DRAFT of the Preliminary Draft Statistical Summary of the Caterpillar 1R Precision Matrix

Preliminary Draft 08/15/2001

PRS

Caterpillar 1R Matrix Summary

- The 1R matrix is not yet complete. This is a draft analysis of 12 of the 18 matrix runs. The statistician work group has not reviewed the presentation.

- Only WD, TGC, TLC, OC, ETOC analyzed to date.

- Three oils (A, D, M) are in the matrix. There is some evidence of discrimination in Oil Consumption. Note that there is only 1 run on D to date with only 2 planned.

- There is no evidence of Lab or Stand effects to date.

- No transformations are necessary and no outliers seen to date.

- There are positive correlations among the parameters especially WD/TGC and OC/ETOC.

Caterpillar 1R Matrix Status

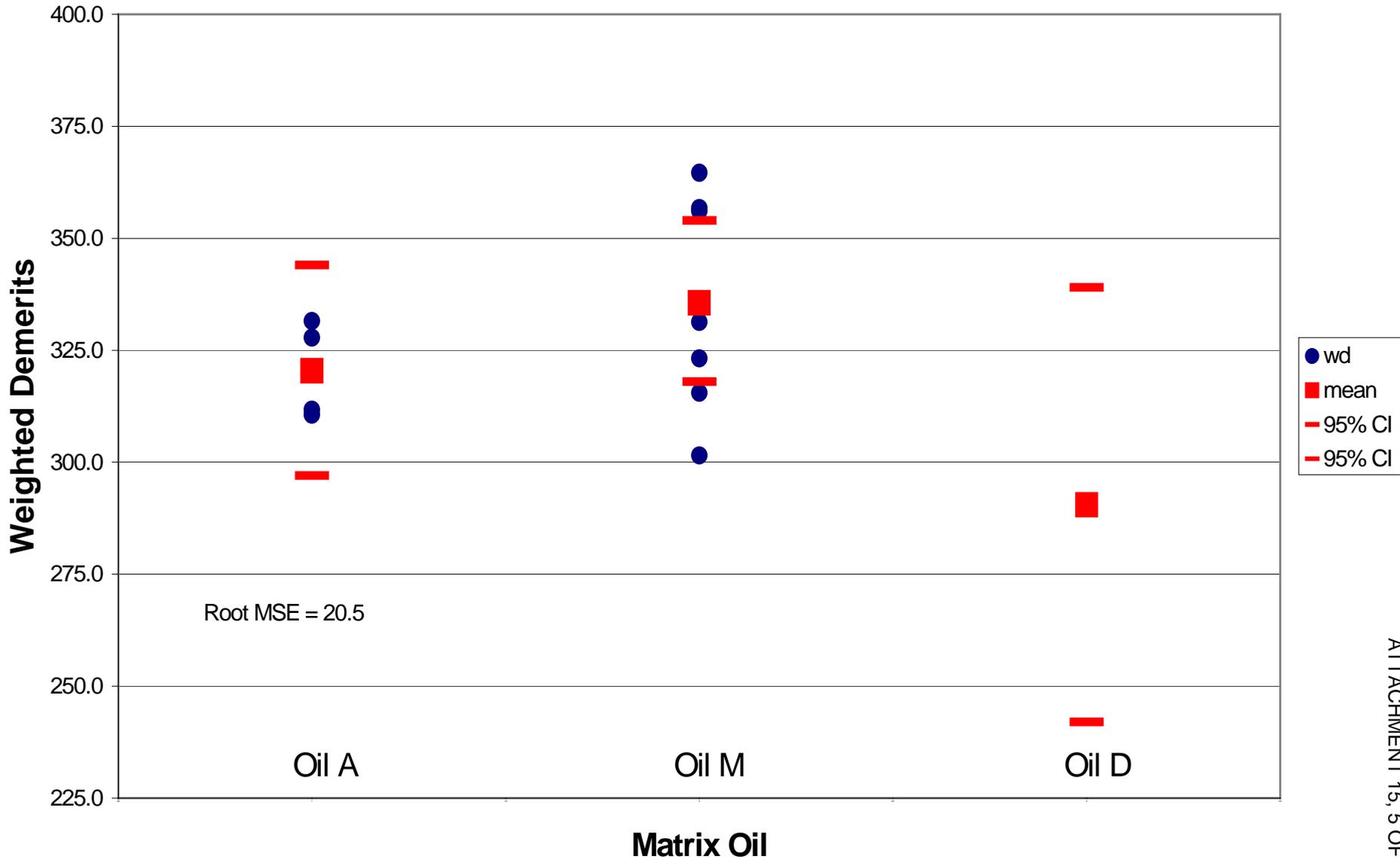| Lab 1			Lab 2	Lab 3			Lab 4	Lab 5
Stand 1	Stand 2	Stand 8	Stand 3	Stand 4	Stand 5	Stand 9	Stand 6	Stand 7
A	M	A	M	A	M	A	M	A
M	D	M	A	M	D	M	A	M

