7150

Stoller established 1959

Task Order LM00-502
Control Number 09-0263

December 10, 2008

Mr. Steve Roberts
Ohio Environmental Protection Agency
1571 Perry Street
Columbus, OH 43201

SUBJECT: Contract No. DE-AM01-07000LM00060, Stoller
Task Order LM00-502, LTS&M – Other Defense Activities
DMR-QA Study 28 Results – Fernald Preserve NPDES Permit No. OH0009580

Dear Mr. Roberts:

This letter provides S. M. Stoller's explanation related to the "not acceptable" ratings for Ammonia analysis completed under DMR-QA Study No. 28. Enclosed for your information is the complete set of results for all parameters evaluated under DMR-QA No. 28.

The ammonia analysis was conducted at an offsite laboratory. S.M. Stoller requested that the offsite laboratory conduct an investigation, identify the problems, and implement any applicable corrective actions to the rating of "not acceptable" result for Ammonia for this study. The investigation conducted by the laboratory's Quality Department included review of all data, sample distillation and analysis. The review identified a possible reason for failure based on placing the distillation tube too low, thus preventing proper outgassing.

Based on the laboratory's investigations, we believe the "not acceptable" result was most likely an isolated incident. As part of the corrective action, the laboratory ordered a remedial performance test (PT) sample that was analyzed for the deficient analyte. The preliminary results show an "Acceptable" rating for Ammonia. I have attached a copy of their corrective action report and the preliminary results.

If you have any questions, please contact Mary Sizemore at (513) 648-3166.

Sincerely,

Frank Johnston
Fernald Preserve Site Manager

FLJ/MS:dsm

The S.M. Stoller Corporation 10995 Hamilton Cleves Highway Harrison, OH 45030 (513) 648-5294 Fax: (513) 648-3252

Enclosure

c: With enclosure:
Steve Donivan, Stoller
K. Gunter, USEPA – Region V
Mary Sizemore, Stoller
Chuck White, Stoller
rc-fernald (Thru W. Sumner)
Administrative Records (Thru W. Sumner)

Without enclosure:
Jane Powell, DOE-LM

COMPANY WIDE
CORRECTIVE/PREVENTIVE ACTION REQUEST AND REPORT

(REV 12/2006) (Instructions Follow)

1. Date Requested: October 30, 2008	2. CA Requester: Jannie Shaw-Busby
3. Nonconformance, Audit Finding, Problem, Complaint or Improvement Opportunity Description: General Engineering Laboratory, LLC. (GEL) received a rating of "Not Acceptable" for Calcium Hardness as $CaCO^3$, Ammonia as N, Manganese (200.7/6010B/6010C) and Hexavalent Chromium.	
Quality Assurance Team Completes Items 4-6 & forwards to responsible Leader	4. CARR No. 081115-401
5. CA Title: DMR-QA 28 Failures	
6. Leader Assigned Responsibility for Implementation: Jamie Johnson	
7. Team Members: Jannie Shaw-Busby ext. 4287 Jamie Johnson ext 4299	8. Proposed Implementation Date: 12/01/08
9. Quality Systems Director Approval: TCP	Date: 10/30/08

BEGIN CORRECTIVE/PREVENTIVE OR IMPROVEMENT OPPORTUNITY ACTION

Complete Items 10-17 and Return to Quality Systems for Closure.

10. Containment Actions, if any:

An investigation by our Quality Department included reviews of all sample preparation and analytical processes. This included review of reagents and standards used in the sample preparation steps, the initial and continuing verification of the instrument calibration, process control samples, and interviews with the analysts. The investigation found that the laboratory met all quality control criteria for instrument and process controls specified in each method. Additionally, all internal procedures and policies were performed as required.

11. Root Cause(s):

Calcium Hardness as $CaCO^3$

After a thorough review of all data, the failure is attributed to a low calcium response on the Inductively Coupled Plasma Mass Spectrometer (ICPMS). While the calcium response did fall just within its acceptance range, when used in the calculation, the low recovery caused the Calcium Hardness as $CaCO^3$ result to fall outside its acceptance range by 0.1 mg/L. Calcium Hardness using ICPMS data is usually not requested and will not be reported in the future. Therefore, no further action will be taken.

