

TETRA TECH EM, INC.  
BOISE, ID

CLIENT # T029  
REPORT # 09-220

SUBMITTED BY:  
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# ***CHESTER LabNet***

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## **Case Narrative**


Date: July 28, 2009

## **General Information**

Client: Tetra Tech EM, Inc.  
Client Number: T029  
Report Number: 09-220  
Sample Description: 47mm Teflon filter

## **Analysis**

Analytes: Particulate Mass, XRF Metals (Na - Pb)  
Analytical Protocols: Gravimetry, X-Ray Fluorescence protocol 6  
Analytical Notes: No problems were encountered during the analyses. Results have **not** been blank corrected.  
QA/QC Review: All of the data have been reviewed by the analysts performing the analyses and the project manager. All of the quality control and sample-specific information in this package is complete and meets or exceeds the minimum requirements for acceptability.  
Comments: If you have any questions or concerns regarding this analysis, please feel free to contact the project manager.  
Disclaimer: This report shall not be reproduced, except in full, without the written approval of the laboratory. The results only represent that of the samples as received into the laboratory.

 7/28/09  
Project Manager Date  
Paul Duda

**Tetra Tech EMI**  
**Gravimetric Data**

Lab ID	Client ID	Site	Sample Date	Particle Size	Tare Wt.(mg)	Gross Wt.(mg)	Net Wt.(µg)	Volume (m³)	Conc. (µg/m³)	Comments
09-T2848	OFF04-070909	OFF04	7/9/09	TSP	144.719	144.944	225	9.38	23.99	Niobium
09-T2849	OFF03-070909	OFF03	7/9/09	TSP	144.820	145.003	183	9.32	19.64	
09-T2850	CAMU04-071009	CAMU04	7/10/09	TSP	147.750	148.595	845	24.04	35.15	
09-T2851	CAMU06-071009	CAMU06	7/10/09	TSP	146.658	148.988	2330	24.04	96.92	Loose deposit in mailer
09-T2852	BMI03-071009	BMI03	7/10/09	TSP	148.721	149.001	280	19.55	14.32	
09-T2853	BMI06-071009	BMI06	7/10/09	TSP	147.686	148.268	582	24.18	24.07	
09-T2854	BMI08-071009	BMI08	7/10/09	TSP	148.976	150.219	1243	24.16	51.45	Loose deposit in mailer
09-T2855	CAMU04-071409	CAMU04	7/14/09	TSP	148.633	148.973	340	24.04	14.14	
09-T2856	CAMU06-071409	CAMU06	7/14/09	TSP	146.484	149.485	3001	17.39	172.57	Loose deposit in mailer
09-T2857	BMI03-071409	BMI03	7/14/09	TSP	145.630	146.112	482	18.95	25.44	
09-T2858	BMI06-071409	BMI06	7/14/09	TSP	145.850	146.325	475	24.04	19.76	
09-T2859	BMI08-071409	BMI08	7/14/09	TSP	146.010	146.150	140	24.04	5.82	
09-T2860	BMI01-071409	BMI01	7/14/09	TSP	149.112	149.303	191	24.04	7.95	
09-T2936	CAMU04-071709	CAMU04	7/17/09	TSP	148.095	149.571	1476	21.85	67.55	
09-T2937	CAMU06-071709	CAMU06	7/17/09	TSP	141.618	147.665	6047	24.04	251.54	Loose deposit
09-T2938	BMI03-071709	BMI03	7/17/09	TSP	142.067	142.955	888	24.04	36.94	
09-T2939	BMI06-071709	BMI06	7/17/09	TSP	142.913	143.612	699	24.04	29.08	
09-T2940	BMI08-071709	BMI08	7/17/09	TSP	141.456	142.397	941	24.04	39.14	
09-T2941	BMI03-071709 BS	BMI03	7/17/09	TSP	144.030	144.056	26			
09-T2942	BMI08-071709 BS	BMI08	7/17/09	TSP	143.585	143.589	4			

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2848  
Client ID: OFF04-070909  
Filter ID: P8100072  
Site: OFF04  
Sample Date: 7/ 9/09  
Filter Lot #: 6336008  
Volume: 9.380 +/- 0.938 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP  
Comments: Niobium

Analyte	$\mu\text{g}/\text{filter}$	percent	$\mu\text{g}/\text{m}^3$
Gravimetry			
Net Mass	225. $\pm$ 10.		23.99 $\pm$ 2.625
XRF			
* Na	0.0000 $\pm$ 0.3865	0.0000 $\pm$ 0.1718	0.0000 $\pm$ 0.0412
Mg	1.876 $\pm$ 0.3164	0.8337 $\pm$ 0.1454	0.2000 $\pm$ 0.0392
Al	4.033 $\pm$ 0.2915	1.792 $\pm$ 0.1521	0.4300 $\pm$ 0.0531
Si	9.964 $\pm$ 0.5288	4.429 $\pm$ 0.3066	1.062 $\pm$ 0.1203
* P	0.0000 $\pm$ 0.0305	0.0000 $\pm$ 0.0136	0.0000 $\pm$ 0.0033
S	3.765 $\pm$ 0.2158	1.673 $\pm$ 0.1214	0.4014 $\pm$ 0.0463
Cl	1.714 $\pm$ 0.1085	0.7619 $\pm$ 0.0589	0.1828 $\pm$ 0.0216
K	1.947 $\pm$ 0.1096	0.8653 $\pm$ 0.0621	0.2076 $\pm$ 0.0238
Ca	6.678 $\pm$ 0.3413	2.968 $\pm$ 0.2010	0.7120 $\pm$ 0.0800
Ti	1.189 $\pm$ 0.0633	0.5283 $\pm$ 0.0366	0.1267 $\pm$ 0.0144
V	0.0576 $\pm$ 0.0102	0.0256 $\pm$ 0.0047	0.0061 $\pm$ 0.0012
* Cr	0.0237 $\pm$ 0.0090	0.0105 $\pm$ 0.0040	0.0025 $\pm$ 0.0010
Mn	3.182 $\pm$ 0.1605	1.414 $\pm$ 0.0951	0.3392 $\pm$ 0.0380
Fe	3.728 $\pm$ 0.1898	1.657 $\pm$ 0.1120	0.3974 $\pm$ 0.0446
* Co	0.0000 $\pm$ 0.0147	0.0000 $\pm$ 0.0065	0.0000 $\pm$ 0.0016
* Ni	0.0000 $\pm$ 0.0102	0.0000 $\pm$ 0.0045	0.0000 $\pm$ 0.0011
Cu	0.0723 $\pm$ 0.0090	0.0321 $\pm$ 0.0043	0.0077 $\pm$ 0.0012
Zn	0.0554 $\pm$ 0.0090	0.0246 $\pm$ 0.0042	0.0059 $\pm$ 0.0011
* Ga	0.0011 $\pm$ 0.0102	0.0005 $\pm$ 0.0045	0.0001 $\pm$ 0.0011
* Ge	0.0170 $\pm$ 0.0102	0.0075 $\pm$ 0.0045	0.0018 $\pm$ 0.0011
* As	0.0000 $\pm$ 0.0147	0.0000 $\pm$ 0.0065	0.0000 $\pm$ 0.0016
* Se	0.0102 $\pm$ 0.0068	0.0045 $\pm$ 0.0030	0.0011 $\pm$ 0.0007
Br	0.0712 $\pm$ 0.0079	0.0316 $\pm$ 0.0038	0.0076 $\pm$ 0.0011
* Rb	0.0113 $\pm$ 0.0079	0.0050 $\pm$ 0.0035	0.0012 $\pm$ 0.0009
Sr	0.0588 $\pm$ 0.0102	0.0261 $\pm$ 0.0047	0.0063 $\pm$ 0.0013
* Y	0.0158 $\pm$ 0.0113	0.0070 $\pm$ 0.0050	0.0017 $\pm$ 0.0012
Zr	0.1593 $\pm$ 0.0170	0.0708 $\pm$ 0.0082	0.0170 $\pm$ 0.0025
Nb	0.0768 $\pm$ 0.0181	0.0342 $\pm$ 0.0082	0.0082 $\pm$ 0.0021
* Mo	0.0271 $\pm$ 0.0203	0.0121 $\pm$ 0.0091	0.0029 $\pm$ 0.0022
* Pd	0.0848 $\pm$ 0.0486	0.0377 $\pm$ 0.0217	0.0090 $\pm$ 0.0053
* Ag	0.0429 $\pm$ 0.0497	0.0191 $\pm$ 0.0221	0.0046 $\pm$ 0.0053
* Cd	0.0000 $\pm$ 0.0542	0.0000 $\pm$ 0.0241	0.0000 $\pm$ 0.0058
* In	0.1300 $\pm$ 0.0622	0.0578 $\pm$ 0.0277	0.0139 $\pm$ 0.0068
* Sn	0.0000 $\pm$ 0.0689	0.0000 $\pm$ 0.0306	0.0000 $\pm$ 0.0073
* Sb	0.0000 $\pm$ 0.0859	0.0000 $\pm$ 0.0382	0.0000 $\pm$ 0.0092
* Ba	0.0554 $\pm$ 0.0520	0.0246 $\pm$ 0.0231	0.0059 $\pm$ 0.0056
* La	0.0260 $\pm$ 0.0452	0.0116 $\pm$ 0.0201	0.0028 $\pm$ 0.0048
* Hg	0.0000 $\pm$ 0.0192	0.0000 $\pm$ 0.0085	0.0000 $\pm$ 0.0020
* Pb	0.0181 $\pm$ 0.0215	0.0080 $\pm$ 0.0095	0.0019 $\pm$ 0.0023

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2849  
Client ID: OFF03-070909  
Filter ID: P8100073  
Site: OFF03  
Sample Date: 7/ 9/09  
Filter Lot #: 6336008  
Volume: 9.320 +/- 0.932 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	183. ± 10.		19.64 ± 2.238
XRF			
* Na	0.5040 ± 0.3367	0.2754 ± 0.1846	0.0541 ± 0.0365
* Mg	0.5413 ± 0.2249	0.2958 ± 0.1239	0.0581 ± 0.0248
Al	2.562 ± 0.2023	1.400 ± 0.1344	0.2749 ± 0.0350
Si	6.708 ± 0.3627	3.665 ± 0.2818	0.7197 ± 0.0818
* P	0.0011 ± 0.0237	0.0006 ± 0.0130	0.0001 ± 0.0025
S	2.776 ± 0.1661	1.517 ± 0.1229	0.2979 ± 0.0347
Cl	0.2305 ± 0.0429	0.1260 ± 0.0245	0.0247 ± 0.0052
K	1.259 ± 0.0746	0.6879 ± 0.0554	0.1351 ± 0.0157
Ca	3.776 ± 0.1955	2.064 ± 0.1553	0.4052 ± 0.0456
Ti	0.2667 ± 0.0181	0.1457 ± 0.0127	0.0286 ± 0.0035
* V	0.0056 ± 0.0068	0.0031 ± 0.0037	0.0006 ± 0.0007
* Cr	0.0102 ± 0.0079	0.0056 ± 0.0043	0.0011 ± 0.0009
Mn	0.0689 ± 0.0102	0.0377 ± 0.0059	0.0074 ± 0.0013
Fe	2.168 ± 0.1130	1.185 ± 0.0895	0.2327 ± 0.0262
* Co	0.0000 ± 0.0136	0.0000 ± 0.0074	0.0000 ± 0.0015
* Ni	0.0000 ± 0.0102	0.0000 ± 0.0056	0.0000 ± 0.0011
Cu	0.0508 ± 0.0079	0.0278 ± 0.0046	0.0055 ± 0.0010
* Zn	0.0113 ± 0.0079	0.0062 ± 0.0043	0.0012 ± 0.0009
* Ga	0.0034 ± 0.0102	0.0019 ± 0.0056	0.0004 ± 0.0011
* Ge	0.0045 ± 0.0102	0.0025 ± 0.0056	0.0005 ± 0.0011
* As	0.0034 ± 0.0136	0.0019 ± 0.0074	0.0004 ± 0.0015
* Se	0.0079 ± 0.0068	0.0043 ± 0.0037	0.0008 ± 0.0007
* Br	0.0113 ± 0.0068	0.0062 ± 0.0037	0.0012 ± 0.0007
* Rb	0.0068 ± 0.0068	0.0037 ± 0.0037	0.0007 ± 0.0007
* Sr	0.0249 ± 0.0090	0.0136 ± 0.0050	0.0027 ± 0.0010
* Y	0.0090 ± 0.0102	0.0049 ± 0.0056	0.0010 ± 0.0011
* Zr	0.0215 ± 0.0136	0.0117 ± 0.0074	0.0023 ± 0.0015
* Mo	0.0000 ± 0.0192	0.0000 ± 0.0105	0.0000 ± 0.0021
* Pd	0.0565 ± 0.0452	0.0309 ± 0.0248	0.0061 ± 0.0049
* Ag	0.0983 ± 0.0475	0.0537 ± 0.0261	0.0105 ± 0.0052
* Cd	0.0000 ± 0.0520	0.0000 ± 0.0284	0.0000 ± 0.0056
* In	0.0655 ± 0.0576	0.0358 ± 0.0316	0.0070 ± 0.0062
* Sn	0.0339 ± 0.0689	0.0185 ± 0.0377	0.0036 ± 0.0074
* Sb	0.0000 ± 0.0791	0.0000 ± 0.0432	0.0000 ± 0.0085
* Ba	0.0136 ± 0.0305	0.0074 ± 0.0167	0.0015 ± 0.0033
* La	0.0136 ± 0.0260	0.0074 ± 0.0142	0.0015 ± 0.0028
* Hg	0.0000 ± 0.0181	0.0000 ± 0.0099	0.0000 ± 0.0019
* Pb	0.0000 ± 0.0203	0.0000 ± 0.0111	0.0000 ± 0.0022

