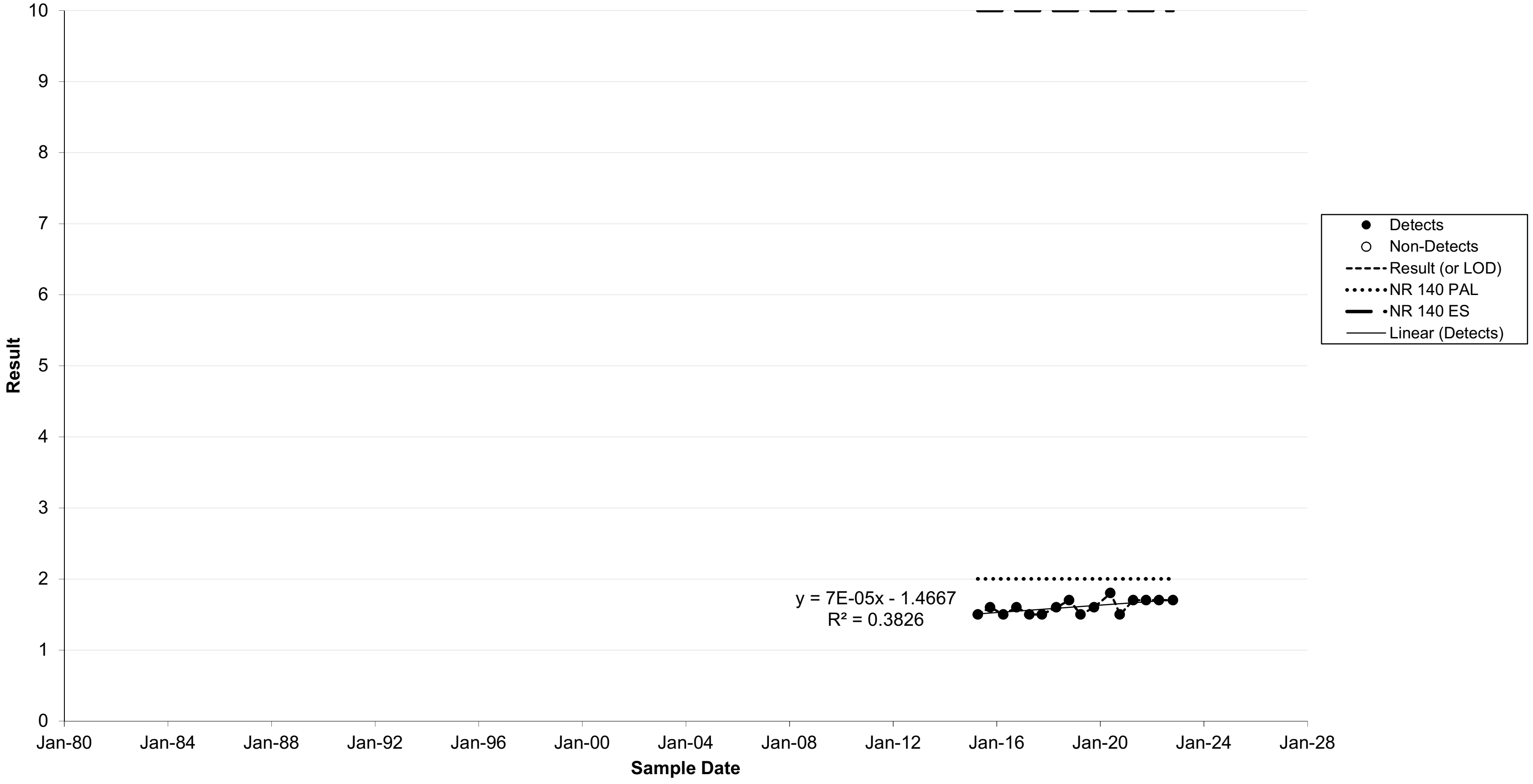
Columbia Dry Ash Disposal Facility
HC-2 - Nitrite + Nitrate as N, mg/L



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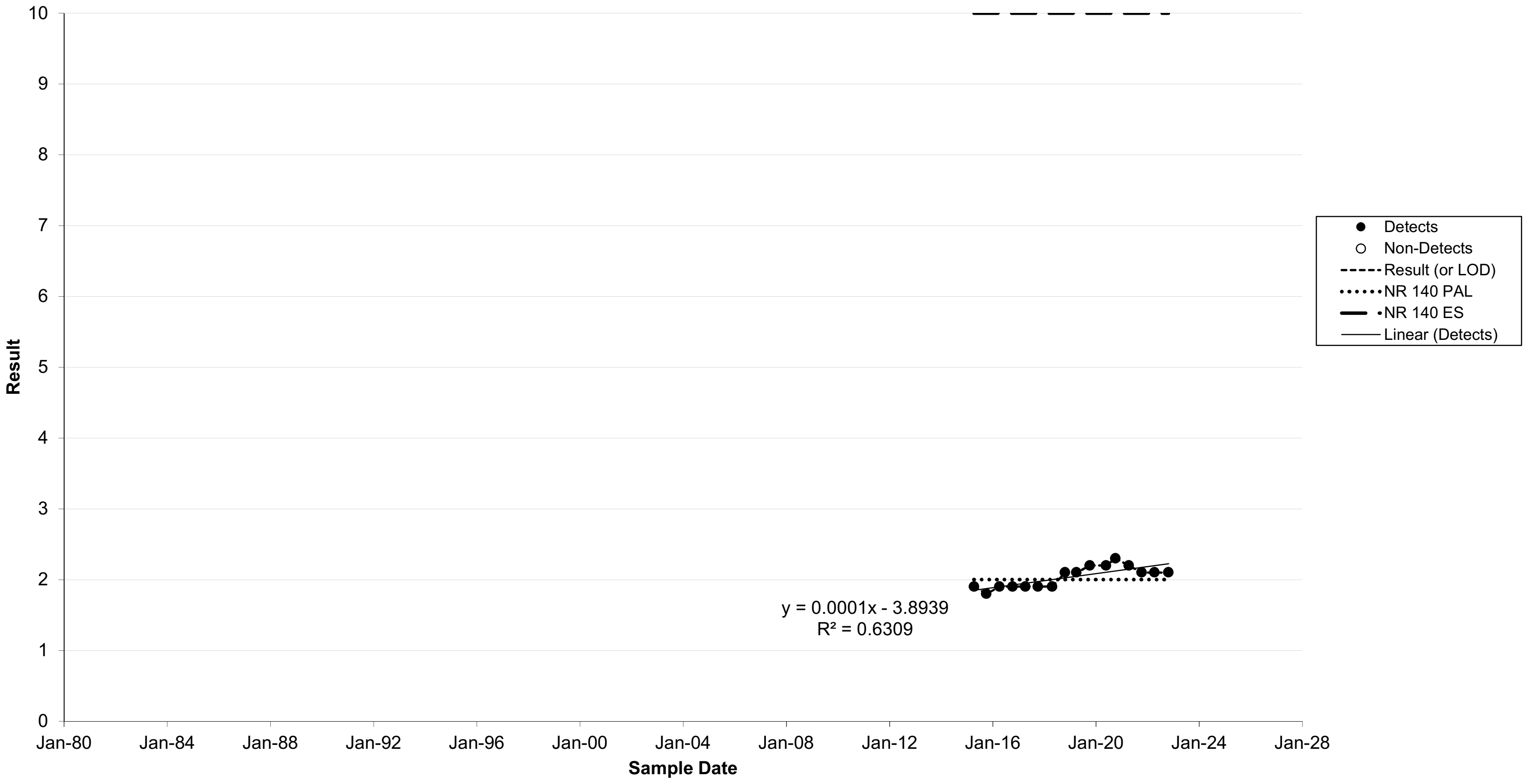
Columbia Dry Ash Disposal Facility
HC-3 - Nitrite + Nitrate as N, mg/L



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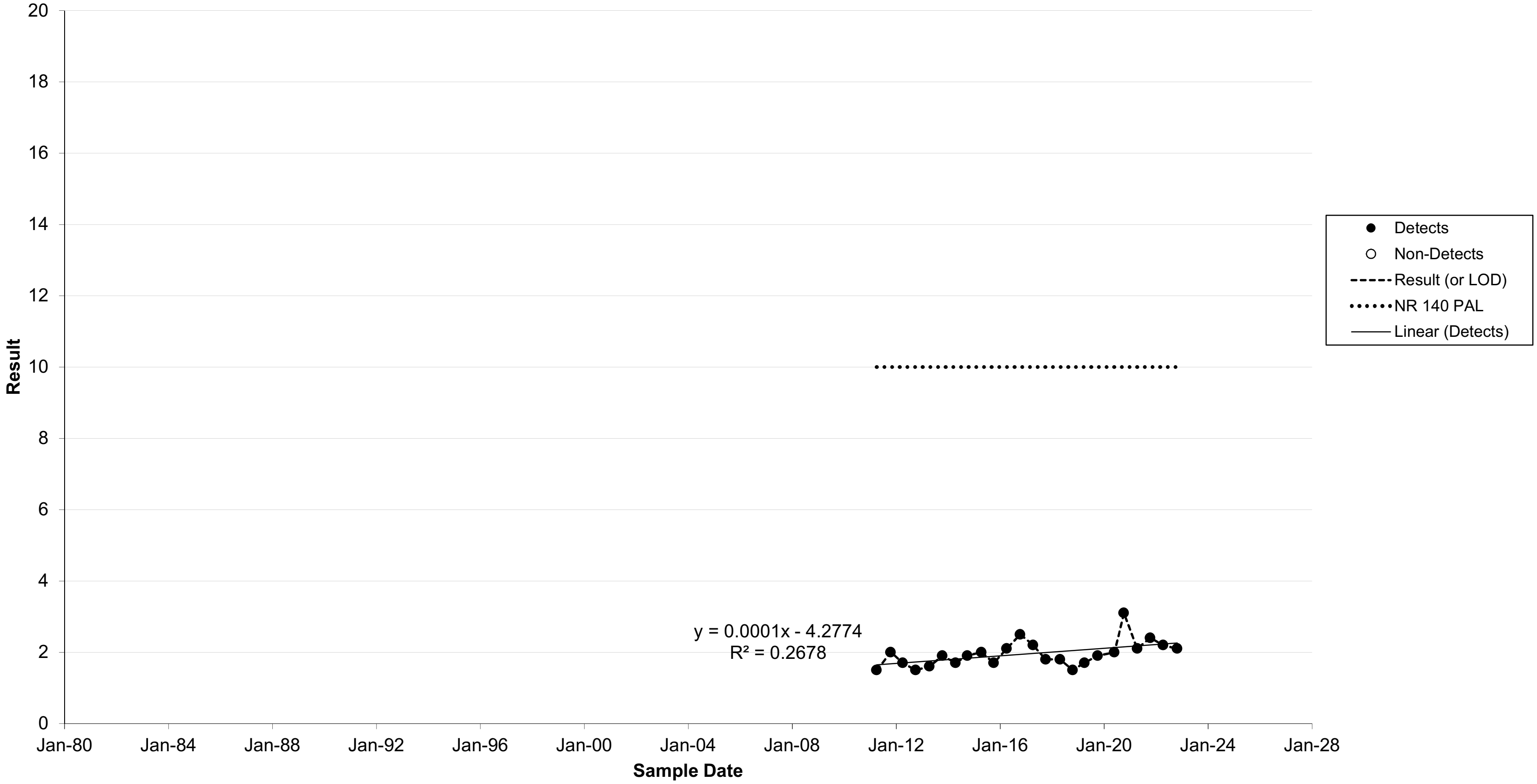
MW-33AR - Selenium, dissolved (ug/l as Se)



