



Test Monitoring Center

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Pittsburgh, PA 15206-4489
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MEMORANDUM: 04-051
DATE: June 2, 2004
TO: Sequence III Surveillance Panel
FROM: Michael T. Kasimirsky *Michael T. Kasimirsky*
SUBJECT: Sequence IIIG/IIIGA Reference Oil 438 Test Target Update

On May 26, 2004, the Sequence III Surveillance Panel approved a motion to revise the test targets on 438 based upon all the data available to date in the LTMS. As part of the motion, the panel also approved a plan to update the targets when 30 and 35 data points on this oil become available. These revised targets, based upon the 25 data points available at this time, are shown in the following table:

Parameter	Mean	Standard Deviation
PVIS	4.5761	0.1877
WPD	3.20	0.35
ACLW	2.8799	0.1864
MRV	9.8405	0.16998

Any applicable severity adjustments were applied to the data prior to target generation. The data used to generate these targets is shown in Tables 1 & 2. Table 1 shows unadjusted data. Table 2 shows severity-adjusted data, with the adjusted parameters shown in red. The above test targets; as well as the severity-adjusted data used to generate them; the raw test targets, the initial test targets, and the preliminary targets from the matrix (which were never used in the IIIG LTMS) for reference oil 438 are shown in the following figures. Figure 1 shows the PVIS data in transformed units. Figure 2 shows the PVIS data in original units. Figure 3 shows the WPD data in original units. Figures 4 and 5 show the ACLW data in transformed and original units, respectively. Figures 6 and 7 show the Sequence IIIGA MRV data in transformed and original units, respectively.

MTK/mtk

Attachments

c: John L. Zalar, TMC

<ftp://www.astmtmc.cmu.edu/docs/gas/sequenceiii/memos/mem04-051.pdf>

Distribution: Electronic Mail

Table 1 – Unadjusted Data

Testkey	LTMS Lab	LTMS App	Ind	Val	LTMS Date	LTMS Time	PVIS	PVISTI	ACLW	ACLWTI	WPD	MRV	MRVTI	OilCon
47950	E	1	438	AC	10/14/2003	1:06	106.1	4.664382	17.4	2.8565	2.84	18147	9.8063	3.66
49885	E	1	438	AC	3/20/2004	0:33	110.5	4.705016	17.5	2.8622	2.99	21721	9.986	3.87
47910	G	2	438	AO	8/12/2003	0:16	132.6	4.887337	16.8	2.8214	3.68	23700	10.0732	4.27
47911	G	2	438	AO	8/12/2003	0:21	143.2	4.964242	15.3	2.7279	2.85	30400	10.3222	4.33
47913	G	3	438	OO	8/12/2003	0:26	91.7	4.518522	15.6	2.7473	4.17	19000	9.8522	3.41
47914	G	5	438	AO	8/12/2003	0:36	120.6	4.792479	20.8	3.035	3	20500	9.9282	3.87
48577	G	3	438	AC	8/12/2003	5:13	138.5	4.93087	22.1	3.0956	3.01	26800	10.1962	4.19
48578	G	4	438	AC	11/28/2003	3:53	101.1	4.61611	18.3	2.9069	3.46	19900	9.8985	3.74
49515	G	2	438	AC	5/3/2004	1:09	86	4.454347	14.1	2.6462	3.33	16500	9.7111	3.19
47941	D	1	438	AC	8/12/2003	0:52	70.7	4.258446	14.7	2.6878	3.04	15435	9.6444	3.23
47921	B	1	438	AC	8/12/2003	0:29	81.9	4.405499	19.3	2.9601	2.62	16300	9.6989	2.97
47922	B	3	438	AC	8/12/2003	0:46	74.5	4.310799	19	2.9444	3.1	14800	9.6024	2.63
47923	B	2	438	OC	11/19/2003	6:36	77.7	4.352855	30.8	3.4275	3.18	16100	9.6866	2.78
49069	B	2	438	AC	11/26/2003	7:03	92.9	4.531524	17.1	2.8391	3.24	16400	9.705	3.12
47930	F	1	438	AC	8/12/2003	0:41	96.6	4.570579	17.6	2.8679	3.72	18620	9.832	3.66
47932	F	1	438	AC	1/13/2004	5:55	77	4.343805	19.7	2.9806	3.85	16449	9.708	3.38
47893	A	1	438	AO	8/12/2003	0:13	102.3	4.62791	14.4	2.6672	3.04	19300	9.8679	3.62
47894	A	3	438	AO	8/12/2003	0:18	111.7	4.715817	21.2	3.054	3.14	20500	9.9282	3.47
47895	A	2	438	AO	8/12/2003	0:32	88.6	4.484132	22	3.091	3.08	16700	9.7232	3.32
47896	A	1	438	AO	8/12/2003	0:34	90.5	4.50535	21.4	3.0634	3.26	18000	9.7981	3.28
47897	A	5	438	AC	8/12/2003	0:49	98.1	4.585987	14	2.6391	2.88	18100	9.8037	3.61
48585	A	6	438	AC	8/14/2003	1:42	86.8	4.463607	17.2	2.8449	3.25	16900	9.7351	3.06
48586	A	1	438	AC	11/1/2003	16:42	96.2	4.566429	17.6	2.8679	3.17	18200	9.8092	3.55
49075	A	4	438	AC	12/30/2003	10:18	86.4	4.458988	13.5	2.6027	3.26	17200	9.7527	2.98
49708	A	3	438	AC	4/14/2004	10:08	108.6	4.687671	15.8	2.76	2.79	20800	9.9427	3.22

