

QC\_DUP\_ QC\_RPD QC\_SPIKI QC\_SPIKI QC\_RPD\_ QC\_SPIKI QC\_DUP\_ QC\_RPD\_ TEST\_BA

TEST\_BATCH\_ID

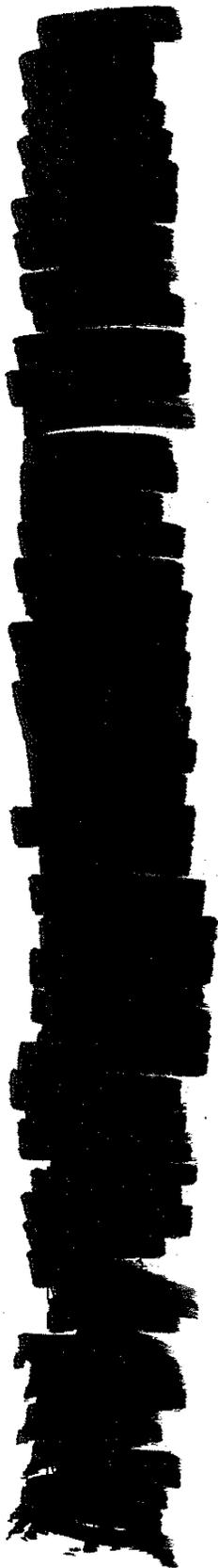
[REDACTED]

[REDACTED]

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[REDACTED]



[REDACTED]

[REDACTED]





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
ENVIRONMENTAL SCIENCE CENTER  
701 MAPES ROAD  
FORT MEADE, MARYLAND 20755-5350

DATE : October 2, 2008  
SUBJECT: Region III Data QA Review  
FROM : Colleen Walling *Colleen K. Walling*  
Region III ESAT RPO (3EA20)  
TO : Christine Wagner  
Regional Project Manager (3HS32)

Attached is the inorganic data validation report for the Battlefield Golf Club site (Case # [REDACTED] SDG # [REDACTED] completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachment

cc: [REDACTED] (TTEMI)

TO File #: [REDACTED]

TDF#: [REDACTED]

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE



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Lockheed Martin Enterprise Solutions & Services  
ESAT Region 3  
US EPA Environmental Science Center  
701 Mapes Road Ft. Meade, MD 20755-5350  
Telephone 410-305-3037 Facsimile 410-305-3597

**DATE:** October 1, 2008

**SUBJECT:** Level IM2 Inorganic Data Validation for Case [REDACTED]

SDG: [REDACTED]

Site: Battlefield Golf Club

**FROM:** [REDACTED]

Inorganic Data Reviewer

**Through:** [REDACTED]

Senior Data Review Chemist

**TO:**

Colleen Walling  
ESAT Region 3 Project Officer

### OVERVIEW

Case [REDACTED] Sample Delivery Group (SDG) [REDACTED] consisted of six (6) aqueous samples analyzed for aluminum (Al), boron (B), calcium (Ca), iron (Fe), magnesium (Mg), mercury (Hg) molybdenum (Mo), potassium (K), and sodium (Na). The sample set included one (1) filed duplicate pair. All samples were submitted to ChemTech Consulting Group (CHEM) for analyses. Samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 (Modified) through the Routine Analytical Services (RAS) program. Modifications included analysis of B at a Contract Required Quantitation Limit (CRQL) of 50 ug/L and Mo 5.0 ug/L using modification reference number 1629.0.

### SUMMARY

Data were validated according to the Region III Modifications to the National Functional Guidelines for Inorganic Data Review, level IM2. Areas of concern with respect to data usability are listed below.

Data in this Case have been impacted by outliers present in the laboratory blanks as well as the ICP serial dilution analysis. Details for these outliers are discussed under "Minor Problems", specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on a single Data Summary Form (DSF).

**MINOR PROBLEMS**

The Preparation Blank (PB) for B and the Continuing Calibration Blank (CCB) for Hg had negative values greater than the absolute value of the Method Detection Limits (MDLs). The positive result reported for B in affected sample MC02J6 which is less than two times (<2X) the absolute value of the blank concentration may be biased low. The "L" qualifier for this outlier has been superseded by "J" on the DSF. Quantitation limits for Hg in all samples may be biased low and have been qualified "UL" on the DSF.

The Percent Difference (%D) for the ICP serial dilution analysis was outside the control limit (>10%) for sodium (Na). Reported results for this analyte in all samples are estimated and have been qualified "J" on the DSF.

**NOTES**

Positive results which are less than the Contract Required Quantitation Limits (CRQLs) but greater than MDLs have been qualified "J" on the DSF.

The laboratory failed to report sample pH values on DC-1 Form.

One (1) CRQL check standard was below the lower control limit for Hg. This standard was immediately analyzed with acceptable recovery. No data were impacted.

Results for the field duplicate pair, samples [REDACTED] were within  $\pm$  CRQL, 20% RPD for all analytes.

Data for Case [REDACTED] SDG [REDACTED] were reviewed in accordance with Region III Modifications to the National Functional Guidelines for Evaluating Inorganic Analyses, April 1993.

**ATTACHMENTS**

**INFORMATION REGARDING REPORT CONTENT**

- TABLES 1A SUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER DATA VALIDATION
- TABLE 1B CODES USED IN COMMENTS COLUMN OF TABLES 1A
- APPENDIX A GLOSSARY OF DATA QUALIFIER CODES
- APPENDIX B DATA SUMMARY FORM(S)
- APPENDIX C CHAIN OF CUSTODY RECORD(S)
- APPENDIX D LABORATORY CASE NARRATIVE(S)

DCN: [REDACTED]

**TABLE 1A  
SUMMARY OF QUALIFIERS ON DATA SUMMARY  
FORM AFTER DATA VALIDATION**

Case [REDACTED] SDG [REDACTED]

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
B	[REDACTED]	J			> MDL < CRQL PBN (- 43.255 J ug/L)
Hg	All Samples		UL	Low	CBN (- 0.072 J ug/L)
Na	All samples	J			SD (24%)

\* See explanation of comments in Table 1B

**TABLE 1B**  
**CODES USED IN COMMENTS COLUMN**

- MDL = Reported results are between MDL and CRQL and are considered estimated.  
<CRQL
- PBN = The preparation blank had a reported negative result greater than absolute value of MDL [the result is in parenthesis]. The reported result which is less than or equal to two times ( $\leq 2X$ ) the absolute value of the blank may be biased low.
- CBN = The continuing calibration blank had a reported negative result greater than absolute value of MDL [the result is in parenthesis]. Quantitation limits may be biased low.
- SD = Percent difference (%D) for ICP serial dilution analysis was outside the control limits (10%), (%D is in parenthesis). Positive results are estimated.

