AFPC Rock Check Program

Sample No. 2011-09

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC IX.2.A	101	21	0.93	0.127
Other (describe)	102	5	0.92	0.037
Method Group 100		26	0.92	0.13
P_2O_5				
Gravimetric AFPC IX.3.B	201	1	32.02	0.000
ICP-inducted coupled plasma AFPC IX.3.D	202	4	31.88	0.036
Photometric-AFPC IX.3.C	203	14	31.89	0.191
Automated -AOAC 978.01-15th	204	11	31.81	0.134
Other(describe)	205	3	32.00	0.375
Method Group 200		33	31.87	0.17
P_2O_5 (on Dry Basis)				
Gravimetric AFPC IX.3.B	211	1	32.16	0.000
ICP-inducted coupled plasma AFPC IX.3.D	212	4	32.20	0.056
Photometric-AFPC IX.3.C	213	9	32.35	0.187
Automated -AOAC 978.01-15th	214	11	32.11	0.124
Other(describe)	215	1	32.18	0.000
Method Group 210		26	32.18	0.16
Fe_2O_3				
Atomic Absorption-AFPC IX.6.B	301	1	0.93	0.000
ICP-inducted coupled plasma-AFPC IX.6.C	302	27	0.89	0.043
Other(describe)	303	3	0.71	0.104
Method Group 300		31	0.89	0.05
Al_2O_3				
Atomic Absorption-AFPC IX.7.B	401	1	2.12	0.000
ICP-inducted coupled plasma-AFPC IX.7.C	402	27	1.56	0.084
Other(describe)	403	3	1.16	0.351
Method Group 400		31	1.56	0.11
MgO				
Atomic Absorption-AFPC IX.8.A	501	3	0.35	0.011
ICP-inducted coupled plasma-AFPC IX.8.B	502	26	0.33	0.011
Other(describe)	503	3	0.29	0.026
Method Group 500		32	0.33	0.02
Acid Insoluble				
Insoluble-AFPC IX.4.A	601	20	8.37	0.157
Other(describe)	602	4	8.17	1.599
Method Group 600		24	8.37	0.23
Carbon Dioxide				
Gasometric-AFPC IX.13.B	651	15	3.14	0.261
Other(describe)	652	6	3.59	1.853
Method Group 650		21	3.21	0.37
CaO				
Gravimetric sulfate-AFPC IX.12.A	701			
ICP-inducted coupled plasma-AFPC IX.12.D	702	18	45.41	0.494
Ceric Sulfate volumetric-AFPC IX.12.B	703			
Permanganate	704	5	45.37	1.299
EDTA Volumetric-AFPC IX.12.C	705	2	45.28	0.366
Other(describe)	706	7	45.32	0.229
Method Group 700		32	45.39	0.38
CaO (on Dry Basis)				
Gravimetric sulfate-AFPC IX.12.A	711			
ICP-inducted coupled plasma-AFPC IX.12.D	712	13	45.80	0.292
Ceric Sulfate volumetric-AFPC IX.12.B	713			
Permanganate	714	4	45.70	0.644
EDTA Volumetric-AFPC IX.12.C	715	2	45.61	0.348
Other(describe)	716	6	45.74	0.105
Method Group 710		25	45.79	0.23

