

# AFPC Rock Check Program

Sample No. 2005-09

	Method #	# of Anal.	Grand Median	Std Dev
<b>Moisture</b>				
Ground Sample AFPC 9-2	101	21	0.80	0.153
Other (describe)	102	3	0.75	0.028
Method Group 100		24	0.79	0.14
<b>BPL or P<sub>2</sub>O<sub>5</sub></b>				
Gravimetric AFPC 9-5	201	2	29.35	0.035
ICP-induced coupled plasma	202			
Photometric-AFPC 9-6	203	14	29.37	0.171
Automated -AOAC 978.01-15th	204	9	29.22	0.097
Other(describe)	205	1	29.34	0.000
Method Group 200		26	29.28	0.15
<b>BPL or P<sub>2</sub>O<sub>5</sub> (on Dry Basis)</b>				
Gravimetric AFPC 9-5	211	2	29.51	0.061
ICP-induced coupled plasma	212			
Photometric-AFPC 9-6	213	13	29.65	0.189
Automated -AOAC 978.01-15th	214	9	29.47	0.046
Other(describe)	215			
Method Group 210		15	29.59	0.17
<b>Fe<sub>2</sub>O<sub>3</sub></b>				
Atomic Absorption-AFPC 9-12,13	301	4	1.00	0.069
ICP-induced coupled plasma	302	20	1.01	0.062
Other(describe)	303	2	0.92	0.002
Method Group 300		26	1.01	0.06
<b>Al<sub>2</sub>O<sub>3</sub></b>				
Atomic Absorption-AFPC 9-16,17	401	3	1.06	0.019
ICP-induced coupled plasma	402	22	1.04	0.080
Other(describe)	403			
Method Group 400		25	1.05	0.07
<b>MgO</b>				
Atomic Absorption-AFPC 9-18,19	501	6	0.45	0.022
ICP-induced coupled plasma	502	21	0.45	0.022
Other(describe)	503			
Method Group 500		27	0.45	0.02
<b>Acid Insoluble</b>				
Insoluble-AFPC 9-8	601	16	11.93	0.201
Other(describe)	602			
Method Group 600		16	11.93	0.20
<b>CaO</b>				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	14	43.44	0.404
Ceric Sulfate volumetric	703			
Permanganate	704	1	43.45	0.000
EDTA Volumetric	705	2	44.41	0.235
Other(describe)	706	6	43.76	0.289
Method Group 700		23	43.71	0.55
<b>CaO (on Dry Basis)</b>				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	6	43.77	0.581
Ceric Sulfate volumetric	713			
Permanganate	714			
EDTA Volumetric	715	2	44.67	0.212
Other(describe)	716	6	44.16	0.329
Method Group 710		12	43.83	0.36

	Method #	# of Anal.	Grand Median	Std Dev
<b>Fluorine, F</b>				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	15	3.46	0.146
Other (describe)	803	2	3.52	0.034
Method Group 800		17	3.47	0.15
<b>Arsenic, As</b>				
Atomic Absorption	911			
ICP-induced coupled plasma	912	5	6.0	0.44
Other(describe)	913	4	9.3	4.61
Method Group 900		9	6.0	3.06
<b>Cadmium, Cd</b>				
Atomic Absorption	921	1	5	0.0
ICP-induced coupled plasma	922	12	5	0.3
Other(describe)	923	3	4	0.2
Method Group 910		16	5	0.4
<b>Cobalt, Co</b>				
Atomic Absorption	931			
ICP-induced coupled plasma	932	8	5	1.3
Other(describe)	933	3	5	1.3
Method Group 920		11	5	1.5
<b>Mercury, Hg</b>				
Atomic Absorption	941			
ICP-induced coupled plasma	942			
Other(describe)	943	1	0.1	0.00
Method Group 930		1	0.1	0.00
<b>Molybdenum, Mo</b>				
Atomic Absorption	951	1	7	0.0
ICP-induced coupled plasma	952	6	9	0.6
Other(describe)	953	3	6	1.7
Method Group 940		10	9	2.1
<b>Nickel, Ni</b>				
Atomic Absorption	961	1	18	0.0
ICP-induced coupled plasma	962	8	20	3.4
Other(describe)	963	3	19	2.1
Method Group 950		12	19	3.6
<b>Lead, Pb</b>				
Atomic Absorption	971	1	11	0.0
ICP-induced coupled plasma	972	6	12	2.0
Other(describe)	973	1	15	0.0
Method Group 960		8	12	2.9
<b>Selenium, Se</b>				
Atomic Absorption	981			
ICP-induced coupled plasma	982	1	2	0.0
Other(describe)	983	2	1	0.2
Method Group 970		3	1	0.2
<b>Zinc, Zn</b>				
Atomic Absorption	991	2	44	3
ICP-induced coupled plasma	992	8	52	2
Other(describe)	993	3	49	1
Method Group 980		13	49	3

