



**ENVIRONMENTAL  
RESOURCE ASSOCIATES®**  
The Industry Standard™

Mark McNeal  
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2773 Downhill Drive  
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L72259

**WS-147**



**Final Report**

**WatR™ Supply Proficiency Testing**

**WatR™ Supply Study**

**Open Date: 10/06/08**

**Close Date: 11/20/08**

**Report Issued Date: 12/10/08**



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December 10, 2008

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Enclosed is your final report for ERA's WS-147 WatR™Supply 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 WS-147 WatR™Supply Proficiency Testing (PT) study have been evaluated using the following tiered approach. If the analyte is listed in the most current National Environmental Laboratory Accreditation Conference (NELAC) PT Field of Testing tables, the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the NELAC FoPT tables. If the analyte is not included in the NELAC FoPT tables, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 0260).

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 well over three hundred 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 helpful in helping you work through your technical issues.

Thank you for your participation in ERA's WS-147 WatR™Supply Proficiency Testing study. If you have any questions, please contact myself, or Curtis Wood, Director of Regulatory Affairs and Business Development, at 1-800-372-0122.

Sincerely,

Handwritten signature of Shawn Kassner in black ink.

Shawn Kassner  
Proficiency Testing Manager

Handwritten signature of Jay R. McBurney in black ink.

Jay R. McBurney  
Quality Program Manager

attachments  
smk



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<b>Report Recipient</b>	<b>Contact/Phone Number</b>	<b>Reporting Type</b>
Arizona	Terry Norcop / 602-364-0720	All Analytes
Colorado	Ken Johnson / 303-692-3045	All Analytes
EPA Region 8	Jim Gindelberger / 303-312-6985	All Analytes
Utah	Kristin Brown / 801-538-9371	All Analytes



# WS-147 Definitions & Study Discussion

**Study Dates: 10/06/08 - 11/20/08**

**Report Issued: 12/10/08**

## WS Study Definitions

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

The ERA Assigned Values are compliant with the most current USEPA/NELAC FoPT tables. A parameter not added to the standard is given an Assigned Value of "0" per the guidelines contained in the USEPA's Criteria Document and NELAC standards.

The Acceptance Limits are established per the criteria contained in the most current USEPA/NELAC FoPT tables, 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.

## WS Study Discussion

ERA's WS-147 WatR™Supply Proficiency Testing study has been reviewed by ERA senior management and certified compliant with the requirements of the USEPA's National Standards for Water Proficiency Testing Studies Criteria Document (December 1998), and the criteria contained in the most current NELAC FoPT tables.

ERA's WS-147 WatR™Supply 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 in the standards met the acceptance criteria contained in the USEPA's National Criteria Document for Water Proficiency Testing Studies, December 1998, and the criteria contained in the most current NELAC FoPT tables.

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 WS-147 WatR™Supply 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™Supply Proficiency Testing program, please contact Shawn Kassner, Proficiency Testing Manager, or Curtis Wood, Director of Regulatory Affairs and Business Development, at 1-800-372-0122.





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Study: **WS-147**

ERA Customer Number: **A144801**

Laboratory Name: **ACZ Laboratories**

## Inorganic Results





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**EPA ID:** CO00028  
**ERA Customer Number:** A144801  
**Report Issued:** 12/10/08  
**Study Dates:** 10/06/08 - 11/20/08

Anal. No.	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
<b>WS Metals</b>							
1000	Aluminum	µg/L	1480	1480	1270 - 1640	Acceptable	EPA 200.7
0140	Antimony	µg/L		34.3	24.0 - 44.6	Not Reported	
0001	Arsenic	µg/L		15.6	10.9 - 20.3	Not Reported	
0002	Barium	µg/L		725	616 - 834	Not Reported	
0141	Beryllium	µg/L		2.93	2.49 - 3.37	Not Reported	
0226	Boron	µg/L		1250	1100 - 1380	Not Reported	
0003	Cadmium	µg/L		36.0	28.8 - 43.2	Not Reported	
0004	Chromium	µg/L		72.7	61.8 - 83.6	Not Reported	
0091	Copper	µg/L		59.7	53.7 - 65.7	Not Reported	
1070	Iron	µg/L	852	852	756 - 937	Acceptable	EPA 200.7
0005	Lead	µg/L		41.9	29.3 - 54.5	Not Reported	
0236	Manganese	µg/L	387	373	336 - 410	Acceptable	EPA 200.7
0237	Molybdenum	µg/L		109	94.9 - 120	Not Reported	
0142	Nickel	µg/L		297	252 - 342	Not Reported	
0007	Selenium	µg/L		65.4	52.3 - 78.5	Not Reported	
1150	Silver	µg/L		54.6	47.0 - 61.8	Not Reported	
0143	Thallium	µg/L		3.58	2.51 - 4.65	Not Reported	
1185	Vanadium	µg/L		371	334 - 408	Not Reported	
0239	Zinc	µg/L	1020	998	898 - 1100	Acceptable	EPA 200.7