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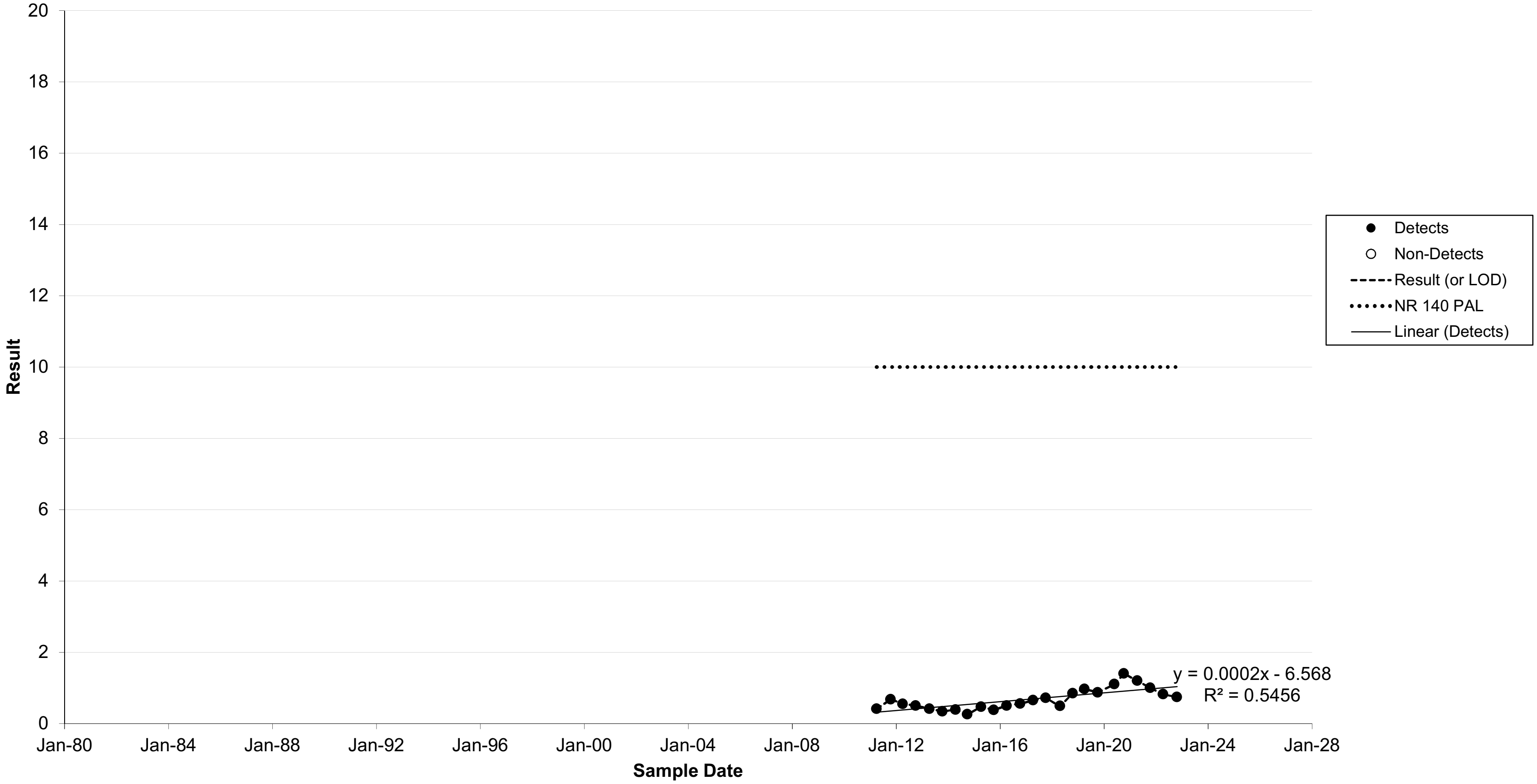
MW-33BR - Selenium, dissolved (ug/l as Se)



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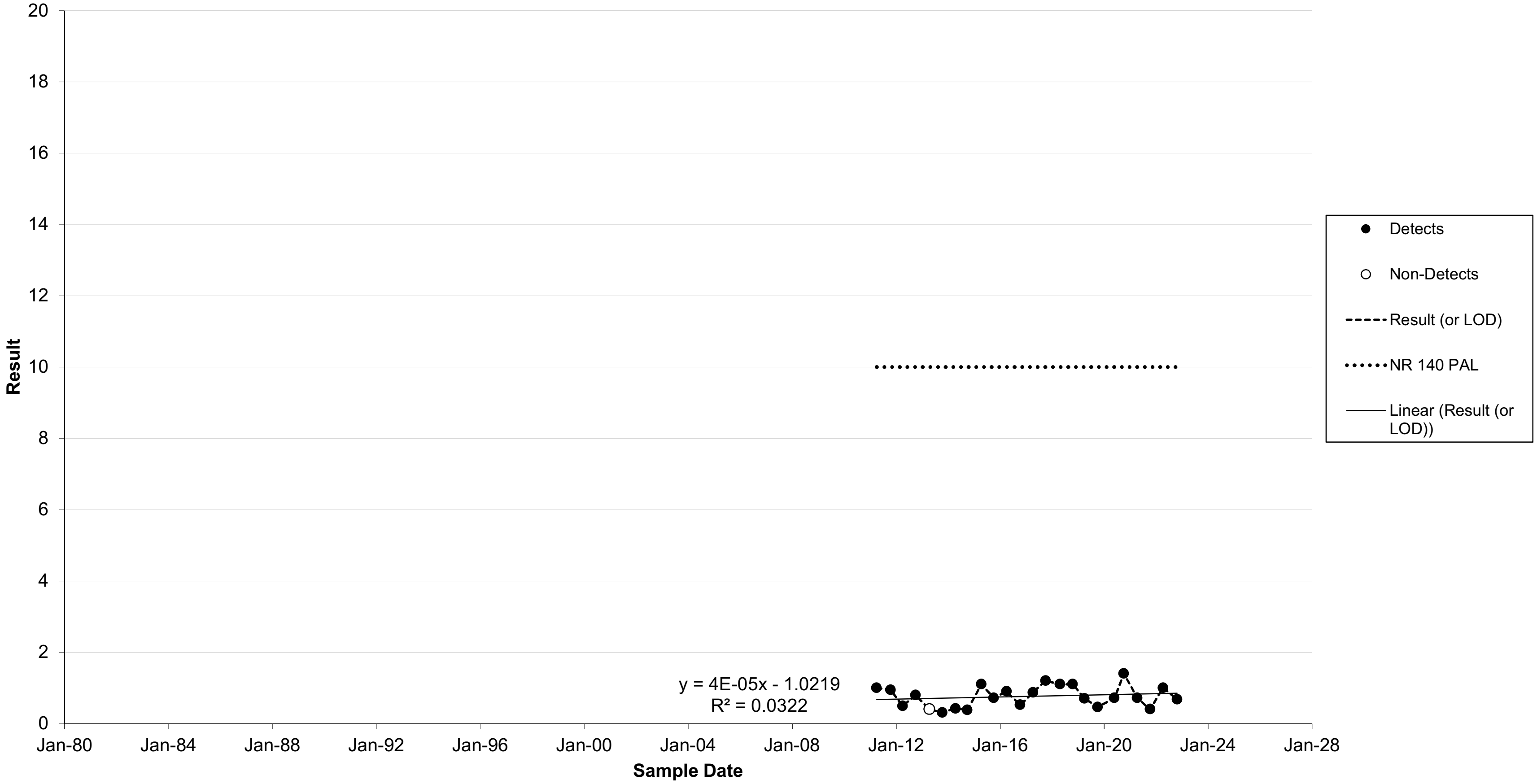
MW-34A - Selenium, dissolved (ug/l as Se)



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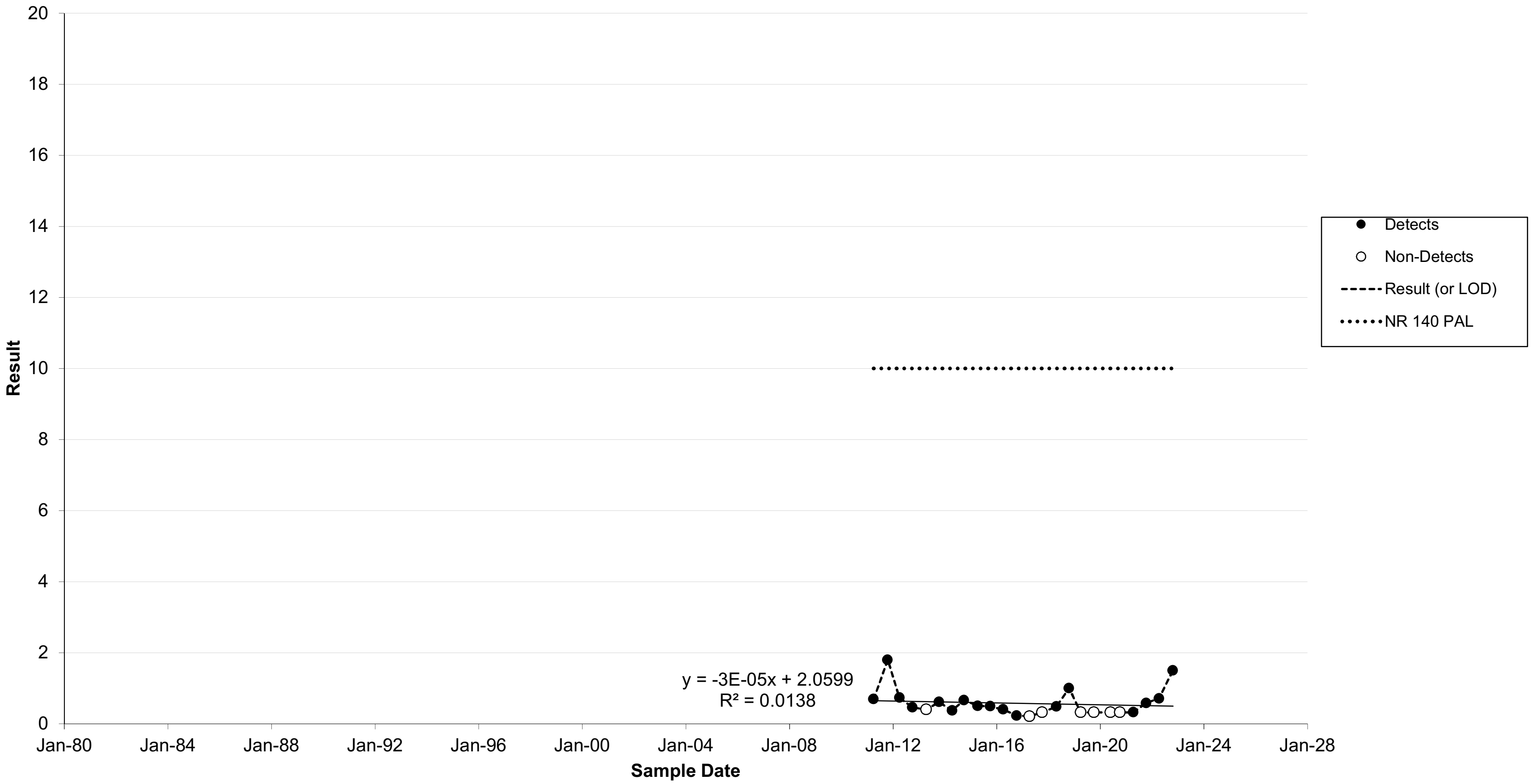
MW-34B - Selenium, dissolved (ug/l as Se)



