General

LANL
Sandia Canyon/Mortandad Cy
November 2011
NMED Groundwater Sample Analytical Resu

Cobrain, Dave, NMENV

From: Dale, Michael, NMENV
Sent: Wednesday, December 21, 2011 9:02 AM
To: Cobrain, Dave, NMENV
Cc: Kulis, Jerzy, NMENV
Subject: NMED HWB groundwater data for the Chromium Investigation Monitoring Group - 1st Quarter sampling 2011 IFGMP
Attachments: L1090816_XLR.xls; L1090816_COA.PDF

Dave,

The attached data are associated with groundwater samples collected by NMED HWB during LANL's first-quarter sampling at the Chromium Investigation Monitoring Group per the 2011 IFGMP (LA-UR-11-2183/EP2011-0273, August 2011). Analytical services were provided by ALS Laboratory Group, Burnaby, British Columbia, Canada. Please let me know if you have any questions concerning these results.

Michael Dale

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35002

Project	914-11.8.11(HR METALS) PAR
Report To	AMY WOLF, ALS LABORATORY GROUP~Fort Collins
ALS File No.	L1090816
Date Received	30-Nov-11 15:00
Date	15-Dec-11

RESULTS OF ANALYSIS

Sample ID	MCOI-5-11-8-11-HRM	R-46-11-8-11-HRM	R-14-11-8-11-HRM	R-35B-11-9-11-HRM
Date Sampled	08-NOV-11	08-NOV-11	08-NOV-11	09-NOV-11
Time Sampled	11:27	11:37	13:57	11:37
ALS Sample ID	L1090816-1	L1090816-2	L1090816-3	L1090816-4
Matrix	Water	Water	Water	Water
Physical Tests				
Hardness (as CaCO3)	86.6	38.9	40.4	84.1
Dissolved Metals				
Aluminum (Al)-Dissolved	0.0346	0.00184	0.00112	0.0278
Antimony (Sb)-Dissolved	0.0000760	0.00289	0.0000765	0.000232
Arsenic (As)-Dissolved	0.000777	0.000754	0.000931	0.00185
Barium (Ba)-Dissolved	0.0152	0.0233	0.0320	0.0398
Beryllium (Be)-Dissolved	0.0000034	<0.0000020	<0.0000020	0.0000024
Bismuth (Bi)-Dissolved	<0.0000010	<0.0000010	<0.0000010	<0.0000010
Boron (B)-Dissolved	0.0220	0.0122	0.0133	0.0256
Cadmium (Cd)-Dissolved	<0.0000050	<0.0000050	<0.0000050	0.0000250
Calcium (Ca)-Dissolved	28.7	10.1	10.5	25.1
Cesium (Cs)-Dissolved	0.0000160	0.000270	0.000289	0.000107
Chromium (Cr)-Dissolved	0.00497	0.00535	0.00537	0.00771
Cobalt (Co)-Dissolved	0.0000333	0.0000495	0.0000423	0.0000540
Copper (Cu)-Dissolved	0.00109	0.00112	0.000182	0.000402
Gallium (Ga)-Dissolved	<0.000050	<0.000050	<0.000050	<0.000050
Iron (Fe)-Dissolved	0.013	<0.010	<0.010	0.016
Lead (Pb)-Dissolved	0.0000362	0.0000172	0.0000066	0.000119
Lithium (Li)-Dissolved	0.0228	0.0204	0.0214	0.0240
Magnesium (Mg)-Dissolved	3.63	3.33	3.42	5.21
Manganese (Mn)-Dissolved	0.000857	0.00105	0.000296	0.00651
Molybdenum (Mo)-Dissolved	0.00134	0.000946	0.00109	0.00119
Nickel (Ni)-Dissolved	0.000533	0.000702	0.000105	0.00104
Phosphorus (P)-Dissolved	0.056	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.485	1.89	2.10	2.05
Rhenium (Re)-Dissolved	0.0000325	<0.0000050	<0.0000050	<0.0000050
Rubidium (Rb)-Dissolved	0.00110	0.00494	0.00590	0.00333
Selenium (Se)-Dissolved	0.000288	0.000333	0.000328	0.000586
Silicon (Si)-Dissolved	31.4	34.6	38.4	36.1
Silver (Ag)-Dissolved	0.0000424	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	13.2	9.73	10.9	11.7
Strontium (Sr)-Dissolved	0.0809	0.0392	0.0465	0.0673
Tellurium (Te)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010
Thallium (Tl)-Dissolved	0.0000083	0.0000022	0.0000061	0.0000028
Thorium (Th)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Tin (Sn)-Dissolved	0.000015	0.000027	<0.000010	0.000036
Titanium (Ti)-Dissolved	0.000872	<0.000050	<0.000050	0.000673
Tungsten (W)-Dissolved	0.000458	0.000661	0.000523	0.000879
Uranium (U)-Dissolved	0.000121	0.000445	0.000758	0.000304
Vanadium (V)-Dissolved	0.00248	0.00805	0.00768	0.0142
Yttrium (Y)-Dissolved	0.0000301	<0.0000050	0.0000093	0.0000334
Zinc (Zn)-Dissolved	0.00220	0.00604	0.00075	0.0282
Zirconium (Zr)-Dissolved	0.000045	<0.000010	<0.000010	0.000103

MCOI-6-11-9-11-HRM	R-42-11-10-11-HRM	R-34-11-10-11-HRM	R-15-11-10-11-HRM	SCI-2-11-14-11-HRM	R-61 SCR2-6CV-11-14-11-HRM	R-61 SC 1-11-15-11-6CV
09-NOV-11	10-NOV-11	10-NOV-11	10-NOV-11	14-NOV-11	14-NOV-11	15-NOV-11
15:13	11:41	12:18	13:31	11:04	13:35	12:50
L1090816-5	L1090816-6	L1090816-7	L1090816-8	L1090816-9	L1090816-10	L1090816-11
Water	Water	Water	Water	Water	Water	Water
243	191	60.5	57.9	243	48.6	53.6
0.00072	0.00081	0.00701	0.00584	0.00061	0.00067	0.00125
0.000185	0.000666	0.0000815	0.0000752	0.0000306	0.000302	0.000687
0.000469	0.000736	0.000845	0.000719	0.000354	0.00194	0.00107
0.0457	0.0887	0.0261	0.0293	0.0641	0.0379	0.0555
0.0000046	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000039	<0.0000020
<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	0.0000053	0.0000020
0.0484	0.0200	0.0194	0.0139	0.0209	0.0257	0.0221
<0.0000050	0.0000060	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
73.3	53.0	18.1	16.8	71.0	12.6	14.4
0.0000140	0.000495	0.0000053	0.0000266	0.0000441	0.000117	0.0000258
0.0556	1.04	0.00485	0.0123	0.501	0.000442	0.00209
0.000458	0.000211	0.0000537	0.0000730	0.000110	0.00172	0.00307
0.0131	0.000391	0.000393	0.000239	0.000688	0.000161	0.00512
<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
<0.010	<0.010	<0.010	<0.010	<0.010	4.10	1.22
0.0000844	0.000130	0.0000295	0.0000386	0.0000070	0.0000694	0.000457
0.0398	0.0372	0.0240	0.0236	0.0244	0.0255	0.0233
14.5	14.2	3.71	3.88	16.0	4.19	4.32
0.00389	0.00206	0.000350	0.000473	0.00149	0.755	1.16
0.00116	0.000494	0.00102	0.000929	0.000625	0.00659	0.00872
0.0373	0.0226	0.000235	0.000602	0.0168	0.00136	0.00377
0.065	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
0.844	2.38	1.75	1.81	3.65	2.01	1.67
0.0000367	0.0000279	<0.0000050	0.0000059	0.0000258	<0.0000050	<0.0000050
0.00135	0.00338	0.00220	0.00438	0.00429	0.00281	0.00212
0.000241	0.000622	0.000420	0.000954	0.000642	0.000217	0.000456
31.8	34.0	33.1	34.1	29.8	32.1	29.0
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
27.1	17.0	11.1	10.9	22.8	20.7	19.0
0.301	0.185	0.0536	0.0555	0.298	0.0665	0.0738
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000029	<0.000010
0.0000126	0.0000020	0.0000078	0.0000016	0.0000072	0.0000017	0.0000016
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000013	0.000031
<0.000050	<0.000050	0.000202	0.000135	<0.000050	<0.000050	0.000082
0.000121	0.000313	0.000510	0.000423	0.00917	0.00132	0.00175
0.00129	0.000634	0.000450	0.000378	0.00155	0.000581	0.000906
0.00122	0.00506	0.00738	0.00671	0.00136	0.000921	0.00122
0.0000103	0.0000096	0.0000133	0.0000133	0.0000350	0.0000064	0.0000121
0.0397	0.0104	0.00276	0.00110	0.00197	0.00046	0.0355
<0.000010	<0.000010	<0.000010	0.000048	<0.000010	<0.000010	<0.000010

