

## Oil Seal Compatibility Test (OSCT) Surveillance Panel Meeting Minutes

Troy, MI (Automation Alley)

11/2/2011

D. Bell

### Participants:

S. Parke (TMC)	A. Athey (Volvo)	T. Bryson (Volvo)	J. D'harte (AAM)
J. Keiter (Lz)	A. Comfort (Army)	B. Dwornick (Army)	S. Eliot (XOM)
G. Greene (Lz)	B. Grinfield (SWRI)	L. Hamilton (Lz)	S. Higuichi (Lz)
J. Gropp (Lz)	B. McGlone (Meritor)	T. Muransky (Meritor)	B. Kearney (Afton)
D. Bell (Afton)	C. Knight (TEI)	P. Kanga (XOM)	C. Koglin (Afton)
T. Marougy (Eaton)	D. Smith (Intertek)	W. Venhoff (Lz)	K. Zreik (GM)
C. O'Brien (GM)			

A motion made by T. Marougy and 2<sup>nd</sup> by B. Grinfield was unanimously approved (9 approved) to approve the OSCT Surveillance Panel meeting minutes from the 5/18/2011 and 6/9/2011 available on the TMC website. An OSCT letter 11-1 was distributed on 9/1/2011 to discontinue mailing paper copies of the final test reports to TMC.

There are multiple baths available at both Lz and SWRI with no known related "stand" bath problems or severity issues.

The Test Engineering Institute (TEI) has the approximate seal inventory:

- PA 343: 18 slabs
- PA344: 102 slabs
- PA345: 300 slabs ordered to arrive ~11/25
- FL383: 178 (approved on 11/2/2011)
- FL384: TEI instructed to place order from FNOK
- NI337: 0 slabs
- NI338: 278 slabs (approved on 11/2/2011)

TMC-169 has been identified as a J2360 oil that can be used as a replacement to the discontinued TMC reference oil 161-1. TMC has depleted their inventory of 161-1, but both test labs have enough for at least two months. TMC has 5 drums of TMC 169 and have provided some to both test labs. Both test labs have collected about twenty data points on reference oil 169 along with reference oil 161-1. The Test Monitoring Center (TMC) proposed tentative acceptance bands for reference oil 169 until at least 30 data points are collected, and then a Surveillance Panel meeting will be held to firm-up the bands. These acceptance bands are shown in the Appendix. Both labs have been instructed to stop the side-by-

side testing with reference oil 169 to conserve slabs of elastomer and oil until reference oil 161-1 is depleted.

The qualification data conducted by Lz and SWRI as compiled by the TMC for the new batch of fluoroelastomer, FL383 (data in Appendix), was reviewed by the Panel. The % elongation and volume change, as well as shore hardness change for FL383 in both 160-1 and 161-1 reference oils fell within the Shewhart acceptance bands. A motion passed unanimously (9 approved) that was made by D. Bell and 2<sup>nd</sup> by B. Grinfield: Effective immediately approve FL383 batch for ASTM D5662 testing. TEI was instructed to release FL383 for sale as orders are received.

The Lz and SWRI qualification data as compiled by the TMC for the new batch of nitrile, NI338 (data in Appendix), was also reviewed by the Panel. The % elongation and volume change, as well as shore hardness change for NI338 in both 168 and 161-1 reference oils fell within the acceptance bands. A motion passed unanimously (9 approved) that was made by D. Bell and 2<sup>nd</sup> by B. Grinfield: Effective immediately approve NI338 batch for ASTM D5662 testing. TEI was instructed to release NI338 for sale.

OH Technologies in Ohio was identified as a potential alternate seal supplier with many years of experience in the auto gear seal business with confidence they can supply seals to meet our needs. However, we have decided not to pursue an alternate supplier at this time<sup>3</sup> since FNOK continues to be a reliable supplier, and we don't want to jeopardize our good working relationship with them.

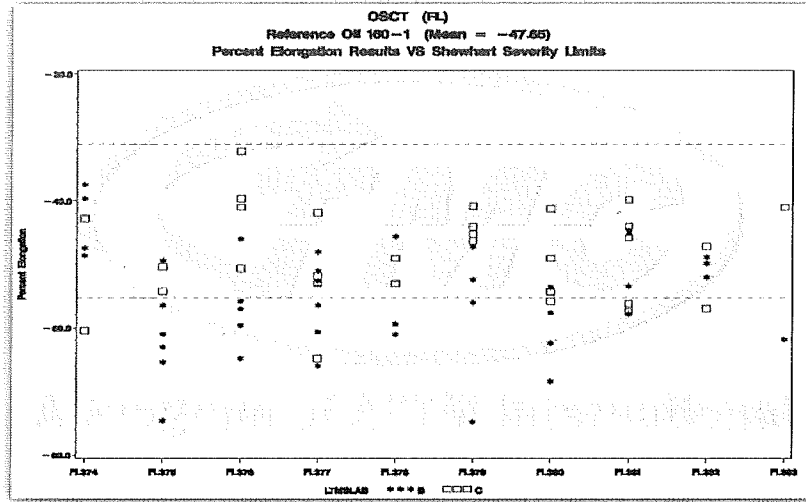
Meeting adjourned at 2:15 pm on 11/5/2011.

