



# Test Monitoring Center

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MEMORANDUM: 02-010

DATE: February 21, 2002

TO: Sequence IIIF Surveillance Panel

FROM: Michael T. Kasimirsky *Michael T. Kasimirsky*

SUBJECT: Reference Oil 433-1 Updated Test Targets

The TMC has received 11 data points on reference oil 433-1 and as such has sufficient data to update the test targets at this time. The initial test targets for this oil, based on 5 data points, are shown below for comparison purposes:

<i>Initial Reference Oil 433-1 Test Targets</i>		
<i>Parameter</i>	<i>Mean</i>	<i>Standard Deviation</i>
PVIS	0.1700213	0.0433403
APV	9.31	0.242
WPD	4.28	0.826
PV60	3.41045	0.111867

The updated test targets, based on the 11 available data points on this reference oil, are shown below:

<i>Updated Reference Oil 433-1 Test Targets</i>		
<i>Parameter</i>	<i>Mean</i>	<i>Standard Deviation</i>
PVIS	0.1684402	0.0402156
APV	9.27	0.281
WPD	4.27	0.557
PV60	3.55682	0.298299

Any applicable severity adjustments were applied to the data prior to target generation. These targets will be updated again when the TMC has 20 and 30 data points available on this reference oil.

These targets, along with targets based on the raw data, the initial test targets on reference oil 433-1, the targets for reference oil 433, and the individual data points are displayed graphically in the six attached plots. The first two plots show Percent Viscosity Increase at 80 hours, in transformed and reported units respectively. The third shows Weighted Piston Deposits in reported units and the fourth shows Average Piston Varnish in reported units. The fifth and sixth plots show Percent Viscosity Increase at 60 hours (the IIIF-HD parameter) in transformed and reported units, respectively. On the last page are two tables showing the individual reference oil test results used in generation of these targets. The first table is the raw, unadjusted data as reported to the TMC and the second table is the severity adjusted data used to calculate the test targets. These new targets are effective for all tests completed on or after March 1, 2002.

