AFPC Rock Check Program

Sample No. 2007-03

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	24	0.69	0.083
Other (describe)	102	1	0.75	
Method Group 100		25	0.70	0.08
BPL or P_2O_5				
Gravimetric AFPC 9-5	201	2	28.86	0.134
ICP-inducted coupled plasma	202	1	29.08	0.000
Photometric-AFPC 9-6	203	16	29.04	0.236
Automated -AOAC 978.01-15th	204	9	28.87	0.216
Other(describe)	205	1	28.96	0.000
Method Group 200		29	29.01	0.19
BPL or P_2O_5 (on Dry Basis)				
Gravimetric AFPC 9-5	211	2	29.01	0.183
ICP-inducted coupled plasma	212	1	29.30	0.000
Photometric-AFPC 9-6	213	13	29.25	0.133
Automated -AOAC 978.01-15th	214	9	29.08	0.204
Other(describe)	215			
Method Group 210		25	29.19	0.15
Fe_2O_3				
Atomic Absorption-AFPC 9-12,13	301	6	1.18	0.331
ICP-inducted coupled plasma	302	23	1.34	0.054
Other(describe)	303			
Method Group 300		29	1.33	0.06
Al_2O_3				
Atomic Absorption-AFPC 9-16,17	401	5	0.98	0.052
ICP-inducted coupled plasma	402	22	0.99	0.082
Other(describe)	403			
Method Group 400		27	0.99	0.08
MgO				
Atomic Absorption-AFPC 9-18,19	501	7	0.46	0.019
ICP-inducted coupled plasma	502	21	0.46	0.007
Other(describe)	503			
Method Group 500		28	0.46	0.01
Acid Insoluble				
Insoluble-AFPC 9-8	601	18	12.86	0.216
Other(describe)	602			
Method Group 600		18	12.86	0.22
CaO				
Gravimetric sulfate	701			
ICP-inducted coupled plasma	702	12	43.13	0.474
Ceric Sulfate volumetric	703			
Permanganate	704	2	40.36	1.858
EDTA Volumetric	705	3	43.24	0.410
Other(describe)	706	9	43.45	0.634
Method Group 700		26	43.19	0.61
CaO (on Dry Basis)				
Gravimetric sulfate	711			
ICP-inducted coupled plasma	712	5	43.39	0.095
Ceric Sulfate volumetric	713			
Permanganate	714	1	38.26	0.000
EDTA Volumetric	715	3	43.57	0.397
Other(describe)	716	7	43.56	0.515
Method Group 710		13	43.54	0.30

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	17	3.37	0.168
Oher(describe)	803	2	3.42	0.022
Method Group 800		19	3.39	0.15
Arsenic, As				
Atomic Absorption	911	1	4.5	0.00
ICP-inducted coupled plasma	912	2	10.0	1.90
Other(describe)	913	3	11.0	0.37
Method Group 900		6	10.5	2.20
Cadmium, Cd				
Atomic Absorption	921	3	4	2.6
ICP-inducted coupled plasma	922	11	5	0.9
Other(describe)	923			
Method Group 910		14	5	1.3
Cobalt, Co				
Atomic Absorption	931	1	15	0.0
ICP-inducted coupled plasma	932	7	6	1.1
Other(describe)	933			
Method Group 920		8	7	1.7
Mercury, Hg				
Atomic Absorption	941			
ICP-inducted coupled plasma	942			
Other(describe)	943			
Method Group 930		0		
Molybdenum, Mo				
Atomic Absorption	951			
ICP-inducted coupled plasma	952	4	12	1.0
Other(describe)	953			
Method Group 940		4	12	1.0
Nickel, Ni				
Atomic Absorption	961	2	51	17.9
ICP-inducted coupled plasma	962	8	24	2.5
Other(describe)	963			
Method Group 950		10	25	3.6
Lead, Pb				
Atomic Absorption	971	2	12	0.6
ICP-inducted coupled plasma	972	5	18	4.9
Other(describe)	973			
Method Group 960		7	13	4.9
Selenium, Se				
Atomic Absorption	981			
ICP-inducted coupled plasma	982			
Other(describe)	983			
Method Group 970		0	#NUM!	
Zinc, Zn				
Atomic Absorption	991	3	58	10
ICP-inducted coupled plasma	992	8	53	24
Other(describe)	993			
Method Group 980		11	54	9

