



ORONITE

Mack T-12 Pre-Matrix Data Analyses Version 5

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EMPOWERED TO EXCEL.

Summary

- These analyses used **six** tests in the on oil 820-2 plus **ten** tests on **nine** low SAPS oils.
- Variability for the 820-2 tests compares well with T10 matrix variability.
- It is surprising to be able to find significant differences with so few reference tests and only one test on most of the other oils.
- The charts show each test result plus the mean for 820-2 and upper and lower limits for determining whether individual test results on the low SAPS oils are significantly ($p=0.05$) different from 820-2. {For OILK, the average of two results is shown.}
- Outlier screening was done with no profiles and not for all tests. Pb was corrected for the UBWL outlier using the T-10 method when possible.
- Significant differences were seen for
 - Delta Pb 0 to 300 {more differences are seen when corrected for UBWL outlier, or when the Lab G test was removed};
 - Top Ring Weight Loss;
 - Delta Pb 250 to 300;
 - Second Ring Weight Loss; and
 - DeltaIR 250 to 300 hours (some numbers questionable).

Pre-matrix Tests with 820-2

Variable	Label	Max	Mean	Min	N	sd
DPbOR	DPbOR	26	21.2	16	5	4.4
DPbOS	DPbOS	34.9	23.5	16	6	6.8
DPBFNL	DPBFNL	40	24.7	17	6	8.3
CLWFNL	CLWFNL	27.7	23.7	17.4	6	3.9
ATRWLFNL	ATRWLFNL	121	88.2	50	6	25.1
ATRWLFNLh	ATRWLFNLh	105.4	81.2	50	6	19.4
OCFNL	OCFNL	82.5	75	63.4	6	6.8
DPB2FNL	DPB2FNL	11	9.2	8	6	1.2
ABWLU	ABWLU	290.2	234.8	146.4	6	48.6
OABWLU	OABWLU	255	224.1	146.4	6	42.1
AR2WL	AR2WL	38.4	29.7	17.1	6	8.9
IR250300	IR250300	349.6	191.1	123	5	92.3

Replicate Tests with low SAPS Oil K

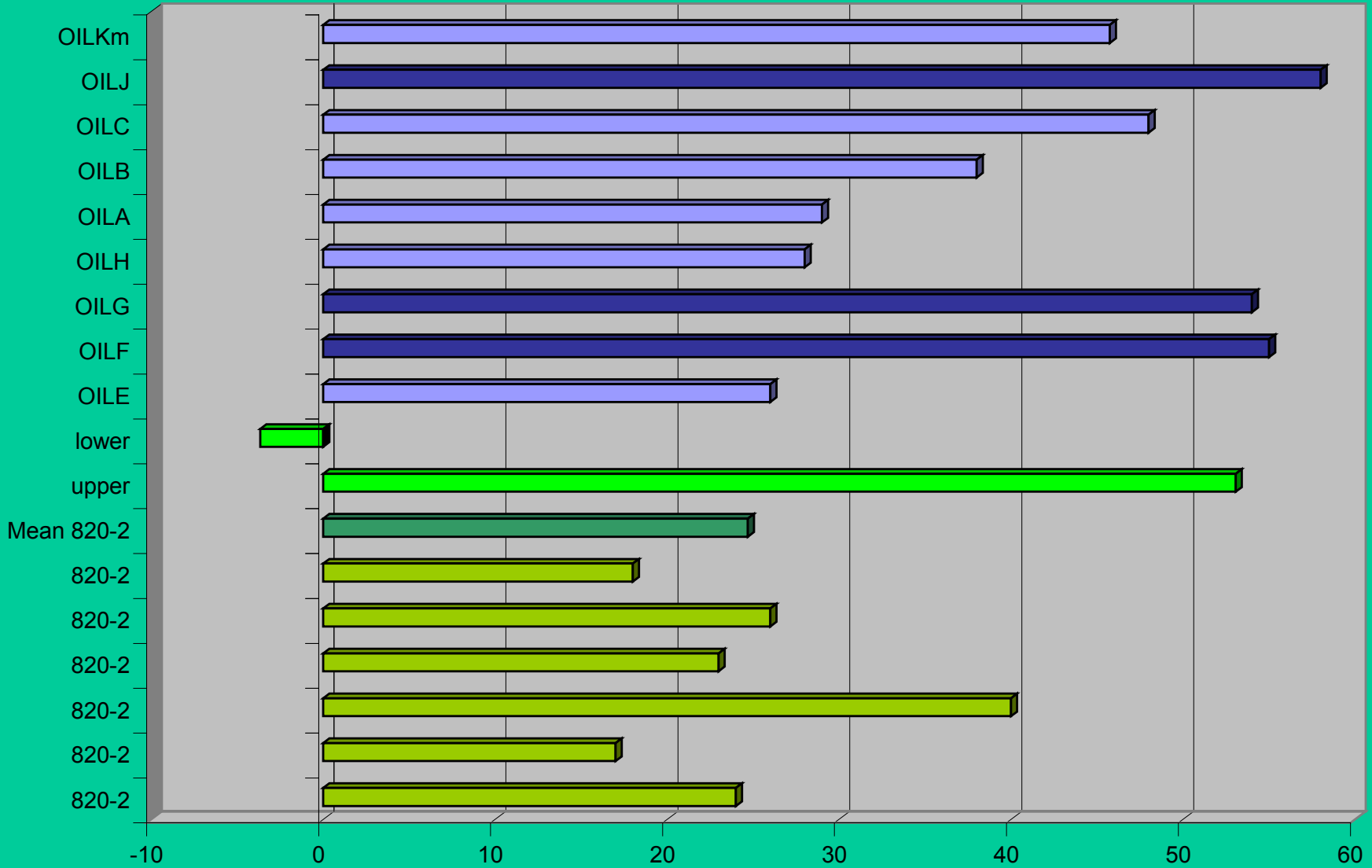
Lab	DPbOS	DPBFNL	CLWFNL	ATRWLFNL	OCFNL	DPB2FNL	ABWLU	OABWLU	AR2WL	IR250300
1		41	21.1	110.3	64.6	22	254.2		33.7	334.8
2		50.5	20.4	94.8	68.8	18.5	274.6		32.8	510