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2850  
Client ID: CAMU04-071009  
Filter ID: P8100074  
Site: CAMU04  
Sample Date: 7/10/09  
Filter Lot #: 6336008  
Volume: 24.04 +/- 2.404 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	845. ± 10.		35.15 ± 3.540
XRF			
* Na	2.850 ± 1.341	0.3373 ± 0.1588	0.1185 ± 0.0570
Mg	7.663 ± 0.7594	0.9068 ± 0.0905	0.3187 ± 0.0449
Al	16.36 ± 1.075	1.936 ± 0.1292	0.6806 ± 0.0814
Si	53.84 ± 2.859	6.372 ± 0.3466	2.240 ± 0.2536
* P	0.0000 ± 0.0542	0.0000 ± 0.0064	0.0000 ± 0.0023
S	9.377 ± 0.5062	1.110 ± 0.0613	0.3900 ± 0.0443
Cl	6.651 ± 0.3582	0.7871 ± 0.0434	0.2767 ± 0.0314
K	8.993 ± 0.4656	1.064 ± 0.0565	0.3741 ± 0.0421
Ca	43.15 ± 2.182	5.107 ± 0.2652	1.795 ± 0.2012
Ti	1.627 ± 0.0848	0.1926 ± 0.0103	0.0677 ± 0.0076
V	0.0520 ± 0.0113	0.0062 ± 0.0013	0.0022 ± 0.0005
* Cr	0.0136 ± 0.0102	0.0016 ± 0.0012	0.0006 ± 0.0004
Mn	0.6848 ± 0.0418	0.0810 ± 0.0050	0.0285 ± 0.0033
Fe	12.80 ± 0.6430	1.515 ± 0.0782	0.5326 ± 0.0596
* Co	0.0000 ± 0.0192	0.0000 ± 0.0023	0.0000 ± 0.0008
* Ni	0.0000 ± 0.0113	0.0000 ± 0.0013	0.0000 ± 0.0005
Cu	0.0904 ± 0.0102	0.0107 ± 0.0012	0.0038 ± 0.0006
Zn	0.1367 ± 0.0113	0.0162 ± 0.0014	0.0057 ± 0.0007
* Ga	0.0023 ± 0.0102	0.0003 ± 0.0012	0.0001 ± 0.0004
* Ge	0.0034 ± 0.0102	0.0004 ± 0.0012	0.0001 ± 0.0004
* As	0.0000 ± 0.0147	0.0000 ± 0.0017	0.0000 ± 0.0006
* Se	0.0000 ± 0.0068	0.0000 ± 0.0008	0.0000 ± 0.0003
Br	0.0588 ± 0.0079	0.0070 ± 0.0009	0.0024 ± 0.0004
Rb	0.0452 ± 0.0079	0.0053 ± 0.0009	0.0019 ± 0.0004
Sr	0.3729 ± 0.0215	0.0441 ± 0.0026	0.0155 ± 0.0018
* Y	0.0090 ± 0.0113	0.0011 ± 0.0013	0.0004 ± 0.0005
Zr	0.1153 ± 0.0158	0.0136 ± 0.0019	0.0048 ± 0.0008
* Mo	0.0045 ± 0.0203	0.0005 ± 0.0024	0.0002 ± 0.0008
* Pd	0.0508 ± 0.0497	0.0060 ± 0.0059	0.0021 ± 0.0021
* Ag	0.0893 ± 0.0508	0.0106 ± 0.0060	0.0037 ± 0.0021
* Cd	0.1277 ± 0.0565	0.0151 ± 0.0067	0.0053 ± 0.0024
In	0.2158 ± 0.0633	0.0255 ± 0.0075	0.0090 ± 0.0028
* Sn	0.1435 ± 0.0734	0.0170 ± 0.0087	0.0060 ± 0.0031
* Sb	0.0655 ± 0.0881	0.0078 ± 0.0104	0.0027 ± 0.0037
Ba	0.2701 ± 0.0667	0.0320 ± 0.0079	0.0112 ± 0.0030
* La	0.0000 ± 0.0576	0.0000 ± 0.0068	0.0000 ± 0.0024
* Hg	0.0000 ± 0.0192	0.0000 ± 0.0023	0.0000 ± 0.0008
Pb	0.0746 ± 0.0226	0.0088 ± 0.0027	0.0031 ± 0.0010

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2851  
Client ID: CAMU06-071009  
Filter ID: P8100075  
Site: CAMU06  
Sample Date: 7/10/09  
Filter Lot #: 6336008  
Volume: 24.04 +/- 2.404 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP  
Comments: Loose deposit in mailer - Niobium

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	2,330. ± 10.		96.92 ± 9.701
XRF			
* Na	1.678 ± 1.505	0.0720 ± 0.0646	0.0698 ± 0.0630
Mg	25.41 ± 2.375	1.091 ± 0.1020	1.057 ± 0.1447
Al	43.09 ± 3.079	1.849 ± 0.1324	1.792 ± 0.2203
Si	125.5 ± 7.195	5.388 ± 0.3097	5.222 ± 0.6019
* P	0.0000 ± 0.0881	0.0000 ± 0.0038	0.0000 ± 0.0037
S	12.29 ± 0.6961	0.5277 ± 0.0300	0.5114 ± 0.0588
Cl	11.31 ± 0.6204	0.4855 ± 0.0267	0.4705 ± 0.0537
K	22.36 ± 1.161	0.9598 ± 0.0500	0.9302 ± 0.1048
Ca	89.43 ± 4.569	3.838 ± 0.1968	3.720 ± 0.4177
Ti	4.086 ± 0.2316	0.1754 ± 0.0100	0.1700 ± 0.0195
* V	0.1243 ± 0.0418	0.0053 ± 0.0018	0.0052 ± 0.0018
Cr	0.0644 ± 0.0158	0.0028 ± 0.0007	0.0027 ± 0.0007
Mn	3.084 ± 0.1571	0.1324 ± 0.0068	0.1283 ± 0.0144
Fe	25.96 ± 1.302	1.114 ± 0.0561	1.080 ± 0.1208
* Co	0.0000 ± 0.0260	0.0000 ± 0.0011	0.0000 ± 0.0011
* Ni	0.0000 ± 0.0124	0.0000 ± 0.0005	0.0000 ± 0.0005
Cu	0.1300 ± 0.0124	0.0056 ± 0.0005	0.0054 ± 0.0007
Zn	0.1966 ± 0.0147	0.0084 ± 0.0006	0.0082 ± 0.0010
Ga	0.0384 ± 0.0113	0.0016 ± 0.0005	0.0016 ± 0.0005
* Ge	0.0000 ± 0.0102	0.0000 ± 0.0004	0.0000 ± 0.0004
* As	0.0045 ± 0.0158	0.0002 ± 0.0007	0.0002 ± 0.0007
* Se	0.0136 ± 0.0079	0.0006 ± 0.0003	0.0006 ± 0.0003
Br	0.0667 ± 0.0090	0.0029 ± 0.0004	0.0028 ± 0.0005
Rb	0.0746 ± 0.0090	0.0032 ± 0.0004	0.0031 ± 0.0005
Sr	0.8159 ± 0.0429	0.0350 ± 0.0018	0.0339 ± 0.0038
* Y	0.0034 ± 0.0113	0.0001 ± 0.0005	0.0001 ± 0.0005
Zr	0.3560 ± 0.0249	0.0153 ± 0.0011	0.0148 ± 0.0018
Nb	0.1141 ± 0.0192	0.0049 ± 0.0008	0.0047 ± 0.0009
* Mo	0.0000 ± 0.0215	0.0000 ± 0.0009	0.0000 ± 0.0009
* Pd	0.1288 ± 0.0531	0.0055 ± 0.0023	0.0054 ± 0.0023
* Ag	0.1130 ± 0.0565	0.0048 ± 0.0024	0.0047 ± 0.0024
* Cd	0.1559 ± 0.0610	0.0067 ± 0.0026	0.0065 ± 0.0026
* In	0.1706 ± 0.0678	0.0073 ± 0.0029	0.0071 ± 0.0029
* Sn	0.0373 ± 0.0768	0.0016 ± 0.0033	0.0016 ± 0.0032
* Sb	0.1785 ± 0.0949	0.0077 ± 0.0041	0.0074 ± 0.0040
Ba	0.7458 ± 0.1582	0.0320 ± 0.0068	0.0310 ± 0.0073
* La	0.0000 ± 0.1390	0.0000 ± 0.0060	0.0000 ± 0.0058
* Hg	0.0418 ± 0.0192	0.0018 ± 0.0008	0.0017 ± 0.0008
Pb	0.1153 ± 0.0249	0.0049 ± 0.0011	0.0048 ± 0.0011

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2852  
Client ID: BMI03-071009  
Filter ID: P8100076  
Site: BMI03  
Sample Date: 7/10/09  
Filter Lot #: 6336008  
Volume: 19.55 +/- 1.955 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	280. ± 10.		14.32 ± 1.521
XRF			
* Na	0.2531 ± 0.4181	0.0904 ± 0.1494	0.0129 ± 0.0214
Mg	1.683 ± 0.3243	0.6009 ± 0.1178	0.0861 ± 0.0187
Al	5.193 ± 0.3605	1.855 ± 0.1448	0.2657 ± 0.0323
Si	14.51 ± 0.7616	5.182 ± 0.3290	0.7422 ± 0.0838
* P	0.0068 ± 0.0316	0.0024 ± 0.0113	0.0003 ± 0.0016
S	5.910 ± 0.3232	2.111 ± 0.1379	0.3023 ± 0.0345
Cl	1.503 ± 0.1017	0.5368 ± 0.0411	0.0769 ± 0.0093
K	2.906 ± 0.1571	1.038 ± 0.0672	0.1487 ± 0.0169
Ca	8.687 ± 0.4418	3.103 ± 0.1928	0.4444 ± 0.0499
Ti	1.014 ± 0.0542	0.3620 ± 0.0233	0.0518 ± 0.0059
V	0.0542 ± 0.0102	0.0194 ± 0.0037	0.0028 ± 0.0006
* Cr	0.0102 ± 0.0090	0.0036 ± 0.0032	0.0005 ± 0.0005
Mn	0.2328 ± 0.0170	0.0831 ± 0.0067	0.0119 ± 0.0015
Fe	4.993 ± 0.2531	1.783 ± 0.1106	0.2554 ± 0.0286
* Co	0.0000 ± 0.0158	0.0000 ± 0.0056	0.0000 ± 0.0008
* Ni	0.0000 ± 0.0102	0.0000 ± 0.0036	0.0000 ± 0.0005
Cu	0.0407 ± 0.0090	0.0145 ± 0.0033	0.0021 ± 0.0005
Zn	0.0508 ± 0.0090	0.0182 ± 0.0033	0.0026 ± 0.0005
* Ga	0.0034 ± 0.0113	0.0012 ± 0.0040	0.0002 ± 0.0006
* Ge	0.0000 ± 0.0102	0.0000 ± 0.0036	0.0000 ± 0.0005
* As	0.0000 ± 0.0147	0.0000 ± 0.0052	0.0000 ± 0.0008
* Se	0.0079 ± 0.0079	0.0028 ± 0.0028	0.0004 ± 0.0004
Br	0.0396 ± 0.0079	0.0141 ± 0.0029	0.0020 ± 0.0005
* Rb	0.0124 ± 0.0079	0.0044 ± 0.0028	0.0006 ± 0.0004
Sr	0.0520 ± 0.0102	0.0186 ± 0.0037	0.0027 ± 0.0006
* Y	0.0068 ± 0.0113	0.0024 ± 0.0040	0.0003 ± 0.0006
Zr	0.1028 ± 0.0158	0.0367 ± 0.0058	0.0053 ± 0.0010
* Mo	0.0000 ± 0.0203	0.0000 ± 0.0073	0.0000 ± 0.0010
* Pd	0.0689 ± 0.0486	0.0246 ± 0.0174	0.0035 ± 0.0025
* Ag	0.0622 ± 0.0508	0.0222 ± 0.0182	0.0032 ± 0.0026
* Cd	0.1119 ± 0.0554	0.0400 ± 0.0198	0.0057 ± 0.0029
* In	0.0418 ± 0.0610	0.0149 ± 0.0218	0.0021 ± 0.0031
* Sn	0.0000 ± 0.0723	0.0000 ± 0.0258	0.0000 ± 0.0037
* Sb	0.0147 ± 0.0881	0.0052 ± 0.0315	0.0008 ± 0.0045
* Ba	0.1243 ± 0.0497	0.0444 ± 0.0178	0.0064 ± 0.0026
* La	0.0192 ± 0.0452	0.0069 ± 0.0161	0.0010 ± 0.0023
* Hg	0.0203 ± 0.0181	0.0073 ± 0.0065	0.0010 ± 0.0009
Pb	0.0678 ± 0.0226	0.0242 ± 0.0081	0.0035 ± 0.0012

\* - Concentration is less than three times the uncertainty



Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2853  
Client ID: BMI06-071009  
Filter ID: P8100077  
Site: BMI06  
Sample Date: 7/10/09  
Filter Lot #: 6336008  
Volume: 24.18 +/- 2.418 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP  
Comments: Niobium