101	Ground Sample AFPC 9-2	
Lab	%	H_2O
27	1.02	-3.945
61	0.86	-2.018
9	0.85	-1.897
13	0.80	-1.235
Std Dev	0.78	-1.000
10	0.78	-0.994
78	0.77	-0.873
61	0.76	-0.813
13	0.76	-0.753
9	0.75	-0.693
15	0.73	-0.391
34	0.71	-0.211
15	0.70	-0.030
Median	0.69	0.000
5	0.69	0.030
5	0.69	0.030
6	0.69	0.090
78	0.69	0.090
6	0.67	0.271
24	0.66	0.452
24	0.64	0.693
Std Dev	0.61	1.000
75	0.61	1.054
75	0.59	1.235
270	0.39	3.644
77	0.36	4.005
77	0.31	4.607

102	Other (describe)	
Lab	%	H_2O
51	0.75	0.000
Median	0.75	0.000

201	Gravimetric AFPC 9-5	
Lab	%	P2O5
51	29.04	-1.340
Std Dev	28.99	-1.000
Median	28.86	0.000
Std Dev	28.73	1.000
77	28.68	1.340

202	ICP-inducted coupled plasma	
Lab	%	P2O5
10	29.08	0.000
Median	29.08	0.000

203	Photometric-AFPC 9-6	
Lab	%	P2O5
60	29.90	-3.644
36	29.87	-3.517
270	29.34	-1.271
5	29.32	-1.186
5	29.28	-1.017
Std Dev	29.28	-1.000
34	29.08	-0.169
6	29.07	-0.106
270	29.06	-0.085
Median	29.04	0.000
61	29.02	0.085
78	29.01	0.127
9	29.00	0.169
6	29.00	0.191
78	28.91	0.551
9	28.86	0.763
Std Dev	28.80	1.000
61	28.79	1.080
27	28.44	2.542

204	Automated -AOAC 978.01-15th	
Lab	%	P2O5
75	29.18	-1.456
13	29.17	-1.409
75	29.12	-1.155
Std Dev	29.08	-1.000
24	28.93	-0.300
15	28.87	0.000
15	28.87	0.000
Median	28.87	0.000
24	28.83	0.185
13	28.80	0.300
77	28.69	0.809

205	Other(describe)	
Lab	%	P2O5
51	28.96	0.000
Median	28.96	0.000

211	Gravimetric AFPC 9-5		
Lab	%	P2O5	dB
51	29.26		-1.340
Std Dev	29.20		-1.000
Median	29.01		0.000
Std Dev	28.83		1.000
77	28.77		1.340

212	ICP-inducted coupled plasma		
Lab	%	P2O5	dB
10	29.30		0.000
Median	29.30		0.000

213	Photometric-AFPC 9-6		
Lab	%	P2O5	dB
5	29.52		-2.065
5	29.48		-1.762
270	29.45		-1.548
Std Dev	29.38		-1.000
34	29.29		-0.295
61	29.27		-0.174
6	29.27		-0.127
9	29.25		0.000
Median	29.25		0.000
78	29.23		0.112
6	29.19		0.436
Std Dev	29.12		1.000
78	29.11		1.045
9	29.08		1.280
61	29.01		1.825
27	28.73		3.869

214	Automated -AOAC 978.01-15th		
Lab	%	P2O5	dB
13	29.40		-1.609
75	29.35		-1.361
75	29.29		-1.062
Std Dev	29.28		-1.000
24	29.12		-0.220
15	29.08		0.000
Median	29.08		0.000
15	29.07		0.043
13	29.02		0.278
24	29.01		0.327
Std Dev	28.87		1.000
77	28.79		1.384

215	Other(describe)		
Lab	%	P2O5	dB
Median	0.00		0.000

301	Atomic Absorption-AFPC 9-12,13	
Lab	%	Fe2O3
5	1.33	-0.468
5	1.33	-0.468
60	1.23	-0.166
Median	1.18	0.000
51	1.12	0.166
Std Dev	0.84	1.000
27	0.78	1.208
36	0.14	3.125