## **Appendix A**

### **Glossary of Data Qualifier Codes**

## **GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)**

### **CODES RELATED TO IDENTIFICATION**

(confidence concerning presence or absence of analytes):

- U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.  
  
(NO CODE) = Confirmed identification.
- B = Not detected substantially above the level reported in laboratory or field blanks.
- R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

### **CODES RELATED TO QUANTITATION**

(can be used for both positive results and sample quantitation limits):

- J = Analyte Present. Reported value may not be accurate or precise.
- K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- UJ = Not detected, quantitation limit may be inaccurate or imprecise.
- UL = Not detected, quantitation limit is probably higher.

### **OTHER CODE**

- Q = No analytical result.

## **Appendix B**

### **Data Summary Forms (DSFs)**

DATA SUMMARY FORM: INORGANIC

Case #: [REDACTED]  
 Site: BATTLEFIELD GOLF CLUB  
 Lab.: CHEM

Number of Soil Samples : 0  
 Number of Water Samples : 6

Sample Number : <span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>	
Sampling Location : <span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>									
Field QC		Water		Water		Dup of Water		Dup of Water		Water	
Matrix :		ug/L									
Units :		8/25/2008		8/28/2008		8/29/2008		8/29/2008		8/29/2008	
Date Sampled :		09:27		10:29		11:19		11:19		11:30	
Time Sampled :		1.0		1.0		1.0		1.0		1.0	
Dilution Factor :											
ANALYTE	CRQL	Result	Flag								
BORON	50	193		380		108		107		137	
IRON	100	158		778		1230		223		5740	
MOLYBDENUM	5										
POTASSIUM	5000	12800		3490	J	6970		7190		3740	J

Sample Number : <span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>	
Sampling Location : <span style="background-color: black; color: black;">[REDACTED]</span>		<span style="background-color: black; color: black;">[REDACTED]</span>									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		8/28/2008		8/28/2008		8/28/2008		8/28/2008		8/28/2008	
Time Sampled :		11:13		11:13		11:13		11:13		11:13	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag								
BORON	50	4.4	J								
IRON	100	17300									
MOLYBDENUM	5										
POTASSIUM	5000	2280	J								

CRQL = Contract Required Quantitation Limit \*Action Level Exists  
 To calculate sample quantitation limits: (CRQL \* Dilution Factor)

SEE NARRATIVE FOR CODE DEFINITIONS  
 Revised 09/99

**Appendix C**  
**Chain-of-Custody Records**

**EPA** USEPA Contract Laboratory Program  
 Inorganic Traffic Report & Chain of Custody Record

Case No: [REDACTED]  
 DAS No: [REDACTED]

Region: [REDACTED]	Date Shipped: 9/2/2008	Chain of Custody Record <table border="1"> <tr> <th>Relinquished By</th> <th>(Date / Time)</th> <th>Sampler Signature</th> <th>Received By</th> <th>(Date / Time)</th> </tr> <tr> <td>1</td> <td></td> <td>[REDACTED]</td> <td>[REDACTED]</td> <td></td> </tr> <tr> <td>2</td> <td></td> <td>[REDACTED]</td> <td>[REDACTED]</td> <td></td> </tr> <tr> <td>3</td> <td></td> <td>[REDACTED]</td> <td>[REDACTED]</td> <td></td> </tr> <tr> <td>4</td> <td></td> <td>[REDACTED]</td> <td>[REDACTED]</td> <td></td> </tr> </table>	Relinquished By	(Date / Time)	Sampler Signature	Received By	(Date / Time)	1		[REDACTED]	[REDACTED]		2		[REDACTED]	[REDACTED]		3		[REDACTED]	[REDACTED]		4		[REDACTED]	[REDACTED]	
Relinquished By	(Date / Time)		Sampler Signature	Received By	(Date / Time)																						
1			[REDACTED]	[REDACTED]																							
2			[REDACTED]	[REDACTED]																							
3		[REDACTED]	[REDACTED]																								
4		[REDACTED]	[REDACTED]																								
Project Code: [REDACTED]	Carrier Name: FedEx																										
CERCLIS ID: VAN000306614	ATB#: 961942977974																										
Spill ID: ALM	Shipped to: Chem Tech Consulting Group (CHEMED) 294 Sheffield Street Mountainside NJ 07092 (908) 789-8900																										
Site Name/State: Battlefield GolfWA																											
Project Leader: [REDACTED]																											
Action: Preliminary Assessment																											
Sampling Co: Tetra Tech EM Inc.																											

INORGANIC SAMPLE NO.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG NO./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE NO.	QC Type
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	788 (HNO3), 902 (HNO3) (2)	[REDACTED]	S: 8/28/2008 13:05	[REDACTED]	[REDACTED]
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	789 (HNO3), 903 (HNO3) (2)	[REDACTED]	S: 8/28/2008 13:25	[REDACTED]	[REDACTED]
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	790 (HNO3), 904 (HNO3) (2)	[REDACTED]	S: 8/29/2008 13:55	[REDACTED]	[REDACTED]
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	791 (HNO3), 905 (HNO3) (2)	[REDACTED]	S: 8/29/2008 13:50	[REDACTED]	[REDACTED]
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	792 (HNO3), 906 (HNO3) (2)	[REDACTED]	S: 8/29/2008 13:50	[REDACTED]	[REDACTED]
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	793 (HNO3), 907 (HNO3) (2)	[REDACTED]	S: 8/29/2008 14:50	[REDACTED]	[REDACTED]
[REDACTED]	Surface Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	794 (HNO3), 908 (HNO3) (2)	[REDACTED]	S: 8/29/2008 12:51	[REDACTED]	[REDACTED]
[REDACTED]	Surface Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	795 (HNO3), 909 (HNO3) (2)	[REDACTED]	S: 8/29/2008 15:40	[REDACTED]	[REDACTED]
[REDACTED]	Potable Well/	M/G	TAL TM+B+M (14)	796 (HNO3) (1)	[REDACTED]	S: 8/25/2008 9:27	[REDACTED]	[REDACTED]
[REDACTED]	Potable Well/	M/G	TAL TM+B+M (14)	797 (HNO3) (1)	[REDACTED]	S: 8/25/2008 9:59	[REDACTED]	[REDACTED]
[REDACTED]	Potable Well/	M/G	TAL TM+B+M (14)	798 (HNO3) (1)	[REDACTED]	S: 8/26/2008 16:45	[REDACTED]	[REDACTED]

