Collaborative Testing Services, Inc.

Fasteners & Metals Testing Program

Summary Report # 85 - 1Q 2009

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ABOUT THE FASTENERS & METALS PROGRAM

Collaborative Testing Services operates and maintains the program for Fasteners and Metals as part of a series of Proficiency and Interlaboratory Testing Programs offered by CTS in cooperation with various associations for a wide range of industries. Personnel from the National Institute of Standards and Technology (formerly the National Bureau of Standards), Industrial Fasteners Institute (IFI), and the Naval Shipyard Laboratories provide technical guidance and advice to this program.

The purpose of the program is to give participating laboratories a means to compare periodically the level and uniformity of their testing with that of other laboratories in the industry. It also provides a realistic assessment of the state of fasteners and metals testing proficiency.

In each report, there is a summary of the statistics for the analysis and a graphical representation of the data for each test. Also shown are notes concerning specific laboratory results, as well as significant findings related to instrument types or other testing variations. Refer to the KEY TO TABLES AND GRAPHS for an explanation of terms and guidelines to interpreting the results.

ABOUT CTS

Founded in 1971, CTS is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries, including rubber, plastics, fasteners and metals, containerboard, paper, color, and wine as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 50 countries, currently participate in the CTS programs.
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Key for Fasteners & Metals Program Web Summary Report

WebCode - Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Report published on the CTS web site.

Lab Mean - The average of the test results obtained by the participant.

Grand Mean - The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.

Between-Lab Standard Deviation - An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).

Comparative Performance Value (CPV) - An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. CPV = (LAB MEAN - GRAND MEAN)/ BETWEEN-LAB STANDARD DEVIATION. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa).

Instr Code - A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).

Data Flag - DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

Data Flag	Statistically Included/Excluded	ACTION REQUIRED
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside the drawn 95% ellipse but within a 99% ellipse that is calculated but not drawn. Labs flagged with an * do not typically receive a specific note regarding the flag. If this error is repeated in future rounds, however, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required(all tests exept Chemical Analyses). Results fall outside the 99% ellipse. See the specific note following the data for more information on why the data is excluded. For Chemical Analyses see an expanation on our website.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample. However, a lab receiving two or more M flags for a test may need to stop and review its testing procedures.

Graph - For each laboratory, the Lab Mean for the second sample (y-axis) is plotted against the Lab Mean for the first sample (x-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the Grand Means for each sample. When 20 or more laboratories are included in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained above. Labs not receiving a data flag appear as points on the plot.

Interlaboratory Testing Program for Metals

Analysis 105

Tensile Strength (Flat Aluminum) - ksi

ASTM B557

WebCode	Data Flag	Sample R75 Lab Mean	Sample R75 Diff. from Grand Mean	Sample R75 CPV	Sample R76 Lab Mean	Sample R76 Diff. from Grand Mean	Sample R76 CPV	Instr Code
1J97BL		49.45	-0.23	-0.48	48.70	-0.15	-0.27	ZZ
2Q83KK		49.60	-0.08	-0.17	48.80	-0.05	-0.09	ZZ
369NNL		50.10	0.42	0.88	49.40	0.55	1.04	ZZ
4RQGVT	M	46.90	-2.78	-5.81				ZZ
7CZQZ7		49.40	-0.28	-0.59	48.40	-0.45	-0.83	ZZ
83KLS7		49.55	-0.13	-0.28	48.76	-0.08	-0.16	ZZ
87Y2HY		48.90	-0.78	-1.63	47.90	-0.95	-1.77	ZZ
99LCZW		49.70	0.02	0.04	49.00	0.15	0.29	ZZ
9EWGYC	X	49.25	-0.43	-0.90	49.09	0.24	0.46	ZZ
9KZB8S		50.00	0.32	0.67	48.90	0.05	0.10	ZZ
ACRFCG		49.00	-0.68	-1.42	48.10	-0.75	-1.40	ZZ
AZB4FV		49.80	0.12	0.25	49.10	0.25	0.47	ZZ
B8YTQG	X	49.30	-0.38	-0.79	47.80	-1.05	-1.96	ZZ
BESN8C		48.50	-1.18	-2.47	47.50	-1.35	-2.52	ZZ
BN9X89		49.30	-0.38	-0.79	48.40	-0.45	-0.83	ZZ
BY98JV		49.40	-0.28	-0.59	48.70	-0.15	-0.27	ZZ
CH2TY2		49.20	-0.48	-1.00	48.40	-0.45	-0.83	ZZ
CQJQUG		49.77	0.09	0.18	48.86	0.01	0.03	ZZ
ELHHKG		50.10	0.42	0.88	49.20	0.35	0.66	ZZ
HPYGX2		49.10	-0.58	-1.21	48.10	-0.75	-1.40	ZZ
MURBRG		49.80	0.12	0.25	49.00	0.15	0.29	ZZ
PBAHRZ		50.35	0.67	1.40	49.50	0.65	1.22	ZZ
RU7NAD		49.82	0.14	0.29	48.87	0.02	0.04	ZZ
RYGHVW		50.10	0.42	0.88	49.50	0.65	1.22	ZZ
SAVL4Y		49.91	0.23	0.49	49.31	0.46	0.86	ZZ
SCAUS5		50.70	1.02	2.13	49.90	1.05	1.97	ZZ
SCEM28		50.10	0.42	0.88	49.30	0.45	0.85	ZZ
T5FXYF	X	48.52	-1.16	-2.43	46.69	-2.16	-4.03	ZZ
VFMF39		50.20	0.52	1.09	49.30	0.45	0.85	ZZ
XCCASY		49.80	0.12	0.25	49.00	0.15	0.29	ZZ
XRE46T		49.50	-0.18	-0.38	48.70	-0.15	-0.27	ZZ
YM8XXM		49.89	0.21	0.45	49.10	0.25	0.47	ZZ
YNL8P7	X	52.96	3.28	6.85	52.59	3.74	7.00	ZZ

Summary Statistics

	Sample R75		Sample R76	
Grand Means	49.680	ksi	48.850	ksi
Stnd Dev Btwn Labs	0.478	ksi	0.535	ksi

Statistics based on 28 **of** 33 **reporting participants**

Samples R75 , R76 : 14G 6061-T6, 16G 6061-T6

Interlaboratory Testing Program for Metals

Analysis 105

Tensile Strength (Flat Aluminum) - ksi
ASTM B557

Comments on assigned Data Flags for Test #105

4RQGVT (M) - Low data for Sample R75. Laboratory did not submit data for Sample R76.
9EWGYC (X) - Inconsistent in testing between samples.
B8YTQG (X) - Inconsistent in testing between samples.
T5FXYF (X) - Low data for Sample R76.
YNL8P7 (X) - Data for both samples are high.