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC IX.14.A	801			
Specific Ion Electrode-AFPC IX.14.B	802	17	3.56	0.213
Oher(describe)	803	5	3.55	0.291
Method Group 800		22	3.55	0.19
Arsenic, As				
Atomic Absorption	911			
ICP-inducted coupled plasma-AFPC IX.15.B	912	11	8.5	5.17
Other(describe)	913	1	7.6	0.00
Method Group 900		12	8.1	5.03
Cadmium, Cd				
Atomic Absorption-AFPC IX.11.A	921	1	14	0.0
ICP-inducted coupled plasma-AFPC IX.11.B	922	11	9	2.1
Other(describe)	923	1	9	0.0
Method Group 910		13	9	1.3
Cobalt, Co				
Atomic Absorption-AFPC IX.16.B	931			
ICP-inducted coupled plasma-AFPC IX.16.A	932	10	4	0.4
Other(describe)	933	2	8	2.6
Method Group 920		12	4	1.0
Mercury, Hg				
Atomic Absorption-AFPC IX.16.B	941			
ICP-inducted coupled plasma-AFPC IX.16.A	942	1	0.1	0.00
Other(describe)	943	1	0.1	0.00
Method Group 930		2	0.1	0.00
Molybdenum, Mo				
Atomic Absorption-AFPC IX.16.B	951			
ICP-inducted coupled plasma-AFPC IX.16.A	952	9	6	1.2
Other(describe)	953	1	7	0.0
Method Group 940		10	7	1.1
Nickel, Ni				
Atomic Absorption-AFPC IX.16.B	961	1	30	0.0
ICP-inducted coupled plasma-AFPC IX.16.A	962	11	18	2.2
Other(describe)	963	3	25	2.2
Method Group 950		15	19	3.3
Lead, Pb				
Atomic Absorption-AFPC IX.16.B	971	1	30	0.0
ICP-inducted coupled plasma-AFPC IX.16.A	972	12	10	5.2
Other(describe)	973	1	13	0.0
Method Group 960		14	11	5.6
Selenium, Se				
Atomic Absorption-AFPC IX.16.B	981			
ICP-inducted coupled plasma-AFPC IX.16.A	982	3		0.1
Other(describe)	983	1	3	0.0
Method Group 970		4	0	0.6
Zinc, Zn				
Atomic Absorption-AFPC IX.16.B	991	1	95	0
ICP-inducted coupled plasma-AFPC IX.16.A	992	12	102	16
Other(describe)	993	3	107	11
Method Group 980		16	102	16

101 Ground Sample AFPC IX.2.A		
Lab	% H_2O	
13	1.14	-1.655
Std Dev	1.05	-1.000
10	1.04	-0.867
10	0.99	-0.512
49	0.99	-0.512
9	0.97	-0.355
15	0.95	-0.197
16	0.95	-0.197
16	0.94	-0.118
13	0.94	-0.079
15	0.93	-0.039
61	0.93	0.000
Median	0.93	0.000
9	0.91	0.118
61	0.90	0.236
24	0.89	0.276
Std Dev	0.80	1.000
35	0.79	1.064
6	0.78	1.143
35	0.67	2.010
24	0.60	2.601
77	0.51	3.271
77	0.45	3.744
27	0.35	4.532

102 Other (describe)		
Lab	% H_2O	
69	1.06	-3.752
Std Dev	0.96	-1.000
26	0.94	-0.536
21	0.92	0.000
Median	0.92	0.000
21	0.89	0.804
Std Dev	0.88	1.000
280	0.51	11.122

201 Gravimetric AFPC IX.3.B		
Lab	% P2O5	
77	32.02	0.000
Median	32.02	0.000

202 ICP-inducted coupled plasma AFPC IX.3.D		
Lab	% P2O5	
10	31.95	-1.787
Std Dev	31.92	-1.000
10	31.89	-0.275
Median	31.88	0.000
16	31.87	0.275
Std Dev	31.84	1.000
16	31.81	1.924

203 Photometric-AFPC IX.3.C		
Lab	% P2O5	
69	32.45	-2.941
35	32.38	-2.575
35	32.19	-1.582
Std Dev	32.08	-1.000
49	32.06	-0.902
26	32.05	-0.824
6	31.95	-0.301
9	31.91	-0.092
Median	31.89	0.000
9	31.87	0.092
78	31.86	0.144
92	31.80	0.458
92	31.80	0.458
78	31.77	0.641
270	31.76	0.667
Std Dev	31.70	1.000
27	30.69	6.262

204 Automated -AOAC 978.01-15th		
Lab	% P2O5	
21	32.37	-4.206
21	32.24	-3.238
77	32.06	-1.898
Std Dev	31.94	-1.000
24	31.85	-0.335
15	31.83	-0.149
13	31.81	0.000
Median	31.81	0.000
15	31.80	0.074
61	31.79	0.112
24	31.76	0.335
Std Dev	31.67	1.000
13	31.39	3.127
61	31.18	4.690