101 Ground Sample AFPC 9-2		
Lab	%	H <sub>2</sub> O
13	1.15	-2.288
13	1.03	-1.503
6	0.96	-1.046
<b>Std Dev</b>	<b>0.95</b>	<b>-1.000</b>
6	0.95	-0.948
61	0.88	-0.523
61	0.88	-0.523
5	0.85	-0.327
75	0.85	-0.327
5	0.82	-0.131
15	0.82	-0.131
24	0.80	0.000
<b>Median</b>	<b>0.80</b>	<b>0.000</b>
15	0.80	0.033
75	0.79	0.098
34	0.76	0.261
34	0.76	0.261
24	0.68	0.817
<b>Std Dev</b>	<b>0.65</b>	<b>1.000</b>
35	0.53	1.765
77	0.46	2.222
77	0.45	2.288
78	0.44	2.353
78	0.44	2.386

102 Other (describe)		
Lab	%	H <sub>2</sub> O
69	0.75	0.000
69	0.75	0.000
<b>Median</b>	<b>0.75</b>	<b>0.000</b>
<b>Std Dev</b>	<b>0.72</b>	<b>1.000</b>
51	0.68	2.680

201 Gravimetric AFPC 9-5		
Lab	%	P2O5
51	29.40	-1.340
<b>Std Dev</b>	<b>29.38</b>	<b>-1.000</b>
<b>Median</b>	<b>29.35</b>	<b>0.000</b>
<b>Std Dev</b>	<b>29.31</b>	<b>1.000</b>
77	29.30	1.340

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

203 Photometric-AFPC 9-6		
Lab	%	P2O5
35	29.64	-1.611
<b>Std Dev</b>	<b>29.54</b>	<b>-1.000</b>
5	29.50	-0.791
61	29.50	-0.791
5	29.48	-0.674
61	29.46	-0.557
34	29.42	-0.322
34	29.42	-0.322
<b>Median</b>	<b>29.37</b>	<b>0.000</b>
6	29.31	0.322
6	29.27	0.586
69	29.25	0.674
78	29.25	0.703
69	29.23	0.791
<b>Std Dev</b>	<b>29.19</b>	<b>1.000</b>
78	29.18	1.113
60	28.70	3.896

204 Automated -AOAC 978.01-15th		
Lab	%	P2O5
75	29.38	-1.649
75	29.37	-1.546
<b>Std Dev</b>	<b>29.31</b>	<b>-1.000</b>
15	29.27	-0.515
15	29.26	-0.412
24	29.22	0.000
<b>Median</b>	<b>29.22</b>	<b>0.000</b>
24	29.21	0.103
13	29.14	0.825
13	29.14	0.825
<b>Std Dev</b>	<b>29.12</b>	<b>1.000</b>
77	29.08	1.392

205 Other(describe)		
Lab	%	P2O5
51	29.34	0.000
<b>Median</b>	<b>29.34</b>	<b>0.000</b>

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
51	29.59	-1.340	
<b>Std Dev</b>	<b>29.57</b>	<b>-1.000</b>	
<b>Median</b>	<b>29.51</b>	<b>0.000</b>	
<b>Std Dev</b>	<b>29.45</b>	<b>1.000</b>	
77	29.43	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
35	29.80	-0.809	
61	29.76	-0.618	
5	29.75	-0.571	
5	29.72	-0.416	
61	29.72	-0.404	
34	29.65	0.000	
34	29.65	0.000	
<b>Median</b>	<b>29.65</b>	<b>0.000</b>	
6	29.59	0.272	
6	29.54	0.536	
69	29.47	0.924	
<b>Std Dev</b>	<b>29.46</b>	<b>1.000</b>	
69	29.45	1.031	
78	29.37	1.445	
78	29.30	1.810	

