ERA
A Waters Company

Donny Juarez
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2393 Salt Creek Hwy
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USA

WP-336 Final Report

WatR™ Pollution Proficiency Testing

WatR™ Pollution Study

Open Date: 01/17/2023

Close Date: 03/03/2023

Report Issued Date: 03/07/2023

ERA
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March 7, 2023

Donny Juarez
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Enclosed is your final report for ERA's WP-336 WatR™Pollution Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's WP-336 WatR™Pollution Proficiency Testing study have been evaluated using the following tiered approach. If the analyte is listed in the most current TNI Fields of Proficiency Testing (FoPT) table the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the table and the evaluation criteria contained in the 2016 TNI Standard, Volume 3. If the analyte is not included in the TNI FoPT table, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 730002268).

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have many years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be useful in helping you work through your technical issues.

Thank you for your participation in ERA's WP-336 WatR™Pollution Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

Craig Huff
Senior Technical Manager

attachments

A Waters Company

Report Recipient	Contact/Phone Number	Reporting Type
Alaska	Shera Hickman / 907-375-8210	All Analytes
ANAB	Zaneta Popovska / 414-501-5341	All Analytes
Florida	Vanessa Soto / 904-791-1599	All Analytes
Nebraska	Tara Wulfekoetter / 402-471-8439	All Analytes
Nevada	Paige Menicucci / 775-687-9311	All Analytes
North Dakota	Cynthia Auen / 701-328-6172	All Analytes
Texas	Frank Jamison / (512) 239-3754	All Analytes

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WP-336 Definitions & Study Discussion

Study Dates: 01/17/2023 - 03/03/2023 **Report Issued: 03/07/2023**

WP Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The ERA Assigned Values are compliant with the most current TNI Fields of Proficiency Testing (FoPT) table. A parameter not added to the standard is given an Assigned Value of "< PTRL" per the guidelines contained in the 2016 TNI Standard. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the criteria contained in the most current TNI FoPT table or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable.

The Performance Evaluation:

Acceptable	= Reported Value falls within the Acceptance Limits.
Not Acceptable	= Reported Value falls outside the Acceptance Limits.
No Evaluation	= Reported Value cannot be evaluated.
Not Reported	= No Value reported.

The Method Description is the method the laboratory reported to ERA.

WP Study Discussion

ERA's WP-336 WatR™Pollution Proficiency Testing study has been reviewed by ERA senior management and certified compliant with the requirements of the 2016 TNI Standard and the criteria contained in the most current TNI Fields of Proficiency Testing (FoPT) table.

ERA's WP-336 WatR™Pollution study standards were examined for any anomalies. A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes met the acceptance criteria contained in the 2016 TNI Standard and the criteria contained in the most current TNI FoPT table.

All activities associated with this proficiency testing study were performed by Waters/ERA with the exception of those noted below. The following physical samples/products were manufactured for Waters/ERA by a subcontractor:

Microbiology products with the following catalog numbers:
880, 935, 079, 077, 080, 595, 595A, 576, 576A

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's WP-336 WatR™Pollution study reports shall not be reproduced except in their entirety and not without the permission of the participating laboratories. The report must not be used by the participating laboratories to claim product endorsement by any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's WatR™Pollution Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.

WP-336 Laboratory Exception Report

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EPA ID: **WY00002**
ERA Customer Number: **E772828**
Report Issued: **03/07/2023**
Study Dates: **01/17/2023 - 03/03/2023**

Not Acceptable Evaluations

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
WP Oil & Grease (cat# 582, lot# P336-518)							
1803	n-Hexane Extractable Material(O&G)(Grav)	mg/L	82.5	52.5	34.1 - 63.8	Not Acceptable	EPA 1664A 1999

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Final Report Results For Laboratory
Energy Laboratories