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	Concentration: L = Low, M = Medium, H = High	Typical Designate: Composite = C, Grab = G	Shipment lead?
IAL DM+B+M = IAL Diss Metals+Bottom+Moy, TAL Mer+H+T = TAL Metals + Bottom + Molydenum, TAL TM+B+M = TAL Total Metals+Bottom+Moy			

TR Number: [REDACTED]

PR provides preliminary results. Requests for preliminary results are subject to analytical costs.  
 Send Copy to Sample Management Office, Altus [REDACTED] CSC, 15000 Conference Center Dr., Chantilly, VA 20151-9819; Phone 703/618-4200; Fax 703/618-4602

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**EPA USEPA Contract Laboratory Program**  
**Inorganic Traffic Report & Chain of Custody Record**

Case No: [REDACTED]  
 DAS No: [REDACTED]

10175

Region: 3	Date Shipped: 9/2/2008	Carrier Name: FedEx	Chain of Custody Record
Project Code: [REDACTED]	Shipped to: ChemTech Consulting	Group (CHEMED)	Relinquished By: [REDACTED] (Date / Time) 9/2/08 12:00
Account Code: VAN000308614	Site Name/State: Battiefield Golf/VA	284 Sheffield Street	Received By: [REDACTED] (Date / Time)
Split ID: ALM	Project Leader: [REDACTED]	Mountainside NJ 07092	
Action: Preliminary Assessment	Sampling Co: Tetra Tech EM Inc.	(908) 789-8800	

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC. TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	777 (HNO3), 891 (HNO3)	[REDACTED]	S: 8/28/2008 12:40		
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	778 (HNO3), 892 (HNO3)	[REDACTED]	S: 8/29/2008 11:15		
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	779 (HNO3), 893 (HNO3)	[REDACTED]	S: 8/29/2008 10:00		
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	780 (HNO3), 894 (HNO3)	[REDACTED]	S: 8/29/2008 14:06		
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	781 (HNO3), 895 (HNO3)	[REDACTED]	S: 8/28/2008 15:50		
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	782 (HNO3), 896 (HNO3)	[REDACTED]	S: 8/28/2008 17:47		
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	783 (HNO3), 897 (HNO3)	[REDACTED]	S: 8/28/2008 18:10		
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	784 (HNO3), 898 (HNO3)	[REDACTED]	S: 8/29/2008 9:10		
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	785 (HNO3), 899 (HNO3)	[REDACTED]	S: 8/29/2008 10:50		
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	786 (HNO3), 900 (HNO3)	[REDACTED]	S: 8/29/2008 11:50		
[REDACTED]	Ground Water/	M/G	TAL DM+B+M (14), TAL TM+B+M (14)	787 (HNO3), 901 (HNO3)	[REDACTED]	S: 8/28/2008 13:48		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: TAL DM+B+M = TAL Diss Metals+Baron+MCOY, TAL MET+B+ = TAL METALS + Barion + MCOY+GGTUM, TAL TM+B+M = TAL TOBI METALS+Barion+MCOY	Concentration: L = Low, M = Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Lead?

**TR Number:** [REDACTED]

PR provides preliminary results. Requests for primary results will increase analytical costs.  
 Send Copy to: Sample Management Office, Ailin [REDACTED] CSC, 6500D Conference Center Dr., Chantilly, VA 20151-3819, Phone 703/818-4200, Fax 703/818-4602

F2V5.1.047 Page 1 of 10

**EPA** USEPA Contract Laboratory Program  
Inorganic Traffic Report & Chain of Custody Record

Case No: [REDACTED]  
DAS No: [REDACTED]

R

Region: 3	Date Shipped: 9/2/2008	Carrier Name: FedEx	Shipments to: Chem Tech Consulting Group (CHEMED) 284 Sheffield Street Mountainside NJ 07092 (908) 789-8900
Project Code: [REDACTED]	Carrier Address: 961942977974	Shipped to:	
Account Code: VAN000306614	Altitude:		
Split ID: ALM			
Site Name/State: Battlefield GolfVA			
Project Leader: [REDACTED]			
Action: Preliminary Assessment			
Sampling Co: Tetra Tech EM Inc.			

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bulbs	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	OC Type
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	855 (HNO3) (1)	[REDACTED]	S: 8/27/2008 16:13		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	856 (HNO3) (1)	[REDACTED]	S: 8/28/2008 9:45		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	857 (HNO3) (1)	[REDACTED]	S: 8/28/2008 10:23		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	858 (HNO3) (1)	[REDACTED]	S: 8/28/2008 10:29		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	859 (HNO3) (1)	[REDACTED]	S: 8/29/2008 11:19		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	860 (HNO3) (1)	[REDACTED]	S: 8/29/2008 11:19		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	861 (HNO3) (1)	[REDACTED]	S: 8/29/2008 11:30		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	862 (HNO3) (1)	[REDACTED]	S: 8/28/2008 11:13		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	863 (Ice Only), 864 (Ice Only) (2)	[REDACTED]	S: 8/25/2008 10:18		
[REDACTED]	Soil (>12")	M/G	TAL Mat+B+ (14)	865 (Ice Only), 866 (Ice Only) (2)	[REDACTED]	S: 8/25/2008 11:35		
[REDACTED]	Soil (>12")	M/G	TAL Mat+B+ (14)	867 (Ice Only), 868 (Ice Only) (2)	[REDACTED]	S: 8/25/2008 12:15		

Shipments for Case Complete Y

Concentration: L = Low, M = Low/Medium, H = High

Type/Designate: Composite = C, Grab = G

Additional Sampler Signature(s):

Chain of Custody Seal Number:

Shipment lead?

TR Number: [REDACTED]

PA provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: [REDACTED] CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

F215.1.047 Page 8 of 10

# U.S. EPA Region III Analytical Request Form

ASQAB USE ONLY			
RAS#			Analytical TAT
DASH			14
NSR#			

**Date:** 8/21/2008      **Site Activity:** Removal Assessment

**Site Name:** Battlefield Golf Club      **Street Address:** 1001 South Centerville Turnpike

**City:** Chesapeake      **State:** VA      **Latitude:** 36.68982      **Longitude:** 76.17790

**Program:** Superfund      **Acct #:** 2008T03 N 302DC6C A3LM RS00      **CERCLIS #:** VAN000306614

**Site ID:**      **Spill ID:** A3LM      **Operable Unit:**      **Date Approved:** 8/20/2008

**Site Specific QA Plan Submitted:**  No  Yes      **Title:** Battlefield Golf Club Fly Ash Assessment SAP

**EPA Project Leader:** CHRIS WAGNER      **Phone#:**      **Cell Phone #:** 804-337-3049      **E-mail:** Wagner.Christine@epa.gov