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MTK/mtk

Attachments

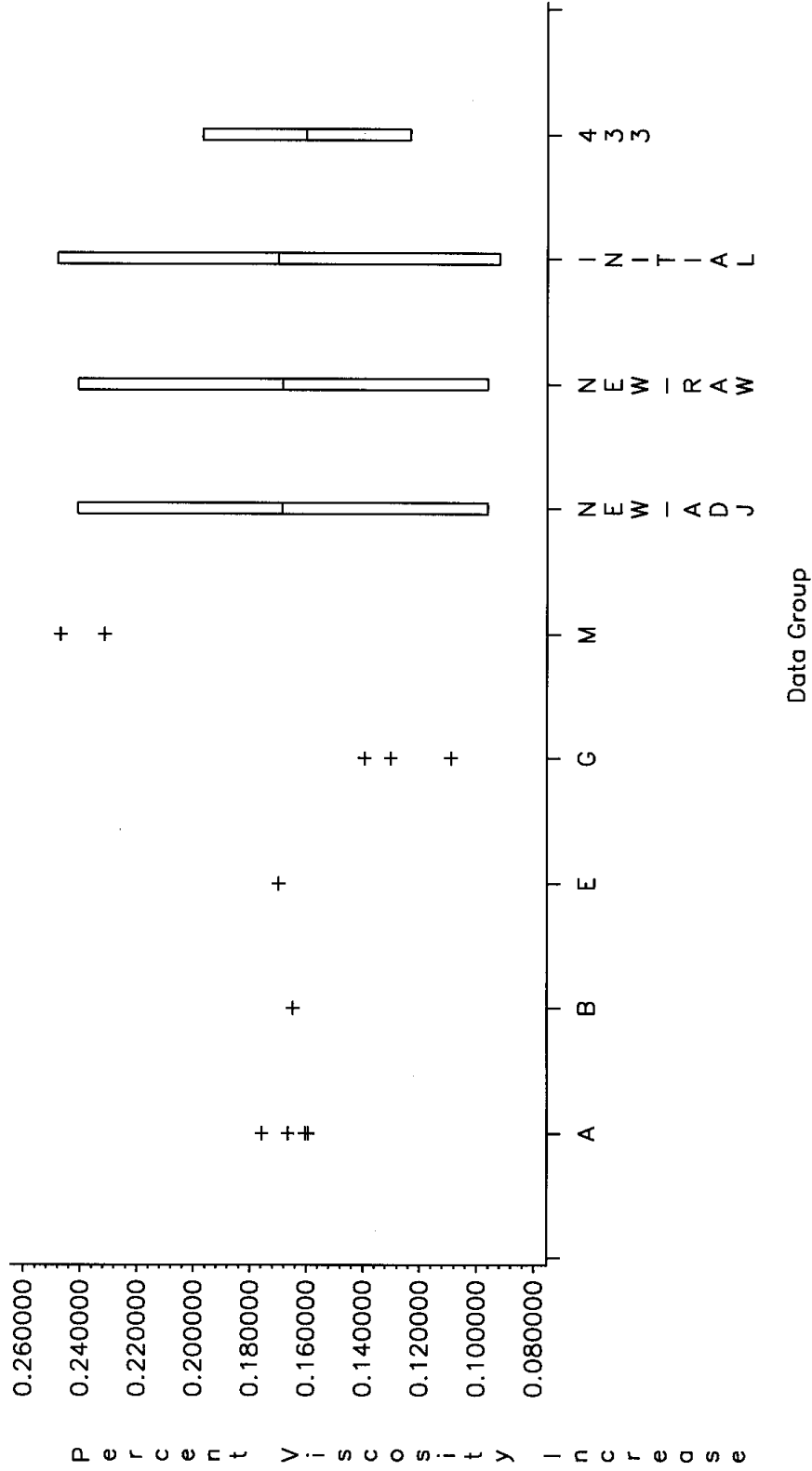
c: John L. Zalar, TMC

<ftp://www.tmc.astm.cmri.cmu.edu/docs/gas/sequenceiii/memos/mem02-010.pdf>