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	582. ± 10.		24.07 ± 2.442
XRF			
* Na	0.0000 ± 0.5469	0.0000 ± 0.0940	0.0000 ± 0.0226
Mg	2.423 ± 0.4317	0.4163 ± 0.0745	0.1002 ± 0.0205
Al	7.243 ± 0.4995	1.245 ± 0.0884	0.2996 ± 0.0364
Si	20.96 ± 1.107	3.602 ± 0.2001	0.8669 ± 0.0980
* P	0.0000 ± 0.0418	0.0000 ± 0.0072	0.0000 ± 0.0017
S	8.660 ± 0.4644	1.488 ± 0.0838	0.3582 ± 0.0406
Cl	8.189 ± 0.4317	1.407 ± 0.0780	0.3387 ± 0.0383
K	4.004 ± 0.2136	0.6879 ± 0.0386	0.1656 ± 0.0188
Ca	16.57 ± 0.8385	2.846 ± 0.1521	0.6851 ± 0.0768
Ti	4.099 ± 0.2079	0.7042 ± 0.0377	0.1695 ± 0.0190
V	0.4735 ± 0.0282	0.0814 ± 0.0051	0.0196 ± 0.0023
Cr	0.1492 ± 0.0136	0.0256 ± 0.0024	0.0062 ± 0.0008
Mn	0.6690 ± 0.0362	0.1149 ± 0.0065	0.0277 ± 0.0031
Fe	8.113 ± 0.4091	1.394 ± 0.0743	0.3355 ± 0.0376
* Co	0.0000 ± 0.0170	0.0000 ± 0.0029	0.0000 ± 0.0007
* Ni	0.0000 ± 0.0113	0.0000 ± 0.0019	0.0000 ± 0.0005
Cu	0.1593 ± 0.0124	0.0274 ± 0.0022	0.0066 ± 0.0008
Zn	0.0960 ± 0.0102	0.0165 ± 0.0018	0.0040 ± 0.0006
* Ga	0.0000 ± 0.0102	0.0000 ± 0.0017	0.0000 ± 0.0004
* Ge	0.0000 ± 0.0102	0.0000 ± 0.0017	0.0000 ± 0.0004
* As	0.0000 ± 0.0147	0.0000 ± 0.0025	0.0000 ± 0.0006
* Se	0.0136 ± 0.0068	0.0023 ± 0.0012	0.0006 ± 0.0003
Br	0.0554 ± 0.0079	0.0095 ± 0.0014	0.0023 ± 0.0004
* Rb	0.0056 ± 0.0079	0.0010 ± 0.0014	0.0002 ± 0.0003
Sr	0.1718 ± 0.0136	0.0295 ± 0.0024	0.0071 ± 0.0009
* Y	0.0181 ± 0.0113	0.0031 ± 0.0019	0.0007 ± 0.0005
Zr	0.7718 ± 0.0429	0.1326 ± 0.0077	0.0319 ± 0.0037
Nb	0.3220 ± 0.0237	0.0553 ± 0.0042	0.0133 ± 0.0017
* Mo	0.0000 ± 0.0203	0.0000 ± 0.0035	0.0000 ± 0.0008
* Pd	0.0396 ± 0.0486	0.0068 ± 0.0083	0.0016 ± 0.0020
* Ag	0.0678 ± 0.0508	0.0116 ± 0.0087	0.0028 ± 0.0021
* Cd	0.0848 ± 0.0542	0.0146 ± 0.0093	0.0035 ± 0.0023
* In	0.0893 ± 0.0610	0.0153 ± 0.0105	0.0037 ± 0.0026
* Sn	0.0407 ± 0.0723	0.0070 ± 0.0124	0.0017 ± 0.0030
* Sb	0.0000 ± 0.0859	0.0000 ± 0.0148	0.0000 ± 0.0036
* Ba	0.2136 ± 0.1480	0.0367 ± 0.0254	0.0088 ± 0.0062
* La	0.0000 ± 0.1333	0.0000 ± 0.0229	0.0000 ± 0.0055
* Hg	0.0181 ± 0.0170	0.0031 ± 0.0029	0.0007 ± 0.0007
Pb	0.1424 ± 0.0237	0.0245 ± 0.0041	0.0059 ± 0.0011

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2854  
Client ID: BMI08-071009  
Filter ID: P8100078  
Site: BMI08  
Sample Date: 7/10/09  
Filter Lot #: 6336008  
Volume: 24.16 +/- 2.416 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP  
Comments: Loose deposit in mailer - Niobium

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	1,243. ± 10.		51.45 ± 5.161
XRF			
* Na	0.0000 ± 0.6192	0.0000 ± 0.0498	0.0000 ± 0.0256
Mg	4.375 ± 0.5548	0.3520 ± 0.0447	0.1811 ± 0.0292
Al	11.13 ± 0.7628	0.8955 ± 0.0618	0.4607 ± 0.0559
Si	30.27 ± 1.637	2.435 ± 0.1332	1.253 ± 0.1425
* P	0.0000 ± 0.0429	0.0000 ± 0.0035	0.0000 ± 0.0018
S	4.971 ± 0.2848	0.3999 ± 0.0231	0.2057 ± 0.0237
Cl	2.144 ± 0.1345	0.1725 ± 0.0109	0.0887 ± 0.0105
K	5.718 ± 0.3006	0.4600 ± 0.0245	0.2367 ± 0.0267
Ca	18.92 ± 0.9594	1.522 ± 0.0781	0.7830 ± 0.0878
Ti	2.774 ± 0.1424	0.2232 ± 0.0116	0.1148 ± 0.0129
V	0.1955 ± 0.0170	0.0157 ± 0.0014	0.0081 ± 0.0011
Cr	0.0542 ± 0.0113	0.0044 ± 0.0009	0.0022 ± 0.0005
Mn	1.310 ± 0.0723	0.1054 ± 0.0059	0.0542 ± 0.0062
Fe	9.936 ± 0.5006	0.7994 ± 0.0408	0.4113 ± 0.0461
* Co	0.0000 ± 0.0181	0.0000 ± 0.0015	0.0000 ± 0.0007
* Ni	0.0000 ± 0.0113	0.0000 ± 0.0009	0.0000 ± 0.0005
Cu	0.0689 ± 0.0102	0.0055 ± 0.0008	0.0029 ± 0.0005
Zn	0.0904 ± 0.0102	0.0073 ± 0.0008	0.0037 ± 0.0006
* Ga	0.0056 ± 0.0113	0.0005 ± 0.0009	0.0002 ± 0.0005
* Ge	0.0000 ± 0.0113	0.0000 ± 0.0009	0.0000 ± 0.0005
* As	0.0000 ± 0.0158	0.0000 ± 0.0013	0.0000 ± 0.0007
* Se	0.0068 ± 0.0079	0.0005 ± 0.0006	0.0003 ± 0.0003
Br	0.0418 ± 0.0079	0.0034 ± 0.0006	0.0017 ± 0.0004
* Rb	0.0192 ± 0.0079	0.0015 ± 0.0006	0.0008 ± 0.0003
Sr	0.2396 ± 0.0158	0.0193 ± 0.0013	0.0099 ± 0.0012
* Y	0.0068 ± 0.0113	0.0005 ± 0.0009	0.0003 ± 0.0005
Zr	0.2904 ± 0.0226	0.0234 ± 0.0018	0.0120 ± 0.0015
Nb	0.0554 ± 0.0181	0.0045 ± 0.0015	0.0023 ± 0.0008
* Mo	0.0000 ± 0.0215	0.0000 ± 0.0017	0.0000 ± 0.0009
* Pd	0.0237 ± 0.0497	0.0019 ± 0.0040	0.0010 ± 0.0021
* Ag	0.0000 ± 0.0542	0.0000 ± 0.0044	0.0000 ± 0.0022
* Cd	0.0836 ± 0.0576	0.0067 ± 0.0046	0.0035 ± 0.0024
* In	0.1458 ± 0.0644	0.0117 ± 0.0052	0.0060 ± 0.0027
* Sn	0.0023 ± 0.0746	0.0002 ± 0.0060	0.0001 ± 0.0031
* Sb	0.0000 ± 0.0904	0.0000 ± 0.0073	0.0000 ± 0.0037
Ba	0.4373 ± 0.1006	0.0352 ± 0.0081	0.0181 ± 0.0045
* La	0.0000 ± 0.0870	0.0000 ± 0.0070	0.0000 ± 0.0036
* Hg	0.0090 ± 0.0192	0.0007 ± 0.0015	0.0004 ± 0.0008
Pb	0.1774 ± 0.0260	0.0143 ± 0.0021	0.0073 ± 0.0013

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2855  
Client ID: CAMU04-071409  
Filter ID: P8100079  
Site: CAMU04  
Sample Date: 7/14/09  
Filter Lot #: 6336008  
Volume: 24.04 +/- 2.404 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	340. ± 10.		14.14 ± 1.474
XRF			
* Na	0.0000 ± 0.4418	0.0000 ± 0.1300	0.0000 ± 0.0184
Mg	4.088 ± 0.4497	1.202 ± 0.1369	0.1701 ± 0.0253
Al	9.359 ± 0.6091	2.753 ± 0.1966	0.3893 ± 0.0464
Si	29.65 ± 1.540	8.721 ± 0.5206	1.233 ± 0.1390
* P	0.0000 ± 0.0373	0.0000 ± 0.0110	0.0000 ± 0.0016
S	3.671 ± 0.2170	1.080 ± 0.0713	0.1527 ± 0.0177
Cl	1.564 ± 0.1062	0.4600 ± 0.0340	0.0651 ± 0.0079
K	4.990 ± 0.4012	1.468 ± 0.1256	0.2076 ± 0.0266
Ca	22.58 ± 1.140	6.640 ± 0.3881	0.9392 ± 0.1052
Ti	0.8848 ± 0.0486	0.2602 ± 0.0162	0.0368 ± 0.0042
* V	0.0136 ± 0.0102	0.0040 ± 0.0030	0.0006 ± 0.0004
* Cr	0.0068 ± 0.0090	0.0020 ± 0.0027	0.0003 ± 0.0004
Mn	0.2531 ± 0.0181	0.0744 ± 0.0058	0.0105 ± 0.0013
Fe	7.252 ± 0.3661	2.133 ± 0.1246	0.3017 ± 0.0338
* Co	0.0000 ± 0.0158	0.0000 ± 0.0047	0.0000 ± 0.0007
* Ni	0.0000 ± 0.0102	0.0000 ± 0.0030	0.0000 ± 0.0004
Cu	0.0452 ± 0.0090	0.0133 ± 0.0027	0.0019 ± 0.0004
Zn	0.1785 ± 0.0136	0.0525 ± 0.0043	0.0074 ± 0.0009
* Ga	0.0090 ± 0.0113	0.0027 ± 0.0033	0.0004 ± 0.0005
* Ge	0.0000 ± 0.0102	0.0000 ± 0.0030	0.0000 ± 0.0004
* As	0.0023 ± 0.0147	0.0007 ± 0.0043	0.0001 ± 0.0006
* Se	0.0011 ± 0.0079	0.0003 ± 0.0023	0.0000 ± 0.0003
* Br	0.0226 ± 0.0079	0.0066 ± 0.0023	0.0009 ± 0.0003
Rb	0.0260 ± 0.0079	0.0076 ± 0.0023	0.0011 ± 0.0003
Sr	0.1842 ± 0.0136	0.0542 ± 0.0043	0.0077 ± 0.0010
* Y	0.0294 ± 0.0113	0.0086 ± 0.0033	0.0012 ± 0.0005
* Zr	0.0294 ± 0.0147	0.0086 ± 0.0043	0.0012 ± 0.0006
* Mo	0.0000 ± 0.0215	0.0000 ± 0.0063	0.0000 ± 0.0009
* Pd	0.0723 ± 0.0497	0.0213 ± 0.0146	0.0030 ± 0.0021
* Ag	0.1119 ± 0.0520	0.0329 ± 0.0153	0.0047 ± 0.0022
* Cd	0.0622 ± 0.0565	0.0183 ± 0.0166	0.0026 ± 0.0024
* In	0.0396 ± 0.0633	0.0116 ± 0.0186	0.0016 ± 0.0026
* Sn	0.0000 ± 0.0723	0.0000 ± 0.0213	0.0000 ± 0.0030
* Sb	0.0000 ± 0.0870	0.0000 ± 0.0256	0.0000 ± 0.0036
* Ba	0.0237 ± 0.0475	0.0070 ± 0.0140	0.0010 ± 0.0020
* La	0.0000 ± 0.0384	0.0000 ± 0.0113	0.0000 ± 0.0016
* Hg	0.0113 ± 0.0181	0.0033 ± 0.0053	0.0005 ± 0.0008
* Pb	0.0000 ± 0.0215	0.0000 ± 0.0063	0.0000 ± 0.0009

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

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Lab ID: 09-T2856  
Client ID: CAMU06-071409  
Filter ID: P8100080  
Site: CAMU06  
Sample Date: 7/14/09  
Filter Lot #: 6336008  
Volume: 17.39 +/- 1.739 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP  
Comments: Loose deposit in mailer - Niobium