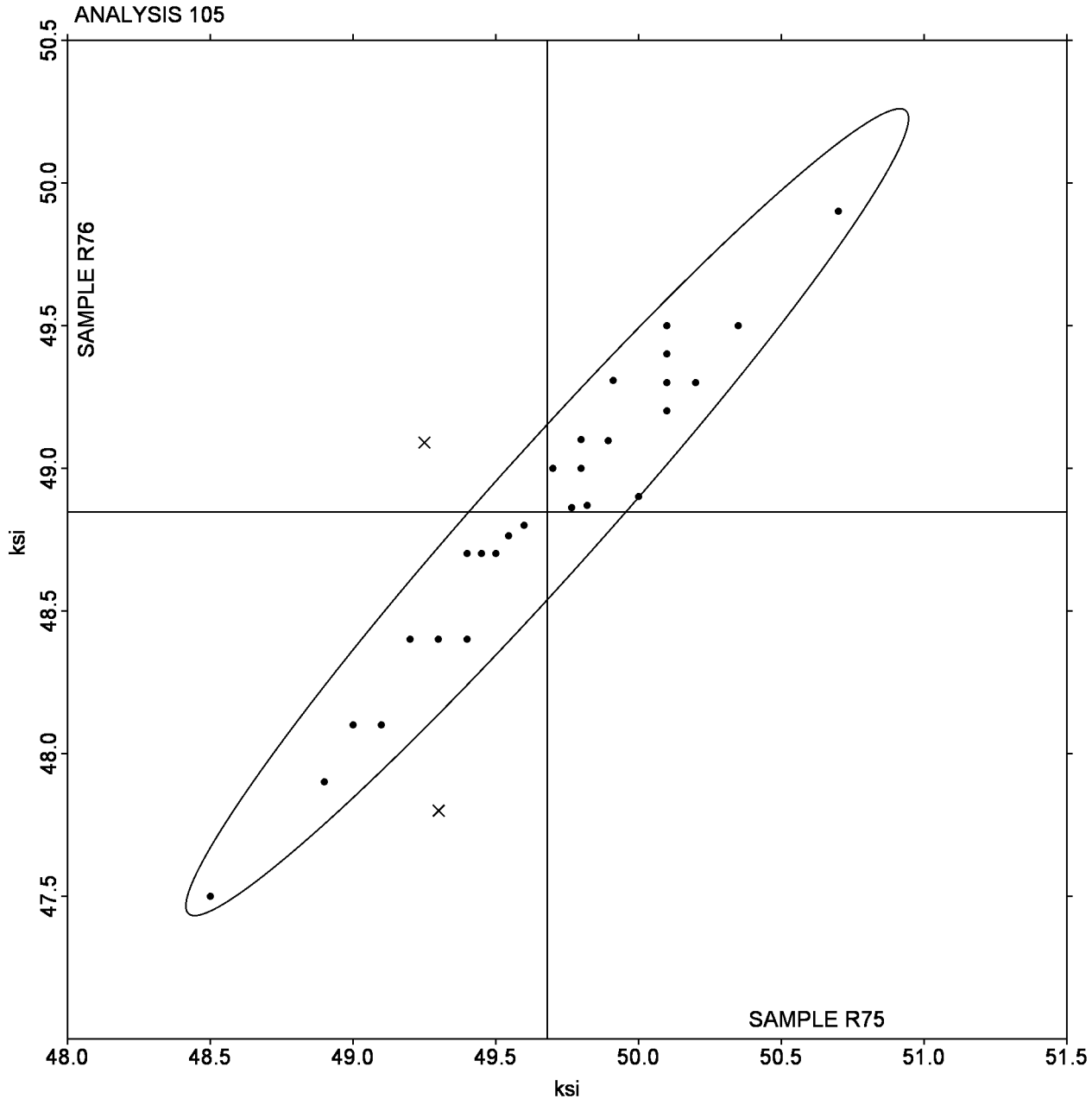
Interlaboratory Testing Program for Metals