Distribution: email

# Sequence IIF Reference Oil 433-1 Test Target Data Set and Shewhart Bands

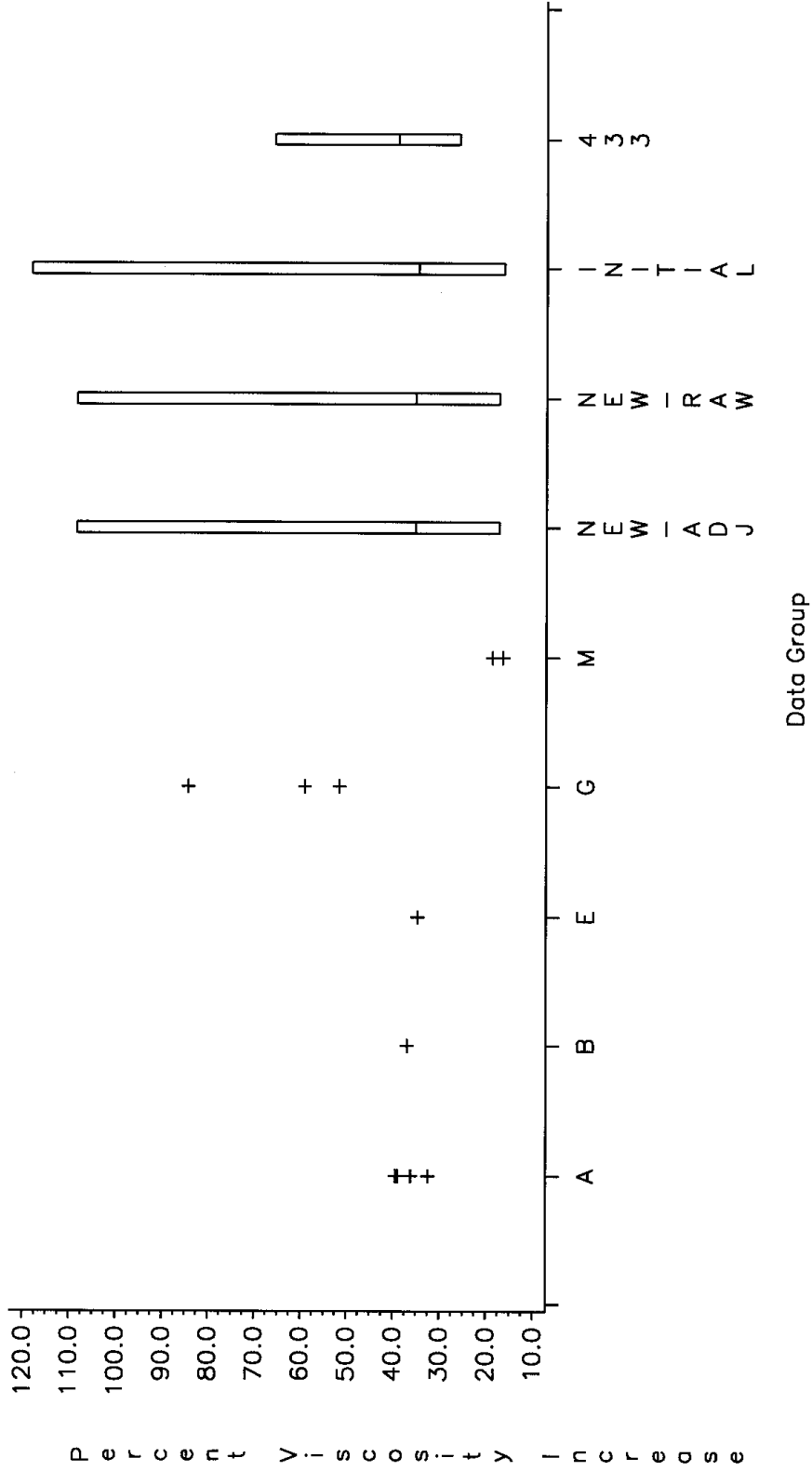
Percent Viscosity Increase, in transformed units



