

# AFPC Rock Check Program

Sample No. 2007-09

	Method #	# of Anal.	Grand Median	Std Dev
<b>Moisture</b>				
Ground Sample AFPC 9-2	101	20	0.76	0.080
Other (describe)	102	1	0.56	
Method Group 100		21	0.76	0.08
<b>BPL or P<sub>2</sub>O<sub>5</sub></b>				
Gravimetric AFPC 9-5	201	3	28.69	0.045
ICP-induced coupled plasma	202	2	28.79	0.063
Photometric-AFPC 9-6	203	11	28.50	0.437
Automated -AOAC 978.01-15th	204	9	28.70	0.086
Other(describe)	205	4	28.54	0.375
Method Group 200		29	28.69	0.19
<b>BPL or P<sub>2</sub>O<sub>5</sub> (on Dry Basis)</b>				
Gravimetric AFPC 9-5	211	2	28.87	0.019
ICP-induced coupled plasma	212	2	29.03	0.068
Photometric-AFPC 9-6	213	6	28.95	0.438
Automated -AOAC 978.01-15th	214	9	28.84	0.084
Other(describe)	215	2	28.99	0.000
Method Group 210		21	28.92	0.12
<b>Fe<sub>2</sub>O<sub>3</sub></b>				
Atomic Absorption-AFPC 9-12,13	301	4	0.94	0.373
ICP-induced coupled plasma	302	22	1.29	0.082
Other(describe)	303	1	1.31	0.000
Method Group 300		27	1.27	0.09
<b>Al<sub>2</sub>O<sub>3</sub></b>				
Atomic Absorption-AFPC 9-16,17	401	3	0.80	0.056
ICP-induced coupled plasma	402	21	0.92	0.060
Other(describe)	403	1	1.23	0.000
Method Group 400		25	0.92	0.06
<b>MgO</b>				
Atomic Absorption-AFPC 9-18,19	501	5	0.58	0.063
ICP-induced coupled plasma	502	21	0.53	0.015
Other(describe)	503	2	0.56	0.011
Method Group 500		28	0.54	0.02
<b>Acid Insoluble</b>				
Insoluble-AFPC 9-8	601	16	12.56	0.116
Other(describe)	602	2	12.56	0.116
Method Group 600		18	12.56	0.17
<b>CaO</b>				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	9	43.10	0.149
Ceric Sulfate volumetric	703			
Permanganate	704	3	44.23	0.700
EDTA Volumetric	705	6	43.45	0.213
Other(describe)	706	8	43.66	0.453
Method Group 700		26	43.32	0.56
<b>CaO (on Dry Basis)</b>				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	3	43.59	0.438
Ceric Sulfate volumetric	713			
Permanganate	714	2	44.40	0.000
EDTA Volumetric	715	5	43.61	0.271
Other(describe)	716	8	43.98	0.646
Method Group 710		21	43.74	0.57

	Method #	# of Anal.	Grand Median	Std Dev
<b>Fluorine, F</b>				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	18	3.43	0.082
Other (describe)	803	2	3.44	0.015
Method Group 800		20	3.43	0.07
<b>Arsenic, As</b>				
Atomic Absorption	911	2	3.5	0.00
ICP-induced coupled plasma	912	2	15.3	0.93
Other(describe)	913	3	10.0	0.96
Method Group 900		7	10.0	4.88
<b>Cadmium, Cd</b>				
Atomic Absorption	921	3	6	1.1
ICP-induced coupled plasma	922	8	4	0.2
Other(describe)	923	1	4	0.0
Method Group 910		12	4	0.7
<b>Cobalt, Co</b>				
Atomic Absorption	931	2	17	0.0
ICP-induced coupled plasma	932	6	7	0.9
Other(describe)	933	1	8	0.0
Method Group 920		9	8	0.7
<b>Mercury, Hg</b>				
Atomic Absorption	941			
ICP-induced coupled plasma	942			
Other(describe)	943			
Method Group 930		0	#NUM!	
<b>Molybdenum, Mo</b>				
Atomic Absorption	951			
ICP-induced coupled plasma	952	3	14	0.1
Other(describe)	953	1	15	0.0
Method Group 940		4	14	0.3
<b>Nickel, Ni</b>				
Atomic Absorption	961	2	63	0.0
ICP-induced coupled plasma	962	6	24	3.4
Other(describe)	963	2	36	3.2
Method Group 950		10	30	10.3
<b>Lead, Pb</b>				
Atomic Absorption	971	3	18	2.1
ICP-induced coupled plasma	972	5	10	1.5
Other(describe)	973	1	12	0.0
Method Group 960		9	12	5.6
<b>Selenium, Se</b>				
Atomic Absorption	981			
ICP-induced coupled plasma	982			
Other(describe)	983	1	3	0.0
Method Group 970		1	3	0.0
<b>Zinc, Zn</b>				
Atomic Absorption	991	3	78	15
ICP-induced coupled plasma	992	6	46	4
Other(describe)	993	2	48	9
Method Group 980		11	46	11