# **Appendix**

**OSCT Surveillance Panel Meeting**

**11/2/2011**

## FL383: % Elongation in 160-1

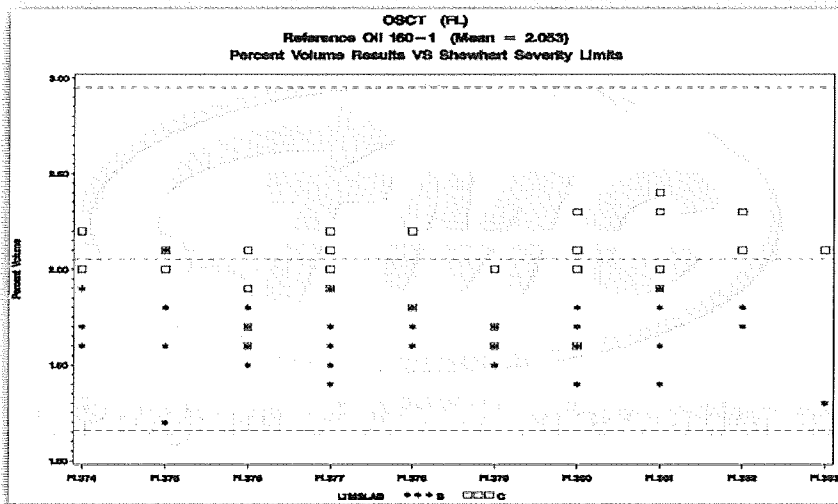


Data from both labs within Shewhart limits

OSCT SP Meeting

1

## FL383: % Volume in 160-1

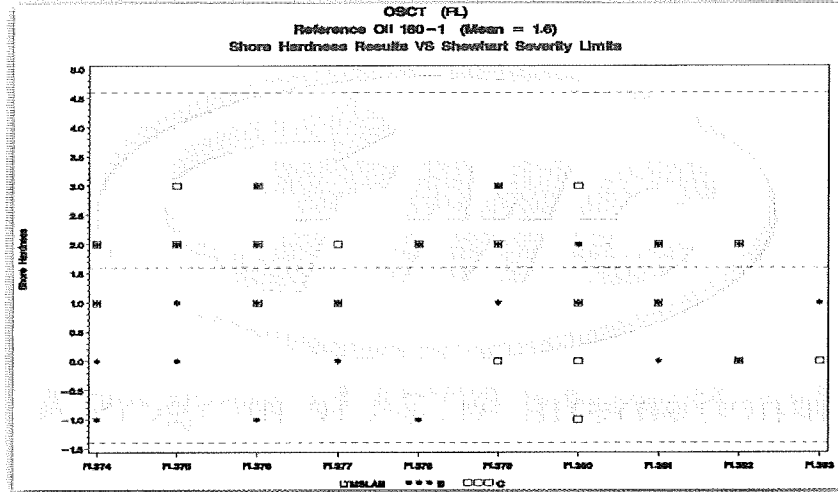


Data from both labs within Shewhart limits

OSCT SP Meeting

2

## FL383: Shore Hardness in 160-1

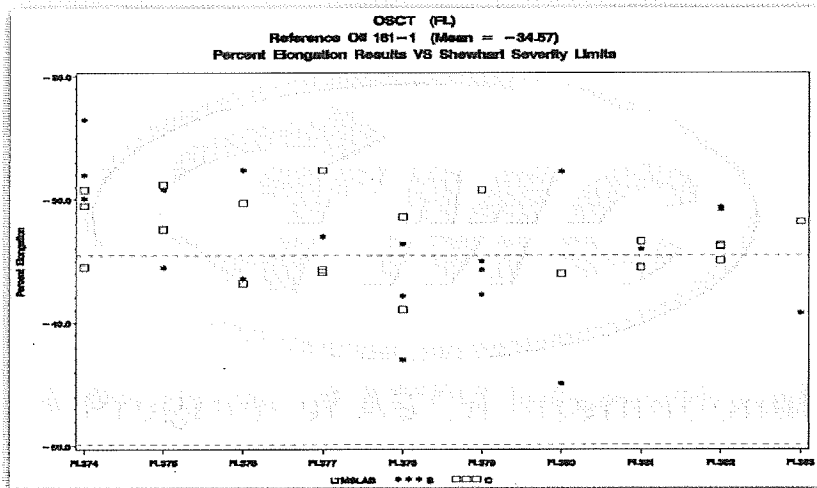


Data from both labs within Shewhart limits

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3

## FL383: % Elongation in 161-1

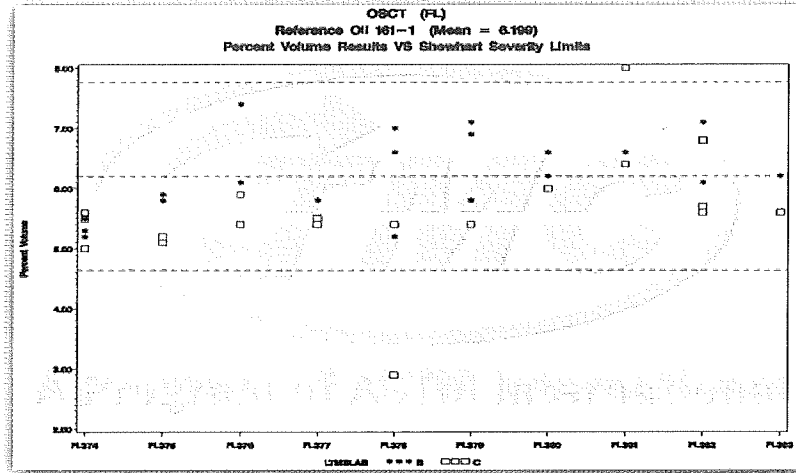


Data from both labs within Shewhart limits

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4

### FL383: % Volume in 161-1

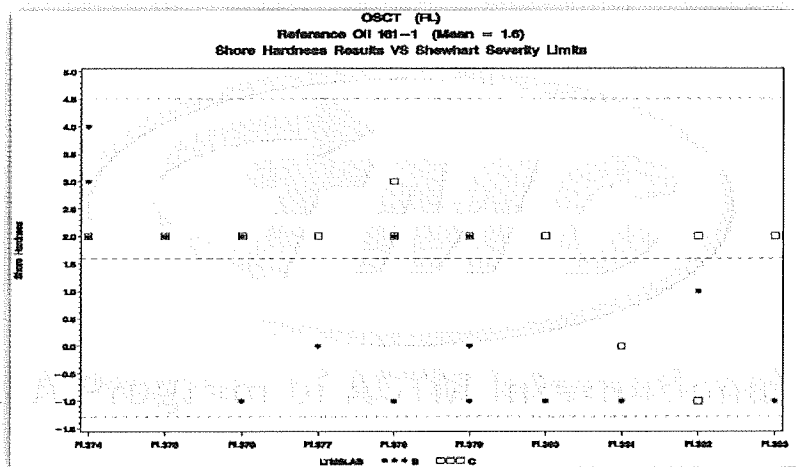


Data from both labs within Shewhart limits

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5