# Sequence IIF Reference Oil 433-1

## Test Target Data Set and Shewhart Bands

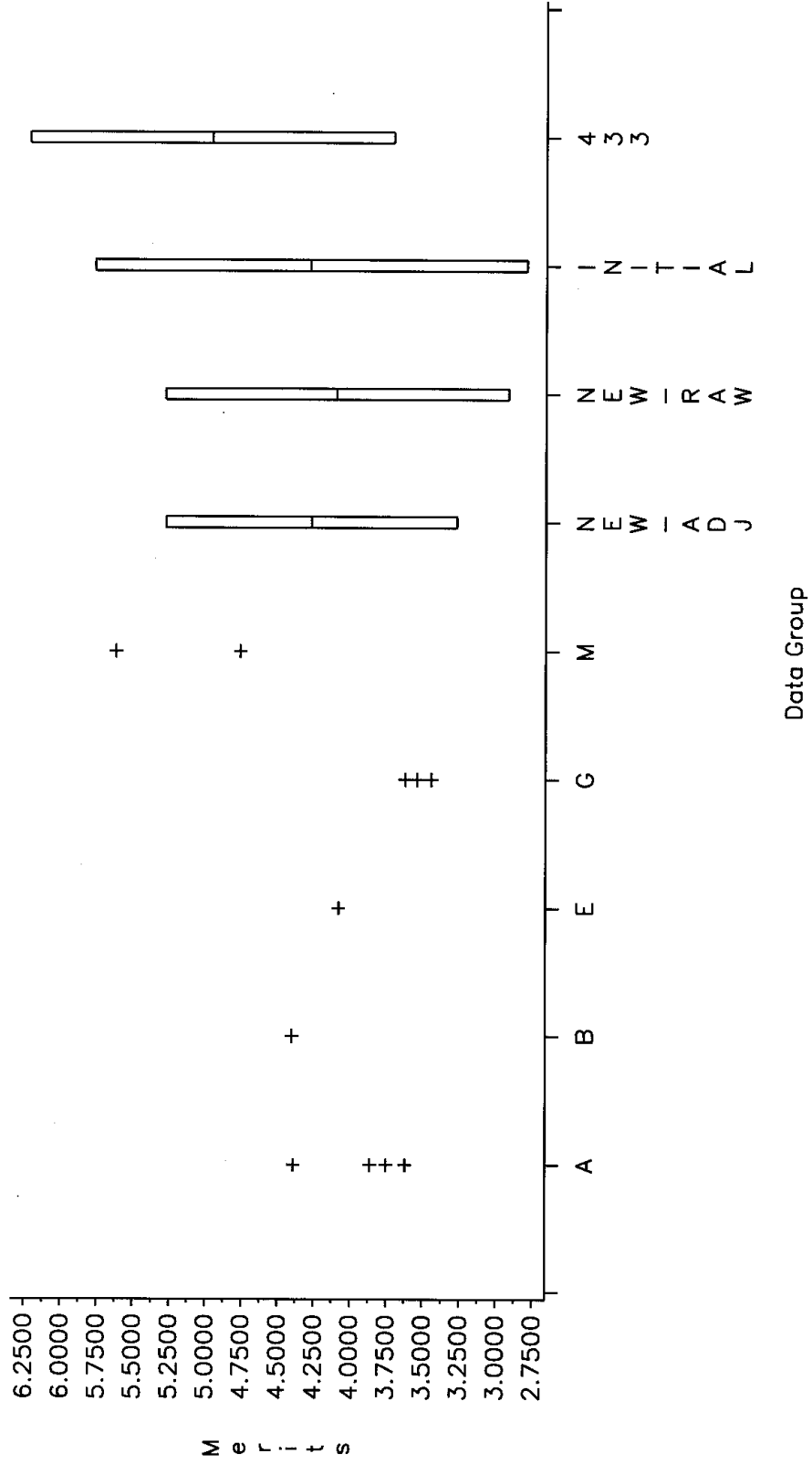
Percent Viscosity Increase, in original units