R-43 SC 2-11-15-11-HRM	R-28-11-15-11-HRM	R-43 SC 1-11-15-11-HRM	R-11-11-16-11-HRM	SCI-1-11-16-11-HRM	R-45 SC 2-11-16-11-HRM	R-45-SC 1-11-16-11-HRM
15-NOV-11	15-NOV-11	15-NOV-11	16-NOV-11	16-NOV-11	16-NOV-11	16-NOV-11
11:29	15:00	16:05	10:27	10:55	10:57	12:40
L1090816-12	L1090816-13	L1090816-14	L1090816-15	L1090816-16	L1090816-17	L1090816-18
Water	Water	Water	Water	Water	Water	Water
57.6	165	57.7	81.0	221	59.9	62.7
0.00407	0.00056	0.00095	0.00099	0.00040	0.00137	0.00156
0.000391	0.0000622	0.000102	0.0000626	0.0000212	0.0000503	0.000135
0.00210	0.000856	0.00103	0.00115	0.00269	0.000969	0.000766
0.0165	0.0669	0.0215	0.0389	0.0341	0.0290	0.0287
<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000034	<0.0000020	<0.0000020
<0.0000010	<0.0000010	<0.0000010	<0.0000010	0.0000025	<0.0000010	<0.0000010
0.0395	0.0262	0.0167	0.0307	0.0855	0.0222	0.0184
<0.0000050	0.0000081	<0.0000050	<0.0000050	<0.000010	<0.0000050	<0.0000050
15.8	47.1	16.9	22.3	71.7	16.2	17.2
0.000180	0.000434	0.000287	0.000383	0.0000057	0.0000403	0.0000724
0.00304	0.420	0.0320	0.0177	0.0100	0.0106	0.0187
0.0000485	0.0000584	0.0000449	0.0000207	0.000236	0.0000266	0.0000255
0.000313	0.000842	0.000240	0.00114	0.00272	0.000114	0.000100
<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
0.013	0.020	<0.010	<0.010	<0.010	<0.010	<0.010
0.0000249	0.0000249	0.0000051	0.0000090	0.0000072	0.0000087	0.0000131
0.0272	0.0347	0.0242	0.0271	0.0632	0.0237	0.0241
4.38	11.4	3.75	6.15	10.1	4.71	4.77
0.000430	0.000935	0.00112	0.000160	0.000221	0.000324	0.000310
0.00175	0.000717	0.00106	0.00144	0.0845	0.00137	0.000921
0.000348	0.0212	0.00194	0.000321	0.00279	0.00160	0.000533
<0.050	<0.050	<0.050	<0.050	1.20	<0.050	<0.050
1.49	1.86	1.33	1.48	1.37	1.31	1.26
<0.0000050	0.0000177	0.0000053	<0.0000050	0.0000141	<0.0000050	<0.0000050
0.00280	0.00272	0.00217	0.00216	0.00315	0.00177	0.00177
0.000508	0.000565	0.00193	0.00143	0.000161	0.000395	0.000928
31.0	34.8	35.1	35.1	29.6	34.4	33.5
<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000399	<0.0000050	<0.0000050
17.8	16.2	10.8	12.6	64.2	11.3	10.8
0.0851	0.163	0.0608	0.0811	0.275	0.0647	0.0684
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
0.0000041	0.0000014	0.0000016	0.0000026	0.0000238	0.0000029	0.0000031
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
0.000012	<0.000010	0.000015	<0.000010	<0.000010	<0.000010	<0.000010
0.000059	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
0.00108	0.000353	0.000595	0.000693	0.000627	0.000592	0.000478
0.00102	0.00127	0.000109	0.000722	0.00329	0.000688	0.000770
0.00805	0.00547	0.00748	0.00756	0.00155	0.00699	0.00534
0.0000092	0.0000079	0.0000073	0.0000114	0.0000686	0.0000098	0.0000098
0.00148	0.00283	0.00409	0.00966	0.00163	0.00246	0.00422
0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

R-36-11-16-11-HRM	R-44-SC 1-11-17-11-HRM	R-35A-11-17-11-HRM	R-44-SC2-11-17-11-HRM	R-50-SC1-11-18-11-HRM	R-61-SC2-11-18-11-HRM	R-1-18-11-HRM
16-NOV-11	17-NOV-11	17-NOV-11	17-NOV-11	18-NOV-11	18-NOV-11	18-NOV-11
13:05	10:34	12:39	13:30	12:02	12:09	15:06
L1090816-19	L1090816-20	L1090816-21	L1090816-22	L1090816-23	L1090816-24	L1090816-25
Water	Water	Water	Water	Water	Water	Water
65.7	45.2	79.7	60.1	54.3	44.8	43.6
0.00518	0.00150	0.00084	0.0160	0.00849	0.00061	0.00156
0.000276	0.0000580	0.0000897	0.0000584	0.000398	0.000231	0.000840
0.00188	0.000765	0.00203	0.000807	0.00167	0.00179	0.00106
0.0338	0.0215	0.356	0.0241	0.0164	0.0311	0.0150
<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000029	<0.0000020
<0.0000010	<0.0000010	<0.0000010	<0.0000010	0.0000014	0.0000049	<0.0000010
0.0252	0.0154	0.0394	0.0165	0.0187	0.0222	0.0135
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
19.3	12.4	22.2	17.4	14.4	11.5	11.0
0.0000259	0.0000502	0.0000534	0.0000347	0.0000423	0.000104	0.0000081
0.00613	0.0133	0.00428	0.00480	0.0883	<0.000050	0.00520
0.0000869	0.000136	0.0000499	0.0000237	0.0000451	0.00137	0.000117
0.000610	0.000213	0.000069	0.000212	0.000139	0.000142	0.00232
<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
<0.010	0.016	<0.010	<0.010	<0.010	2.96	<0.010
0.000188	0.0000234	0.0000054	0.0000185	0.0000716	0.0000425	0.000122
0.0233	0.0221	0.0279	0.0228	0.0242	0.0234	0.0218
4.27	3.48	5.87	4.03	4.49	3.91	3.90
0.00195	0.000275	0.000425	0.00512	0.000581	0.651	0.00324
0.00166	0.000894	0.00110	0.000759	0.00202	0.00578	0.00114
0.000991	0.000947	0.00920	0.000191	0.00228	0.000946	0.0163
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2.03	1.15	4.03	1.34	1.48	1.92	1.76
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
0.00297	0.00160	0.00583	0.00191	0.00215	0.00249	0.00405
0.00100	0.000475	0.000497	0.000384	0.000534	0.000219	0.000363
33.1	32.6	38.3	34.1	32.2	32.8	35.3
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
14.4	9.67	17.9	11.0	15.4	19.4	12.4
0.0631	0.0504	0.160	0.0559	0.0502	0.0572	0.0449
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000025	<0.000010
0.0000049	0.0000032	0.0000065	0.0000035	0.0000086	0.0000046	0.0000037
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
0.000012	<0.000010	<0.000010	<0.000010	<0.000010	0.000012	<0.000010
0.000093	<0.000050	<0.000050	0.000385	0.000156	<0.000050	<0.000050
0.000856	0.00122	0.000472	0.00114	0.000927	0.00106	0.000439
0.000303	0.000427	0.000613	0.000532	0.000591	0.000473	0.000695
0.0147	0.00495	0.0173	0.00631	0.00518	0.00135	0.00832
0.0000123	0.0000106	0.0000121	0.0000244	0.0000182	0.0000132	0.0000101
0.0574	0.00375	0.00075	0.00248	0.0100	0.00143	0.0148
0.000026	<0.000010	<0.000010	0.000015	0.000023	<0.000010	<0.000010

R-61-SC1-3CV-11-21-HRM	R-50 SC1-11-21-22-HRM	R-61 SC1-6CV-11-21-HRM	R-60A-11-22-11-HRM	R-60-11-22-11-HRM	R-13-11-22-11-HRM	R-50 SC2-11-28-11-HRM
21-NOV-11	21-NOV-11	21-NOV-11	22-NOV-11	22-NOV-11	22-NOV-11	28-NOV-11
12:54	13:17	14:29	09:11	10:47	10:58	13:39
L1090816-26	L1090816-27	L1090816-28	L1090816-29	L1090816-30	L1090816-31	L1090816-32
Water	Water	Water	Water	Water	Water	Water
49.6	51.7	47.8	46.2	46.5	48.2	44.4
0.00054	0.00571	0.00175	0.00500	0.00482	0.00139	0.0225
0.000315	0.000320	0.000249	0.000564	0.000607	0.0000443	0.000119
0.00114	0.00159	0.000823	0.00120	0.00111	0.000688	0.00114
0.0508	0.0161	0.0467	0.0290	0.0297	0.0258	0.0251
0.0000025	<0.0000020	0.0000021	<0.0000020	<0.0000020	<0.0000020	<0.0000020
0.0000031	<0.0000010	0.0000017	<0.0000010	<0.0000010	<0.0000010	0.0000012
0.0212	0.0178	0.0196	0.0125	0.0124	0.0136	0.0156
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000058	<0.0000050
13.3	13.7	12.7	12.3	12.4	13.6	11.2
0.0000287	0.0000399	0.0000267	0.0000909	0.0000927	<0.0000050	0.000271
0.000357	0.0820	0.00148	0.00467	0.00479	0.00392	0.00361
0.00228	0.0000200	0.00225	0.0000601	0.0000882	0.0000099	0.0000287
0.000146	0.000165	0.000226	0.000146	0.000142	0.000337	0.000062
<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
1.62	<0.010	0.950	<0.010	<0.010	<0.010	0.031
0.0000203	0.0000430	0.0000776	0.0000234	0.0000279	<0.0000050	0.0000540
0.0232	0.0234	0.0229	0.0197	0.0197	0.0246	0.0218
4.00	4.25	3.89	3.79	3.81	3.43	3.96
1.01	0.000245	0.933	0.000223	0.000265	0.000885	0.000262
0.00721	0.00171	0.00630	0.00126	0.00133	0.000941	0.00116
0.00233	0.00174	0.00212	0.00119	0.00125	<0.000050	0.00159
<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1.59	1.42	1.56	1.86	1.86	1.35	1.42
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
0.00206	0.00202	0.00198	0.00445	0.00452	0.00181	0.00181
0.000407	0.000492	0.000542	0.000426	0.000411	0.000596	0.000333
28.8	32.2	29.5	33.7	33.6	33.3	36.0
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
19.3	14.8	18.6	10.4	10.4	10.3	11.6
0.0660	0.0490	0.0588	0.0492	0.0494	0.0457	0.0455
0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
0.0000023	0.0000089	0.0000039	0.0000106	0.0000110	0.0000024	0.0000036
<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000155
<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
0.000055	0.000080	0.000092	0.000050	<0.000050	<0.000050	0.000230
0.00175	0.000688	0.00148	0.00152	0.00156	0.000473	0.00132
0.000518	0.000527	0.000724	0.000642	0.000658	0.000431	0.000608
0.00147	0.00518	0.00149	0.00900	0.00898	0.00529	0.00720
0.0000137	0.0000141	0.0000178	0.0000131	0.0000169	0.0000143	0.0000353
0.00442	0.0105	0.00256	0.00094	0.00073	0.00024	0.00554
<0.000010	0.000014	<0.000010	<0.000010	0.000013	<0.000010	0.000042

Project	914-11.8.11(HR METALS) PAR
Report To	AMY WOLF, ALS LABORATORY GROUP~Fort Collins
ALS File No.	L1090816
Date Received	30-Nov-11 15:00
Date	15-Dec-11