### FL383: Shore Hardness in 161-1

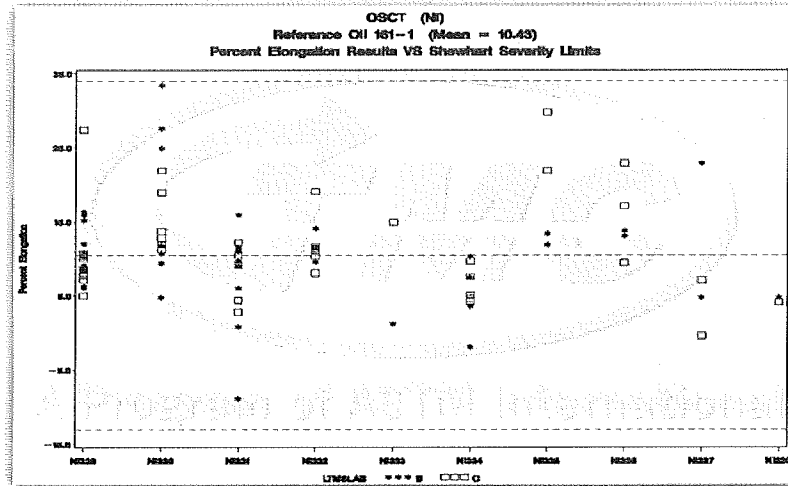


Data from both labs within Shewhart limits

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6

## NI338: % Elongation in 161-1

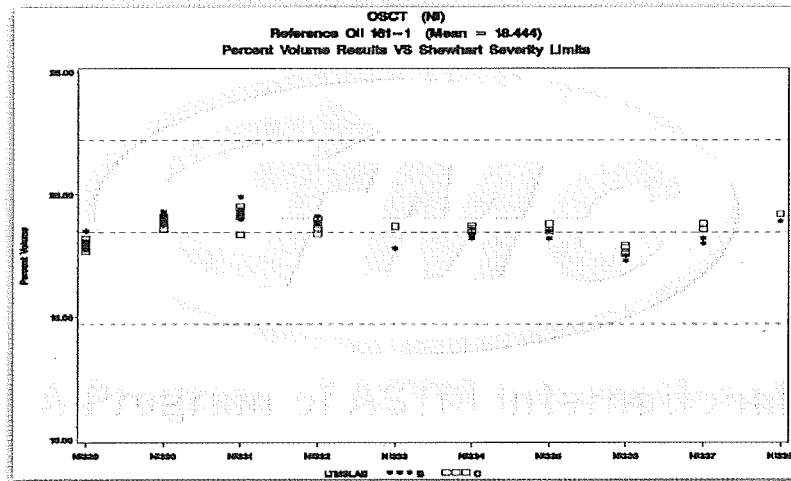


Data from both labs within Shewhart limits

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7

## NI338: % Volume in 161-1

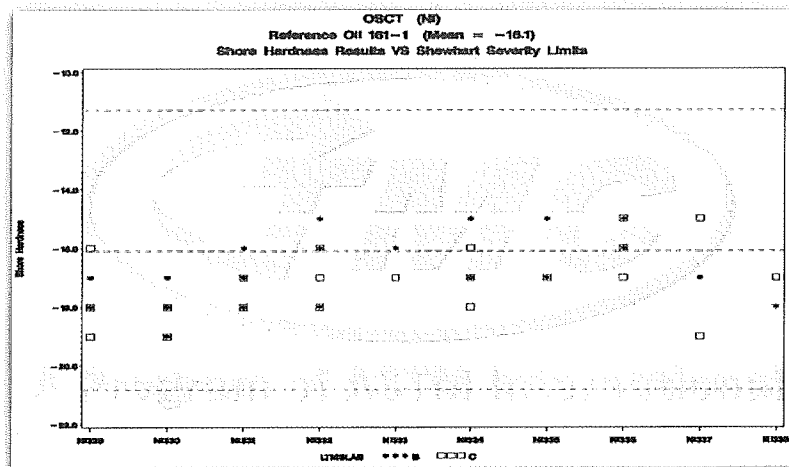


Data from both labs within Shewhart limits

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8

## NI338: Shore Hardness in 161-1

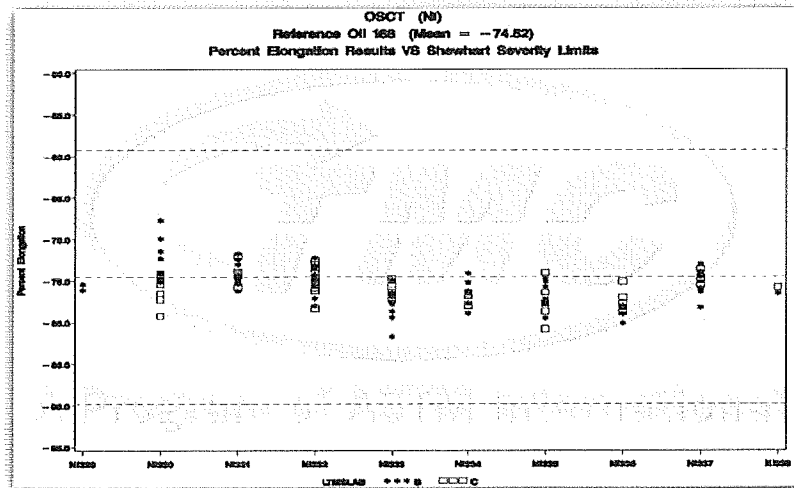


Data from both labs within Shewhart limits

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9

## NI338: % Elongation in 168



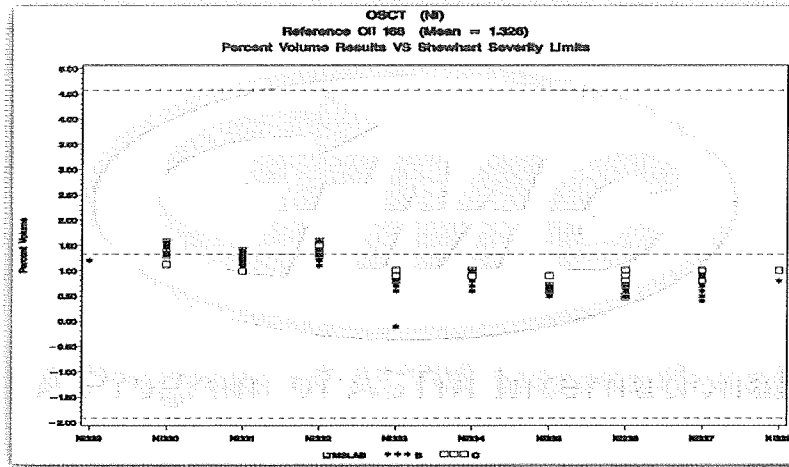
Data from both labs within Shewhart limits