# Sequence IIF Reference Oil 433-1

## Test Target Data Set and Shewhart Bands

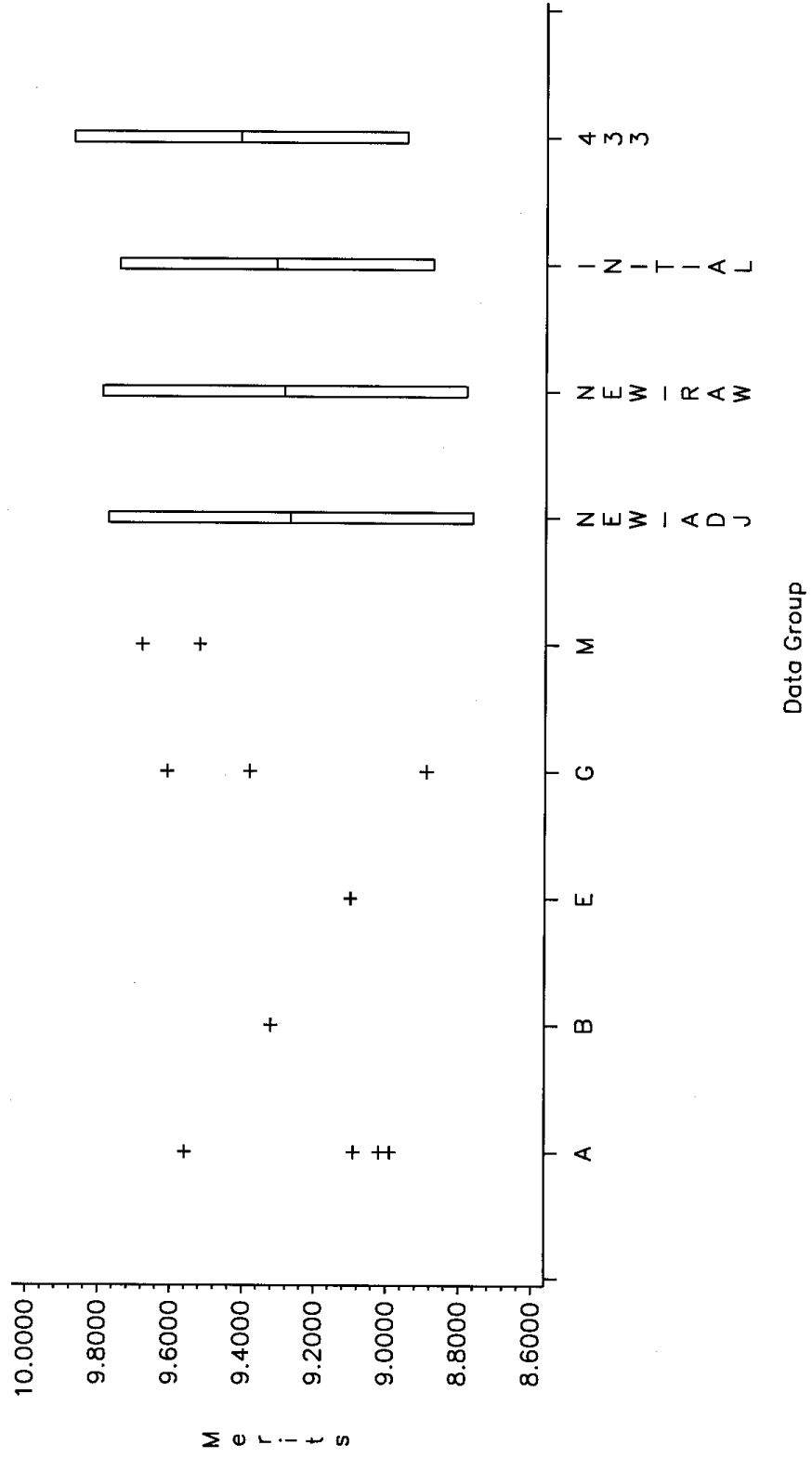
Weighted Piston Deposits, in reported units