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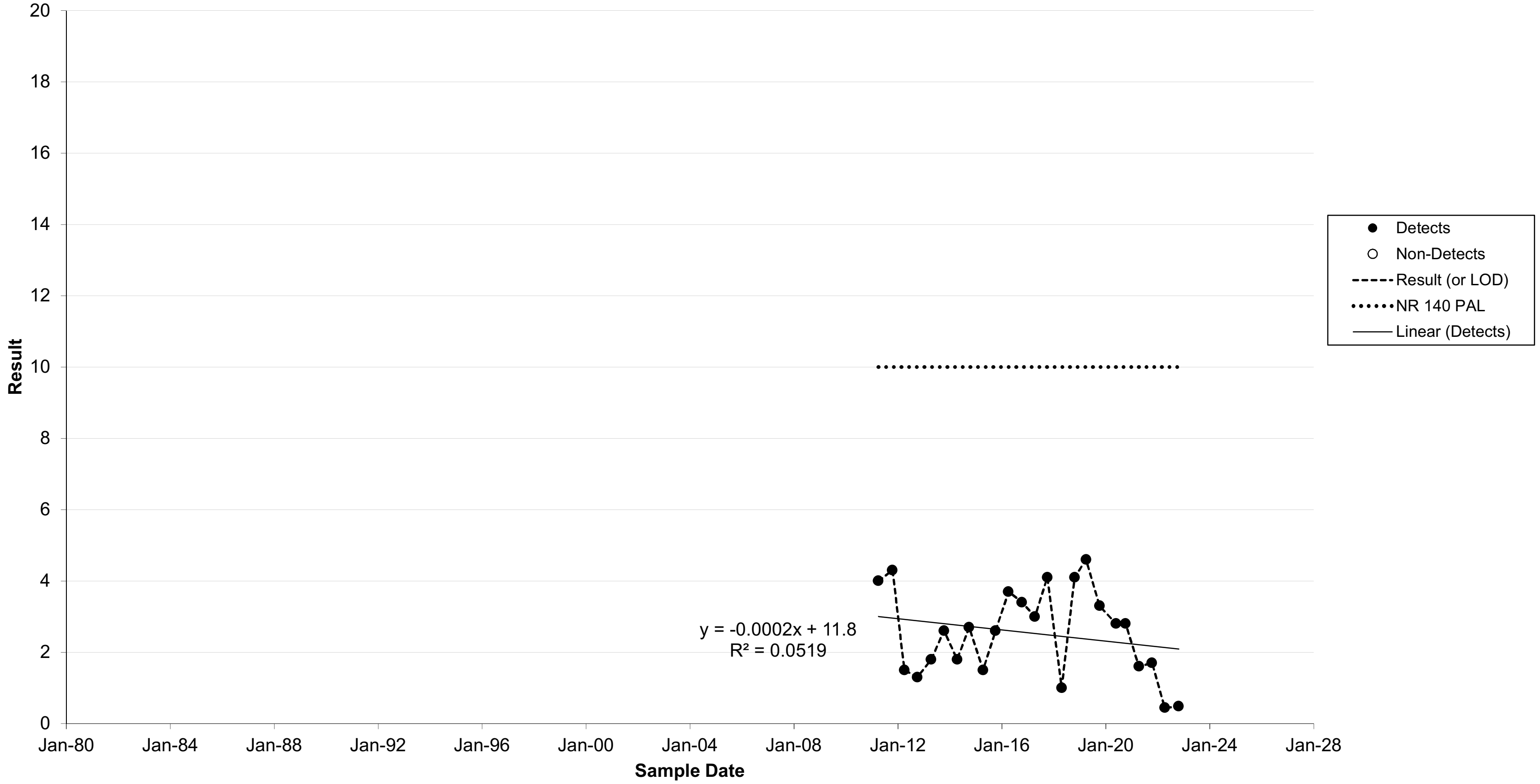
MW-37A - Selenium, dissolved (ug/l as Se)



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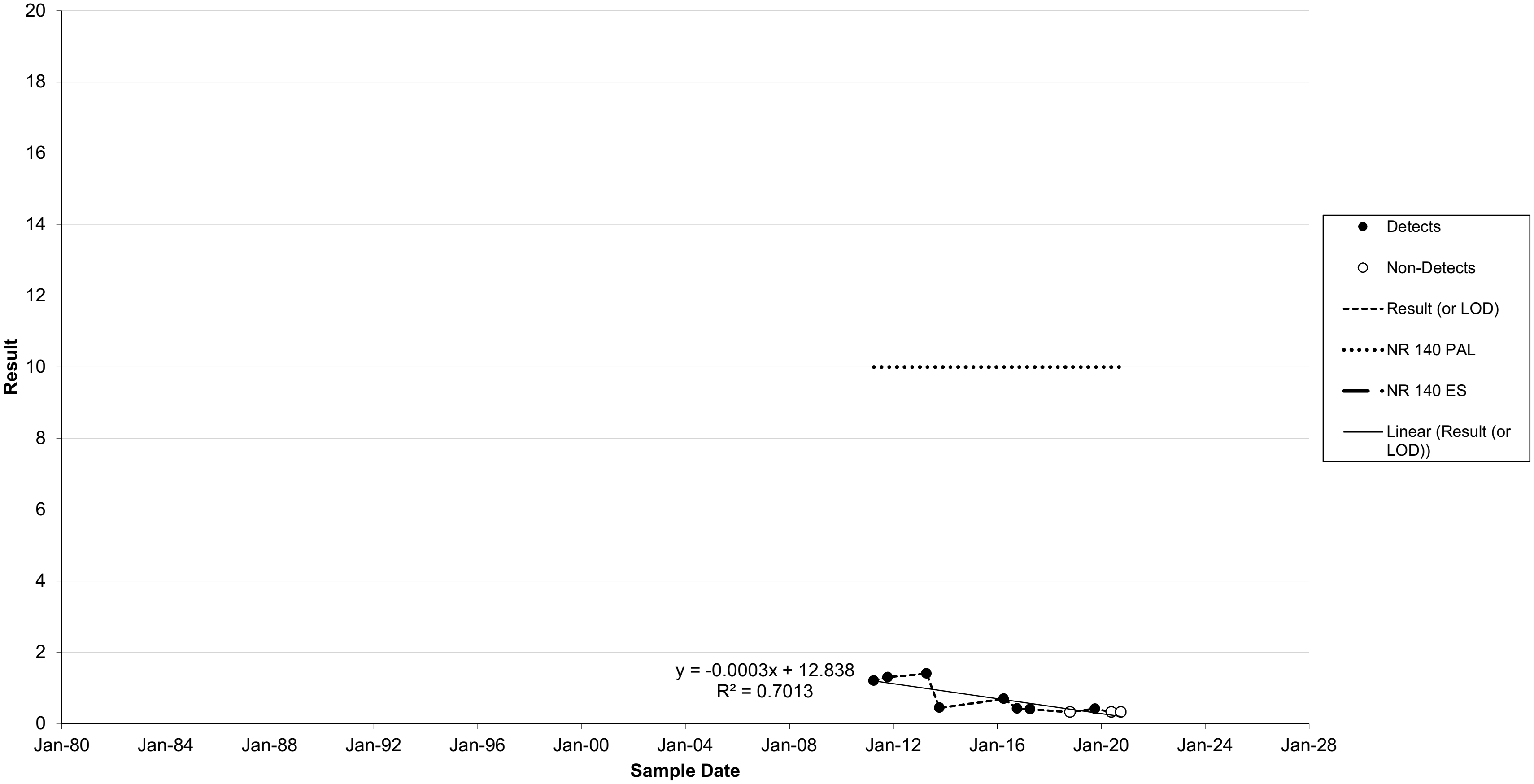

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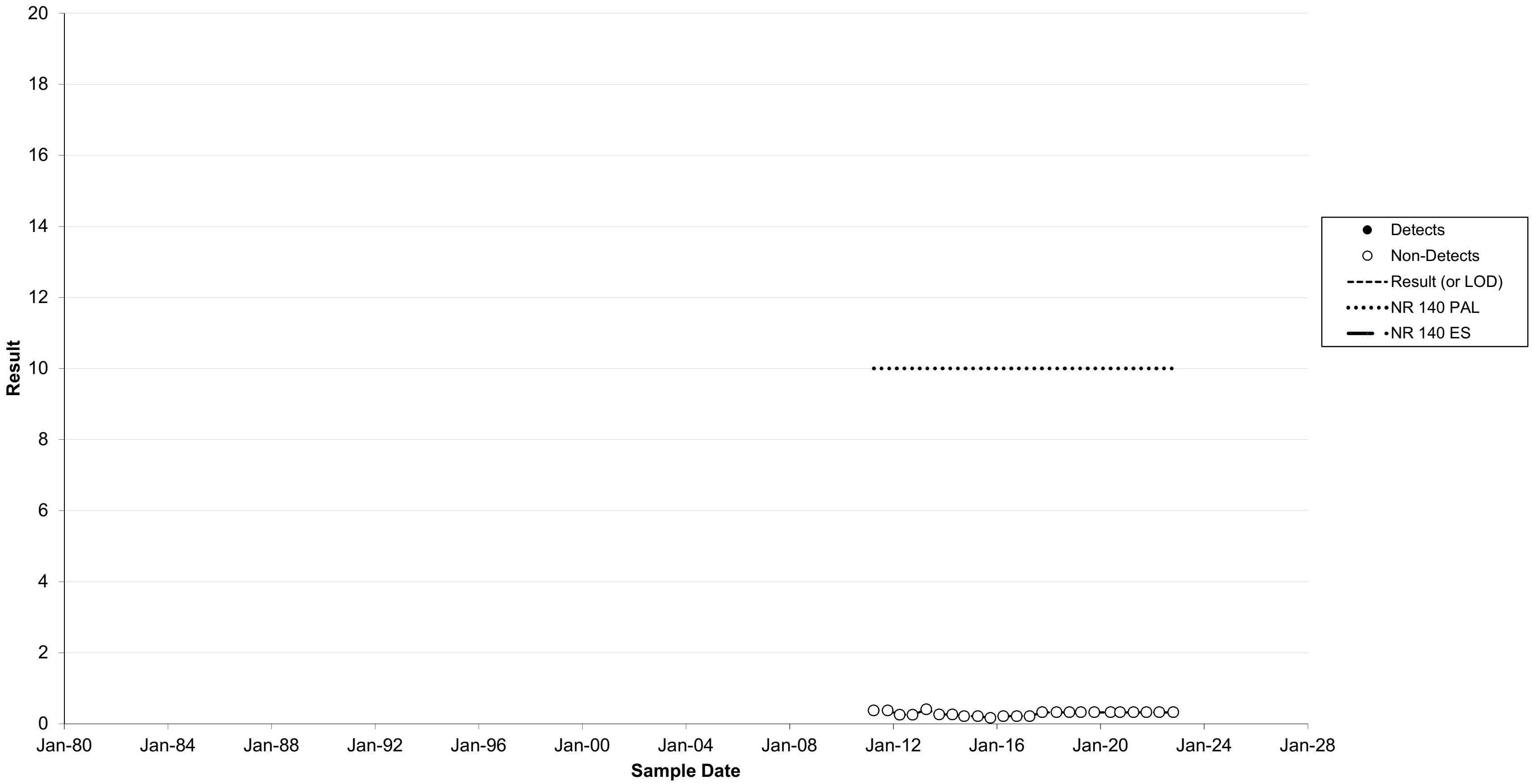
MW-84A - Selenium, dissolved (ug/l as Se)



