

AFPC Rock Check Program

Sample No. 2006-09

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	18	0.81	0.048
Other (describe)	102	2	0.77	0.007
Method Group 100		20	0.80	0.05
BPL or P₂O₅				
Gravimetric AFPC 9-5	201	1	29.32	0.000
ICP-induced coupled plasma	202	2	29.61	0.000
Photometric-AFPC 9-6	203	11	29.53	0.121
Automated -AOAC 978.01-15th	204	9	29.32	0.116
Other(describe)	205			
Method Group 200		23	29.44	0.20
BPL or P₂O₅ (on Dry Basis)				
Gravimetric AFPC 9-5	211	1	29.47	0.000
ICP-induced coupled plasma	212			
Photometric-AFPC 9-6	213	10	29.72	0.115
Automated -AOAC 978.01-15th	214	9	29.54	0.100
Other(describe)	215			
Method Group 210		10	29.69	0.17
Fe₂O₃				
Atomic Absorption-AFPC 9-12,13	301	1	1.19	0.000
ICP-induced coupled plasma	302	20	1.32	0.064
Other(describe)	303	2	1.31	0.004
Method Group 300		23	1.31	0.05
Al₂O₃				
Atomic Absorption-AFPC 9-16,17	401			
ICP-induced coupled plasma	402	22	0.94	0.044
Other(describe)	403			
Method Group 400		22	0.94	0.04
MgO				
Atomic Absorption-AFPC 9-18,19	501	2	0.48	0.028
ICP-induced coupled plasma	502	21	0.48	0.007
Other(describe)	503			
Method Group 500		23	0.48	0.01
Acid Insoluble				
Insoluble-AFPC 9-8	601	15	10.57	0.106
Other(describe)	602			
Method Group 600		15	10.57	0.11
CaO				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	13	44.66	0.966
Ceric Sulfate volumetric	703			
Permanganate	704	1	44.10	0.000
EDTA Volumetric	705	3	44.65	0.157
Other(describe)	706	6	44.19	0.258
Method Group 700		23	44.50	0.51
CaO (on Dry Basis)				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	6	44.37	0.460
Ceric Sulfate volumetric	713			
Permanganate	714			
EDTA Volumetric	715	3	45.01	0.150
Other(describe)	716	6	44.51	0.232
Method Group 710		11	44.85	0.41

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	15	3.45	0.159
Other(describe)	803	2	3.80	0.019
Method Group 800		17	3.52	0.17
Arsenic, As				
Atomic Absorption	911			
ICP-induced coupled plasma	912	7	6.7	0.44
Other(describe)	913	3	10.0	0.78
Method Group 900		10	7.1	1.52
Cadmium, Cd				
Atomic Absorption	921			
ICP-induced coupled plasma	922	8	4	0.4
Other(describe)	923	3	3	0.3
Method Group 910		11	4	0.8
Cobalt, Co				
Atomic Absorption	931			
ICP-induced coupled plasma	932	7	6	2.6
Other(describe)	933	3	4	0.9
Method Group 920		10	6	1.3
Mercury, Hg				
Atomic Absorption	941			
ICP-induced coupled plasma	942	1	0.1	0.00
Other(describe)	943			
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	11	0.0
Method Group 940		5	8	0.9
Nickel, Ni				
Atomic Absorption	961			
ICP-induced coupled plasma	962	6	20	3.9
Other(describe)	963	3	16	2.4
Method Group 950		9	20	2.6
Lead, Pb				
Atomic Absorption	971			
ICP-induced coupled plasma	972	7	11	3.8
Other(describe)	973	1	14	0.0
Method Group 960		8	12	3.2
Selenium, Se				
Atomic Absorption	981			
ICP-induced coupled plasma	982			
Other(describe)	983	1	2	0.0
Method Group 970		1	2	0.0
Zinc, Zn				
Atomic Absorption	991	1	59	0
ICP-induced coupled plasma	992	6	45	8
Other(describe)	993	3	34	7
Method Group 980		10	45	10

101 Ground Sample AFPC 9-2			
Lab	%	H ₂ O	
13	0.90		-1.989
13	0.90		-1.884
9	0.88		-1.570
75	0.88		-1.466
Std Dev	0.85		-1.000
78	0.84		-0.733
35	0.83		-0.544
75	0.82		-0.314
6	0.81		-0.105
78	0.81		-0.105
Median	0.81		0.000
9	0.80		0.105
24	0.80		0.105
6	0.79		0.314
24	0.79		0.419
34	0.77		0.733
Std Dev	0.76		1.000
15	0.73		1.675
15	0.72		1.884
77	0.50		6.386
77	0.36		9.317