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10



## NI338: % Volume in 168

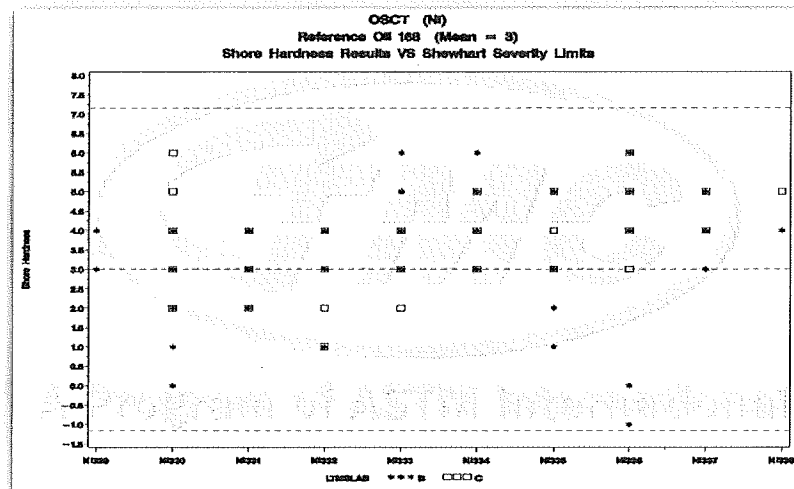


Data from both labs within Shewhart limits

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11

## NI222: Shore Hardness in 168



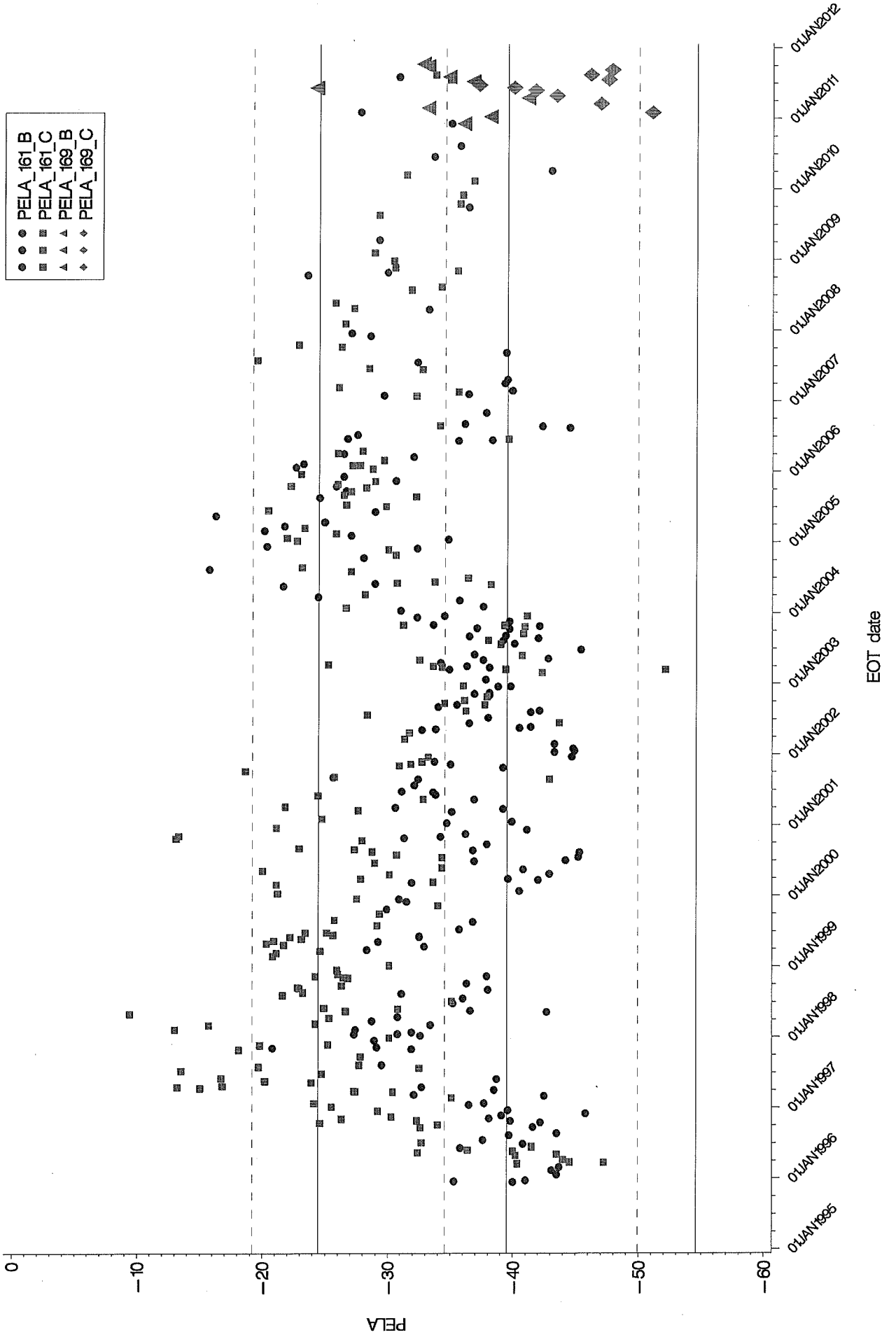
Data from both labs within Shewhart limits