205 Other(describe)		
Lab	% P2O5	
280	32.02	-0.053
280	32.00	0.000
Median	32.00	0.000
Std Dev	31.62	1.000
19	31.01	2.627

211 Gravimetric AFPC IX.3.B		
Lab	% P2O5	dB
77	32.16	0.000
Median	32.16	0.000

212 ICP-inducted coupled plasma AFPC IX.3.D		
Lab	% P2O5	dB
10	32.26	-1.177
Std Dev	32.25	-1.000
10	32.22	-0.453
Median	32.20	0.000
16	32.17	0.453
Std Dev	32.14	1.000
16	32.12	1.468

213 Photometric-AFPC IX.3.C		
Lab	% P2O5	dB
69	32.80	-2.402
35	32.60	-1.335
Std Dev	32.54	-1.000
35	32.45	-0.521
49	32.38	-0.169
26	32.35	0.000
Median	32.35	0.000
9	32.20	0.809
6	32.20	0.819
9	32.18	0.894
Std Dev	32.16	1.000
27	30.80	8.308

214 Automated -AOAC 978.01-15th		
Lab	% P2O5	dB
21	32.66	-4.468
21	32.54	-3.493
Std Dev	32.23	-1.000
77	32.22	-0.959
24	32.14	-0.248
15	32.12	-0.149
13	32.11	0.000
Median	32.11	0.000
15	32.10	0.042
61	32.08	0.226
Std Dev	31.98	1.000
24	31.95	1.247
13	31.75	2.895
61	31.47	5.141

215 Other(describe)			
Lab	% P2O5		dB
280	32.18		0.000
Median	32.18		0.000

301 Atomic Absorption-AFPC IX.6.B		
Lab	% Fe2O3	
27	0.93	0.000
Median	0.93	0.000

302 ICP-inducted coupled plasma-AFPC IX.6.C		
Lab	% Fe2O3	
77	1.22	-7.690
77	1.19	-6.991
78	1.06	-3.962
78	1.04	-3.496
Std Dev	0.93	-1.000
61	0.93	-0.816
6	0.90	-0.233
13	0.90	-0.233
16	0.90	-0.233
61	0.90	-0.233
15	0.90	-0.117
15	0.90	-0.117
13	0.89	0.000
16	0.89	0.000
49	0.89	0.000
Median	0.89	0.000
10	0.89	0.117
10	0.88	0.233

9	0.88	0.350
9	0.88	0.350
92	0.86	0.699
92	0.85	0.932
Std Dev	0.85	1.000
24	0.84	1.282
24	0.84	1.282
21	0.83	1.398
21	0.83	1.398
35	0.79	2.330
35	0.78	2.563
69	0.63	6.112

303	Other(describe)	
Lab	%	Fe2O3
19	0.97	-2.536
Std Dev	0.81	-1.000
280	0.71	0.000
Median	0.71	0.000
280	0.69	0.144

401	Atomic Absorption-AFPC IX.6.B	
Lab	%	Al2O3
27	2.12	0.000
Median	2.12	0.000

402	ICP-inducted coupled plasma-AFPC IX.6.C	
Lab	%	Al2O3
77	2.11	-6.551
77	2.10	-6.432
78	1.83	-3.156
78	1.80	-2.799
61	1.71	-1.727
61	1.70	-1.668
92	1.65	-1.072
24	1.65	-1.012
Std Dev	1.64	-1.000
24	1.63	-0.774
92	1.61	-0.596
21	1.59	-0.357
49	1.58	-0.238
10	1.56	0.000
16	1.56	0.000
Median	1.56	0.000
13	1.55	0.119
16	1.55	0.119
10	1.55	0.179
21	1.55	0.179
6	1.54	0.238
13	1.54	0.238
9	1.53	0.357
9	1.52	0.476
15	1.49	0.893
69	1.49	0.893
Std Dev	1.48	1.000
15	1.48	1.012
35	1.27	3.454
35	1.22	4.050

403	Other(describe)	
Lab	%	Al2O3
19	2.04	-2.523
Std Dev	1.51	-1.000
280	1.16	0.000
Median	1.16	0.000
280	1.10	0.157

501	Atomic Absorption-AFPC IX.8.A	
Lab	%	MgO
35	0.35	0.000
35	0.35	0.000
Median	0.35	0.000
Std Dev	0.34	1.000
27	0.32	2.680

