

# AFPC Rock Check Program

Sample No. 2006-10

	Method #	# of Anal.	Grand Median	Std Dev
<b>Moisture</b>				
Ground Sample AFPC 9-2	101	22	1.33	0.109
Other (describe)	102	3	1.31	0.030
Method Group 100		25	1.33	0.10
<b>BPL or P<sub>2</sub>O<sub>5</sub></b>				
Gravimetric AFPC 9-5	201	2	32.60	0.090
ICP-induced coupled plasma	202	1	32.57	0.000
Photometric-AFPC 9-6	203	13	32.68	0.175
Automated -AOAC 978.01-15th	204	12	32.61	0.091
Other(describe)	205	1	32.61	0.000
Method Group 200		29	32.64	0.15
<b>BPL or P<sub>2</sub>O<sub>5</sub> (on Dry Basis)</b>				
Gravimetric AFPC 9-5	211	2	32.88	0.184
ICP-induced coupled plasma	212			
Photometric-AFPC 9-6	213	13	33.09	0.151
Automated -AOAC 978.01-15th	214	10	33.06	0.113
Other(describe)	215			
Method Group 210		14	33.07	0.14
<b>Fe<sub>2</sub>O<sub>3</sub></b>				
Atomic Absorption-AFPC 9-12,13	301	3	1.21	0.052
ICP-induced coupled plasma	302	21	1.16	0.037
Other(describe)	303	2	1.10	0.004
Method Group 300		26	1.16	0.04
<b>Al<sub>2</sub>O<sub>3</sub></b>				
Atomic Absorption-AFPC 9-16,17	401	3	1.18	0.026
ICP-induced coupled plasma	402	22	1.18	0.075
Other(describe)	403			
Method Group 400		25	1.18	0.07
<b>MgO</b>				
Atomic Absorption-AFPC 9-18,19	501	3	0.44	0.015
ICP-induced coupled plasma	502	23	0.43	0.021
Other(describe)	503			
Method Group 500		26	0.43	0.02
<b>Acid Insoluble</b>				
Insoluble-AFPC 9-8	601	21	3.00	0.205
Other(describe)	602			
Method Group 600		21	3.00	0.21
<b>CaO</b>				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	10	47.78	1.181
Ceric Sulfate volumetric	703			
Permanganate	704			
EDTA Volumetric	705	7	47.68	0.181
Other(describe)	706	6	47.69	0.754
Method Group 700		23	47.68	0.77
<b>CaO (on Dry Basis)</b>				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	5	47.71	0.320
Ceric Sulfate volumetric	713			
Permanganate	714			
EDTA Volumetric	715	7	48.32	0.139
Other(describe)	716	6	48.42	0.762
Method Group 710		11	48.32	0.27

	Method #	# of Anal.	Grand Median	Std Dev
<b>Fluorine, F</b>				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	16	3.75	0.129
Other (describe)	803	2	3.84	0.060
Method Group 800		18	3.77	0.14
<b>Arsenic, As</b>				
Atomic Absorption	911			
ICP-induced coupled plasma	912	4	8.0	2.76
Other(describe)	913	4	6.8	0.64
Method Group 900		8	6.8	2.29
<b>Cadmium, Cd</b>				
Atomic Absorption	921	1	4	0.0
ICP-induced coupled plasma	922	10	5	0.7
Other(describe)	923	3	5	0.1
Method Group 910		14	5	0.7
<b>Cobalt, Co</b>				
Atomic Absorption	931			
ICP-induced coupled plasma	932	5	4	0.0
Other(describe)	933	3	4	0.4
Method Group 920		8	4	0.3
<b>Mercury, Hg</b>				
Atomic Absorption	941			
ICP-induced coupled plasma	942			
Other(describe)	943			
Method Group 930		0		
<b>Molybdenum, Mo</b>				
Atomic Absorption	951	1	16	0.0
ICP-induced coupled plasma	952	3	15	0.2
Other(describe)	953	3	7	5.5
Method Group 940		7	15	3.3
<b>Nickel, Ni</b>				
Atomic Absorption	961			
ICP-induced coupled plasma	962	6	9	1.5
Other(describe)	963	4	13	6.7
Method Group 950		10	11	2.0
<b>Lead, Pb</b>				
Atomic Absorption	971	1	20	0.0
ICP-induced coupled plasma	972	2	12	0.0
Other(describe)	973	3	18	3.5
Method Group 960		6	18	4.5
<b>Selenium, Se</b>				
Atomic Absorption	981			
ICP-induced coupled plasma	982			
Other(describe)	983	4	1	0.3
Method Group 970		4	1	0.3
<b>Zinc, Zn</b>				
Atomic Absorption	991	1	36	0
ICP-induced coupled plasma	992	4	39	3
Other(describe)	993	4	51	13
Method Group 980		9	43	5

