

AFPC Rock Check Program

Sample No. 2020-03

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC IX.2.A	101	24	0.59	0.090
Other (describe)	102	1	0.62	
Method Group 100		25	0.59	0.09
P₂O₅				
Gravimetric AFPC IX.3.B	201	3	30.81	0.050
ICP-induced coupled plasma AFPC IX.3.D	202	2	30.55	0.060
Photometric-AFPC IX.3.C	203	18	30.59	0.162
Automated -AOAC 978.01-15th	204	9	30.80	0.104
Other(describe)	205	1	31.84	0.000
Method Group 200		33	30.68	0.21
P₂O₅ (on Dry Basis)				
Gravimetric AFPC IX.3.B	211	2	30.93	0.022
ICP-induced coupled plasma AFPC IX.3.D	212	2	30.72	0.067
Photometric-AFPC IX.3.C	213	14	30.82	0.176
Automated -AOAC 978.01-15th	214	7	31.00	0.164
Other(describe)	215			
Method Group 210		25	30.84	0.21
Fe₂O₃				
Atomic Absorption-AFPC IX.6.B	301	1	1.10	0.000
ICP-induced coupled plasma-AFPC IX.6.C	302	20	1.05	0.057
Other(describe)	303	4	1.17	0.196
Method Group 300		25	1.05	0.06
Al₂O₃				
Atomic Absorption-AFPC IX.7.B	401	1	0.90	0.000
ICP-induced coupled plasma-AFPC IX.7.C	402	21	1.16	0.052
Other(describe)	403	3	1.82	0.022
Method Group 400		25	1.17	0.08
MgO				
Atomic Absorption-AFPC IX.8.A	501	4	0.49	0.028
ICP-induced coupled plasma-AFPC IX.8.B	502	20	0.46	0.013
Other(describe)	503	3	0.47	0.004
Method Group 500		27	0.46	0.01
Acid Insoluble				
Insoluble-AFPC IX.4.A	601	18	9.81	0.149
Other(describe)	602	2	9.68	0.060
Method Group 600		20	9.79	0.13
Carbon Dioxide				
Gasometric-AFPC IX.13.B	651	12	3.49	0.119
Other(describe)	652	6	4.39	0.939
Method Group 650		18	3.56	0.29
CaO				
Gravimetric sulfate-AFPC IX.12.A	701			
ICP-induced coupled plasma-AFPC IX.12.D	702	17	44.66	0.653
Ceric Sulfate volumetric-AFPC IX.12.B	703			
Permanganate	704	4	44.86	0.084
EDTA Volumetric-AFPC IX.12.C	705			
Other(describe)	706	7	45.39	1.007
Method Group 700		28	44.79	0.60
CaO (on Dry Basis)				
Gravimetric sulfate-AFPC IX.12.A	711			
ICP-induced coupled plasma-AFPC IX.12.D	712	13	45.25	0.484
Ceric Sulfate volumetric-AFPC IX.12.B	713			
Permanganate	714	4	45.14	0.167
EDTA Volumetric-AFPC IX.12.C	715			
Other(describe)	716	6	45.64	0.925
Method Group 710		22	45.26	0.61

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC IX.14.A	801			
Specific Ion Electrode-AFPC IX.14.B	802	19	3.51	0.121
Other (describe)	803	2	3.56	0.052
Method Group 800		21	3.51	0.10
Arsenic, As				
Atomic Absorption	911	1	10.0	0.00
ICP-induced coupled plasma-AFPC IX.15.B	912	7	12.0	2.25
Other(describe)	913			
Method Group 900		8	11.9	2.51
Cadmium, Cd				
Atomic Absorption-AFPC IX.11.A	921	1	4	0.0
ICP-induced coupled plasma-AFPC IX.11.B	922	8	3	1.2
Other(describe)	923	1	40	0.0
Method Group 910		10	3	2.2
Cobalt, Co				
Atomic Absorption-AFPC IX.16.B	931	1	25	0.0
ICP-induced coupled plasma-AFPC IX.16.A	932	8	18	5.2
Other(describe)	933	1	17	0.0
Method Group 920		10	18	6.1
Mercury, Hg				
Atomic Absorption-AFPC IX.16.B	941			
ICP-induced coupled plasma-AFPC IX.16.A	942	4	19.3	28.82
Other(describe)	943	1		0.00
Method Group 930		5	0.0	28.73
Molybdenum, Mo				
Atomic Absorption-AFPC IX.16.B	951	1	22	0.0
ICP-induced coupled plasma-AFPC IX.16.A	952	6	20	3.3
Other(describe)	953	1	17	0.0
Method Group 940		8	20	3.6
Nickel, Ni				
Atomic Absorption-AFPC IX.16.B	961	1	27	0.0
ICP-induced coupled plasma-AFPC IX.16.A	962	8	22	2.3
Other(describe)	963	1	11	0.0
Method Group 950		10	22	3.3
Lead, Pb				
Atomic Absorption-AFPC IX.16.B	971	1	16	0.0
ICP-induced coupled plasma-AFPC IX.16.A	972	8	25	9.2
Other(describe)	973	1	10	0.0
Method Group 960		10	21	12.4
Selenium, Se				
Atomic Absorption-AFPC IX.16.B	981			
ICP-induced coupled plasma-AFPC IX.16.A	982			
Other(describe)	983	1		0.0
Method Group 970		1	0	0.0
Zinc, Zn				
Atomic Absorption-AFPC IX.16.B	991	1	36	0
ICP-induced coupled plasma-AFPC IX.16.A	992	8	43	12
Other(describe)	993	1	28	0
Method Group 980		10	40	9

