

AFPC Rock Check Program

Sample No. 2015-10

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC IX.2.A	101	23	0.86	0.101
Other (describe)	102			
Method Group 100		23	0.86	0.10
P₂O₅				
Gravimetric AFPC IX.3.B	201	3	30.32	8.321
ICP-induced coupled plasma AFPC IX.3.D	202	4	30.13	0.358
Photometric-AFPC IX.3.C	203	14	30.19	0.295
Automated -AOAC 978.01-15th	204	11	30.12	0.123
Other(describe)	205			
Method Group 200		32	30.15	0.18
P₂O₅ (on Dry Basis)				
Gravimetric AFPC IX.3.B	211	2	30.38	0.084
ICP-induced coupled plasma AFPC IX.3.D	212	4	30.38	0.404
Photometric-AFPC IX.3.C	213	6	30.53	0.034
Automated -AOAC 978.01-15th	214	11	30.38	0.134
Other(describe)	215			
Method Group 210		23	30.41	0.13
Fe₂O₃				
Atomic Absorption-AFPC IX.6.B	301	2	0.44	0.306
ICP-induced coupled plasma-AFPC IX.6.C	302	25	0.90	0.052
Other(describe)	303	3	1.05	0.153
Method Group 300		30	0.90	0.06
Al₂O₃				
Atomic Absorption-AFPC IX.7.B	401	1	1.52	0.000
ICP-induced coupled plasma-AFPC IX.7.C	402	25	1.27	0.060
Other(describe)	403	3	1.65	0.396
Method Group 400		29	1.27	0.15
MgO				
Atomic Absorption-AFPC IX.8.A	501	3	0.43	0.071
ICP-induced coupled plasma-AFPC IX.8.B	502	23	0.38	0.007
Other(describe)	503	3	0.44	0.410
Method Group 500		29	0.39	0.01
Acid Insoluble				
Insoluble-AFPC IX.4.A	601	20	11.43	0.119
Other(describe)	602	1	11.90	0.000
Method Group 600		21	11.44	0.10
Carbon Dioxide				
Gasometric-AFPC IX.13.B	651	10	3.41	0.170
Other(describe)	652	9	3.98	2.026
Method Group 650		19	3.57	0.41
CaO				
Gravimetric sulfate-AFPC IX.12.A	701			
ICP-induced coupled plasma-AFPC IX.12.D	702	18	43.90	0.279
Ceric Sulfate volumetric-AFPC IX.12.B	703			
Permanganate	704			
EDTA Volumetric-AFPC IX.12.C	705	3	43.47	0.347
Other(describe)	706	8	44.38	0.461
Method Group 700		29	43.95	0.49
CaO (on Dry Basis)				
Gravimetric sulfate-AFPC IX.12.A	711			
ICP-induced coupled plasma-AFPC IX.12.D	712	12	44.33	0.087
Ceric Sulfate volumetric-AFPC IX.12.B	713			
Permanganate	714			
EDTA Volumetric-AFPC IX.12.C	715	3	43.69	0.450
Other(describe)	716	7	44.75	0.320
Method Group 710		21	44.35	0.25

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC IX.14.A	801			
Specific Ion Electrode-AFPC IX.14.B	802	20	3.47	0.125
Other (describe)	803	2	3.58	0.007
Method Group 800		22	3.48	0.14
Arsenic, As				
Atomic Absorption	911	1	7.0	0.00
ICP-induced coupled plasma-AFPC IX.15.B	912	7	8.9	3.54
Other(describe)	913	1	8.5	0.00
Method Group 900		9	8.8	3.33
Cadmium, Cd				
Atomic Absorption-AFPC IX.11.A	921	1	9	0.0
ICP-induced coupled plasma-AFPC IX.11.B	922	13	6	0.7
Other(describe)	923	1	5	0.0
Method Group 910		15	6	1.1
Cobalt, Co				
Atomic Absorption-AFPC IX.16.B	931	1	9	0.0
ICP-induced coupled plasma-AFPC IX.16.A	932	13	21	11.5
Other(describe)	933	1	30	0.0
Method Group 920		15	21	11.6
Mercury, Hg				
Atomic Absorption-AFPC IX.16.B	941			
ICP-induced coupled plasma-AFPC IX.16.A	942	3	0.7	0.33
Other(describe)	943	1	0.1	0.00
Method Group 930		4	0.4	0.49
Molybdenum, Mo				
Atomic Absorption-AFPC IX.16.B	951	1	9	0.0
ICP-induced coupled plasma-AFPC IX.16.A	952	9	23	4.9
Other(describe)	953	1	24	0.0
Method Group 940		11	23	4.2
Nickel, Ni				
Atomic Absorption-AFPC IX.16.B	961	1	32	0.0
ICP-induced coupled plasma-AFPC IX.16.A	962	13	23	1.5
Other(describe)	963	1	26	0.0
Method Group 950		15	23	2.1
Lead, Pb				
Atomic Absorption-AFPC IX.16.B	971	1	11	0.0
ICP-induced coupled plasma-AFPC IX.16.A	972	9	10	2.4
Other(describe)	973	1	11	0.0
Method Group 960		11	10	1.6
Selenium, Se				
Atomic Absorption-AFPC IX.16.B	981			
ICP-induced coupled plasma-AFPC IX.16.A	982	1		0.0
Other(describe)	983	1	1	0.0
Method Group 970		2	1	0.5
Zinc, Zn				
Atomic Absorption-AFPC IX.16.B	991	1	67	0
ICP-induced coupled plasma-AFPC IX.16.A	992	13	65	4
Other(describe)	993	1	64	0
Method Group 980		15	65	4