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12

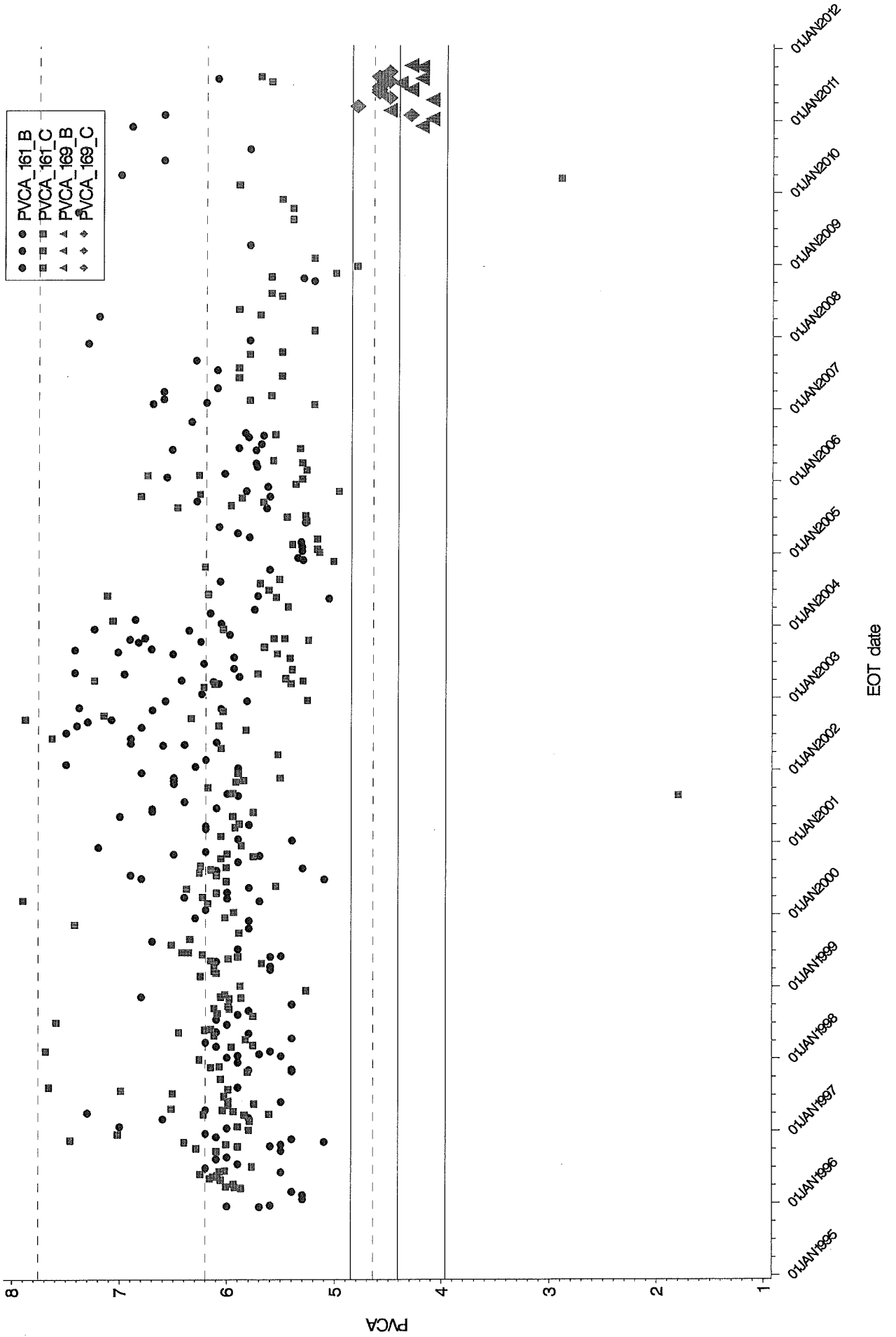
# Fluoroelastomer Percent Elongation

Target = -39.52; STD = 6.8513



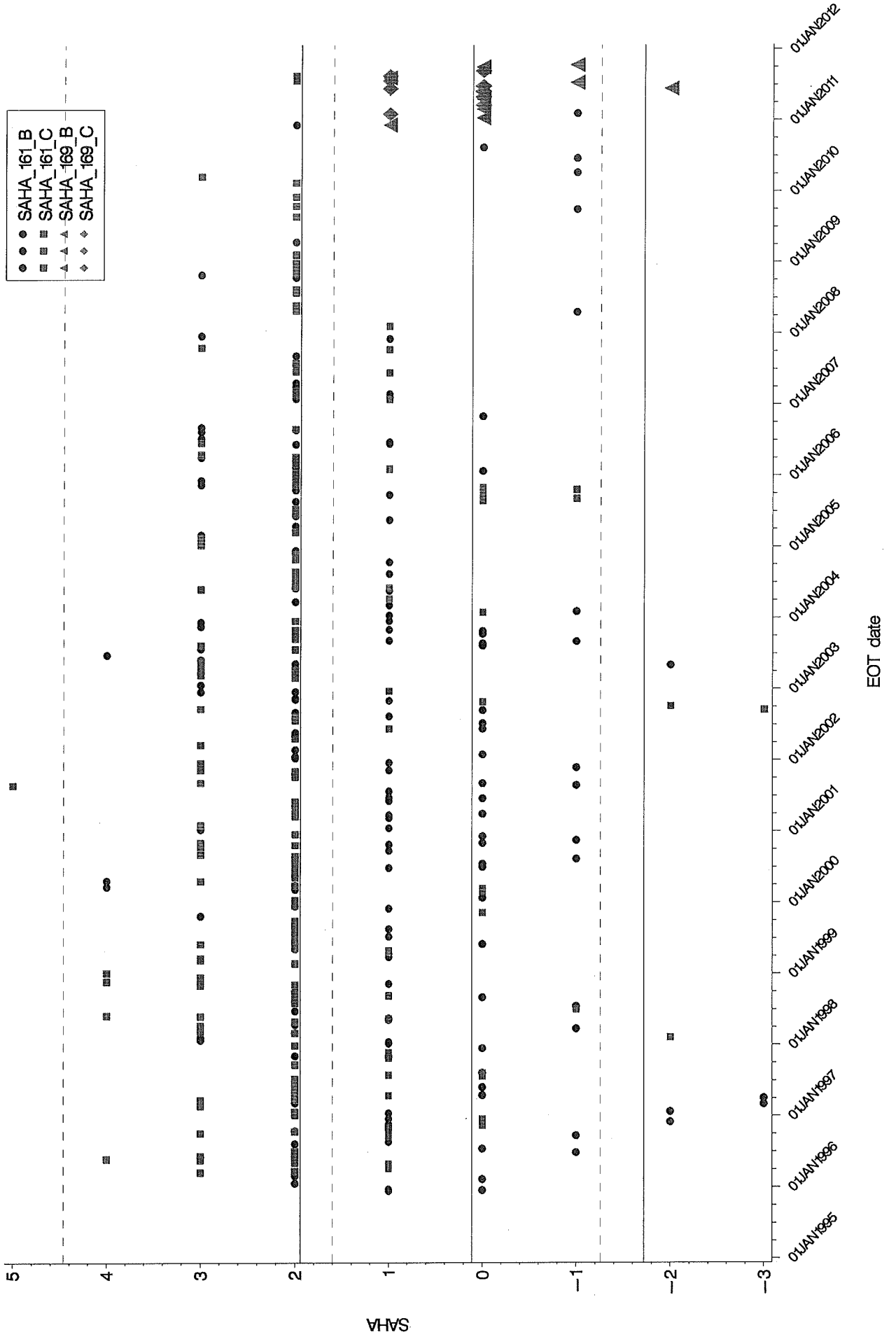
# Fluoroelastomer Percent Volume Change

Target = 4.4056; STD = 0.2014



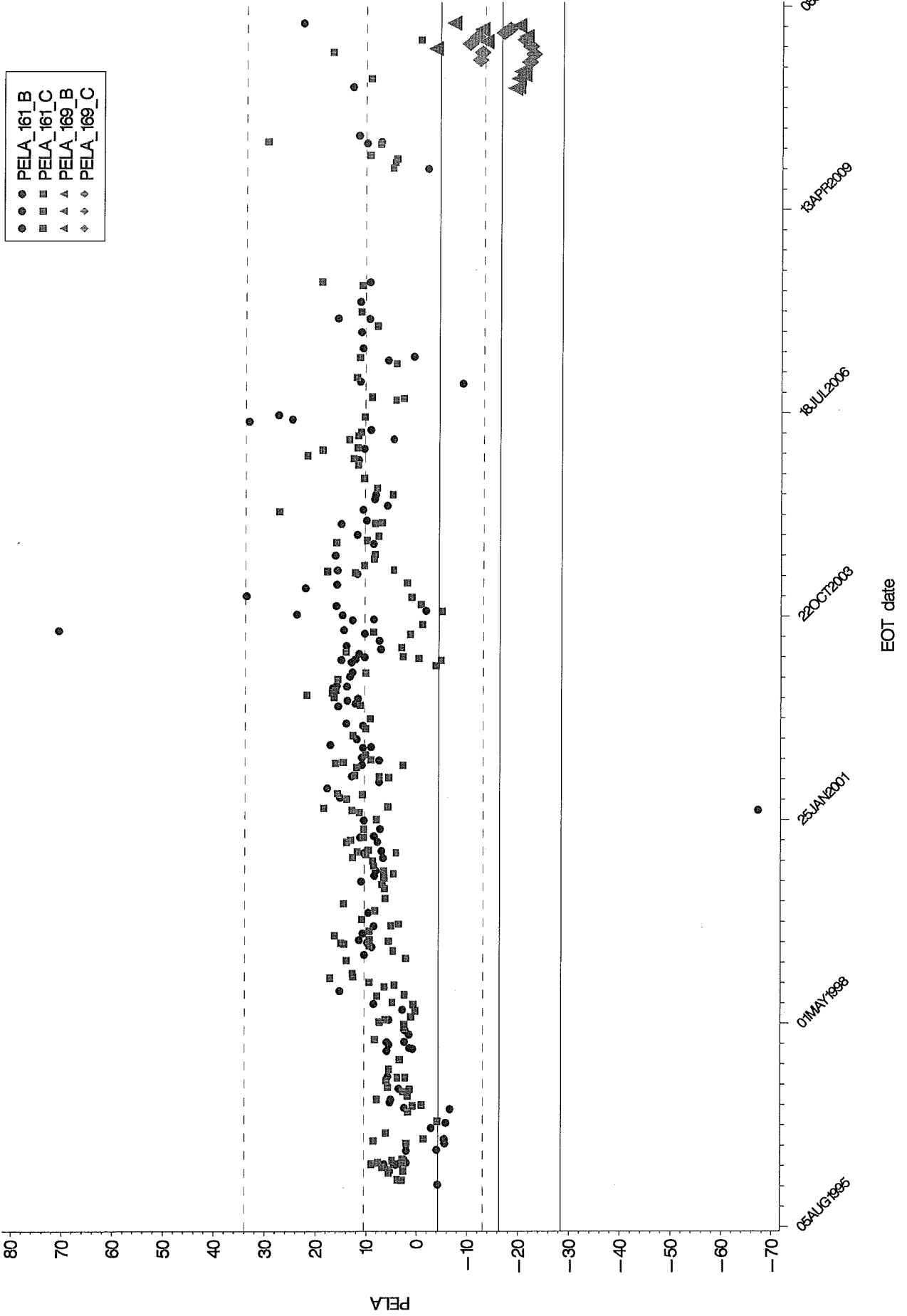
# Fluoroelastomer Points Hardness Change