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Columbia Dry Ash Disposal Facility
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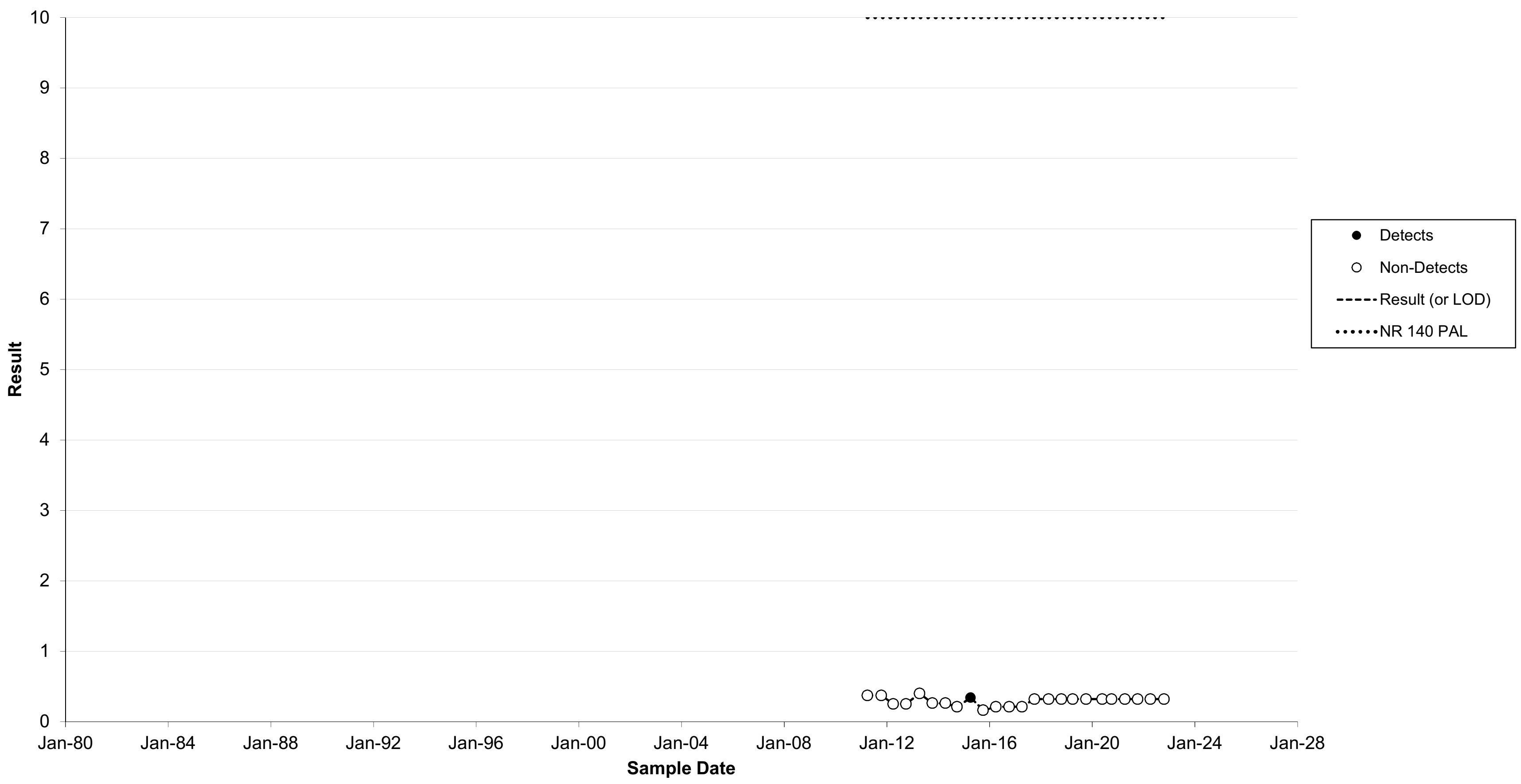

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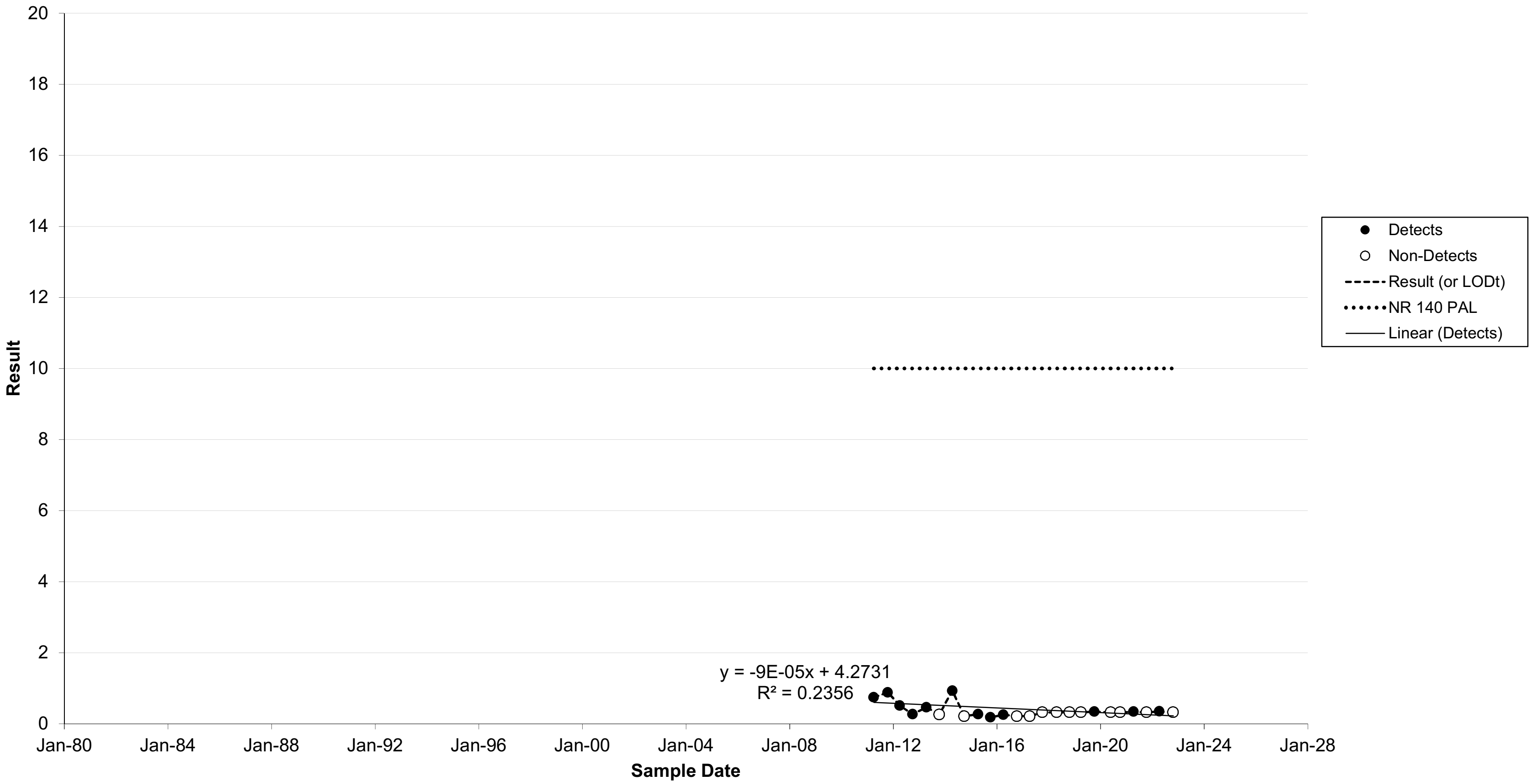

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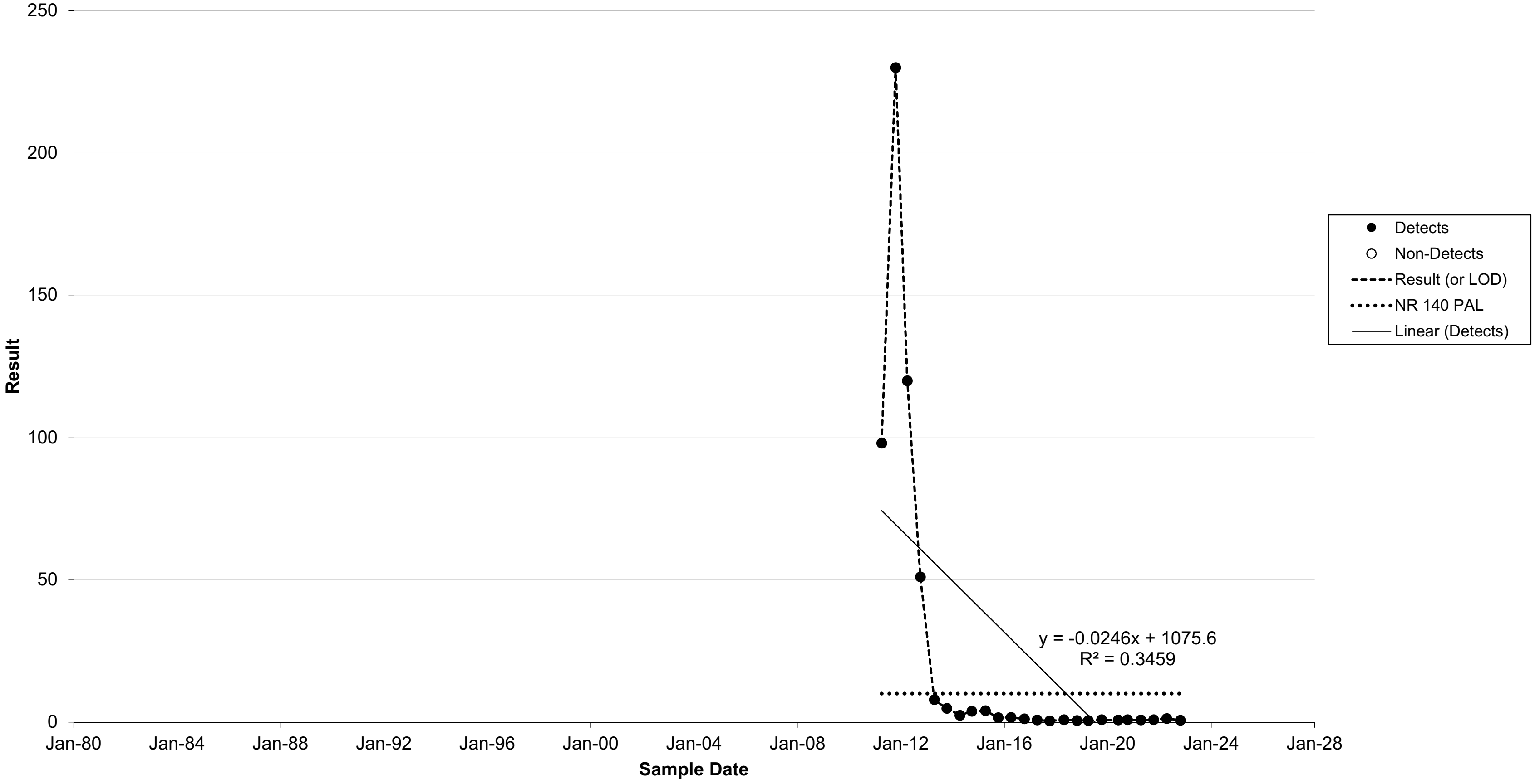

