

6390 Joyce Drive
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Golden, CO 80403

Phone 303-940-0033
Fax 866-283-0269
www.phenova.com

September 24, 2021

Ms. Rhonda Morris
Alloway - Marion
1776 Marion-Waldo Road
Marion, OH 43302
USA

Dear Rhonda,

Thank you for participating in the DMRQA41-Chem DMRQA PT Study. Enclosed is your final report, which has been carefully reviewed by the PT specialists at Phenova.

For any analyte falling outside the established acceptance limits, our PT management staff would like to assist you in determining the most appropriate course of corrective action for your facility. Please contact us at any time if we may be of service to you. A final report for your laboratory will be sent to all accrediting agencies you requested at the time of data submittal.

Thank you again for participating in the DMRQA41-Chem DMRQA PT Study. We appreciate working with you and look forward to our next study. If you have any questions, please call us at 303-940-0033.



Report Definitions:

NELAC Experimental Analytes

NELAC Experimental Analytes must be run twice a year. Due to the experimental nature of the acceptance limits, accreditation status is not based on the evaluation received.

Assigned Value

The Assigned Value is determined from the study mean, gravimetric and volumetric true concentration of an analyte to be analyzed, calculation and/or an appropriate reference value as stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Document (current version), the National Environmental Laboratory Accreditation Conference (NELAC) criteria (ref: NELAC FOT tables, NELAC PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation Limits

Acceptance Limits are derived from fixed limits, coefficients, constants and calculations stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Documents (current version), the National Environmental Laboratory Accreditation Conference (NELAC) criteria (ref: NELAC PT FOT tables, NELAC PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation

- Acceptable* The reported value falls within the Acceptance Limits.
- Not Acceptable* The reported value falls outside the Acceptance Limits.
- No Evaluation* The reported value is non-numeric and can not be evaluated.
- NR* As required by the NELAC standards and requested by state authorities, any analyte purchased but not reported by your facility is listed as NR (Not Reported).

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Final Report - DMRQA PT

Study: DMRQA41-Chem

Opening Date: April 23, 2021 - Closing Date: August 27, 2021

Facility: Alloway - Marion
1776 Marion-Waldo Road
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USA

Contact: Ms. Rhonda Morris
740-389-5991

EPA Lab ID: OH01320

NPDES Permit ID:

Trace Metals (PT-TM1-DMRQA) Lot #: 8550-04

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1000	Aluminum	10013806	EPA 200.7 Rev.4.4 1994	µg/L	1020	1110	897 - 1130	837 - 1190	Acceptable
1005	Antimony	10014605	EPA 200.8 Rev.5.4 1994	µg/L	633	645	552 - 697	516 - 731	Acceptable
1010	Arsenic	10013806	EPA 200.7 Rev.4.4 1994	µg/L	738	751	660 - 812	624 - 842	Acceptable
1010	Arsenic	10014605	EPA 200.8 Rev.5.4 1994	µg/L	738	749	660 - 812	624 - 842	Acceptable
1015	Barium	10013806	EPA 200.7 Rev.4.4 1994	µg/L	261	262		222 - 300	Acceptable
1015	Barium	10014605	EPA 200.8 Rev.5.4 1994	µg/L	261	260		222 - 300	Acceptable
1020	Beryllium	10013806	EPA 200.7 Rev.4.4 1994	µg/L	119	121		101 - 137	Acceptable
1020	Beryllium	10014605	EPA 200.8 Rev.5.4 1994	µg/L	119	120		101 - 137	Acceptable
1030	Cadmium	10013806	EPA 200.7 Rev.4.4 1994	µg/L	275	289		234 - 316	Acceptable
1030	Cadmium	10014605	EPA 200.8 Rev.5.4 1994	µg/L	275	277		234 - 316	Acceptable
1040	Chromium	10013806	EPA 200.7 Rev.4.4 1994	µg/L	809	840		688 - 930	Acceptable
1040	Chromium	10014605	EPA 200.8 Rev.5.4 1994	µg/L	809	800		688 - 930	Acceptable
1050	Cobalt	10013806	EPA 200.7 Rev.4.4 1994	µg/L	361	378		307 - 415	Acceptable
1050	Cobalt	10014605	EPA 200.8 Rev.5.4 1994	µg/L	361	370		307 - 415	Acceptable
1055	Copper	10013806	EPA 200.7 Rev.4.4 1994	µg/L	471	492		401 - 542	Acceptable
1055	Copper	10014605	EPA 200.8 Rev.5.4 1994	µg/L	471	488		401 - 542	Acceptable
1070	Iron	10013806	EPA 200.7 Rev.4.4 1994	µg/L	3450	3580		2940 - 3970	Acceptable
1075	Lead	10013806	EPA 200.7 Rev.4.4 1994	µg/L	898	964		764 - 1030	Acceptable
1075	Lead	10014605	EPA 200.8 Rev.5.4 1994	µg/L	898	876		764 - 1030	Acceptable
1090	Manganese	10013806	EPA 200.7 Rev.4.4 1994	µg/L	1070	1090		912 - 1230	Acceptable
1100	Molybdenum	10013806	EPA 200.7 Rev.4.4 1994	µg/L	136	138	120 - 151	113 - 158	Acceptable
1100	Molybdenum	10014605	EPA 200.8 Rev.5.4 1994	µg/L	136	137	120 - 151	113 - 158	Acceptable
1105	Nickel	10013806	EPA 200.7 Rev.4.4 1994	µg/L	1020	1080	914 - 1120	895 - 1140	Acceptable
1105	Nickel	10014605	EPA 200.8 Rev.5.4 1994	µg/L	1020	1040	914 - 1120	895 - 1140	Acceptable
1140	Selenium	10013806	EPA 200.7 Rev.4.4 1994	µg/L	823	841		699 - 946	Acceptable
1140	Selenium	10014605	EPA 200.8 Rev.5.4 1994	µg/L	823	865		699 - 946	Acceptable
1150	Silver	10013806	EPA 200.7 Rev.4.4 1994	µg/L	585	611		498 - 673	Acceptable