DETECTION LIMITS

Sample ID	MCOI-5-11-8-11-HRM	R-46-11-8-11-HRM	R-14-11-8-11-HRM	R-35B-11-9-11-HRM
Date Sampled	08-NOV-11	08-NOV-11	08-NOV-11	09-NOV-11
Time Sampled	11:27	11:37	13:57	11:37
ALS Sample ID	L1090816-1	L1090816-2	L1090816-3	L1090816-4
Matrix	Water	Water	Water	Water
Physical Tests				
Hardness (as CaCO3)	0.50	0.50	0.50	0.50
Dissolved Metals				
Aluminum (Al)-Dissolved	0.00020	0.00020	0.00020	0.00020
Antimony (Sb)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Arsenic (As)-Dissolved	0.000020	0.000020	0.000020	0.000020
Barium (Ba)-Dissolved	0.000020	0.000020	0.000020	0.000020
Beryllium (Be)-Dissolved	0.0000020	0.0000020	0.0000020	0.0000020
Bismuth (Bi)-Dissolved	0.0000010	0.0000010	0.0000010	0.0000010
Boron (B)-Dissolved	0.0050	0.0050	0.0050	0.0050
Cadmium (Cd)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Calcium (Ca)-Dissolved	0.030	0.030	0.030	0.030
Cesium (Cs)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Chromium (Cr)-Dissolved	0.000050	0.000050	0.000050	0.000050
Cobalt (Co)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Copper (Cu)-Dissolved	0.000050	0.000050	0.000050	0.000050
Gallium (Ga)-Dissolved	0.000050	0.000050	0.000050	0.000050
Iron (Fe)-Dissolved	0.010	0.010	0.010	0.010
Lead (Pb)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Lithium (Li)-Dissolved	0.00020	0.00020	0.00020	0.00020
Magnesium (Mg)-Dissolved	0.030	0.030	0.030	0.030
Manganese (Mn)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Molybdenum (Mo)-Dissolved	0.000010	0.000010	0.000010	0.000010
Nickel (Ni)-Dissolved	0.000050	0.000050	0.000050	0.000050
Phosphorus (P)-Dissolved	0.050	0.050	0.050	0.050
Potassium (K)-Dissolved	0.050	0.050	0.050	0.050
Rhenium (Re)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Rubidium (Rb)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Selenium (Se)-Dissolved	0.000040	0.000040	0.000040	0.000040
Silicon (Si)-Dissolved	0.050	0.050	0.050	0.050
Silver (Ag)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Sodium (Na)-Dissolved	0.20	0.20	0.20	0.20
Strontium (Sr)-Dissolved	0.000010	0.000010	0.000010	0.000010
Tellurium (Te)-Dissolved	0.000010	0.000010	0.000010	0.000010
Thallium (Tl)-Dissolved	0.0000010	0.0000010	0.0000010	0.0000010
Thorium (Th)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Tin (Sn)-Dissolved	0.000010	0.000010	0.000010	0.000010
Titanium (Ti)-Dissolved	0.000050	0.000050	0.000050	0.000050
Tungsten (W)-Dissolved	0.000010	0.000010	0.000010	0.000010
Uranium (U)-Dissolved	0.0000010	0.0000010	0.0000010	0.0000010
Vanadium (V)-Dissolved	0.000010	0.000010	0.000010	0.000010
Yttrium (Y)-Dissolved	0.0000050	0.0000050	0.0000050	0.0000050
Zinc (Zn)-Dissolved	0.00010	0.00010	0.00010	0.00010
Zirconium (Zr)-Dissolved	0.000010	0.000010	0.000010	0.000010

MCOI-6-11-9-11-HRM	R-42-11-10-11-HRM	R-34-11-10-11-HRM	R-15-11-10-11-HRM	SCI-2-11-14-11-HRM	R-61 SCR2-6CV-11-14-11-HRM	R-61 SC 1-11-15-11-6CV
09-NOV-11	10-NOV-11	10-NOV-11	10-NOV-11	14-NOV-11	14-NOV-11	15-NOV-11
15:13	11:41	12:18	13:31	11:04	13:35	12:50
L1090816-5	L1090816-6	L1090816-7	L1090816-8	L1090816-9	L1090816-10	L1090816-11
Water	Water	Water	Water	Water	Water	Water
0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
0.0000020	0.0000020	0.0000020	0.0000020	0.0000020	0.0000020	0.0000020
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.030	0.030	0.030	0.030	0.030	0.030	0.030
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.010	0.010	0.010	0.010	0.010	0.010	0.010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
0.030	0.030	0.030	0.030	0.030	0.030	0.030
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010

R-43 SC 2-11-15-11-HRM	R-28-11-15-11-HRM	R-43 SC 1-11-15-11-HRM	R-11-11-16-11-HRM	SCI-1-11-16-11-HRM	R-45 SC 2-11-16-11-HRM	R-45-SC 1-11-16-11-HRM
15-NOV-11	15-NOV-11	15-NOV-11	16-NOV-11	16-NOV-11	16-NOV-11	16-NOV-11
11:29	15:00	16:05	10:27	10:55	10:57	12:40
L1090816-12	L1090816-13	L1090816-14	L1090816-15	L1090816-16	L1090816-17	L1090816-18
Water	Water	Water	Water	Water	Water	Water
0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
0.0000020	0.0000020	0.0000020	0.0000020	0.0000020	0.0000020	0.0000020
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
0.0000050	0.0000050	0.0000050	0.0000050	0.000010	0.0000050	0.0000050
0.030	0.030	0.030	0.030	0.030	0.030	0.030
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.010	0.010	0.010	0.010	0.010	0.010	0.010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
0.030	0.030	0.030	0.030	0.030	0.030	0.030
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010

R-36-11-16-11-HRM	R-44-SC 1-11-17-11-HRM	R-35A-11-17-11-HRM	R-44-SC2-11-17-11-HRM	R-50-SC1-11-18-11-HRM	R-61-SC2-11-18-11-HRM	R-1-18-11-HRM
16-NOV-11	17-NOV-11	17-NOV-11	17-NOV-11	18-NOV-11	18-NOV-11	18-NOV-11
13:05	10:34	12:39	13:30	12:02	12:09	15:06
L1090816-19	L1090816-20	L1090816-21	L1090816-22	L1090816-23	L1090816-24	L1090816-25
Water	Water	Water	Water	Water	Water	Water
0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
0.0000020	0.0000020	0.0000020	0.0000020	0.0000020	0.0000020	0.0000020
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.030	0.030	0.030	0.030	0.030	0.030	0.030
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.010	0.010	0.010	0.010	0.010	0.010	0.010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
0.030	0.030	0.030	0.030	0.030	0.030	0.030
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010

R-61-SC1-3CV-11-21-HRM	R-50 SC1-11-21-22-HRM	R-61 SC1-6CV-11-21-HRM	R-60A-11-22-11-HRM	R-60-11-22-11-HRM	R-13-11-22-11-HRM	R-50 SC2-11-28-11-HRM
21-NOV-11	21-NOV-11	21-NOV-11	22-NOV-11	22-NOV-11	22-NOV-11	28-NOV-11
12:54	13:17	14:29	09:11	10:47	10:58	13:39
L1090816-26	L1090816-27	L1090816-28	L1090816-29	L1090816-30	L1090816-31	L1090816-32
Water	Water	Water	Water	Water	Water	Water
0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020
0.0000020	0.0000020	0.0000020	0.0000020	0.0000020	0.0000020	0.0000020
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.030	0.030	0.030	0.030	0.030	0.030	0.030
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.010	0.010	0.010	0.010	0.010	0.010	0.010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
0.030	0.030	0.030	0.030	0.030	0.030	0.030
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000040	0.000040	0.000040	0.000040	0.000040	0.000040	0.000040
0.050	0.050	0.050	0.050	0.050	0.050	0.050
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.20	0.20	0.20	0.20	0.20	0.20	0.20
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.000050	0.000050	0.000050	0.000050	0.000050	0.000050	0.000050
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010	0.0000010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010
0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050
0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010
0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010

Project	914-11.8.11(HR METALS) PAR
Report To	AMY WOLF, ALS LABORATORY GROUP~Fort Collins
ALS File No.	L1090816
Date Received	30-Nov-11 15:00
Date	15-Dec-11

UNITS

Sample ID	MCOI-5-11-8-11-HRM	R-46-11-8-11-HRM	R-14-11-8-11-HRM	R-35B-11-9-11-HRM
Date Sampled	08-NOV-11	08-NOV-11	08-NOV-11	09-NOV-11
Time Sampled	11:27	11:37	13:57	11:37
ALS Sample ID	L1090816-1	L1090816-2	L1090816-3	L1090816-4
Matrix	Water	Water	Water	Water
Physical Tests				
Hardness (as CaCO3)	mg/L	mg/L	mg/L	mg/L
Dissolved Metals				
Aluminum (Al)-Dissolved	mg/L	mg/L	mg/L	mg/L
Antimony (Sb)-Dissolved	mg/L	mg/L	mg/L	mg/L
Arsenic (As)-Dissolved	mg/L	mg/L	mg/L	mg/L
Barium (Ba)-Dissolved	mg/L	mg/L	mg/L	mg/L
Beryllium (Be)-Dissolved	mg/L	mg/L	mg/L	mg/L
Bismuth (Bi)-Dissolved	mg/L	mg/L	mg/L	mg/L
Boron (B)-Dissolved	mg/L	mg/L	mg/L	mg/L
Cadmium (Cd)-Dissolved	mg/L	mg/L	mg/L	mg/L
Calcium (Ca)-Dissolved	mg/L	mg/L	mg/L	mg/L
Cesium (Cs)-Dissolved	mg/L	mg/L	mg/L	mg/L
Chromium (Cr)-Dissolved	mg/L	mg/L	mg/L	mg/L
Cobalt (Co)-Dissolved	mg/L	mg/L	mg/L	mg/L
Copper (Cu)-Dissolved	mg/L	mg/L	mg/L	mg/L
Gallium (Ga)-Dissolved	mg/L	mg/L	mg/L	mg/L
Iron (Fe)-Dissolved	mg/L	mg/L	mg/L	mg/L
Lead (Pb)-Dissolved	mg/L	mg/L	mg/L	mg/L
Lithium (Li)-Dissolved	mg/L	mg/L	mg/L	mg/L
Magnesium (Mg)-Dissolved	mg/L	mg/L	mg/L	mg/L
Manganese (Mn)-Dissolved	mg/L	mg/L	mg/L	mg/L
Molybdenum (Mo)-Dissolved	mg/L	mg/L	mg/L	mg/L
Nickel (Ni)-Dissolved	mg/L	mg/L	mg/L	mg/L
Phosphorus (P)-Dissolved	mg/L	mg/L	mg/L	mg/L
Potassium (K)-Dissolved	mg/L	mg/L	mg/L	mg/L
Rhenium (Re)-Dissolved	mg/L	mg/L	mg/L	mg/L
Rubidium (Rb)-Dissolved	mg/L	mg/L	mg/L	mg/L
Selenium (Se)-Dissolved	mg/L	mg/L	mg/L	mg/L
Silicon (Si)-Dissolved	mg/L	mg/L	mg/L	mg/L
Silver (Ag)-Dissolved	mg/L	mg/L	mg/L	mg/L
Sodium (Na)-Dissolved	mg/L	mg/L	mg/L	mg/L
Strontium (Sr)-Dissolved	mg/L	mg/L	mg/L	mg/L
Tellurium (Te)-Dissolved	mg/L	mg/L	mg/L	mg/L
Thallium (Tl)-Dissolved	mg/L	mg/L	mg/L	mg/L
Thorium (Th)-Dissolved	mg/L	mg/L	mg/L	mg/L
Tin (Sn)-Dissolved	mg/L	mg/L	mg/L	mg/L
Titanium (Ti)-Dissolved	mg/L	mg/L	mg/L	mg/L
Tungsten (W)-Dissolved	mg/L	mg/L	mg/L	mg/L
Uranium (U)-Dissolved	mg/L	mg/L	mg/L	mg/L
Vanadium (V)-Dissolved	mg/L	mg/L	mg/L	mg/L
Yttrium (Y)-Dissolved	mg/L	mg/L	mg/L	mg/L
Zinc (Zn)-Dissolved	mg/L	mg/L	mg/L	mg/L
Zirconium (Zr)-Dissolved	mg/L	mg/L	mg/L	mg/L