102 Other (describe)			
Lab	%	H ₂ O	
69	0.78		-1.340
Std Dev	0.77		-1.000
Median	0.77		0.000
Std Dev	0.76		1.000
69	0.76		1.340

201 Gravimetric AFPC 9-5			
Lab	%	P2O5	
77	29.32		0.000
Median	29.32		0.000

202 ICP-induced coupled plasma			
Lab	%	P2O5	
10	29.61		0.000
10	29.61		0.000
Median	29.61		0.000

203 Photometric-AFPC 9-6			
Lab	%	P2O5	
60	29.70		-1.443
69	29.65		-1.031
Std Dev	29.65		-1.000
6	29.59		-0.536
78	29.58		-0.412
6	29.53		-0.041
69	29.53		0.000
Median	29.53		0.000
34	29.46		0.536
35	29.44		0.701
Std Dev	29.44		1.000
9	29.40		1.031
78	29.30		1.855
9	29.24		2.350

204 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
13	29.90		-5.014
13	29.52		-1.686
Std Dev	29.44		-1.000
15	29.42		-0.821
75	29.35		-0.259
15	29.32		0.000
Median	29.32		0.000
75	29.30		0.173
24	29.26		0.519
77	29.25		0.605
24	29.21		0.951

205 Other(describe)			
Lab	%	P2O5	
Median	0.00		0.000

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
77	29.47		0.000
Median	29.47		0.000

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
Median	0.00		0.000

213 Photometric-AFPC 9-6				
Lab	%	P2O5	dB	
69	29.88			-1.412
Std Dev	29.83			-1.000
6	29.83			-0.978
78	29.82			-0.847
6	29.77			-0.400
69	29.75			-0.265
Median	29.72			0.000
34	29.69			0.265
35	29.69			0.282
9	29.64			0.713
Std Dev	29.60			1.000
78	29.55			1.485
9	29.50			1.908

214 Automated -AOAC 978.01-15th				
Lab	%	P2O5	dB	
13	30.17			-6.300
13	29.78			-2.396
Std Dev	29.64			-1.000
15	29.63			-0.877
75	29.61			-0.669
75	29.54			0.000
Median	29.54			0.000
15	29.53			0.111
24	29.50			0.463
Std Dev	29.44			1.000
24	29.44			1.012
77	29.36			1.868

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

301 Atomic Absorption-AFPC 9-12,13			
Lab	%	Fe2O3	
60	1.19		0.000
Median	1.19		0.000

302 ICP-induced coupled plasma			
Lab	%	Fe2O3	
77	1.55		-3.683
77	1.53		-3.370

78	1.51		-2.978
78	1.47		-2.429
Std Dev	1.38		-1.000
34	1.37		-0.862
15	1.36		-0.627
6	1.33		-0.235
6	1.32		-0.078
13	1.32		-0.078
15	1.32		-0.078
Median	1.32		0.000
13	1.31		0.078
10	1.30		0.235
10	1.30		0.235
9	1.29		0.392
75	1.27		0.639
75	1.27		0.699
9	1.26		0.862
Std Dev	1.25		1.000
24	1.25		1.097
35	1.20		1.802
24	1.20		1.881

303 Other(describe)			
Lab	%	Fe2O3	
69	1.31		-1.340
Std Dev	1.31		-1.000
Median	1.31		0.000
Std Dev	1.30		1.000
69	1.30		1.340

401 Atomic Absorption-AFPC 9-16,17			
Lab	%	Al2O3	
Median	0.00		0.000

402 ICP-induced coupled plasma			
Lab	%	Al2O3	
78	1.50		-12.626
77	1.40		-10.374
77	1.39		-10.149
78	1.38		-9.923
24	1.01		-1.591
35	0.99		-1.163
24	0.99		-1.028
Std Dev	0.98		-1.000

15	0.96	-0.352
75	0.95	-0.273
15	0.95	-0.127
34	0.94	-0.014
Median	0.94	0.000
75	0.94	0.014
6	0.93	0.211
10	0.93	0.211
10	0.93	0.211
13	0.93	0.211
69	0.93	0.211
69	0.93	0.211
13	0.93	0.324
6	0.92	0.436
9	0.92	0.436
Std Dev	0.89	1.000
9	0.89	1.112