The 1R Task Force concluded that the 3 tests at a coolant flow of 63 L/m are no different from the ones run at 70 L/m.
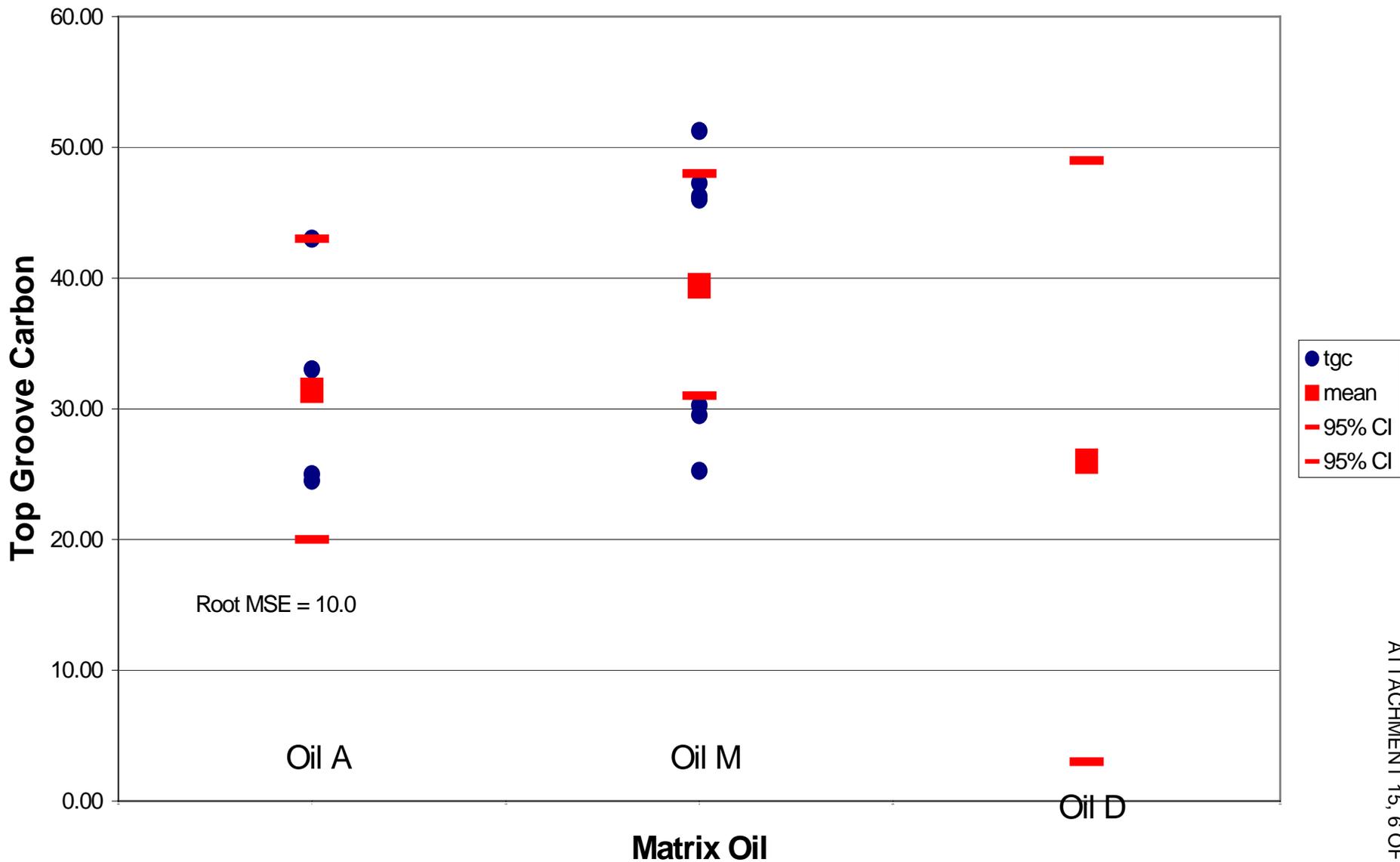
Caterpillar 1R Correlations