MCOI-6-11-9-11-HRM	R-42-11-10-11-HRM	R-34-11-10-11-HRM	R-15-11-10-11-HRM	SCI-2-11-14-11-HRM	R-61 SCR2-6CV-11-14-11-HRM	R-61 SC 1-11-15-11-6CV
09-NOV-11	10-NOV-11	10-NOV-11	10-NOV-11	14-NOV-11	14-NOV-11	15-NOV-11
15:13	11:41	12:18	13:31	11:04	13:35	12:50
L1090816-5	L1090816-6	L1090816-7	L1090816-8	L1090816-9	L1090816-10	L1090816-11
Water	Water	Water	Water	Water	Water	Water
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

R-43 SC 2-11-15-11-HRM	R-28-11-15-11-HRM	R-43 SC 1-11-15-11-HRM	R-11-11-16-11-HRM	SCI-1-11-16-11-HRM	R-45 SC 2-11-16-11-HRM	R-45-SC 1-11-16-11-HRM
15-NOV-11	15-NOV-11	15-NOV-11	16-NOV-11	16-NOV-11	16-NOV-11	16-NOV-11
11:29	15:00	16:05	10:27	10:55	10:57	12:40
L1090816-12	L1090816-13	L1090816-14	L1090816-15	L1090816-16	L1090816-17	L1090816-18
Water	Water	Water	Water	Water	Water	Water
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

R-36-11-16-11-HRM	R-44-SC 1-11-17-11-HRM	R-35A-11-17-11-HRM	R-44-SC2-11-17-11-HRM	R-50-SC1-11-18-11-HRM	R-61-SC2-11-18-11-HRM	R-1-18-11-HRM
16-NOV-11	17-NOV-11	17-NOV-11	17-NOV-11	18-NOV-11	18-NOV-11	18-NOV-11
13:05	10:34	12:39	13:30	12:02	12:09	15:06
L1090816-19	L1090816-20	L1090816-21	L1090816-22	L1090816-23	L1090816-24	L1090816-25
Water	Water	Water	Water	Water	Water	Water
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

R-61-SC1-3CV-11-21-HRM	R-50 SC1-11-21-22-HRM	R-61 SC1-6CV-11-21-HRM	R-60A-11-22-11-HRM	R-60-11-22-11-HRM	R-13-11-22-11-HRM	R-50 SC2-11-28-11-HRM
21-NOV-11	21-NOV-11	21-NOV-11	22-NOV-11	22-NOV-11	22-NOV-11	28-NOV-11
12:54	13:17	14:29	09:11	10:47	10:58	13:39
L1090816-26	L1090816-27	L1090816-28	L1090816-29	L1090816-30	L1090816-31	L1090816-32
Water	Water	Water	Water	Water	Water	Water
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
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mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

Project	914-11.8.11(HR METALS) PAR
Report To	AMY WOLF, ALS LABORATORY GROUP~Fort Collins
ALS File No.	L1090816
Date Received	30-Nov-11 15:00
Date	15-Dec-11

QUALITY CONTROL RESULTS

Matrix	QC Type	Analyte	QC Spl. No.	Reference	Result	Target	Units	%	Limits	Qualifier
Dissolved Metals										
Water	CRM	Aluminum (Al)-Dissolved	WG1397589-2	VA-HIGH-WATRM	1.94	2.00	mg/L	96.8	80-120	
Water	CRM	Antimony (Sb)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.895	1.00	mg/L	89.5	80-120	
Water	CRM	Arsenic (As)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.990	1.00	mg/L	99.0	80-120	
Water	CRM	Barium (Ba)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.241	0.250	mg/L	96.4	80-120	
Water	CRM	Beryllium (Be)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.0838	0.100	mg/L	83.8	80-120	
Water	CRM	Bismuth (Bi)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.972	1.00	mg/L	97.2	80-120	
Water	CRM	Boron (B)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.82	1.00	mg/L	82.3	80-120	
Water	CRM	Cadmium (Cd)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.102	0.100	mg/L	102.0	80-120	
Water	CRM	Calcium (Ca)-Dissolved	WG1397589-2	VA-HIGH-WATRM	52.3	50.0	mg/L	104.6	80-120	
Water	CRM	Cesium (Cs)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.0450	0.0500	mg/L	90.0	80-120	
Water	CRM	Chromium (Cr)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.241	0.250	mg/L	96.2	80-120	
Water	CRM	Cobalt (Co)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.262	0.250	mg/L	104.8	80-120	
Water	CRM	Copper (Cu)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.248	0.250	mg/L	99.2	80-120	
Water	CRM	Gallium (Ga)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.258	0.250	mg/L	103.2	80-120	
Water	CRM	Iron (Fe)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.966	1.00	mg/L	96.6	80-120	
Water	CRM	Lead (Pb)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.531	0.500	mg/L	106.2	80-120	
Water	CRM	Lithium (Li)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.208	0.250	mg/L	83.1	80-120	
Water	CRM	Magnesium (Mg)-Dissolved	WG1397589-2	VA-HIGH-WATRM	49.5	50.0	mg/L	99.0	80-120	
Water	CRM	Manganese (Mn)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.252	0.250	mg/L	100.8	80-120	
Water	CRM	Molybdenum (Mo)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.203	0.250	mg/L	81.2	80-120	
Water	CRM	Nickel (Ni)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.513	0.500	mg/L	102.6	80-120	
Water	CRM	Phosphorus (P)-Dissolved	WG1397589-2	VA-HIGH-WATRM	2.50	2.50	mg/L	99.9	80-120	
Water	CRM	Potassium (K)-Dissolved	WG1397589-2	VA-HIGH-WATRM	49.3	50.0	mg/L	98.6	80-120	
Water	CRM	Rhenium (Re)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.0970	0.100	mg/L	97.0	80-120	
Water	CRM	Rubidium (Rb)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.0814	0.100	mg/L	81.4	80-120	
Water	CRM	Selenium (Se)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.992	1.00	mg/L	99.2	80-120	
Water	CRM	Silicon (Si)-Dissolved	WG1397589-2	VA-HIGH-WATRM	1.02	1.00	mg/L	101.9	80-120	
Water	CRM	Silver (Ag)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.0880	0.100	mg/L	88.0	80-120	
Water	CRM	Sodium (Na)-Dissolved	WG1397589-2	VA-HIGH-WATRM	49.8	50.0	mg/L	99.6	80-120	
Water	CRM	Strontium (Sr)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.207	0.250	mg/L	82.9	80-120	
Water	CRM	Tellurium (Te)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.102	0.100	mg/L	102.0	80-120	
Water	CRM	Thallium (Tl)-Dissolved	WG1397589-2	VA-HIGH-WATRM	1.00	1.00	mg/L	100.1	80-120	
Water	CRM	Thorium (Th)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.0833	0.100	mg/L	83.3	80-120	
Water	CRM	Tin (Sn)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.481	0.500	mg/L	96.2	80-120	

Water	CRM	Titanium (Ti)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.241	0.250	mg/L	96.4	80-120
Water	CRM	Tungsten (W)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.0961	0.100	mg/L	96.1	80-120
Water	CRM	Uranium (U)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.00470	0.00500	mg/L	94.1	80-120
Water	CRM	Vanadium (V)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.500	0.500	mg/L	100.0	80-120
Water	CRM	Yttrium (Y)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.0814	0.100	mg/L	81.4	80-120
Water	CRM	Zinc (Zn)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.550	0.500	mg/L	110.0	80-120
Water	CRM	Zirconium (Zr)-Dissolved	WG1397589-2	VA-HIGH-WATRM	0.0916	0.100	mg/L	91.6	80-120
Water	MB	Aluminum (Al)-Dissolved	WG1397589-1		<0.00020	<0.0002	mg/L	-	0.0002
Water	MB	Antimony (Sb)-Dissolved	WG1397589-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Arsenic (As)-Dissolved	WG1397589-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Barium (Ba)-Dissolved	WG1397589-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Beryllium (Be)-Dissolved	WG1397589-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Bismuth (Bi)-Dissolved	WG1397589-1		<0.0000010	<0.000001	mg/L	-	0.000001
Water	MB	Boron (B)-Dissolved	WG1397589-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Cadmium (Cd)-Dissolved	WG1397589-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Calcium (Ca)-Dissolved	WG1397589-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Cesium (Cs)-Dissolved	WG1397589-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Chromium (Cr)-Dissolved	WG1397589-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Cobalt (Co)-Dissolved	WG1397589-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Copper (Cu)-Dissolved	WG1397589-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Gallium (Ga)-Dissolved	WG1397589-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Iron (Fe)-Dissolved	WG1397589-1		<0.010	<0.01	mg/L	-	0.01
Water	MB	Lead (Pb)-Dissolved	WG1397589-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Lithium (Li)-Dissolved	WG1397589-1		<0.00020	<0.0002	mg/L	-	0.0002
Water	MB	Magnesium (Mg)-Dissolved	WG1397589-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Manganese (Mn)-Dissolved	WG1397589-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Molybdenum (Mo)-Dissolved	WG1397589-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Nickel (Ni)-Dissolved	WG1397589-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Phosphorus (P)-Dissolved	WG1397589-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Potassium (K)-Dissolved	WG1397589-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Rhenium (Re)-Dissolved	WG1397589-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Rubidium (Rb)-Dissolved	WG1397589-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Selenium (Se)-Dissolved	WG1397589-1		<0.000040	<0.00004	mg/L	-	0.00004
Water	MB	Silicon (Si)-Dissolved	WG1397589-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Silver (Ag)-Dissolved	WG1397589-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Sodium (Na)-Dissolved	WG1397589-1		<0.20	<0.2	mg/L	-	0.2
Water	MB	Strontium (Sr)-Dissolved	WG1397589-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Tellurium (Te)-Dissolved	WG1397589-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Thallium (Tl)-Dissolved	WG1397589-1		<0.0000010	<0.000001	mg/L	-	0.000001
Water	MB	Thorium (Th)-Dissolved	WG1397589-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Tin (Sn)-Dissolved	WG1397589-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Titanium (Ti)-Dissolved	WG1397589-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Tungsten (W)-Dissolved	WG1397589-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Uranium (U)-Dissolved	WG1397589-1		<0.0000010	<0.000001	mg/L	-	0.000001
Water	MB	Vanadium (V)-Dissolved	WG1397589-1		<0.000010	<0.00001	mg/L	-	0.00001