Target = 0.1111; STD = 0.8324



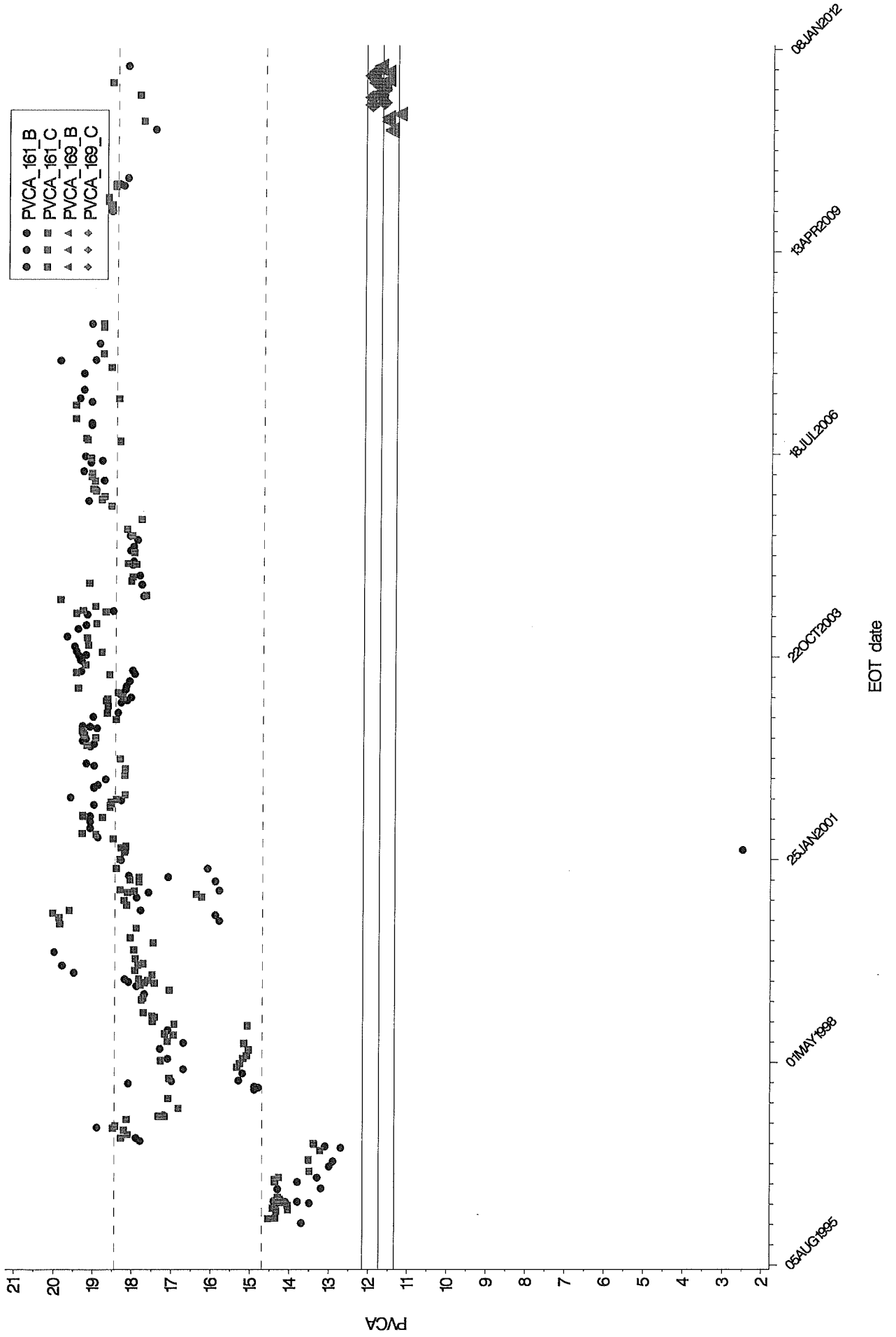
# Nitrile Percent Elongation

Target = -16.36; STD = 5.4667



# Nitrile Percent Volume Change

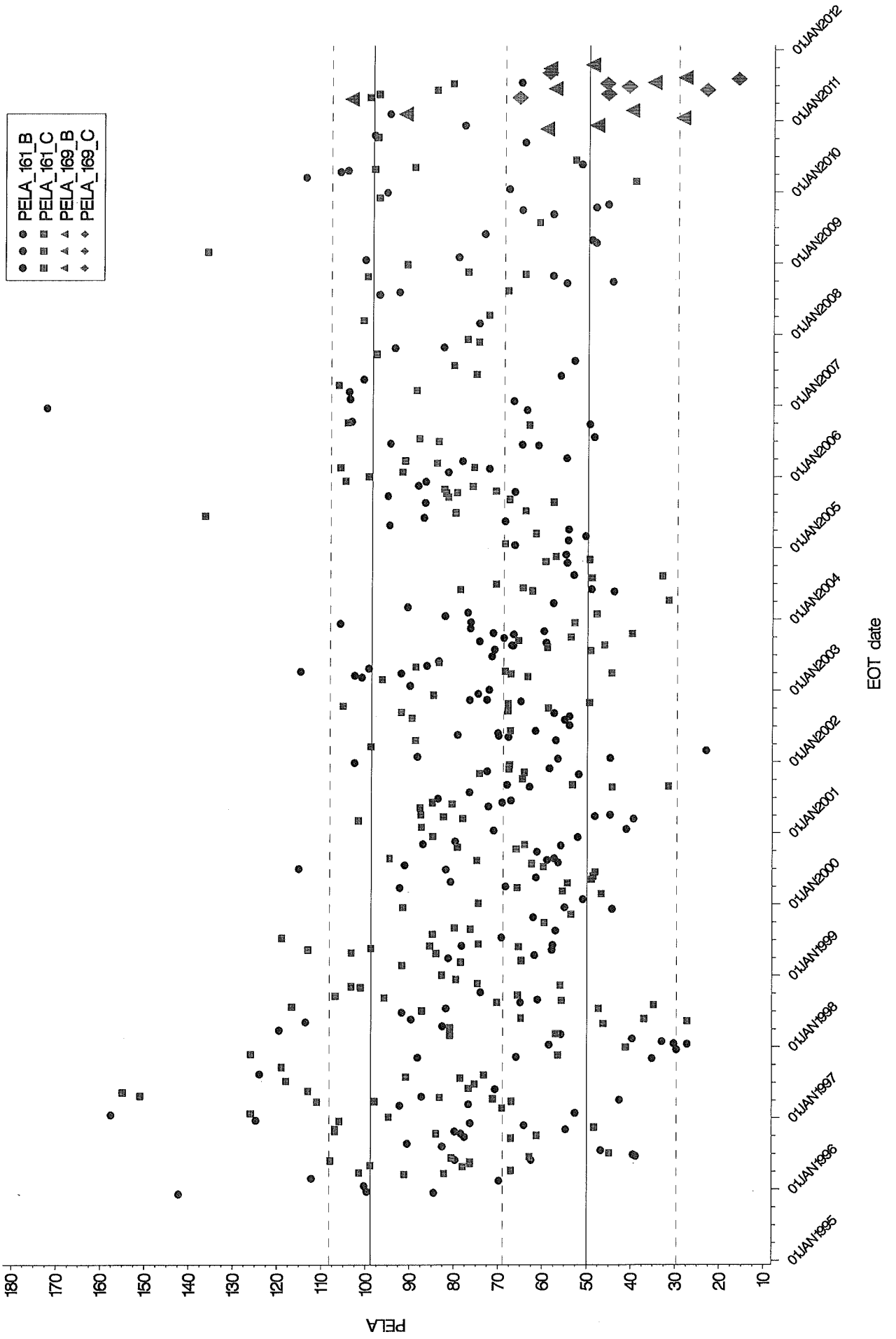
Target = 11.738; STD = 0.1857





# Polyacrylate Percent Elongation

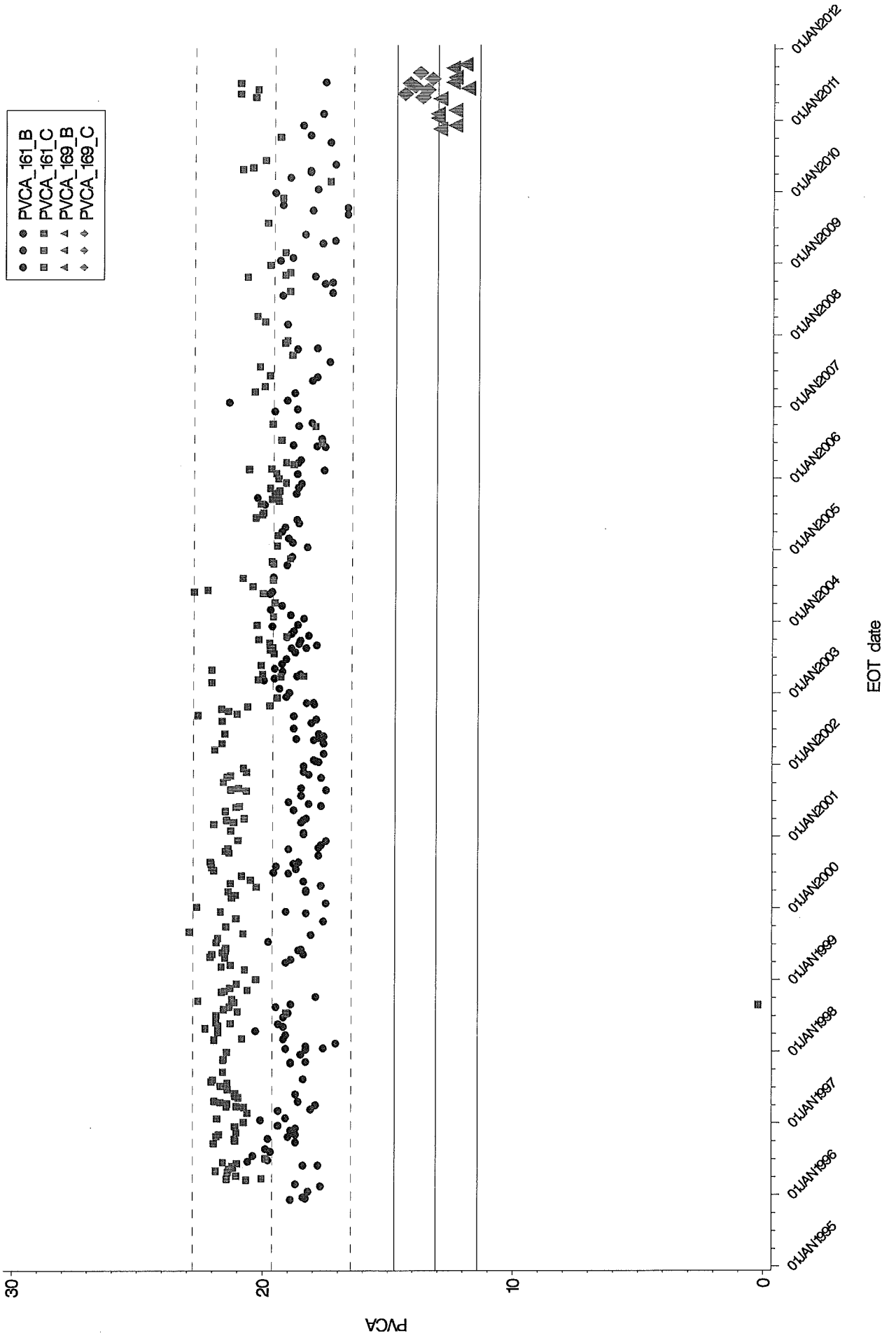
Target = 49.928; STD = 22.226





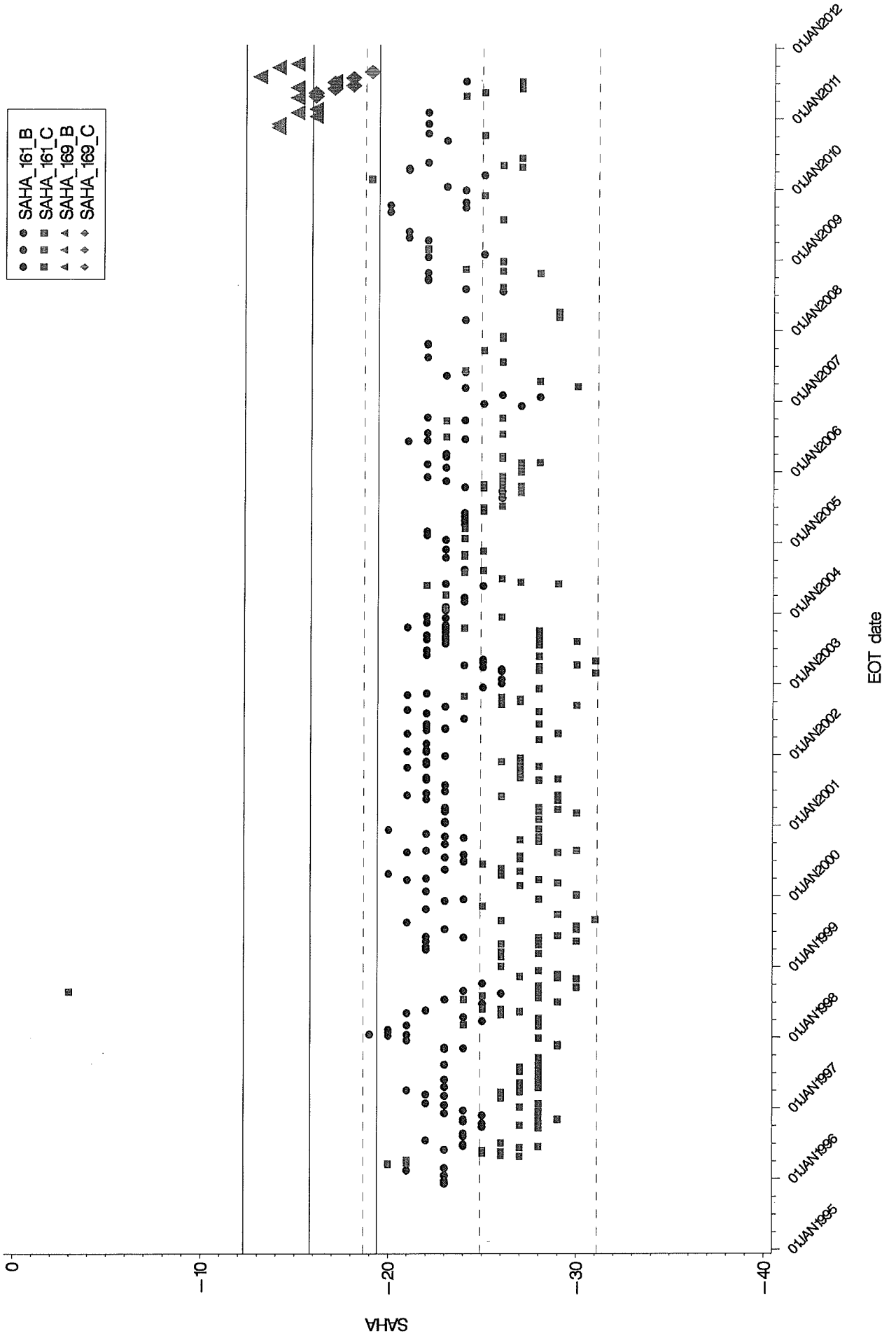
# Polyacrylate Percent Volume Change

Target = 13.067; STD = 0.7515



# Polyacrylate Points Hardness Change

Target = -15.83; STD = 1.679



OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date: Nov. 3, 2011

Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
AA	NV	Allison Athey	Volvo Powertrain N.A. 13302 Pennsylvania Ave. Hagerstown, MD 21742-2675	Phone: 301-790-5400 x3109 FAX: 301-790-5815 e-Mail: Allison.athey@volvo.com
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**OIL SEAL COMPATIBILITY SURVEILLANCE PANEL**

Date: NOV. 2, 2011

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	NV	Andrew Gelder	Afton Chemical Corp. London Rd. Bracknell, Berkshire RG12 2UW United Kingdom	Phone: 44-1344-35-6524 FAX: e-Mail: Andrew.gelder@aftonchemical.com
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<i>GG</i>	NV	G. Greene	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-2394 FAX: e-Mail: ggre@lubrizol.com
	V	Rebecca Grinfield	Southwest Research Institute P.O. Drawer 28510 San Antonio, TX 78228-0510	Phone: 210-522-3652 FAX: 210-522-5907 e-Mail: bgrinfield@swri.org
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<i>LH</i>	NV	Larry Hamilton	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-2326 FAX: e-Mail: Larry.hamilton@lubrizol.com