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Final Evaluation Report

Study: **WP-336**

ERA Customer Number: **E772828**

Laboratory Name: **Energy Laboratories**

Inorganic Results

WP-336 Final Evaluation Report

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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WP Minerals (cat# 581, lot# P336-506)												
1505	Alkalinity as CaCO3	mg/L	81.7	80.9	68.8 - 93.0	Acceptable	SM2320B 22nd ED 2011	1/25/2023	0.517	80.1	3.08	slf
1575	Chloride	mg/L	78.9	80.2	70.1 - 90.5	Acceptable	EPA 300.0 2.1 1993	1/25/2023	-0.504	80.4	2.98	slf
1610	Conductivity at 25°C	µmhos/cm	530	532	479 - 585	Acceptable	SM2510B 22nd ED 2011	1/24/2023	0.215	527	13.9	jcg
1730	Fluoride	mg/L	2.97	3.10	2.50 - 3.57	Acceptable	EPA 300.0 2.1 1993	1/25/2023	-0.519	3.07	0.196	slf
1125	Potassium	mg/L		35.4	28.3 - 42.5	Not Reported				35.3	1.76	
1155	Sodium	mg/L		88.0	70.4 - 106	Not Reported				87.8	4.09	
2000	Sulfate	mg/L	35.6	35.7	29.0 - 41.1	Acceptable	EPA 300.0 2.1 1993	1/25/2023	-0.0654	35.7	1.75	slf
1955	Total Dissolved Solids at 180°C	mg/L		394	349 - 439	Not Reported				372	20.2	
1950	Total Solids at 105°C	mg/L		392	347 - 437	Not Reported				388	20.6	
WP Minerals (cat# 581, lot# P336-506)												
1505	Alkalinity as CaCO3	mg/L		80.9	68.8 - 93.0	Not Reported				80.1	3.08	
1575	Chloride	mg/L		80.2	70.1 - 90.5	Not Reported				80.4	2.98	
1610	Conductivity at 25°C	µmhos/cm		532	479 - 585	Not Reported				527	13.9	
1730	Fluoride	mg/L	3.15	3.10	2.50 - 3.57	Acceptable	SM4500F- C 22nd ED 2011	2/1/2023	0.398	3.07	0.196	slf
1125	Potassium	mg/L		35.4	28.3 - 42.5	Not Reported				35.3	1.76	
1155	Sodium	mg/L		88.0	70.4 - 106	Not Reported				87.8	4.09	
2000	Sulfate	mg/L		35.7	29.0 - 41.1	Not Reported				35.7	1.75	
1955	Total Dissolved Solids at 180°C	mg/L		394	349 - 439	Not Reported				372	20.2	
1950	Total Solids at 105°C	mg/L		392	347 - 437	Not Reported				388	20.6	
WP pH (cat# 577, lot# P336-977)												
1900	pH	S.U.	5.95	5.94	5.74 - 6.14	Acceptable	SM4500H+ B 22nd ED 2011	1/24/2023	0.182	5.94	0.0433	jcg

All analytes except for 1,1-Biphenyl, 1,2-Diphenylhydrazine, 1,3-Dinitrobenzene, 2,3-Dichloroaniline, Acetophenone, Atrazine, Azobenzene, Benzaldehyde, Caprolactam, n-Decane and n-Octadecane in the Base/Neutrals, catalog # 833, are included in ERA's A2LA accreditation. Lab Code 1539.01.

WP-336 Final Evaluation Report

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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WP Solids (cat# 241, lot# P336-499)												
1960	Total Suspended Solids	mg/L	42	46.4	35.6 - 53.4	Acceptable	SM 2540 D-2015 2015	1/24/2023	-1.28	44.4	1.91	jcg
1955	Total Dissolved Solids at 180°C	mg/L	370	378	333 - 423	Acceptable	SM2540C 23rd ED 2015	1/24/2023	0.451	365	12.0	jcg
1950	Total Solids at 105°C	mg/L		427	382 - 472	Not Reported				415	20.7	
WP Simple Nutrients (cat# 584, lot# P336-505)												
1515	Ammonia as N	mg/L	8.32	8.22	6.50 - 9.93	Acceptable	EPA 350.1 2 1993	1/27/2023	0.124	8.26	0.525	dmb
1820	Nitrate + Nitrite as N	mg/L	9.3	9.68	8.04 - 11.2	Acceptable	EPA 353.2 2 1993	1/24/2023	-0.679	9.62	0.473	mnm
1810	Nitrate as N	mg/L	9.3	9.68	7.99 - 11.3	Acceptable	EPA 353.2 (calc)	2/15/2023	-0.697	9.64	0.484	dmb
1870	ortho-Phosphate as P	mg/L	4.79	4.82	4.10 - 5.54	Acceptable	EPA 365.1 2 1993	1/24/2023	-0.199	4.84	0.264	dmb
1827	Total Nitrogen	mg/L		17.9	10.2 - 25.6	Not Reported				18.1	0.485	
WP Complex Nutrients (cat# 579, lot# P336-525)												
1795	Total Kjeldahl Nitrogen	mg/L		28.6	21.6 - 34.4	Not Reported				28.1	1.98	
1910	Total phosphorus as P	mg/L	8.45	8.47	7.06 - 9.78	Acceptable	EPA 365.1 2 1993	2/3/2023	0.126	8.40	0.399	dmb
WP Nitrite (cat# 888, lot# P336-770)												
1840	Nitrite as N	mg/L	1.63	1.67	1.41 - 1.93	Acceptable	SM4500NO2- B 22nd ED 2011	1/24/2023	-0.431	1.67	0.0883	mnm
WP Demand (cat# 578, lot# P336-516)												
1530	BOD	mg/L	92.1	87.4	46.7 - 128	Acceptable	SM 5210 B-2016 2016	1/26/2023	0.400	86.7	13.6	slf
1555	CBOD	mg/L	75.6	79.2	36.5 - 122	Acceptable	SM 5210 B-2016 2016	2/1/2023	-0.449	84.1	19.0	slf
1565	COD	mg/L		142	112 - 167	Not Reported				141	10.9	
2040	TOC	mg/L	57.7	56.1	46.8 - 64.9	Acceptable	EPA 9060A 2004	2/8/2023	0.397	56.3	3.42	mnm

