

AFPC Rock Check Program

Sample No. 2006-06

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	23	1.27	0.106
Other (describe)	102			
Method Group 100		23	1.27	0.11
BPL or P₂O₅				
Gravimetric AFPC 9-5	201	1	13.85	0.000
ICP-induced coupled plasma	202	3	13.78	0.149
Photometric-AFPC 9-6	203	16	13.50	0.403
Automated -AOAC 978.01-15th	204	6	13.73	0.046
Other(describe)	205	1	13.60	0.000
Method Group 200		27	13.70	0.27
BPL or P₂O₅ (on Dry Basis)				
Gravimetric AFPC 9-5	211	1	13.95	0.000
ICP-induced coupled plasma	212	3	13.98	0.155
Photometric-AFPC 9-6	213	12	14.00	0.437
Automated -AOAC 978.01-15th	214	6	13.88	0.088
Other(describe)	215	1	13.76	0.000
Method Group 210		12	13.78	0.30
Fe₂O₃				
Atomic Absorption-AFPC 9-12,13	301	4	1.26	0.077
ICP-induced coupled plasma	302	21	1.31	0.078
Other(describe)	303	1	1.25	0.000
Method Group 300		26	1.31	0.08
Al₂O₃				
Atomic Absorption-AFPC 9-16,17	401	2	1.47	0.019
ICP-induced coupled plasma	402	21	1.45	0.396
Other(describe)	403	1	2.10	0.000
Method Group 400		24	1.45	0.43
MgO				
Atomic Absorption-AFPC 9-18,19	501	5	1.80	0.045
ICP-induced coupled plasma	502	20	1.86	0.119
Other(describe)	503	2	1.84	0.049
Method Group 500		27	1.85	0.12
Acid Insoluble				
Insoluble-AFPC 9-8	601	16	47.37	0.316
Other(describe)	602	1	47.10	0.000
Method Group 600		17	47.32	0.29
CaO				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	15	23.45	1.172
Ceric Sulfate volumetric	703			
Permanganate	704	1	23.35	0.000
EDTA Volumetric	705	4	24.68	1.838
Other(describe)	706	3	23.29	0.065
Method Group 700		23	23.38	0.48
CaO (on Dry Basis)				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	8	23.49	1.669
Ceric Sulfate volumetric	713			
Permanganate	714			
EDTA Volumetric	715	3	26.11	1.084
Other(describe)	716	3	23.56	0.172
Method Group 710		11	23.78	1.03

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	12	1.63	0.071
Other (describe)	803	2	1.72	0.004
Method Group 800		14	1.66	0.09
Arsenic, As				
Atomic Absorption	911			
ICP-induced coupled plasma	912	2	25.5	0.75
Other(describe)	913	2	10.5	0.37
Method Group 900		4	17.8	10.63
Cadmium, Cd				
Atomic Absorption	921			
ICP-induced coupled plasma	922	9	1	0.6
Other(describe)	923	2	1	0.0
Method Group 910		11	1	0.5
Cobalt, Co				
Atomic Absorption	931			
ICP-induced coupled plasma	932	6	3	0.6
Other(describe)	933	1	2	0.0
Method Group 920		7	3	0.7
Mercury, Hg				
Atomic Absorption	941			
ICP-induced coupled plasma	942			
Other(describe)	943	1	0.1	0.00
Method Group 930		1	0.1	0.00
Molybdenum, Mo				
Atomic Absorption	951			
ICP-induced coupled plasma	952	4	7	1.0
Other(describe)	953	1	5	0.0
Method Group 940		5	6	1.5
Nickel, Ni				
Atomic Absorption	961			
ICP-induced coupled plasma	962	6	10	0.6
Other(describe)	963	2	20	6.3
Method Group 950		8	10	0.9
Lead, Pb				
Atomic Absorption	971			
ICP-induced coupled plasma	972	4	8	4.8
Other(describe)	973	1	7	0.0
Method Group 960		5	7	4.5
Selenium, Se				
Atomic Absorption	981			
ICP-induced coupled plasma	982			
Other(describe)	983			
Method Group 970		0	#NUM!	
Zinc, Zn				
Atomic Absorption	991	1	11	0
ICP-induced coupled plasma	992	6	28	10
Other(describe)	993	2	11	5
Method Group 980		9	20	11