Ammonia as N

After a thorough review of all data, sample distillation and analysis, a definite reason for the failure could not be determined. Although all quality control criteria were met for the batch, one minor item of concern was observed. The distillation tube was placed too low in some the samples, preventing them from outgassing properly.

Manganese (200.7/6010B/6010C)

The laboratory recovered 111.1% of the known value of the performance test (PT) sample. The acceptance criterion for the PT was 89.6% - 111% recovery of the known value. This acceptance range is tighter than those identified in the EPA methods for routine laboratory control samples (85% - 115% recovery). In fact, these limits are barely wider than the 90% -110% recoveries specified for initial and

continuing instrument calibrations standards (which are not subject to the sample preparation/digestion procedures).

Hexavalent Chromium

A review of the raw data indicated that the results were reported in the incorrect units. The results were reported in mg/L instead of ug/L. This error was not caught during the peer review process. This failure is attributed to human error and inattention to detail. In the future both the results and the units will be reviewed by the data entry person and peer reviewer.

12. Actions to Prevent Potential Occurrence or Recurrence:

Based on our investigation, it is believed the unacceptable ratings for Calcium Hardness as $CaCO^3$, Manganese (200.7/6010B/6010C) and Hexavalent Chromium were isolated incidents. As a corrective action, the laboratory analyzed remedial PT samples from WP-164 study. The PT samples were analyzed and reported to the provider on October 30, 2008. Acceptable ratings were obtained for all parameters.

Ammonia a N

Another distillation block was set up to distill Ammonia as N samples. Prior to distilling the sample, the heights of the distillation tubes were adjusted to be about 1/4" to 3/8" under the surface of the catch solution. This minimized back pressure and aided the samples to properly outgas. The previous block did not position all the tubes at the same height. A single blind quality control sample was also analyzed to ensure that the accurate results could be obtained. An 89% recovery was reported. The Simple Nutrient sample from WP-165 was analyzed as a remedial PT. Preliminary results show that an "Acceptable" rating was obtained for Ammonia as N.

13. Implementation of Permanent Corrective/Preventive Actions or Improvements: When a process is changed in the future, a single blind quality control sample will also be analyzed to ensure that accurate data is being generated.

14. Verify Corrective/preventive Action(s) or Improvement(s):
A single blind quality control sample was analyzed for Ammonia as N to ensure that the accurate results could be obtained. An 89% recovery was reported.

15. Lessons Learned. Who can benefit from Lessons Learned?

The importance of attention to detail has been emphasized to everyone. The importance of providing accurate data has also been reiterated to all.

16. Preparer's Name(s):	17. Approval of Leader Responsible for implementation:
Jannie Shaw-Busby	Jamie Johnson
Date: 12/1/08	Date:12/1/08

Supplemental Pages Attached? Yes X No

18. Reviewed and Approved by Quality Systems Director:

ENVIRONMENTAL RESOURCE ASSOCIATES®
The Industry Standard™

GEL Laboratories, LLC
Preliminary Limits
For Study WP-165

LABORATORY INFORMATION

GEL Laboratories, LLC	**Customer ID:** G061301	**USEPA ID:** SC00012
2040 Savage Rd.	**Fax:** 843-766-1178	**Contact:** Jannie Shaw-Busby
Charleston, SC 29407	**Email:** jls@gel.com	**Contact Title:** Quality Assurance Officer
	Phone: 843-556-8171	**Approval Date:** 11/24/2008

REGULATORY AGENCY INFORMATION

You have authorized to send copies of your WP-165 study final to the following agencies:

Alaska	Massachusetts
Arizona (AZ0668)	Nevada (SC12)
Arkansas (88-0651)	New Jersey (SC002)
California (01151CA)	New Mexico (WP)
Connecticut (WP) (PH-0169)	New York (11501)
DoD EDQW	North Carolina (WP) (233)
Florida (E87156)	North Dakota
Hawaii	Oklahoma
Idaho	Pennsylvania (68-00485)
Illinois	South Carolina (10120)
Indiana	Tennessee (02934)
Kansas	Texas (T104704235)
Kentucky	Virginia (WP)
Louisiana	Washington
Maryland	Wisconsin

THIRD PARTY INFORMATION

There are no third parties listed to receive reports.