Water	MB	Yttrium (Y)-Dissolved	WG1397589-1	<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Zinc (Zn)-Dissolved	WG1397589-1	<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Zirconium (Zr)-Dissolved	WG1397589-1	<0.000010	<0.00001	mg/L	-	0.00001

Project	914-11.8.11(HR METALS) PAR
Report To	AMY WOLF, ALS LABORATORY GROUP~Fort Collins
ALS File No.	L1090816
Date Received	30-Nov-11 15:00
Date	15-Dec-11

Hold Time Exceedances

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

Qualifier Key for Sample Parameters Listed Below:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects

Samples with Parameter Qualifiers as Listed Above:

Sample Number	Client Sample ID	Parameters	Qualifier
L1090816-16	SCI-1-11-16-11-HRM	Cadmium (Cd)-Dissolved	DLM

ALS LABORATORY GROUP
ATTN: AMY WOLF
225 Commerce Drive
Fort Collins CO

Date Received: 30-NOV-11
Report Date: 15-DEC-11 17:05 (MT)
Version: FINAL

Client Phone: 970-490-1511

Certificate of Analysis

Lab Work Order #: L1090816

Project P.O. #: NOT SUBMITTED
Job Reference: 914-11.8.11(HR METALS) PAR
C of C Numbers:
Legal Site Desc:

ELLE DINIZ
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-1	L1090816-2	L1090816-3	L1090816-4	L1090816-5
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	08-NOV-11	08-NOV-11	08-NOV-11	09-NOV-11	09-NOV-11
	Sampled Time	11:27	11:37	13:57	11:37	15:13
	Client ID	MCOI-5-11-8-11-HRM	R-46-11-8-11-HRM	R-14-11-8-11-HRM	R-35B-11-9-11-HRM	MCOI-6-11-9-11-HRM
Grouping	Analyte					
WATER						
Physical Tests	Hardness (as CaCO3) (mg/L)	86.6	38.9	40.4	84.1	243
Dissolved Metals	Aluminum (Al)-Dissolved (mg/L)	0.0346	0.00184	0.00112	0.0278	0.00072
	Antimony (Sb)-Dissolved (mg/L)	0.0000760	0.00289	0.0000765	0.000232	0.000185
	Arsenic (As)-Dissolved (mg/L)	0.000777	0.000754	0.000931	0.00185	0.000469
	Barium (Ba)-Dissolved (mg/L)	0.0152	0.0233	0.0320	0.0398	0.0457
	Beryllium (Be)-Dissolved (mg/L)	0.0000034	<0.0000020	<0.0000020	0.0000024	0.0000046
	Bismuth (Bi)-Dissolved (mg/L)	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010
	Boron (B)-Dissolved (mg/L)	0.0220	0.0122	0.0133	0.0256	0.0484
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	0.0000250	<0.0000050
	Calcium (Ca)-Dissolved (mg/L)	28.7	10.1	10.5	25.1	73.3
	Cesium (Cs)-Dissolved (mg/L)	0.0000160	0.000270	0.000289	0.000107	0.0000140
	Chromium (Cr)-Dissolved (mg/L)	0.00497	0.00535	0.00537	0.00771	0.0556
	Cobalt (Co)-Dissolved (mg/L)	0.0000333	0.0000495	0.0000423	0.0000540	0.000458
	Copper (Cu)-Dissolved (mg/L)	0.00109	0.00112	0.000182	0.000402	0.0131
	Gallium (Ga)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Iron (Fe)-Dissolved (mg/L)	0.013	<0.010	<0.010	0.016	<0.010
	Lead (Pb)-Dissolved (mg/L)	0.0000362	0.0000172	0.0000066	0.000119	0.0000844
	Lithium (Li)-Dissolved (mg/L)	0.0228	0.0204	0.0214	0.0240	0.0398
	Magnesium (Mg)-Dissolved (mg/L)	3.63	3.33	3.42	5.21	14.5
	Manganese (Mn)-Dissolved (mg/L)	0.000857	0.00105	0.000296	0.00651	0.00389
	Molybdenum (Mo)-Dissolved (mg/L)	0.00134	0.000946	0.00109	0.00119	0.00116
	Nickel (Ni)-Dissolved (mg/L)	0.000533	0.000702	0.000105	0.00104	0.0373
	Phosphorus (P)-Dissolved (mg/L)	0.056	<0.050	<0.050	<0.050	0.065
	Potassium (K)-Dissolved (mg/L)	0.485	1.89	2.10	2.05	0.844
	Rhenium (Re)-Dissolved (mg/L)	0.0000325	<0.0000050	<0.0000050	<0.0000050	0.0000367
	Rubidium (Rb)-Dissolved (mg/L)	0.00110	0.00494	0.00590	0.00333	0.00135
	Selenium (Se)-Dissolved (mg/L)	0.000288	0.000333	0.000328	0.000586	0.000241
	Silicon (Si)-Dissolved (mg/L)	31.4	34.6	38.4	36.1	31.8
	Silver (Ag)-Dissolved (mg/L)	0.0000424	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Sodium (Na)-Dissolved (mg/L)	13.2	9.73	10.9	11.7	27.1
	Strontium (Sr)-Dissolved (mg/L)	0.0809	0.0392	0.0465	0.0673	0.301
	Tellurium (Te)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thallium (Tl)-Dissolved (mg/L)	0.0000083	0.0000022	0.0000061	0.0000028	0.0000126
	Thorium (Th)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Tin (Sn)-Dissolved (mg/L)	0.000015	0.000027	<0.000010	0.000036	<0.000010
	Titanium (Ti)-Dissolved (mg/L)	0.000872	<0.000050	<0.000050	0.000673	<0.000050
	Tungsten (W)-Dissolved (mg/L)	0.000458	0.000661	0.000523	0.000879	0.000121

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-6	L1090816-7	L1090816-8	L1090816-9	L1090816-10
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	10-NOV-11	10-NOV-11	10-NOV-11	14-NOV-11	14-NOV-11
	Sampled Time	11:41	12:18	13:31	11:04	13:35
	Client ID	R-42-11-10-11-HRM	R-34-11-10-11-HRM	R-15-11-10-11-HRM	SCI-2-11-14-11-HRM	R-61 SCR2-6CV-11-14-11-HRM
Grouping	Analyte					
WATER						
Physical Tests	Hardness (as CaCO3) (mg/L)	191	60.5	57.9	243	48.6
Dissolved Metals	Aluminum (Al)-Dissolved (mg/L)	0.00081	0.00701	0.00584	0.00061	0.00067
	Antimony (Sb)-Dissolved (mg/L)	0.000666	0.0000815	0.0000752	0.0000306	0.000302
	Arsenic (As)-Dissolved (mg/L)	0.000736	0.000845	0.000719	0.000354	0.00194
	Barium (Ba)-Dissolved (mg/L)	0.0887	0.0261	0.0293	0.0641	0.0379
	Beryllium (Be)-Dissolved (mg/L)	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000039
	Bismuth (Bi)-Dissolved (mg/L)	<0.0000010	<0.0000010	<0.0000010	<0.0000010	0.0000053
	Boron (B)-Dissolved (mg/L)	0.0200	0.0194	0.0139	0.0209	0.0257
	Cadmium (Cd)-Dissolved (mg/L)	0.0000060	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Calcium (Ca)-Dissolved (mg/L)	53.0	18.1	16.8	71.0	12.6
	Cesium (Cs)-Dissolved (mg/L)	0.000495	0.0000053	0.0000266	0.0000441	0.000117
	Chromium (Cr)-Dissolved (mg/L)	1.04	0.00485	0.0123	0.501	0.000442
	Cobalt (Co)-Dissolved (mg/L)	0.000211	0.0000537	0.0000730	0.000110	0.00172
	Copper (Cu)-Dissolved (mg/L)	0.000391	0.000393	0.000239	0.000688	0.000161
	Gallium (Ga)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Iron (Fe)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	4.10
	Lead (Pb)-Dissolved (mg/L)	0.000130	0.0000295	0.0000386	0.0000070	0.0000694
	Lithium (Li)-Dissolved (mg/L)	0.0372	0.0240	0.0236	0.0244	0.0255
	Magnesium (Mg)-Dissolved (mg/L)	14.2	3.71	3.88	16.0	4.19
	Manganese (Mn)-Dissolved (mg/L)	0.00206	0.000350	0.000473	0.00149	0.755
	Molybdenum (Mo)-Dissolved (mg/L)	0.000494	0.00102	0.000929	0.000625	0.00659
	Nickel (Ni)-Dissolved (mg/L)	0.0226	0.000235	0.000602	0.0168	0.00136
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	2.38	1.75	1.81	3.65	2.01
	Rhenium (Re)-Dissolved (mg/L)	0.0000279	<0.0000050	0.0000059	0.0000258	<0.0000050
	Rubidium (Rb)-Dissolved (mg/L)	0.00338	0.00220	0.00438	0.00429	0.00281
	Selenium (Se)-Dissolved (mg/L)	0.000622	0.000420	0.000954	0.000642	0.000217
	Silicon (Si)-Dissolved (mg/L)	34.0	33.1	34.1	29.8	32.1
	Silver (Ag)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Sodium (Na)-Dissolved (mg/L)	17.0	11.1	10.9	22.8	20.7
	Strontium (Sr)-Dissolved (mg/L)	0.185	0.0536	0.0555	0.298	0.0665
	Tellurium (Te)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	0.000029
	Thallium (Tl)-Dissolved (mg/L)	0.0000020	0.0000078	0.0000016	0.0000072	0.0000017
	Thorium (Th)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Tin (Sn)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	0.000013
	Titanium (Ti)-Dissolved (mg/L)	<0.000050	0.000202	0.000135	<0.000050	<0.000050
	Tungsten (W)-Dissolved (mg/L)	0.000313	0.000510	0.000423	0.00917	0.00132