Analysis 105

Tensile Strength (Flat Aluminum) - ksi

ASTM B557

SAMPLE R75 = 49.680 ksi SAMPLE R76 = 48.850 ksi



Interlaboratory Testing Program for Metals

Analysis 106

Yield Strength (Flat Aluminum) - ksi

ASTM B557

WebCode	Data Flag	Sample R75 Lab Mean	Sample R75 Diff. from Grand Mean	Sample R75 CPV	Sample R76 Lab Mean	Sample R76 Diff. from Grand Mean	Sample R76 CPV	Instr Code
12R6J5		45.12	0.57	0.91	43.92	0.33	0.43	ZZ
1D5RVR		44.87	0.32	0.51	43.85	0.26	0.34	ZZ
2LD8MJ	X	42.70	-1.85	-2.94	43.70	0.11	0.15	ZZ
4K7T4L		43.50	-1.05	-1.67	42.30	-1.29	-1.66	ZZ
5JV7H7		43.80	-0.75	-1.19	42.50	-1.09	-1.40	ZZ
68U3SJ		44.55	0.00	0.00	43.80	0.21	0.28	ZZ
75NKBG		45.60	1.05	1.68	44.80	1.21	1.57	ZZ
9Q34DF		44.40	-0.15	-0.23	43.50	-0.09	-0.11	ZZ
9ZPDJB		44.40	-0.15	-0.23	43.40	-0.19	-0.24	ZZ
AAQ2KY		44.60	0.05	0.08	43.30	-0.29	-0.37	ZZ
CHXXHG		44.82	0.27	0.43	44.20	0.61	0.79	ZZ
DC8LAS		44.60	0.05	0.08	43.60	0.01	0.02	ZZ
F24TN4		44.70	0.15	0.24	44.00	0.41	0.53	ZZ
H78RN1		44.76	0.21	0.34	43.96	0.37	0.48	ZZ
HDFQ46		44.40	-0.15	-0.23	44.00	0.41	0.53	ZZ
HEM4ES		43.80	-0.75	-1.19	42.80	-0.79	-1.01	ZZ
HHQCWE		44.70	0.15	0.24	43.60	0.01	0.02	ZZ
J9ZFXT		43.70	-0.85	-1.35	43.30	-0.29	-0.37	ZZ
JN5HMH		45.50	0.95	1.52	44.50	0.91	1.18	ZZ
L6LF6Y		44.25	-0.30	-0.47	44.24	0.65	0.84	ZZ
LC5GHN		43.40	-1.15	-1.83	41.70	-1.89	-2.43	ZZ
LEZ8V7		43.70	-0.85	-1.35	43.00	-0.59	-0.76	ZZ
PWZD76		44.20	-0.35	-0.55	42.50	-1.09	-1.40	ZZ
PY5M7X		44.65	0.10	0.16	43.45	-0.14	-0.18	ZZ
RESCSJ		44.48	-0.07	-0.11	42.39	-1.19	-1.54	ZZ
RXDK3D		44.70	0.15	0.24	43.50	-0.09	-0.11	ZZ
T68358		44.95	0.40	0.64	44.30	0.71	0.92	ZZ
VG3CV9	*	46.30	1.75	2.79	45.10	1.51	1.95	ZZ
VTNK22		45.00	0.45	0.72	44.10	0.51	0.66	ZZ
W351EN		44.67	0.12	0.20	43.87	0.29	0.37	ZZ
WCXR71		44.30	-0.25	-0.39	44.10	0.51	0.66	ZZ
XSMWT9	X	47.88	3.33	5.32	46.79	3.20	4.13	ZZ

Summary Statistics

	Sample R75		Sample R76	
Grand Means	44.547	ksi	43.590	ksi
Stnd Dev Btwn Labs	0.627	ksi	0.775	ksi

Statistics based on 30 **of** 32 **reporting participants**

Samples R75 , R76 : 14G 6061-T6, 16G 6061-T6

Interlaboratory Testing Program for Metals

Analysis 106

Yield Strength (Flat Aluminum) - ksi

ASTM B557

Comments on assigned Data Flags for Test #106

2LD8MJ (X) - Low data for Sample R75.

XSMWT9 (X) - Data for both samples are high.

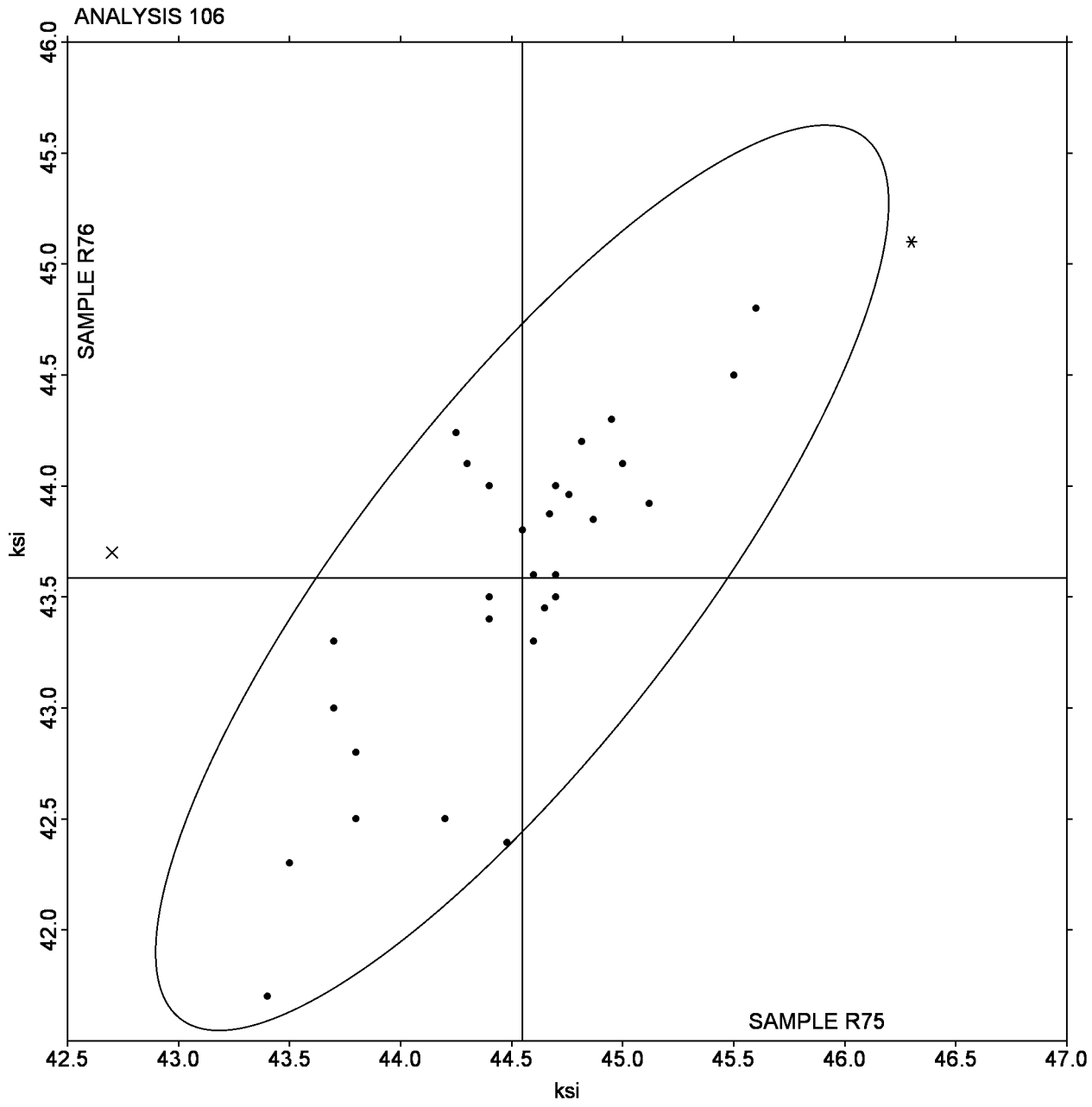
Interlaboratory Testing Program for Metals