# Sequence IIF Reference Oil 433-1

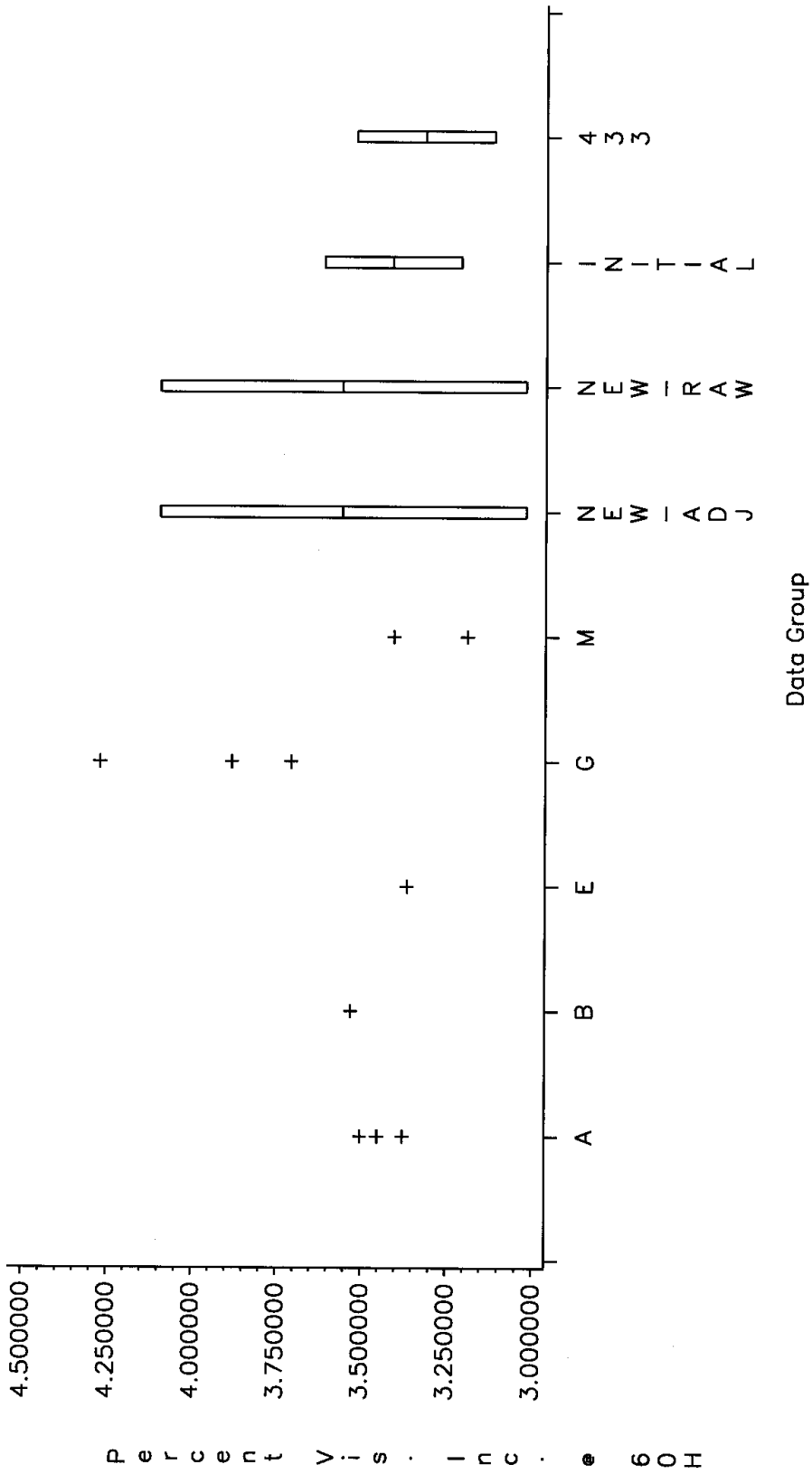
## Test Target Data Set and Shewhart Bands