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-11	L1090816-12	L1090816-13	L1090816-14	L1090816-15
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	15-NOV-11	15-NOV-11	15-NOV-11	15-NOV-11	16-NOV-11
	Sampled Time	12:50	11:29	15:00	16:05	10:27
	Client ID	R-61 SC 1-11-15-11-6CV	R-43 SC 2-11-15-11-HRM	R-28-11-15-11-HRM	R-43 SC 1-11-15-11-HRM	R-11-11-16-11-HRM
Grouping	**Analyte**					
WATER						
Physical Tests	Hardness (as CaCO3) (mg/L)	53.6	57.6	165	57.7	81.0
Dissolved Metals	Aluminum (Al)-Dissolved (mg/L)	0.00125	0.00407	0.00056	0.00095	0.00099
	Antimony (Sb)-Dissolved (mg/L)	0.000687	0.000391	0.0000622	0.000102	0.0000626
	Arsenic (As)-Dissolved (mg/L)	0.00107	0.00210	0.000856	0.00103	0.00115
	Barium (Ba)-Dissolved (mg/L)	0.0555	0.0165	0.0669	0.0215	0.0389
	Beryllium (Be)-Dissolved (mg/L)	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
	Bismuth (Bi)-Dissolved (mg/L)	0.0000020	<0.0000010	<0.0000010	<0.0000010	<0.0000010
	Boron (B)-Dissolved (mg/L)	0.0221	0.0395	0.0262	0.0167	0.0307
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	<0.0000050	0.0000081	<0.0000050	<0.0000050
	Calcium (Ca)-Dissolved (mg/L)	14.4	15.8	47.1	16.9	22.3
	Cesium (Cs)-Dissolved (mg/L)	0.0000258	0.000180	0.000434	0.000287	0.000383
	Chromium (Cr)-Dissolved (mg/L)	0.00209	0.00304	0.420	0.0320	0.0177
	Cobalt (Co)-Dissolved (mg/L)	0.00307	0.0000485	0.0000584	0.0000449	0.0000207
	Copper (Cu)-Dissolved (mg/L)	0.00512	0.000313	0.000842	0.000240	0.00114
	Gallium (Ga)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Iron (Fe)-Dissolved (mg/L)	1.22	0.013	0.020	<0.010	<0.010
	Lead (Pb)-Dissolved (mg/L)	0.000457	0.0000249	0.0000249	0.0000051	0.0000090
	Lithium (Li)-Dissolved (mg/L)	0.0233	0.0272	0.0347	0.0242	0.0271
	Magnesium (Mg)-Dissolved (mg/L)	4.32	4.38	11.4	3.75	6.15
	Manganese (Mn)-Dissolved (mg/L)	1.16	0.000430	0.000935	0.00112	0.000160
	Molybdenum (Mo)-Dissolved (mg/L)	0.00872	0.00175	0.000717	0.00106	0.00144
	Nickel (Ni)-Dissolved (mg/L)	0.00377	0.000348	0.0212	0.00194	0.000321
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	1.67	1.49	1.86	1.33	1.48
	Rhenium (Re)-Dissolved (mg/L)	<0.0000050	<0.0000050	0.0000177	0.0000053	<0.0000050
	Rubidium (Rb)-Dissolved (mg/L)	0.00212	0.00280	0.00272	0.00217	0.00216
	Selenium (Se)-Dissolved (mg/L)	0.000456	0.000508	0.000565	0.00193	0.00143
	Silicon (Si)-Dissolved (mg/L)	29.0	31.0	34.8	35.1	35.1
	Silver (Ag)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Sodium (Na)-Dissolved (mg/L)	19.0	17.8	16.2	10.8	12.6
	Strontium (Sr)-Dissolved (mg/L)	0.0738	0.0851	0.163	0.0608	0.0811
	Tellurium (Te)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thallium (Tl)-Dissolved (mg/L)	0.0000016	0.0000041	0.0000014	0.0000016	0.0000026
	Thorium (Th)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Tin (Sn)-Dissolved (mg/L)	0.000031	0.000012	<0.000010	0.000015	<0.000010
	Titanium (Ti)-Dissolved (mg/L)	0.000082	0.000059	<0.000050	<0.000050	<0.000050
	Tungsten (W)-Dissolved (mg/L)	0.00175	0.00108	0.000353	0.000595	0.000693

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-16	L1090816-17	L1090816-18	L1090816-19	L1090816-20
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	16-NOV-11	16-NOV-11	16-NOV-11	16-NOV-11	17-NOV-11
	Sampled Time	10:55	10:57	12:40	13:05	10:34
	Client ID	SCI-1-11-16-11-HRM	R-45 SC 2-11-16-11-HRM	R-45-SC 1-11-16-11-HRM	R-36-11-16-11-HRM	R-44-SC 1-11-17-11-HRM
Grouping	**Analyte**					
WATER						
Physical Tests	Hardness (as CaCO3) (mg/L)	221	59.9	62.7	65.7	45.2
Dissolved Metals	Aluminum (Al)-Dissolved (mg/L)	0.00040	0.00137	0.00156	0.00518	0.00150
	Antimony (Sb)-Dissolved (mg/L)	0.0000212	0.0000503	0.000135	0.000276	0.0000580
	Arsenic (As)-Dissolved (mg/L)	0.00269	0.000969	0.000766	0.00188	0.000765
	Barium (Ba)-Dissolved (mg/L)	0.0341	0.0290	0.0287	0.0338	0.0215
	Beryllium (Be)-Dissolved (mg/L)	0.0000034	<0.0000020	<0.0000020	<0.0000020	<0.0000020
	Bismuth (Bi)-Dissolved (mg/L)	0.0000025	<0.0000010	<0.0000010	<0.0000010	<0.0000010
	Boron (B)-Dissolved (mg/L)	0.0855	0.0222	0.0184	0.0252	0.0154
	Cadmium (Cd)-Dissolved (mg/L)	<0.000010 DLM	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Calcium (Ca)-Dissolved (mg/L)	71.7	16.2	17.2	19.3	12.4
	Cesium (Cs)-Dissolved (mg/L)	0.0000057	0.0000403	0.0000724	0.0000259	0.0000502
	Chromium (Cr)-Dissolved (mg/L)	0.0100	0.0106	0.0187	0.00613	0.0133
	Cobalt (Co)-Dissolved (mg/L)	0.000236	0.0000266	0.0000255	0.0000869	0.000136
	Copper (Cu)-Dissolved (mg/L)	0.00272	0.000114	0.000100	0.000610	0.000213
	Gallium (Ga)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Iron (Fe)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	0.016
	Lead (Pb)-Dissolved (mg/L)	0.0000072	0.0000087	0.0000131	0.000188	0.0000234
	Lithium (Li)-Dissolved (mg/L)	0.0632	0.0237	0.0241	0.0233	0.0221
	Magnesium (Mg)-Dissolved (mg/L)	10.1	4.71	4.77	4.27	3.48
	Manganese (Mn)-Dissolved (mg/L)	0.000221	0.000324	0.000310	0.00195	0.000275
	Molybdenum (Mo)-Dissolved (mg/L)	0.0845	0.00137	0.000921	0.00166	0.000894
	Nickel (Ni)-Dissolved (mg/L)	0.00279	0.00160	0.000533	0.000991	0.000947
	Phosphorus (P)-Dissolved (mg/L)	1.20	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	1.37	1.31	1.26	2.03	1.15
	Rhenium (Re)-Dissolved (mg/L)	0.0000141	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Rubidium (Rb)-Dissolved (mg/L)	0.00315	0.00177	0.00177	0.00297	0.00160
	Selenium (Se)-Dissolved (mg/L)	0.000161	0.000395	0.000928	0.00100	0.000475
	Silicon (Si)-Dissolved (mg/L)	29.6	34.4	33.5	33.1	32.6
	Silver (Ag)-Dissolved (mg/L)	0.0000399	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Sodium (Na)-Dissolved (mg/L)	64.2	11.3	10.8	14.4	9.67
	Strontium (Sr)-Dissolved (mg/L)	0.275	0.0647	0.0684	0.0631	0.0504
	Tellurium (Te)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thallium (Tl)-Dissolved (mg/L)	0.0000238	0.0000029	0.0000031	0.0000049	0.0000032
	Thorium (Th)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Tin (Sn)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	0.000012	<0.000010
	Titanium (Ti)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	0.000093	<0.000050
	Tungsten (W)-Dissolved (mg/L)	0.000627	0.000592	0.000478	0.000856	0.00122

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-21	L1090816-22	L1090816-23	L1090816-24	L1090816-25
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	17-NOV-11	17-NOV-11	18-NOV-11	18-NOV-11	18-NOV-11
	Sampled Time	12:39	13:30	12:02	12:09	15:06
	Client ID	R-35A-11-17-11-HRM	R-44-SC2-11-17-11-HRM	R-50-SC1-11-18-11-HRM	R-61-SC2-11-18-11-HRM	R-1-18-11-HRM
Grouping	Analyte					
WATER						
Physical Tests	Hardness (as CaCO3) (mg/L)	79.7	60.1	54.3	44.8	43.6
Dissolved Metals	Aluminum (Al)-Dissolved (mg/L)	0.00084	0.0160	0.00849	0.00061	0.00156
	Antimony (Sb)-Dissolved (mg/L)	0.0000897	0.0000584	0.000398	0.000231	0.000840
	Arsenic (As)-Dissolved (mg/L)	0.00203	0.000807	0.00167	0.00179	0.00106
	Barium (Ba)-Dissolved (mg/L)	0.356	0.0241	0.0164	0.0311	0.0150
	Beryllium (Be)-Dissolved (mg/L)	<0.0000020	<0.0000020	<0.0000020	0.0000029	<0.0000020
	Bismuth (Bi)-Dissolved (mg/L)	<0.0000010	<0.0000010	0.0000014	0.0000049	<0.0000010
	Boron (B)-Dissolved (mg/L)	0.0394	0.0165	0.0187	0.0222	0.0135
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Calcium (Ca)-Dissolved (mg/L)	22.2	17.4	14.4	11.5	11.0
	Cesium (Cs)-Dissolved (mg/L)	0.0000534	0.0000347	0.0000423	0.000104	0.0000081
	Chromium (Cr)-Dissolved (mg/L)	0.00428	0.00480	0.0883	<0.000050	0.00520
	Cobalt (Co)-Dissolved (mg/L)	0.0000499	0.0000237	0.0000451	0.00137	0.000117
	Copper (Cu)-Dissolved (mg/L)	0.000069	0.000212	0.000139	0.000142	0.00232
	Gallium (Ga)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Iron (Fe)-Dissolved (mg/L)	<0.010	<0.010	<0.010	2.96	<0.010
	Lead (Pb)-Dissolved (mg/L)	0.0000054	0.0000185	0.0000716	0.0000425	0.000122
	Lithium (Li)-Dissolved (mg/L)	0.0279	0.0228	0.0242	0.0234	0.0218
	Magnesium (Mg)-Dissolved (mg/L)	5.87	4.03	4.49	3.91	3.90
	Manganese (Mn)-Dissolved (mg/L)	0.000425	0.00512	0.000581	0.651	0.00324
	Molybdenum (Mo)-Dissolved (mg/L)	0.00110	0.000759	0.00202	0.00578	0.00114
	Nickel (Ni)-Dissolved (mg/L)	0.00920	0.000191	0.00228	0.000946	0.0163
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	4.03	1.34	1.48	1.92	1.76
	Rhenium (Re)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Rubidium (Rb)-Dissolved (mg/L)	0.00583	0.00191	0.00215	0.00249	0.00405
	Selenium (Se)-Dissolved (mg/L)	0.000497	0.000384	0.000534	0.000219	0.000363
	Silicon (Si)-Dissolved (mg/L)	38.3	34.1	32.2	32.8	35.3
	Silver (Ag)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Sodium (Na)-Dissolved (mg/L)	17.9	11.0	15.4	19.4	12.4
	Strontium (Sr)-Dissolved (mg/L)	0.160	0.0559	0.0502	0.0572	0.0449
	Tellurium (Te)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	0.000025	<0.000010
	Thallium (Tl)-Dissolved (mg/L)	0.0000065	0.0000035	0.0000086	0.0000046	0.0000037
	Thorium (Th)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Tin (Sn)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	0.000012	<0.000010
	Titanium (Ti)-Dissolved (mg/L)	<0.000050	0.000385	0.000156	<0.000050	<0.000050
	Tungsten (W)-Dissolved (mg/L)	0.000472	0.00114	0.000927	0.00106	0.000439