Analysis 106

Yield Strength (Flat Aluminum) - ksi

ASTM B557

SAMPLE R75 = 44.547 ksi SAMPLE R76 = 43.590 ksi



Interlaboratory Testing Program for Metals

Analysis 107

Elongation (Flat Aluminum) - Percent

ASTM B557

WebCode	Data Flag	Sample R75 Lab Mean	Sample R75 Diff. from Grand Mean	Sample R75 CPV	Sample R76 Lab Mean	Sample R76 Diff. from Grand Mean	Sample R76 CPV	Instr Code
2RP5J6		9.00	-2.54	-2.31	9.00	-2.54	-2.56	ZZ
3EE9BS		10.96	-0.58	-0.53	11.30	-0.24	-0.24	ZZ
5ZL6GU		12.00	0.46	0.41	11.50	-0.04	-0.04	ZZ
6D15QM		11.50	-0.04	-0.04	11.50	-0.04	-0.04	ZZ
8149MG		13.00	1.46	1.32	12.00	0.46	0.46	ZZ
8AFHG5		12.00	0.46	0.41	12.00	0.46	0.46	ZZ
8QGXYS	M	10.40	-1.14	-1.04				ZZ
8Y8FC1		11.00	-0.54	-0.49	11.00	-0.54	-0.55	ZZ
A4WAJF		13.40	1.86	1.69	12.80	1.26	1.27	ZZ
APHVLD		10.00	-1.54	-1.40	10.50	-1.04	-1.05	ZZ
CNLR5G		13.30	1.76	1.59	12.20	0.66	0.66	ZZ
CX5QH5		12.00	0.46	0.41	12.00	0.46	0.46	ZZ
G1D7DK		10.75	-0.79	-0.72	11.70	0.16	0.16	ZZ
GH68MR		12.55	1.01	0.91	12.62	1.08	1.09	ZZ
GW5AUA		11.50	-0.04	-0.04	11.50	-0.04	-0.04	ZZ
J2G78X		12.00	0.46	0.41	12.00	0.46	0.46	ZZ
J5MMUG		12.50	0.96	0.87	11.50	-0.04	-0.04	ZZ
KDYZPK		9.90	-1.64	-1.49	9.30	-2.24	-2.26	ZZ
LM5QV8		9.60	-1.94	-1.76	10.40	-1.14	-1.15	ZZ
LR32XZ		11.00	-0.54	-0.49	11.50	-0.04	-0.04	ZZ
LUX7XH		11.00	-0.54	-0.49	11.10	-0.44	-0.44	ZZ
M9ZFVA		12.00	0.46	0.41	12.60	1.06	1.07	ZZ
NNVJXV		11.50	-0.04	-0.04	11.50	-0.04	-0.04	ZZ
Q999J9		12.40	0.86	0.78	12.20	0.66	0.66	ZZ
RBQN19		11.50	-0.04	-0.04	11.90	0.36	0.36	ZZ
UQWPMA		11.65	0.11	0.10	11.85	0.31	0.31	ZZ
W1L1FL		12.00	0.46	0.41	12.00	0.46	0.46	ZZ
WJ9LMB		12.50	0.96	0.87	13.00	1.46	1.47	ZZ
WSWAZK		12.00	0.46	0.41	11.50	-0.04	-0.04	ZZ
XTYFRL		11.04	-0.50	-0.46	11.83	0.29	0.29	ZZ
YNG6PU		12.92	1.38	1.25	12.94	1.40	1.41	ZZ
YPZ2SS		11.50	-0.04	-0.04	11.50	-0.04	-0.04	ZZ
YX7RAM		9.40	-2.14	-1.94	9.10	-2.44	-2.46	ZZ

Summary Statistics

	Sample R75		Sample R76	
Grand Means	11.543	Percent	11.540	Percent
Stnd Dev Btwn Labs	1.102	Percent	0.993	Percent

Statistics based on 32 **of** 33 **reporting participants**

Samples R75 , R76 : 14G 6061-T6, 16G 6061-T6

Interlaboratory Testing Program for Metals

Analysis 107

Elongation (Flat Aluminum) - Percent

ASTM B557

Comments on assigned Data Flags for Test #107

8QGXYS (M) - Laboratory did not submit data for Sample R76.