**Request Preparer:**      **Phone#:**      **Cell Phone #:**      **E-mail:**      **E-mail:**      **E-mail:**

**Site Leader:**      **Phone#:**      **Cell Phone #:**      **E-mail:**      **E-mail:**      **E-mail:**

**Contractor:** Tetra Tech EM Inc      **EPA CO/PO:** Lorrie Murray/Karen Wodarczyk

#Samples	Matrix:	Parameter:	Method:
	soil	TAL Metals + Boron + Molybdenum + Hg	ILM05.4 ICPAES+Hg
	groundwater	TAL Metals + Boron + Molybdenum + Hg	ILM05.4 ICPAES+Hg
	potable water	TAL metals Low(w/o Al,Ca,Fe,K,Mg,Na)&B,Mo,Hg	ILM05.4 ICPMS & Hg
	potable water	Parameter: Al, Ca, Fe, K, Mg, Na	Method: ILM05.4 ICPAES
	groundwater	Parameter: TAL metals Low(w/o Al,Ca,Fe,K,Mg,Na)&B,Mo,Hg	Method: ILM05.4 ICPMS & Hg
	groundwater	Parameter: Al, Ca, Fe, K, Mg, Na	Method: ILM05.4 ICPAES
	groundwater	Parameter:	Method:

**Ship Date From:** 8/29/2008      **Ship Date To:** 9/3/2008      **Org. Validation Level**      **Inorg. Validation Level** IM2

**Unvalidated Data Requested:**  No  Yes      **If Yes, TAT Needed:**  24hrs  48hrs  72hrs  7days  Other (Specify) 14 days

**Validated Data Package Due:**  14 days  21 days  30days  42 days  Other (Specify)

**Electronic Data Deliverables Required:**  No  Yes      (EDDs will be provided in Region 3 EDD Format)

**Special Instructions:** See attached DLs.

## **Appendix D**

### **Laboratory Case Narrative**



**CHEMTECH**  
284 Sheffield Street  
Mountainside, NJ 07092

**SDG NARRATIVE**

USEPA [REDACTED]  
SDG # [REDACTED]  
CASE # [REDACTED]  
CONTRACT # EPW06047  
LAB NAME: CHEMTECH CONSULTING GROUP  
LAB CODE: CHEM [REDACTED]  
CHEMTECH PROJECT # [REDACTED]  
MODIFIED ANALYSIS: 1629.0

**A. Number of Samples and Date of Receipt**

6 Water Samples were delivered to the laboratory intact on 09/03/2008.

**B. Parameters**

Test requested for ICP- AES Metals CLP12= (Al,Ca,Fe,Mg,K,Na)+B+MO & HG.

**C. Cooler Temp**

Indicator Bottle: Presence/Absence  
Cooler: 4°C

**D. Detail Documentation (related to Sample Handling  
Shipping, Analytical Problem, Temp of Cooler etc):**

**E. Corrective Action taken for above:**

**F. Analytical Techniques:**

All analyses were based on CLP Methodology by method ILM05.4

**CHEMTECH**  
284 Sheffield Street  
Mountainside, NJ 07092

**G. Calculation:**

*Calculation example for ICP-AES Water Sample:*

Results reported in Ug/L = Results in ppm X 1000 X Dilution Factor (if any) X Fraction of Sample Amount Taken in ICP Water- Prep

Fraction of Sample Amount Taken in ICP Water- Prep =  $100/100$  or  $50/50 = 1$   
(if 100 ml Initial Volume taken and Final Volume was made to 100 ml or 50 ml Initial Volume and Final Volume made to 50 ml in ICP-AES Water Digestion procedure)

*Calculation example for Hg Water Sample:*

Results reported in Ug/L = Results in ppb X Dilution Factor (if any) X Fraction of Sample Amount Taken in Water Hg-Prep.

Fraction of Sample Amount Taken in Water Hg-Prep =  $100/100 = 1$   
(if 100 ml Initial Volume taken and made it to Final Volume as 100 ml)

**H. QA/ QC**

Calibrations met requirements. Interference check met requirements. Blank analyses did not indicate any presence of contamination. Laboratory Control sample was within control limits. Spike sample did meet requirements. Duplicate sample did meet requirements. Serial Dilution did meet requirements except for Sodium.

I certify that the data package is in compliance with the terms and conditions of the contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature \_\_\_\_\_

Name: \_\_\_\_\_

Date 9/16/08

Title: Project Manager

SAMPLE LOG-IN SHEET

Lab Name CHEMTECH CONSULTING GROUP

Received By (Print Name) [REDACTED] Log-in Date 9/4/2008

Received By (Signature) [REDACTED]

Case Number [REDACTED] Sample Delivery Group No. [REDACTED] NRAS Number [REDACTED]

Remarks:

		Corresponding			Remarks: Condition of Sample shipment, etc.	
		EPA Sample #	Aqueous Sample pH	Sample Tag #		Assigned Lab #
1. Custody Seal(s)	<input checked="" type="checkbox"/> Present/Absent* <input checked="" type="checkbox"/> Intact/Broken	[REDACTED]	N/A	[REDACTED]	[REDACTED]	INTACT
2. Custody Seal Nos.	_____	[REDACTED]	↓	[REDACTED]	[REDACTED]	
3. Traffic Reports/Chain Of Custody Reports or Packing Lists	<input checked="" type="checkbox"/> Present/Absent*	[REDACTED]		[REDACTED]	[REDACTED]	
4. Airbill	<input checked="" type="checkbox"/> Airbill Sticker <input checked="" type="checkbox"/> Present/Absent*	[REDACTED]		[REDACTED]	[REDACTED]	
5. Airbill No.	961942977974	[REDACTED]		[REDACTED]	[REDACTED]	
6. Sample Tags Sample Tag #	<input checked="" type="checkbox"/> Present/Absent* <input checked="" type="checkbox"/> Listed/Not Listed On TR/Chain-of-Custody	[REDACTED]		[REDACTED]	[REDACTED]	
7. Sample Condition	<input checked="" type="checkbox"/> Intact/Broken*/Leaking	[REDACTED]		[REDACTED]	[REDACTED]	
8. Cooler Temperature Indicator Bottle	<input checked="" type="checkbox"/> Present/Absent*	[REDACTED]		[REDACTED]	[REDACTED]	
9. Cooler Temperature	40C	[REDACTED]		[REDACTED]	[REDACTED]	
10. Does Information on custody records, traffic reports, and sample tags agree?	<input checked="" type="checkbox"/> Yes/No*	[REDACTED]		[REDACTED]	[REDACTED]	
11. Date Received at Lab	9.3.08	[REDACTED]		[REDACTED]	[REDACTED]	
12. Time Received	9:30	[REDACTED]		[REDACTED]	[REDACTED]	