403 Other(describe)		
Lab	%	Al2O3
Median	0.00	0.000

501 Atomic Absorption-AFPC 9-18,19		
Lab	%	MgO
35	0.52	-1.340
Std Dev	0.51	-1.000
Median	0.48	0.000
Std Dev	0.45	1.000
60	0.44	1.340

502 ICP-induced coupled plasma		
Lab	%	MgO
78	0.57	-11.390
69	0.56	-10.720
69	0.55	-9.380
78	0.53	-6.700
13	0.50	-2.010
10	0.49	-1.340
10	0.49	-1.340
13	0.49	-1.340
34	0.49	-1.340
77	0.49	-1.340
Std Dev	0.49	-1.000
6	0.48	0.000

9	0.48	0.000
9	0.48	0.000
15	0.48	0.000
15	0.48	0.000
77	0.48	0.000
Median	0.48	0.000
24	0.48	0.670
Std Dev	0.47	1.000
6	0.47	1.340
24	0.46	2.680
75	0.43	7.333
75	0.42	7.555

503 Other(describe)		
Lab	%	MgO
Median	0.00	0.000

601 Insoluble-AFPC 9-8		
Lab	%	Al
6	10.86	-2.774
6	10.81	-2.304
9	10.74	-1.646
13	10.72	-1.411
Std Dev	10.67	-1.000
15	10.65	-0.752
15	10.64	-0.658
9	10.62	-0.517
24	10.57	0.000
Median	10.57	0.000
10	10.54	0.235
10	10.54	0.235
69	10.54	0.235
24	10.54	0.282
69	10.49	0.705
13	10.49	0.752
Std Dev	10.46	1.000
35	10.29	2.586

602 Other(describe)		
Lab	%	Al
Median	0.00	0.000

701 Gravimetric sulfate		
Lab	%	CaO

Median	0.00	0.000
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702 ICP-induced coupled plasma		
Lab	%	CaO
78	47.23	-2.659
78	45.66	-1.030
75	45.63	-1.007
Std Dev	45.63	-1.000
75	45.50	-0.869
77	45.00	-0.352
6	44.73	-0.072
6	44.66	0.000
Median	44.66	0.000
34	44.52	0.145
77	44.40	0.269
10	44.21	0.471
10	44.21	0.471
69	44.06	0.626
69	44.01	0.673

703 Ceric Sulfate volumetric		
Lab	%	CaO
Median	0.00	0.000

704 Permanganate		
Lab	%	CaO
60	44.10	0.000
Median	44.10	0.000

705 EDTA Volumetric		
Lab	%	CaO
35	45.01	-2.297
Std Dev	44.81	-1.000
9	44.65	0.000
Median	44.65	0.000
9	44.59	0.383

706 Other(describe)		
Lab	%	CaO
24	44.50	-1.200
24	44.45	-1.006
Std Dev	44.44	-1.000
15	44.21	-0.097
Median	44.19	0.000

15	44.16	0.097
13	44.00	0.716
Std Dev	43.93	1.000
13	43.71	1.858

711 Gravimetric sulfate			
Lab	%	CaO	dB
Median	0.00	0.000	0.000

712 ICP-induced coupled plasma			
Lab	%	CaO	dB
6	45.10	-1.571	
6	45.02	-1.398	
Std Dev	44.83	-1.000	
69	44.39	-0.040	
Median	44.37	0.000	
69	44.35	0.040	
10	44.21	0.363	
10	44.21	0.363	

713 Ceric Sulfate volumetric			
Lab	%	CaO	dB
Median	0.00	0.000	0.000

714 Permanganate			
Lab	%	CaO	dB
Median	0.00	0.000	0.000

715 EDTA Volumetric			
Lab	%	CaO	dB
35	45.39	-2.518	
Std Dev	45.16	-1.000	
9	45.01	0.000	
Median	45.01	0.000	
9	44.99	0.162	

716 Other(describe)			
Lab	%	CaO	dB
24	44.85	-1.501	
24	44.80	-1.255	
Std Dev	44.74	-1.000	
15	44.53	-0.099	
Median	44.51	0.000	
15	44.48	0.099	

13	44.40	0.466
Std Dev	44.27	1.000
13	44.10	1.739

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

802 Specific Ion Electrode		
Lab	%	Fluorine, F

69	3.72	-1.703
69	3.71	-1.640
78	3.63	-1.135
78	3.61	-1.040
Std Dev	3.60	-1.000
35	3.57	-0.788
9	3.56	-0.725
9	3.52	-0.473
75	3.45	0.000
Median	3.45	0.000
13	3.44	0.063
24	3.40	0.284
75	3.40	0.315
24	3.36	0.536
15	3.35	0.631
15	3.30	0.946
Std Dev	3.29	1.000
13	3.15	1.860