Analyte	$\mu\text{g}/\text{filter}$	percent	$\mu\text{g}/\text{m}^3$
Gravimetry			
Net Mass	3,001. $\pm$ 10.		172.6 $\pm$ 17.27
XRF			
* Na	0.0000 $\pm$ 1.911	0.0000 $\pm$ 0.0637	0.0000 $\pm$ 0.1099
Mg	32.32 $\pm$ 3.156	1.077 $\pm$ 0.1052	1.858 $\pm$ 0.2598
Al	56.91 $\pm$ 4.236	1.896 $\pm$ 0.1413	3.272 $\pm$ 0.4080
Si	165.9 $\pm$ 9.837	5.528 $\pm$ 0.3283	9.539 $\pm$ 1.109
* P	0.0520 $\pm$ 0.0994	0.0017 $\pm$ 0.0033	0.0030 $\pm$ 0.0057
S	9.224 $\pm$ 0.5480	0.3074 $\pm$ 0.0183	0.5304 $\pm$ 0.0617
Cl	14.46 $\pm$ 0.7933	0.4820 $\pm$ 0.0265	0.8317 $\pm$ 0.0949
K	29.83 $\pm$ 1.554	0.9941 $\pm$ 0.0519	1.715 $\pm$ 0.1934
Ca	114.9 $\pm$ 5.900	3.829 $\pm$ 0.1970	6.608 $\pm$ 0.7428
Ti	5.218 $\pm$ 0.2893	0.1739 $\pm$ 0.0097	0.3001 $\pm$ 0.0343
V	0.1661 $\pm$ 0.0475	0.0055 $\pm$ 0.0016	0.0096 $\pm$ 0.0029
Cr	0.0633 $\pm$ 0.0181	0.0021 $\pm$ 0.0006	0.0036 $\pm$ 0.0011
Mn	1.408 $\pm$ 0.0780	0.0469 $\pm$ 0.0026	0.0810 $\pm$ 0.0093
Fe	32.05 $\pm$ 1.606	1.068 $\pm$ 0.0536	1.843 $\pm$ 0.2061
* Co	0.0000 $\pm$ 0.0282	0.0000 $\pm$ 0.0009	0.0000 $\pm$ 0.0016
* Ni	0.0000 $\pm$ 0.0136	0.0000 $\pm$ 0.0005	0.0000 $\pm$ 0.0008
Cu	0.0531 $\pm$ 0.0102	0.0018 $\pm$ 0.0003	0.0031 $\pm$ 0.0007
Zn	0.1910 $\pm$ 0.0237	0.0064 $\pm$ 0.0008	0.0110 $\pm$ 0.0018
* Ga	0.0203 $\pm$ 0.0113	0.0007 $\pm$ 0.0004	0.0012 $\pm$ 0.0007
* Ge	0.0192 $\pm$ 0.0113	0.0006 $\pm$ 0.0004	0.0011 $\pm$ 0.0007
* As	0.0237 $\pm$ 0.0158	0.0008 $\pm$ 0.0005	0.0014 $\pm$ 0.0009
* Se	0.0000 $\pm$ 0.0079	0.0000 $\pm$ 0.0003	0.0000 $\pm$ 0.0005
Br	0.0542 $\pm$ 0.0079	0.0018 $\pm$ 0.0003	0.0031 $\pm$ 0.0006
Rb	0.1017 $\pm$ 0.0102	0.0034 $\pm$ 0.0003	0.0058 $\pm$ 0.0008
Sr	1.165 $\pm$ 0.0599	0.0388 $\pm$ 0.0020	0.0670 $\pm$ 0.0075
* Y	0.0305 $\pm$ 0.0113	0.0010 $\pm$ 0.0004	0.0018 $\pm$ 0.0007
Zr	0.5040 $\pm$ 0.0305	0.0168 $\pm$ 0.0010	0.0290 $\pm$ 0.0034
Nb	0.1107 $\pm$ 0.0192	0.0037 $\pm$ 0.0006	0.0064 $\pm$ 0.0013
* Mo	0.0000 $\pm$ 0.0215	0.0000 $\pm$ 0.0007	0.0000 $\pm$ 0.0012
* Pd	0.0983 $\pm$ 0.0542	0.0033 $\pm$ 0.0018	0.0057 $\pm$ 0.0032
* Ag	0.1605 $\pm$ 0.0576	0.0053 $\pm$ 0.0019	0.0092 $\pm$ 0.0034
* Cd	0.1763 $\pm$ 0.0633	0.0059 $\pm$ 0.0021	0.0101 $\pm$ 0.0038
* In	0.0870 $\pm$ 0.0689	0.0029 $\pm$ 0.0023	0.0050 $\pm$ 0.0040
* Sn	0.1051 $\pm$ 0.0814	0.0035 $\pm$ 0.0027	0.0060 $\pm$ 0.0047
* Sb	0.1062 $\pm$ 0.0972	0.0035 $\pm$ 0.0032	0.0061 $\pm$ 0.0056
Ba	1.313 $\pm$ 0.1966	0.0438 $\pm$ 0.0066	0.0755 $\pm$ 0.0136
* La	0.0000 $\pm$ 0.1650	0.0000 $\pm$ 0.0055	0.0000 $\pm$ 0.0095
* Hg	0.0147 $\pm$ 0.0215	0.0005 $\pm$ 0.0007	0.0008 $\pm$ 0.0012
Pb	0.1220 $\pm$ 0.0249	0.0041 $\pm$ 0.0008	0.0070 $\pm$ 0.0016

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2857  
Client ID: BMI03-071409  
Filter ID: P8100081  
Site: BMI03  
Sample Date: 7/14/09  
Filter Lot #: 6336008  
Volume: 18.95 +/- 1.895 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP  
Comments: Niobium

Analyte	$\mu\text{g}/\text{filter}$	percent	$\mu\text{g}/\text{m}^3$
Gravimetry			
Net Mass	482. $\pm$ 10.		25.44 $\pm$ 2.598
XRF			
* Na	0.0000 $\pm$ 0.4780	0.0000 $\pm$ 0.0992	0.0000 $\pm$ 0.0252
Mg	3.954 $\pm$ 0.4622	0.8203 $\pm$ 0.0974	0.2086 $\pm$ 0.0321
Al	9.003 $\pm$ 0.5955	1.868 $\pm$ 0.1295	0.4751 $\pm$ 0.0570
Si	24.46 $\pm$ 1.283	5.076 $\pm$ 0.2862	1.291 $\pm$ 0.1458
* P	0.0000 $\pm$ 0.0384	0.0000 $\pm$ 0.0080	0.0000 $\pm$ 0.0020
S	5.554 $\pm$ 0.3096	1.152 $\pm$ 0.0685	0.2931 $\pm$ 0.0336
Cl	3.444 $\pm$ 0.1955	0.7146 $\pm$ 0.0432	0.1818 $\pm$ 0.0209
K	4.538 $\pm$ 0.2396	0.9415 $\pm$ 0.0534	0.2395 $\pm$ 0.0271
Ca	14.88 $\pm$ 0.7537	3.088 $\pm$ 0.1690	0.7853 $\pm$ 0.0880
Ti	2.402 $\pm$ 0.1243	0.4984 $\pm$ 0.0278	0.1268 $\pm$ 0.0143
V	0.1955 $\pm$ 0.0170	0.0406 $\pm$ 0.0036	0.0103 $\pm$ 0.0014
Cr	0.0542 $\pm$ 0.0113	0.0113 $\pm$ 0.0024	0.0029 $\pm$ 0.0007
Mn	4.074 $\pm$ 0.2090	0.8452 $\pm$ 0.0468	0.2150 $\pm$ 0.0242
Fe	7.494 $\pm$ 0.3786	1.555 $\pm$ 0.0849	0.3955 $\pm$ 0.0443
* Co	0.0000 $\pm$ 0.0170	0.0000 $\pm$ 0.0035	0.0000 $\pm$ 0.0009
* Ni	0.0000 $\pm$ 0.0102	0.0000 $\pm$ 0.0021	0.0000 $\pm$ 0.0005
Cu	0.0452 $\pm$ 0.0090	0.0094 $\pm$ 0.0019	0.0024 $\pm$ 0.0005
Zn	0.0576 $\pm$ 0.0090	0.0120 $\pm$ 0.0019	0.0030 $\pm$ 0.0006
* Ga	0.0203 $\pm$ 0.0113	0.0042 $\pm$ 0.0023	0.0011 $\pm$ 0.0006
* Ge	0.0056 $\pm$ 0.0102	0.0012 $\pm$ 0.0021	0.0003 $\pm$ 0.0005
* As	0.0000 $\pm$ 0.0147	0.0000 $\pm$ 0.0030	0.0000 $\pm$ 0.0008
* Se	0.0000 $\pm$ 0.0079	0.0000 $\pm$ 0.0016	0.0000 $\pm$ 0.0004
Br	0.0531 $\pm$ 0.0079	0.0110 $\pm$ 0.0017	0.0028 $\pm$ 0.0005
* Rb	0.0102 $\pm$ 0.0079	0.0021 $\pm$ 0.0016	0.0005 $\pm$ 0.0004
Sr	0.1650 $\pm$ 0.0136	0.0342 $\pm$ 0.0029	0.0087 $\pm$ 0.0011
* Y	0.0192 $\pm$ 0.0113	0.0040 $\pm$ 0.0023	0.0010 $\pm$ 0.0006
Zr	0.2938 $\pm$ 0.0226	0.0610 $\pm$ 0.0049	0.0155 $\pm$ 0.0020
Nb	0.1379 $\pm$ 0.0192	0.0286 $\pm$ 0.0040	0.0073 $\pm$ 0.0012
* Mo	0.0000 $\pm$ 0.0215	0.0000 $\pm$ 0.0045	0.0000 $\pm$ 0.0011
* Pd	0.1356 $\pm$ 0.0497	0.0281 $\pm$ 0.0103	0.0072 $\pm$ 0.0027
* Ag	0.0034 $\pm$ 0.0520	0.0007 $\pm$ 0.0108	0.0002 $\pm$ 0.0027
* Cd	0.1006 $\pm$ 0.0554	0.0209 $\pm$ 0.0115	0.0053 $\pm$ 0.0030
In	0.2542 $\pm$ 0.0633	0.0527 $\pm$ 0.0132	0.0134 $\pm$ 0.0036
* Sn	0.0622 $\pm$ 0.0723	0.0129 $\pm$ 0.0150	0.0033 $\pm$ 0.0038
* Sb	0.0102 $\pm$ 0.0893	0.0021 $\pm$ 0.0185	0.0005 $\pm$ 0.0047
Ba	0.2836 $\pm$ 0.0904	0.0588 $\pm$ 0.0188	0.0150 $\pm$ 0.0050
* La	0.0000 $\pm$ 0.0802	0.0000 $\pm$ 0.0166	0.0000 $\pm$ 0.0042
* Hg	0.0113 $\pm$ 0.0203	0.0023 $\pm$ 0.0042	0.0006 $\pm$ 0.0011
Pb	0.0814 $\pm$ 0.0237	0.0169 $\pm$ 0.0049	0.0043 $\pm$ 0.0013

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2858  
Client ID: BMI06-071409  
Filter ID: P8100082  
Site: BMI06  
Sample Date: 7/14/09  
Filter Lot #: 6336008  
Volume: 24.04 +/- 2.404 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	475. ± 10.		19.76 ± 2.019
XRF			
* Na	0.2961 ± 0.4904	0.0623 ± 0.1033	0.0123 ± 0.0204
Mg	3.757 ± 0.4554	0.7910 ± 0.0973	0.1563 ± 0.0246
Al	8.011 ± 0.5356	1.686 ± 0.1182	0.3332 ± 0.0401
Si	23.32 ± 1.224	4.910 ± 0.2776	0.9702 ± 0.1096
* P	0.0000 ± 0.0373	0.0000 ± 0.0079	0.0000 ± 0.0016
S	6.009 ± 0.3311	1.265 ± 0.0746	0.2500 ± 0.0285
Cl	3.097 ± 0.1785	0.6521 ± 0.0400	0.1288 ± 0.0149
K	4.257 ± 0.2249	0.8962 ± 0.0510	0.1771 ± 0.0200
Ca	20.95 ± 1.516	4.411 ± 0.3325	0.8715 ± 0.1076
Ti	1.210 ± 0.0644	0.2548 ± 0.0146	0.0503 ± 0.0057
V	0.0960 ± 0.0113	0.0202 ± 0.0024	0.0040 ± 0.0006
Cr	0.0328 ± 0.0102	0.0069 ± 0.0021	0.0014 ± 0.0004
Mn	1.671 ± 0.0904	0.3518 ± 0.0204	0.0695 ± 0.0079
Fe	7.006 ± 0.3537	1.475 ± 0.0807	0.2914 ± 0.0326
* Co	0.0000 ± 0.0170	0.0000 ± 0.0036	0.0000 ± 0.0007
* Ni	0.0000 ± 0.0102	0.0000 ± 0.0021	0.0000 ± 0.0004
Cu	0.2768 ± 0.0181	0.0583 ± 0.0040	0.0115 ± 0.0014
Zn	0.0927 ± 0.0102	0.0195 ± 0.0022	0.0039 ± 0.0006
* Ga	0.0045 ± 0.0113	0.0010 ± 0.0024	0.0002 ± 0.0005
* Ge	0.0000 ± 0.0102	0.0000 ± 0.0021	0.0000 ± 0.0004
* As	0.0011 ± 0.0147	0.0002 ± 0.0031	0.0000 ± 0.0006
* Se	0.0090 ± 0.0079	0.0019 ± 0.0017	0.0004 ± 0.0003
Br	0.0622 ± 0.0079	0.0131 ± 0.0017	0.0026 ± 0.0004
* Rb	0.0102 ± 0.0079	0.0021 ± 0.0017	0.0004 ± 0.0003
Sr	0.1695 ± 0.0136	0.0357 ± 0.0030	0.0071 ± 0.0009
* Y	0.0000 ± 0.0113	0.0000 ± 0.0024	0.0000 ± 0.0005
Zr	0.1006 ± 0.0158	0.0212 ± 0.0034	0.0042 ± 0.0008
* Mo	0.0000 ± 0.0203	0.0000 ± 0.0043	0.0000 ± 0.0008
* Pd	0.0373 ± 0.0486	0.0079 ± 0.0102	0.0016 ± 0.0020
* Ag	0.0147 ± 0.0508	0.0031 ± 0.0107	0.0006 ± 0.0021
* Cd	0.0836 ± 0.0554	0.0176 ± 0.0117	0.0035 ± 0.0023
* In	0.0757 ± 0.0610	0.0159 ± 0.0129	0.0031 ± 0.0026
* Sn	0.0000 ± 0.0723	0.0000 ± 0.0152	0.0000 ± 0.0030
* Sb	0.0000 ± 0.0870	0.0000 ± 0.0183	0.0000 ± 0.0036
Ba	0.1887 ± 0.0588	0.0397 ± 0.0124	0.0078 ± 0.0026
* La	0.0000 ± 0.0531	0.0000 ± 0.0112	0.0000 ± 0.0022
* Hg	0.0249 ± 0.0181	0.0052 ± 0.0038	0.0010 ± 0.0008
* Pb	0.0486 ± 0.0226	0.0102 ± 0.0048	0.0020 ± 0.0010