101 Ground Sample AFPC 9-2		
Lab	%	H <sub>2</sub> O
13	1.55	-2.016
13	1.46	-1.145
61	1.45	-1.099
<b>Std Dev</b>	<b>1.44</b>	<b>-1.000</b>
61	1.43	-0.916
15	1.40	-0.641
15	1.38	-0.458
5	1.36	-0.275
24	1.36	-0.275
24	1.36	-0.275
9	1.33	0.000
9	1.33	0.000
9	1.33	0.000
9	1.33	0.000
<b>Median</b>	<b>1.33</b>	<b>0.000</b>
34	1.26	0.641
75	1.25	0.733
6	1.24	0.825
75	1.23	0.962
<b>Std Dev</b>	<b>1.22</b>	<b>1.000</b>
6	1.18	1.374
5	1.17	1.466
57	0.98	3.207
77	0.47	7.880
77	0.41	8.429

102 Other (describe)		
Lab	%	H <sub>2</sub> O
69	1.31	-0.168
69	1.31	0.000
<b>Median</b>	<b>1.31</b>	<b>0.000</b>
<b>Std Dev</b>	<b>1.28</b>	<b>1.000</b>
51	1.23	2.513

201 Gravimetric AFPC 9-5		
Lab	%	P2O5
51	32.72	-1.340
<b>Std Dev</b>	<b>32.69</b>	<b>-1.000</b>
<b>Median</b>	<b>32.60</b>	<b>0.000</b>
<b>Std Dev</b>	<b>32.51</b>	<b>1.000</b>
77	32.48	1.340

202 ICP-induced coupled plasma		
Lab	%	P2O5
10	32.57	0.000
<b>Median</b>	<b>32.57</b>	<b>0.000</b>

203 Photometric-AFPC 9-6		
Lab	%	P2O5
61	32.82	-0.798
61	32.78	-0.542
6	32.77	-0.513
5	32.72	-0.228
6	32.70	-0.086
9	32.68	0.000
9	32.68	0.000
<b>Median</b>	<b>32.68</b>	<b>0.000</b>
5	32.64	0.228
34	32.59	0.513
<b>Std Dev</b>	<b>32.50</b>	<b>1.000</b>
69	32.49	1.112
69	32.49	1.112
9	32.48	1.140
9	32.48	1.140

204 Automated -AOAC 978.01-15th		
Lab	%	P2O5
75	32.90	-3.145
<b>Std Dev</b>	<b>32.70</b>	<b>-1.000</b>
75	32.70	-0.957
24	32.66	-0.520
24	32.66	-0.520
24	32.64	-0.246
24	32.64	-0.246
<b>Median</b>	<b>32.61</b>	<b>0.000</b>
15	32.59	0.246
13	32.56	0.629
13	32.55	0.684
<b>Std Dev</b>	<b>32.52</b>	<b>1.000</b>
77	32.50	1.231
15	32.45	1.832
57	32.30	3.418

205 Other (describe)		
Lab	%	P2O5
51	32.61	0.000

<b>Median</b>	<b>32.61</b>	<b>0.000</b>
---------------	--------------	--------------

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
51	33.13		-1.340
<b>Std Dev</b>	<b>33.06</b>		<b>-1.000</b>
<b>Median</b>	<b>32.88</b>		<b>0.000</b>
<b>Std Dev</b>	<b>32.70</b>		<b>1.000</b>
77	32.63		1.340