Sample Transfer

Fraction	METALS	Fraction	[REDACTED]
Area #	Q50	Area #	9/16/08
By	[REDACTED]	By	[REDACTED]
On	9-16-08	On	[REDACTED]

\* Contact SMO and attach record of resolution

Reviewed By [REDACTED] Logbook No. [REDACTED]  
Date 9-16-08 Logbook Page No. [REDACTED]

4

## Request for Quote (RFQ) for Modified Analysis

Date: August 27, 2008

**Subject:** Modification Reference Number: 1629.0  
Title: ICP-AES Metals with Boron and Molybdenum  
Sample Matrix: Water and Soil  
Fraction Affected: Metals  
Statement of Work: ILM05.4

### Purpose:

The Contractor Laboratory is requested to perform the following modified analyses under the Inorganic Statement of Work (SOW) ILM05.4, based on the additional specifications listed below. Unless specifically modified by this modification, all analyses, Quality Control (QC), and reporting requirements specified in SOW ILM05.4 remain unchanged and in full force and effect. The number of samples requested in this modification is not guaranteed.

*Please note that accepting a modified analysis request is voluntary, and that the Laboratory is not required to accept the modified analysis. There will be no adverse effect to the Laboratory for not accepting the modified analysis request. However, once the Laboratory accepts the request for modified analysis, it shall perform the analysis in accordance with this modification and as specified in SOW ILM05.4.*

The Laboratory is requested to review the modification described herein, determine whether or not it shall accept the requested modified analyses, and complete the attached response form. The Laboratory shall provide comments in response to the required changes in the designated area, in order to ensure that the modified analysis can be completed in accordance with the specifications described herein.

Notice to Contractors: Acceptance of Modified Analysis samples will not count against the monthly capacity.

**Modification to the SOW Specifications:**

The contract Laboratory shall analyze aqueous/water and soil/sediment samples for target analytes and the additional analytes Boron (B, CASRN 7440-42-8) and Molybdenum (Mo, CASRN 7439-98-7) by ICP-AES as indicated on the Traffic Report/Chain of Custody Record.

Analyte	Water CRQL (ug/L)	Soil CRQL (mg/kg)	Water Spike level (ug/L)	Soil Spike level (mg/kg)
B	50	5.0	250	25
Mo	5	0.5	25	2.5

The Laboratory must submit Method Detection Limits (MDL) for Boron and Molybdenum that are less than one-half the CRQLs.

The Laboratory shall not use borosilicate glassware to digest the samples for metals analysis or prepare any sample dilutions to avoid contaminating samples with Boron. Polymer digestion vessels shall be used instead.

Post-digestion Spike requirements are per the SOW.

The Laboratory shall add Boron and Molybdenum to the ICV/CCV solutions at appropriate concentrations.

The Laboratory shall add Boron and Molybdenum to the CRI solution at the requested aqueous CRQLs.

The Laboratory shall add Boron and Molybdenum to the LCSW at the levels requested for Matrix Spike if they are not already present in the solution. The Laboratory is not required to add Boron and Molybdenum to the LCSS if they are not already present.

The Laboratory is not required to add Boron and Molybdenum to the ICSA/ICSAB solutions. The Laboratory shall use a true value of zero (0) and acceptance windows of +/- 2 times the CRQL, unless a non-zero value for these analytes has been determined for the solution(s).

The Laboratory shall add Boron and Molybdenum to Forms 1, 2A, 2B, 3, 4A, 5A, (5B), 6, 8, 9, 10A, 11, and 13

**Reporting Requirements:**

Hardcopy and electronic data reporting are required as specified per SOW ILM05.4. All hardcopy and electronic data shall be adjusted to incorporate modified specifications. This includes attaching a copy of the requirements for modified analysis to the SDG Narrative. If specific problems occur with incorporation of the modified analysis into the hardcopy and/or electronic deliverable, the Laboratory shall contact the DASS Manager within the Sample

Management Office (SMO) at (703) 818-4233 or via email at CCSSUPPORT@fedcsc.com for resolution.

All samples and/or fractions assigned to an SDG shall be analyzed under the same Modified Analysis requirements as established in this memorandum. The Laboratory shall not include data from multiple Modified Analyses in one SDG.

The Laboratory shall include the Modification Reference Number 1629.0 on each hardcopy data form under the "NRAS No:" header appearing on each form as well as the "NRAS No." field on the Record type 21 of the electronic deliverable (if diskette deliverable is required). The Laboratory shall also document the Modification Reference Number and Solicitation Number on the SDG Coversheet.

---

**Clarifications/Revisions to the RFQ for Modified Analysis:**

---

**Laboratory Name:**  
**Laboratory Comments:**

**Contractor Laboratory Acknowledgment Document**

Analysis	Modification Reference Number	Hardcopy Turnaround Requirement	Preliminary Results (Y/N)	PDF Delivery (Y/N)	(A) Estimated No. of Samples by Matrix (including billable QC)	Cost For Modified Analysis	
						(B) New Per Sample Price	(A x B) Total Cost
ICP-AES 5-10 Metals (plus B and Mo)	1629.0	14 days	N	N	149 water	\$ _____	\$ _____
ICP-AES 11-22 Metals (plus B and Mo)	1629.0	14 days	N	N	28 water 39 soil	\$ _____	\$ _____
ICP-MS 11-16 Metals	N/A	14 days	N	N	149 water	\$ _____	\$ _____
Mercury	N/A	14 days	N	N	177 water 39 soil	\$ _____	\$ _____
<b>Total Project Cost</b>						<b>\$ _____</b>	<b>\$ _____</b>

**Project Information**      8/29/2008 through 9/3/2008  
**Estimated Shipping Period:**      Please note that the samples will ship under two Cases.  
**Additional Information:**

**Note:** The requirements in the RFQ are as stated, and the Government will reduce the line item price listed on the bid sheet for late deliverables at a rate of 5 percent per calendar day late, up to a maximum of 50 percent. The Government will treat noncompliant data and late data for Preliminary Results in accordance with the terms and conditions of the contract, using the price listed on the bid sheet as the basis for the calculation.

Name of Contractor Laboratory: \_\_\_\_\_

Contract Number: \_\_\_\_\_

\_\_\_\_ Laboratory AGREES to perform analysis through the modified analysis protocol outlined in Modified Analysis Request.  
 \_\_\_\_ Laboratory DECLINES to perform analysis through the modified analysis protocol outlined in Modified Analysis Request.