101 Ground Sample AFPC 9-2			
Lab	%	H ₂ O	
10	1.47		-1.834
13	1.47		-1.834
13	1.40		-1.222
Std Dev	1.38		-1.000
9	1.37		-0.940
50	1.37		-0.940
61	1.37		-0.940
61	1.35		-0.752
9	1.32		-0.470
6	1.31		-0.376
6	1.30		-0.235
78	1.28		-0.047
5	1.27		0.000
Median	1.27		0.000
6	1.26		0.094
75	1.26		0.141
75	1.25		0.235
78	1.25		0.235
5	1.23		0.376
15	1.21		0.611
57	1.19		0.752
15	1.18		0.893
Std Dev	1.16		1.000
35	1.10		1.599
77	0.69		5.454
77	0.58		6.488

102 Other (describe)			
Lab	%	H ₂ O	
Median	0.00		0.000

201 Gravimetric AFPC 9-5			
Lab	%	P2O5	
77	13.85		0.000
Median	13.85		0.000

202 ICP-induced coupled plasma			
Lab	%	P2O5	
10	13.89		-0.737
13	13.78		0.000
Median	13.78		0.000
Std Dev	13.63		1.000

13 13.49 1.943

203 Photometric-AFPC 9-6			
Lab	%	P2O5	
35	16.06		-6.353
9	14.04		-1.340
9	14.02		-1.290
5	13.94		-1.092
Std Dev	13.90		-1.000
61	13.83		-0.819
61	13.83		-0.819
5	13.81		-0.769
19	13.50		0.000
60	13.50		0.000
Median	13.50		0.000
78	13.44		0.161
78	13.39		0.273
6	13.36		0.360
6	13.21		0.732
6	13.20		0.744
Std Dev	13.10		1.000
6	13.00		1.241
36	12.70		1.985

204 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
75	13.76		-0.656
15	13.75		-0.547
75	13.75		-0.547
Median	13.73		0.000
77	13.70		0.547
15	13.69		0.875
Std Dev	13.68		1.000
50	13.60		2.735

205 Other(describe)			
Lab	%	P2O5	
57	13.60		0.000
Median	13.60		0.000

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
77	13.95		0.000
Median	13.95		0.000

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
10	14.10		-0.721
13	13.98		0.000
Median	13.98		0.000
Std Dev	13.83		1.000
13	13.68		1.959

213 Photometric-AFPC 9-6			
Lab	%	P2O5	dB
35	16.24		-5.116
Std Dev	14.44		-1.000
9	14.24		-0.530
9	14.21		-0.467
5	14.11		-0.252
61	14.02		-0.043
61	14.02		-0.036
Median	14.00		0.000
5	13.99		0.036
78	13.61		0.904
Std Dev	13.57		1.000
78	13.56		1.018
6	13.53		1.083
6	13.38		1.426
6	13.17		1.917

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
75	13.93		-0.533
75	13.92		-0.460
15	13.92		-0.396
Median	13.88		0.000
15	13.85		0.396
Std Dev	13.79		1.000
50	13.79		1.062
77	13.78		1.164

215 Other(describe)			
Lab	%	P2O5	dB
57	13.76		0.000
Median	13.76		0.000

301 Atomic Absorption-AFPC 9-12,13			
Lab	%	Fe2O3	
36	1.43		-2.196
Std Dev	1.34		-1.000
5	1.27		-0.129
Median	1.26		0.000
5	1.25		0.129
Std Dev	1.18		1.000
60	1.08		2.389

302 ICP-induced coupled plasma			
Lab	%	Fe2O3	
15	1.46		-1.914
15	1.45		-1.787
35	1.39		-1.021
Std Dev	1.39		-1.000
77	1.38		-0.893
61	1.37		-0.766
61	1.37		-0.702
9	1.34		-0.383
77	1.34		-0.383
78	1.33		-0.191
9	1.32		-0.128
6	1.31		0.000
Median	1.31		0.000
6	1.31		0.064
78	1.31		0.064
75	1.28		0.362
10	1.27		0.510
13	1.26		0.638
Std Dev	1.23		1.000
13	1.23		1.085
75	1.19		1.482
50	1.19		1.531
6	0.90		5.232
6	0.90		5.232

303 Other(describe)			
Lab	%	Fe2O3	
19	1.25		0.000
Median	1.25		0.000

401 Atomic Absorption-AFPC 9-16,17			
Lab	%	Al2O3	

5	1.49	-1.340
Std Dev	1.48	-1.000
Median	1.47	0.000
Std Dev	1.45	1.000
5	1.44	1.340