101 Ground Sample AFPC IX.2.A			
Lab	%	H ₂ O	
9	1.11		-2.432
266	1.10		-2.382
9	1.09		-2.283
Std Dev	0.96		-1.000
10	0.90		-0.397
21	0.90		-0.397
49	0.89		-0.298
13	0.88		-0.149
15	0.88		-0.149
21	0.87		-0.099
10	0.86		0.000
13	0.86		0.000
24	0.86		0.000
Median	0.86		0.000
24	0.86		0.050
75	0.85		0.149
15	0.84		0.248
26	0.83		0.313
75	0.79		0.744
Std Dev	0.76		1.000
35	0.71		1.489
6	0.69		1.737
55	0.58		2.779
77	0.56		2.978
77	0.53		3.276
35	0.29		5.658

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

201 Gravimetric AFPC IX.3.B			
Lab	%	P2O5	
56	52.41		-2.655
Std Dev	38.64		-1.000
55	30.32		0.000
Median	30.32		0.000
77	30.11		0.025

202 ICP-induced coupled plasma AFPC IX.3.D			
Lab	%	P2O5	
266	31.95		-5.081

Std Dev	30.49		-1.000
10	30.14		-0.028
Median	30.13		0.000
6	30.12		0.028
10	30.09		0.112

203 Photometric-AFPC IX.3.C			
Lab	%	P2O5	
56	52.19		-74.624
25	30.56		-1.247
35	30.51		-1.077
Std Dev	30.49		-1.000
35	30.46		-0.907
45	30.45		-0.874
49	30.22		-0.093
9	30.20		-0.025
Median	30.19		0.000
9	30.19		0.025
45	30.16		0.110
26	30.09		0.365
78	30.06		0.466
92	30.04		0.517
92	30.00		0.653
78	29.95		0.823

204 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
21	30.31		-1.543
77	30.28		-1.299
Std Dev	30.24		-1.000
21	30.19		-0.568
13	30.17		-0.406
75	30.13		-0.081
24	30.12		0.000
Median	30.12		0.000
24	30.08		0.325
13	30.03		0.772
75	30.01		0.934
Std Dev	30.00		1.000
15	29.96		1.340
15	29.96		1.340

205 Other(describe)			
Lab	%	P2O5	

Median	0.00		0.000
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211 Gravimetric AFPC IX.3.B			
Lab	%	P2O5	
55	30.50		-1.340
Std Dev	30.47		-1.000
Median	30.38		0.000
Std Dev	30.30		1.000
77	30.27		1.340

212 ICP-induced coupled plasma AFPC IX.3.D			
Lab	%	P2O5	
266	32.31		-4.759
Std Dev	30.79		-1.000
10	30.41		-0.078
Median	30.38		0.000
10	30.35		0.078
6	30.33		0.135

213 Photometric-AFPC IX.3.C			
Lab	%	P2O5	
35	30.73		-5.903
Std Dev	30.56		-1.000
35	30.55		-0.619
9	30.53		-0.155
Median	30.53		0.000
9	30.52		0.155
Std Dev	30.49		1.000
49	30.49		1.064
26	30.34		5.625

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
21	30.58		-1.465
Std Dev	30.51		-1.000
21	30.46		-0.630
77	30.45		-0.528
13	30.44		-0.422
75	30.39		-0.052
24	30.38		0.000
Median	30.38		0.000
24	30.34		0.290
13	30.29		0.704
Std Dev	30.25		1.000