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

213 Photometric-AFPC 9-6			
Lab	%	P2O5	dB
61	33.30		-1.363
61	33.26		-1.105
<b>Std Dev</b>	<b>33.24</b>		<b>-1.000</b>
6	33.18		-0.604
9	33.12		-0.201
9	33.12		-0.201
5	33.11		-0.115
5	33.09		0.000
<b>Median</b>	<b>33.09</b>		<b>0.000</b>
6	33.09		0.031
34	33.01		0.556
<b>Std Dev</b>	<b>32.94</b>		<b>1.000</b>
9	32.92		1.139
9	32.92		1.139
69	32.92		1.149
69	32.91		1.160

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
75	33.31		-2.211
<b>Std Dev</b>	<b>33.17</b>		<b>-1.000</b>
75	33.11		-0.497
24	33.08		-0.241
24	33.08		-0.241
13	33.06		-0.043
<b>Median</b>	<b>33.06</b>		<b>0.000</b>
15	33.05		0.043
13	33.04		0.194

<b>Std Dev</b>	<b>32.94</b>	<b>1.000</b>
15	32.90	1.400
77	32.63	3.742
57	32.62	3.866

215 Other (describe)			
Lab	%	P2O5	dB
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

301 Atomic Absorption-AFPC 9-12,13		
Lab	%	Fe2O3
5	1.25	-0.766
5	1.21	0.000
<b>Median</b>	<b>1.21</b>	<b>0.000</b>
<b>Std Dev</b>	<b>1.16</b>	<b>1.000</b>
51	1.11	1.914

302 ICP-induced coupled plasma		
Lab	%	Fe2O3
77	1.33	-4.556
77	1.32	-4.288
51	1.24	-2.144
75	1.22	-1.648
34	1.21	-1.340
6	1.21	-1.206
75	1.20	-1.179
10	1.20	-1.072
<b>Std Dev</b>	<b>1.20</b>	<b>-1.000</b>
6	1.20	-0.938
13	1.20	-0.938
9	1.16	0.000
9	1.16	0.000
9	1.16	0.000
9	1.16	0.000
<b>Median</b>	<b>1.16</b>	<b>0.000</b>
13	1.16	0.134
61	1.16	0.134
24	1.15	0.268
24	1.15	0.268
61	1.15	0.268
15	1.15	0.402
15	1.14	0.670

303 Other(describe)			
Lab	%	Fe2O3	
69	1.10		-1.340
<b>Std Dev</b>	<b>1.10</b>		<b>-1.000</b>
<b>Median</b>	<b>1.10</b>		<b>0.000</b>
<b>Std Dev</b>	<b>1.09</b>		<b>1.000</b>
69	1.09		1.340

401 Atomic Absorption-AFPC 9-16,17			
Lab	%	Al2O3	
51	1.23		-1.914
<b>Std Dev</b>	<b>1.21</b>		<b>-1.000</b>
5	1.18		0.000
<b>Median</b>	<b>1.18</b>		<b>0.000</b>
5	1.16		0.766

402 ICP-induced coupled plasma			
Lab	%	Al2O3	
77	1.47		-3.902
77	1.47		-3.902
24	1.26		-1.100
24	1.26		-1.100
75	1.26		-1.058
<b>Std Dev</b>	<b>1.25</b>		<b>-1.000</b>
75	1.25		-0.975
6	1.21		-0.434
6	1.19		-0.100
9	1.18		-0.033
9	1.18		-0.033
13	1.18		-0.033
<b>Median</b>	<b>1.18</b>		<b>0.000</b>
10	1.18		0.033
13	1.17		0.167
34	1.15		0.367
69	1.15		0.367
9	1.14		0.500
9	1.14		0.500
69	1.14		0.500
61	1.11		0.900
61	1.11		0.900
<b>Std Dev</b>	<b>1.10</b>		<b>1.000</b>
15	1.10		1.034
15	1.10		1.100

403 Other(describe)			
Lab	%	Al2O3	
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

501 Atomic Absorption-AFPC 9-18,19			
Lab	%	MgO	
5	0.46		-1.340
<b>Std Dev</b>	<b>0.45</b>		<b>-1.000</b>
5	0.44		0.000
<b>Median</b>	<b>0.44</b>		<b>0.000</b>
<b>Std Dev</b>	<b>0.43</b>		<b>1.000</b>
51	0.42		1.340