402 ICP-induced coupled plasma		
Lab	%	Al2O3
77	2.38	-2.351
77	2.33	-2.225
50	2.16	-1.795
78	2.15	-1.770
78	2.13	-1.707
35	1.89	-1.112
Std Dev	1.85	-1.000
15	1.63	-0.455
15	1.61	-0.392
9	1.50	-0.126
6	1.45	0.000
6	1.45	0.000
9	1.45	0.000
Median	1.45	0.000
61	1.42	0.076
61	1.41	0.101
13	1.37	0.202
10	1.36	0.228
75	1.35	0.244
13	1.29	0.405
75	1.21	0.615
Std Dev	1.05	1.000
6	0.77	1.732
6	0.76	1.757

403 Other(describe)		
Lab	%	Al2O3
19	2.10	0.000
Median	2.10	0.000

501 Atomic Absorption-AFPC 9-18,19		
Lab	%	MgO
35	2.02	-4.802
Std Dev	1.84	-1.000
5	1.82	-0.447
60	1.80	0.000

Median	1.80	0.000
36	1.76	0.893
Std Dev	1.76	1.000
5	1.73	1.563

502 ICP-induced coupled plasma			
Lab	%	MgO	
61	2.07	-1.772	
15	2.03	-1.437	
61	2.01	-1.269	
15	2.00	-1.143	
9	1.98	-1.018	
Std Dev	1.98	-1.000	
9	1.95	-0.767	
10	1.94	-0.683	
13	1.94	-0.683	
6	1.87	-0.097	
75	1.86	-0.029	
Median	1.86	0.000	
6	1.86	0.029	
77	1.85	0.071	
77	1.84	0.155	
75	1.84	0.172	
78	1.80	0.490	
78	1.79	0.573	
Std Dev	1.74	1.000	
13	1.73	1.076	
50	1.72	1.160	
6	1.13	6.143	
6	1.12	6.185	

503 Other(describe)		
Lab	%	MgO
19	1.90	-1.340
Std Dev	1.88	-1.000
Median	1.84	0.000
Std Dev	1.79	1.000
57	1.77	1.340

601 Insoluble-AFPC 9-8			
Lab	%	Al	
6	47.78	-1.289	
Std Dev	47.69	-1.000	
15	47.55	-0.545	

5	47.52	-0.466
61	47.50	-0.387
15	47.49	-0.372
9	47.48	-0.340
61	47.48	-0.340
6	47.43	-0.166
Median	47.37	0.000
9	47.32	0.166
6	47.30	0.245
13	47.19	0.577
5	47.13	0.767
Std Dev	47.06	1.000
10	46.88	1.557
35	46.49	2.791
19	45.85	4.815
13	45.31	6.538

602 Other(describe)		
Lab	%	Al
57	47.10	0.000
Median	47.10	0.000

701 Gravimetric sulfate		
Lab	%	CaO
Median	0.00	0.000

702 ICP-induced coupled plasma		
Lab	%	CaO
75	24.05	-0.518
78	23.94	-0.422
75	23.93	-0.411
61	23.77	-0.273
78	23.65	-0.171
61	23.64	-0.162
13	23.54	-0.081
13	23.45	0.000
Median	23.45	0.000
77	23.27	0.149
77	23.05	0.337
10	22.87	0.495
Std Dev	22.27	1.000
6	21.41	1.741
6	21.35	1.792
6	16.01	6.346

6	15.62	6.683
703 Ceric Sulfate volumetric		
Lab	%	CaO
Median	0.00	0.000

704 Permanganate		
Lab	%	CaO
60	23.35	0.000
Median	23.35	0.000

705 EDTA Volumetric		
Lab	%	CaO
9	26.39	-0.931
9	25.77	-0.593
Median	24.68	0.000
35	23.59	0.593
50	23.08	0.871

706 Other(describe)		
Lab	%	CaO
15	23.38	-1.378
Std Dev	23.35	-1.000
15	23.29	0.000
Median	23.29	0.000
Std Dev	23.22	1.000
19	23.20	1.302

711 Gravimetric sulfate			
Lab	%	CaO	dB
Median	0.00		0.000

712 ICP-induced coupled plasma			
Lab	%	CaO	dB
61	24.09	-0.359	
61	23.96	-0.283	
13	23.89	-0.239	
13	23.78	-0.172	
Median	23.49	0.000	
10	23.20	0.172	
Std Dev	21.82	1.000	
6	21.69	1.082	
6	21.63	1.116	
6	16.21	4.359	

713 Ceric Sulfate volumetric			
Lab	%	CaO	dB
Median	0.00		0.000

714 Permanganate			
Lab	%	CaO	dB
Median	0.00		0.000

715 EDTA Volumetric			
Lab	%	CaO	dB
9	26.76		-0.592
9	26.11		0.000
Median	26.11		0.000
Std Dev	25.03		1.000
35	23.85		2.088