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2859  
Client ID: BMI08-071409  
Filter ID: P8100083  
Site: BMI08  
Sample Date: 7/14/09  
Filter Lot #: 6336008  
Volume: 24.04 +/- 2.404 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	140. ± 10.		5.824 ± 0.7157
XRF			
* Na	0.4554 ± 0.3266	0.3253 ± 0.2344	0.0189 ± 0.0137
* Mg	0.0780 ± 0.1288	0.0557 ± 0.0921	0.0032 ± 0.0054
Al	0.9662 ± 0.1186	0.6901 ± 0.0980	0.0402 ± 0.0064
Si	2.794 ± 0.1661	1.996 ± 0.1855	0.1162 ± 0.0135
* P	0.0011 ± 0.0237	0.0008 ± 0.0170	0.0000 ± 0.0010
S	0.4452 ± 0.0667	0.3180 ± 0.0528	0.0185 ± 0.0033
Cl	0.3480 ± 0.0497	0.2486 ± 0.0397	0.0145 ± 0.0025
K	0.5740 ± 0.0429	0.4100 ± 0.0424	0.0239 ± 0.0030
Ca	2.636 ± 0.1390	1.883 ± 0.1672	0.1097 ± 0.0124
Ti	0.2780 ± 0.0192	0.1986 ± 0.0197	0.0116 ± 0.0014
* V	0.0136 ± 0.0079	0.0097 ± 0.0057	0.0006 ± 0.0003
* Cr	0.0056 ± 0.0079	0.0040 ± 0.0057	0.0002 ± 0.0003
Mn	0.2102 ± 0.0158	0.1501 ± 0.0156	0.0087 ± 0.0011
Fe	0.9628 ± 0.0542	0.6877 ± 0.0626	0.0400 ± 0.0046
* Co	0.0000 ± 0.0136	0.0000 ± 0.0097	0.0000 ± 0.0006
* Ni	0.0000 ± 0.0102	0.0000 ± 0.0073	0.0000 ± 0.0004
* Cu	0.0000 ± 0.0079	0.0000 ± 0.0056	0.0000 ± 0.0003
* Zn	0.0079 ± 0.0079	0.0056 ± 0.0057	0.0003 ± 0.0003
* Ga	0.0000 ± 0.0102	0.0000 ± 0.0073	0.0000 ± 0.0004
* Ge	0.0000 ± 0.0102	0.0000 ± 0.0073	0.0000 ± 0.0004
* As	0.0000 ± 0.0147	0.0000 ± 0.0105	0.0000 ± 0.0006
* Se	0.0068 ± 0.0068	0.0048 ± 0.0049	0.0003 ± 0.0003
* Br	0.0068 ± 0.0068	0.0048 ± 0.0049	0.0003 ± 0.0003
* Rb	0.0102 ± 0.0079	0.0073 ± 0.0057	0.0004 ± 0.0003
* Sr	0.0023 ± 0.0090	0.0016 ± 0.0065	0.0001 ± 0.0004
* Y	0.0023 ± 0.0113	0.0016 ± 0.0081	0.0001 ± 0.0005
* Zr	0.0396 ± 0.0147	0.0282 ± 0.0107	0.0016 ± 0.0006
* Mo	0.0249 ± 0.0203	0.0178 ± 0.0146	0.0010 ± 0.0009
* Pd	0.0870 ± 0.0486	0.0622 ± 0.0350	0.0036 ± 0.0021
* Ag	0.0915 ± 0.0497	0.0654 ± 0.0358	0.0038 ± 0.0021
* Cd	0.0678 ± 0.0542	0.0484 ± 0.0389	0.0028 ± 0.0023
* In	0.1119 ± 0.0610	0.0799 ± 0.0440	0.0047 ± 0.0026
* Sn	0.0000 ± 0.0712	0.0000 ± 0.0508	0.0000 ± 0.0030
* Sb	0.0316 ± 0.0870	0.0226 ± 0.0622	0.0013 ± 0.0036
* Ba	0.0113 ± 0.0328	0.0081 ± 0.0234	0.0005 ± 0.0014
* La	0.0034 ± 0.0271	0.0024 ± 0.0194	0.0001 ± 0.0011
* Hg	0.0000 ± 0.0181	0.0000 ± 0.0129	0.0000 ± 0.0008
* Pb	0.0147 ± 0.0215	0.0105 ± 0.0154	0.0006 ± 0.0009

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2860  
Client ID: BMI01-071409  
Filter ID: P8100084  
Site: BMI01  
Sample Date: 7/14/09  
Filter Lot #: 6336008  
Volume: 24.04 +/- 2.404 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	191. ± 10.		7.945 ± 0.8968
XRF			
* Na	0.0384 ± 0.3774	0.0201 ± 0.1976	0.0016 ± 0.0157
Mg	1.619 ± 0.2983	0.8478 ± 0.1624	0.0674 ± 0.0141
Al	2.954 ± 0.2294	1.546 ± 0.1448	0.1229 ± 0.0156
Si	8.293 ± 0.4441	4.342 ± 0.3252	0.3450 ± 0.0391
* P	0.0000 ± 0.0282	0.0000 ± 0.0148	0.0000 ± 0.0012
S	3.695 ± 0.2757	1.935 ± 0.1763	0.1537 ± 0.0192
Cl	2.072 ± 0.1277	1.085 ± 0.0877	0.0862 ± 0.0101
K	1.505 ± 0.1582	0.7880 ± 0.0925	0.0626 ± 0.0091
Ca	7.379 ± 0.3763	3.863 ± 0.2824	0.3069 ± 0.0345
Ti	0.6870 ± 0.0384	0.3597 ± 0.0276	0.0286 ± 0.0033
* V	0.0034 ± 0.0090	0.0018 ± 0.0047	0.0001 ± 0.0004
* Cr	0.0079 ± 0.0090	0.0041 ± 0.0047	0.0003 ± 0.0004
Mn	4.243 ± 0.2181	2.222 ± 0.1630	0.1765 ± 0.0198
Fe	3.136 ± 0.1605	1.642 ± 0.1202	0.1304 ± 0.0147
* Co	0.0000 ± 0.0147	0.0000 ± 0.0077	0.0000 ± 0.0006
* Ni	0.0000 ± 0.0102	0.0000 ± 0.0053	0.0000 ± 0.0004
Cu	0.0350 ± 0.0090	0.0183 ± 0.0048	0.0015 ± 0.0004
* Zn	0.0226 ± 0.0090	0.0118 ± 0.0048	0.0009 ± 0.0004
* Ga	0.0124 ± 0.0113	0.0065 ± 0.0059	0.0005 ± 0.0005
* Ge	0.0136 ± 0.0113	0.0071 ± 0.0059	0.0006 ± 0.0005
* As	0.0136 ± 0.0147	0.0071 ± 0.0077	0.0006 ± 0.0006
* Se	0.0079 ± 0.0079	0.0041 ± 0.0041	0.0003 ± 0.0003
* Br	0.0203 ± 0.0079	0.0106 ± 0.0042	0.0008 ± 0.0003
* Rb	0.0158 ± 0.0079	0.0083 ± 0.0042	0.0007 ± 0.0003
Sr	0.0667 ± 0.0102	0.0349 ± 0.0056	0.0028 ± 0.0005
* Y	0.0136 ± 0.0113	0.0071 ± 0.0059	0.0006 ± 0.0005
* Zr	0.0249 ± 0.0147	0.0130 ± 0.0077	0.0010 ± 0.0006
* Mo	0.0011 ± 0.0215	0.0006 ± 0.0112	0.0000 ± 0.0009
* Pd	0.0972 ± 0.0497	0.0509 ± 0.0262	0.0040 ± 0.0021
* Ag	0.0983 ± 0.0520	0.0515 ± 0.0273	0.0041 ± 0.0022
* Cd	0.0000 ± 0.0554	0.0000 ± 0.0290	0.0000 ± 0.0023
* In	0.0949 ± 0.0633	0.0497 ± 0.0332	0.0039 ± 0.0027
* Sn	0.0825 ± 0.0746	0.0432 ± 0.0391	0.0034 ± 0.0031
* Sb	0.0881 ± 0.0904	0.0461 ± 0.0474	0.0037 ± 0.0038
* Ba	0.0045 ± 0.0429	0.0024 ± 0.0225	0.0002 ± 0.0018
* La	0.0000 ± 0.0350	0.0000 ± 0.0183	0.0000 ± 0.0015
* Hg	0.0158 ± 0.0215	0.0083 ± 0.0112	0.0007 ± 0.0009
* Pb	0.0000 ± 0.0226	0.0000 ± 0.0118	0.0000 ± 0.0009

\* - Concentration is less than three times the uncertainty



Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2936  
Client ID: CAMU04-071709  
Filter ID: P8100267  
Site: CAMU04  
Sample Date: 7/17/09  
Filter Lot #: 6336008  
Volume: 21.85 +/- 2.185 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP  
Comments: NUD-Ca

Analyte	$\mu\text{g}/\text{filter}$	percent	$\mu\text{g}/\text{m}^3$
Gravimetry			
Net Mass	1,476. $\pm$ 10.		67.55 $\pm$ 6.771
XRF			
* Na	0.0000 $\pm$ 0.9571	0.0000 $\pm$ 0.0648	0.0000 $\pm$ 0.0438
Mg	16.90 $\pm$ 1.481	1.145 $\pm$ 0.1007	0.7737 $\pm$ 0.1029
Al	29.55 $\pm$ 1.994	2.002 $\pm$ 0.1358	1.352 $\pm$ 0.1632
Si	88.75 $\pm$ 4.871	6.013 $\pm$ 0.3325	4.062 $\pm$ 0.4633
* P	0.0215 $\pm$ 0.0655	0.0015 $\pm$ 0.0044	0.0010 $\pm$ 0.0030
S	11.75 $\pm$ 0.6407	0.7962 $\pm$ 0.0437	0.5378 $\pm$ 0.0613
Cl	9.139 $\pm$ 0.4916	0.6192 $\pm$ 0.0336	0.4183 $\pm$ 0.0475
K	16.64 $\pm$ 1.252	1.128 $\pm$ 0.0852	0.7618 $\pm$ 0.0953
Ca	80.33 $\pm$ 7.453	5.443 $\pm$ 0.5063	3.677 $\pm$ 0.5015
Ti	2.999 $\pm$ 0.1537	0.2032 $\pm$ 0.0105	0.1373 $\pm$ 0.0154
V	0.1706 $\pm$ 0.0170	0.0116 $\pm$ 0.0012	0.0078 $\pm$ 0.0011
* Cr	0.0316 $\pm$ 0.0113	0.0021 $\pm$ 0.0008	0.0014 $\pm$ 0.0005
Mn	1.787 $\pm$ 0.1718	0.1210 $\pm$ 0.0117	0.0818 $\pm$ 0.0113
Fe	19.36 $\pm$ 0.9707	1.311 $\pm$ 0.0664	0.8859 $\pm$ 0.0991
* Co	0.0000 $\pm$ 0.0260	0.0000 $\pm$ 0.0018	0.0000 $\pm$ 0.0012
* Ni	0.0000 $\pm$ 0.0124	0.0000 $\pm$ 0.0008	0.0000 $\pm$ 0.0006
Cu	0.1130 $\pm$ 0.0124	0.0077 $\pm$ 0.0008	0.0052 $\pm$ 0.0008
Zn	0.1684 $\pm$ 0.0136	0.0114 $\pm$ 0.0009	0.0077 $\pm$ 0.0010
* Ga	0.0102 $\pm$ 0.0113	0.0007 $\pm$ 0.0008	0.0005 $\pm$ 0.0005
* Ge	0.0068 $\pm$ 0.0113	0.0005 $\pm$ 0.0008	0.0003 $\pm$ 0.0005
* As	0.0090 $\pm$ 0.0158	0.0006 $\pm$ 0.0011	0.0004 $\pm$ 0.0007
* Se	0.0011 $\pm$ 0.0079	0.0001 $\pm$ 0.0005	0.0001 $\pm$ 0.0004
Br	0.1220 $\pm$ 0.0102	0.0083 $\pm$ 0.0007	0.0056 $\pm$ 0.0007
Rb	0.0599 $\pm$ 0.0090	0.0041 $\pm$ 0.0006	0.0027 $\pm$ 0.0005
Sr	0.5447 $\pm$ 0.0305	0.0369 $\pm$ 0.0021	0.0249 $\pm$ 0.0029
* Y	0.0079 $\pm$ 0.0113	0.0005 $\pm$ 0.0008	0.0004 $\pm$ 0.0005
Zr	0.1978 $\pm$ 0.0192	0.0134 $\pm$ 0.0013	0.0091 $\pm$ 0.0013
* Mo	0.0000 $\pm$ 0.0215	0.0000 $\pm$ 0.0015	0.0000 $\pm$ 0.0010
* Pd	0.1266 $\pm$ 0.0531	0.0086 $\pm$ 0.0036	0.0058 $\pm$ 0.0025
* Ag	0.0362 $\pm$ 0.0542	0.0024 $\pm$ 0.0037	0.0017 $\pm$ 0.0025
* Cd	0.0689 $\pm$ 0.0588	0.0047 $\pm$ 0.0040	0.0032 $\pm$ 0.0027
* In	0.0633 $\pm$ 0.0655	0.0043 $\pm$ 0.0044	0.0029 $\pm$ 0.0030
* Sn	0.1300 $\pm$ 0.0780	0.0088 $\pm$ 0.0053	0.0059 $\pm$ 0.0036
* Sb	0.1412 $\pm$ 0.0938	0.0096 $\pm$ 0.0064	0.0065 $\pm$ 0.0043
Ba	0.3220 $\pm$ 0.1051	0.0218 $\pm$ 0.0071	0.0147 $\pm$ 0.0050
* La	0.0000 $\pm$ 0.0893	0.0000 $\pm$ 0.0060	0.0000 $\pm$ 0.0041
* Hg	0.0000 $\pm$ 0.0215	0.0000 $\pm$ 0.0015	0.0000 $\pm$ 0.0010
* Pb	0.0531 $\pm$ 0.0237	0.0036 $\pm$ 0.0016	0.0024 $\pm$ 0.0011