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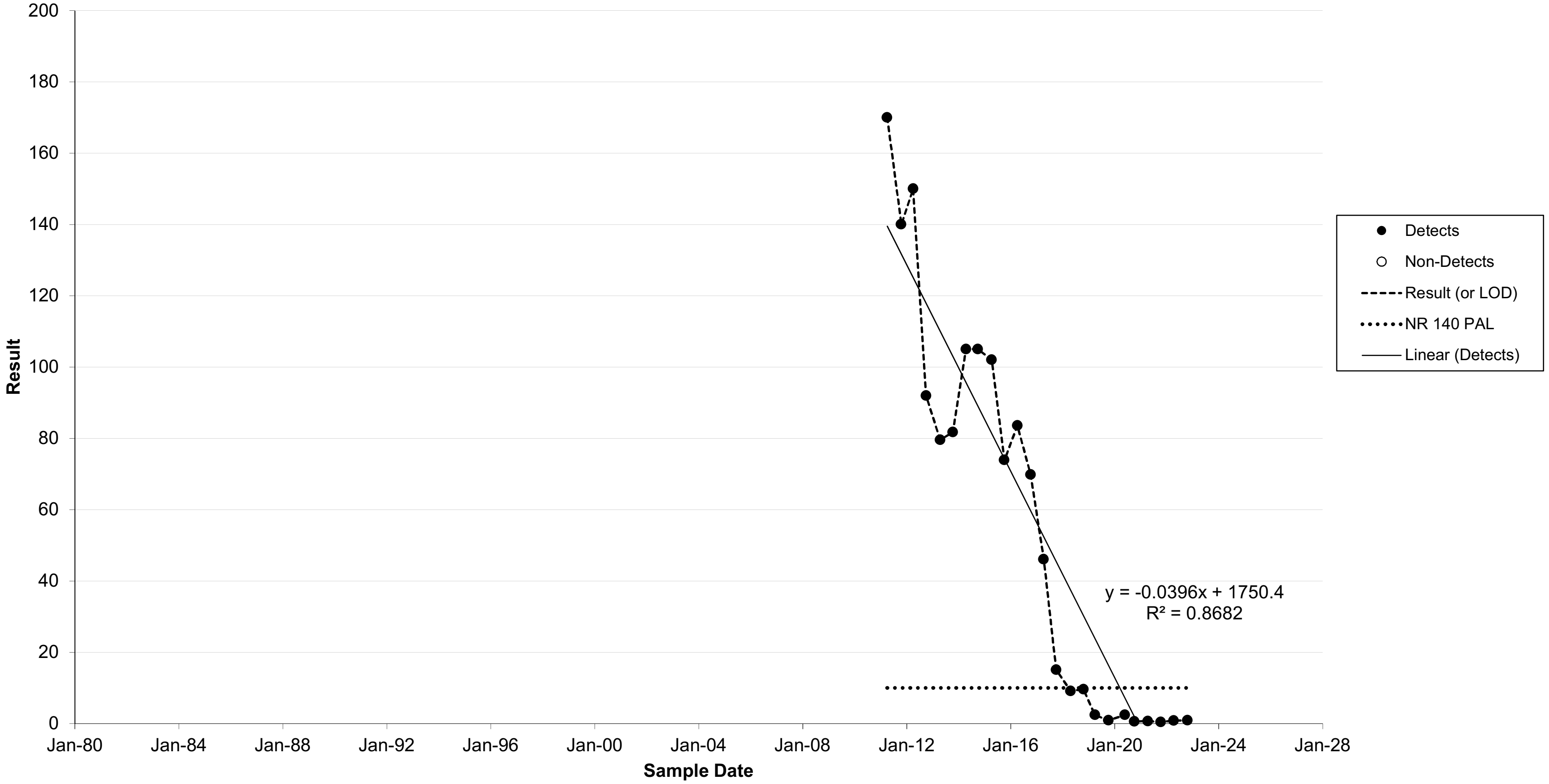

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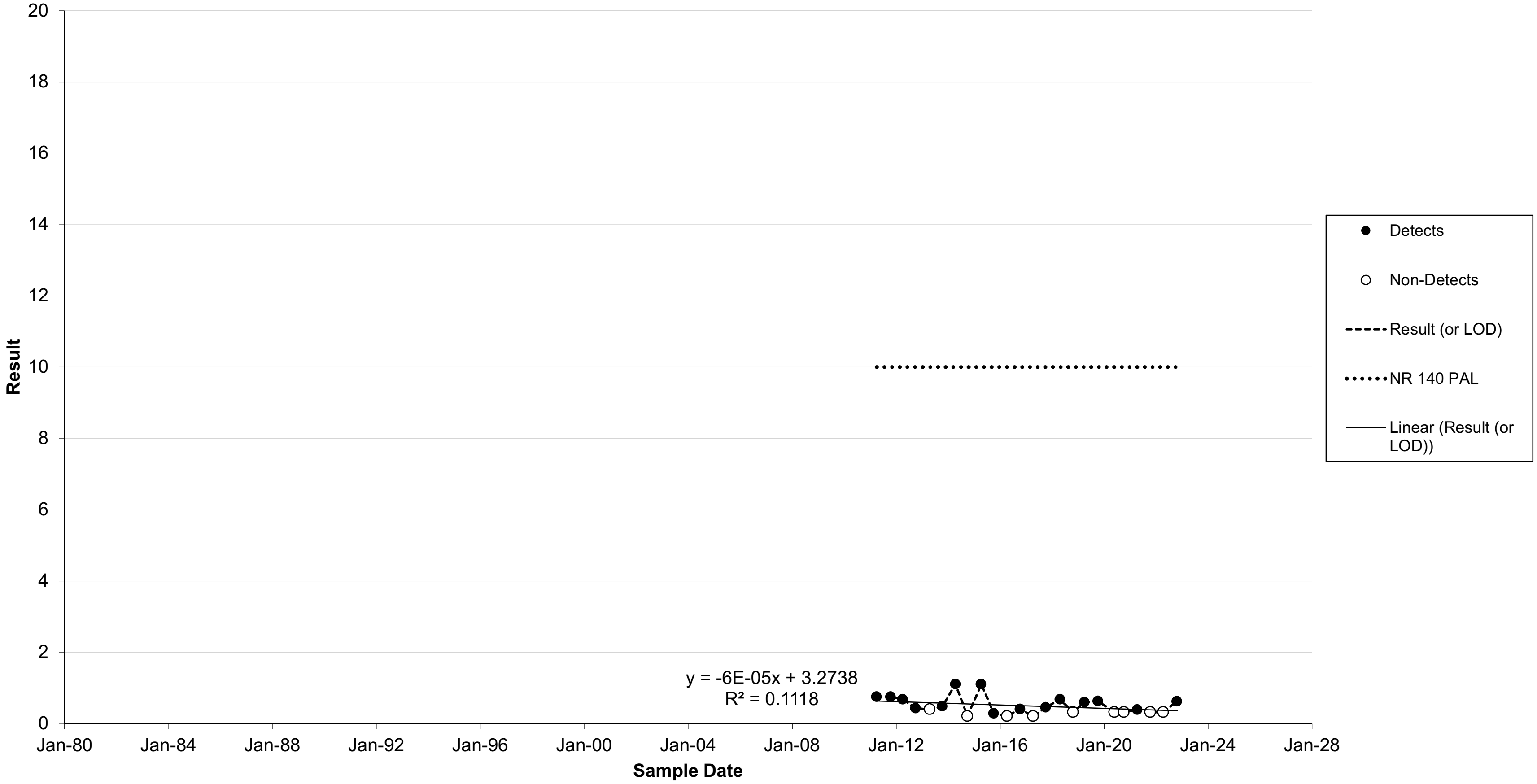

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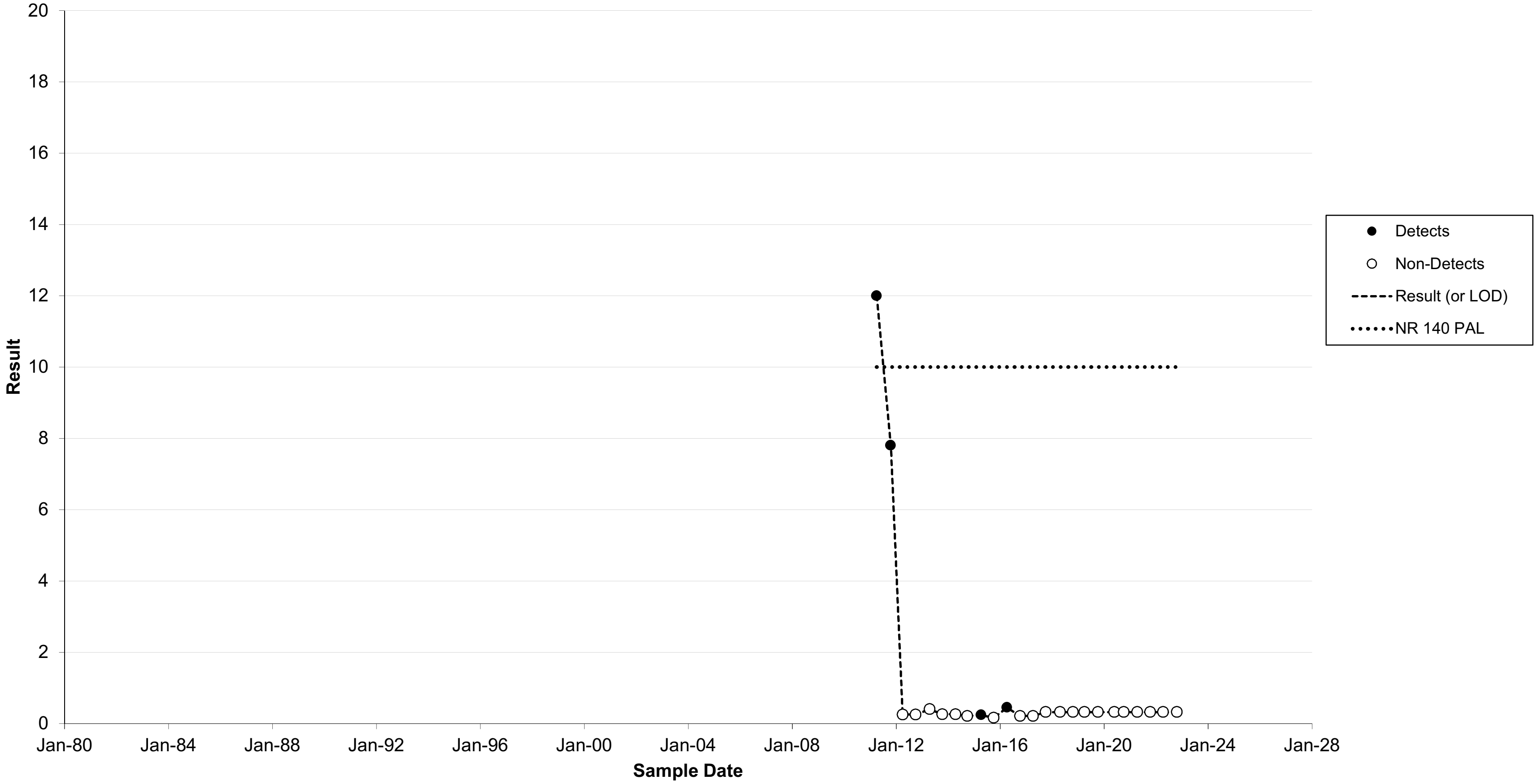