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
75	29.62	-3.121	
75	29.61	-2.917	
<b>Std Dev</b>	<b>29.52</b>	<b>-1.000</b>	
15	29.50	-0.559	
15	29.50	-0.501	
13	29.47	0.000	
<b>Median</b>	<b>29.47</b>	<b>0.000</b>	
24	29.45	0.510	
13	29.44	0.781	
<b>Std Dev</b>	<b>29.43</b>	<b>1.000</b>	
24	29.40	1.540	
77	29.21	5.673	

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	1.03	-0.435	
5	1.02	-0.290	
<b>Median</b>	<b>1.00</b>	<b>0.000</b>	
51	0.98	0.290	
<b>Std Dev</b>	<b>0.93</b>	<b>1.000</b>	
60	0.78	3.187	

302 ICP-induced coupled plasma			
Lab	%	Fe2O3	
77	1.15	-2.271	
77	1.14	-2.109	
<b>Std Dev</b>	<b>1.07</b>	<b>-1.000</b>	
78	1.06	-0.811	
15	1.05	-0.649	
15	1.05	-0.568	
51	1.05	-0.568	
78	1.03	-0.243	
34	1.02	-0.162	
34	1.02	-0.162	
6	1.01	0.000	
61	1.01	0.000	
<b>Median</b>	<b>1.01</b>	<b>0.000</b>	
6	1.01	0.081	
61	1.00	0.162	
13	0.98	0.568	
13	0.97	0.730	
75	0.95	0.899	
<b>Std Dev</b>	<b>0.95</b>	<b>1.000</b>	
75	0.95	1.008	
24	0.90	1.866	
35	0.89	1.947	
24	0.88	2.190	

303 Other(describe)			
Lab	%	Fe2O3	
69	0.93	-1.340	
<b>Std Dev</b>	<b>0.92</b>	<b>-1.000</b>	

Median	0.92	0.000
Std Dev	0.92	1.000
69	0.92	1.340

401 Atomic Absorption-AFPC 9-16,17		
Lab	%	Al2O3
51	1.10	-2.144
Std Dev	1.08	-1.000
5	1.06	0.000
Median	1.06	0.000
5	1.05	0.536

402 ICP-induced coupled plasma		
Lab	%	Al2O3
77	1.48	-5.485
77	1.43	-4.861
78	1.24	-2.456
78	1.20	-2.026
51	1.13	-1.122
24	1.13	-1.060
Std Dev	1.12	-1.000
24	1.12	-0.935
35	1.08	-0.499
6	1.06	-0.187
6	1.05	-0.125
34	1.04	0.000
34	1.04	0.000
Median	1.04	0.000
61	1.03	0.125
61	1.02	0.249
13	1.02	0.312
13	1.02	0.312
15	1.02	0.312
15	1.02	0.312
69	1.00	0.511
69	0.99	0.598
75	0.98	0.711
75	0.98	0.742

403 Other(describe)		
Lab	%	Al2O3
Median	0.00	0.000

501 Atomic Absorption-AFPC 9-18,19			
Lab	%	MgO	
35	0.46	-0.447	
5	0.45	0.000	
5	0.45	0.000	
51	0.45	0.000	
Median	0.45	0.000	
Std Dev	0.43	1.000	
60	0.41	1.787	
	0.40	2.233	

502 ICP-induced coupled plasma			
Lab	%	MgO	
61	0.48	-0.983	
13	0.47	-0.759	
15	0.47	-0.759	
15	0.47	-0.759	
13	0.47	-0.536	
61	0.47	-0.536	
78	0.46	-0.179	
6	0.46	-0.089	
6	0.46	-0.089	
34	0.45	0.000	
34	0.45	0.000	
Median	0.45	0.000	
78	0.45	0.112	
51	0.45	0.134	
77	0.45	0.134	
77	0.45	0.134	
24	0.44	0.804	
24	0.44	0.804	
Std Dev	0.43	1.000	
69	0.41	2.055	
69	0.41	2.099	
75	0.38	3.075	
75	0.38	3.482	