302	ICP-inducted coupled plasma	
Lab	%	Fe2O3
77	1.50	-3.055
78	1.47	-2.407
77	1.46	-2.315
51	1.40	-1.204
78	1.40	-1.204
Std Dev	1.39	-1.000
75	1.37	-0.643
15	1.37	-0.556
15	1.36	-0.463
75	1.35	-0.237
24	1.35	-0.185
34	1.34	-0.093
24	1.34	0.000
Median	1.34	0.000
6	1.33	0.093
6	1.33	0.185
9	1.31	0.463
13	1.31	0.556
9	1.30	0.648
61	1.29	0.833
Std Dev	1.28	1.000
10	1.28	1.018

61	1.28	1.111
13	1.19	2.778
270	1.03	5.648
270	0.99	6.389

303 Other(describe)

Lab	%	Fe2O3
Median	0.00	0.000

401 Atomic Absorption-AFPC 9-16,17

Lab	%	Al2O3
27	1.19	-3.924
Std Dev	1.03	-1.000
51	1.03	-0.957
5	0.98	0.000
Median	0.98	0.000
5	0.96	0.383
Std Dev	0.93	1.000
36	0.46	9.954

402 ICP-inducted coupled plasma

Lab	%	Al2O3
77	1.45	-5.585
77	1.40	-4.978
78	1.24	-2.975
78	1.22	-2.793
24	1.10	-1.275
24	1.09	-1.154
Std Dev	1.07	-1.000
75	1.07	-0.928
75	1.06	-0.825
270	1.02	-0.364
270	1.02	-0.364
15	0.99	0.000
61	0.99	0.000
Median	0.99	0.000
15	0.99	0.061
6	0.97	0.243
6	0.97	0.243
10	0.97	0.243
34	0.97	0.243
9	0.96	0.364
9	0.96	0.364
61	0.96	0.364
13	0.94	0.607
13	0.93	0.729

403 Other(describe)

Lab	%	Al2O3
Median	0.00	0.000

501 Atomic Absorption-AFPC 9-18,19

Lab	%	MgO
27	0.50	-2.144
36	0.48	-1.072
Std Dev	0.48	-1.000
5	0.47	-0.536
5	0.46	0.000
51	0.46	0.000
Median	0.46	0.000
Std Dev	0.44	1.000
60	0.44	1.072
57	0.43	1.608

502 ICP-inducted coupled plasma

Lab	%	MgO
61	0.50	-5.360
9	0.47	-1.340
13	0.47	-1.340
15	0.47	-1.340
24	0.47	-1.340
Std Dev	0.47	-1.000
15	0.47	-0.670
6	0.46	0.000
9	0.46	0.000
10	0.46	0.000
13	0.46	0.000
34	0.46	0.000
61	0.46	0.000
77	0.46	0.000
Median	0.46	0.000
6	0.46	0.670
24	0.46	0.670
78	0.46	0.670
78	0.46	0.670
Std Dev	0.45	1.000
77	0.45	1.340
51	0.42	5.360
75	0.39	8.852
75	0.39	9.107

503 Other(describe)

Lab	%	MgO
Median	0.00	0.000

601 Insoluble-AFPC 9-8

Lab	%	AI
5	13.19	-1.525
5	13.18	-1.479
13	13.15	-1.317
Std Dev	13.08	-1.000
61	13.08	-0.993
9	13.03	-0.786
61	12.91	-0.231
27	12.90	-0.162
9	12.88	-0.092
57	12.88	-0.092
Median	12.86	0.000
51	12.84	0.092
24	12.74	0.554
15	12.73	0.624
15	12.73	0.624
10	12.71	0.716
6	12.68	0.832
24	12.65	0.993
Std Dev	12.64	1.000
6	12.60	1.201
13	12.60	1.201