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2937  
Client ID: CAMU06-071709  
Filter ID: P8100268  
Site: CAMU06  
Sample Date: 7/17/09  
Filter Lot #: 6336008  
Volume: 24.04 +/- 2.404 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP  
Comments: Loose deposit - Niobium

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	6,047. ± 10.		251.5 ± 25.16
XRF			
* Na	1.834 ± 7.246	0.0303 ± 0.1198	0.0763 ± 0.3015
Mg	61.17 ± 8.183	1.012 ± 0.1353	2.544 ± 0.4250
Al	109.1 ± 9.936	1.804 ± 0.1643	4.538 ± 0.6138
Si	301.7 ± 20.74	4.989 ± 0.3430	12.55 ± 1.523
* P	0.2520 ± 0.2283	0.0042 ± 0.0038	0.0105 ± 0.0096
S	23.52 ± 1.449	0.3889 ± 0.0240	0.9782 ± 0.1149
Cl	27.44 ± 1.577	0.4537 ± 0.0261	1.141 ± 0.1316
K	55.92 ± 2.988	0.9248 ± 0.0494	2.326 ± 0.2637
Ca	215.7 ± 16.03	3.567 ± 0.2652	8.973 ± 1.118
Ti	9.849 ± 0.5187	0.1629 ± 0.0086	0.4097 ± 0.0463
V	0.4701 ± 0.0678	0.0078 ± 0.0011	0.0196 ± 0.0034
Cr	0.1842 ± 0.0305	0.0030 ± 0.0005	0.0077 ± 0.0015
Mn	3.762 ± 0.1932	0.0622 ± 0.0032	0.1565 ± 0.0176
Fe	59.29 ± 2.971	0.9805 ± 0.0492	2.466 ± 0.2759
* Co	0.0000 ± 0.0418	0.0000 ± 0.0007	0.0000 ± 0.0017
Ni	0.0757 ± 0.0203	0.0013 ± 0.0003	0.0031 ± 0.0009
Cu	0.2249 ± 0.0305	0.0037 ± 0.0005	0.0094 ± 0.0016
Zn	0.3989 ± 0.0362	0.0066 ± 0.0006	0.0166 ± 0.0022
* Ga	0.0271 ± 0.0124	0.0004 ± 0.0002	0.0011 ± 0.0005
* Ge	0.0000 ± 0.0124	0.0000 ± 0.0002	0.0000 ± 0.0005
* As	0.0056 ± 0.0158	0.0001 ± 0.0003	0.0002 ± 0.0007
* Se	0.0045 ± 0.0079	0.0001 ± 0.0001	0.0002 ± 0.0003
Br	0.2226 ± 0.0147	0.0037 ± 0.0002	0.0093 ± 0.0011
Rb	0.1932 ± 0.0136	0.0032 ± 0.0002	0.0080 ± 0.0010
Sr	2.008 ± 0.1017	0.0332 ± 0.0017	0.0835 ± 0.0094
Y	0.0554 ± 0.0113	0.0009 ± 0.0002	0.0023 ± 0.0005
Zr	0.9650 ± 0.0520	0.0160 ± 0.0009	0.0401 ± 0.0046
Nb	0.2509 ± 0.0215	0.0041 ± 0.0004	0.0104 ± 0.0014
* Mo	0.0000 ± 0.0203	0.0000 ± 0.0003	0.0000 ± 0.0008
* Pd	0.1526 ± 0.0588	0.0025 ± 0.0010	0.0063 ± 0.0025
* Ag	0.0848 ± 0.0610	0.0014 ± 0.0010	0.0035 ± 0.0026
* Cd	0.0034 ± 0.0655	0.0001 ± 0.0011	0.0001 ± 0.0027
In	0.2350 ± 0.0746	0.0039 ± 0.0012	0.0098 ± 0.0033
* Sn	0.0994 ± 0.0848	0.0016 ± 0.0014	0.0041 ± 0.0035
* Sb	0.1831 ± 0.1017	0.0030 ± 0.0017	0.0076 ± 0.0043
Ba	1.910 ± 0.3446	0.0316 ± 0.0057	0.0794 ± 0.0164
* La	0.0000 ± 0.2859	0.0000 ± 0.0047	0.0000 ± 0.0119
* Hg	0.0463 ± 0.0203	0.0008 ± 0.0003	0.0019 ± 0.0009
Pb	0.1559 ± 0.0260	0.0026 ± 0.0004	0.0065 ± 0.0013

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2938  
Client ID: BMI03-071709  
Filter ID: P8100269  
Site: BMI03  
Sample Date: 7/17/09  
Filter Lot #: 6336008  
Volume: 24.04 +/- 2.404 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP  
Comments: Niobium

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	888. ± 10.		36.94 ± 3.717
XRF			
* Na	3.066 ± 1.396	0.3452 ± 0.1572	0.1275 ± 0.0594
Mg	6.705 ± 0.7176	0.7551 ± 0.0813	0.2789 ± 0.0409
Al	17.40 ± 1.142	1.960 ± 0.1305	0.7239 ± 0.0866
Si	46.51 ± 2.478	5.238 ± 0.2852	1.935 ± 0.2192
* P	0.0000 ± 0.0508	0.0000 ± 0.0057	0.0000 ± 0.0021
S	16.05 ± 0.8452	1.807 ± 0.0973	0.6675 ± 0.0754
Cl	7.716 ± 0.4124	0.8689 ± 0.0475	0.3210 ± 0.0364
K	9.538 ± 0.4927	1.074 ± 0.0568	0.3968 ± 0.0447
Ca	36.36 ± 1.840	4.095 ± 0.2122	1.513 ± 0.1695
Ti	2.982 ± 0.1785	0.3358 ± 0.0205	0.1240 ± 0.0145
V	0.2656 ± 0.0384	0.0299 ± 0.0043	0.0110 ± 0.0019
Cr	0.0814 ± 0.0124	0.0092 ± 0.0014	0.0034 ± 0.0006
Mn	0.9469 ± 0.0497	0.1066 ± 0.0057	0.0394 ± 0.0044
Fe	14.51 ± 0.7288	1.634 ± 0.0841	0.6035 ± 0.0675
* Co	0.0000 ± 0.0203	0.0000 ± 0.0023	0.0000 ± 0.0008
* Ni	0.0000 ± 0.0113	0.0000 ± 0.0013	0.0000 ± 0.0005
Cu	0.1198 ± 0.0113	0.0135 ± 0.0013	0.0050 ± 0.0007
Zn	0.1650 ± 0.0124	0.0186 ± 0.0014	0.0069 ± 0.0009
* Ga	0.0045 ± 0.0113	0.0005 ± 0.0013	0.0002 ± 0.0005
* Ge	0.0000 ± 0.0102	0.0000 ± 0.0011	0.0000 ± 0.0004
* As	0.0000 ± 0.0147	0.0000 ± 0.0017	0.0000 ± 0.0006
* Se	0.0079 ± 0.0068	0.0009 ± 0.0008	0.0003 ± 0.0003
Br	0.1401 ± 0.0113	0.0158 ± 0.0013	0.0058 ± 0.0007
Rb	0.0407 ± 0.0079	0.0046 ± 0.0009	0.0017 ± 0.0004
Sr	0.3424 ± 0.0203	0.0386 ± 0.0023	0.0142 ± 0.0017
* Y	0.0113 ± 0.0113	0.0013 ± 0.0013	0.0005 ± 0.0005
Zr	0.3786 ± 0.0249	0.0426 ± 0.0028	0.0157 ± 0.0019
Nb	0.1831 ± 0.0192	0.0206 ± 0.0022	0.0076 ± 0.0011
* Mo	0.0000 ± 0.0203	0.0000 ± 0.0023	0.0000 ± 0.0008
Pd	0.1797 ± 0.0497	0.0202 ± 0.0056	0.0075 ± 0.0022
* Ag	0.0949 ± 0.0520	0.0107 ± 0.0059	0.0039 ± 0.0022
* Cd	0.0588 ± 0.0554	0.0066 ± 0.0062	0.0024 ± 0.0023
* In	0.0633 ± 0.0622	0.0071 ± 0.0070	0.0026 ± 0.0026
* Sn	0.0588 ± 0.0723	0.0066 ± 0.0081	0.0024 ± 0.0030
* Sb	0.1288 ± 0.0893	0.0145 ± 0.0101	0.0054 ± 0.0038
Ba	0.6328 ± 0.1300	0.0713 ± 0.0147	0.0263 ± 0.0060
* La	0.0000 ± 0.1220	0.0000 ± 0.0137	0.0000 ± 0.0051
* Hg	0.0237 ± 0.0181	0.0027 ± 0.0020	0.0010 ± 0.0008
Pb	0.1412 ± 0.0237	0.0159 ± 0.0027	0.0059 ± 0.0011

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2939  
Client ID: BMI06-071709  
Filter ID: P8100270  
Site: BMI06  
Sample Date: 7/17/09  
Filter Lot #: 6336008  
Volume: 24.04 +/- 2.404 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP  
Comments: Niobium

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	699. ± 10.		29.08 ± 2.937
XRF			
* Na	0.7887 ± 0.5944	0.1128 ± 0.0850	0.0328 ± 0.0249
Mg	4.702 ± 0.5503	0.6727 ± 0.0793	0.1956 ± 0.0301
Al	12.90 ± 0.8464	1.846 ± 0.1239	0.5368 ± 0.0642
Si	35.15 ± 1.857	5.029 ± 0.2752	1.462 ± 0.1654
* P	0.0000 ± 0.0452	0.0000 ± 0.0065	0.0000 ± 0.0019
S	10.50 ± 0.5594	1.502 ± 0.0829	0.4367 ± 0.0495
Cl	5.522 ± 0.2994	0.7900 ± 0.0443	0.2297 ± 0.0261
K	7.307 ± 0.3797	1.045 ± 0.0563	0.3039 ± 0.0343
Ca	28.67 ± 1.449	4.101 ± 0.2154	1.193 ± 0.1336
Ti	3.025 ± 0.1548	0.4328 ± 0.0230	0.1258 ± 0.0141
V	0.3085 ± 0.0215	0.0441 ± 0.0031	0.0128 ± 0.0016
Cr	0.0893 ± 0.0113	0.0128 ± 0.0016	0.0037 ± 0.0006
Mn	1.015 ± 0.0576	0.1452 ± 0.0085	0.0422 ± 0.0049
Fe	11.83 ± 0.5944	1.693 ± 0.0884	0.4921 ± 0.0551
* Co	0.0000 ± 0.0181	0.0000 ± 0.0026	0.0000 ± 0.0008
* Ni	0.0000 ± 0.0102	0.0000 ± 0.0015	0.0000 ± 0.0004
Cu	0.2011 ± 0.0147	0.0288 ± 0.0021	0.0084 ± 0.0010
Zn	0.1277 ± 0.0113	0.0183 ± 0.0016	0.0053 ± 0.0007
* Ga	0.0000 ± 0.0102	0.0000 ± 0.0015	0.0000 ± 0.0004
* Ge	0.0023 ± 0.0102	0.0003 ± 0.0015	0.0001 ± 0.0004
* As	0.0034 ± 0.0136	0.0005 ± 0.0019	0.0001 ± 0.0006
* Se	0.0045 ± 0.0068	0.0006 ± 0.0010	0.0002 ± 0.0003
Br	0.0859 ± 0.0079	0.0123 ± 0.0011	0.0036 ± 0.0005
Rb	0.0282 ± 0.0079	0.0040 ± 0.0011	0.0012 ± 0.0003
Sr	0.2644 ± 0.0170	0.0378 ± 0.0025	0.0110 ± 0.0013
* Y	0.0056 ± 0.0102	0.0008 ± 0.0015	0.0002 ± 0.0004
Zr	0.4079 ± 0.0260	0.0584 ± 0.0038	0.0170 ± 0.0020
Nb	0.1932 ± 0.0192	0.0276 ± 0.0028	0.0080 ± 0.0011
* Mo	0.0000 ± 0.0192	0.0000 ± 0.0027	0.0000 ± 0.0008
* Pd	0.0859 ± 0.0475	0.0123 ± 0.0068	0.0036 ± 0.0020
* Ag	0.0170 ± 0.0486	0.0024 ± 0.0070	0.0007 ± 0.0020
* Cd	0.1582 ± 0.0542	0.0226 ± 0.0078	0.0066 ± 0.0024
* In	0.1492 ± 0.0599	0.0213 ± 0.0086	0.0062 ± 0.0026
* Sn	0.0350 ± 0.0701	0.0050 ± 0.0100	0.0015 ± 0.0029
* Sb	0.0000 ± 0.0814	0.0000 ± 0.0116	0.0000 ± 0.0034
Ba	0.3706 ± 0.1130	0.0530 ± 0.0162	0.0154 ± 0.0049
* La	0.0000 ± 0.1028	0.0000 ± 0.0147	0.0000 ± 0.0043
* Hg	0.0113 ± 0.0181	0.0016 ± 0.0026	0.0005 ± 0.0008
Pb	0.1051 ± 0.0226	0.0150 ± 0.0032	0.0044 ± 0.0010