Study WP-165
Complete Preliminary Report
Simple Nutrients (cat# 584)

Analyte	Units	Reported Value	Preliminary Assigned Value	Preliminary Acceptance Limits	Method Description
Ammonia as N	mg/L	11.7	14.3	10.6 - 17.7	EPA 350.1 2 1993
Nitrate + Nitrite as N	mg/L		14.8	12.1 - 17.2	
Nitrate as N	mg/L		14.8	11.5 - 17.8	
ortho-Phosphate as P	mg/L		3.57	2.93 - 4.24	

Jannie Shaw-Busby
GEL Laboratories, LLC
2040 Savage Rd.
Charleston, SC 29407

WP-164 Final Report

WatR™ Pollution Proficiency Testing

WatR™ Pollution Study

Open Date: 09/15/08

Close Date: 10/30/08

Report Issued Date: 11/14/08

WP-164 Final Complete Report

Jannie Shaw-Busby
Quality Assurance Officer
GEL Laboratories, LLC
2040 Savage Rd.
Charleston, SC 29407
843-556-8171

EPA ID: SC00012
ERA Customer Number: G061301
Report Issued: 11/14/08
Study Dates: 09/15/08 - 10/30/08

Anal. No.	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
WP Simple Nutrients							
0031	Ammonia as N	mg/L		5.88	4.29 - 7.47	Not Reported	
1820	Nitrate + Nitrite as N	mg/L		20.8	17.0 - 24.2	Not Reported	
0032	Nitrate as N	mg/L		20.8	16.2 - 25.1	Not Reported	
0033	ortho-Phosphate as P	mg/L		1.49	1.18 - 1.82	Not Reported	
WP Complex Nutrients							
0034	Total Kjeldahl Nitrogen	mg/L		26.0	17.1 - 33.4	Not Reported	
0035	Total phosphorus as P	mg/L	3.76	4.52	3.70 - 5.39	Acceptable	EPA 365.4
WP Trace Metals							
0001	Aluminum	µg/L		3250	2690 - 3760	Not Reported	
0016	Antimony	µg/L		306	208 - 371	Not Reported	
0002	Arsenic	µg/L		293	243 - 345	Not Reported	
1015	Barium	µg/L		556	482 - 627	Not Reported	
0003	Beryllium	µg/L		390	331 - 440	Not Reported	
1025	Boron	µg/L		881	730 - 1030	Not Reported	
0004	Cadmium	µg/L		148	126 - 169	Not Reported	
0006	Chromium	µg/L		697	608 - 788	Not Reported	
0005	Cobalt	µg/L		571	502 - 640	Not Reported	
0007	Copper	µg/L		564	508 - 620	Not Reported	
0008	Iron	µg/L		826	729 - 934	Not Reported	
0012	Lead	µg/L		1040	912 - 1160	Not Reported	
0010	Manganese	µg/L	1390	1360	1220 - 1510	Acceptable	EPA 200.7
0074	Molybdenum	µg/L		386	326 - 442	Not Reported	
0011	Nickel	µg/L		694	626 - 776	Not Reported	
0013	Selenium	µg/L		212	165 - 247	Not Reported	
0017	Silver	µg/L		194	166 - 222	Not Reported	
0075	Strontium	µg/L		151	130 - 172	Not Reported	
0018	Thallium	µg/L		129	81.2 - 171	Not Reported	
0014	Vanadium	µg/L		1390	1220 - 1550	Not Reported	
0015	Zinc	µg/L		388	332 - 449	Not Reported	

All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

WP-164 Final Complete Report

Jannie Shaw-Busby
Quality Assurance Officer
GEL Laboratories, LLC
2040 Savage Rd.
Charleston, SC 29407
843-556-8171

EPA ID: SC00012
ERA Customer Number: G061301
Report Issued: 11/14/08
Study Dates: 09/15/08 - 10/30/08