101 Ground Sample AFPC IX.2.A			
Lab	%	H ₂ O	
55	0.79		-2.210
16	0.77		-2.002
49	0.73		-1.547
21	0.72		-1.381
21	0.69		-1.050
Std Dev	0.68		-1.000
13	0.63		-0.442
9	0.63		-0.387
13	0.61		-0.221
35	0.61		-0.221
9	0.60		-0.111
24	0.59		0.000
24	0.59		0.000
35	0.59		0.000
Median	0.59		0.000
26	0.58		0.111
30	0.57		0.221
10-D	0.57		0.221
26	0.56		0.332
10-C	0.51		0.884
Std Dev	0.50		1.000
27	0.49		1.105
27	0.49		1.105
15	0.33		2.873
15	0.33		2.929
77	0.28		3.426
77	0.06		5.857

102 Other (describe)			
Lab	%	H ₂ O	
69	0.62		0.000
Median	0.62		0.000

201 Gravimetric AFPC IX.3.B			
Lab	%	P2O5	
56	30.85		-0.695
77	30.81		0.000
Median	30.81		0.000
Std Dev	30.76		1.000
55	30.71		1.985

202 ICP-induced coupled plasma AFPC IX.3.D			
Lab	%	P2O5	
10-D	30.63		-1.340
Std Dev	30.61		-1.000
Median	30.55		0.000
Std Dev	30.49		1.000
10-C	30.47		1.340

203 Photometric-AFPC IX.3.C			
Lab	%	P2O5	
9	30.80		-1.263
49	30.78		-1.171
Std Dev	30.75		-1.000
26	30.74		-0.924
26	30.71		-0.739
69	30.68		-0.554
78	30.68		-0.524
30	30.66		-0.431
9	30.66		-0.400
35	30.60		-0.062
Median	30.59		0.000
21	30.58		0.062
92	30.54		0.339
92	30.52		0.431
21	30.47		0.770
35	30.46		0.801
Std Dev	30.43		1.000
78	30.30		1.787
27	30.10		3.019
16	30.03		3.481
27	29.85		4.559

204 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
13	30.86		-0.574
10-C	30.83		-0.287
24	30.82		-0.191
24	30.82		-0.191
13	30.80		0.000
Median	30.80		0.000
Std Dev	30.70		1.000
15	30.69		1.101
15	30.68		1.149
10-D	30.68		1.149

77 30.36 4.211			
205 Other(describe)			
Lab	%	P2O5	
56	31.84		0.000
Median	31.84		0.000

211 Gravimetric AFPC IX.3.B			
Lab	%	P2O5	dB
55	30.95		-1.340
Std Dev	30.95		-1.000
Median	30.93		0.000
Std Dev	30.90		1.000
77	30.90		1.340

212 ICP-induced coupled plasma AFPC IX.3.D			
Lab	%	P2O5	dB
10-D	30.81		-1.340
Std Dev	30.78		-1.000
Median	30.72		0.000
Std Dev	30.65		1.000
10-C	30.63		1.340