Comparison of Standard Deviations

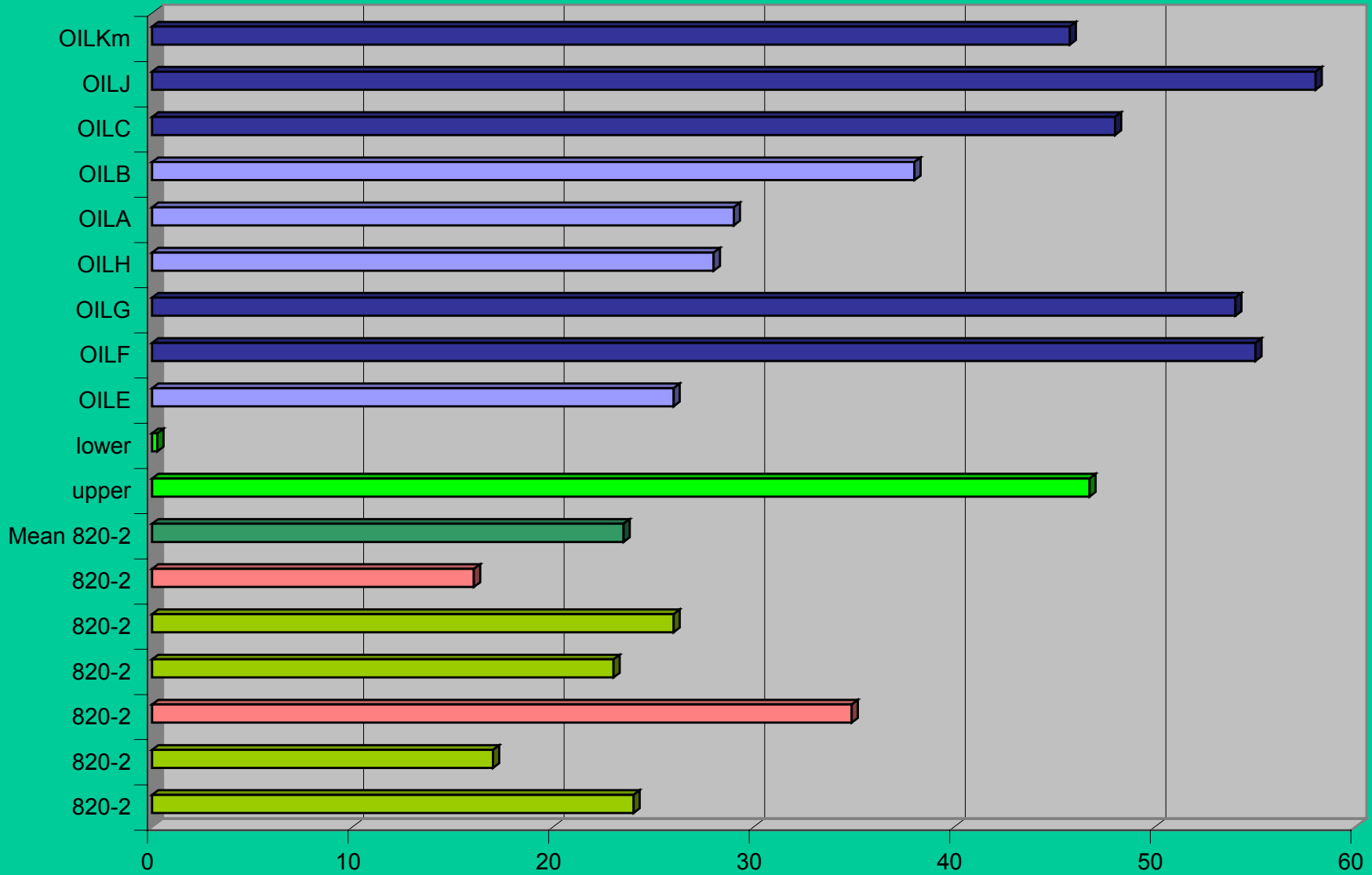
	InDPBFINAL	DPB2FNL	ATRWLFNL	CLWFNL	OCFNL	IRINH300
T10 LTMS	0.2339	3.5	18	4.2	7.2	
T10 Matrix*	0.2946	6	25	3.7	8.9	181
T12 820-2	0.3065	1	25	3.9	6.8	126