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-26	L1090816-27	L1090816-28	L1090816-29	L1090816-30
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	21-NOV-11	21-NOV-11	21-NOV-11	22-NOV-11	22-NOV-11
	Sampled Time	12:54	13:17	14:29	09:11	10:47
	Client ID	R-61-SC1-3CV-11-21-HRM	R-50 SC1-11-21-22-HRM	R-61 SC1-6CV-11-21-HRM	R-60A-11-22-11-HRM	R-60-11-22-11-HRM
Grouping	Analyte					
WATER						
Physical Tests	Hardness (as CaCO3) (mg/L)	49.6	51.7	47.8	46.2	46.5
Dissolved Metals	Aluminum (Al)-Dissolved (mg/L)	0.00054	0.00571	0.00175	0.00500	0.00482
	Antimony (Sb)-Dissolved (mg/L)	0.000315	0.000320	0.000249	0.000564	0.000607
	Arsenic (As)-Dissolved (mg/L)	0.00114	0.00159	0.000823	0.00120	0.00111
	Barium (Ba)-Dissolved (mg/L)	0.0508	0.0161	0.0467	0.0290	0.0297
	Beryllium (Be)-Dissolved (mg/L)	0.0000025	<0.0000020	0.0000021	<0.0000020	<0.0000020
	Bismuth (Bi)-Dissolved (mg/L)	0.0000031	<0.0000010	0.0000017	<0.0000010	<0.0000010
	Boron (B)-Dissolved (mg/L)	0.0212	0.0178	0.0196	0.0125	0.0124
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Calcium (Ca)-Dissolved (mg/L)	13.3	13.7	12.7	12.3	12.4
	Cesium (Cs)-Dissolved (mg/L)	0.0000287	0.0000399	0.0000267	0.0000909	0.0000927
	Chromium (Cr)-Dissolved (mg/L)	0.000357	0.0820	0.00148	0.00467	0.00479
	Cobalt (Co)-Dissolved (mg/L)	0.00228	0.0000200	0.00225	0.0000601	0.0000882
	Copper (Cu)-Dissolved (mg/L)	0.000146	0.000165	0.000226	0.000146	0.000142
	Gallium (Ga)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Iron (Fe)-Dissolved (mg/L)	1.62	<0.010	0.950	<0.010	<0.010
	Lead (Pb)-Dissolved (mg/L)	0.0000203	0.0000430	0.0000776	0.0000234	0.0000279
	Lithium (Li)-Dissolved (mg/L)	0.0232	0.0234	0.0229	0.0197	0.0197
	Magnesium (Mg)-Dissolved (mg/L)	4.00	4.25	3.89	3.79	3.81
	Manganese (Mn)-Dissolved (mg/L)	1.01	0.000245	0.933	0.000223	0.000265
	Molybdenum (Mo)-Dissolved (mg/L)	0.00721	0.00171	0.00630	0.00126	0.00133
	Nickel (Ni)-Dissolved (mg/L)	0.00233	0.00174	0.00212	0.00119	0.00125
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	1.59	1.42	1.56	1.86	1.86
	Rhenium (Re)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Rubidium (Rb)-Dissolved (mg/L)	0.00206	0.00202	0.00198	0.00445	0.00452
	Selenium (Se)-Dissolved (mg/L)	0.000407	0.000492	0.000542	0.000426	0.000411
	Silicon (Si)-Dissolved (mg/L)	28.8	32.2	29.5	33.7	33.6
	Silver (Ag)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Sodium (Na)-Dissolved (mg/L)	19.3	14.8	18.6	10.4	10.4
	Strontium (Sr)-Dissolved (mg/L)	0.0660	0.0490	0.0588	0.0492	0.0494
	Tellurium (Te)-Dissolved (mg/L)	0.000012	<0.000010	<0.000010	<0.000010	<0.000010
	Thallium (Tl)-Dissolved (mg/L)	0.0000023	0.0000089	0.0000039	0.0000106	0.0000110
	Thorium (Th)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Tin (Sn)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Titanium (Ti)-Dissolved (mg/L)	0.000055	0.000080	0.000092	0.000050	<0.000050
	Tungsten (W)-Dissolved (mg/L)	0.00175	0.000688	0.00148	0.00152	0.00156

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-31	L1090816-32		
	Description	WATER	WATER		
	Sampled Date	22-NOV-11	28-NOV-11		
	Sampled Time	10:58	13:39		
	Client ID	R-13-11-22-11-HRM	R-50 SC2-11-28-11-HRM		
Grouping	**Analyte**				
WATER					
Physical Tests	Hardness (as CaCO3) (mg/L)	48.2	44.4		
Dissolved Metals	Aluminum (Al)-Dissolved (mg/L)	0.00139	0.0225		
	Antimony (Sb)-Dissolved (mg/L)	0.0000443	0.000119		
	Arsenic (As)-Dissolved (mg/L)	0.000688	0.00114		
	Barium (Ba)-Dissolved (mg/L)	0.0258	0.0251		
	Beryllium (Be)-Dissolved (mg/L)	<0.0000020	<0.0000020		
	Bismuth (Bi)-Dissolved (mg/L)	<0.0000010	0.0000012		
	Boron (B)-Dissolved (mg/L)	0.0136	0.0156		
	Cadmium (Cd)-Dissolved (mg/L)	0.0000058	<0.0000050		
	Calcium (Ca)-Dissolved (mg/L)	13.6	11.2		
	Cesium (Cs)-Dissolved (mg/L)	<0.0000050	0.000271		
	Chromium (Cr)-Dissolved (mg/L)	0.00392	0.00361		
	Cobalt (Co)-Dissolved (mg/L)	0.0000099	0.0000287		
	Copper (Cu)-Dissolved (mg/L)	0.000337	0.000062		
	Gallium (Ga)-Dissolved (mg/L)	<0.000050	<0.000050		
	Iron (Fe)-Dissolved (mg/L)	<0.010	0.031		
	Lead (Pb)-Dissolved (mg/L)	<0.0000050	0.0000540		
	Lithium (Li)-Dissolved (mg/L)	0.0246	0.0218		
	Magnesium (Mg)-Dissolved (mg/L)	3.43	3.96		
	Manganese (Mn)-Dissolved (mg/L)	0.000885	0.000262		
	Molybdenum (Mo)-Dissolved (mg/L)	0.000941	0.00116		
	Nickel (Ni)-Dissolved (mg/L)	<0.000050	0.00159		
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050		
	Potassium (K)-Dissolved (mg/L)	1.35	1.42		
	Rhenium (Re)-Dissolved (mg/L)	<0.0000050	<0.0000050		
	Rubidium (Rb)-Dissolved (mg/L)	0.00181	0.00181		
	Selenium (Se)-Dissolved (mg/L)	0.000596	0.000333		
	Silicon (Si)-Dissolved (mg/L)	33.3	36.0		
	Silver (Ag)-Dissolved (mg/L)	<0.0000050	<0.0000050		
	Sodium (Na)-Dissolved (mg/L)	10.3	11.6		
	Strontium (Sr)-Dissolved (mg/L)	0.0457	0.0455		
	Tellurium (Te)-Dissolved (mg/L)	<0.000010	<0.000010		
	Thallium (Tl)-Dissolved (mg/L)	0.0000024	0.0000036		
	Thorium (Th)-Dissolved (mg/L)	<0.0000050	0.0000155		
	Tin (Sn)-Dissolved (mg/L)	<0.000010	<0.000010		
	Titanium (Ti)-Dissolved (mg/L)	<0.000050	0.000230		
	Tungsten (W)-Dissolved (mg/L)	0.000473	0.00132		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-1	L1090816-2	L1090816-3	L1090816-4	L1090816-5
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	08-NOV-11	08-NOV-11	08-NOV-11	09-NOV-11	09-NOV-11
	Sampled Time	11:27	11:37	13:57	11:37	15:13
	Client ID	MCOI-5-11-8-11-HRM	R-46-11-8-11-HRM	R-14-11-8-11-HRM	R-35B-11-9-11-HRM	MCOI-6-11-9-11-HRM
Grouping	**Analyte**					
WATER						
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	0.000121	0.000445	0.000758	0.000304	0.00129
	Vanadium (V)-Dissolved (mg/L)	0.00248	0.00805	0.00768	0.0142	0.00122
	Yttrium (Y)-Dissolved (mg/L)	0.0000301	<0.0000050	0.0000093	0.0000334	0.0000103
	Zinc (Zn)-Dissolved (mg/L)	0.00220	0.00604	0.00075	0.0282	0.0397
	Zirconium (Zr)-Dissolved (mg/L)	0.000045	<0.000010	<0.000010	0.000103	<0.000010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-6	L1090816-7	L1090816-8	L1090816-9	L1090816-10
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	10-NOV-11	10-NOV-11	10-NOV-11	14-NOV-11	14-NOV-11
	Sampled Time	11:41	12:18	13:31	11:04	13:35
	Client ID	R-42-11-10-11-HRM	R-34-11-10-11-HRM	R-15-11-10-11-HRM	SCI-2-11-14-11-HRM	R-61 SCR2-6CV-11-14-11-HRM
Grouping	**Analyte**					
WATER						
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	0.000634	0.000450	0.000378	0.00155	0.000581
	Vanadium (V)-Dissolved (mg/L)	0.00506	0.00738	0.00671	0.00136	0.000921
	Yttrium (Y)-Dissolved (mg/L)	0.0000096	0.0000133	0.0000133	0.0000350	0.0000064
	Zinc (Zn)-Dissolved (mg/L)	0.0104	0.00276	0.00110	0.00197	0.00046
	Zirconium (Zr)-Dissolved (mg/L)	<0.000010	<0.000010	0.000048	<0.000010	<0.000010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-11	L1090816-12	L1090816-13	L1090816-14	L1090816-15
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	15-NOV-11	15-NOV-11	15-NOV-11	15-NOV-11	16-NOV-11
	Sampled Time	12:50	11:29	15:00	16:05	10:27
	Client ID	R-61 SC 1-11-15-11-6CV	R-43 SC 2-11-15-11-HRM	R-28-11-15-11-HRM	R-43 SC 1-11-15-11-HRM	R-11-11-16-11-HRM
Grouping	**Analyte**					
WATER						
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	0.000906	0.00102	0.00127	0.000109	0.000722
	Vanadium (V)-Dissolved (mg/L)	0.00122	0.00805	0.00547	0.00748	0.00756
	Yttrium (Y)-Dissolved (mg/L)	0.0000121	0.0000092	0.0000079	0.0000073	0.0000114
	Zinc (Zn)-Dissolved (mg/L)	0.0355	0.00148	0.00283	0.00409	0.00966
	Zirconium (Zr)-Dissolved (mg/L)	<0.000010	0.000012	<0.000010	<0.000010	<0.000010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-16	L1090816-17	L1090816-18	L1090816-19	L1090816-20
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	16-NOV-11	16-NOV-11	16-NOV-11	16-NOV-11	17-NOV-11
	Sampled Time	10:55	10:57	12:40	13:05	10:34
	Client ID	SCI-1-11-16-11-HRM	R-45 SC 2-11-16-11-HRM	R-45-SC 1-11-16-11-HRM	R-36-11-16-11-HRM	R-44-SC 1-11-17-11-HRM
Grouping	**Analyte**					
WATER						
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	0.00329	0.000688	0.000770	0.000303	0.000427
	Vanadium (V)-Dissolved (mg/L)	0.00155	0.00699	0.00534	0.0147	0.00495
	Yttrium (Y)-Dissolved (mg/L)	0.0000686	0.0000098	0.0000098	0.0000123	0.0000106
	Zinc (Zn)-Dissolved (mg/L)	0.00163	0.00246	0.00422	0.0574	0.00375
	Zirconium (Zr)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	0.000026	<0.000010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-21	L1090816-22	L1090816-23	L1090816-24	L1090816-25
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	17-NOV-11	17-NOV-11	18-NOV-11	18-NOV-11	18-NOV-11
	Sampled Time	12:39	13:30	12:02	12:09	15:06
	Client ID	R-35A-11-17-11-HRM	R-44-SC2-11-17-11-HRM	R-50-SC1-11-18-11-HRM	R-61-SC2-11-18-11-HRM	R-1-18-11-HRM
Grouping	**Analyte**					
WATER						
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	0.000613	0.000532	0.000591	0.000473	0.000695
	Vanadium (V)-Dissolved (mg/L)	0.0173	0.00631	0.00518	0.00135	0.00832
	Yttrium (Y)-Dissolved (mg/L)	0.0000121	0.0000244	0.0000182	0.0000132	0.0000101
	Zinc (Zn)-Dissolved (mg/L)	0.00075	0.00248	0.0100	0.00143	0.0148
	Zirconium (Zr)-Dissolved (mg/L)	<0.000010	0.000015	0.000023	<0.000010	<0.000010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-26	L1090816-27	L1090816-28	L1090816-29	L1090816-30
	Description	WATER	WATER	WATER	WATER	WATER
	Sampled Date	21-NOV-11	21-NOV-11	21-NOV-11	22-NOV-11	22-NOV-11
	Sampled Time	12:54	13:17	14:29	09:11	10:47
	Client ID	R-61-SC1-3CV-11-21-HRM	R-50 SC1-11-21-22-HRM	R-61 SC1-6CV-11-21-HRM	R-60A-11-22-11-HRM	R-60-11-22-11-HRM
Grouping	**Analyte**					
WATER						
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	0.000518	0.000527	0.000724	0.000642	0.000658
	Vanadium (V)-Dissolved (mg/L)	0.00147	0.00518	0.00149	0.00900	0.00898
	Yttrium (Y)-Dissolved (mg/L)	0.0000137	0.0000141	0.0000178	0.0000131	0.0000169
	Zinc (Zn)-Dissolved (mg/L)	0.00442	0.0105	0.00256	0.00094	0.00073
	Zirconium (Zr)-Dissolved (mg/L)	<0.000010	0.000014	<0.000010	<0.000010	0.000013