213 Photometric-AFPC IX.3.C			
Lab	%	P2O5	dB
49	31.01		-1.072
Std Dev	30.99		-1.000
9	30.99		-0.972
26	30.91		-0.542
26	30.89		-0.405
69	30.87		-0.304
9	30.84		-0.126
30	30.84		-0.101
Median	30.82		0.000
21	30.80		0.101
35	30.79		0.172
21	30.68		0.813
Std Dev	30.64		1.000
35	30.64		1.009
16	30.26		3.186
27	30.25		3.244
27	30.00		4.674

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
13	31.05		-0.330
24	31.00		-0.047
24	31.00		-0.047
13	31.00		0.000
Median	31.00		0.000
Std Dev	30.83		1.000
15	30.79		1.283
15	30.78		1.304
77	30.38		3.765

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

301 Atomic Absorption-AFPC IX.6.B			
Lab	%	Fe2O3	
55	1.10		0.000
Median	1.10		0.000

302 ICP-induced coupled plasma-AFPC IX.6.C			
Lab	%	Fe2O3	
35	1.38		-5.799
78	1.12		-1.230
Std Dev	1.11		-1.000
78	1.10		-0.879
15	1.09		-0.615
15	1.08		-0.527
9	1.07		-0.351
21	1.07		-0.351
13	1.06		-0.176
13	1.05		0.000
21	1.05		0.000
10-D	1.05		0.000
Median	1.05		0.000
9	1.05		0.088
49	1.04		0.176
10-C	1.03		0.351
92	1.00		0.879
Std Dev	0.99		1.000
92	0.99		1.142
16	0.95		1.757
24	0.94		1.933

24	0.93	2.197
35	0.91	2.548

303 Other(describe)			
Lab	%	Fe2O3	
77	1.29		-0.613
77	1.28		-0.562
Median	1.17		0.000
56	1.06		0.562
Std Dev	0.97		1.000
69	0.90		1.378

401 Atomic Absorption-AFPC IX.6.B			
Lab	%	Al2O3	
55	0.90		0.000
Median	0.90		0.000

402 ICP-induced coupled plasma-AFPC IX.6.C			
Lab	%	Al2O3	
78	1.79		-11.964
78	1.71		-10.433
35	1.34		-3.350
92	1.24		-1.531
Std Dev	1.21		-1.000
21	1.21		-0.957
21	1.20		-0.766
9	1.20		-0.670
92	1.19		-0.574
24	1.19		-0.479
10-C	1.17		-0.191
24	1.16		0.000
49	1.16		0.000
10-D	1.16		0.000
Median	1.16		0.000
9	1.16		0.096
15	1.14		0.383
13	1.13		0.574
16	1.13		0.670
15	1.12		0.861
Std Dev	1.11		1.000
13	1.09		1.340
69	1.02		2.680
35	0.81		6.700

403 Other(describe)			
Lab	%	Al2O3	
77	1.82		0.000
77	1.82		0.000
Median	1.82		0.000
Std Dev	1.80		1.000
56	1.76		2.680

501 Atomic Absorption-AFPC IX.8.A			
Lab	%	MgO	
27	0.52		-1.251
Std Dev	0.51		-1.000
27	0.50		-0.536
Median	0.49		0.000
55	0.47		0.536
35	0.46		0.893

502 ICP-induced coupled plasma-AFPC IX.8.B			
Lab	%	MgO	
21	0.50		-2.871
13	0.49		-2.489
21	0.49		-2.489
Std Dev	0.47		-1.000
15	0.47		-0.957
10-D	0.47		-0.957
15	0.47		-0.574
78	0.47		-0.574
13	0.46		-0.191
49	0.46		-0.191
10-C	0.46		-0.191
Median	0.46		0.000
9	0.46		0.191
92	0.46		0.191
9	0.45		0.574
24	0.45		0.574
92	0.45		0.574
24	0.45		0.957
78	0.45		0.957
Std Dev	0.44		1.000
35	0.44		1.340
69	0.44		1.340
16	0.40		4.403

503 Other(describe)			
Lab	%	MgO	
77	0.48		-2.680
Std Dev	0.47		-1.000
56	0.47		0.000
77	0.47		0.000
Median	0.47		0.000

601 Insoluble-AFPC IX.4.A			
Lab	%	Al	
55	10.75		-6.281
16	10.44		-4.204
9	10.18		-2.429
69	9.99		-1.189
Std Dev	9.96		-1.000
10-D	9.90		-0.586
13	9.83		-0.117
49	9.83		-0.117
15	9.83		-0.084
24	9.82		-0.017
Median	9.81		0.000
10-C	9.81		0.017
15	9.72		0.620
35	9.70		0.754
26	9.69		0.821
26	9.68		0.888
24	9.67		0.955
9	9.67		0.988
Std Dev	9.66		1.000
35	9.61		1.357
13	9.49		2.161