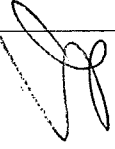

# OIL SEAL COMPATIBILITY SURVEILLANCE PANEL

Date: NOV. 2, 2011

Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
SH	NV	Sam Higuchi	Afton Chemical Corp. 500 Spring Street (23219) P.O. Box 2158 Richmond, VA 23218-2158	Phone: 804-788-5375 FAX: 804-788-6358 e-Mail: Samuel.higuchi@aftonchemical.com
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	NV	Jennifer Keiter	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-8034 FAX: 440-347-8003 e-Mail: Jennifer.keiter@lubrizol.com
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	NV	Percy Kanga	ExxonMobil 600 Billingsport Rd. Paulsboro, NJ 08066	Phone: 856-224-2094 FAX: 856-224-3613 e-Mail: Percy.r.kanga@exxonmobil.com
	V	Clayton Knight	Test Engineering Institute 12718 Cimarron Path San Antonio, TX 78249	Phone: 210-690-1958 FAX: 210-877-0228 e-Mail: cknight@tei-net.com
	NV	Cory Koglin	Afton Chemical Corp. 500 Spring Street (23219) P.O. Box 2158 Richmond, VA 23218-2158	Phone: 804-788-5305 FAX: 804-788-6358 e-Mail: cory.koglin@aftonchemical.com

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Date: Nov. 2, 2011

Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
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	V	Thelma Marougy	Eaton Corporation 26201 Northwestern Highway Southfield, MI 48037	Phone: 248-226-6985 FAX: 248-226-1739 e-Mail: thelmaemarougy@eaton.com
	NV	John Mattern	The Lubrizol Corporation 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-8034 FAX: 440-347-8003 e-Mail: john.mattern@lubrizol.com
	V	Bruce McGlone	Arvin Meritor 2135 West Maple Troy, MI 48084	Phone: 248-435-9929 FAX: 248-435-6602 e-Mail: Bruce.McGlone@arvinmeritor.com