***9/14/01 Analysis of T10 matrix -- 27 tests (2 operationally valid tests removed)**

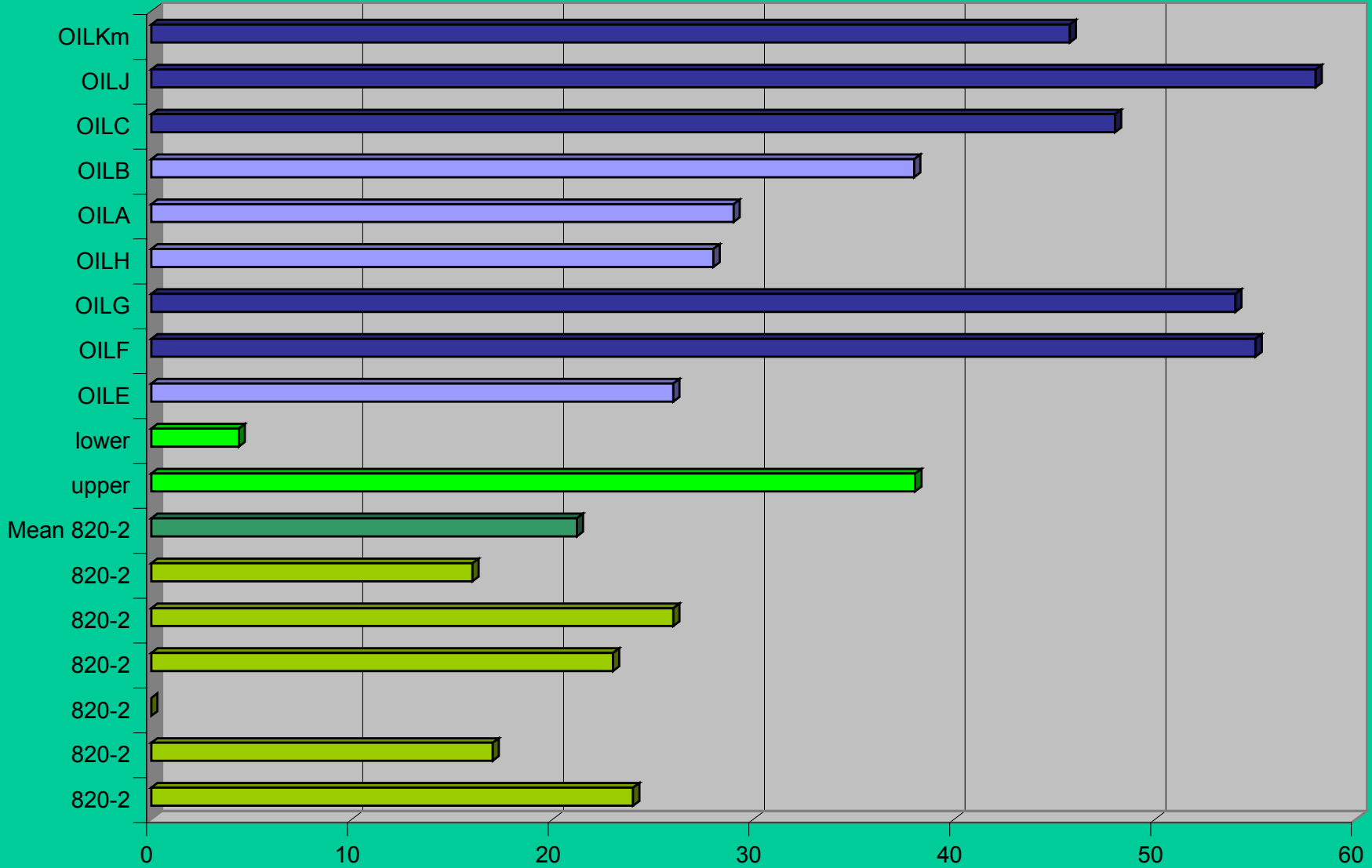