502 ICP-induced coupled plasma			
Lab	%	MgO	
9	0.44		-0.487
9	0.44		-0.487
9	0.44		-0.487
9	0.44		-0.487
10	0.44		-0.487
13	0.44		-0.487
61	0.44		-0.487
61	0.44		-0.487
6	0.44		-0.244
13	0.44		-0.244
6	0.43		0.000
34	0.43		0.000
77	0.43		0.000
77	0.43		0.000
<b>Median</b>	<b>0.43</b>		<b>0.000</b>
15	0.42		0.731
24	0.42		0.731
24	0.42		0.731
15	0.41		0.975
51	0.41		0.975
<b>Std Dev</b>	<b>0.41</b>		<b>1.000</b>
69	0.39		1.949
75	0.39		2.177
69	0.37		2.924
75	0.35		3.890

503 Other(describe)			
Lab	%	MgO	
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

601 Insoluble-AFPC 9-8			
Lab	%	Al	
9	3.60		-2.948
9	3.60		-2.948
9	3.49		-2.412
9	3.49		-2.412
5	3.40		-1.973
6	3.24		-1.194
<b>Std Dev</b>	<b>3.20</b>		<b>-1.000</b>
61	3.14		-0.682
61	3.09		-0.463
57	3.07		-0.365
5	3.05		-0.268
24	3.00		0.000
24	3.00		0.000
<b>Median</b>	<b>3.00</b>		<b>0.000</b>
13	2.98		0.097
15	2.98		0.097
6	2.97		0.122
15	2.97		0.146
69	2.94		0.268
69	2.93		0.341
13	2.87		0.633
<b>Std Dev</b>	<b>2.79</b>		<b>1.000</b>
10	2.75		1.194
51	1.94		5.141

602 Other(describe)			
Lab	%	Al	
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

701 Gravimetric sulfate			
Lab	%	CaO	
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

702 ICP-induced coupled plasma			
Lab	%	CaO	
75	54.87		-6.006
75	49.22		-1.223
77	49.10		-1.118
<b>Std Dev</b>	<b>48.96</b>		<b>-1.000</b>
77	48.90		-0.948
34	47.88		-0.085

<b>Median</b>	<b>47.78</b>		<b>0.000</b>
10	47.68		0.085
61	47.55		0.195
61	47.44		0.288
69	47.09		0.584
69	47.08		0.597

703 Ceric Sulfate volumetric			
Lab	%	CaO	
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

704 Permanganate			
Lab	%	CaO	
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

705 EDTA Volumetric			
Lab	%	CaO	
51	48.51		-4.586
6	47.98		-1.630
<b>Std Dev</b>	<b>47.86</b>		<b>-1.000</b>
6	47.81		-0.718
9	47.68		0.000
9	47.68		0.000
<b>Median</b>	<b>47.68</b>		<b>0.000</b>
9	47.62		0.332
9	47.62		0.332

706 Other(describe)			
Lab	%	CaO	
24	48.63		-1.244
24	48.63		-1.244
<b>Std Dev</b>	<b>48.44</b>		<b>-1.000</b>
13	47.86		-0.222
<b>Median</b>	<b>47.69</b>		<b>0.000</b>
13	47.52		0.222
15	47.39		0.395
15	47.33		0.474

711 Gravimetric sulfate			
Lab	%	CaO	dB
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

712 ICP-induced coupled plasma			
Lab	%	CaO	dB

61	48.25	-1.680
61	48.13	-1.300
Std Dev	48.03	-1.000
69	47.71	0.000
Median	47.71	0.000
69	47.70	0.040
10	47.68	0.102

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
51	49.11	-5.676	
6	48.58	-1.826	
Std Dev	48.46	-1.000	
6	48.38	-0.417	
9	48.32	0.000	
9	48.32	0.000	
Median	48.32	0.000	
9	48.26	0.436	
9	48.26	0.436	

716 Other(describe)			
Lab	%	CaO	dB
24	49.30	-1.155	
24	49.30	-1.155	
Std Dev	49.18	-1.000	
13	48.61	-0.254	
Median	48.42	0.000	
13	48.22	0.254	
15	48.06	0.462	
15	47.99	0.555	