101 Ground Sample AFPC 9-2		
Lab	%	H <sub>2</sub> O
61	1.99	-15.301
61	1.99	-15.301
24	0.89	-1.589
10	0.85	-1.091
<b>Std Dev</b>	<b>0.84</b>	<b>-1.000</b>
13	0.83	-0.841
6	0.81	-0.592
34	0.80	-0.467
34	0.80	-0.467
13	0.78	-0.218
75	0.77	-0.093
<b>Median</b>	<b>0.76</b>	<b>0.000</b>
15	0.76	0.093
15	0.76	0.093
75	0.74	0.280
9	0.71	0.654
24	0.71	0.654
9	0.70	0.779
<b>Std Dev</b>	<b>0.68</b>	<b>1.000</b>
27	0.41	4.456
27	0.41	4.456
77	0.37	4.893
77	0.32	5.516

102 Other (describe)		
Lab	%	H <sub>2</sub> O
51	0.56	0.000
<b>Median</b>	<b>0.56</b>	<b>0.000</b>

201 Gravimetric AFPC 9-5		
Lab	%	P2O5
77	28.80	-2.457
<b>Std Dev</b>	<b>28.73</b>	<b>-1.000</b>
26	28.69	0.000
<b>Median</b>	<b>28.69</b>	<b>0.000</b>
51	28.68	0.223

202 ICP-induced coupled plasma		
Lab	%	P2O5
10	28.87	-1.340
<b>Std Dev</b>	<b>28.85</b>	<b>-1.000</b>
<b>Median</b>	<b>28.79</b>	<b>0.000</b>

<b>Std Dev</b>	<b>28.72</b>	<b>1.000</b>
6	28.70	1.340

203 Photometric-AFPC 9-6		
Lab	%	P2O5
35	29.30	-1.832
60	28.95	-1.031
<b>Std Dev</b>	<b>28.94</b>	<b>-1.000</b>
9	28.85	-0.802
6	28.75	-0.573
9	28.67	-0.389
61	28.50	0.000
<b>Median</b>	<b>28.50</b>	<b>0.000</b>
61	28.46	0.092
27	28.22	0.653
27	28.22	0.653
<b>Std Dev</b>	<b>28.06</b>	<b>1.000</b>
270	27.59	2.084
57	25.70	6.414

204 Automated -AOAC 978.01-15th		
Lab	%	P2O5
15	28.88	-2.039
<b>Std Dev</b>	<b>28.79</b>	<b>-1.000</b>
15	28.74	-0.408
75	28.71	-0.117
75	28.71	-0.058
77	28.70	0.000
<b>Median</b>	<b>28.70</b>	<b>0.000</b>
24	28.63	0.816
<b>Std Dev</b>	<b>28.61</b>	<b>1.000</b>
13	28.60	1.223
24	28.59	1.340
13	28.52	2.097

205 Other(describe)		
Lab	%	P2O5
34	28.76	-0.600
34	28.76	-0.600
<b>Median</b>	<b>28.54</b>	<b>0.000</b>
51	28.31	0.600
<b>Std Dev</b>	<b>28.16</b>	<b>1.000</b>
19	28.10	1.160

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
77	28.89		-1.340
<b>Std Dev</b>	<b>28.89</b>		<b>-1.000</b>
<b>Median</b>	<b>28.87</b>		<b>0.000</b>
<b>Std Dev</b>	<b>28.85</b>		<b>1.000</b>
51	28.84		1.340

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
10	29.12		-1.340
<b>Std Dev</b>	<b>29.09</b>		<b>-1.000</b>
<b>Median</b>	<b>29.03</b>		<b>0.000</b>
<b>Std Dev</b>	<b>28.96</b>		<b>1.000</b>
6	28.93		1.340

213 Photometric-AFPC 9-6			
Lab	%	P2O5	dB
61	29.08		-0.283
9	29.06		-0.232
61	29.04		-0.189
<b>Median</b>	<b>28.95</b>		<b>0.000</b>
9	28.87		0.189
<b>Std Dev</b>	<b>28.52</b>		<b>1.000</b>
27	28.33		1.429
27	28.33		1.429