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1090816-31	L1090816-32			
	Description	WATER	WATER			
	Sampled Date	22-NOV-11	28-NOV-11			
	Sampled Time	10:58	13:39			
	Client ID	R-13-11-22-11-HRM	R-50 SC2-11-28-11-HRM			
Grouping	**Analyte**					
WATER						
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	0.000431	0.000608			
	Vanadium (V)-Dissolved (mg/L)	0.00529	0.00720			
	Yttrium (Y)-Dissolved (mg/L)	0.0000143	0.0000353			
	Zinc (Zn)-Dissolved (mg/L)	0.00024	0.00554			
	Zirconium (Zr)-Dissolved (mg/L)	<0.000010	0.000042			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

MET-D-NP-U-HRMS-VA	Water	Diss. Metals in Water by HR-ICPMS(Ultra)	EPA 200.8

Ultra trace metals in water are analyzed by high resolution inductively coupled plasma mass spectrometry (HR-ICPMS), based on US EPA Method 200.8, (Oct. 1999). This procedure is intended for pristine field-filtered acid-preserved water samples. ALS recommends that filtration blanks be submitted for this test to aid with interpretation of results.

MET-D-NP-U-ICP-VA	Water	Dissolved Metals in Water by ICPOES	EPA SW-846 6010B

Ultra trace metals in water are analyzed by ICPOES, based on US EPA Method 6010B. This procedure is intended for pristine field-filtered acid-preserved water samples. ALS recommends that filtration blanks be submitted for this test to aid with interpretation of results.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

L1090816

L1D90816-COFC

Chain of Custody Record

SHIP TO:

Paragon Analytics
225 Commerce Drive
Fort Collins, CO 80524
(970) 490-1511

MAIL REPORT TO:

Kim Gramzow
NMED-DOE Oversight Bureau
1183 Diamond Drive Suite B
Los Alamos, New Mexico 87544
kgramzow@lanl.gov

Attention

KG
(505) 661-4008

BILL TO:

Cecilia Garcia-Frank
NMED DOE Oversight Bureau
1183 Diamond Drive, Suite B
Los Alamos, NM 87544

Project Number: 814-11.8.11(HR Metals)PAR
(Lab Invoice Use Only)

LMW08

New contract 20-867-00-16004

Lab ID Number	NMED - Sample ID	Date	Time	Special Services (Line Item #200) $60	Dissolved TAL Metals + U (Line Item #203) $150	Acid Digestion for Metals (Line Item #221) $5								
					Filtered									
			Line Item No.	620	203	221								
			Price per Sample	$ 60.00	$ 150.00	$ 5.00								
	MCOI-5-11-8-11-HRM	11/8/2011	11:27		X	X								1-250 ml plastic--GeoTech
	R-48-11-8-11-HRM	11/8/2011	11:37	X	X	X								1-250 ml plastic--GeoTech
	R-14-11-8-11-HRM	11/8/2011	13:57	X	X	X								1-250 ml plastic--GeoTech
	R-35b-11-9-11-HRM	11/8/2011	11:37	X	X	X								1-250 ml plastic--GeoTech
	MCOI-4-11-9-11-HRM	11/9/2011	15:13	X	X	X								1-250 ml plastic--GeoTech
	R-42-11-10-11-HRM	11/10/2011	11:41		X	X								1-250 ml plastic--GeoTech
	R-34-11-10-11-HRM	11/10/2011	12:18		X	X								1-250 ml plastic--GeoTech
	R-15-11-10-11-HRM	11/10/2011	13:31		X	X								1-250 ml plastic--GeoTech
	SCI-2-11-14-11-HRM	11/14/2011	11:04		X	X								1-250 ml plastic--GeoTech
	R-61 Scr 2-6CV-11-14-11-HRM	11/14/2011	13:35		X	X								1-250 ml plastic--GeoTech
	R-61 Sc 1-11-15-11-6CV	11/15/2011	12:50		X	X								1-250 ml plastic--GeoTech
	R-43 Sc 2-11-15-11-HRM	11/15/2011	11:29		X	X								1-250 ml plastic--GeoTech
	R-28-11-15-11-HRM	11/15/2011	15:00		X	X								1-250 ml plastic--GeoTech
	R-43 Sc 1-11-15-11-HRM	11/15/2011	16:05		X	X								1-250 ml plastic--GeoTech
	R-11-11-16-11-HRM	11/16/2011	10:27		X	X								1-250 ml plastic--GeoTech
	SCI-1-11-16-11-HRM	11/16/2011	10:55		X	X								1-250 ml plastic--GeoTech
	R-45 Sc 2-11-16-11-HRM	11/16/2011	10:57		X	X								1-250 ml plastic--GeoTech
	R-45 Sc 1-11-16-11-HRM	11/16/2011	12:40		X	X								1-250 ml plastic--GeoTech
	R-36-11-16-11-HRM	11/16/2011	13:05		X	X								1-250 ml plastic--GeoTech
	R-44-Sc 1-11-17-11-HRM	11/17/2011	10:34		X	X								1-250 ml plastic--GeoTech
	R-35a-11-17-11-HRM	11/17/2011	12:39		X	X								1-250 ml plastic--GeoTech
	R-44-Sc 2-11-17-11-HRM	11/17/2011	13:30		X	X								1-250 ml plastic--GeoTech
	R-50-Sc 1-11-18-11-HRM	11/18/2011	12:02		X	X								1-250 ml plastic--GeoTech
	R-61-Sc2-11-18-11-HRM	11/18/2011	12:09		X	X								1-250 ml plastic--GeoTech
	R-1-11-18-11-HRM	11/18/2011	15:06		X	X								1-250 ml plastic--GeoTech
	R-61-Sc1-3CV-11-21-HRM	11/21/2011	12:54		X	X								1-250 ml plastic--GeoTech
	R-50 Sc1-11-21-22-HRM	11/21/2011	13:17		X	X								1-250 ml plastic--GeoTech
	R-61 Sc1-6CV-11-21-HRM	11/21/2011	14:29		X	X								1-250 ml plastic--GeoTech
	R-60A-11-22-11-HRM	11/22/2011	9:11		X	X								1-250 ml plastic--GeoTech
	R-60-11-22-11-HRM	11/22/2011	10:47		X	X								1-250 ml plastic--GeoTech
	R-13-11-22-11-HRM	11/22/2011	10:58		X	X								1-250 ml plastic--GeoTech
	R-60 Sc 2-11-28-11-HRM	11/28/2011	13:39		X	X								1-250 ml plastic--GeoTech
Date/Time	Relinquished By:		Total No. of Samples	5	32	32								

	Kim Gramzow	Sign
		Print
	NMED DOE Oversight Bureau	Co./Org.
Date/Time	Received By:	
		Sign
		Print
		Co./Org.

Comments: Lance - We shipped this directly to Burnaby, British Columbia. We pushed 4.0 L of water thru the GeoTech filters prior to sampling

QC Level: Standard
QC Required: MS MSD Blank
Turn Around Time (TAT): Standard

☐ Place "X" in box if there are less than 5 total samples for shipping costs.