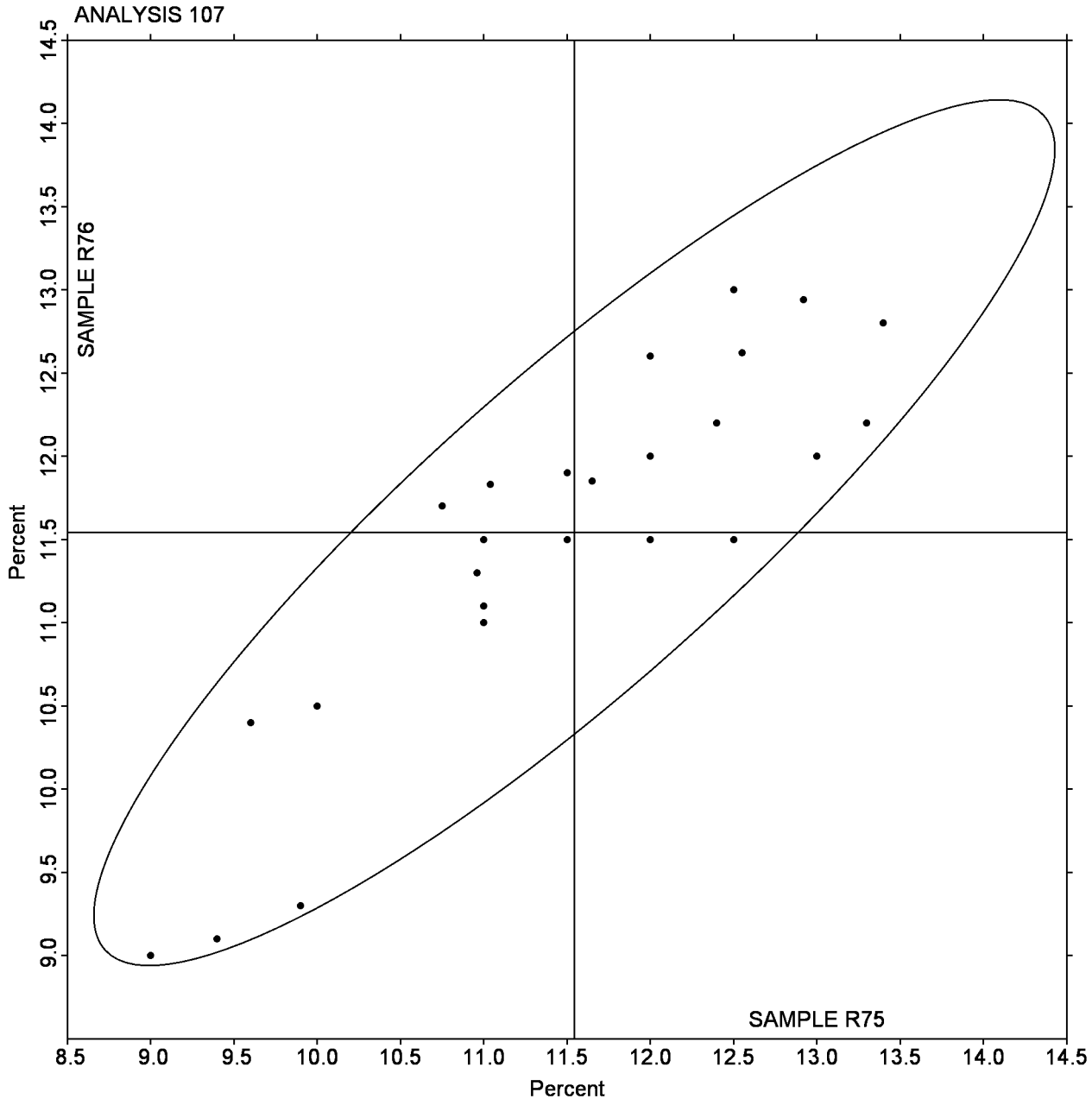
Interlaboratory Testing Program for Metals

Analysis 107

Elongation (Flat Aluminum) - Percent

ASTM B557

SAMPLE R75 = 11.543 Percent SAMPLE R76 = 11.540 Percent



Interlaboratory Testing Program for Metals

Analysis 110

Tensile Strength (Pre-Machined Round Steel) - ksi

ASTM E8

		Sample A75			Sample A76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
1R24MW		146.20	-2.53	-1.39	141.20	-2.53	-1.52	ZZ
1XE75Q		147.30	-1.43	-0.79	142.80	-0.93	-0.56	ZZ
2GBAYJ		147.30	-1.43	-0.79	142.50	-1.23	-0.74	ZZ
36VPJG		149.20	0.47	0.26	143.60	-0.13	-0.08	ZZ
48QT4U	*	143.50	-5.23	-2.88	140.80	-2.93	-1.76	ZZ
4DKDHB	X	140.50	-8.22	-4.54	145.53	1.80	1.08	ZZ
5AQLSD		148.40	-0.33	-0.18	144.00	0.27	0.16	ZZ
5BVUAB		149.30	0.57	0.32	144.10	0.37	0.22	ZZ
7VRC2N		149.20	0.47	0.26	145.20	1.47	0.89	ZZ
7ZDAW8		147.30	-1.43	-0.79	141.60	-2.13	-1.28	ZZ
8UR9MU		151.40	2.67	1.47	145.80	2.07	1.25	ZZ
B2TTCE		151.90	3.17	1.75	146.80	3.07	1.85	ZZ
CB9SCP		148.90	0.17	0.09	142.80	-0.93	-0.56	ZZ
CRZ2HR		149.00	0.27	0.15	144.88	1.15	0.69	ZZ
DLT2HG		146.78	-1.95	-1.07	141.11	-2.62	-1.57	ZZ
E3J5ZG		147.00	-1.73	-0.95	143.00	-0.73	-0.44	ZZ
E4HCEA		151.00	2.27	1.25	144.20	0.47	0.28	ZZ
EFUZS5		147.90	-0.83	-0.46	144.30	0.57	0.35	ZZ
EXGYU5		150.64	1.91	1.05	146.10	2.37	1.43	ZZ
FRG98T		148.40	-0.33	-0.18	142.90	-0.83	-0.50	ZZ
H63KQY		147.40	-1.33	-0.73	143.50	-0.23	-0.14	ZZ
H7ZECN		151.02	2.29	1.27	146.47	2.75	1.65	ZZ
JZQU6Z		148.81	0.08	0.05	142.28	-1.44	-0.87	ZZ
KDZKHJ		148.10	-0.63	-0.35	142.20	-1.53	-0.92	ZZ
KGAHD9		151.28	2.55	1.41	145.52	1.79	1.08	ZZ
L344J1		151.90	3.17	1.75	145.00	1.27	0.77	ZZ
L71R7B		148.20	-0.53	-0.29	143.00	-0.73	-0.44	ZZ
LCK4LR		148.50	-0.23	-0.13	142.60	-1.13	-0.68	ZZ
PRRL8P		146.38	-2.34	-1.29	141.43	-2.30	-1.38	ZZ
Q95T4N		148.20	-0.53	-0.29	144.40	0.67	0.41	ZZ
QL77AR		149.00	0.27	0.15	145.00	1.27	0.77	ZZ
SDVWXD		149.10	0.37	0.21	144.75	1.02	0.62	ZZ
UEPF6W		147.90	-0.83	-0.46	143.40	-0.33	-0.20	ZZ
UV2839	*	151.00	2.27	1.25	143.00	-0.73	-0.44	ZZ
VFMTT4		149.00	0.27	0.15	143.00	-0.73	-0.44	ZZ
WDHRWK		151.15	2.42	1.34	145.49	1.77	1.06	ZZ
WEVDHR		149.90	1.17	0.65	146.00	2.27	1.37	ZZ
Z11KC8		147.60	-1.13	-0.62	141.95	-1.78	-1.07	ZZ
ZGMVS1		147.00	-1.73	-0.95	143.00	-0.73	-0.44	ZZ
ZJ52T4		150.26	1.53	0.85	147.07	3.34	2.01	ZZ
ZNBBKE		146.80	-1.93	-1.06	142.30	-1.43	-0.86	ZZ