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
15	29.09		-3.000
15	28.95		-1.327
75	28.93		-1.080
<b>Std Dev</b>	<b>28.93</b>		<b>-1.000</b>
75	28.92		-0.917
24	28.84		0.000
<b>Median</b>	<b>28.84</b>		<b>0.000</b>
24	28.83		0.083
13	28.82		0.260
77	28.81		0.416
13	28.76		0.984

215 Other(describe)			
Lab	%	P2O5	dB
34	28.99		0.000

34	28.99	0.000
<b>Median</b>	<b>28.99</b>	<b>0.000</b>

301 Atomic Absorption-AFPC 9-12,13		
Lab	%	Fe2O3
51	1.22	-0.764
60	1.18	-0.657
<b>Median</b>	<b>0.94</b>	<b>0.000</b>
27	0.69	0.657
27	0.69	0.657

302 ICP-induced coupled plasma		
Lab	%	Fe2O3
77	1.49	-2.500
77	1.46	-2.134
51	1.39	-1.280
<b>Std Dev</b>	<b>1.37</b>	<b>-1.000</b>
34	1.35	-0.793
34	1.35	-0.793
75	1.35	-0.791
75	1.34	-0.610
26	1.33	-0.549
6	1.31	-0.305
6	1.30	-0.183
15	1.30	-0.122
<b>Median</b>	<b>1.29</b>	<b>0.000</b>
15	1.28	0.122
9	1.27	0.183
9	1.26	0.305
61	1.25	0.488
24	1.24	0.549
10	1.24	0.610
13	1.21	0.914
13	1.21	0.975
<b>Std Dev</b>	<b>1.20</b>	<b>1.000</b>
61	1.20	1.036
24	1.19	1.158
35	1.19	1.158

303 Other(describe)		
Lab	%	Fe2O3
19	1.31	0.000
<b>Median</b>	<b>1.31</b>	<b>0.000</b>

401 Atomic Absorption-AFPC 9-16,17			
Lab	%	Al2O3	
51	0.95		-2.680
<b>Std Dev</b>	<b>0.86</b>		<b>-1.000</b>
27	0.80		0.000
27	0.80		0.000
<b>Median</b>	<b>0.80</b>		<b>0.000</b>

402 ICP-induced coupled plasma			
Lab	%	Al2O3	
77	1.44		-8.710
77	1.36		-7.370
35	1.00		-1.340
24	1.00		-1.256
9	0.99		-1.173
24	0.99		-1.173
<b>Std Dev</b>	<b>0.98</b>		<b>-1.000</b>
13	0.97		-0.754
75	0.96		-0.681
9	0.96		-0.670
75	0.95		-0.450
6	0.92		0.000
10	0.92		0.000
26	0.92		0.000
<b>Median</b>	<b>0.92</b>		<b>0.000</b>
15	0.92		0.084
6	0.91		0.168
15	0.91		0.168
34	0.91		0.168
34	0.91		0.168
61	0.90		0.419
13	0.89		0.586
61	0.89		0.586

403 Other(describe)			
Lab	%	Al2O3	
19	1.23		0.000
<b>Median</b>	<b>1.23</b>		<b>0.000</b>

501 Atomic Absorption-AFPC 9-18,19			
Lab	%	MgO	
27	0.62		-0.552
27	0.62		-0.552
35	0.58		0.000

<b>Median</b>	<b>0.58</b>		<b>0.000</b>
51	0.53		0.788
<b>Std Dev</b>	<b>0.52</b>		<b>1.000</b>
60	0.49		1.419

502 ICP-induced coupled plasma			
Lab	%	MgO	
9	0.56		-2.010
10	0.56		-1.675
13	0.56		-1.675
9	0.55		-1.340
34	0.55		-1.340
34	0.55		-1.340
61	0.55		-1.005
<b>Std Dev</b>	<b>0.54</b>		<b>-1.000</b>
15	0.54		-0.670
26	0.54		-0.670
51	0.54		-0.670
6	0.53		0.000
6	0.53		0.000
15	0.53		0.000
61	0.53		0.000
77	0.53		0.000
77	0.53		0.000
<b>Median</b>	<b>0.53</b>		<b>0.000</b>
13	0.52		0.670
24	0.52		0.670
<b>Std Dev</b>	<b>0.52</b>		<b>1.000</b>
24	0.51		1.340
75	0.46		4.500
75	0.46		4.950