Table 2 – Severity Adjusted Data

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Figure 1

Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

Percent Viscosity Increase, in transformed units

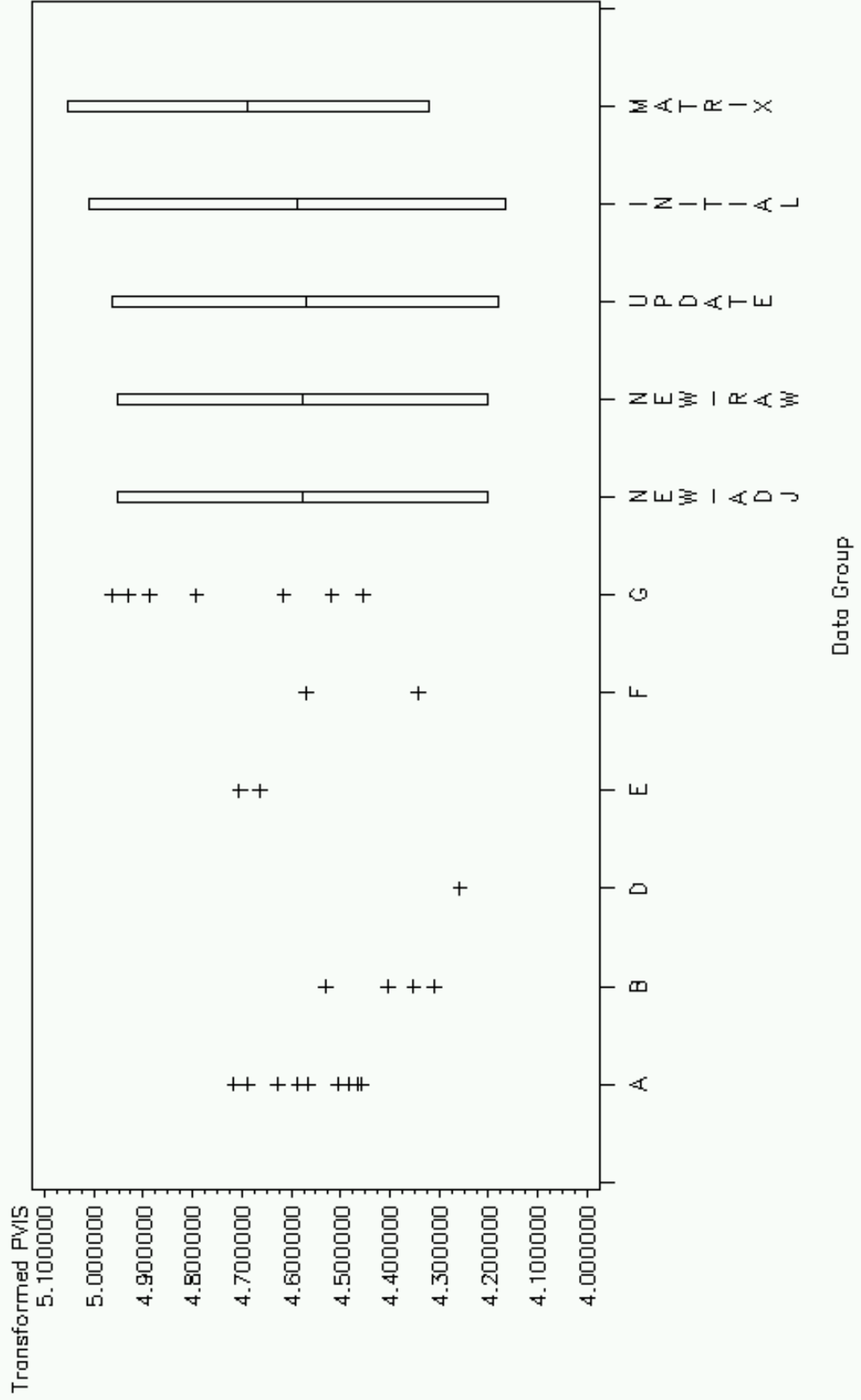


Figure 2

Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