502	ICP-inducted coupled plasma-AFPC IX.8.B	
Lab	%	MgO
13	0.39	-5.360
77	0.39	-5.360
61	0.36	-2.233
13	0.35	-1.787
92	0.35	-1.787
92	0.35	-1.787
Std Dev	0.34	-1.000
24	0.34	-0.893
24	0.34	-0.893
16	0.33	0.000
16	0.33	0.000
21	0.33	0.000
49	0.33	0.000
61	0.33	0.000
77	0.33	0.000
78	0.33	0.000
Median	0.33	0.000
9	0.33	0.447
9	0.33	0.447
10	0.33	0.447
10	0.33	0.447
15	0.33	0.447
78	0.33	0.447
15	0.32	0.893
Std Dev	0.32	1.000
69	0.32	1.206
6	0.32	1.340
21	0.31	1.787
270	0.30	2.680

503	Other(describe)	
Lab	%	MgO
19	0.35	-2.489
Std Dev	0.31	-1.000
280	0.29	0.000
Median	0.29	0.000
280	0.28	0.191

601	Insoluble-AFPC IX.4.A	
Lab	%	AI
6	8.58	-1.324
35	8.54	-1.069
Std Dev	8.53	-1.000
24	8.50	-0.814
15	8.50	-0.782
24	8.49	-0.718
15	8.47	-0.622
16	8.45	-0.495
16	8.42	-0.303
21	8.40	-0.175
9	8.38	-0.016
Median	8.37	0.000
9	8.37	0.016
10	8.37	0.048
35	8.36	0.080
10	8.34	0.207
49	8.29	0.526
Std Dev	8.22	1.000
27	8.19	1.196
26	8.17	1.324
13	8.13	1.547
21	8.13	1.547
13	8.08	1.866

602	Other(describe)	
Lab	%	AI
280	8.54	-0.228
280	8.50	-0.206

651	Gasometric-AFPC IX.13.B	
Lab	%	CO2
6	3.57	-1.646
21	3.47	-1.263
21	3.47	-1.263
Std Dev	3.40	-1.000
61	3.36	-0.842
13	3.33	-0.708
61	3.29	-0.574
49	3.21	-0.268
15	3.14	0.000
Median	3.14	0.000
9	3.12	0.096
9	3.12	0.096
15	3.11	0.115
Std Dev	2.88	1.000
24	2.88	1.015
77	2.66	1.838
13	2.51	2.412
69	1.53	6.164

652	Other(describe)	
Lab	%	CO2
35	6.55	-1.598
35	6.28	-1.452
Std Dev	5.44	-1.000
78	3.59	0.000
78	3.59	0.000
Median	3.59	0.000
280	2.97	0.335
280	2.87	0.389

701 Gravimetric sulfate-AFPC IX.12.A		
Lab	%	CaO
Median	0.00	0.000

702 ICP-inducted coupled plasma-AFPC IX.12.D		
Lab	%	CaO
270	47.98	-5.208
77	46.60	-2.417
77	46.54	-2.296
92	46.52	-2.255
92	46.00	-1.203
Std Dev	45.90	-1.000
16	45.63	-0.455
16	45.57	-0.334
10	45.42	-0.030
78	45.41	-0.010
Median	45.41	0.000
49	45.40	0.010
9	45.39	0.040
9	45.36	0.091
6	45.26	0.293
69	45.24	0.334
10	45.10	0.617
78	45.00	0.819
Std Dev	44.91	1.000
61	42.48	5.926
61	39.76	11.428

703 Ceric Sulfate volumetric-AFPC IX.12.B		
Lab	%	CaO
Median	0.00	0.000

704 Permanganate		
Lab	%	CaO
280	48.41	-2.337
280	46.94	-1.209
Std Dev	46.67	-1.000
21	45.37	0.000
Median	45.37	0.000
21	45.20	0.131
27	44.13	0.955

705 EDTA Volumetric-AFPC IX.12.C		
Lab	%	CaO
35	45.77	-1.340
Std Dev	45.65	-1.000
Median	45.28	0.000
Std Dev	44.91	1.000
35	44.79	1.340