Signature of Laboratory Representative: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of USEPA Contracting Officer: \_\_\_\_\_ Date: \_\_\_\_\_

**Analysis:** Description of the analyses being requested by the USEPA for this Case. This column is completed by SMO.

**Modification Reference Number:** The numerical value assigned to the technical requirements describing the changes to the Statement of Work. This column is completed by SMO.

**Hardcopy Turnaround Requirement:** The analytical data turnaround time required for this Case. This column is completed by SMO.

**Preliminary Results:** Indicates if Preliminary Results are required for the line item. This column is completed by SMO.

**PDF Delivery:** Indicates if PDF Delivery is required for the line item. This column is completed by SMO.

**Estimated No. of Samples and sample Matrix (including QC):** The client's estimated number of samples (by matrix), including billable QC samples, to be collected and shipped to the laboratory. This column is completed by SMO.

**New Per Sample Price:** Laboratory's sample price for analyzing the samples identified in the line item. This column is completed by the laboratory.

**Total Cost:** This value is the Estimated No. of Samples (including QC) multiplied by the New Per Sample Price. This column is completed by the laboratory.

**Total Project Cost:** Sum of the total costs for all line items. This is completed by the laboratory.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
ENVIRONMENTAL SCIENCE CENTER  
701 MAPES ROAD  
FORT MEADE, MARYLAND 20755-5350

DATE : October 2, 2008  
SUBJECT: Region III Data QA Review  
FROM : Colleen Walling *Colleen Walling*  
Region III ESAT RPO (3EA20)  
TO : Christine Wagner  
Regional Project Manager (3HS32)

Attached is the inorganic data validation report for the Battlefield Golf Club site (Case # [REDACTED] SDG # [REDACTED] completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachment

cc: [REDACTED] (TTEMI)

TO File #: [REDACTED] TDF#: [REDACTED]

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE



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Lockheed Martin Enterprise Solutions & Services  
ESAT Region 3  
US EPA Environmental Science Center  
701 Mapes Road Ft. Meade, MD 20755-5350  
Telephone 410-305-3037 Facsimile 410-305-3597

**DATE:** October 1, 2008

**SUBJECT:** Level IM2 Inorganic Data Validation for Case [REDACTED]  
SDG: [REDACTED]  
Site: Battlefield Golf Club

**FROM:** [REDACTED]  
Inorganic Data Reviewer

**Through:** [REDACTED]  
Senior Data Review Chemist

**TO:** Colleen Walling  
ESAT Region 3 Project Officer

**OVERVIEW**

Case [REDACTED] Sample Delivery Group (SDG) [REDACTED] consisted of twenty (20) aqueous samples analyzed for aluminum (Al), boron (B), calcium (Ca), iron (Fe), magnesium (Mg), mercury (Hg), molybdenum (Mo), potassium (K), and sodium (Na). The sample set included two (2) filed duplicate pairs. All samples were submitted to ChemTech Consulting Group (CHEM) for analyses. Samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 (Modified) through the Routine Analytical Services (RAS) program. Modifications included analysis of B at a Contract Required Quantitation Limit (CRQL) of 50 ug/L and Mo 5.0 ug/L using modification reference number 1629.0.

**SUMMARY**

Data were validated according to the Region III Modifications to the National Functional Guidelines for Inorganic Data Review, level IM2. Areas of concern with respect to data usability are listed below.

Data in this Case have been impacted by outliers present in a laboratory blank as well as the ICP serial dilution analysis. Details for these outliers are discussed under "Minor Problems", specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on a single Data Summary Form (DSF).

**MINOR PROBLEMS**

The Continuing Calibration Blank (CCB) had a negative value greater than the absolute value of the MDL for aluminum (Al). Quantitation limits for this analyte in affected samples may be biased low and have been qualified "UL" on the DSFs.

The Percent Difference (%D) for the ICP serial dilution analysis was outside the control limit (>10%) for sodium (Na). Reported results for this analyte in all samples are estimated and have been qualified "J" on the DSF.

**NOTES**

Positive results which are less than the Contract Required Quantitation Limits (CRQLs) but greater than MDLs have been qualified "J" on the DSFs.

Reported results for field duplicate pairs [REDACTED] were within control limits (20% RPD,  $\pm$  CRQL) for all analytes.

Results for the Preparation Blank (PB) were not included on Form III. Raw data for this blank was utilized by the reviewer to assess laboratory contamination. No data were impacted.

Data for Case [REDACTED] SDG [REDACTED] were reviewed in accordance with Region III Modifications to the National Functional Guidelines for Evaluating Inorganic Analyses, April 1993.

**ATTACHMENTS**

**INFORMATION REGARDING REPORT CONTENT**

- TABLES 1A SUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER DATA VALIDATION
- TABLE 1B CODES USED IN COMMENTS COLUMN OF TABLES 1A
- APPENDIX A GLOSSARY OF DATA QUALIFIER CODES
- APPENDIX B DATA SUMMARY FORM(S)
- APPENDIX C CHAIN OF CUSTODY RECORD(S)
- APPENDIX D LABORATORY CASE NARRATIVE(S)

DCN: [REDACTED]

**TABLE 1A  
SUMMARY OF QUALIFIERS ON DATA SUMMARY  
FORM AFTER DATA VALIDATION**

Case [REDACTED] SDG [REDACTED]

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Al	All Samples Except [REDACTED]		UL	Low	CBN (- 20.320 J ug/L)
Na	All samples	J			SD (19%)

\* See explanation of comments in Table 1B

**TABLE 1B**  
**CODES USED IN COMMENTS COLUMN**

- SD = The Percent difference (%D) for the ICP serial dilution analysis was outside the (10%) control limit. [the %D is in parenthesis]. Positive results are estimated.
- CBN = The continuing calibration blank had a reported negative result greater than absolute value of MDL [the result is in parenthesis]. Quantitation limits may be biased low.

## **Appendix A**

### **Glossary of Data Qualifier Codes**

## **GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)**

### **CODES RELATED TO IDENTIFICATION**

(confidence concerning presence or absence of analytes):

- U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.  
  
(NO CODE) = Confirmed identification.
- B = Not detected substantially above the level reported in laboratory or field blanks.
- R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

### **CODES RELATED TO QUANTITATION**

(can be used for both positive results and sample quantitation limits):

- J = Analyte Present. Reported value may not be accurate or precise.
- K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- UJ = Not detected, quantitation limit may be inaccurate or imprecise.
- UL = Not detected, quantitation limit is probably higher.

### **OTHER CODE**

- Q = No analytical result.