WD	0.68	0.76	-0.01	0.21
0.89	TGC	0.75	0.40	0.52
0.74	**0.87**	TLC	0.00	0.16
0.42	0.72	0.62	OC	**0.91**
0.53	0.71	0.73	**0.89**	ETOC

Raw Data Correlations on Upper Triangle; Partial Correlations on Lower Triangle

Caterpillar 1R Weighted Demerits Matrix Test Results, Means, and Confidence Intervals by Oil

Root MSE = 20.5

Legend:
- wd
- mean
- 95% CI
- 95% CI

Weighted Demerits

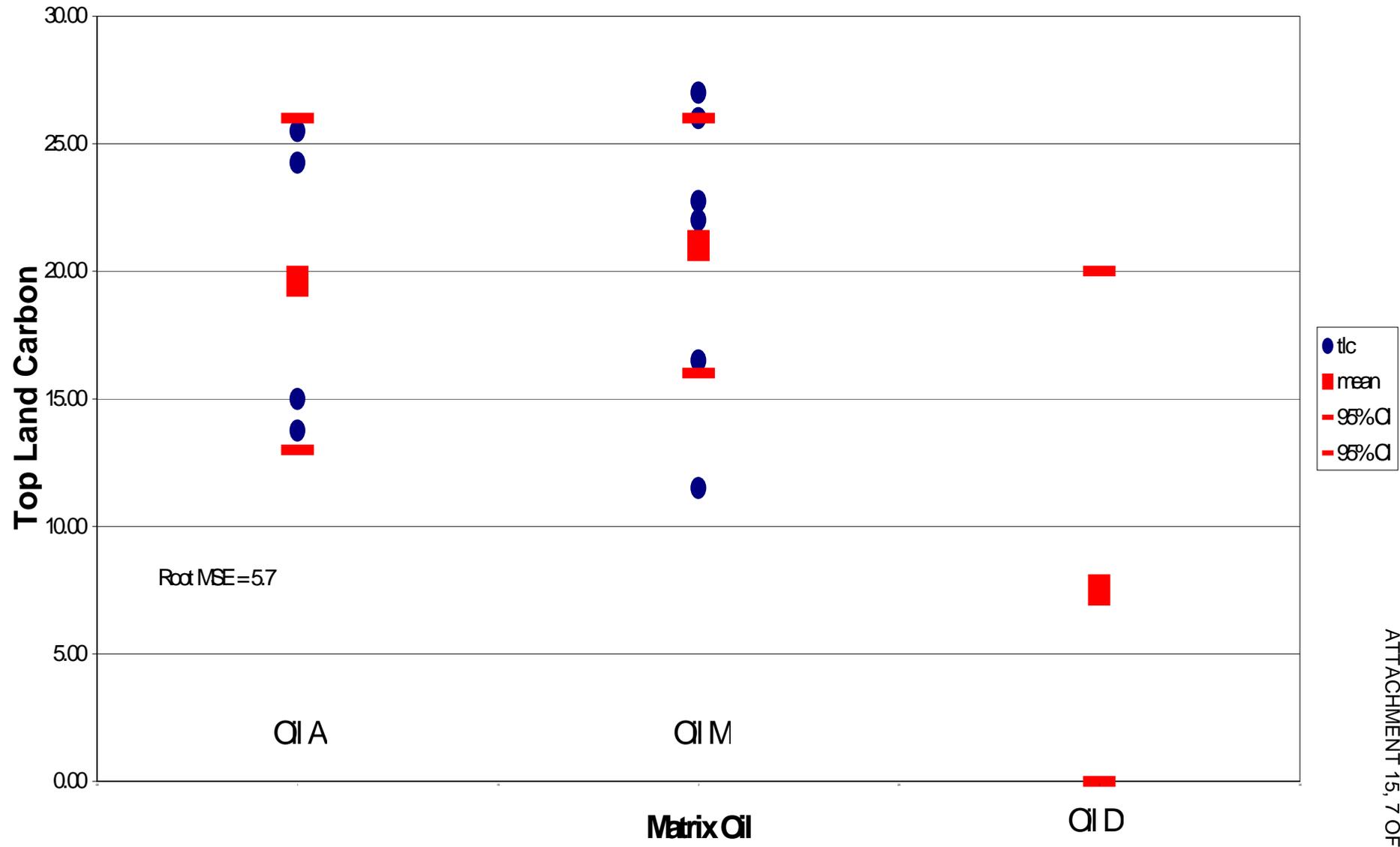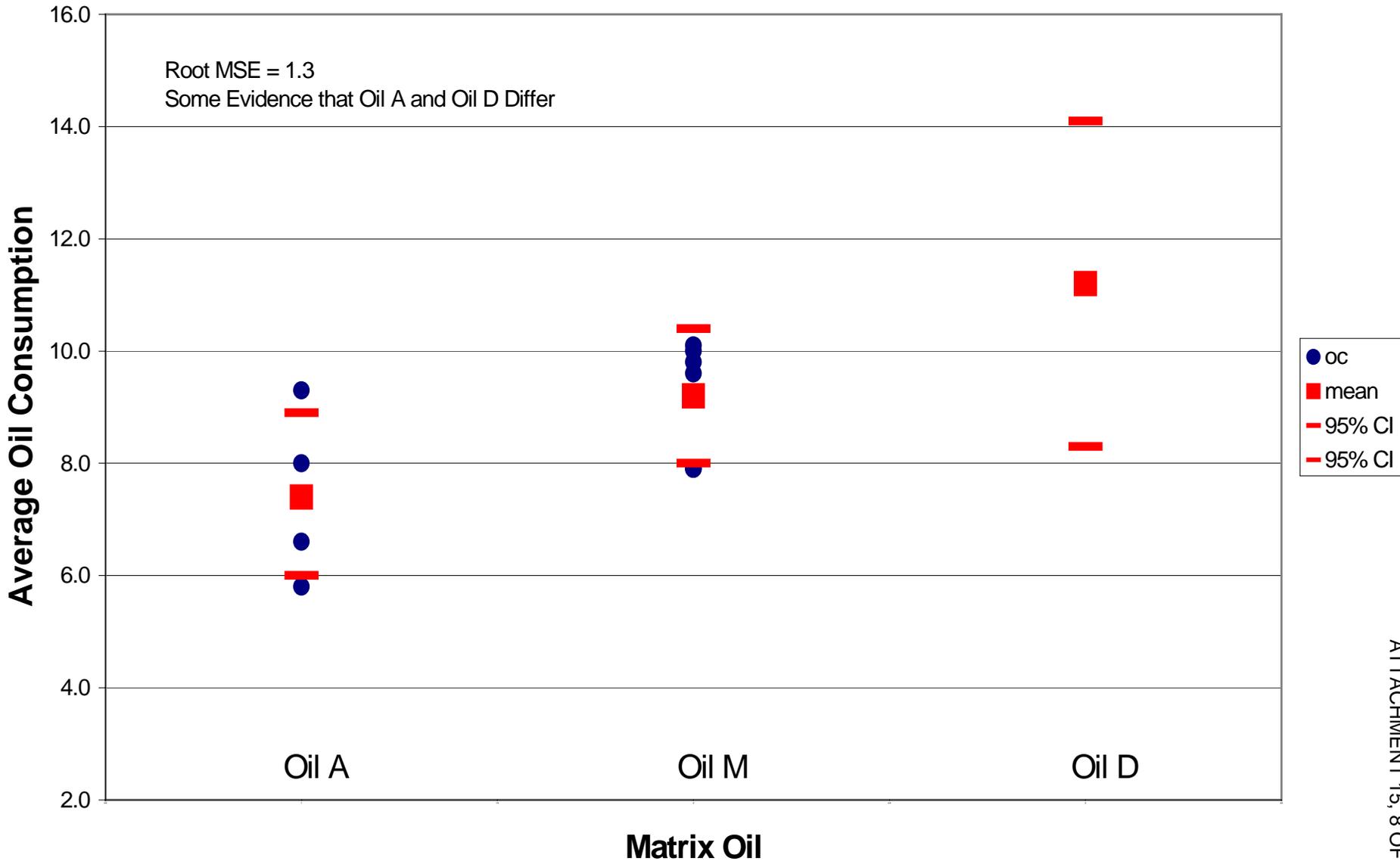Matrix Oil

Oil A   Oil M   Oil D

Caterpillar 1R Top Groove Carbon Matrix Test Results, Means, and Confidence Intervals by Oil

Caterpillar 1R Top Land Carbon Matrix Test Results, Means, and Confidence Intervals by Oil

Root MSE = 5.7

Oil A

Oil M

Oil D

Matrix Oil

Top Land Carbon

Legend:
- tlc
- mean
- 95% CI
- 95% CI

Caterpillar 1R Average Oil Consumption Test Results, Means, and Confidence Intervals by Oil

Caterpillar 1R End of Test Oil Consumption Matrix Test Results, Means, and Confidence Intervals by Oil