75	30.24		1.025
15	30.22		1.197
15	30.21		1.288

215 Other(describe)			
Lab	%	P2O5	
Median	0.00		0.000

301 Atomic Absorption-AFPC IX.6.B			
Lab	%	Fe2O3	
55	0.85		-1.340
Std Dev	0.75		-1.000
Median	0.44		0.000
Std Dev	0.13		1.000
25	0.03		1.340

302 ICP-induced coupled plasma-AFPC IX.6.C			
Lab	%	Fe2O3	
35	101.00		#####
35	1.03		-2.489
266	1.01		-2.106
78	0.96		-1.149
Std Dev	0.95		-1.000
15	0.95		-0.861
15	0.95		-0.861
78	0.94		-0.766
13	0.94		-0.670
75	0.91		-0.101
10	0.90		0.000
10	0.90		0.000
13	0.90		0.000
21	0.90		0.000
21	0.90		0.000
Median	0.90		0.000
75	0.90		0.065
6	0.90		0.096
9	0.88		0.383
9	0.88		0.479
45	0.87		0.574
49	0.86		0.766
92	0.86		0.766
45	0.85		0.957
Std Dev	0.85		1.000
92	0.83		1.340

24	0.79	2.106
24	0.79	2.201

303 Other(describe)			
Lab	%	Fe2O3	
56	1.46		-2.680
Std Dev	1.20		-1.000
77	1.05		0.000
77	1.05		0.000
Median	1.05		0.000

401 Atomic Absorption-AFPC IX.6.B			
Lab	%	Al2O3	
55	1.52		0.000
Median	1.52		0.000

402 ICP-induced coupled plasma-AFPC IX.6.C			
Lab	%	Al2O3	
266	1.74		-7.872
78	1.58		-5.109
78	1.58		-5.109
35	1.47		-3.350
35	1.44		-2.848
92	1.35		-1.340
Std Dev	1.33		-1.000
24	1.32		-0.838
92	1.31		-0.670
15	1.28		-0.084
15	1.28		-0.084
21	1.28		-0.084
75	1.27		-0.057
24	1.27		0.000
Median	1.27		0.000
6	1.25		0.335
9	1.25		0.335
10	1.25		0.335
49	1.25		0.335
75	1.24		0.486
9	1.24		0.503
10	1.24		0.503
13	1.24		0.503
13	1.24		0.586
21	1.24		0.586
45	1.22		0.838

Std Dev	1.21	1.000
45	1.17	1.675

403 Other(describe)			
Lab	%	Al2O3	
77	1.65		0.000
77	1.65		0.000
Median	1.65		0.000
Std Dev	1.25		1.000
56	0.59		2.680

501 Atomic Absorption-AFPC IX.8.A			
Lab	%	MgO	
35	0.47		-0.564
35	0.43		0.000
Median	0.43		0.000
Std Dev	0.36		1.000
55	0.28		2.116

502 ICP-induced coupled plasma-AFPC IX.8.B			
Lab	%	MgO	
10	0.39		-1.340
10	0.39		-1.340
15	0.39		-1.340
21	0.39		-1.340
21	0.39		-1.340
24	0.39		-1.340
266	0.39		-1.340
Std Dev	0.39		-1.000
6	0.39		-0.670
13	0.39		-0.670
13	0.39		-0.670
15	0.39		-0.670
9	0.38		0.000
9	0.38		0.000
24	0.38		0.000
49	0.38		0.000
78	0.38		0.000
92	0.38		0.000
92	0.38		0.000
Median	0.38		0.000
78	0.38		0.670
Std Dev	0.37		1.000
45	0.37		1.340

45	0.36	2.680
75	0.34	4.730
75	0.34	5.586

503 Other(describe)			
Lab	%	MgO	
56	1.50		-2.583
Std Dev	0.85		-1.000
77	0.44		0.000
Median	0.44		0.000
77	0.40		0.097

601 Insoluble-AFPC IX.4.A			
Lab	%	Al	
55	12.00		-4.774
45	11.88		-3.769
10	11.56		-1.089
9	11.56		-1.089
Std Dev	11.55		-1.000
6	11.52		-0.754
13	11.52		-0.712
9	11.49		-0.461
21	11.49		-0.461
10	11.46		-0.251
24	11.44		-0.084
Median	11.43		0.000
24	11.42		0.084
15	11.41		0.201
49	11.40		0.251
15	11.40		0.293
35	11.38		0.419
Std Dev	11.31		1.000
13	11.29		1.214
35	11.25		1.508
26	11.17		2.178
21	10.90		4.439
45	10.33		9.213