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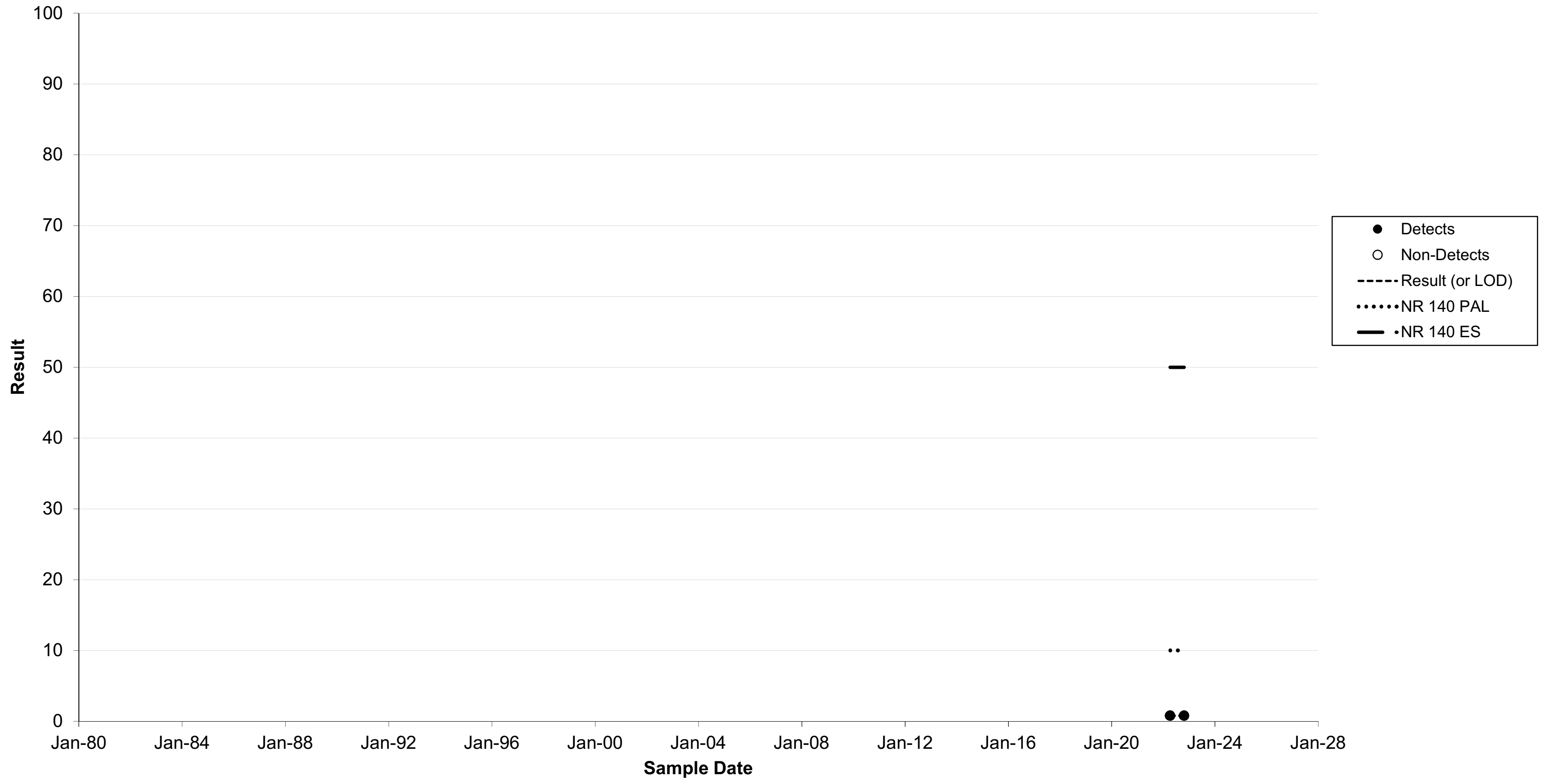

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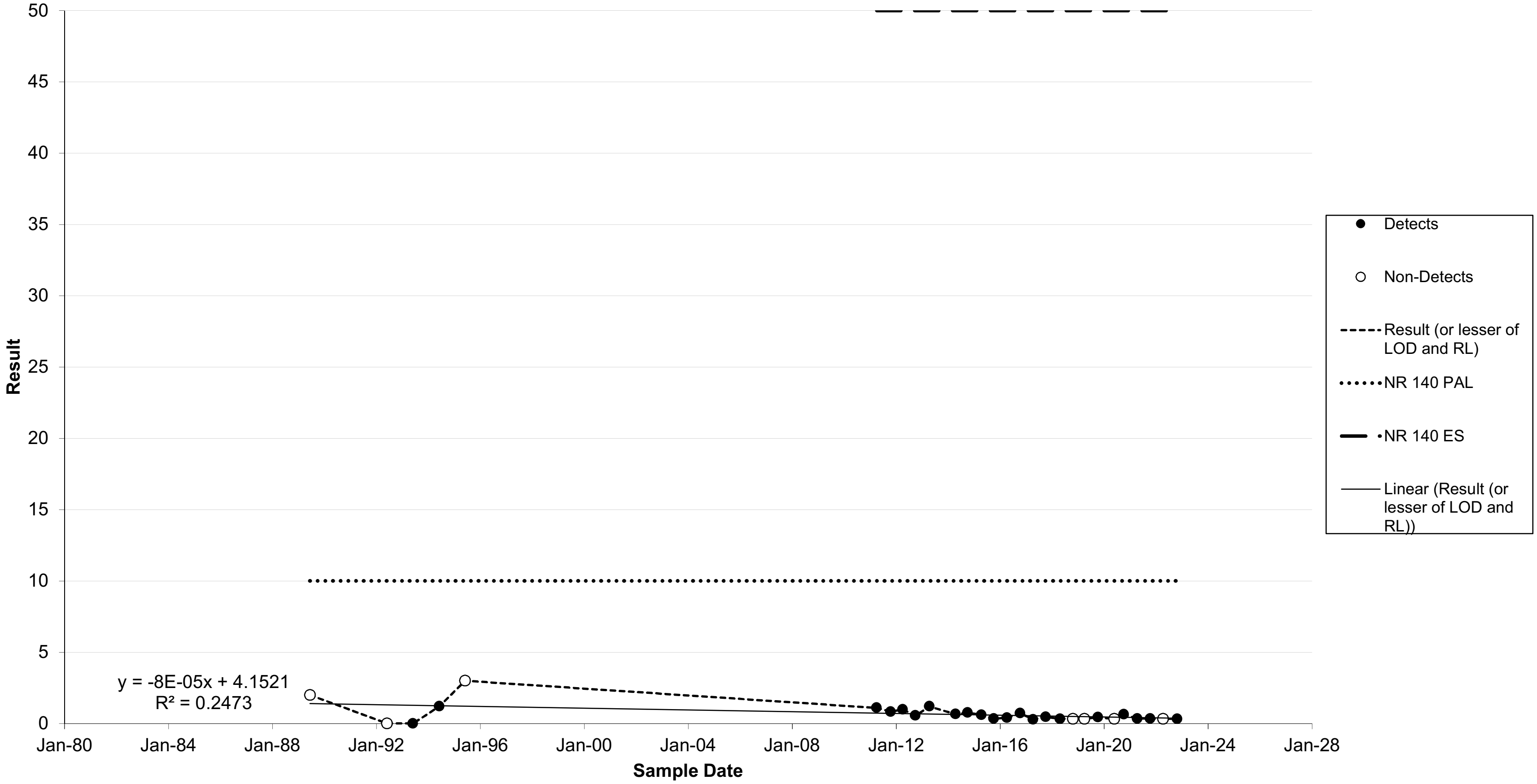
Columbia Dry Ash Disposal Facility
HC-1 - Selenium, total (ug/l as Se)



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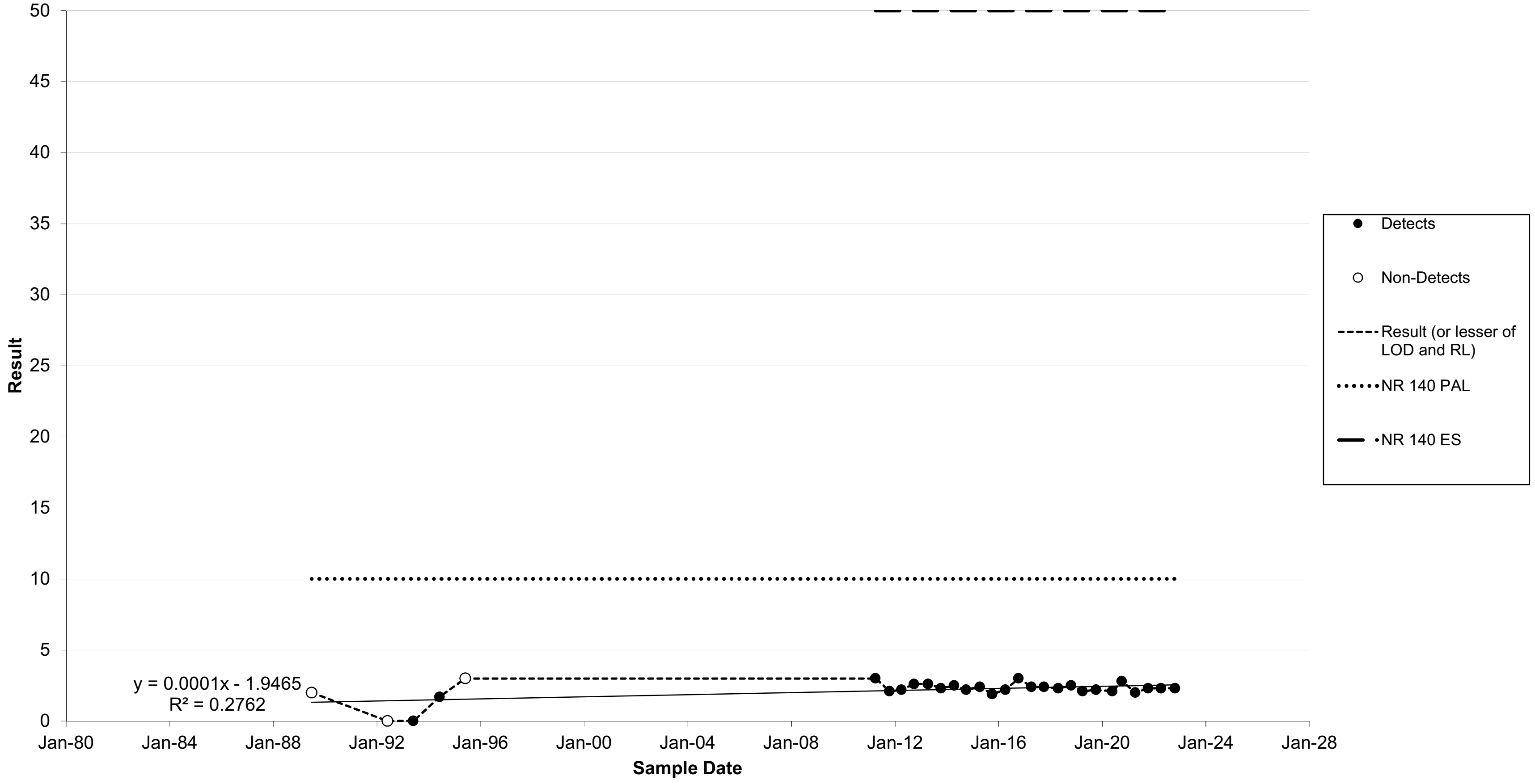
Columbia Dry Ash Disposal Facility
HC-2 - Selenium, total (ug/l as Se)



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Columbia Dry Ash Disposal Facility
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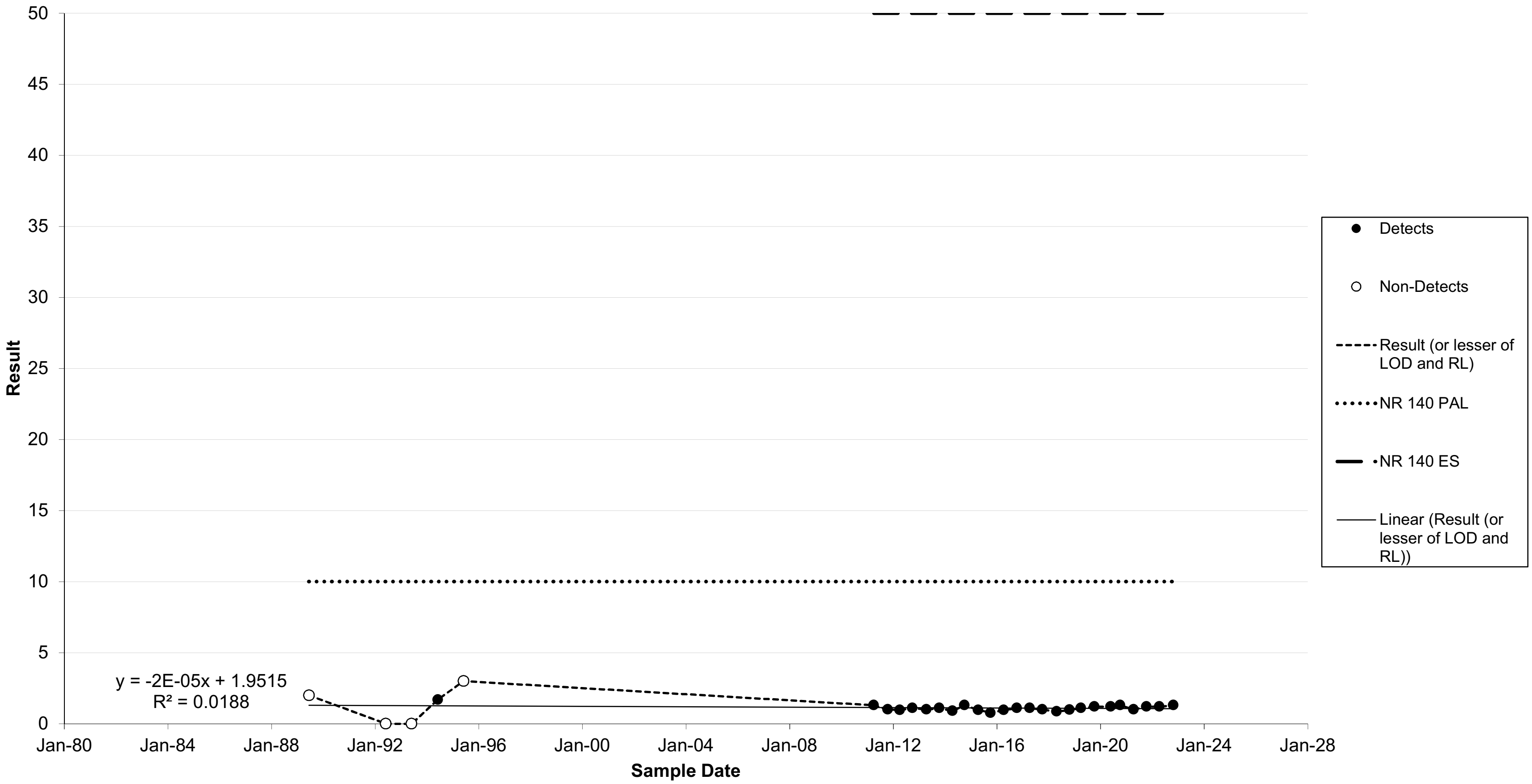