503 Other(describe)			
Lab	%	MgO	
19	0.57		-1.340
<b>Std Dev</b>	<b>0.57</b>		<b>-1.000</b>
<b>Median</b>	<b>0.56</b>		<b>0.000</b>
<b>Std Dev</b>	<b>0.54</b>		<b>1.000</b>
57	0.54		1.340

601 Insoluble-AFPC 9-8			
Lab	%	Al	
26	13.23		-5.814
61	12.91		-3.047

61	12.86		-2.572
6	12.71		-1.318
<b>Std Dev</b>	<b>12.67</b>		<b>-1.000</b>
13	12.61		-0.454
27	12.59		-0.238
27	12.59		-0.238
9	12.58		-0.195
<b>Median</b>	<b>12.56</b>		<b>0.000</b>
10	12.54		0.195
13	12.54		0.195
51	12.50		0.497
15	12.49		0.584
9	12.45		0.929
<b>Std Dev</b>	<b>12.44</b>		<b>1.000</b>
15	12.33		2.010
24	12.29		2.313
24	12.15		3.523

602 Other(describe)			
Lab	%	Al	
57	12.71		-1.340
<b>Std Dev</b>	<b>12.67</b>		<b>-1.000</b>
<b>Median</b>	<b>12.56</b>		<b>0.000</b>
<b>Std Dev</b>	<b>12.44</b>		<b>1.000</b>
19	12.40		1.340

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

702 ICP-induced coupled plasma			
Lab	%	CaO	
75	44.80		-11.390
75	44.79		-11.296
<b>Std Dev</b>	<b>43.25</b>		<b>-1.000</b>
10	43.22		-0.804
77	43.20		-0.670
77	43.10		0.000
<b>Median</b>	<b>43.10</b>		<b>0.000</b>
34	43.02		0.536
34	43.02		0.536
<b>Std Dev</b>	<b>42.95</b>		<b>1.000</b>
61	42.87		1.541
61	41.72		9.246

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

704 Permanganate			
Lab	%	CaO	
27	44.23		0.000
27	44.23		0.000
<b>Median</b>	<b>44.23</b>		<b>0.000</b>
<b>Std Dev</b>	<b>43.53</b>		<b>1.000</b>
60	42.35		2.680

705 EDTA Volumetric			
Lab	%	CaO	
9	43.76		-1.481
<b>Std Dev</b>	<b>43.66</b>		<b>-1.000</b>
26	43.61		-0.776
9	43.55		-0.494
<b>Median</b>	<b>43.45</b>		<b>0.000</b>
6	43.34		0.494
6	43.30		0.682
51	43.25		0.917

706 Other(describe)			
Lab	%	CaO	
57	44.60		-2.079
<b>Std Dev</b>	<b>44.11</b>		<b>-1.000</b>
24	43.88		-0.480
15	43.80		-0.303
24	43.78		-0.270
<b>Median</b>	<b>43.66</b>		<b>0.000</b>
15	43.54		0.270
19	43.30		0.789
<b>Std Dev</b>	<b>43.20</b>		<b>1.000</b>
13	42.93		1.605
13	42.92		1.638

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	43.74	-0.342
10	43.59	0.000
Median	43.59	0.000
Std Dev	43.15	1.000
61	42.57	2.338

713 Ceric Sulfate volumetric			
Lab	%	CaO	dB
Median	0.00		0.000

714 Permanganate			
Lab	%	CaO	dB
27	44.40		0.000
27	44.40		0.000
Median	44.40		0.000

715 EDTA Volumetric			
Lab	%	CaO	dB
9	44.07		-1.707
Std Dev	43.88		-1.000
9	43.86		-0.911
26	43.61		0.000
Median	43.61		0.000
51	43.49		0.429
Std Dev	43.34		1.000
6	43.30		1.143

716 Other(describe)			
Lab	%	CaO	dB
57	44.60		-0.960
24	44.27		-0.448
15	44.13		-0.230
24	44.09		-0.176
Median	43.98		0.000
15	43.87		0.176
Std Dev	43.33		1.000
19	43.30		1.052
13	43.29		1.068
13	43.25		1.125

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

802 Specific Ion Electrode		
Lab	%	Fluorine, F
24	3.76	-4.020
35	3.74	-3.776
24	3.70	-3.228
Std Dev	3.51	-1.000
6	3.50	-0.853
9	3.50	-0.853
9	3.47	-0.487
27	3.47	-0.487
27	3.47	-0.487
13	3.44	-0.122
Median	3.43	0.000
34	3.42	0.122
34	3.42	0.122
51	3.41	0.244
75	3.39	0.487
75	3.38	0.609
Std Dev	3.35	1.000
13	3.31	1.462
270	3.20	2.802
15	2.96	5.725
15	2.95	5.847