All analytes except for 1,1-Biphenyl, 1,2-Diphenylhydrazine, 1,3-Dinitrobenzene, 2,3-Dichloroaniline, Acetophenone, Atrazine, Azobenzene, Benzaldehyde, Caprolactam, n-Decane and n-Octadecane in the Base/Neutrals, catalog # 833, are included in ERA's A2LA accreditation. Lab Code 1539.01.

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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WP Demand (cat# 578, lot# P336-516)												
1530	BOD	mg/L		87.4	46.7 - 128	Not Reported				86.7	13.6	
1555	CBOD	mg/L		79.2	36.5 - 122	Not Reported				84.1	19.0	
1565	COD	mg/L		142	112 - 167	Not Reported				141	10.9	
2040	TOC	mg/L	57.6	56.1	46.8 - 64.9	Acceptable	SM 5310 C-2014 2014	1/27/2023	0.368	56.3	3.42	mnm
WP Oil & Grease (cat# 582, lot# P336-518)												
1803	n-Hexane Extractable Material(O&G)(Grav)	mg/L	82.5	52.5	34.1 - 63.8	Not Acceptable	EPA 1664A 1999	1/31/2023	7.04	51.0	4.48	
1803	n-Hexane Extractable Material(O&G)(IR)	mg/L		64.6	43.5 - 77.1	Not Reported				75.4	33.0	
WP Hexavalent Chromium (cat# 898, lot# P336-984)												
1045	Hexavalent Chromium	µg/L	100	103	81.9 - 124	Acceptable	SM3500Cr B 22nd ED 2011	1/26/2023	-0.331	102	5.15	dmb
WP Sulfide (cat# 891, lot# P336-071)												
2005	Sulfide	mg/L	5.92	5.61	2.42 - 8.16	Acceptable	SM 4500-S2 F-2011 2011	1/24/2023	1.26	4.72	0.948	jcg
WP Sulfide (cat# 891, lot# P336-071)												
2005	Sulfide	mg/L	4.75	5.61	2.42 - 8.16	Acceptable	SM 4500-S2 D-2011 2011	1/24/2023	0.0310	4.72	0.948	jcg
WP Acidity (cat# 885, lot# P336-915)												
1500	Acidity as CaCO3	mg/L	1265	1180	1060 - 1300	Acceptable	SM2310B 22nd ED 2011	1/24/2023	1.84	1180	48.5	slf
WP Bromide (cat# 887, lot# P336-769)												
1540	Bromide	mg/L	5.34	4.90	4.03 - 5.76	Acceptable	EPA 300.0 2.1 1993	1/25/2023	1.36	4.93	0.305	slf