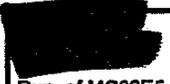
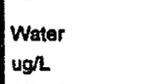
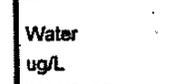
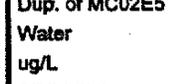
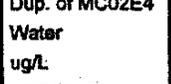
## **Appendix B**

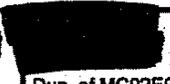
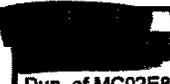
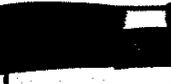
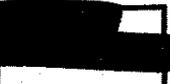
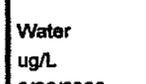
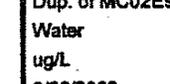
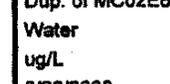
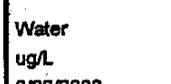
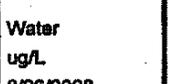
### **Data Summary Forms (DSFs)**

DATA SUMMARY FORM: INORGANIC

Case #:  SDG:   
 Site: BATTLEFIELD GOLF CLUB  
 Lab.: CHEM

Number of Soil Samples : 0  
 Number of Water Samples : 20

Sample Number :											
Sampling Location :											
Field QC :						Dup. of MC02E5		Dup. of MC02E4			
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		8/26/2008		8/26/2008		8/26/2008		8/26/2008		8/26/2008	
Time Sampled :		10:50		11:33		11:26		11:26		13:16	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
BORON	50	146		19.7	J	144		146		26.4	J
IRON	100	161		5750		148		164		6280	
MOLYBDENUM	5										
POTASSIUM	5000	9000		1410	J	9320		9270		1310	J

Sample Number :											
Sampling Location :											
Field QC :				Dup. of MC02E9		Dup. of MC02E8					
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		8/26/2008		8/26/2008		8/26/2008		8/26/2008		8/26/2008	
Time Sampled :		17:18		17:50		17:50		18:51		18:59	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
BORON	50	207		51.4		56.7		131		122	
IRON	100	192		185		187		177		190	
MOLYBDENUM	5										
POTASSIUM	5000	13600		3250	J	3190	J	12400		12000	

CRQL = Contract Required Quantitation Limit \*Action Level Exists  
 To calculate sample quantitation limits: (CRQL \* Dilution Factor)

SEE NARRATIVE FOR CODE DEFINITIONS  
 Revised 09/99

Case #: ██████████  
 Site: BATTLEFIELD GOLF CLUB  
 Lab.: CHEM

Sample Number :		██████████		██████████		██████████		██████████		██████████	
Sampling Location :		██████████		██████████		██████████		██████████		██████████	
Field QC :		Water									
Matrix :		ug/L									
Units :		8/26/2008		8/27/2008		8/27/2008		8/27/2008		8/27/2008	
Date Sampled :		19:13		09:18		10:40		10:56		10:19	
Time Sampled :		1.0		1.0		1.0		1.0		1.0	
Dilution Factor :											
ANALYTE	CRQL	Result	Flag								
BORON	50	539		114		14.0	J	18.3	J	18.3	J
IRON	100	290		4800		763		835		804	
MOLYBDENUM	5										
POTASSIUM	5000	28900		10700							

Sample Number :		██████████		██████████		██████████		██████████		██████████	
Sampling Location :		██████████		██████████		██████████		██████████		██████████	
Field QC :		Water									
Matrix :		ug/L									
Units :		8/27/2008		8/27/2008		8/27/2008		8/27/2008		8/27/2008	
Date Sampled :		11:24		11:56		12:24		13:18		13:39	
Time Sampled :		1.0		1.0		1.0		1.0		1.0	
Dilution Factor :											
ANALYTE	CRQL	Result	Flag								
BORON	50	160		26.6	J	24.8	J	45.7	J	111	J
IRON	100	623		521		174		626		685	
MOLYBDENUM	5										
POTASSIUM	5000	722	J	1170	J	868	J	1600	J	3010	J

CRQL = Contract Required Quantitation Limit \*Action Level Exists  
 To calculate sample quantitation limits: (CRQL \* Dilution Factor)

SEE NARRATIVE FOR CODE DEFINITIONS  
 Revised 09/99

## **Appendix C**

### **Chain-of-Custody Records**

**EPA USEPA Contract Laboratory Program**  
**Inorganic Traffic Report & Chain of Custody Record**

Case No: [REDACTED]  
 DAS No: [REDACTED]

**R**

Region: 3	Date Shipped: 9/2/2008	Carrier Name: FedEx	Shipped to: Chem Tech Consulting Group (CHEMED) 284 Sheffield Street Mountainside NJ 07092 (908) 799-8900
Project Code: [REDACTED]	Carrier Address: 96194297974	Shipped to: Chem Tech Consulting Group (CHEMED) 284 Sheffield Street Mountainside NJ 07092 (908) 799-8900	
Account Code: [REDACTED]	ALM		
CERCUS ID: VAN0000306614	Battlefield Golf/VA		
Spill ID: ALM			
Site Name/State: Battlefield Golf/VA			
Project Leader: [REDACTED]			
Action: Preliminary Assessment			
Sampling Co: Tetra Tech EM Inc.			

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	OC Type
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	811 (HNO3) (1)	[REDACTED]	S: 8/25/2008 19:19		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	812 (HNO3) (1)	[REDACTED]	S: 8/25/2008 20:15		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	813 (HNO3) (1)	[REDACTED]	S: 8/25/2008 7:46		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	814 (HNO3) (1)	[REDACTED]	S: 8/25/2008 8:19		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	815 (HNO3) (1)	[REDACTED]	S: 8/25/2008 9:18		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	816 (HNO3) (1)	[REDACTED]	S: 8/25/2008 9:15		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	817 (HNO3) (1)	[REDACTED]	S: 8/25/2008 10:26		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	818 (HNO3) (1)	[REDACTED]	S: 8/25/2008 10:50		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	819 (HNO3) (1)	[REDACTED]	S: 8/25/2008 11:33		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	820 (HNO3) (1)	[REDACTED]	S: 8/25/2008 11:26		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	821 (HNO3) (1)	[REDACTED]	S: 8/25/2008 11:26		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analyte Key: L = Low, M = Low/Medium, H = High	Concentration: L = Low, M = Low/Medium, H = High	Typed Designator: Composite = C, Grab = G	Shipment Recd?
TAL DM-B+M = TAL DSS Metals+Barium+Moly, TAL Mg+Ba = TAL Metals + Barium + Moly, TAL TM+B+M = TAL Total Metals+Barium+Moly			

TR Number: [REDACTED]

PT provides preliminary results. Requests for preliminary results will increase analytical costs.  
 Send Copy to: Sample Management Office, A1101, CSCC, 15000 Conference Center Dr., Charlottesville, VA 20151-3819, Phone 703/818-4200, Fax 703/818-4602

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**EPA** USEPA Contract Laboratory Program  
**Inorganic Traffic Report & Chain of Custody Record**

Case No: [Redacted]  
 DAS No: [Redacted]

Region: 3	Date Shipped: 9/2/2008	<b>Chain of Custody Record</b> Ratiquested By: [Redacted] (Date / Time) Received By: [Redacted] (Date / Time)
Project Code: [Redacted]	Carrier Name: FedEx	
Account Code: CERCLIS ID: VAND00305614	Arrbill: 961942977974	
Spill ID: ALM	Shipped to: ChemTech Consulting Group (CHEMED) 284 Sheffield Street Mountinside NJ 07092 (908) 789-8900	
Site Name/State: Battlefield Golf/VA		
Project Leader: [Redacted]		
Action: Preliminary Assessment		
Sampling Co: Tetra Tech EM Inc.		