Delta Pb 0 to 300



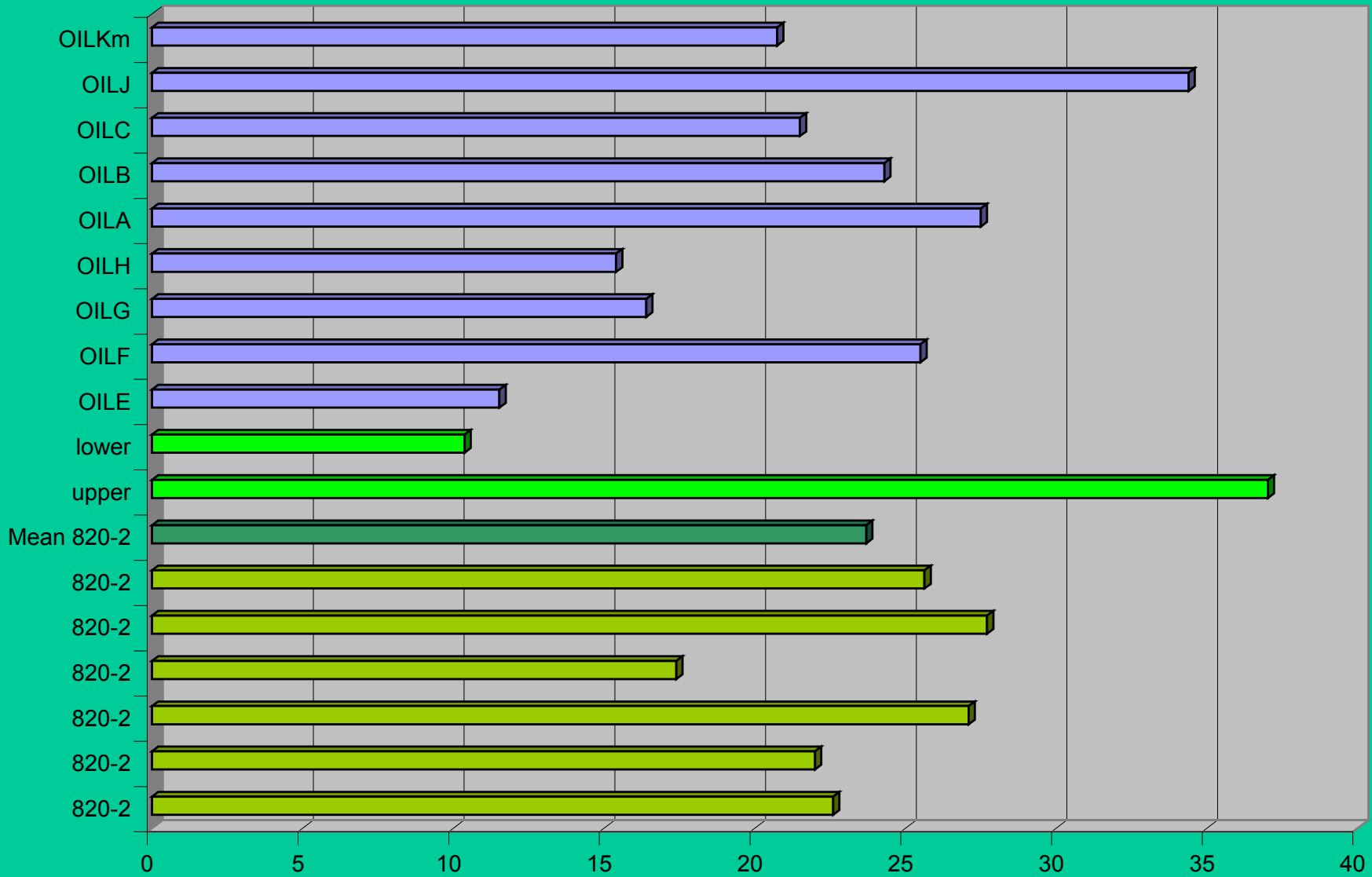
Delta Pb 0 to 300 UBWL OSC



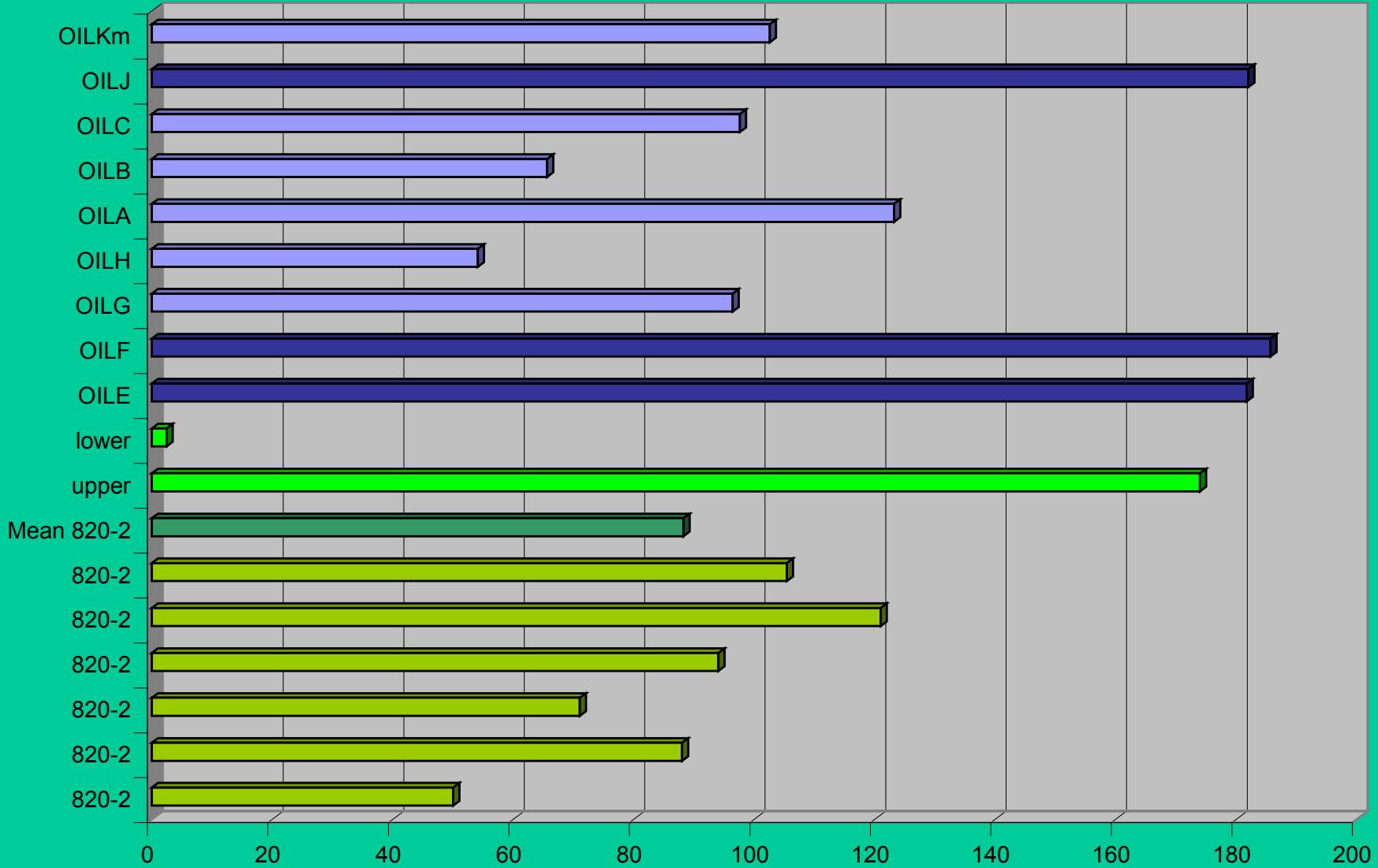