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2940  
Client ID: BMI08-071709  
Filter ID: P8100271  
Site: BMI08  
Sample Date: 7/17/09  
Filter Lot #: 6336008  
Volume: 24.04 +/- 2.404 m<sup>3</sup>  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP

Analyte	µg/filter	percent	µg/m <sup>3</sup>
Gravimetry			
Net Mass	941. ± 10.		39.14 ± 3.936
XRF			
* Na	0.0000 ± 0.7209	0.0000 ± 0.0766	0.0000 ± 0.0300
Mg	8.347 ± 0.8159	0.8871 ± 0.0872	0.3472 ± 0.0486
Al	20.53 ± 1.344	2.182 ± 0.1447	0.8541 ± 0.1021
Si	53.89 ± 2.879	5.727 ± 0.3120	2.242 ± 0.2542
* P	0.0000 ± 0.0531	0.0000 ± 0.0056	0.0000 ± 0.0022
S	15.12 ± 0.8000	1.607 ± 0.0867	0.6289 ± 0.0712
Cl	5.423 ± 0.2983	0.5763 ± 0.0323	0.2256 ± 0.0257
K	10.37 ± 0.7876	1.102 ± 0.0845	0.4313 ± 0.0542
Ca	43.71 ± 2.213	4.645 ± 0.2403	1.818 ± 0.2038
Ti	2.834 ± 0.1740	0.3012 ± 0.0188	0.1179 ± 0.0138
V	0.1492 ± 0.0373	0.0159 ± 0.0040	0.0062 ± 0.0017
Cr	0.0881 ± 0.0124	0.0094 ± 0.0013	0.0037 ± 0.0006
Mn	1.946 ± 0.1040	0.2068 ± 0.0113	0.0809 ± 0.0092
Fe	17.48 ± 0.8769	1.858 ± 0.0953	0.7272 ± 0.0814
* Co	0.0000 ± 0.0215	0.0000 ± 0.0023	0.0000 ± 0.0009
* Ni	0.0000 ± 0.0113	0.0000 ± 0.0012	0.0000 ± 0.0005
Cu	0.3379 ± 0.0339	0.0359 ± 0.0036	0.0141 ± 0.0020
Zn	0.2475 ± 0.0260	0.0263 ± 0.0028	0.0103 ± 0.0015
* Ga	0.0102 ± 0.0102	0.0011 ± 0.0011	0.0004 ± 0.0004
* Ge	0.0034 ± 0.0102	0.0004 ± 0.0011	0.0001 ± 0.0004
* As	0.0294 ± 0.0147	0.0031 ± 0.0016	0.0012 ± 0.0006
* Se	0.0170 ± 0.0068	0.0018 ± 0.0007	0.0007 ± 0.0003
Br	0.1333 ± 0.0102	0.0142 ± 0.0011	0.0055 ± 0.0007
Rb	0.0475 ± 0.0079	0.0050 ± 0.0008	0.0020 ± 0.0004
Sr	0.3966 ± 0.0226	0.0421 ± 0.0024	0.0165 ± 0.0019
* Y	0.0079 ± 0.0102	0.0008 ± 0.0011	0.0003 ± 0.0004
Zr	0.3017 ± 0.0215	0.0321 ± 0.0023	0.0126 ± 0.0015
* Mo	0.0034 ± 0.0192	0.0004 ± 0.0020	0.0001 ± 0.0008
* Pd	0.0667 ± 0.0497	0.0071 ± 0.0053	0.0028 ± 0.0021
* Ag	0.1141 ± 0.0520	0.0121 ± 0.0055	0.0047 ± 0.0022
* Cd	0.0734 ± 0.0554	0.0078 ± 0.0059	0.0031 ± 0.0023
* In	0.0000 ± 0.0622	0.0000 ± 0.0066	0.0000 ± 0.0026
* Sn	0.1266 ± 0.0734	0.0134 ± 0.0078	0.0053 ± 0.0031
* Sb	0.0000 ± 0.0848	0.0000 ± 0.0090	0.0000 ± 0.0035
Ba	0.8113 ± 0.1254	0.0862 ± 0.0134	0.0337 ± 0.0062
* La	0.0000 ± 0.1130	0.0000 ± 0.0120	0.0000 ± 0.0047
* Hg	0.0000 ± 0.0192	0.0000 ± 0.0020	0.0000 ± 0.0008
Pb	0.1266 ± 0.0237	0.0134 ± 0.0025	0.0053 ± 0.0011

\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

=====  
Lab ID: 09-T2941  
Client ID: BMI03-071709 BS  
Filter ID: P8100272  
Site: BMI03  
Sample Date: 7/17/09  
Filter Lot #: 6336008  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP

Analyte	<u>µg/filter</u>	<u>percent</u>
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Gravimetry

Net Mass	26. ± 10.	
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XRF

* Na	0.2757 ± 0.2757	1.060 ± 1.136
* Mg	0.0000 ± 0.1006	0.0000 ± 0.3868
* Al	0.0000 ± 0.0508	0.0000 ± 0.1956
* Si	0.0147 ± 0.0362	0.0565 ± 0.1408
* P	0.0102 ± 0.0192	0.0391 ± 0.0754
* S	0.0339 ± 0.0181	0.1304 ± 0.0857
* Cl	0.0000 ± 0.0339	0.0000 ± 0.1304
* K	0.0192 ± 0.0181	0.0739 ± 0.0751
* Ca	0.0316 ± 0.0124	0.1217 ± 0.0669
* Ti	0.0000 ± 0.0068	0.0000 ± 0.0261
* V	0.0079 ± 0.0056	0.0304 ± 0.0247
* Cr	0.0000 ± 0.0068	0.0000 ± 0.0261
* Mn	0.0000 ± 0.0102	0.0000 ± 0.0391
* Fe	0.0000 ± 0.0158	0.0000 ± 0.0608
* Co	0.0000 ± 0.0113	0.0000 ± 0.0435
* Ni	0.0000 ± 0.0090	0.0000 ± 0.0348
* Cu	0.0000 ± 0.0068	0.0000 ± 0.0261
* Zn	0.0000 ± 0.0068	0.0000 ± 0.0261
* Ga	0.0056 ± 0.0102	0.0217 ± 0.0400
* Ge	0.0000 ± 0.0102	0.0000 ± 0.0391
* As	0.0000 ± 0.0136	0.0000 ± 0.0522
* Se	0.0023 ± 0.0068	0.0087 ± 0.0263
* Br	0.0079 ± 0.0068	0.0304 ± 0.0286
* Rb	0.0011 ± 0.0068	0.0043 ± 0.0261
* Sr	0.0079 ± 0.0079	0.0304 ± 0.0326
* Y	0.0000 ± 0.0102	0.0000 ± 0.0391
* Zr	0.0000 ± 0.0136	0.0000 ± 0.0522
* Mo	0.0113 ± 0.0192	0.0435 ± 0.0758
* Pd	0.0486 ± 0.0452	0.1869 ± 0.1881
* Ag	0.0881 ± 0.0475	0.3390 ± 0.2243
* Cd	0.0554 ± 0.0520	0.2130 ± 0.2161
* In	0.1446 ± 0.0576	0.5563 ± 0.3081
* Sn	0.0497 ± 0.0678	0.1912 ± 0.2709
* Sb	0.0000 ± 0.0814	0.0000 ± 0.3129
* Ba	0.0294 ± 0.0260	0.1130 ± 0.1090
* La	0.0158 ± 0.0147	0.0608 ± 0.0612
* Hg	0.0011 ± 0.0181	0.0043 ± 0.0696
* Pb	0.0147 ± 0.0203	0.0565 ± 0.0812

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\* - Concentration is less than three times the uncertainty

Client: T029 - Tetra Tech EMI  
Report Number: 09-220

Lab ID: 09-T2942  
Client ID: BMI08-071709 BS  
Filter ID: P8100273  
Site: BMI08  
Sample Date: 7/17/09  
Filter Lot #: 6336008  
Deposit Area: 11.3 cm<sup>2</sup>  
Size Fraction: TSP

Analyte	<u>µg/filter</u>	<u>percent</u>
Gravimetry		
Net Mass	4. ± 10.	
XRF		
* Na	0.9187 ± 0.5153	22.97 ± 58.85
* Mg	0.1085 ± 0.1627	2.712 ± 7.907
* Al	0.0079 ± 0.0508	0.1978 ± 1.364
* Si	0.0000 ± 0.0362	0.0000 ± 0.9040
* P	0.0090 ± 0.0203	0.2260 ± 0.7601
* S	0.0000 ± 0.0181	0.0000 ± 0.4520
* Cl	0.0000 ± 0.0339	0.0000 ± 0.8475
* K	0.0000 ± 0.0181	0.0000 ± 0.4520
* Ca	0.0000 ± 0.0124	0.0000 ± 0.3108
* Ti	0.0000 ± 0.0068	0.0000 ± 0.1695
* V	0.0068 ± 0.0056	0.1695 ± 0.4467
Cr	0.0237 ± 0.0079	0.5932 ± 1.496
* Mn	0.0192 ± 0.0102	0.4802 ± 1.227
* Fe	0.0000 ± 0.0158	0.0000 ± 0.3955
* Co	0.0000 ± 0.0113	0.0000 ± 0.2825
* Ni	0.0000 ± 0.0090	0.0000 ± 0.2260
* Cu	0.0000 ± 0.0068	0.0000 ± 0.1695
* Zn	0.0068 ± 0.0068	0.1695 ± 0.4564
* Ga	0.0124 ± 0.0102	0.3108 ± 0.8174
* Ge	0.0000 ± 0.0102	0.0000 ± 0.2542
* As	0.0000 ± 0.0136	0.0000 ± 0.3390
* Se	0.0056 ± 0.0068	0.1412 ± 0.3917
* Br	0.0045 ± 0.0068	0.1130 ± 0.3294
* Rb	0.0000 ± 0.0068	0.0000 ± 0.1695
* Sr	0.0102 ± 0.0090	0.2542 ± 0.6746
* Y	0.0000 ± 0.0102	0.0000 ± 0.2542
* Zr	0.0000 ± 0.0136	0.0000 ± 0.3390
* Mo	0.0249 ± 0.0203	0.6215 ± 1.635
* Pd	0.0588 ± 0.0452	1.469 ± 3.842
* Ag	0.0712 ± 0.0475	1.780 ± 4.605
* Cd	0.0814 ± 0.0520	2.034 ± 5.248
* In	0.0000 ± 0.0576	0.0000 ± 1.441
* Sn	0.0158 ± 0.0678	0.3955 ± 1.962
* Sb	0.0000 ± 0.0814	0.0000 ± 2.034
* Ba	0.0000 ± 0.0260	0.0000 ± 0.6498
* La	0.0181 ± 0.0147	0.4520 ± 1.188
* Hg	0.0282 ± 0.0170	0.7062 ± 1.816
* Pb	0.0328 ± 0.0215	0.8192 ± 2.117

\* - Concentration is less than three times the uncertainty

# CHESTER LabNet

XRF-770

## XRF Analytical Quality Assurance Report

Client: Tetra Tech

Report: 09-220

Analysis Period: July 27 through 28, 2009

Number of Samples: 20

### 1. Precision Data

Micromatter Multi-elemental Quality Control Standard: QS285

#### QC Standard Results

Analyte	n	Counts per Second			c.v.	%E
		Calib.	Meas.	S.D.		
Si(0)	2	1785.92	1687.50	31.82	1.89	-5.51
Ti(1)	2	591.36	560.30	8.06	1.44	-5.25
Fe(1)	2	1321.41	1266.20	22.91	1.81	-4.18
Se(3)	2	343.74	325.07	1.03	0.32	-5.43
Pb(3)	2	394.75	370.17	0.77	0.21	-6.23
Cd(4)	2	277.97	270.87	3.63	1.34	-2.55

### 2. Accuracy Data

NIST Standard Reference Materials: SRM 1832, SRM 1833, SRM 2783

Analyte/ SRM	n	Certified Value(μg/cm²)	Measured Value (μg/cm²)				% Rec.
			High	Low	Average		
Al 1832	4	14.6 +/- .97	15.07	14.58	14.88	+/- 0.20	101.9
Si 1832	4	34.0 +/- 1.1	35.35	33.72	34.57	+/- 0.58	101.7
Si 1833	4	31.5 +/- 2.1	31.02	30.76	30.89	+/- 0.10	98.1
S 2708	4	2.46 +/- .25	2.47	2.33	2.42	+/- 0.05	98.0
K 1833	4	16.4 +/- 1.64	17.85	16.67	17.27	+/- 0.43	105.3
Ca 2783	4	1.33 +/- 0.17	1.34	1.30	1.32	+/- 0.02	99.7
Ti 1833	4	12.1 +/- 1.79	12.39	11.81	12.02	+/- 0.23	99.4
V 1832	4	4.70 +/- .49	4.70	4.47	4.59	+/- 0.11	97.7
Mn 1832	4	4.54 +/- .49	4.47	4.37	4.42	+/- 0.04	97.5
Fe 1833	4	13.6 +/- .45	13.59	13.32	13.47	+/- 0.11	99.1
Cu 1832	4	2.43 +/- .16	2.57	2.45	2.50	+/- 0.05	102.9
Zn 1833	4	3.88 +/- .30	3.64	3.49	3.58	+/- 0.06	92.2
Pb 1833	4	16.1 +/- .75	16.52	15.87	16.17	+/- 0.23	100.4