602 Other(describe)			
Lab	%	Al	
266	11.90		0.000
Median	11.90		0.000

651 Gasometric-AFPC IX.13.B			
Lab	%	CO2	
13	3.69		-1.649
6	3.60		-1.149
Std Dev	3.57		-1.000
49	3.41		-0.029
9	3.41		0.000
9	3.41		0.000
13	3.41		0.000
Median	3.41		0.000
Std Dev	3.24		1.000
15	3.20		1.207
21	3.18		1.355
21	3.18		1.355
15	3.13		1.649

652 Other(describe)			
Lab	%	CO2	
56	6.81		-1.399
35	6.40		-1.197
35	6.29		-1.143
Std Dev	6.00		-1.000
55	4.12		-0.072
78	3.98		0.000
Median	3.98		0.000
78	3.74		0.116
24	3.58		0.197
24	3.57		0.200
266	2.71		0.624

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

702 ICP-induced coupled plasma-AFPC IX.12.B			
Lab	%	CaO	
92	46.09		-7.861
92	45.63		-6.212
Std Dev	44.18		-1.000
10	44.13		-0.834
10	44.08		-0.654
45	44.06		-0.583
21	44.00		-0.350
13	43.97		-0.242

13	43.95	-0.170
49	43.91	-0.045
Median	43.90	0.000
6	43.89	0.045
9	43.88	0.063
21	43.88	0.081
9	43.85	0.170
Std Dev	43.62	1.000
45	43.61	1.031
78	42.42	5.315
75	42.22	6.025
78	42.03	6.713
75	41.36	9.112

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

704 Permanganate		
Lab	%	CaO
Median	0.00	0.000

705 EDTA Volumetric-AFPC IX.12.C		
Lab	%	CaO
266	44.31	-2.421
Std Dev	43.82	-1.000
35	43.47	0.000
Median	43.47	0.000
35	43.38	0.259

706 Other(describe)		
Lab	%	CaO
15	44.81	-0.933
15	44.79	-0.890
77	44.60	-0.477
77	44.50	-0.260
Median	44.38	0.000
24	44.26	0.260
24	44.14	0.521
Std Dev	43.92	1.000
55	43.70	1.476
56	0.26	95.742

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

712 ICP-induced coupled plasma-AFPC IX.12.D			
Lab	%	CaO	dB
10	44.51	-2.077	
10	44.48	-1.702	
Std Dev	44.42	-1.000	
21	44.38	-0.555	
9	44.36	-0.352	
13	44.35	-0.231	
9	44.34	-0.079	
Median	44.33	0.000	
13	44.33	0.079	
49	44.30	0.333	
21	44.27	0.689	
Std Dev	44.25	1.000	
6	44.19	1.681	
75	42.55	20.598	
75	41.71	30.336	

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

714 Permanganate			
Lab	%	CaO	dB
Median	0.00	0.000	

715 EDTA Volumetric-AFPC IX.12.C			
Lab	%	CaO	dB
266	44.80	-2.472	
Std Dev	44.14	-1.000	
35	43.69	0.000	
Median	43.69	0.000	
35	43.60	0.208	

716 Other(describe)			
Lab	%	CaO	dB
15	45.19	-1.363	
15	45.19	-1.357	
Std Dev	45.07	-1.000	
77	44.84	-0.272	

77	44.75	0.000
Median	44.75	0.000
24	44.64	0.340
24	44.52	0.711
Std Dev	44.43	1.000
55	43.95	2.484

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	3.74	-2.140
35	3.73	-2.060
13	3.67	-1.580
Std Dev	3.60	-1.000
9	3.60	-0.980
13	3.58	-0.820
21	3.53	-0.460
9	3.52	-0.340
24	3.50	-0.180
21	3.49	-0.100
15	3.48	-0.020
Median	3.47	0.000
49	3.47	0.020
15	3.46	0.140
6	3.44	0.300
26	3.43	0.340
75	3.38	0.740
24	3.36	0.940
Std Dev	3.35	1.000
266	3.22	2.020
75	3.18	2.380
55	2.83	5.140
25	2.47	8.020

803 Other(describe)		
Lab	%	Fluorine, F
77	3.59	-1.340
Std Dev	3.59	-1.000
Median	3.58	0.000
Std Dev	3.57	1.000
77	3.57	1.340