Appendix K

Long Term Care Plan

Post-Closure Care Plan

Columbia Dry Ash Disposal Facility

Phase 1 Module 1
Phase 1 Module 2
Phase 1 Module 3
Phase 1 Module 4
Phase 1 Module 5
Phase 1 Module 6
Phase 2 Module 10
Phase 2 Module 11
Phase 2 Module 12
Phase 2 Module 13

Prepared for:

Wisconsin Power and Light Company
Columbia Energy Center
W8375 Murray Road
Pardeeville, Wisconsin 53954

SCS ENGINEERS

25222260.00 | September 1, 2023

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

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Figures

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PE CERTIFICATION

PHILLIP E.
GEARING
E-45115

I, Phillip Gearing, hereby certify that I am a licensed professional engineer in the State of Wisconsin in accordance with the requirements of ch. A–E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A–E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 500 to 538, Wis. Adm. Code.

Specifically,

- This Post-Closure Care Plan was prepared by me or under my direct supervision and meets the requirements of 40 CFR 257.104(d) and NR 514.07(10)(d)

September 1, 2023
(signature) (date)

Phillip E. Gearing
(printed or typed name)

License number E-45115

My license renewal date is July 31, 2024.

Pages or sheets covered by this seal:

ALL

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1.0 INTRODUCTION AND PROJECT SUMMARY

On behalf of Wisconsin Power and Light Company (WPL), SCS Engineers (SCS) has prepared this Post-Closure Care Plan for the Columbia (COL) Dry Ash Disposal Facility Phase 1, Modules 1 through 6 and Phase 2, Modules 10 through 13 as required by 40 Code of Federal Regulations (CFR) 257.104 and Wisconsin Administrative Code NR 514.07(10)(d), as stated below.

40 CFR 257.104(d). *"Written post-closure plan – (1) Content of the plan. The owner or operator of a CCR unit must prepare a written post-closure plan that includes, as a minimum, the information specified in paragraphs (d)(1)(i) through (iii) of this section."*

NR 517.07 (10)(d). *"A written long–term care plan that addresses all of the following: 1. A description of the monitoring and maintenance activities and the frequency at which those activities will be performed. The activities shall include, at a minimum, all of the following:"*

The COL facility includes an active coal combustion residual (CCR) landfill, which currently consists of the following modules, located in Phase 1 and Phase 2 of the facility.

- **Phase 1, Module 1** – This module has received final cover over outer sideslope areas that will no longer receive additional CCR; intermediate cover has been placed over remaining areas. The final cover placed complies with the CCR Rule.

- **Phase 1, Module 2** – This module has received intermediate cover over a majority of the in-place CCR.

- **Phase 1, Module 3** – This module has received intermediate cover over a majority of the in-place CCR.

- **Phase 1, Module 4** – This module is currently being filled.

- **Phase 1, Module 5** – This module is currently being filled.

- **Phase 1, Module 6** – This module is currently being filled.

- **Phase 2, Module 10** – This module is currently being filled.

- **Phase 2, Module 11** – This module is currently being filled.

- **Phase 2, Module 12** – This module is currently proposed for approval. The module will be constructed and filled following approval.

- **Phase 2, Module 13** – This module is currently proposed for approval. The module will be constructed and filled following approval.

Phase 1, Modules 1 through 3 were previously described as separate existing CCR landfills although they are contiguous and are managed as a single landfill by the facility and by the Wisconsin Department of Natural Resources (WDNR). WPL has clarified in the operating record for the Columbia facility that Modules 1 through 3 are one existing CCR landfill as defined in 40 CFR 257.53 of the federal CCR Rule. Phase 1, Modules 4 through 6 and Modules 10 and 11 are considered to be a new CCR landfill that initiated construction after October 19, 2015, and is therefore managed as a separate CCR unit under the CCR Rule even though they are contiguous to the existing CCR landfill (Modules 1 through 3). Phase 2, Modules 12 and 13 will be included in the new CCR landfill, if approved and constructed. Construction of additional modules beyond Modules 12 and 13 is not currently planned prior to retirement of the Columbia Energy Center, which is currently scheduled to occur no later than June 1, 2026.

The site location is shown on **Figure 1**. **Figure 2** shows proposed final cover grades and monitoring locations.

Phase 1, Module 1 has been partially closed with a final cover as described in the Closure Plan for the existing CCR landfill. The remaining open areas of this module will be closed when CCR materials reach final waste grades, as described in the Plan of Operations approved by the WDNR. The future final cover system is planned to differ from the existing final cover system, as explained in the Closure Plan. Following the closure of the CCR units at COL, WPL will conduct post-closure care in accordance with 40 CFR 257.104(b) for the required 30 years and with NR 514.07(10)(d) for the required 40 years per NR 506.084(2).

2.0 MONITORING AND MAINTENANCE ACTIVITIES

40 CFR 257.104(d)(1)(i). *"A description of the monitoring and maintenance activities required in paragraph (b) of this section for the CCR unit, and the frequency at which these activities will be performed."*

NR 514.07(10)(d)(1). *"A description of the monitoring and maintenance activities and the frequency at which those activities will be performed."*

Monitoring and Maintenance Activities	Frequency
Mowing	Semi-Annually
Inspections by Owner/Operator	Quarterly
Repair to Final Cover for Erosion Concerns	As needed, determined by inspection
Sedimentation Basin Cleaning	As needed, determined by inspection
Leachate Collection Line Cleaning	Annually
Environmental Monitoring (groundwater, leachate)	Semi-Annually

The owner/operator will perform quarterly inspections of the landfill surface, leachate control system, and groundwater monitoring systems. If issues are noticed during the inspection, action will be taken to remedy the situation. Eroded areas will be repaired and reseeded. Repairs or replacement will be performed on the groundwater monitoring system as needed.

2.1 FINAL COVER MAINTENANCE

Mowing will be performed semi-annually during the growing season unless additional mowing is required in response to the vegetation growth rate. During quarterly inspections, if eroded areas are noted, WPL will repair and reseed the area.

2.2 LEACHATE COLLECTION AND REMOVAL SYSTEM MAINTENANCE

The leachate collection and removal system for the existing CCR landfill and existing / future units will be maintained to meet state requirements including leachate collection line cleaning, leachate collection video inspection, and any needed repairs to the existing system. Leachate collection video inspection will occur at 5-year intervals, following the annual pipe cleaning required by NR 506.07(5)(c). The video camera inspection will extend a minimum of 300 feet onto the base grades of each leachate collection line.

Phase 1, Module 4 was constructed and opened in 2018. Module 4 is a new CCR landfill as defined in 40 CFR 257.53. Phase 1, Modules 5 and 6 were constructed in 2021. Phase 2, Modules 10 and 11 began construction in 2022. These modules are defined as lateral expansions of the new CCR landfill. Phase 1, Modules 4, 5, and 6 and Phase 2, Modules 10 and 11 are in compliance with the requirements of 40 CFR 257.70, as demonstrated in the Liner and Leachate Collection System Design Compliance Demonstrations. Phase 1, Modules 4, 5, and 6 and Phase 2, Modules 10 and 11 are in compliance with the requirements of NR 504.12, as demonstrated in the Plan of Operation Modification Request WDNR CCR Code Update Report. The proposed Phase 2, Modules 12 and 13 will be in compliance with the requirements of NR 504.12, as well.

2.3 GROUNDWATER MONITORING AND SYSTEM MAINTENANCE

CCR wells, as defined by NR 500.03(26y) and approved by the Department, will be maintained and sampled semi-annually for the parameters listed in Appendix III to Part 257 and listed in Appendix I, Table 1A to NR 507, and in accordance with 40 CFR 257.90-98 and NR 507.15 (3).

Non-CCR monitoring wells at the site will be maintained and sampled as approved by the Department in writing.

Sampling and analysis will be conducted in accordance with the Groundwater Sampling and Analysis Plan.

3.0 POST-CLOSURE PERIOD CONTACTS

40 CFR 257.104(d)(1)(ii). *"The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure period."*

NR 514.07(10)(d)(2). *"The name, address, telephone number, and email address of the person or office to contact about the facility during long–term care."*

Currently, the contact information for COL during the post-closure/long-term care period is as follows:

Columbia Energy Center
Attn: Plant Manager
W8375 Murray Road
Pardeeville, WI 53954
(608) 742-0711
CCRProgram@alliantenergy.com

4.0 POST-CLOSURE PERIOD SITE USE

40 CFR 257.104(d)(1)(iii). *"A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system or the function of the monitoring systems unless necessary to comply with the requirements of the subpart…"*

NR 514.07(10)(d)(3). *"A description of the planned uses of the property during long−term care. Post−closure uses may not disturb the integrity of the final cover, liner, or any other component of the landfill, or the function of the monitoring systems unless approved in writing by the department…."*

The final use of the COL Dry Ash Disposal Facility will be privately owned green space. With this use, there will be no disturbance of the final cover or any other landfill-related components.

5.0 CERTIFICATIONS

40 CFR 257.104(d)(4). *"The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the initial and any amendment of the written post-closure plan meets the requirements of this section."*

NR 500.05. *"Unless otherwise specified, all submittals for review and approval of any initial site report, feasibility report, plan of operation site investigation report, remedial action options report, construction documentation report, or closure plan, or any modifications to those plans, shall include all of the following:*

> *(4) CERTIFICATION. (a) The reports and plan sheets shall be under the seal of a licensed professional engineer."*

Phillip Gearing, PE, a licensed profession engineer in the State of Wisconsin, has overseen the preparation of this Post-Closure Care Plan. A certification statement is provided on **page iii** of this plan.

6.0 RECORDKEEPING AND REPORTING

40 CFR 257.104(b)(2)(iii). *"The owner or operator has completed the written post-closure plan when the plan including the certification required by paragraph (d)(4) of this section, has been placed in the facility's operating record as required by Section 257.105(i)(4)."*

NR 506.17(2)(e). *"The written operating record shall contain the plan of operation, plan modifications, construction documentation, department approvals, annual reports, inspection records, monitoring and corrective action records, notifications to the department, and records of public comments received during any public comment period."*

The Post-Closure Care Plan will be placed in the facility's operating record and on Alliant Energy's CCR Rule Compliance Data and Information website, as will all amendments.