	NV	Donna Mosher	Eaton Corporation 13100 E. Michigan Avenue Galesburg, MI 49053	Phone: 269-342-3039 FAX: 269-746-6039 e-Mail: donnamosher@eaton.com
	NV	Troy Muransky	Arvin Meritor 2135 West Maple Rd. Troy, MI 48084	Phone: 248-435-1409 FAX: 248-435-6602 e-Mail: Troy.muransky@arvinmeritor.com
	V	Scott Parke	ASTM Test Monitoring Center 6555 Penn Avenue Pittsburgh, PA 15206	Phone: 412-365-1033 FAX: 412-365-1047 e-Mail: sdp@astmtmc.cmu.edu
	V	Dale Smith	Intertek Automotive Research 5404 Bandera Road San Antonio, TX 78238	Phone: 412-855-6854 FAX: Dale.smith@intertek.com e-Mail:

**OIL SEAL COMPATIBILITY SURVEILLANCE PANEL**

Date: Nov. 2, 2011

Initials	V = Voting NV = Non-voting	Name	Company & Address	Phone / FAX / e-Mail
	NV	HaiQing Song	Research Institute of Petroleum Processing No 18 XueYuan Road PO Box 914-19 Beijing 100083 P.R. China	Phone: 011-86-10-8236-8182 FAX: 011-86-10-6231-1290 e-Mail: songhq@ripp-sinopec.com
	NV	Chintan Ved	Ford 35500 Plymouth Road Livonia, MI 48150	Phone: 313-805-9495 FAX: e-Mail: cved@ford.com
<i>WV</i>	NV	Wes Venhoff	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH 44092	Phone: 440-347-4879 FAX: e-Mail: wve@lubrizol.com
	NV	Luis A. Villahermosa	U.S. Army TARADEC AMSRD-TAR-D/210 MS110 6501 E. 11 Mile Road Warren, MI 48397-5000	Phone: 586-282-4207 FAX: 586-282-4244 e-Mail: Luis.a.villahermosa@us.army.mil
	NV	JingChun Xie	Lanzhou Lube Oil R&D Institute No. 369 YuMen Street XiGu District Lanzhou 730060 GanSu Province P.R. China	Phone: 011-86-931-793-3713 FAX: 011-86-139-9319-2560 e-Mail: xjc@luberdi.com.cn
<i>K-2</i>	NV	Khaled Zreik	General Motors	Phone: 248-977-9214 FAX: e-Mail: Khaled.zreik@gm.com

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