602 Other(describe)

Lab	%	AI
Median	0.00	0.000

701 Gravimetric sulfate

Lab	%	CaO
Median	0.00	0.000

702 ICP-inducted coupled plasma

Lab	%	CaO
78	46.48	-7.069
75	44.72	-3.357
75	44.66	-3.239
Std Dev	43.60	-1.000
10	43.27	-0.295
34	43.23	-0.222
61	43.16	-0.063
Median	43.13	0.000
6	43.10	0.063
77	43.00	0.264
61	42.99	0.295
6	42.96	0.348
78	42.96	0.348
77	42.70	0.897

703 Ceric Sulfate volumetric

Lab	%	CaO
Median	0.00	0.000

704 Permanganate

Lab	%	CaO
60	42.85	-1.340
Std Dev	42.22	-1.000
Median	40.36	0.000
Std Dev	38.50	1.000
27	37.87	1.340

705 EDTA Volumetric

Lab	%	CaO
51	43.95	-1.730
Std Dev	43.65	-1.000
9	43.24	0.000
Median	43.24	0.000
9	42.85	0.950

706 Other(describe)

Lab	%	CaO
270	44.45	-1.584
Std Dev	44.08	-1.000
13	44.04	-0.938
270	43.88	-0.686
15	43.47	-0.039
15	43.45	0.000
Median	43.45	0.000
24	43.28	0.268
24	43.03	0.654
Std Dev	42.81	1.000

13	42.51	1.474
57	40.70	4.327

711	Gravimetric sulfate	
Lab	% CaO	dB
Median	0.00	0.000

712	ICP-inducted coupled plasma	
Lab	% CaO	dB
10	43.60	-2.212
Std Dev	43.49	-1.000
61	43.49	-0.979
6	43.39	0.000
Median	43.39	0.000
61	43.36	0.361
Std Dev	43.30	1.000
6	43.25	1.496

713	Ceric Sulfate volumetric	
Lab	% CaO	dB
Median	0.00	0.000

714	Permanganate	
Lab	% CaO	dB
27	38.26	0.000
Median	38.26	0.000

715	EDTA Volumetric	
Lab	% CaO	dB
51	44.28	-1.801
Std Dev	43.96	-1.000
9	43.57	0.000
Median	43.57	0.000
9	43.22	0.879

716	Other(describe)	
Lab	% CaO	dB
13	44.38	-1.581
Std Dev	44.08	-1.000
15	43.77	-0.415
15	43.76	-0.392
24	43.56	0.000
Median	43.56	0.000
24	43.30	0.496
Std Dev	43.05	1.000
13	42.85	1.377
57	40.70	5.551

801	Volumetric-AFPC 9-37	
Lab	% Fluorine, F	
Median	0.00	0.000

802	Specific Ion Electrode	
Lab	% Fluorine, F	
24	3.59	-1.310
Std Dev	3.54	-1.000
9	3.47	-0.596
24	3.47	-0.596
34	3.44	-0.417
78	3.43	-0.328
13	3.41	-0.208
78	3.41	-0.208
9	3.40	-0.179
51	3.37	0.000
Median	3.37	0.000
27	3.31	0.357
75	3.31	0.357
75	3.27	0.596
Std Dev	3.20	1.000
13	3.20	1.012
270	3.20	1.012
15	3.19	1.072
15	3.14	1.370
36	2.98	2.323

803	Oher(describe)	
Lab	% Fluorine, F	
77	3.45	-1.340
Std Dev	3.44	-1.000
Median	3.42	0.000
Std Dev	3.40	1.000
77	3.39	1.340

911	Atomic Absorption-AFPC 9-18,19	
Lab	ppm Arsenic, As	
27	4.5	0.000
Median	4.5	0.000

912	ICP-inducted coupled plasma	
Lab	ppm Arsenic, As	
270	12.5	-1.340
Std Dev	11.9	-1.000
Median	10.0	0.000
Std Dev	8.0	1.000
24	7.4	1.340

913	Other(describe)	
Lab	ppm Arsenic, As	
77	11.0	0.000
77	11.0	0.000
Median	11.0	0.000
Std Dev	10.6	1.000
51	10.0	2.680

921	Atomic Absorption-AFPC 9-12,13	
Lab	ppm Cadmium, Cd	
27	11	-2.630
Std Dev	7	-1.000
57	4	0.000
Median	4	0.000
51	4	0.050