Interlaboratory Testing Program for Metals

Analysis 110

Tensile Strength (Pre-Machined Round Steel) - ksi

ASTM E8

Summary Statistics

	Sample A75	Sample A76
Grand Means	148.728 ksi	143.730 ksi
Stnd Dev Btwn Labs	1.813 ksi	1.663 ksi

Statistics based on 40 **of** 41 **reporting participants**

Samples A75 , A76 : AISI 4340, AISI 4340

Comments on assigned Data Flags for Test #110

4DKDHB (X) - Low data for Sample A75. Data might to be transposed between samples.

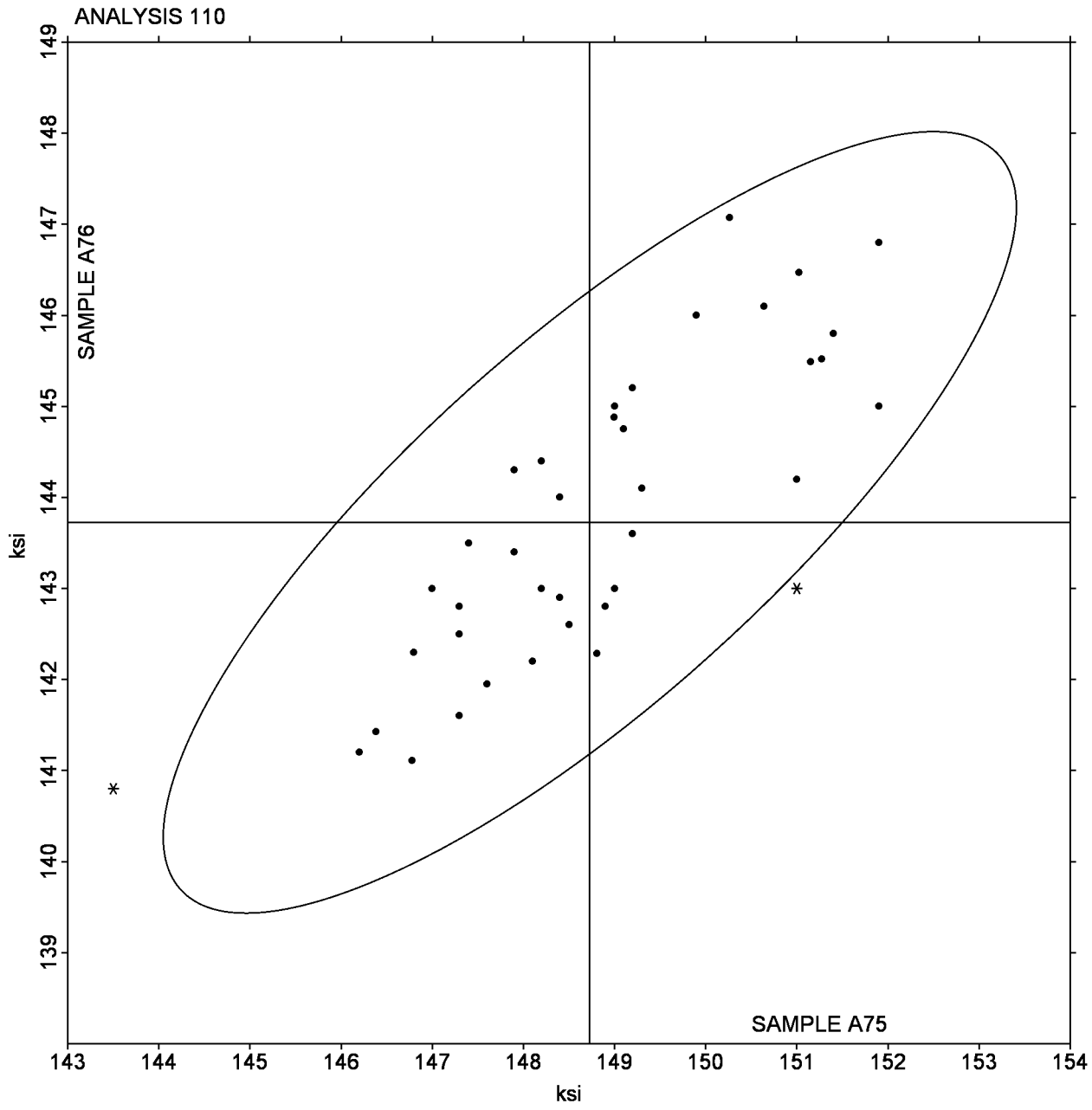
Interlaboratory Testing Program for Metals