Anal. No.	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
WP Trace Metals							
0001	Aluminum	µg/L		3250	2690 - 3760	Not Reported	
0016	Antimony	µg/L		306	208 - 371	Not Reported	
0002	Arsenic	µg/L		293	243 - 345	Not Reported	
1015	Barium	µg/L		556	482 - 627	Not Reported	
0003	Beryllium	µg/L		390	331 - 440	Not Reported	
1025	Boron	µg/L		881	730 - 1030	Not Reported	
0004	Cadmium	µg/L		148	126 - 169	Not Reported	
0006	Chromium	µg/L		697	608 - 788	Not Reported	
0005	Cobalt	µg/L		571	502 - 640	Not Reported	
0007	Copper	µg/L		564	508 - 620	Not Reported	
0008	Iron	µg/L		826	729 - 934	Not Reported	
0012	Lead	µg/L		1040	912 - 1160	Not Reported	
0010	Manganese	µg/L	1390	1360	1220 - 1510	Acceptable	EPA 6010B
0074	Molybdenum	µg/L		386	326 - 442	Not Reported	
0011	Nickel	µg/L		694	626 - 776	Not Reported	
0013	Selenium	µg/L		212	165 - 247	Not Reported	
0017	Silver	µg/L		194	166 - 222	Not Reported	
0075	Strontium	µg/L		151	130 - 172	Not Reported	
0018	Thallium	µg/L		129	81.2 - 171	Not Reported	
0014	Vanadium	µg/L		1390	1220 - 1550	Not Reported	
0015	Zinc	µg/L		388	332 - 449	Not Reported	

All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

WP-164 Final Complete Report

Jannie Shaw-Busby
Quality Assurance Officer
GEL Laboratories, LLC
2040 Savage Rd.
Charleston, SC 29407
843-556-8171

EPA ID: SC00012
ERA Customer Number: G061301
Report Issued: 11/14/08
Study Dates: 09/15/08 - 10/30/08

Anal. No.	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
WP Trace Metals							
0001	Aluminum	µg/L		3250	2690 - 3760	Not Reported	
0016	Antimony	µg/L		306	208 - 371	Not Reported	
0002	Arsenic	µg/L		293	243 - 345	Not Reported	
1015	Barium	µg/L		556	482 - 627	Not Reported	
0003	Beryllium	µg/L		390	331 - 440	Not Reported	
1025	Boron	µg/L		881	730 - 1030	Not Reported	
0004	Cadmium	µg/L		148	126 - 169	Not Reported	
0006	Chromium	µg/L		697	608 - 788	Not Reported	
0005	Cobalt	µg/L		571	502 - 640	Not Reported	
0007	Copper	µg/L		564	508 - 620	Not Reported	
0008	Iron	µg/L		826	729 - 934	Not Reported	
0012	Lead	µg/L		1040	912 - 1160	Not Reported	
0010	Manganese	µg/L	1390	1360	1220 - 1510	Acceptable	EPA 6010C
0074	Molybdenum	µg/L		386	326 - 442	Not Reported	
0011	Nickel	µg/L		694	626 - 776	Not Reported	
0013	Selenium	µg/L		212	165 - 247	Not Reported	
0017	Silver	µg/L		194	166 - 222	Not Reported	
0075	Strontium	µg/L		151	130 - 172	Not Reported	
0018	Thallium	µg/L		129	81.2 - 171	Not Reported	
0014	Vanadium	µg/L		1390	1220 - 1550	Not Reported	
0015	Zinc	µg/L		388	332 - 449	Not Reported	
WP Hexavalent Chromium							
1045	Hexavalent Chromium	µg/L	594	605	493 - 711	Acceptable	EPA 7196A
WP Hexavalent Chromium							
1045	Hexavalent Chromium	µg/L	594	605	493 - 711	Acceptable	SM3500Cr D
WP Turbidity							
2055	Turbidity	NTU	7.15	7.38	6.18 - 8.43	Acceptable	EPA 180.1
WP Turbidity							
2055	Turbidity	NTU	7.15	7.38	6.18 - 8.43	Acceptable	SM2130B
WP Settleable Solids							
1965	Settleable Solids	mL/L	26	24.4	19.0 - 31.4	Acceptable	EPA 160.5
WP Settleable Solids							
1965	Settleable Solids	mL/L	26	24.4	19.0 - 31.4	Acceptable	SM2540F

All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01