<b>WS Metals</b>							
1000	Aluminum	µg/L		1480	1270 - 1640	Not Reported	
0140	Antimony	µg/L	39.8	34.3	24.0 - 44.6	Acceptable	EPA 200.8
0001	Arsenic	µg/L	17.9	15.6	10.9 - 20.3	Acceptable	EPA 200.8
0002	Barium	µg/L	697	725	616 - 834	Acceptable	EPA 200.8
0141	Beryllium	µg/L	2.88	2.93	2.49 - 3.37	Acceptable	EPA 200.8
0226	Boron	µg/L		1250	1100 - 1380	Not Reported	
0003	Cadmium	µg/L	32.7	36.0	28.8 - 43.2	Acceptable	EPA 200.8
0004	Chromium	µg/L	71	72.7	61.8 - 83.6	Acceptable	EPA 200.8
0091	Copper	µg/L	59.2	59.7	53.7 - 65.7	Acceptable	EPA 200.8
1070	Iron	µg/L		852	756 - 937	Not Reported	
0005	Lead	µg/L	42.2	41.9	29.3 - 54.5	Acceptable	EPA 200.8
0236	Manganese	µg/L		373	336 - 410	Not Reported	
0237	Molybdenum	µg/L		109	94.9 - 120	Not Reported	
0142	Nickel	µg/L	280	297	252 - 342	Acceptable	EPA 200.8
0007	Selenium	µg/L	62.9	65.4	52.3 - 78.5	Acceptable	EPA 200.8
1150	Silver	µg/L	47.0	54.6	47.0 - 61.8	Acceptable	EPA 200.8
0143	Thallium	µg/L	3.38	3.58	2.51 - 4.65	Acceptable	EPA 200.8
1185	Vanadium	µg/L		371	334 - 408	Not Reported	
0239	Zinc	µg/L		998	898 - 1100	Not Reported	





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Anal. No.	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
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**WS Mercury**

0006	Mercury	µg/L	1.81	1.74	1.22 - 2.26	Acceptable	EPA 245.1
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**WS pH**

0026	pH	S.U.	7.71	7.52	7.32 - 7.72	Acceptable	SM4500H+ B
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**WS Inorganics**

0027	Alkalinity as CaCO3	mg/L	27.8	32.0	28.8 - 36.0	Not Acceptable	SM2320B
1575	Chloride	mg/L	18.2	18.2	15.7 - 20.8	Acceptable	EPA 300.0
1610	Conductivity at 25°C	µmhos/cm	494	510	459 - 561	Acceptable	SM2510B
0010	Fluoride	mg/L	6.95	7.67	6.90 - 8.44	Acceptable	EPA 300.0
1820	Nitrate + Nitrite as N	mg/L	7.95	8.05	7.24 - 8.86	Acceptable	EPA 353.2
0009	Nitrate as N	mg/L	7.95	8.05	7.24 - 8.86	Acceptable	EPA 353.2
1125	Potassium	mg/L		38.3	33.1 - 43.0	Not Reported	
0145	Sulfate	mg/L	105	110	96.7 - 123	Acceptable	EPA 300.0
0024	Total Dissolved Solids at 180°C	mg/L	336	325	211 - 439	Acceptable	SM2540C

**WS Inorganics**

0027	Alkalinity as CaCO3	mg/L		32.0	28.8 - 36.0	Not Reported	
1575	Chloride	mg/L		18.2	15.7 - 20.8	Not Reported	
1610	Conductivity at 25°C	µmhos/cm		510	459 - 561	Not Reported	
0010	Fluoride	mg/L	6.37	7.67	6.90 - 8.44	Not Acceptable	SM4500F- C
1820	Nitrate + Nitrite as N	mg/L		8.05	7.24 - 8.86	Not Reported	
0009	Nitrate as N	mg/L		8.05	7.24 - 8.86	Not Reported	
1125	Potassium	mg/L		38.3	33.1 - 43.0	Not Reported	
0145	Sulfate	mg/L		110	96.7 - 123	Not Reported	
0024	Total Dissolved Solids at 180°C	mg/L		325	211 - 439	Not Reported	

**WS Turbidity**

0023	Turbidity	NTU	2.91	2.94	2.55 - 3.59	Acceptable	EPA 180.1
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**WS Nitrite**

0092	Nitrite as N	mg/L	1.1	1.04	0.884 - 1.20	Acceptable	EPA 353.2
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**WS o-Phosphate Nutrients**

0261	ortho-Phosphate as P	mg/L	2.79	2.77	2.43 - 3.13	Acceptable	EPA 365.1
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**WS Cyanide**

0146	Cyanide	mg/L	.445	0.466	0.350 - 0.582	Acceptable	EPA 335.4
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**WS Organic Carbon**

1710	Dissolved Organic Carbon (DOC)	mg/L		2.37	1.94 - 2.85	Not Reported	
0263	Total Organic Carbon (TOC)	mg/L	2.62	2.37	1.94 - 2.85	Acceptable	SM5310B

**WS Bromide, Bromate & Chlorate**

0193	Bromate	µg/L		31.4	22.0 - 40.8	Not Reported	
0260	Bromide	µg/L	207	102	73.8 - 128	Not Acceptable	EPA 300.0
0194	Chlorate	µg/L		97.0	78.4 - 115	Not Reported	





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Anal. No.	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
<b>WS Hardness</b>							
1035	Calcium	mg/L	71.9	66.9	59.6 - 74.0	Acceptable	EPA 200.7
1085	Magnesium	mg/L	11.2	9.67	8.70 - 10.8	Not Acceptable	EPA 200.7
0029	Sodium	mg/L	18.5	16.2	14.2 - 17.9	Not Acceptable	EPA 200.7
0025	Calcium Hardness as CaCO3	mg/L		167	149 - 185	Not Reported	
1755	Total Hardness as CaCO3	mg/L	226	207	185 - 229	Acceptable	SM2340B
<b>WS Silica</b>							
1990	Silica as SiO2	mg/L	32.2	39.8	33.8 - 45.8	Not Acceptable	EPA 200.7