Analysis 110

Tensile Strength (Pre-Machined Round Steel) - ksi

ASTM E8

SAMPLE A75 = 148.728 ksi SAMPLE A76 = 143.730 ksi



Interlaboratory Testing Program for Metals

Analysis 111

Yield Strength - ksi

ASTM E8

WebCode	Data Flag	Sample A75 Lab Mean	Sample A75 Diff. from Grand Mean	Sample A75 CPV	Sample A76 Lab Mean	Sample A76 Diff. from Grand Mean	Sample A76 CPV	Instr Code
1BFGNB		120.32	-2.42	-1.20	115.19	-1.82	-1.18	ZZ
1W1MQP		125.60	2.86	1.42	117.70	0.69	0.45	ZZ
2JM321		123.00	0.26	0.13	117.40	0.39	0.26	ZZ
3CGRTS		122.30	-0.44	-0.22	117.80	0.79	0.51	ZZ
486DR7	*	118.70	-4.04	-2.01	112.30	-4.71	-3.05	ZZ
64ZNC9		122.00	-0.74	-0.37	117.60	0.59	0.38	ZZ
6945BG		124.90	2.16	1.07	119.90	2.89	1.87	ZZ
7HBNCL		125.08	2.34	1.16	118.08	1.07	0.69	ZZ
7KSQYX		122.49	-0.25	-0.13	117.80	0.79	0.51	ZZ
8JNKTA		124.50	1.76	0.88	116.50	-0.51	-0.33	ZZ
931HP5		123.40	0.66	0.33	118.80	1.79	1.16	ZZ
AKVNBR		121.00	-1.74	-0.86	117.00	-0.01	0.00	ZZ
BYNH8S		125.00	2.26	1.12	117.00	-0.01	0.00	ZZ
DLTMW7		124.00	1.26	0.63	116.00	-1.01	-0.65	ZZ
DYEXFL		122.90	0.16	0.08	116.20	-0.81	-0.52	ZZ
E3PKG4		121.00	-1.74	-0.86	115.80	-1.21	-0.78	ZZ
E5U59C	X	134.89	12.15	6.04	124.98	7.97	5.16	ZZ
F4WLYL		121.00	-1.74	-0.86	117.40	0.39	0.26	ZZ
FC9JUZ		122.30	-0.44	-0.22	116.30	-0.71	-0.46	ZZ
FM2VCJ		121.00	-1.74	-0.86	117.00	-0.01	0.00	ZZ
G5TXES		124.48	1.75	0.87	119.95	2.94	1.90	ZZ
G929Z3		122.27	-0.47	-0.23	115.60	-1.41	-0.91	ZZ
GWNSTK		120.79	-1.95	-0.97	115.53	-1.48	-0.96	ZZ
H2BSVK		126.10	3.36	1.67	119.70	2.69	1.74	ZZ
HKLYTS		118.90	-3.83	-1.91	114.49	-2.52	-1.63	ZZ
HUUU5R		121.98	-0.76	-0.38	117.48	0.48	0.31	ZZ
KJZGKX	X	113.74	-9.00	-4.47	119.23	2.22	1.44	ZZ
KYUKY2		125.10	2.36	1.17	116.70	-0.31	-0.20	ZZ
NXLPT7		121.80	-0.94	-0.47	117.60	0.59	0.38	ZZ
NXMX21		121.40	-1.34	-0.66	115.30	-1.71	-1.10	ZZ
THTPX1		121.10	-1.64	-0.81	116.60	-0.41	-0.26	ZZ
UJK34Q		126.60	3.86	1.92	118.00	0.99	0.64	ZZ
V74MJS		126.10	3.36	1.67	118.40	1.39	0.90	ZZ
V7FAQJ		122.00	-0.74	-0.37	117.50	0.49	0.32	ZZ
X4Y92X		121.20	-1.54	-0.76	115.80	-1.21	-0.78	ZZ
XM5DWE		122.60	-0.14	-0.07	116.50	-0.51	-0.33	ZZ
YBY8GJ		122.90	0.16	0.08	118.30	1.29	0.84	ZZ
YN6QX6	X	121.40	-1.34	-0.67	110.37	-6.63	-4.29	ZZ

Summary Statistics

	Sample A75		Sample A76	
Grand Means	122.737	ksi	117.010	ksi
Stnd Dev Btwn Labs	2.012	ksi	1.545	ksi

Statistics based on 35 **of** 38 **reporting participants**

Interlaboratory Testing Program for Metals

Analysis 111

Yield Strength - ksi

ASTM E8

Samples A75 , A76 : AISI 4340, AISI 4340

Comments on assigned Data Flags for Test #111

E5U59C (X) - Data for both samples are high.
KJZGKX (X) - Low data for Sample A75. Data might to be transposed between samples.
YN6QX6 (X) - Low data for Sample A76.

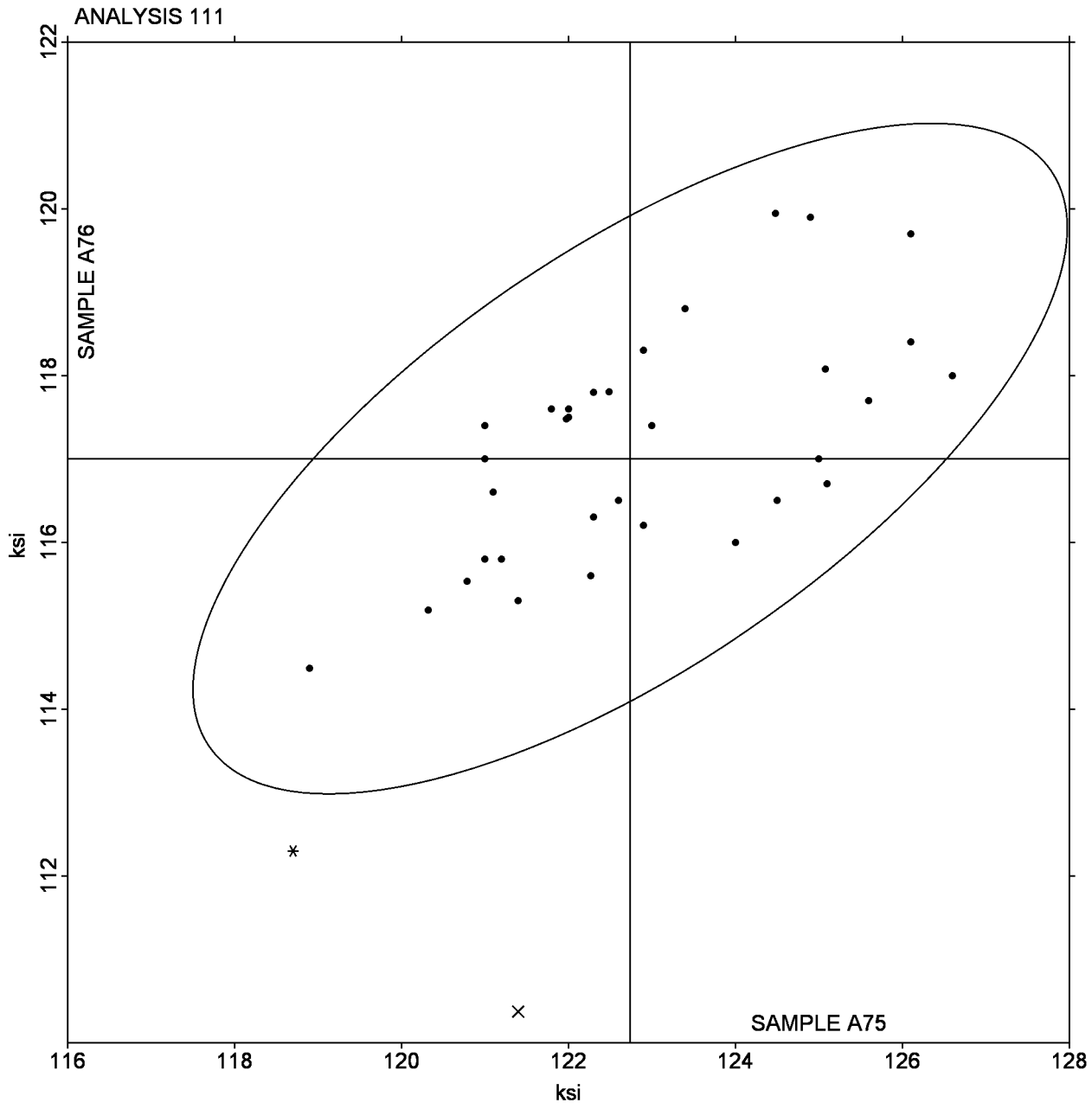
Interlaboratory Testing Program for Metals