706 Other(describe)		
Lab	%	CaO
19	45.70	-1.656
24	45.65	-1.416
Std Dev	45.55	-1.000
15	45.39	-0.283
15	45.32	0.000
Median	45.32	0.000
13	45.21	0.479
13	45.21	0.501
24	45.14	0.806

711 Gravimetric sulfate-AFPC IX.12.A			
Lab	%	CaO	dB
Median	0.00		0.000

712 ICP-inducted coupled plasma-AFPC IX.12.D			
Lab	%	CaO	dB
77	46.84		-3.543
77	46.75		-3.240
Std Dev	46.10		-1.000
16	46.06		-0.886
16	46.01		-0.694
10	45.87		-0.239
49	45.85		-0.170
9	45.80		0.000
Median	45.80		0.000
9	45.80		0.009
69	45.72		0.273
6	45.62		0.646
10	45.57		0.797
Std Dev	45.51		1.000
61	42.87		10.044
61	40.11		19.488

713 Ceric Sulfate volumetric-AFPC IX.12.B			
Lab	%	CaO	dB
Median	0.00		0.000

714 Permanganate			
Lab	%	CaO	dB
280	47.18		-2.299
Std Dev	46.34		-1.000
21	45.79		-0.144
Median	45.70		0.000
21	45.61		0.144
Std Dev	45.06		1.000
27	44.28		2.197

715 EDTA Volumetric-AFPC IX.12.C			
Lab	%	CaO	dB
35	46.08		-1.340
Std Dev	45.96		-1.000
Median	45.61		0.000
Std Dev	45.26		1.000
35	45.15		1.340

716 Other(describe)			
Lab	%	CaO	dB
24	45.92		-1.677
Std Dev	45.85		-1.000
15	45.81		-0.658
15	45.75		-0.122
Median	45.74		0.000
13	45.73		0.122
Std Dev	45.64		1.000
13	45.63		1.048
24	45.54		1.916

801 Volumetric-AFPC IX.14.A		
Lab	%	Fluorine, F
Median	0.00	0.000

802 Specific Ion Electrode-AFPC IX.14.B		
Lab	%	Fluorine, F
35	4.27	-3.362
69	4.20	-3.033
35	4.01	-2.139
Std Dev	3.77	-1.000
270	3.70	-0.682
9	3.66	-0.494
9	3.61	-0.259
21	3.60	-0.212
21	3.59	-0.165
13	3.56	0.000
Median	3.56	0.000
26	3.54	0.071
27	3.50	0.282
49	3.43	0.588
24	3.38	0.846
13	3.35	0.964
Std Dev	3.34	1.000
24	3.33	1.058
15	3.23	1.528
15	3.22	1.575

803 Oher(describe)		
Lab	%	Fluorine, F
19	3.59	-0.137
77	3.55	0.000
77	3.55	0.000
Median	3.55	0.000
Std Dev	3.26	1.000
280	3.16	1.340
280	2.95	2.062

911 Atomic Absorption-AFPC		
Lab	ppm	Arsenic, As
Median	0.0	0.000

912 ICP-inducted coupled plasma-AFPC IX.15.I		
Lab	ppm	Arsenic, As
61	16.4	-1.523
Std Dev	13.7	-1.000
78	12.1	-0.686
61	11.3	-0.543
78	10.6	-0.396
6	10.5	-0.389
270	8.5	0.000
Median	8.5	0.000
24	4.8	0.715
35	4.0	0.870
35	4.0	0.870

Std Dev	3.3	1.000
77	0.0	1.644
77	0.0	1.644

913 Other(describe)		
Lab	ppm	Arsenic, As
13	7.6	0.000
Median	7.6	0.000

921 Atomic Absorption-AFPC IX.11.A		
Lab	ppm	Cadmium, Cd
27	14	0.000
Median	14	0.000

922 ICP-inducted coupled plasma-AFPC IX.11.B		
Lab	ppm	Cadmium, Cd
78	12	-1.113
Std Dev	11	-1.000
78	11	-0.972
61	10	-0.569
77	10	-0.407
77	10	-0.407
61	9	0.000
Median	9	0.000
6	9	0.205
270	9	0.228
Std Dev	7	1.000
35	6	1.475
35	5	1.946
69	4	2.435