716 Other(describe)			
Lab	%	CaO	dB
15	23.66		-0.572
15	23.56		0.000
Median	23.56		0.000
Std Dev	23.39		1.000
19	23.20		2.108

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

802 Specific Ion Electrode			
Lab	%	Fluorine, F	
35	1.99		-5.043
15	1.73		-1.305
15	1.72		-1.234
Std Dev	1.70		-1.000
9	1.68		-0.670
36	1.68		-0.670
9	1.64		-0.106
Median	1.63		0.000
75	1.63		0.106
78	1.63		0.106
13	1.60		0.529
75	1.60		0.529
Std Dev	1.56		1.000

78	1.55	1.234
13	1.43	2.856

803 Other(describe)			
Lab	%	Fluorine, F	
77	1.72		-1.340
Std Dev	1.72		-1.000
Median	1.72		0.000
Std Dev	1.71		1.000
77	1.71		1.340

911 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Arsenic, As	
Median	0.0		0.000

912 ICP-induced coupled plasma			
Lab	ppm	Arsenic, As	
78	26.5		-1.340
Std Dev	26.2		-1.000
Median	25.5		0.000
Std Dev	24.8		1.000
78	24.5		1.340

913 Other(describe)			
Lab	ppm	Arsenic, As	
77	11.0		-1.340
Std Dev	10.9		-1.000
Median	10.5		0.000
Std Dev	10.1		1.000
13	10.0		1.340

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	
Median	0		0.000

922 ICP-induced coupled plasma			
Lab	ppm	Cadmium, Cd	
50	5		-6.432
75	2		-1.072
75	2		-1.072
Std Dev	2		-1.000
78	1		-0.089
78	1		0.000
Median	1		0.000

61	1	0.089
61	1	0.268
77	1	0.715
77	1	0.715

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
13	1		-1.340
Std Dev	1		-1.000
Median	1		0.000
Std Dev	1		1.000
57	1		1.340

931 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Cobalt, Co	
Median	0		0.000

932 ICP-induced coupled plasma			
Lab	ppm	Cobalt, Co	
77	3		0.000
77	3		0.000
78	3		0.000
78	3		0.000
Median	3		0.000
Std Dev	2		1.000
75	2		1.787
75	2		1.787

933 Other(describe)			
Lab	ppm	Cobalt, Co	
13	2		0.000
Median	2		0.000

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

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

943 Other(describe)			
Lab	ppm	Mercury, Hg	
13	<1		0.000

57	0.1	0.000
Median	0.1	0.000

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

952 ICP-induced coupled plasma			
Lab	ppm	Iolybdenum, Mo	
78	7		-0.632
78	7		-0.531
Median	7		0.000
77	6		0.531
Std Dev	6		1.000
77	5		1.542

953 Other(describe)			
Lab	ppm	Iolybdenum, Mo	
13	5		0.000
Median	5		0.000

961 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Nickel, Ni	
Median	0		0.000

962 ICP-induced coupled plasma			
Lab	ppm	Nickel, Ni	
78	12		-2.680
Std Dev	11		-1.000
78	11		-0.893
77	10		0.000
77	10		0.000
Median	10		0.000
75	10		0.893
Std Dev	9		1.000
75	9		1.787

963 Other(describe)			
Lab	ppm	Nickel, Ni	
19	28		-1.340
Std Dev	26		-1.000
Median	20		0.000
Std Dev	13		1.000
13	11		1.340

971	Atomic Absorption-AFPC 9-16,17	
Lab	ppm	Lead, Pb
Median	0	0.000

972	ICP-induced coupled plasma	
Lab	ppm	Lead, Pb
78	13	-0.946
78	11	-0.631
Median	8	0.000
77	5	0.631
77	5	0.631

973	Other(describe)	
Lab	ppm	Lead, Pb
13	7	0.000
Median	7	0.000

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

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

983	Other(describe)	
Lab	ppm	Selenium, Se
13	<5	0.000
Median	0	0.000

991	Atomic Absorption-AFPC 9-18,19	
Lab	ppm	Zinc, Zn
60	11	0.000
Median	11	0.000

992	ICP-induced coupled plasma	
Lab	ppm	Zinc, Zn
75	40	-1.149
Std Dev	38	-1.000
77	35	-0.718
77	33	-0.526
Median	28	0.000
75	22	0.526

78	20	0.718
78	20	0.766

993	Other(describe)	
Lab	ppm	Zinc, Zn
13	19	-1.340
Std Dev	17	-1.000
Median	11	0.000
Std Dev	6	1.000
57	4	1.340