911 Atomic Absorption-AFPC		
Lab	ppm	Arsenic, As
55	7.0	0.000
Median	7.0	0.000

912 ICP-induced coupled plasma-AFPC IX.15.I		
Lab	ppm	Arsenic, As
35	14.0	-1.439
78	14.0	-1.425
35	13.0	-1.157
Std Dev	12.4	-1.000
24	8.9	0.000
Median	8.9	0.000
24	8.8	0.042
78	8.7	0.056
266	7.1	0.508

913 Other(describe)		
Lab	ppm	Arsenic, As
13	8.5	0.000
Median	8.5	0.000

921 Atomic Absorption-AFPC IX.11.A		
Lab	ppm	Cadmium, Cd
55	9	0.000
Median	9	0.000

922 ICP-induced coupled plasma-AFPC IX.11.I		
Lab	ppm	Cadmium, Cd
78	7	-1.834
78	7	-1.742
266	7	-1.735
Std Dev	7	-1.000
77	6	-0.282
45	6	0.000
75	6	0.000
75	6	0.000
77	6	0.000
Median	6	0.000
24	5	0.776
Std Dev	5	1.000
24	5	1.058
35	5	1.411

35	5	1.411
45	5	1.411

923 Other(describe)		
Lab	ppm	Cadmium, Cd
13	5	0.000
Median	5	0.000

931 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Cobalt, Co
55	9	0.000
Median	9	0.000

932 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Cobalt, Co
78	45	-2.060
78	45	-2.017
Std Dev	33	-1.000
35	32	-0.925
24	31	-0.851
24	31	-0.816
35	30	-0.751
266	21	0.000
Median	21	0.000
77	19	0.210
75	17	0.428
77	16	0.489
75	15	0.559
45	13	0.733
Std Dev	10	1.000
45	8	1.170

933 Other(describe)		
Lab	ppm	Cobalt, Co
13	30	0.000
Median	30	0.000

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

942 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Mercury, Hg
35	1.0	-0.914

35	0.7	0.000
Median	0.7	0.000
Std Dev	0.4	1.000
266	0.1	1.766

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	Iolybdenum, Mo
55	9	0.000
Median	9	0.000

952 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Iolybdenum, Mo
45	33	-2.071
45	28	-1.056
Std Dev	28	-1.000
266	26	-0.568
78	23	-0.132
78	23	0.000
Median	23	0.000
24	19	0.721
77	19	0.772
24	19	0.782
77	18	0.975

953 Other(describe)		
Lab	ppm	Iolybdenum, Mo
13	24	0.000
Median	24	0.000

961 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Nickel, Ni
55	32	0.000
Median	32	0.000

962 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Nickel, Ni
78	28	-3.350
78	27	-3.015
75	24	-1.005

77	24	-1.005
Std Dev	24	-1.000
75	24	-0.670
77	23	-0.335
24	23	0.000
Median	23	0.000
24	22	0.100
45	22	0.335
45	22	0.335
266	22	0.335
Std Dev	21	1.000
35	11	7.705
35	7	10.385

963 Other(describe)		
Lab	ppm	Nickel, Ni
13	26	0.000
Median	26	0.000

971 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Lead, Pb
55	11	0.000
Median	11	0.000

972 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Lead, Pb
35	19	-3.711
266	17	-2.762
35	13	-1.237
Std Dev	12	-1.000
78	10	-0.124
77	10	0.000
77	10	0.000
Median	10	0.000
78	10	0.103
Std Dev	8	1.000
24	7	1.154
24	6	1.608

973 Other(describe)		
Lab	ppm	Lead, Pb
13	11	0.000
Median	11	0.000

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

982 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Selenium, Se
266	0	0.000
Median	0	0.000

983 Other(describe)		
Lab	ppm	Selenium, Se
13	1	0.000
Median	1	0.000

991 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Zinc, Zn
55	67	0.000
Median	67	0.000

992 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Zinc, Zn
24	108	-11.725
24	93	-7.517
266	74	-2.600
Std Dev	68	-1.000
75	67	-0.670
77	66	-0.402
75	66	-0.268
78	65	0.000
Median	65	0.000
35	63	0.402
77	62	0.670
78	62	0.670
Std Dev	61	1.000
35	60	1.206
45	55	2.546
45	54	2.814

993 Other(describe)		
Lab	ppm	Zinc, Zn
13	64	0.000
Median	64	0.000