Percent Viscosity Increase, in original units

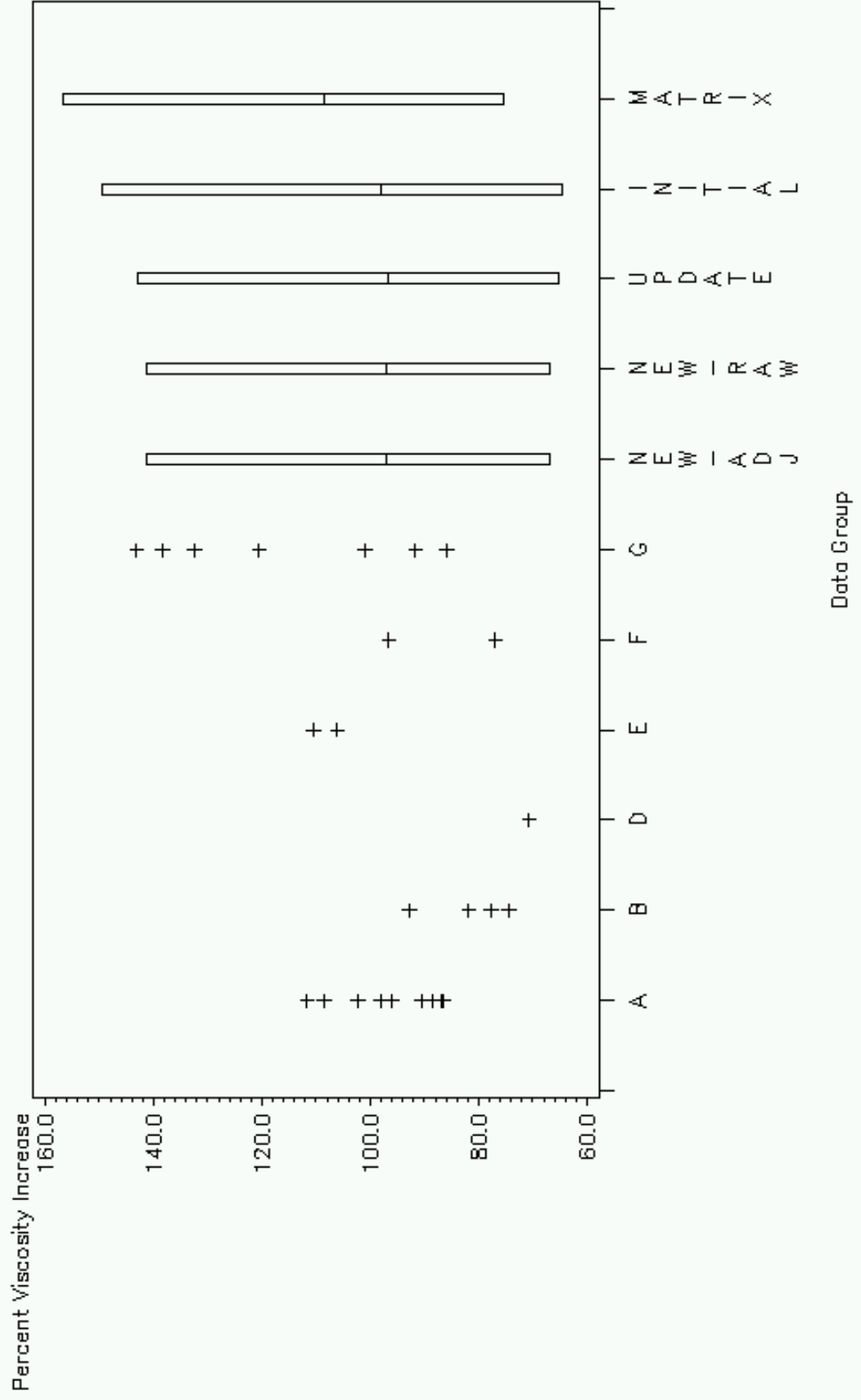
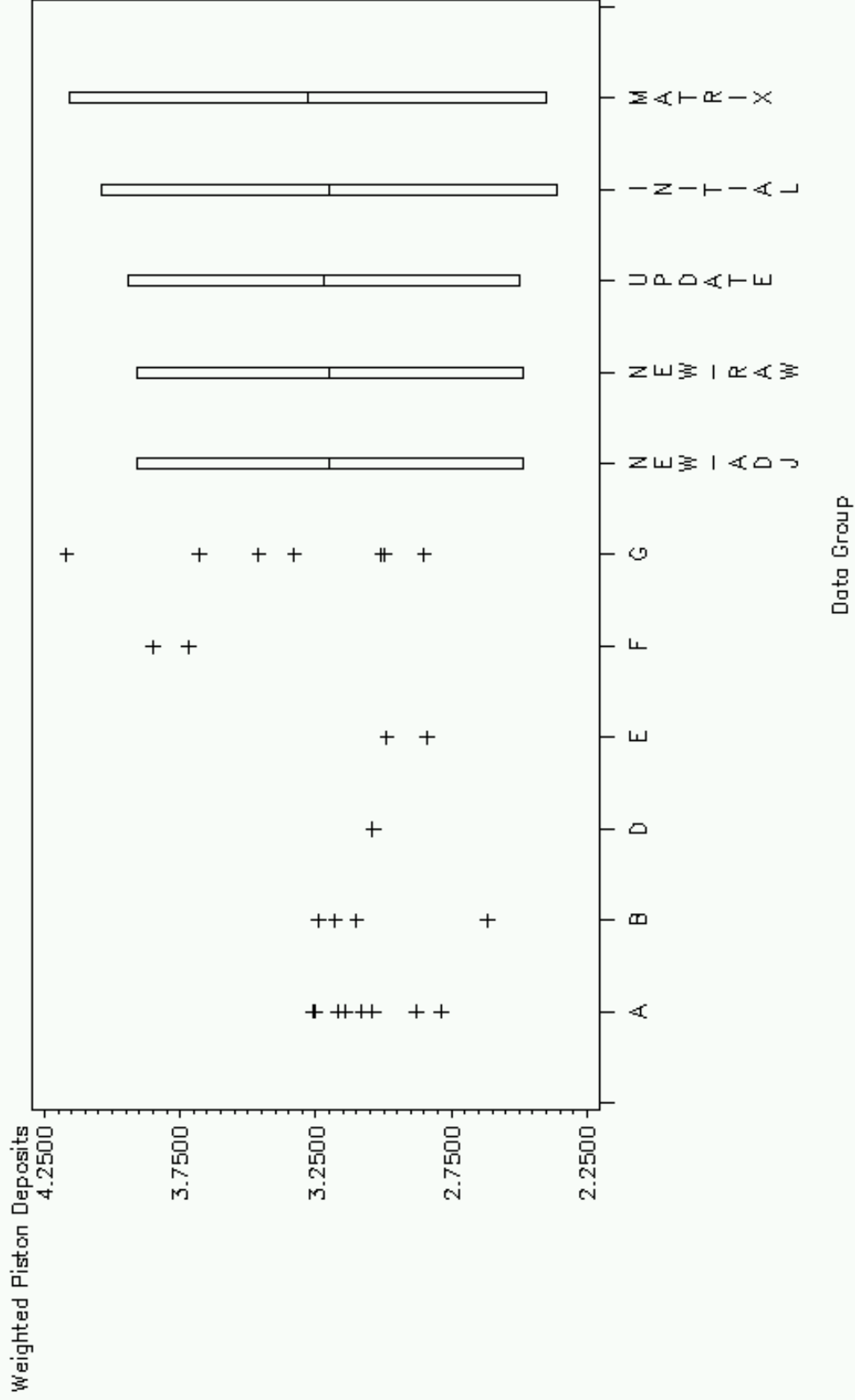