Delta Pb 0 to 300 Lab G Test Removed



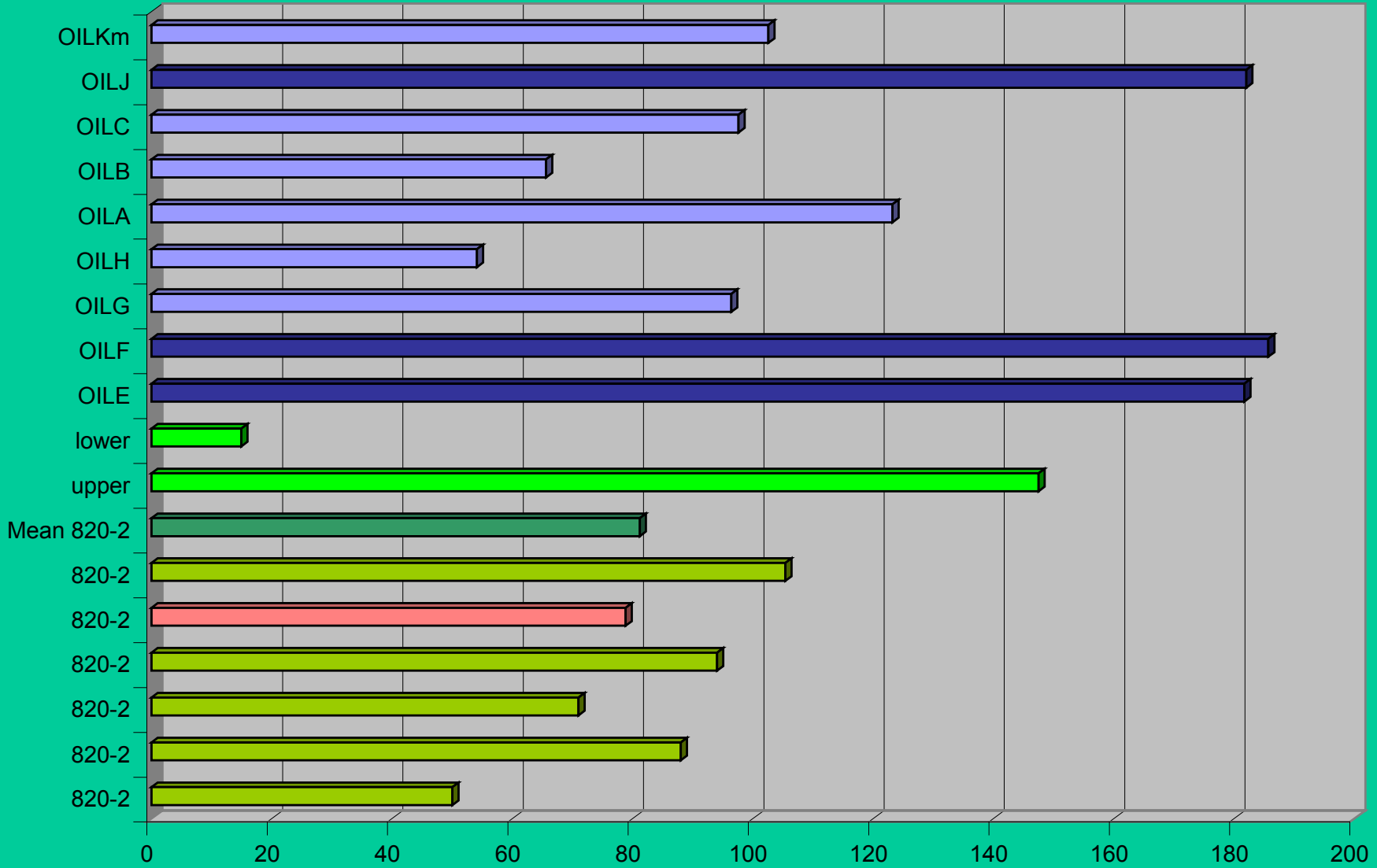
Cylinder Liner Wear



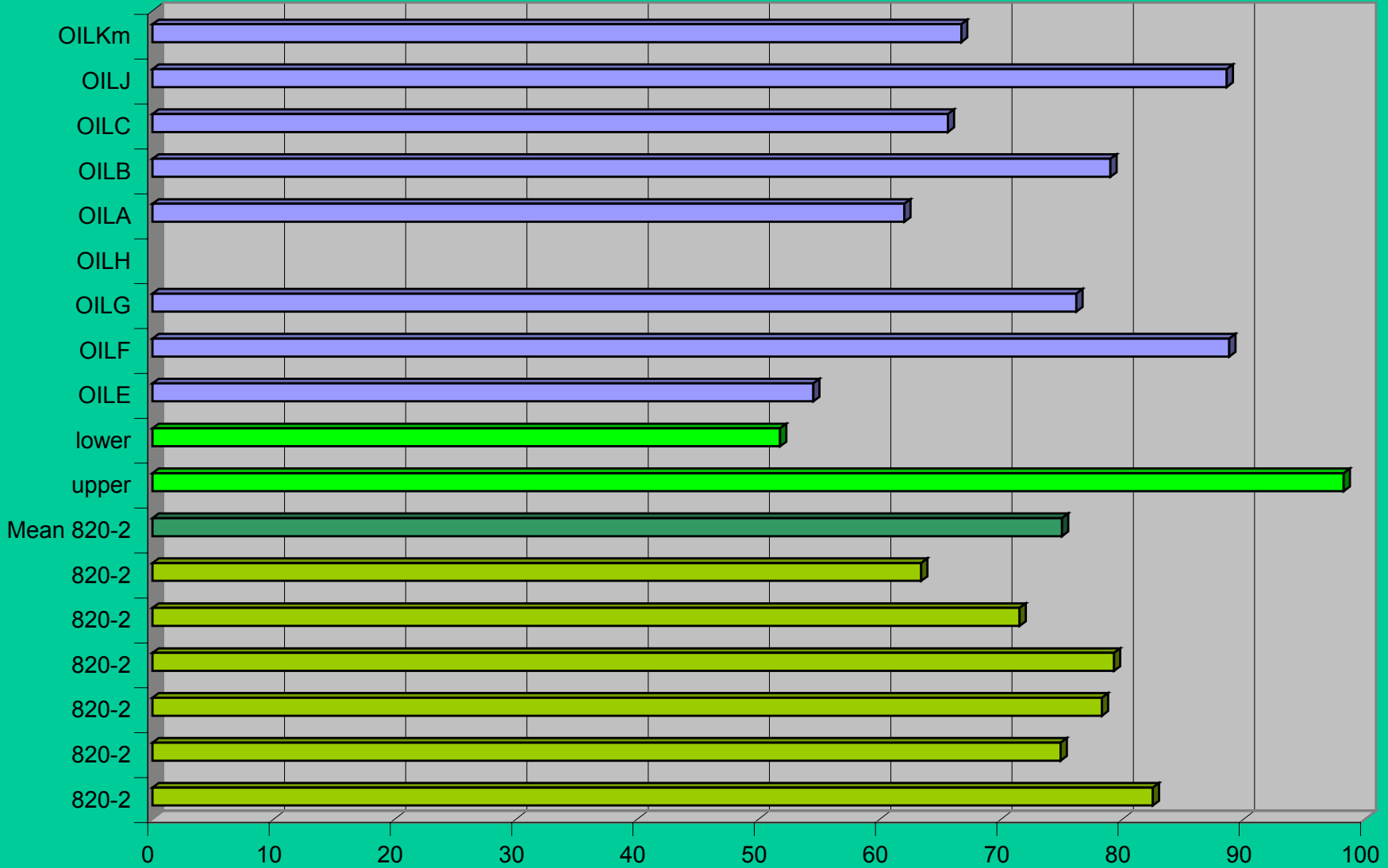