503 Other(describe)			
Lab	%	MgO	
Median	0.00	0.000	

601 Insoluble-AFPC 9-8			
Lab	%	Al	
13	12.20	-1.346	
Std Dev	12.13	-1.000	

13	12.11	-0.897
51	12.01	-0.374
15	11.99	-0.274
6	11.97	-0.175
5	11.95	-0.100
15	11.94	-0.025
5	11.93	0.000
6	11.93	0.000
Median	11.93	0.000
24	11.74	0.947
Std Dev	11.73	1.000
61	11.73	1.022
35	11.71	1.097
24	11.68	1.271
61	11.67	1.296
69	2.50	47.018
69	2.48	47.118

602 Other(describe)			
Lab	%	Al	
Median	0.00	0.000	

701 Gravimetric sulfate			
Lab	%	CaO	
Median	0.00	0.000	

702 ICP-induced coupled plasma			
Lab	%	CaO	
61	44.21	-1.894	
61	44.16	-1.770	
78	44.10	-1.622	
Std Dev	43.84	-1.000	
34	43.77	-0.817	
34	43.77	-0.817	
77	43.50	-0.149	
77	43.50	-0.149	
Median	43.44	0.000	
6	43.38	0.149	
6	43.34	0.260	
78	43.32	0.309	
69	43.20	0.594	
69	43.19	0.619	
Std Dev	43.04	1.000	
75	42.27	2.907	

75	42.01	3.530
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703 Ceric Sulfate volumetric			
Lab	%	CaO	
Median	0.00	0.000	

704 Permanganate			
Lab	%	CaO	
60	43.45	0.000	
Median	43.45	0.000	

705 EDTA Volumetric			
Lab	%	CaO	
35	44.72	-1.340	
Std Dev	44.64	-1.000	
Median	44.41	0.000	
Std Dev	44.17	1.000	
51	44.09	1.340	

706 Other(describe)			
Lab	%	CaO	
15	44.40	-2.213	
15	44.22	-1.608	
Std Dev	44.04	-1.000	
24	43.77	-0.035	
Median	43.76	0.000	
13	43.75	0.035	
24	43.71	0.156	
Std Dev	43.47	1.000	
13	43.42	1.176	

711 Gravimetric sulfate				
Lab	%	CaO	dB	
Median	0.00	0.000		

712 ICP-induced coupled plasma				
Lab	%	CaO	dB	
61	44.60	-1.417		
61	44.55	-1.330		
Std Dev	44.36	-1.000		
6	43.80	-0.045		
Median	43.77	0.000		
6	43.75	0.045		
69	43.53	0.427		

69	43.52		0.444
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
35	44.96		-1.340
Std Dev	44.89		-1.000
Median	44.67		0.000
Std Dev	44.46		1.000
51	44.39		1.340
716 Other(describe)			
Lab	%	CaO	dB
15	44.75		-1.804
15	44.59		-1.301
Std Dev	44.49		-1.000
13	44.25		-0.291
Median	44.16		0.000
24	44.06		0.291
24	44.06		0.292
13	43.87		0.887
801 Volumetric-AFPC 9-37			
Lab	%	Fluorine, F	
Median	0.00		0.000
802 Specific Ion Electrode			
Lab	%	Fluorine, F	
69	3.74		-1.924
69	3.72		-1.787
Std Dev	3.61		-1.000
35	3.51		-0.344
51	3.51		-0.309
24	3.50		-0.241
6	3.49		-0.172
13	3.47		-0.034
13	3.46		0.000

Median	3.46	0.000
24	3.46	0.034
75	3.34	0.825
Std Dev	3.31	1.000
78	3.31	1.065
78	3.31	1.065
15	3.23	1.581
15	3.21	1.752
75	3.13	2.302

803 Other( describe)		
Lab	%	Fluorine, F
77	3.56	-1.340
Std Dev	3.55	-1.000
Median	3.52	0.000
Std Dev	3.48	1.000
77	3.47	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
78	<1	0.000
6	10.9	-11.174
Std Dev	6.4	-1.000
69	6.0	-0.023
69	6.0	0.000
Median	6.0	0.000
Std Dev	5.5	1.000
24	5.4	1.317
78	2.0	9.039