Figure 3

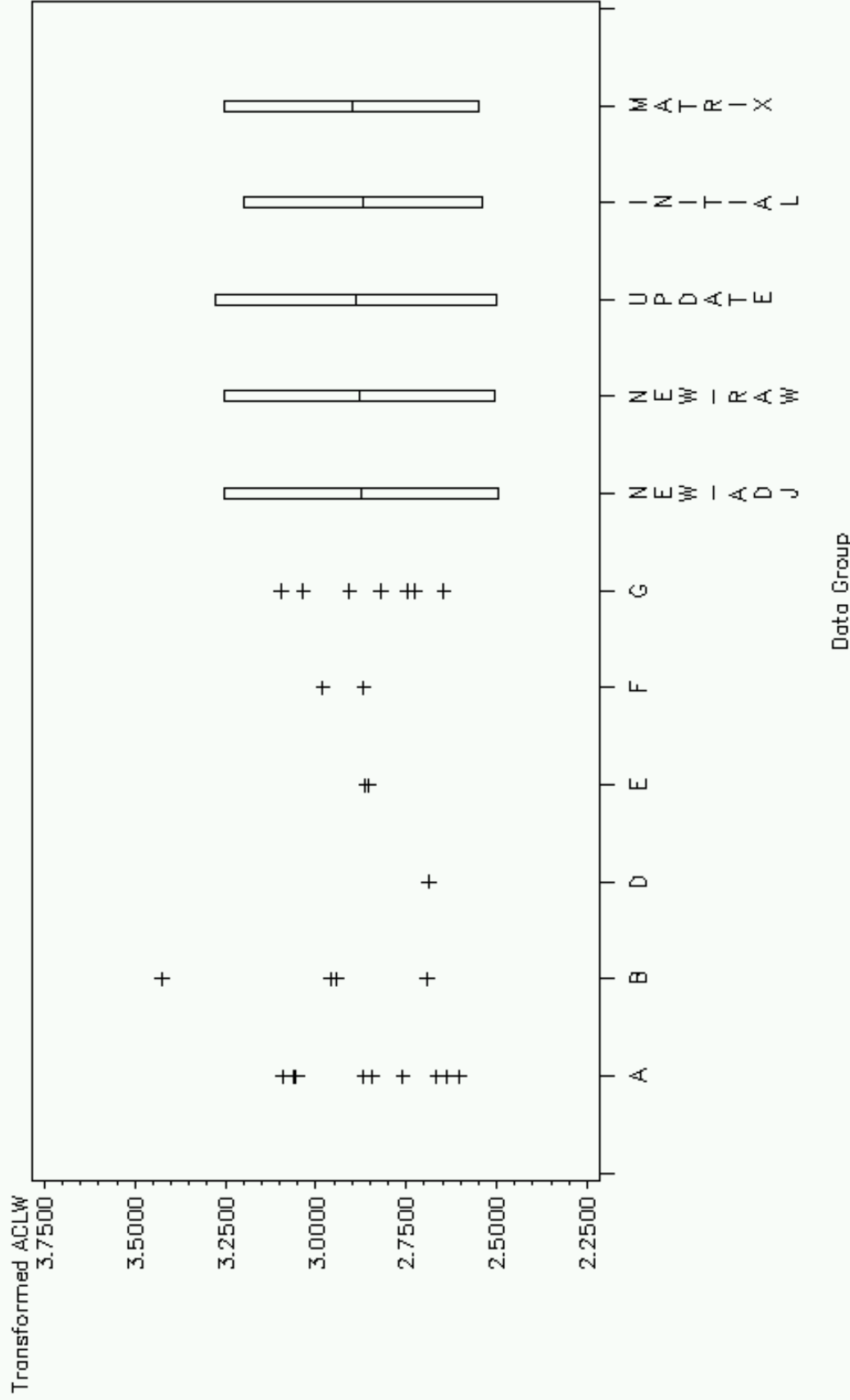
Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