602 Other(describe)			
Lab	%	Al	
21	9.76		-1.340
Std Dev	9.74		-1.000
Median	9.68		0.000
Std Dev	9.62		1.000
21	9.60		1.340

651 Gasometric-AFPC IX.13.B			
Lab	%	CO2	
30	3.69		-1.675
Std Dev	3.61		-1.000

24	3.60	-0.921
24	3.60	-0.921
21	3.56	-0.586
21	3.56	-0.586
49	3.51	-0.167
Median	3.49	0.000
9	3.47	0.168
9	3.47	0.168
15	3.42	0.586
15	3.38	0.921
Std Dev	3.37	1.000
13	3.35	1.173
13	3.20	2.429

652 Other(describe)			
Lab	%	CO2	
35	5.63		-1.323
35	5.53		-1.216
Std Dev	5.33		-1.000
78	4.40		-0.013
Median	4.39		0.000
78	4.38		0.013
55	3.86		0.562
Std Dev	3.45		1.000
56	3.26		1.200

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

702 ICP-induced coupled plasma-AFPC IX.12.I			
Lab	%	CaO	
35	45.77		-1.700
9	45.72		-1.616
35	45.59		-1.424
Std Dev	45.31		-1.000
13	45.21		-0.842
9	45.19		-0.804
21	45.12		-0.697
13	44.96		-0.459
49	44.75		-0.138
92	44.66		0.000
Median	44.66		0.000
10-D	44.65		0.015

10-C	44.61	0.077
21	44.40	0.398
69	44.31	0.536
78	44.31	0.544
92	44.19	0.727
Std Dev	44.01	1.000
16	43.45	1.861
78	41.23	5.253

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

704 Permanganate		
Lab	%	CaO
30	45.01	-1.846
Std Dev	44.94	-1.000
55	44.88	-0.298
Median	44.86	0.000
27	44.83	0.298
Std Dev	44.77	1.000
27	44.71	1.727

705 EDTA Volumetric-AFPC IX.12.C		
Lab	%	CaO
Median	0.00	0.000

706 Other(describe)		
Lab	%	CaO
77	46.60	-1.201
Std Dev	46.40	-1.000
77	46.30	-0.903
15	45.59	-0.194
15	45.39	0.000
Median	45.39	0.000
56	44.71	0.675
24	44.48	0.908
Std Dev	44.38	1.000
24	44.21	1.171

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
35	46.04		-1.645
9	46.00		-1.564
35	45.87		-1.290
Std Dev	45.73		-1.000
13	45.49		-0.501
9	45.46		-0.439
21	45.43		-0.374
13	45.25		0.000
Median	45.25		0.000
49	45.08		0.343
10-D	44.91		0.700
10-C	44.84		0.839
Std Dev	44.76		1.000
21	44.72		1.085
69	44.59		1.360
16	43.78		3.020

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

714 Permanganate			
Lab	%	CaO	dB
30	45.27		-0.740
55	45.24		-0.557
Median	45.14		0.000
27	45.05		0.557
Std Dev	44.98		1.000
27	44.93		1.277

715 EDTA Volumetric-AFPC IX.12.C			
Lab	%	CaO	dB
Median	0.00		0.000

716 Other(describe)			
Lab	%	CaO	dB
77	46.73		-1.182
Std Dev	46.56		-1.000
77	46.33		-0.747
15	45.73		-0.104
Median	45.64		0.000
15	45.54		0.104

24	44.74	0.970
Std Dev	44.71	1.000
24	44.47	1.259

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
24	3.65	-1.154
35	3.64	-1.072
Std Dev	3.63	-1.000
35	3.63	-0.990
21	3.60	-0.742
21	3.58	-0.577
24	3.57	-0.495
9	3.57	-0.454
9	3.57	-0.454
26	3.51	0.000
49	3.51	0.000
Median	3.51	0.000
13	3.50	0.082
26	3.47	0.330
69	3.46	0.412
13	3.45	0.495
Std Dev	3.39	1.000
15	3.38	1.113
15	3.36	1.278
55	3.11	3.298
27	3.08	3.546
27	3.08	3.546

803 Other(describe)		
Lab	%	Fluorine, F
77	3.63	-1.340
Std Dev	3.61	-1.000
Median	3.56	0.000
Std Dev	3.51	1.000
77	3.49	1.340