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Trace Metals (PT-TM1-DMRQA) cont'd Lot #: 8550-04

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1150	Silver	10014605	EPA 200.8 Rev.5.4 1994	µg/L	585	592		498 - 673	Acceptable
1165	Thallium	10014605	EPA 200.8 Rev.5.4 1994	µg/L	380	352	332 - 421	309 - 444	Acceptable
1185	Vanadium	10013806	EPA 200.7 Rev.4.4 1994	µg/L	1320	1290		1130 - 1520	Acceptable
1190	Zinc	10013806	EPA 200.7 Rev.4.4 1994	µg/L	582	597		495 - 670	Acceptable

Mercury (PT-HG-DMRQA) Lot #: 8550-05

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1095	Mercury		EPA 245.1 Rev 3.0	µg/L	25.2	25.5		17.6 - 32.7	Acceptable

Mercury Low Level (PT-HGLL-DMRQA) Lot #: 8550-47

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1095	Mercury	10237204	EPA 1631E 2004	ng/L	23.5	22.2	16.3 - 30.7	12.7 - 34.3	Acceptable

Chromium VI (PT-CR6-DMRQA) Lot #: 8550-06

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1045	Chromium VI	20066266	SM 3500-Cr B-2011	µg/L	756	750	674 - 831	636 - 865	Acceptable

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Demand (PT-DEM-DMRQA) Lot #: 8550-07

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1530	BOD		SM 5210B-01	mg/L	83.9	61.6	55.1 - 140	42.6 - 140	Acceptable
1555	CBOD		SM 5210B-01	mg/L	83.9	71.0	46.3 - 140	33.2 - 140	Acceptable
1565	COD		EPA 410.4 Rev 2.0	mg/L	130	136	110 - 145	102 - 153	Acceptable
2040	TOC		SM 5310B-11	mg/L	51.4	50.4	45.6 - 56.7	42.8 - 59.5	Acceptable

Solids (PT-SOL-DMRQA) Lot #: 8550-09

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1955	Total Dissolved Solids at 180° (TFR)		SM 2540C-11	mg/L	584	580	525 - 642	525 - 642	Acceptable
1960	Non-Filterable Residue (TSS)		SM 2540D-11	mg/L	37.4	36.8	30.3 - 41.1	27.6 - 43.8	Acceptable