Average Piston Varnish, in reported units



# Sequence IIIF Reference Oil 433-1 Test Target Data Set and Shewhart Bands

Percent Viscosity Increase @ 60H, in transformed units



# Sequence III F Reference Oil 433-1 Test Target Data Set and Shewhart Bands

Percent Viscosity Increase @ 60H, in original units

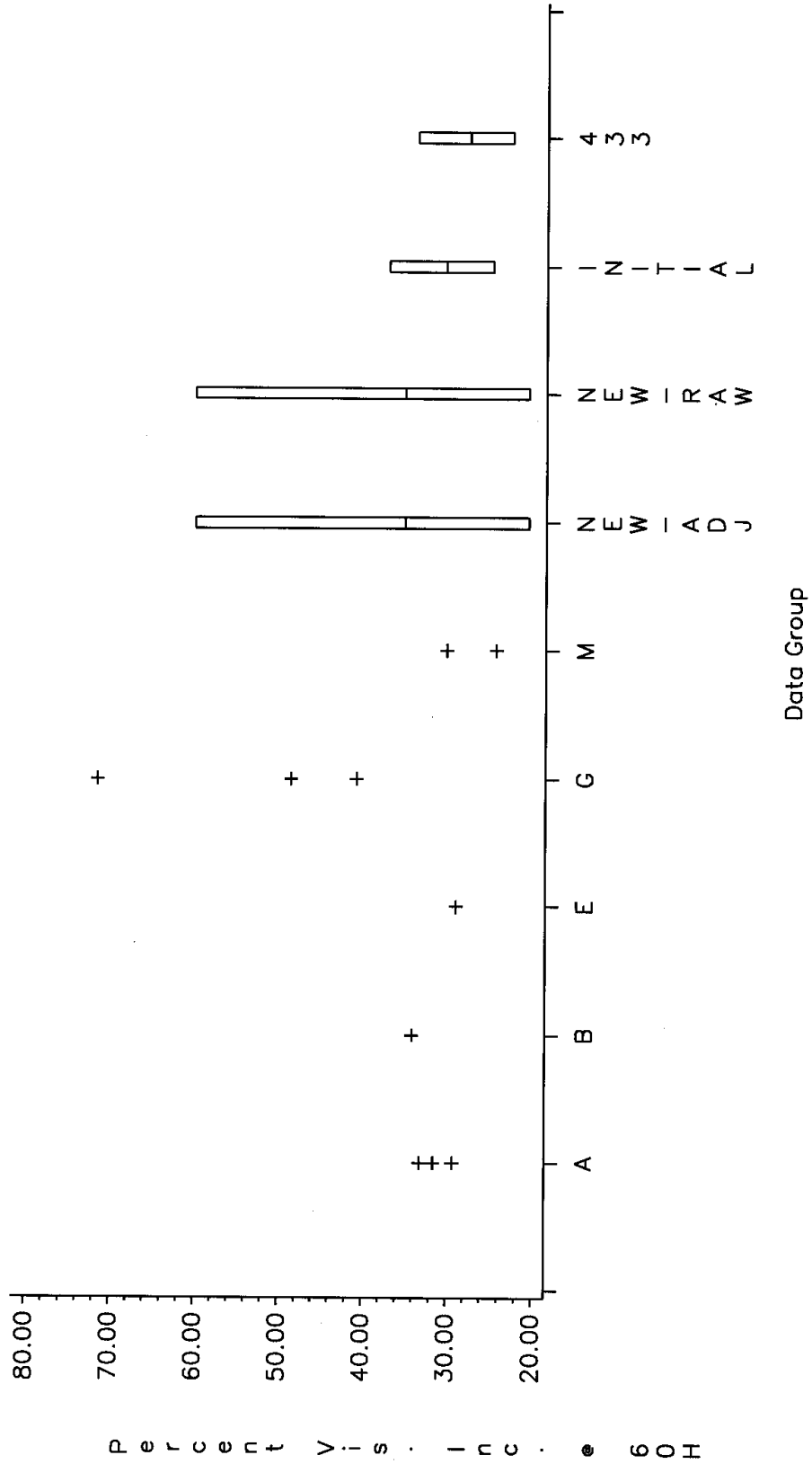




Table 1 – Unadjusted Reference Oil 433-I Data

OILCODE	LTMSLAB	LTMSAPP	IND	VAL	LTMSDATE	LTMSTIME	PVIS	PVISTI	APV	WPD	PV60	ACLW	SACLW	OILCON
40351	E	1	433-1	AC	8/17/2001	3:57	34.7	0.16976	9.1	4.08	28.93	17.1	17.0	2.29
40354	G	1	433-1	OC	8/18/2001	6:10	84.2	0.108979	9.38	3.44	71.48	23.3	14.2	4.48
42873	G	1	433-1	AC	12/31/2001	11:26	51.5	0.139347	8.89	3.62	40.71	24.6	9.5	3.35
42874	G	4	433-1	AC	1/28/2002	6:10	59	0.130189	9.61	3.54	48.5	48.6	7.2	4.09
40364	M	2	433-1	AC	8/17/2001	6:01	18.7	0.231249	9.68	5.62	30.09	8.0	7.6	4.16
40365	M	1	433-1	AC	2/18/2002	5:07	16.4	0.246932	9.52	4.76	24.26	11.9	11.9	3.46
40366	B	2	433-1	AC	8/19/2001	1:48	36.9	0.164622	9.32	4.4	34.1	14.9	15.1	3.51
40378	A	7	433-1	OC	8/16/2001	18:42	32.4	0.175682	9.09	3.86	31.56	58.0	46.9	2.91
42144	A	7	433-1	OC	8/28/2001	21:06	39.4	0.159313	8.99	4.39	31.52	36.5	19.0	3.15
42146	A	5	433-1	AC	12/9/2001	1:08	38.9	0.160334	9.56	3.75	33.16	8.1	8.0	3.06
42147	A	6	433-1	AC	12/10/2001	0:06	36.1	0.166436	9.02	3.62	29.27	16.6	16.5	3.3

Table 2 – Severity Adjusted Reference Oil 433-I Data

OILCODE	LTMSLAB	LTMSAPP	IND	VAL	LTMSDATE	LTMSTIME	PVIS	PVISTI	APV	WPD	PV60	ACLW	SACLW	OILCON
40351	E	1	433-1	AC	8/17/2001	3:57	34.7	0.16976	9.1	4.08	28.93	17.1	17.0	2.29
40354	G	1	433-1	OC	8/18/2001	6:10	84.2	0.108979	9.18	3.44	71.48	23.3	14.2	4.48
42873	G	1	433-1	AC	12/31/2001	11:26	51.5	0.139347	8.89	4.05	40.71	24.6	9.5	3.35
42874	G	4	433-1	AC	1/28/2002	6:10	59	0.130189	9.61	4.12	48.5	48.6	7.2	4.09
40364	M	2	433-1	AC	8/17/2001	6:01	18.7	0.231249	9.68	5.62	30.09	8.0	7.6	4.16
40365	M	1	433-1	AC	2/18/2002	5:07	16.4	0.246932	9.52	4.76	24.26	11.9	11.9	3.46
40366	B	2	433-1	AC	8/19/2001	1:48	36.9	0.164622	9.32	4.4	34.1	14.9	15.1	3.51
40378	A	7	433-1	OC	8/16/2001	18:42	32.4	0.175682	9.09	3.86	31.56	58.0	46.9	2.91
42144	A	7	433-1	OC	8/28/2001	21:06	39.4	0.159313	8.99	4.39	31.52	36.5	19.0	3.15
42146	A	5	433-1	AC	12/9/2001	1:08	38.9	0.160334	9.56	4.19	33.16	8.1	8.0	3.06
42147	A	6	433-1	AC	12/10/2001	0:06	36.1	0.166436	9.02	4.06	29.27	16.6	16.5	3.3