923 Other(describe)		
Lab	ppm	Cadmium, Cd
13	9	0.000
Median	9	0.000

931 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Cobalt, Co
Median	0	0.000

932 ICP-inducted coupled plasma-AFPC IX.16.A		
Lab	ppm	Cobalt, Co
69	<0.05	0.000
78	8	-9.235
78	8	-8.028
61	5	-1.123
Std Dev	5	-1.000
61	4	-0.302
6	4	-0.060
Median	4	0.000
270	4	0.060
77	4	0.423
77	4	0.423
Std Dev	4	1.000
35	2	5.251
35	2	5.251

933 Other(describe)		
Lab	ppm	Cobalt, Co
27	12	-1.340
Std Dev	11	-1.000
Median	8	0.000
Std Dev	5	1.000
13	5	1.340

941 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Mercury, Hg
Median	0.0	0.000

942 ICP-inducted coupled plasma-AFPC IX.16.A		
Lab	ppm	Mercury, Hg
35	<1	0.000
35	<1	0.000
69	<0.5	0.000
270		0.000
Median		0.000

943 Other(describe)		
Lab	ppm	Mercury, Hg
13	0.1	0.000
Median	0.1	0.000

951 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	!olybdenum, Mo
Median	0	0.000

952 ICP-inducted coupled plasma-AFPC IX.16.A		
Lab	ppm	!olybdenum, Mo
61	8	-1.353
Std Dev	8	-1.000
6	7	-0.678
270	7	-0.427
24	7	-0.385
61	6	0.000
Median	6	0.000
78	6	0.201
78	5	0.913
Std Dev	5	1.000
77	5	1.248
77	4	2.085

953 Other(describe)		
Lab	ppm	Molybdenum, Mo
13	7	0.000
Median	7	0.000

961 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Nickel, Ni
27	30	0.000
Median	30	0.000

962 ICP-inducted coupled plasma-AFPC IX.16.A		
Lab	ppm	Nickel, Ni
270	22	-1.586
69	20	-1.038
Std Dev	20	-1.000
61	19	-0.641
77	19	-0.453
6	18	0.000
77	18	0.000
Median	18	0.000
61	17	0.276
78	17	0.680
78	16	0.906
Std Dev	16	1.000
35	12	2.719
35	11	3.172

963 Other(describe)		
Lab	ppm	Nickel, Ni
19	27	-0.916
19	25	0.000
Median	25	0.000
Std Dev	23	1.000
13	21	1.764

971 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Lead, Pb
27	30	0.000
Median	30	0.000

972 ICP-inducted coupled plasma-AFPC IX.16.A		
Lab	ppm	Lead, Pb
69	28	-3.329
24	21	-2.038
61	16	-1.109
Std Dev	16	-1.000
6	15	-0.811
270	12	-0.313
61	11	-0.081
Median	10	0.000
78	10	0.081
78	9	0.224
77	8	0.454
77	8	0.454
35	7	0.646
35	6	0.838

973 Other(describe)		
Lab	ppm	Lead, Pb
13	13	0.000
Median	13	0.000

981 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Selenium, Se
Median	0	0.000

982 ICP-inducte coupled plasma-AFPC IX.16.A		
Lab	ppm	Selenium, Se
69	<0.05	0.000
61	0	-2.680
Std Dev	0	-1.000
77	0	0.000
77	0	0.000
Median	0	0.000

983 Other(describe)

Lab	ppm	Selenium, Se
13	3	0.000
Median	3	0.000

991 Atomic Absorption-AFPC IX.16.B

Lab	ppm	Zinc, Zn
27	95	0.000
Median	95	0.000

992 ICP-inducted coupled plasma-AFPC IX.16.A

Lab	ppm	Zinc, Zn
24	116	-0.863
24	116	-0.833
61	112	-0.586
78	104	-0.123
61	104	-0.093
78	103	-0.062
Median	102	0.000
77	101	0.062
77	97	0.308
Std Dev	86	1.000
69	85	1.067
270	83	1.203
35	61	2.528
35	61	2.528

993 Other(describe)

Lab	ppm	Zinc, Zn
13	118	-0.954
19	107	0.000
Median	107	0.000
Std Dev	96	1.000
19	88	1.726