Minerals 1 (PT-MIN1-DMRQA) Lot #: 8550-08

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1505	Total Alkalinity(as CaCO ₃)		SM 2320B-11	mg/L	291	286		248 - 335	Acceptable
1575	Chloride		EPA 300.0 Rev 2.1	mg/L	170	172	153 - 187	150 - 190	Acceptable
1730	Fluoride		SM 4500-F C-11	mg/L	1.47	1.48	1.25 - 1.65	1.15 - 1.75	Acceptable
2000	Sulfate		EPA 300.0 Rev 2.1	mg/L	21.5	20.6	18.4 - 23.8	17.0 - 25.1	Acceptable

Minerals 2 - Hardness (PT-MIN2-DMRQA) Lot #: 8550-102

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1755	Total Hardness (as CaCO ₃)		SM 2340C-11	mg/L	114	112		97.3 - 132	Acceptable
1755	Total Hardness (as CaCO ₃)		SM 2340B-11	mg/L	114	122		97.3 - 132	Acceptable

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Specific Conductance (PT-COND-DMRQA) Lot #: 8550-72

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1610	Specific Conductance (25°C)		SM2510B-97, 11	µmhos/cm	818	837		736 - 900	Acceptable

Nutrients 1 - Simple (PT-NUT1-DMRQA) Lot #: 8550-10

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1515	Ammonia as N		EPA 350.1 Rev 2.0	mg/L	1.92	1.96	1.56 - 2.37	1.35 - 2.57	Acceptable
1810	Nitrate as N		EPA 353.2 Rev 2.0 and SM 4500-NO3 F-11	mg/L	20.3	20.2	18.1 - 22.5	17.0 - 23.6	Acceptable
1870	Orthophosphate as P		SM 4500-P E-11	mg/L	2.29	2.27		1.95 - 2.63	Acceptable

Nutrients 2 - Complex (PT-NUT2-DMRQA) Lot #: 8550-11

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1795	Total Kjeldahl Nitrogen (TKN)		EPA 351.2 Rev 2.0	mg/L	13.2	13.9	10.8 - 15.2	9.74 - 16.3	Acceptable
1910	Total Phosphorous		SM 4500-P E-11	mg/L	5.30	5.32	4.69 - 5.86	4.39 - 6.15	Acceptable

Nutrients 3 - Nitrite (PT-NUT3-DMRQA) Lot #: 8550-69

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1840	Nitrite as N		EPA 353.2 Rev 2.0 and SM 4500-NO3 F-11	mg/L	1.21	1.15	1.07 - 1.35	0.998 - 1.42	Acceptable

Oil & Grease - 1L (PT-OGR1L-DMRQA) Lot #: 8550-103

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1803	Oil & Grease		EPA 1664A (HEM)	mg/L	148	118	118 - 163	108 - 169	Acceptable

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Residual Chlorine (PT-CL-DMRQA) Lot #: 8550-13

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1940	Total Residual Chlorine		SM 4500-Cl G-11	mg/L	2.21	2.18	1.78 - 2.43	1.63 - 2.58	Acceptable

pH (PT-PH-DMRQA) Lot #: 8550-15

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1900	pH		SM 4500-H B-11	S.U.	8.25	8.25		8.05 - 8.45	Acceptable

Total Cyanide (PT-CN-DMRQA) Lot #: 8550-14

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1645	Total Cyanide		EPA 335.4 Rev 1.0	mg/L	0.798	0.766		0.519 - 1.08	Acceptable

Phenolics (PT-PHEN-DMRQA) Lot #: 8550-16

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
1905	Total Phenolics (4AAP)		EPA 420.4 Rev 1.0	mg/L	2.00	1.42	0.875 - 2.20	0.659 - 2.20	Acceptable

Micro (Fecal, E. Coli & Total) (PT-MIC-DMRQA) Lot #: 8550-12

NELAC Code	Analyte	Method Code	Method Description	Units	Assigned Value	Result	Warning Limits	Acceptance Limits	Evaluation
2530	Fecal Coliform, MF			CFU/100 mL	505			206 - 1240	NR
2500	Total Coliform, MF			CFU/100 mL	806			337 - 1930	NR
2525	E. Coli, MF			CFU/100 mL	428			46 - 3970	NR
2530	Fecal Coliform, MPN		SM 9223B-04	MPN/100 mL	622	550		131 - 2950	Acceptable
2500	Total Coliform, MPN		SM 9223B-04	MPN/100 mL	684	691		263 - 1780	Acceptable
2525	E. Coli, MPN		SM 9223B-04	MPN/100 mL	716	691		368 - 1390	Acceptable