803 Other( describe)		
Lab	%	Fluorine, F
77	3.46	-1.340
Std Dev	3.45	-1.000
Median	3.44	0.000
Std Dev	3.43	1.000
77	3.42	1.340

911 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Arsenic, As
27	3.5	0.000
27	3.5	0.000
Median	3.5	0.000

912 ICP-induced coupled plasma		
Lab	ppm	Arsenic, As
6	16.5	-1.340
Std Dev	16.2	-1.000
Median	15.3	0.000
Std Dev	14.3	1.000

270	14.0	1.340
913 Other(describe)		
Lab	ppm	Arsenic, As
77	12.0	-2.074
Std Dev	11.0	-1.000
51	10.0	0.000
Median	10.0	0.000
13	9.4	0.606

921 Atomic Absorption-AFPC 9-12,13		
Lab	ppm	Cadmium, Cd
27	6	0.000
27	6	0.000
Median	6	0.000
Std Dev	5	1.000
51	3	2.680

922 ICP-induced coupled plasma		
Lab	ppm	Cadmium, Cd
51	5	-5.360
6	5	-4.020
Std Dev	4	-1.000
75	4	0.000
75	4	0.000
77	4	0.000
77	4	0.000
Median	4	0.000
Std Dev	4	1.000
270	4	1.340
26	2	10.720

923 Other(describe)		
Lab	ppm	Cadmium, Cd
13	4	0.000
Median	4	0.000

931 Atomic Absorption-AFPC 9-16,17		
Lab	ppm	Cobalt, Co
27	17	0.000
27	17	0.000
Median	17	0.000

932 ICP-induced coupled plasma		
Lab	ppm	Cobalt, Co
51	8	-1.153
Std Dev	8	-1.000
6	8	-0.634
77	7	0.000
77	7	0.000
Median	7	0.000
Std Dev	6	1.000
75	6	1.153
75	6	1.153

933 Other(describe)		
Lab	ppm	Cobalt, Co
13	8	0.000
Median	8	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	<0.12	0.000
Median	0.0	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
6	14	-2.680
Std Dev	14	-1.000
77	14	0.000
77	14	0.000
Median	14	0.000

953 Other(describe)		
Lab	ppm	Iolybdenum, Mo

13	15	0.000
Median	15	0.000

961 Atomic Absorption-AFPC 9-12,13	Lab	ppm	Nickel, Ni
	27	63	0.000
	27	63	0.000
Median	63		0.000

962 ICP-induced coupled plasma	Lab	ppm	Nickel, Ni
	6	31	-2.084
	270	29	-1.489
Std Dev	27		-1.000
	75	24	0.000
	75	24	0.000
Median	24		0.000
	77	23	0.298
	77	23	0.298

963 Other(describe)	Lab	ppm	Nickel, Ni
	19	40	-1.340
Std Dev	39		-1.000
Median	36		0.000
Std Dev	32		1.000
	13	31	1.340

971 Atomic Absorption-AFPC 9-16,17	Lab	ppm	Lead, Pb
	27	18	0.000
	27	18	0.000
Median	18		0.000
Std Dev	15		1.000
	51	12	2.680

972 ICP-induced coupled plasma	Lab	ppm	Lead, Pb
	6	18	-5.360
	270	12	-1.340
Std Dev	11		-1.000
	77	10	0.000
	77	10	0.000
Median	10		0.000

Std Dev	9	1.000	
	26	7	2.010

973 Other(describe)	Lab	ppm	Lead, Pb
	13	12	0.000
Median	12		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	3	0.000
Median	3		0.000

991 Atomic Absorption-AFPC 9-18,19	Lab	ppm	Zinc, Zn
	27	78	0.000
	27	78	0.000
Median	78		0.000
Std Dev	63		1.000
	60	38	2.680

992 ICP-induced coupled plasma	Lab	ppm	Zinc, Zn
	26	<1	0.000
	6	49	-0.766
	270	48	-0.510
	75	46	0.000
	75	46	0.000
Median	46		0.000
Std Dev	42		1.000
	77	41	1.276
	77	40	1.531

993 Other(describe)	Lab	ppm	Zinc, Zn
	13	60	-1.340

Std Dev	57	-1.000	
Median	48	0.000	
Std Dev	38	1.000	
	19	35	1.340