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Final Evaluation Report

Study: **WP-336**

ERA Customer Number: **E772828**

Laboratory Name: **Energy Laboratories**

Microbiology Results

WP-336 Final Evaluation Report

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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WP WasteWatR™ Coliform MicrobE™ (cat# 576, lot# P336-083)												
2500	Total Coliforms (MF)	CFU/100mL		112	28.0 - 451	Not Reported				112	70.6	
2530	Fecal Coliforms (MF)	CFU/100mL		55.0	13.0 - 231	Not Reported				55.2	36.4	
2525	E.coli (MF)	CFU/100mL		96.0	13.0 - 693	Not Reported				95.5	113	
2500	Total Coliform (MPN-Multiple Well)	MPN/100mL	135	138	75.1 - 255	Acceptable	SM COLert 18 QT 23rd ED 2016	1/26/2023	-0.00733	138	30.0	
2530	Fecal Coliform (MPN-Multiple Well)	MPN/100mL	81.3	78.3	35.3 - 174	Acceptable	Colilert®-18 (Fecal Coliforms) 2010	1/26/2023	0.0121	78.3	23.1	
2525	E.coli (MPN-Multiple Well)	MPN/100mL	135	135	71.4 - 254	Acceptable	SM COLert 18 QT 23rd ED 2016	1/26/2023	0.000961	135	30.4	
WP WasteWatR™ Coliform MicrobE™ (cat# 576, lot# P336-083)												
2500	Total Coliforms (MF)	CFU/100mL		112	28.0 - 451	Not Reported				112	70.6	
2530	Fecal Coliforms (MF)	CFU/100mL		55.0	13.0 - 231	Not Reported				55.2	36.4	
2525	E.coli (MF)	CFU/100mL		96.0	13.0 - 693	Not Reported				95.5	113	
2500	Total Coliform (MPN-Multiple Well)	MPN/100mL	138	138	75.1 - 255	Acceptable	SM COLertQT 23rd ED 2016	1/26/2023	-0.000867	138	30.0	
2530	Fecal Coliform (MPN-Multiple Well)	MPN/100mL		78.3	35.3 - 174	Not Reported				78.3	23.1	
2525	E.coli (MPN-Multiple Well)	MPN/100mL	138	135	71.4 - 254	Acceptable	SM COLertQT 23rd ED 2016	1/26/2023	0.00740	135	30.4	

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Final Evaluation Report

Study: **WP-336**

ERA Customer Number: **E772828**

Laboratory Name: **Energy Laboratories**

Organic Results

WP-336 Final Evaluation Report

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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WP Gasoline Range Organics (GRO) in Water (cat# 640, lot# P336-762)												
9408	Gasoline Range Organics (GRO)	µg/L	2714	2350	873 - 4130	Acceptable	EPA 8015C 3 2007	2/2/2023	-0.313	2940	727	adw
4375	Benzene in GRO	µg/L		7.38	3.71 - 11.7	Not Reported				7.87	1.66	
4765	Ethylbenzene in GRO	µg/L		64.4	39.9 - 90.2	Not Reported				65.8	5.25	
5140	Toluene in GRO	µg/L		175	97.8 - 228	Not Reported				180	31.8	
5260	Xylenes, total in GRO	µg/L		348	218 - 483	Not Reported				356	28.1	
WP Diesel Range Organics (DRO) in Water (cat# 641, lot# P336-764)												
9369	Diesel Range Organics (DRO)	µg/L	481	1070	107 - 1510	Acceptable	EPA 8015C 3 2007	1/27/2023	-1.44	794	218	adw
WP Total Petroleum Hydrocarbons (TPH) in Water (cat# 642, lot# P336-642)												
1853	TPH (Gravimetric)	mg/L	44.6	54.5	24.6 - 78.7	Acceptable	EPA 1664A SGT 1999	1/31/2023	0.296	42.2	8.22	
1853	TPH (IR)	mg/L		67.0	30.8 - 96.8	Not Reported				44.0	9.88	

CERTIFICATE OF RECOGNITION

ERA congratulates

Energy Laboratories

WP-336

For your participation and successful evaluation, we recognize the performance of this laboratory for achieving acceptable evaluation in the following standards.

Acidity	Bromide	Complex Nutrients
Demand	Diesel Range Organics (DRO) in Water	Gasoline Range Organics (GRO) in Water
Hexavalent Chromium	Minerals	Nitrite
pH	Simple Nutrients	Solids
Sulfide	Total Petroleum Hydrocarbons (TPH) in Water	WasteWatR™ Coliform MicrobE™

Craig Huff
Senior Technical Manager

E772828