WPL will amend the Post-Closure Care Plan if there is a change in operation of the CCR unit that affects the written Post-Closure Care Plan or, if after post-closure activities have started, unexpected events cause a revision of the plan.

WPL will provide notification of completion of the post-closure care no later than 60 days following the completion of the post-closure care period. The notification will include certification by a qualified professional engineer verifying that post-closure care has been completed in accordance with the plan. The notification will be placed in the facility's operating record and on the website.

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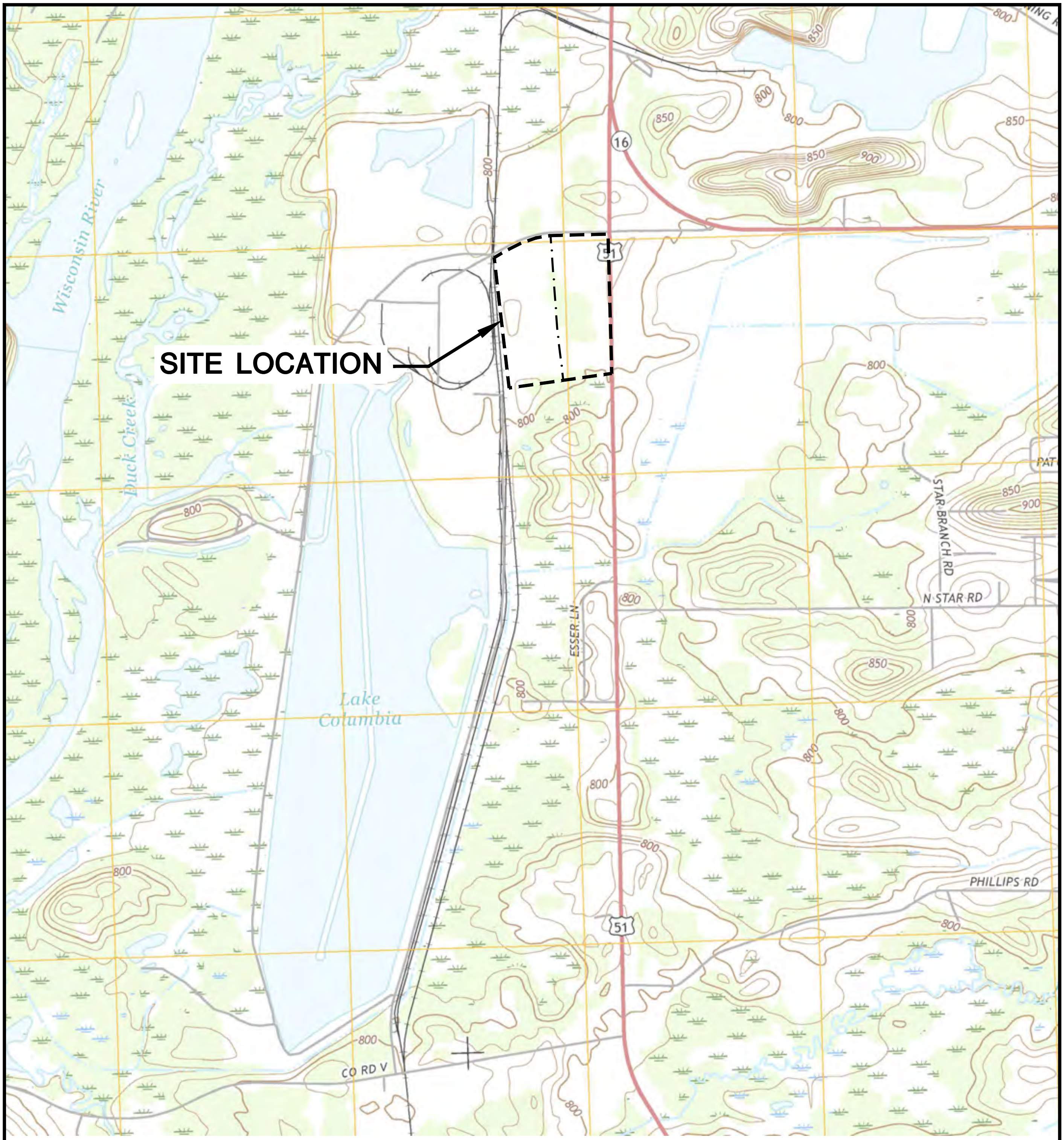
Figures



POYNETTE QUADRANGLE
WISCONSIN–COLUMBIA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
2016
SCALE: 1" = 2,000'

CLIENT	WISCONSIN POWER AND LIGHT COLUMBIA ENERGY CENTER W8375 MURRAY ROAD PARDEEVILLE, WISCONSIN 53954	SITE	POST CLOSURE CARE PLAN COLUMBIA DRY ASH DISPOSAL FACILITY TOWN OF PACIFIC, WISCONSIN

SITE LOCATION MAP

PROJECT NO.	25222260.00	DRAWN BY:	AHB	ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE
DRAWN:	08/09/2016	CHECKED BY:	RJG			1
REVISED:	12/28/2022	APPROVED BY:	PEG 01/31/23			

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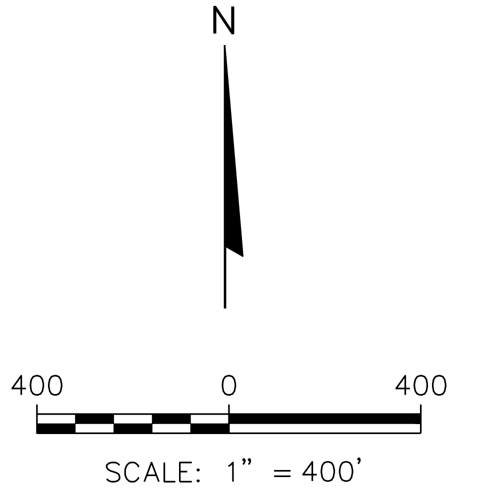
LEGEND

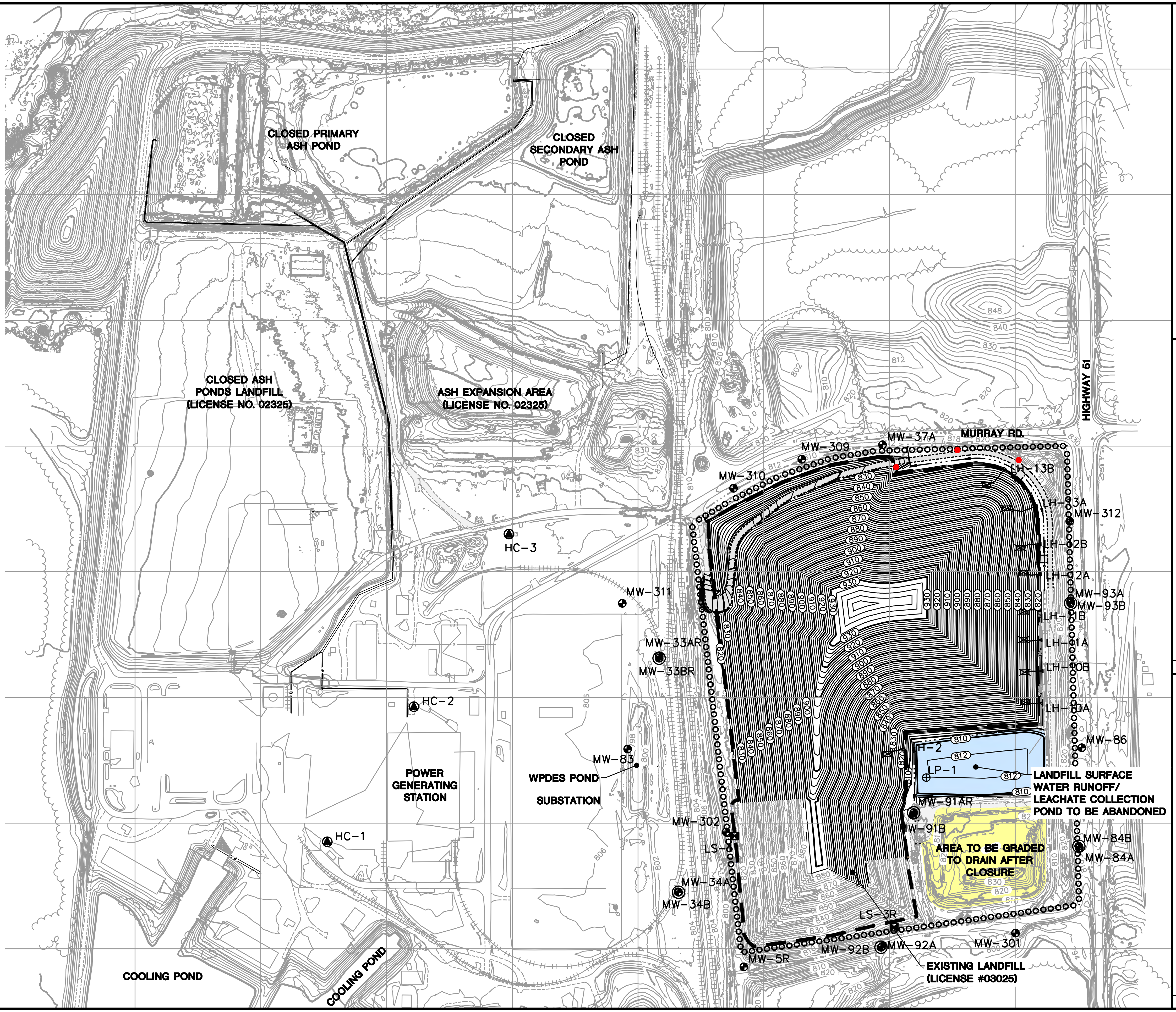
- ·ooooooooo ASH DISPOSAL FACILITY LIMITS
- APPROVED LIMITS OF ASH FILL
- PHASE/MODULE LIMIT
- 810 EXISTING GRADE (10' CONTOUR)
- EXISTING GRADE (2' CONTOUR)
- PAVED ROAD
- UNPAVED ROAD
- RAILROAD TRACKS
- VEGETATION
- FENCE
- SWALE
- EDGE OF WATER
- APPROXIMATE LIMITS OF EXISTING LEACHATE/SURFACE WATER POND LINER
- CULVERT
- ⊠ TRANSMISSION TOWER
- WATER SUPPLY WELL
- WATER TABLE WELL
- PIEZOMETER
- ⊗ SURFACE WATER SAMPLE LOCATION
- ⧓ LYSIMETER
- LEACHATE HEADWELL
- △ BENCHMARK
- 820 PROPOSED FINAL GRADES (10' CONTOUR)
- PROPOSED FINAL GRADES (2' CONTOUR)
- ● PROPOSED MODULE 13 MONITORING WELL

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEYS BY SCS ENGINEERS IN MAY 2019, DECEMBER 2020, NOVEMBER 2021, AND DECEMBER 2021, AND BY DRONE SURVEYS BY AMES IN NOVEMBER 2022, JANUARY 2023, AND JUNE 2023.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AUGUST 2012, AND JANUARY 2016, AND BY SCS ENGINEERS IN MAY 2019.



SCALE: 1" = 400'



CLIENT

WISCONSIN POWER AND LIGHT
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WISCONSIN 53954

SITE

POST-CLOSURE CARE PLAN
COLUMBIA DRY ASH DISPOSAL FACILITY
TOWN OF PACIFIC, WISCONSIN

PROJECT NO.	25222260.00	DRAWN BY:	BJM/KP
DRAWN:	12/18/2017	CHECKED BY:	PEG
REVISED:	9/1/2023	APPROVED BY:	PEG 09/01/23

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

POST-CLOSURE CARE PLAN

FIGURE
2

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