911 Atomic Absorption-AFPC		
Lab	ppm	Arsenic, As
55	10.0	0.000

Median	10.0	0.000
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912 ICP-induced coupled plasma-AFPC IX.15.I		
Lab	ppm	Arsenic, As
78	16.8	-2.108
78	15.1	-1.375
Std Dev	14.3	-1.000
24	12.8	-0.355
35	12.0	0.000
Median	12.0	0.000
24	11.9	0.067
69	10.0	0.883
35	10.0	0.887

913 Other(describe)		
Lab	ppm	Arsenic, As
Median	0.0	0.000

921 Atomic Absorption-AFPC IX.11.A		
Lab	ppm	Cadmium, Cd
55	4	0.000
Median	4	0.000

922 ICP-induced coupled plasma-AFPC IX.11.I		
Lab	ppm	Cadmium, Cd
78	5	-2.424
78	5	-2.361
Std Dev	4	-1.000
35	3	-0.422
35	3	-0.422
Median	3	0.000
77	2	0.422
77	2	0.422
24	2	0.465
24	2	0.676

923 Other(describe)		
Lab	ppm	Cadmium, Cd
69	40	0.000
Median	40	0.000

931 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Cobalt, Co
55	25	0.000

Median	25	0.000
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932 ICP-induced coupled plasma-AFPC IX.16.A	Lab	ppm	Cobalt, Co
	78	28	-1.993
	78	27	-1.801
Std Dev	23	-1.000	
	24	19	-0.322
	35	18	-0.072
Median	18	0.000	
	24	17	0.072
	35	15	0.504
Std Dev	12	1.000	
	77	12	1.081
	77	10	1.465

933 Other(describe)	Lab	ppm	Cobalt, Co
	69	17	0.000
Median	17	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
	24	39.0	-0.685
	24	38.5	-0.668
Median	19.3	0.000	
	35	0.0	0.668
	35	0.0	0.668

943 Other(describe)	Lab	ppm	Mercury, Hg
	69	0.0	0.000
Median	0.0	0.000	

951 Atomic Absorption-AFPC IX.16.B	Lab	ppm	lolybdenum, Mo
	55	22	0.000
Median	22	0.000	

952 ICP-induced coupled plasma-AFPC IX.16.A	Lab	ppm	lolybdenum, Mo
	78	22	-0.563
	78	21	-0.353
	24	20	-0.023
Median	20	0.000	
	24	20	0.023
Std Dev	16	1.000	
	77	15	1.419
	77	15	1.419

953 Other(describe)	Lab	ppm	lolybdenum, Mo
	69	17	0.000
Median	17	0.000	

961 Atomic Absorption-AFPC IX.16.B	Lab	ppm	Nickel, Ni
	55	27	0.000
Median	27	0.000	

962 ICP-induced coupled plasma-AFPC IX.16.A	Lab	ppm	Nickel, Ni
	78	27	-1.812
	78	26	-1.597
Std Dev	25	-1.000	
	77	24	-0.740
	35	23	-0.311
Median	22	0.000	
	24	22	0.311
	24	22	0.332
	35	21	0.547
	77	21	0.547

963 Other(describe)	Lab	ppm	Nickel, Ni
	69	11	0.000
Median	11	0.000	

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

972 ICP-induced coupled plasma-AFPC IX.16.A	Lab	ppm	Lead, Pb
	78	31	-0.718
	78	31	-0.680
	77	30	-0.599
	77	27	-0.272
Median	25	0.000	
	35	22	0.272
	35	20	0.490
Std Dev	15	1.000	
	24	12	1.415
	24	10	1.627

973 Other(describe)	Lab	ppm	Lead, Pb
	69	10	0.000
Median	10	0.000	

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

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

983 Other(describe)	Lab	ppm	Selenium, Se
	69	0	0.000
Median	0	0.000	

991 Atomic Absorption-AFPC IX.16.B	Lab	ppm	Zinc, Zn
	55	36	0.000
Median	36	0.000	

992 ICP-induced coupled plasma-AFPC IX.16.A	Lab	ppm	Zinc, Zn
	24	73	-2.501
	24	68	-2.143
Std Dev	55	-1.000	
	78	50	-0.533
	78	47	-0.277
Median	43	0.000	

35	40	0.277
35	39	0.362
77	37	0.533
77	32	0.959

993 Other(describe)	Lab	ppm	Zinc, Zn
	69	28	0.000
Median	28	0.000	