803 Other (describe)		
Lab	%	Fluorine, F

77	3.82	-1.340
Std Dev	3.81	-1.000
Median	3.80	0.000
Std Dev	3.78	1.000
77	3.77	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
69	7.3	-1.455

69	7.2	-1.191
Std Dev	7.1	-1.000
24	7.0	-0.573
9	6.7	0.000
Median	6.7	0.000
9	6.5	0.458
78	6.5	0.458
Std Dev	6.3	1.000
78	1.5	11.911

913 Other (describe)		
Lab	ppm	Arsenic, As

13	11.1	-1.404
Std Dev	10.8	-1.000
77	10.0	0.000
Median	10.0	0.000
Std Dev	9.2	1.000
77	9.0	1.276

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

922 ICP-induced coupled plasma		
Lab	ppm	Cadmium, Cd

78	5	-1.228
Std Dev	4	-1.000
9	4	-0.782
78	4	-0.447
77	4	0.000
77	4	0.000
Median	4	0.000
9	4	0.335
Std Dev	4	1.000
75	3	2.233
75	3	2.233

923 Other (describe)		
Lab	ppm	Cadmium, Cd

13	3	-1.025
Std Dev	3	-1.000
69	3	0.000
Median	3	0.000
Std Dev	3	1.000

69	3	1.655
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931 Atomic Absorption-AFPC 9-16,17		
Lab	ppm	Cobalt, Co
Median	0	0.000

932 ICP-induced coupled plasma		
Lab	ppm	Cobalt, Co

78	11	-1.914
78	11	-1.914
Std Dev	9	-1.000
77	6	0.000
77	6	0.000
Median	6	0.000
75	5	0.383
75	5	0.383
24	4	0.785

933 Other (describe)		
Lab	ppm	Cobalt, Co

13	6	-2.182
Std Dev	5	-1.000
69	4	0.000
Median	4	0.000
69	4	0.498

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

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

24	0.1	0.000
Median	0.1	0.000

943 Other (describe)		
Lab	ppm	Mercury, Hg

13	<1	0.000
69	<0.1	0.000
69		0.000
Median		0.000

951 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Molybdenum, Mo

Median	0	0.000
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952 ICP-induced coupled plasma		
Lab	ppm	Molybdenum, Mo

77	8	-0.632
77	8	-0.632
Median	7	0.000
78	7	0.632
78	6	0.935

953 Other (describe)		
Lab	ppm	Molybdenum, Mo

69	<0.5	0.000
69	<0.5	0.000
13	11	0.000
Median		0.000

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

Median	0	0.000
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962 ICP-induced coupled plasma		
Lab	ppm	Nickel, Ni

78	27	-1.659
78	26	-1.531
Std Dev	24	-1.000
77	20	0.000
77	20	0.000
Median	20	0.000
75	19	0.255
75	19	0.383

963 Other (describe)		
Lab	ppm	Nickel, Ni

13	22	-2.362
Std Dev	19	-1.000
69	16	0.000
Median	16	0.000
69	16	0.318

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

Median	0	0.000
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972 ICP-induced coupled plasma		
Lab	ppm	Lead, Pb
24	18	-1.897
Std Dev	15	-1.000
78	15	-0.995
78	13	-0.332
9	11	0.000
Median	11	0.000
9	10	0.226
Std Dev	7	1.000
77	7	1.128
77	7	1.128

973 Other(describe)		
Lab	ppm	Lead, Pb
69	<0.1	0.000
69	<0.1	0.000
13	14	0.000
Median		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
69	<0.1	0.000
69	<0.1	0.000
13	2	0.000
Median		0.000

991 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Zinc, Zn
60	59	0.000
Median	59	0.000

992 ICP-induced coupled plasma		
Lab	ppm	Zinc, Zn
78	61	-2.084
78	55	-1.357

Std Dev	52	-1.000
75	46	-0.099
Median	45	0.000
75	44	0.099
77	42	0.364
77	40	0.629

993 Other(describe)		
Lab	ppm	Zinc, Zn
13	53	-2.678
Std Dev	41	-1.000
69	34	0.000
Median	34	0.000
69	34	0.002