Weighted Piston Deposits, in original units



Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

Average Camshaft & Lifter Wear, in transformed units



Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

Average Camshaft & Lifter Wear, in original units

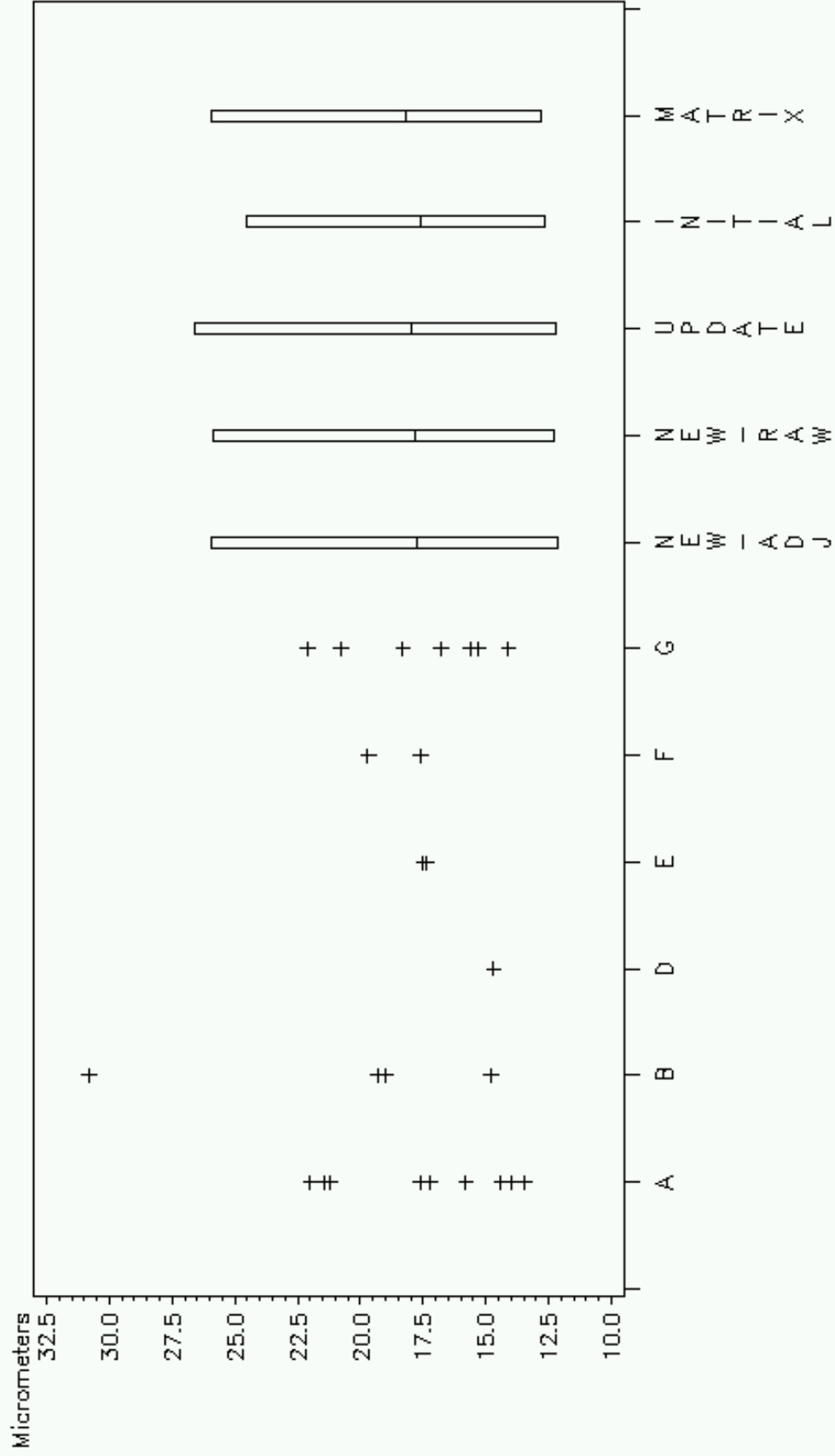


Figure 5

Figure 6

Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

Mini Rotary Viscometer Viscosity, in transformed units

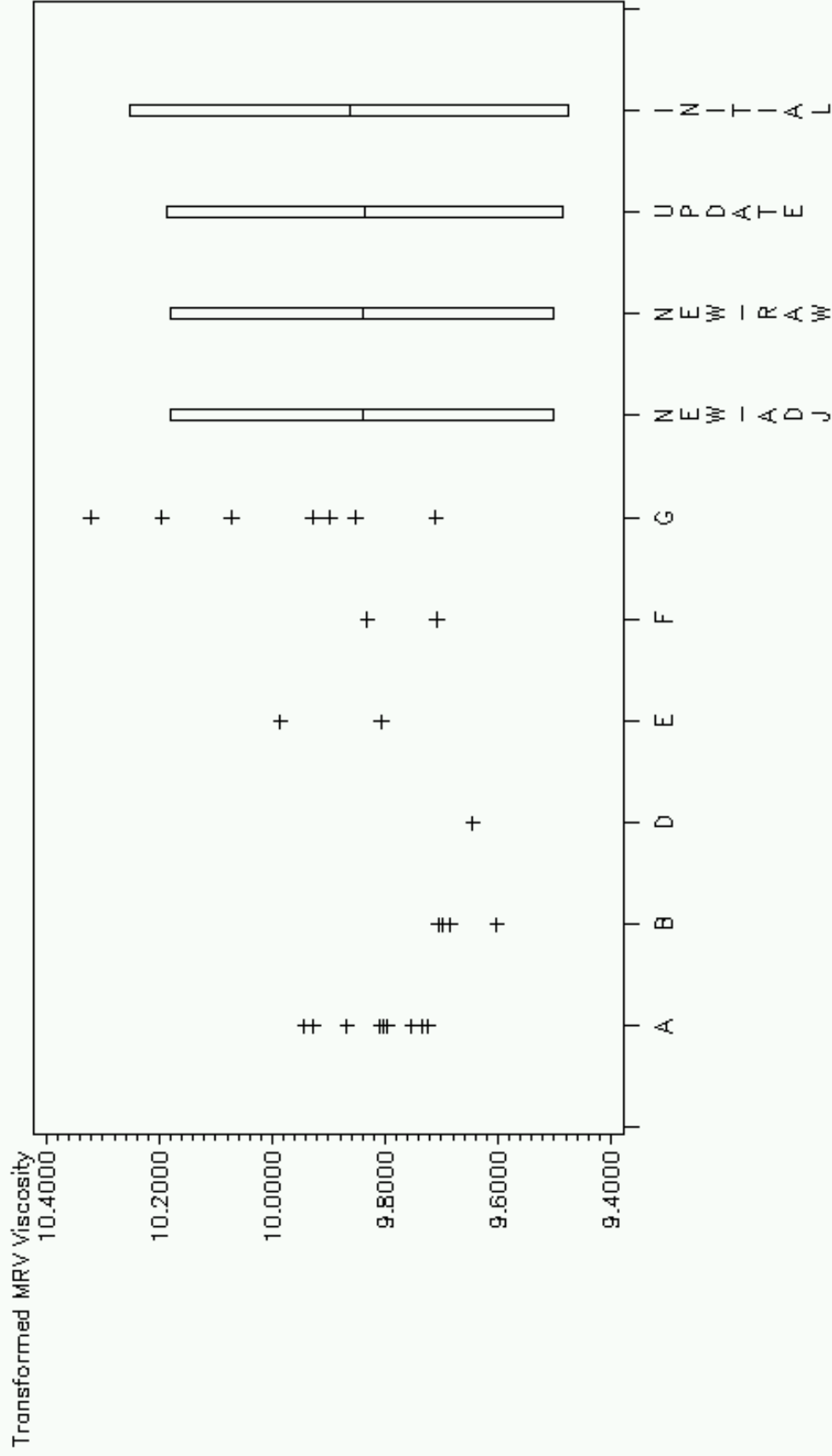


Figure 7

Sequence III G Reference Oil 438 Test Target Data Set and Shewhart Bands