INORGANIC SAMPLE NO.	MATRIX/ SAMPLER	CONC TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	822 (HNO3) (1)	[Redacted]	S: 8/26/2008 13:16 ✓		
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	823 (HNO3) (1)	[Redacted]	S: 8/26/2008 17:18 ✓		
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	824 (HNO3) (1)	[Redacted]	S: 8/26/2008 17:50 ✓		
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	825 (HNO3) (1)	[Redacted]	S: 8/26/2008 17:50 ✓		
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	826 (HNO3) (1)	[Redacted]	S: 8/26/2008 18:51 ✓		
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	827 (HNO3) (1)	[Redacted]	S: 8/26/2008 18:59 ✓		
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	828 (HNO3) (1)	[Redacted]	S: 8/26/2008 19:13 ✓		
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	829 (HNO3) (1)	[Redacted]	S: 8/27/2008 9:18 ✓		
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	830 (HNO3) (1)	[Redacted]	S: 8/27/2008 10:40 ✓		
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	831 (HNO3) (1)	[Redacted]	S: 8/27/2008 10:56 ✓		
[Redacted]	Potable Well/	M/G	TAL TM+B+M (14)	832 (HNO3) (1)	[Redacted]	S: 8/27/2008 10:19 ✓		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analyte Key: L = Low, M = Low/Medium, H = High	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment lead?
TAL DM+B+M = TAL Diss Metals+Boron+Moly; TAL MA+B+ = TAL Metals + Boron + Molydenum; TAL TM+B+M = TAL Total Metals+Boron+Moly			

PR provides preliminary results. Requests for preliminary results will increase analytical costs.  
 Send Copy to: Sample Management Office, Alin [Redacted] CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

**EPA USEPA Contract Laboratory Program**  
**Inorganic Traffic Report & Chain of Custody Record**

Case No: [REDACTED]  
 DAS No: [REDACTED]

R

Region: 3	Date Shipped: 9/2/2008	Chain of Custody Record Relinquished By * (Date / Time) Received (Date / Time) 1 2 3 4.	Sampler Signature [REDACTED] Received [REDACTED]
Project Code: [REDACTED]	Carrier Name: FedEx		
Account Code: VAN000308614	Airbill: 961942972974		
CFRCLIS ID: ALM	Shipped to: Chem Tech Consulting Group (CHEMED) 284 Sheffield Street Mountainside NJ 07092 (908) 789-8900		
Split ID: [REDACTED]	Site Name/State: Battlefield Golf/VA		
Project Leader: [REDACTED]	Action: Preliminary Assessment		
Sampling Co: Terra Tech EM Inc.			

INORGANIC SAMPLE NO.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	833 (HNO3) (1)	[REDACTED]	S: 8/27/2008 11:24 /		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	834 (HNO3) (1)	[REDACTED]	S: 8/27/2008 11:56 /		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	835 (HNO3) (1)	[REDACTED]	S: 8/27/2008 12:24 /		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	836 (HNO3) (1)	[REDACTED]	S: 8/27/2008 13:18 /		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	837 (HNO3) (1)	[REDACTED]	S: 8/27/2008 13:39 /		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	838 (HNO3) (1)	[REDACTED]	S: 8/27/2008 14:21		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	839 (HNO3) (1)	[REDACTED]	S: 8/27/2008 14:58		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	840 (HNO3) (1)	[REDACTED]	S: 8/28/2008 13:20		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	841 (HNO3) (1)	[REDACTED]	S: 8/27/2008 15:20		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	842 (HNO3) (1)	[REDACTED]	S: 8/27/2008 16:39		
[REDACTED]	Potable Well	M/G	TAL TM+B+M (14)	843 (HNO3) (1)	[REDACTED]	S: 8/27/2008 17:07		

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: TAL DM+B+M = TAL Diss Metals+Boron+Moly, TAL MB+B+ = TAL Metals + Boron + Molybdenum, TAL TM+B+M = TAL Total Metals+Boron+Moly	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Lead?

# U.S. EPA Region III Analytical Request Form

ASQAB USE ONLY	
RASH#	Analytical TAT
DASH#	14
NSF#	

Date: 8/21/2008

City: Chesapeake

Program: Superfund

Site ID:

EPA Project Leader: CHRIS WAGNER

Request Preparer:

Site Leader:

Contractor: Tetra Tech EM Inc

#Samples

#Samples

#Samples

#Samples

#Samples

#Samples

#Samples

#Samples

#Samples

Ship Date From: 8/29/2008

Validated Data Package Due:  14 days  21 days  30days  42 days  Other (Specify)

Electronic Data Deliverables Required:  No  Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: See attached DLs.

Site Activity: Removal Assessment

Site Name: Battlefield Golf Club

State: VA

Acct #: 2008T03 N 302DCC6C A3LM RS00

Spill ID: A3LM

Title: Battlefield Golf Club Fly Ash Assessment SAP

Phone#: [REDACTED]

Cell Phone #: [REDACTED]

Cell Phone #: [REDACTED]

Phone#: [REDACTED]

Cell Phone #: [REDACTED]

EPA CO/PO: Lorrie Murray/Karen Wodarzyk

Parameter: TAL Metals + Boron + Molybdenum + Hg

Parameter: TAL Metals + Boron + Molybdenum + Hg

Parameter: TAL metals Low(w/o Al,Ca,Fe,K,Mg,Na)&B,Mo,Hg

Parameter: Al, Ca, Fe, K, Mg, Na

Parameter: TAL metals Low(w/o Al,Ca,Fe,K,Mg,Na)&B,Mo,Hg

Parameter: Al, Ca, Fe, K, Mg, Na

Parameter:

Parameter:

Ship Date To: 9/3/2008

Org. Validation Level

Inorg. Validation Level IM2

If Yes, TAT Needed:  24hrs  48hrs  72hrs  Other (Specify) **14 days**