913 Other(describe)		
Lab	ppm	Arsenic, As
13	26.5	-3.732
Std Dev	13.9	-1.000
77	9.5	-0.043
Median	9.3	0.000
77	9.1	0.043
Std Dev	4.7	1.000
51	3.0	1.367

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	
51	5	0.000	
Median	5	0.000	

922 ICP-induced coupled plasma			
Lab	ppm	Cadmium, Cd	
77	11	-16.973	
77	11	-16.973	
Std Dev	6	-1.000	
24	5	-0.447	
78	5	-0.447	
24	5	-0.149	
61	5	0.000	
78	5	0.000	
Median	5	0.000	
61	5	0.149	
51	5	0.893	
75	5	0.893	
Std Dev	5	1.000	
75	5	2.382	
6	3	6.849	

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
13	5	-2.632	
Std Dev	5	-1.000	
69	4	0.000	
Median	4	0.000	
69	4	0.048	

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	8	-1.942	
78	7	-1.554	
Std Dev	6	-1.000	
51	6	-0.777	
77	5	0.000	
77	5	0.000	
Median	5	0.000	

6	5	0.233
75	4	0.777
75	4	0.777

933 Other(describe)		
Lab	ppm	Cobalt, Co
13	8	-2.657
Std Dev	6	-1.000
69	5	0.000
Median	5	0.000
69	5	0.023

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
6	<0.02	0.000
Median	0.0	0.000

943 Other(describe)		
Lab	ppm	Mercury, Hg
69	<0.5	0.000
69	<0.5	0.000
13	0.1	0.000
Median		0.000

951 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Iolybdenum, Mo
51	7	0.000
Median	7	0.000

952 ICP-induced coupled plasma		
Lab	ppm	Iolybdenum, Mo
77	12	-4.523
77	10	-1.173
Std Dev	10	-1.000
6	9	-0.168
Median	9	0.000
78	9	0.168
51	9	0.503
Std Dev	9	1.000
78	9	1.173

953 Other(describe)			
Lab	ppm	Molybdenum, Mo	
13	10		-2.632
Std Dev	7		-1.000
69	6		0.000
Median	6		0.000
69	6		0.048

961 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Nickel, Ni	
51	18		0.000
Median	18		0.000

962 ICP-induced coupled plasma			
Lab	ppm	Nickel, Ni	
78	25		-1.578
78	25		-1.429
Std Dev	23		-1.000
51	23		-0.983
77	20		-0.089
Median	20		0.000
6	19		0.089
77	19		0.208
75	19		0.357
75	17		0.804

963 Other(describe)			
Lab	ppm	Nickel, Ni	
13	24		-2.632
Std Dev	21		-1.000
69	19		0.000
Median	19		0.000
69	18		0.048

971 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Lead, Pb	
51	11		0.000
Median	11		0.000

972 ICP-induced coupled plasma			
Lab	ppm	Lead, Pb	
77	18		-2.865
77	15		-1.383

Std Dev	14		-1.000
24	12		-0.049
Median	12		0.000
78	12		0.049
78	11		0.371
Std Dev	10		1.000
6	7		2.717

973 Other(describe)			
Lab	ppm	Lead, Pb	
69	<0.5		0.000
69	<0.5		0.000
13	15		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	
6	2		0.000
Median	2		0.000

983 Other(describe)			
Lab	ppm	Selenium, Se	
69	<0.5		0.000
69	<0.5		0.000
13	1		-1.340
Std Dev	1		-1.000
Median	1		0.000
77			1.340

991 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Zinc, Zn	
60	48		-1.340
Std Dev	47		-1.000
Median	44		0.000
Std Dev	41		1.000
51	40		1.340

992 ICP-induced coupled plasma			
Lab	ppm	Zinc, Zn	
78	56		-1.864

78	55		-1.165
Std Dev	54		-1.000
75	54		-0.932
75	52		0.000
77	52		0.000
77	52		0.000
Median	52		0.000
Std Dev	50		1.000
51	49		1.398
6	48		1.864

993 Other(describe)			
Lab	ppm	Zinc, Zn	
69	49		-0.064
69	49		0.000
Median	49		0.000
Std Dev	48		1.000
13	47		2.616