Top Ring Weight Loss



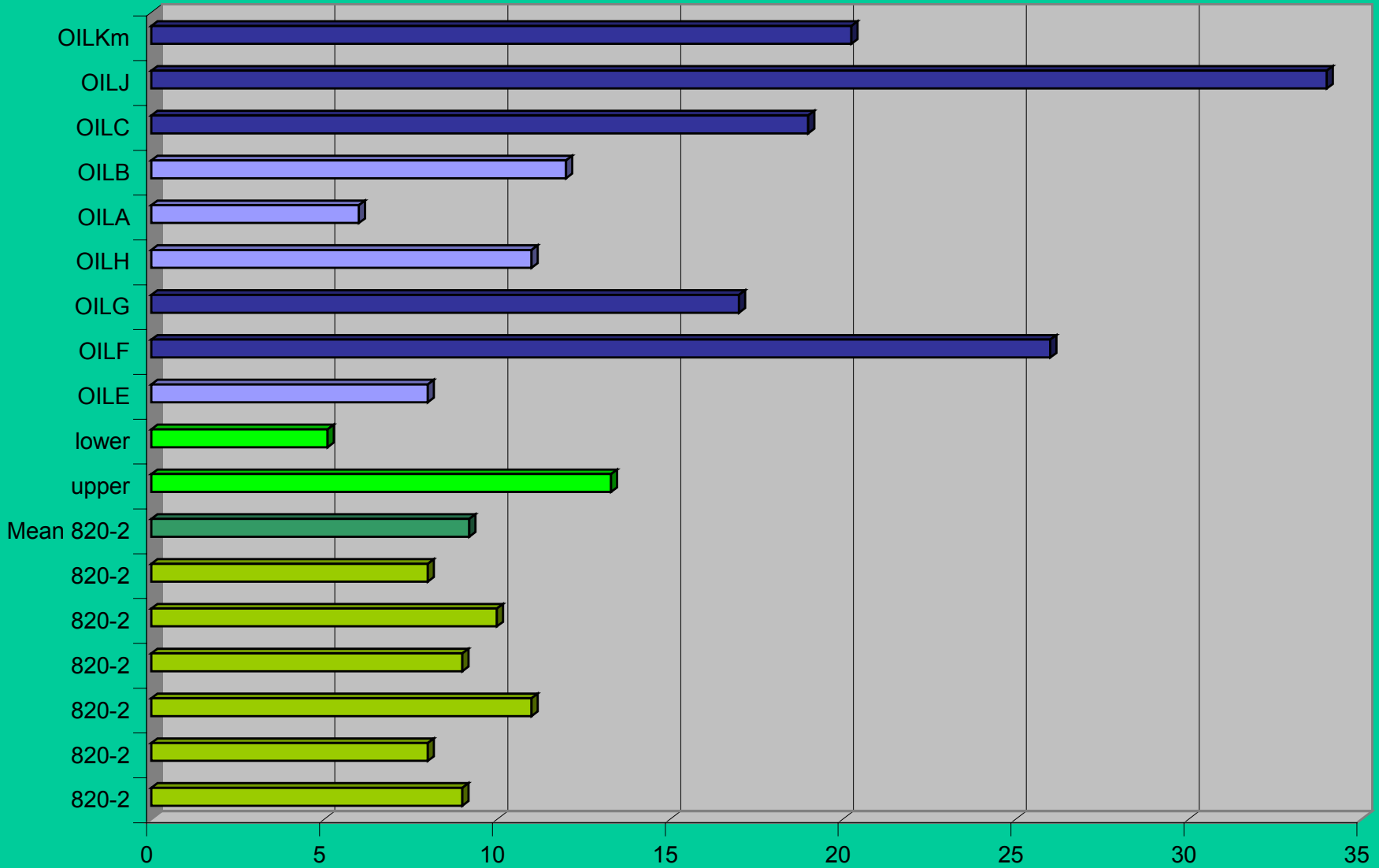
Top Ring Weight Loss (Lab A Near Outlier Removed)