922	ICP-inducted coupled plasma	
Lab	ppm Cadmium, Cd	
78	7	-2.519
78	7	-1.930
51	6	-1.072
Std Dev	6	-1.000
270	6	-0.965
75	5	0.000
75	5	0.000
77	5	0.000
77	5	0.000
Median	5	0.000
61	4	0.643
61	4	0.858
Std Dev	4	1.000
270	4	1.018

923	Other(describe)	
Lab	ppm Cadmium, Cd	
Median	0	0.000

931	Atomic Absorption-AFPC 9-16,17	
Lab	ppm Cobalt, Co	
27	15	0.000
Median	15	0.000

932	ICP-inducted coupled plasma	
Lab	ppm Cobalt, Co	
78	9	-2.680
78	8	-1.787
Std Dev	7	-1.000
77	7	-0.893
51	6	0.000
75	6	0.000
75	6	0.000
77	6	0.000
Median	6	0.000

933	Other(describe)	
Lab	ppm Cobalt, Co	
Median	0	0.000

941	Atomic Absorption-AFPC 9-18,19	
Lab	ppm Mercury, Hg	
Median	0.0	0.000

942	ICP-inducted coupled plasma	
Lab	ppm Mercury, Hg	
Median	0.0	0.000

943	Other(describe)	
Lab	ppm Mercury, Hg	
Median	0.0	0.000

951	Atomic Absorption-AFPC 9-18,19	
Lab	ppm lolybdenum, Mo	
Median	0	0.000

952	ICP-inducted coupled plasma	
Lab	ppm lolybdenum, Mo	
77	13	-0.664
77	13	-0.664
Median	12	0.000
78	12	0.664

78	12		0.713

953	Other(describe)		
Lab	ppm	Molybdenum, Mo	
Median	0		0.000

961		Atomic Absorption-AFPC 9-12,13	
Lab	ppm	Nickel, Ni	
27	75		-1.340
Std Dev	69		-1.000
Median	51		0.000
Std Dev	33		1.000
51	27		1.340

962	ICP-inducted coupled plasma		
Lab	ppm	Nickel, Ni	
78	28		-1.588
78	27		-1.191
Std Dev	26		-1.000
51	25		-0.596
270	25		-0.596
Median	24		0.000
75	22		0.596
75	22		0.596
77	22		0.596
77	21		0.993

963	Other(describe)		
Lab	ppm	Nickel, Ni	
Median	0		0.000

971		Atomic Absorption-AFPC 9-16,17	
Lab	ppm	Lead, Pb	
27	13		-1.340
Std Dev	12		-1.000
Median	12		0.000
Std Dev	11		1.000
51	11		1.340

972	ICP-inducted coupled plasma		
Lab	ppm	Lead, Pb	
77	ND		0.000
78	18		-0.103
24	18		0.000
78	18		0.000
Median	18		0.000
Std Dev	13		1.000
270	11		1.340
77	4		2.783

973	Other(describe)		
Lab	ppm	Lead, Pb	
Median	0		0.000

981		Atomic Absorption-AFPC 9-18,19	
Lab	ppm	Selenium, Se	
Median	0		0.000

982	ICP-inducted coupled plasma		
Lab	ppm	Selenium, Se	
Median	0		0.000

983	Other(describe)		
Lab	ppm	Selenium, Se	
Median	0		0.000

991		Atomic Absorption-AFPC 9-18,19	
Lab	ppm	Zinc, Zn	
27	65		-0.736
60	58		0.000
Median	58		0.000
Std Dev	48		1.000
51	39		1.944

992	ICP-inducted coupled plasma		
Lab	ppm	Zinc, Zn	
78	176		-5.112
78	157		-4.305
Std Dev	77		-1.000
75	57		-0.166
75	54		-0.062
Median	53		0.000
51	51		0.062
270	50		0.124
77	48		0.186
77	44		0.352

993	Other(describe)		
Lab	ppm	Zinc, Zn	
Median	0		0.000