NIST: National Institute of Standards and Technology

% Rec: Percent Recovery = (Experimental/Given) x 100

n: Number of Observations

S.D.: Standard Deviation

c.v.: Coefficient of Variation = (S.D./Measured) x 100

% E: Percent Error = [(Measured-Calibrated)/Calibrated] x 100



## XRF-770 REPLICATE REPORT

4.63

Original ID: 09-T2851

Replicate ID: RT2851

Filter Lot:

Deposit Mass: 2330 µg

Deposit Area: 11.3 cm<sup>2</sup>

Particle Size: F

Element	Original ug/cm2			Replicate ug/cm2			Difference ug/cm2			RPD		
Na	0.1485	+-	0.1332	0.2226	+-	0.1528	-0.0741	+-	0.2028			
Mg	2.2490	+-	0.2102	2.2374	+-	0.2173	0.0116	+-	0.3024	+	0.5	+- 13.5
Al	3.8131	+-	0.2725	3.8254	+-	0.2754	-0.0124	+-	0.3874	+	-0.3	+- 10.1
Si	11.1103	+-	0.6367	11.0851	+-	0.6360	0.0252	+-	0.8999	+	0.2	+- 8.1
P	0.0000	+-	0.0078	0.0000	+-	0.0089	0.0000	+-	0.0118			
S	1.0875	+-	0.0616	1.1036	+-	0.0657	-0.0161	+-	0.0900	+	-1.5	+- 8.2
Cl	1.0015	+-	0.0549	1.0281	+-	0.0584	-0.0266	+-	0.0802	+	-2.6	+- 7.9
K	1.9792	+-	0.1027	1.9599	+-	0.1026	0.0193	+-	0.1452	+	1.0	+- 7.4
Ca	7.9136	+-	0.4043	8.0506	+-	0.4119	-0.1371	+-	0.5771	+	-1.7	+- 7.2
Ti	0.3616	+-	0.0205	0.4023	+-	0.0209	-0.0407	+-	0.0293	0	-10.6	+- 7.7
V	0.0110	+-	0.0037	0.0220	+-	0.0029	-0.0110	+-	0.0046			
Cr	0.0057	+-	0.0014	0.0046	+-	0.0019	0.0011	+-	0.0024	+	20.8	+- 46.1
Mn	0.2729	+-	0.0139	0.2817	+-	0.0146	-0.0089	+-	0.0201	+	-3.2	+- 7.3
Fe	2.2972	+-	0.1152	2.3278	+-	0.1169	-0.0306	+-	0.1641	+	-1.3	+- 7.1
Co	0.0000	+-	0.0023	0.0000	+-	0.0031	0.0000	+-	0.0038			
Ni	0.0000	+-	0.0011	0.0002	+-	0.0015	-0.0002	+-	0.0018			
Cu	0.0115	+-	0.0011	0.0114	+-	0.0014	0.0001	+-	0.0018	+	1.0	+- 15.7
Zn	0.0174	+-	0.0013	0.0197	+-	0.0017	-0.0023	+-	0.0021	0	-12.5	+- 11.4
Ga	0.0034	+-	0.0010	0.0020	+-	0.0013	0.0014	+-	0.0016	+	50.4	+- 60.4
Ge	0.0000	+-	0.0009	0.0000	+-	0.0014	0.0000	+-	0.0017			
As	0.0004	+-	0.0014	0.0006	+-	0.0018	-0.0002	+-	0.0023			
Se	0.0012	+-	0.0007	0.0015	+-	0.0009	-0.0004	+-	0.0012			
Br	0.0059	+-	0.0008	0.0066	+-	0.0010	-0.0007	+-	0.0012	+	-11.2	+- 19.5
Rb	0.0066	+-	0.0008	0.0060	+-	0.0011	0.0005	+-	0.0013	+	8.5	+- 21.4
Sr	0.0722	+-	0.0038	0.0712	+-	0.0039	0.0010	+-	0.0055	+	1.4	+- 7.6
Y	0.0003	+-	0.0010	0.0021	+-	0.0014	-0.0018	+-	0.0017			
Zr	0.0315	+-	0.0022	0.0333	+-	0.0026	-0.0019	+-	0.0034	+	-5.8	+- 10.4
Nb	0.0101	+-	0.0017	0.0091	+-	0.0021	0.0010	+-	0.0027	+	10.5	+- 27.7
Mo	0.0000	+-	0.0019	0.0021	+-	0.0024	-0.0021	+-	0.0031			
Pd	0.0114	+-	0.0047	0.0143	+-	0.0065	-0.0029	+-	0.0081			
Ag	0.0100	+-	0.0050	0.0129	+-	0.0067	-0.0029	+-	0.0083			
Cd	0.0138	+-	0.0054	0.0146	+-	0.0073	-0.0007	+-	0.0091			
In	0.0151	+-	0.0060	0.0289	+-	0.0083	-0.0138	+-	0.0102			
Sn	0.0033	+-	0.0068	0.0094	+-	0.0093	-0.0061	+-	0.0116			
Sb	0.0158	+-	0.0084	0.0164	+-	0.0112	-0.0006	+-	0.0140			
Ba	0.0660	+-	0.0140	0.0504	+-	0.0158	0.0156	+-	0.0211	+	26.8	+- 36.3
La	0.0000	+-	0.0123	0.0000	+-	0.0136	0.0000	+-	0.0184			
Hg	0.0037	+-	0.0017	0.0076	+-	0.0022	-0.0039	+-	0.0028			
Pb	0.0102	+-	0.0022	0.0115	+-	0.0027	-0.0013	+-	0.0035	+	-11.7	+- 32.2

RPD: Relative Percent Difference  $(X1-X2)/[(X1+X2)/2]*100$ . RPD is calculated when original value is greater than three times its uncertainty.

**XRF-770 REPLICATE REPORT**

4.69

Original ID: 09-T2937

Replicate ID: RT2937

Filter Lot:

Deposit Mass: 6047 µg

Deposit Area: 11.3 cm<sup>2</sup>

Particle Size: F

Element	Original ug/cm2			Replicate ug/cm2			Difference ug/cm2			RPD		
Na	0.1623	+-	0.6412	0.0000	+-	0.5175	0.1623	+-	0.8240			
Mg	5.4133	+-	0.7242	4.9716	+-	0.6431	0.4416	+-	0.9686	+	8.5	+- 18.7
Al	9.6553	+-	0.8793	9.0219	+-	0.8149	0.6334	+-	1.1989	+	6.8	+- 12.8
Si	26.6976	+-	1.8347	25.1752	+-	1.7241	1.5224	+-	2.5177	+	5.9	+- 9.7
P	0.0223	+-	0.0202	0.0013	+-	0.0161	0.0210	+-	0.0258			
S	2.0806	+-	0.1282	2.0591	+-	0.1263	0.0215	+-	0.1800	+	1.0	+- 8.7
Cl	2.4283	+-	0.1396	2.2949	+-	0.1319	0.1334	+-	0.1920	+	5.6	+- 8.1
K	4.9490	+-	0.2644	4.9758	+-	0.3801	-0.0267	+-	0.4630	+	-0.5	+- 9.3
Ca	19.0857	+-	1.4185	18.5264	+-	1.3799	0.5594	+-	1.9790	+	3.0	+- 10.5
Ti	0.8716	+-	0.0459	0.8096	+-	0.0437	0.0620	+-	0.0634	+	7.4	+- 7.5
V	0.0416	+-	0.0060	0.0404	+-	0.0067	0.0012	+-	0.0090	+	2.9	+- 21.9
Cr	0.0163	+-	0.0027	0.0167	+-	0.0028	-0.0004	+-	0.0039	+	-2.3	+- 23.6
Mn	0.3329	+-	0.0171	0.3386	+-	0.0257	-0.0057	+-	0.0309	+	-1.7	+- 9.2
Fe	5.2472	+-	0.2629	4.9563	+-	0.2483	0.2909	+-	0.3616	+	5.7	+- 7.1
Co	0.0000	+-	0.0037	0.0000	+-	0.0050	0.0000	+-	0.0062			
Ni	0.0067	+-	0.0018	0.0102	+-	0.0024	-0.0035	+-	0.0030	0	-40.8	+- 35.7
Cu	0.0199	+-	0.0027	0.0197	+-	0.0033	0.0003	+-	0.0043	+	1.3	+- 21.5
Zn	0.0353	+-	0.0032	0.0357	+-	0.0025	-0.0004	+-	0.0041	+	-1.2	+- 11.5
Ga	0.0024	+-	0.0011	0.0017	+-	0.0014	0.0007	+-	0.0017			
Ge	0.0000	+-	0.0011	0.0026	+-	0.0013	-0.0026	+-	0.0017			
As	0.0005	+-	0.0014	0.0035	+-	0.0019	-0.0031	+-	0.0024			
Se	0.0004	+-	0.0007	0.0012	+-	0.0009	-0.0008	+-	0.0012			
Br	0.0197	+-	0.0013	0.0195	+-	0.0014	0.0003	+-	0.0019	+	1.4	+- 9.8
Rb	0.0171	+-	0.0012	0.0160	+-	0.0014	0.0011	+-	0.0018	+	6.7	+- 11.1
Sr	0.1777	+-	0.0090	0.1782	+-	0.0092	-0.0004	+-	0.0129	+	-0.2	+- 7.2
Y	0.0049	+-	0.0010	0.0071	+-	0.0014	-0.0022	+-	0.0017	0	-36.2	+- 28.9
Zr	0.0854	+-	0.0046	0.0839	+-	0.0048	0.0015	+-	0.0066	+	1.8	+- 7.8
Nb	0.0222	+-	0.0019	0.0238	+-	0.0023	-0.0016	+-	0.0030	+	-6.8	+- 13.2
Mo	0.0000	+-	0.0018	0.0000	+-	0.0023	0.0000	+-	0.0030			
Pd	0.0135	+-	0.0052	0.0173	+-	0.0071	-0.0038	+-	0.0088			
Ag	0.0075	+-	0.0054	0.0007	+-	0.0075	0.0068	+-	0.0092			
Cd	0.0003	+-	0.0058	0.0184	+-	0.0080	-0.0181	+-	0.0099			
In	0.0208	+-	0.0066	0.0173	+-	0.0090	0.0035	+-	0.0111	+	18.4	+- 58.4
Sn	0.0088	+-	0.0075	0.0037	+-	0.0101	0.0052	+-	0.0126			
Sb	0.0162	+-	0.0090	0.0286	+-	0.0121	-0.0124	+-	0.0151			
Ba	0.1690	+-	0.0305	0.1659	+-	0.0301	0.0031	+-	0.0429	+	1.9	+- 25.6
La	0.0000	+-	0.0253	0.0000	+-	0.0258	0.0000	+-	0.0361			
Hg	0.0041	+-	0.0018	0.0026	+-	0.0027	0.0015	+-	0.0032			
Pb	0.0138	+-	0.0023	0.0123	+-	0.0028	0.0015	+-	0.0036	+	11.3	+- 27.8

RPD: Relative Percent Difference  $(X1-X2)/[(X1+X2)/2]*100$ . RPD is calculated when original value is greater than three times its uncertainty.

Company Name <b>TETRA TECH EM Inc</b>		Phone 208 484 9430	
Contact <b>Doug Herbel</b>		Fax 208 343 4750	
E-Mail Address <b>doug.herbelt@tetra.com</b>		Report Address <b>3380 Americana Terrace, Ste 201</b>	
City <b>Boise</b>		State <b>ID</b>	Zip <b>83704</b>
Billing Address <b>3380 Americana Terrace, Ste 201</b>		City <b>Boise</b>	
State <b>ID</b>		Zip <b>83704</b>	
PO# <b>103PO233</b>		Project <b>BMT</b>	

**CHESTER LabNet**

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## CHAIN-OF-CUSTODY RECORD

Page 1 of 2

LabNet ID	Field Sample ID	Site	Sample Date	Volume (m <sup>3</sup> )	Particle Size	Analysis Requested										Turn Around Time		Remarks
						<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush	Specify										
	CAMU04-071009	CAMU04	7/10/09	24.04	1/2	X											0972850	
	CAMU06-071009	CAMU06		24.04		X											0972851	
	BMT03-071009	BMT03		19.55		X											0972852	
	BMT06-071009	BMT06		24.18		X											0972853	
	BMT08-071009	BMT08		24.16		X											0972854	
	CAMU04-071409	CAMU04	7/14/09	24.04		X											0972855	
	CAMU06-071409	CAMU06		17.39		X											0972856	
	BMT03-071409	BMT03		18.95		X											0972857	
	BMT06-071409	BMT06		24.04		X											0972858	
	BMT08-071409	BMT08		24.04		X											0972859	
	BMT01-071409	BMT01		24.04		X											0972860	

Relinquished By: (Signature) [Signature] Date/Time 7/20/09 1:030

Relinquished By: (Signature) [Signature] Date/Time 7/21/09 9:50

Received By: (Signature) [Signature] Date/Time 7/21/09 9:50

Received By: (Signature) [Signature] Date/Time 7/21/09 9:50

Notes: XRF

[illegible]

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# CHAIN-OF-CUSTODY RECORD

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**RAW DATA**

Available upon request