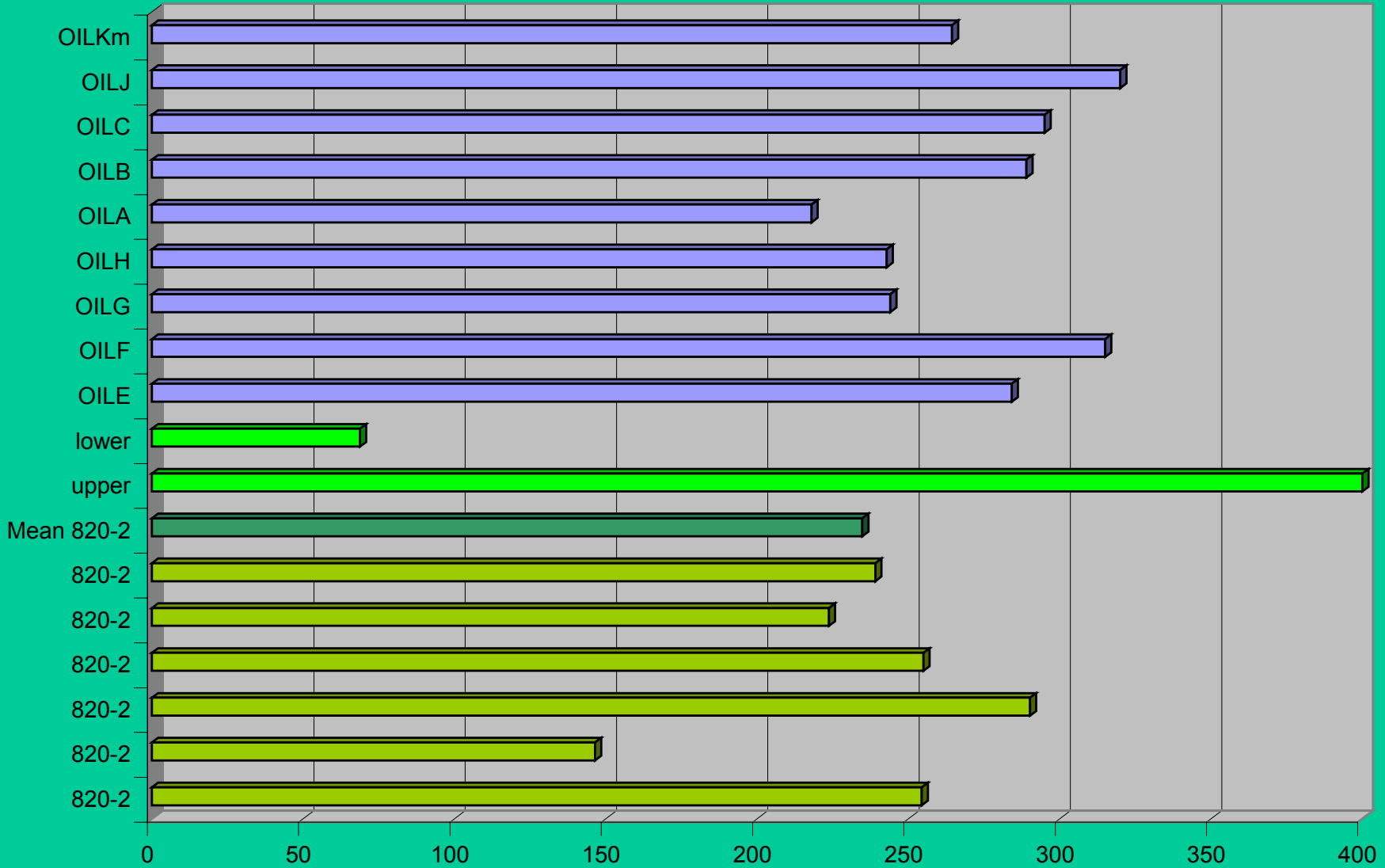
Oil Consumption



Delta Pb 250 to 300

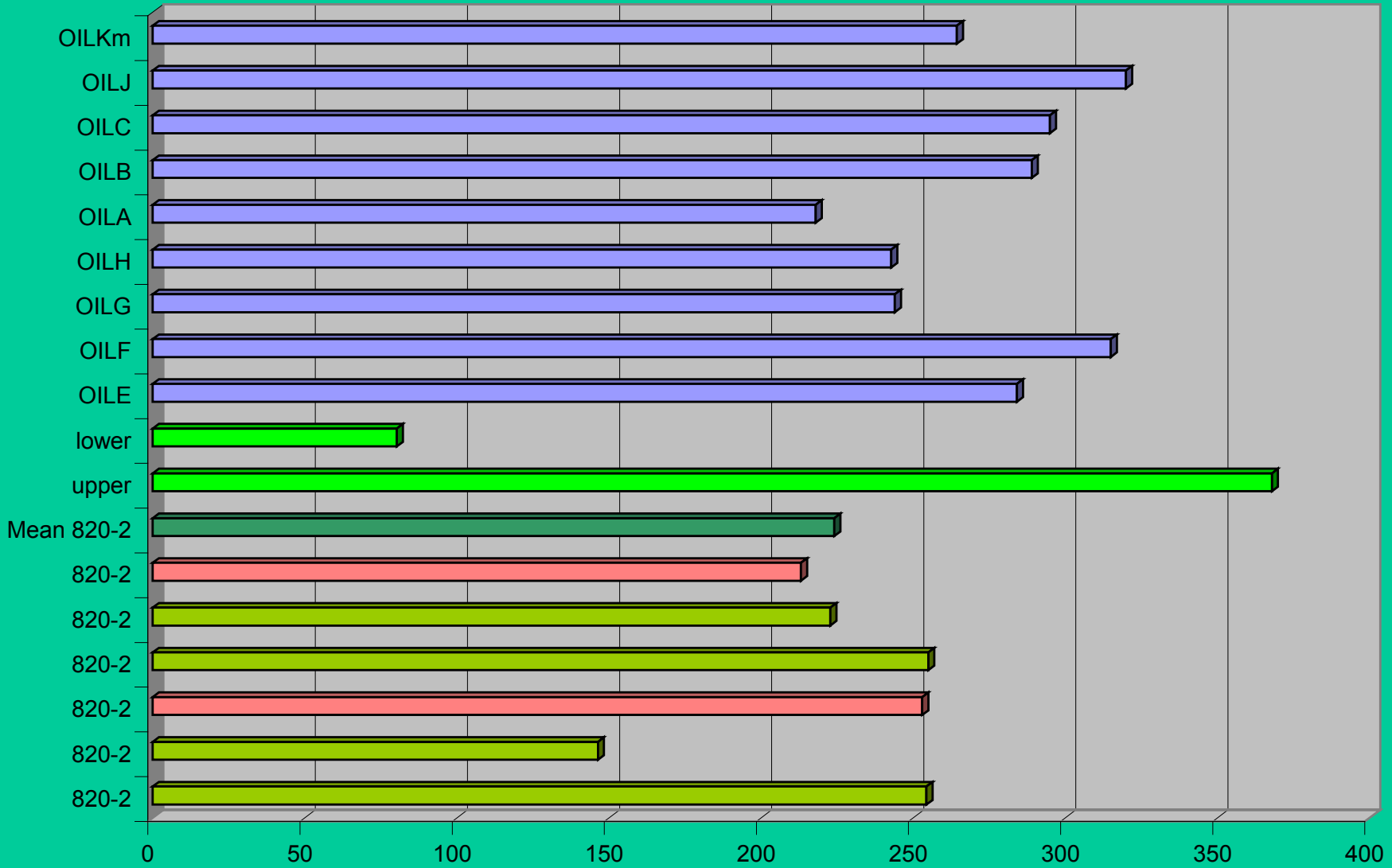


Upper Bearing Weight Loss

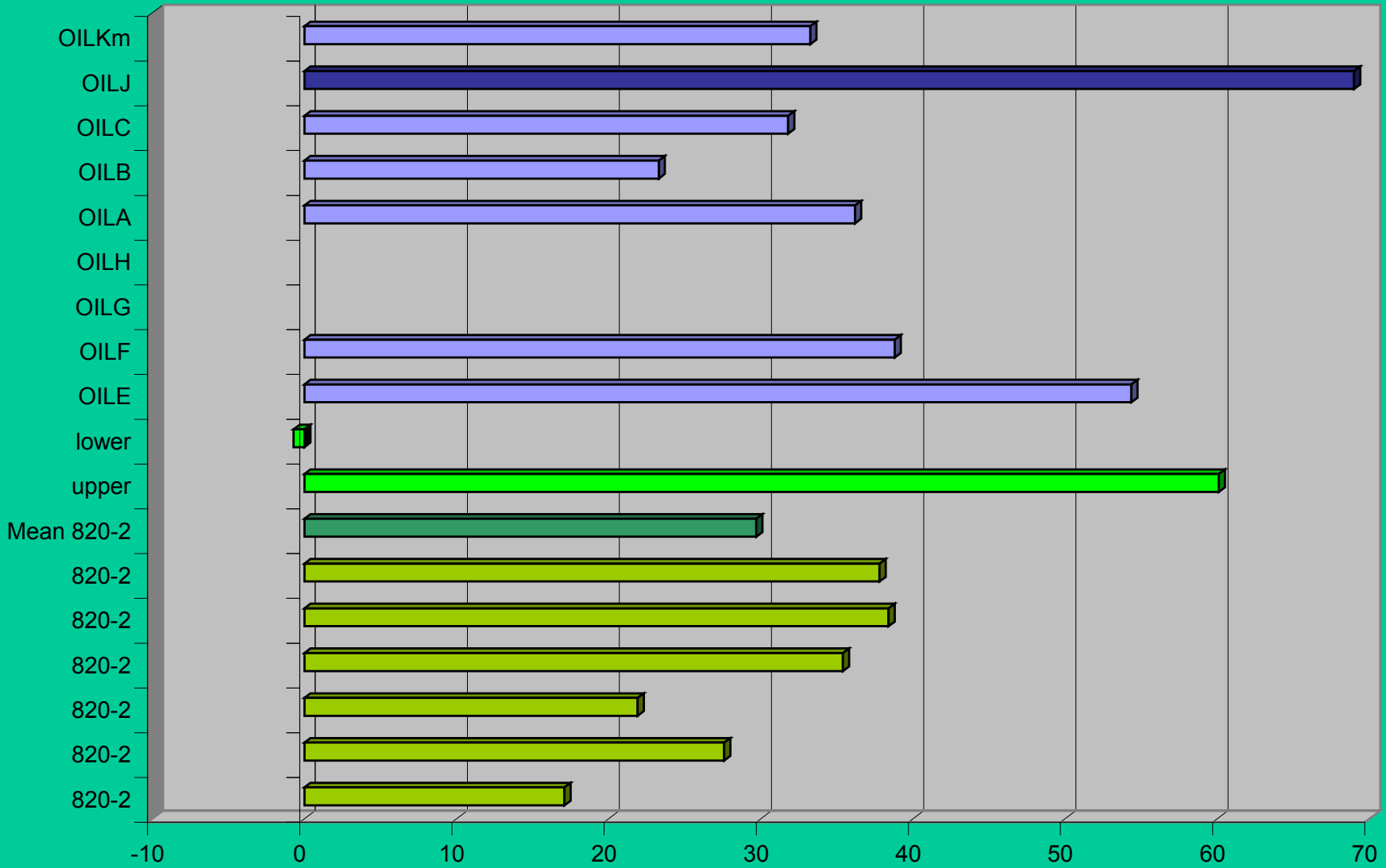


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Upper Bearing Weight Loss (Outlier Screened)



Second Ring Weight Loss



Delta IR Method 5 (300 Hours - 250 Hours)

