

McClellan AFB - Brice Environmental Small Arms Firing Range Restoration



PIMS NW, Inc.

McClellan AFB - Brice Environmental

Small Arms Firing Range Feasibility Results - untreated soil

SMALL ARMS FIRING RANGE TCLP LEAD RESULTS

Soil Fraction (Standard Sieve Mesh Size)	Fractional TCLP Lead mg/L
+ #4 Mesh	83, 76
- #4 x + #10 Mesh	80
- #10 X + #50 Mesh	39
- #50 X + #100 Mesh	78
- #100 X + #200 Mesh	30
- #200 Mesh	25, 26

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Small Arms Firing Range Feasibility Results - Apatite II treated soil

TCLP RESULTS FOLLOWING APATITE II ADDITION

Apatite II Addition by Weight	TCLP Lead Results mg/L
1.0%	5.9/6.5
2.0%	5.0/4.2
3.0%	2.6/2.4
5.7%	1.3/1.4
10.7%	0.9/1.1/1.0

TCLP RESULTS FOLLOWING PORTLAND CEMENT ADDITION

Portland Cement Addition by Weight	TCLP Lead Results mg/L
2.0%	7.4
3.5%	2.8
5.0%	0.1, 0.5

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Small Arms Firing Range Feasibility Results - untreated soil

FORT ORD TCLP LEAD CONCENTRATIONS AND DISTRIBUTION

Soil Fraction (Standard Sieve Mesh Size)	TCLP Lead (mg/L)	TCLP Lead Duplicate (mg/L)	Average (mg/L)	% of Total Feed Sample	TCLP Lead Distribution
Plus #4 Mesh Soil	1.2	2.6	1.9	3.6	.5 %
Minus #4 x Plus #10 Mesh Soil		3.3	3.3	1.5	.3 %
Minus #10 x Plus #50 Mesh Soil	31.1	14.8	22.9	50.9	76.7 %
Minus #50 x Plus #100 Mesh Soil	8.9	7.6	8.3	29.2	15.8 %
Minus #100 x Plus #200 Mesh Soil	13.6	9.4	11.5	1.8	1.4 %
Minus #200 Mesh Soil	12.3	7.3	9.8	8.4	5.4 %

Plus #200 Mesh Material TCLP			16.6	87.0	94.6 %
Total Soil Fractions TCLP			16.0	92.9	100.0 %

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Small Arms Firing Range Feasibility Results - Apatite II treated soil

TCLP RESULTS FOLLOWING APATITE STABILIZATION

(on the plus #200 mesh soil fraction)

Apatite II Addition By Weight	TCLP Lead Results (mg/L)
0.2%	5.9
0.4%	4.6
0.6%	2.5
1.2%	1.4
2.2%	1.0

From the perspectives of ease of use, dust concerns, and durability, Brice Environmental has recommended Apatite II as the choice of stabilization agent for lead at these sites.



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