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

802 Specific Ion Electrode			
Lab	%	Fluorine, F	
24	3.92	-1.340	
24	3.92	-1.340	
57	3.91	-1.262	
Std Dev	3.88	-1.000	
51	3.87	-0.952	
9	3.83	-0.641	
9	3.83	-0.641	
9	3.78	-0.252	
9	3.78	-0.252	
Median	3.75	0.000	
75	3.72	0.252	
13	3.68	0.524	
69	3.68	0.563	
69	3.67	0.602	
75	3.66	0.680	
Std Dev	3.62	1.000	
15	3.50	1.923	
13	3.49	2.039	
15	3.45	2.311	

803 Other(describe)			
Lab	%	Fluorine, F	
77	3.92	-1.340	
Std Dev	3.90	-1.000	
Median	3.84	0.000	
Std Dev	3.78	1.000	
77	3.76	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	9.8	-0.675	
69	9.8	-0.669	
Median	8.0	0.000	
24	6.1	0.669	
24	6.1	0.669	

913 Other(describe)			
Lab	ppm	Arsenic, As	

13	9.0	-3.340
Std Dev	7.4	-1.000
77	6.8	0.000
77	6.8	0.000
Median	6.8	0.000
Std Dev	6.2	1.000
51	5.5	2.020

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	
51	4	0.000	
Median	4		0.000

922 ICP-induced coupled plasma			
Lab	ppm	Cadmium, Cd	
7		-3.145	
Std Dev	5	-1.000	
77	5	-0.286	
77	5	-0.286	
61	5	-0.143	
24	5	0.000	
24	5	0.000	
Median	5	0.000	
61	4	0.929	
Std Dev	4	1.000	
75	4	1.143	
75	4	1.143	
51	3	3.287	

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
13	5	-1.286	
Std Dev	5	-1.000	
69	5	0.000	
Median	5	0.000	
Std Dev	5	1.000	
69	5	1.394	

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

932 ICP-induced coupled plasma			
Lab	ppm	Cobalt, Co	
51	4		0.000

75	4	0.000
75	4	0.000
77	4	0.000
77	4	0.000
Median	4	0.000

933 Other(describe)			
Lab	ppm	Cobalt, Co	
13	5		-2.529
Std Dev	5		-1.000
69	4		0.000
Median	4		0.000
69	4		0.151

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	
69	<0.20		0.000
69	<0.20		0.000
13			0.000
Median			0.000

951 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Iolybdenum, Mo	
51	16		0.000
Median	16		0.000

952 ICP-induced coupled plasma			
Lab	ppm	Iolybdenum, Mo	
51	16		-2.680
Std Dev	15		-1.000
77	15		0.000
77	15		0.000
Median	15		0.000

953 Other(describe)			
Lab	ppm	Iolybdenum, Mo	

13	22	-2.679
Std Dev	13	-1.000
69	7	0.000
Median	7	0.000
69	7	0.001

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

962	ICP-induced coupled plasma	
Lab	ppm	Nickel, Ni
24	12	-1.787
24	12	-1.787
Std Dev	10	-1.000
75	9	0.000
75	9	0.000
77	9	0.000
Median	9	0.000
77	8	0.674

963	Other(describe)	
Lab	ppm	Nickel, Ni
34		-3.135
Std Dev	20	-1.000
13	15	-0.317
Median	13	0.000
69	11	0.317
69	11	0.321

971	Atomic Absorption-AFPC 9-16,17	
Lab	ppm	Lead, Pb
51	20	0.000
Median	20	0.000

972	ICP-induced coupled plasma	
Lab	ppm	Lead, Pb
77	12	0.000
77	12	0.000
Median	12	0.000

973	Other(describe)	
Lab	ppm	Lead, Pb
13	27	-2.676
Std Dev	21	-1.000

69	18	0.000
Median	18	0.000
69	18	0.004

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	2	-4.509
Std Dev	1	-1.000
69	1	-0.009
Median	1	0.000
69	1	0.009
77	1	0.799

991	Atomic Absorption-AFPC 9-18,19	
Lab	ppm	Zinc, Zn
51	36	0.000
Median	36	0.000

992	ICP-induced coupled plasma	
Lab	ppm	Zinc, Zn
75	43	-1.302
Std Dev	42	-1.000
75	41	-0.536
Median	39	0.000
77	37	0.536
77	36	0.842

993	Other(describe)	
Lab	ppm	Zinc, Zn
71		-1.520
Std Dev	64	-1.000
13	58	-0.548
Median	51	0.000
69	44	0.548
69	44	0.550