Analysis 111

Yield Strength - ksi

ASTM E8

SAMPLE A75 = 122.737 ksi SAMPLE A76 = 117.010 ksi



Interlaboratory Testing Program for Metals

Analysis 112

Elongation - Percent increase (in 4XD)

ASTM E8

WebCode	Data Flag	Sample A75 Lab Mean	Sample A75 Diff. from Grand Mean	Sample A75 CPV	Sample A76 Lab Mean	Sample A76 Diff. from Grand Mean	Sample A76 CPV	Instr Code
1HB2F2		17.00	0.11	0.17	17.50	0.27	0.42	ZZ
1KXFRA		17.00	0.11	0.17	16.70	-0.53	-0.81	ZZ
22FU3J		15.90	-0.99	-1.56	15.80	-1.43	-2.20	ZZ
236EEG		17.00	0.11	0.17	17.00	-0.23	-0.35	ZZ
2RDNZL		17.50	0.61	0.95	17.00	-0.23	-0.35	ZZ
34SYHL		17.00	0.11	0.17	17.40	0.17	0.26	ZZ
3QAQPU		16.00	-0.89	-1.40	17.00	-0.23	-0.35	ZZ
4876NC		16.50	-0.39	-0.62	17.00	-0.23	-0.35	ZZ
53PLRA		16.20	-0.69	-1.09	16.60	-0.63	-0.97	ZZ
6FK1VL		16.60	-0.29	-0.46	16.00	-1.23	-1.89	ZZ
6UQZ21		17.38	0.49	0.76	17.72	0.49	0.75	ZZ
8BTL23		17.10	0.21	0.33	17.60	0.37	0.57	ZZ
8CJ7TL		16.90	0.01	0.01	17.10	-0.13	-0.20	ZZ
9J2EQ4		17.00	0.11	0.17	17.50	0.27	0.42	ZZ
9XQFQJ		17.20	0.31	0.48	17.20	-0.03	-0.05	ZZ
BDQ971		18.10	1.21	1.89	17.93	0.70	1.08	ZZ
BQH5DN		16.90	0.01	0.01	17.70	0.47	0.72	ZZ
BX6P7G		16.50	-0.39	-0.62	17.00	-0.23	-0.35	ZZ
DD81SP		17.60	0.71	1.11	17.60	0.37	0.57	ZZ
GWZZUM		16.00	-0.89	-1.40	17.00	-0.23	-0.35	ZZ
J14LGT		16.50	-0.39	-0.62	17.00	-0.23	-0.35	ZZ
JAK1XV		17.00	0.11	0.17	17.00	-0.23	-0.35	ZZ
JLG42P		15.90	-0.99	-1.56	15.80	-1.43	-2.20	ZZ
JR9RVL		17.70	0.81	1.27	17.00	-0.23	-0.35	ZZ
K9SD7C		16.80	-0.09	-0.15	17.20	-0.03	-0.05	ZZ
KZ2QCX		18.10	1.21	1.89	18.00	0.77	1.18	ZZ
LLLYH3		17.00	0.11	0.17	16.70	-0.53	-0.81	ZZ
MXG2GM		16.90	0.01	0.01	17.30	0.07	0.11	ZZ
P1NQZB		16.20	-0.69	-1.09	17.10	-0.13	-0.20	ZZ
PDSPB9		17.10	0.21	0.33	17.80	0.57	0.88	ZZ
QH4BRQ		16.40	-0.49	-0.77	16.40	-0.83	-1.28	ZZ
RBGM4T		17.00	0.11	0.17	18.00	0.77	1.18	ZZ
SNN6QP	*	15.80	-1.09	-1.71	17.60	0.37	0.57	ZZ
USCD3Z		17.00	0.11	0.17	17.00	-0.23	-0.35	ZZ
WA228M		17.20	0.31	0.48	17.40	0.17	0.26	ZZ
X7C2JS		16.40	-0.49	-0.77	16.80	-0.43	-0.66	ZZ
XV9Q84		16.00	-0.89	-1.40	17.50	0.27	0.42	ZZ
YF56JW		16.70	-0.19	-0.30	17.20	-0.03	-0.05	ZZ
Z9SRYZ		17.10	0.21	0.33	17.50	0.27	0.42	ZZ
ZMF9KB		17.98	1.09	1.71	18.55	1.32	2.03	ZZ
ZNQT9U	*	18.44	1.55	2.43	19.22	1.99	3.06	ZZ

Interlaboratory Testing Program for Metals

Analysis 112

Elongation - Percent increase (in 4XD)
ASTM E8

Summary Statistics

	Sample A75		Sample A76	
Grand Means	16.893	Percent	17.230	Percent
Stnd Dev Btwn Labs	0.638	Percent	0.651	Percent

Statistics based on 41 **of** 41 **reporting participants**

Samples A75 , A76 : AISI 4340, AISI 4340

Analysis Notes for Test #112

No "X" flags were assigned for this analysis.

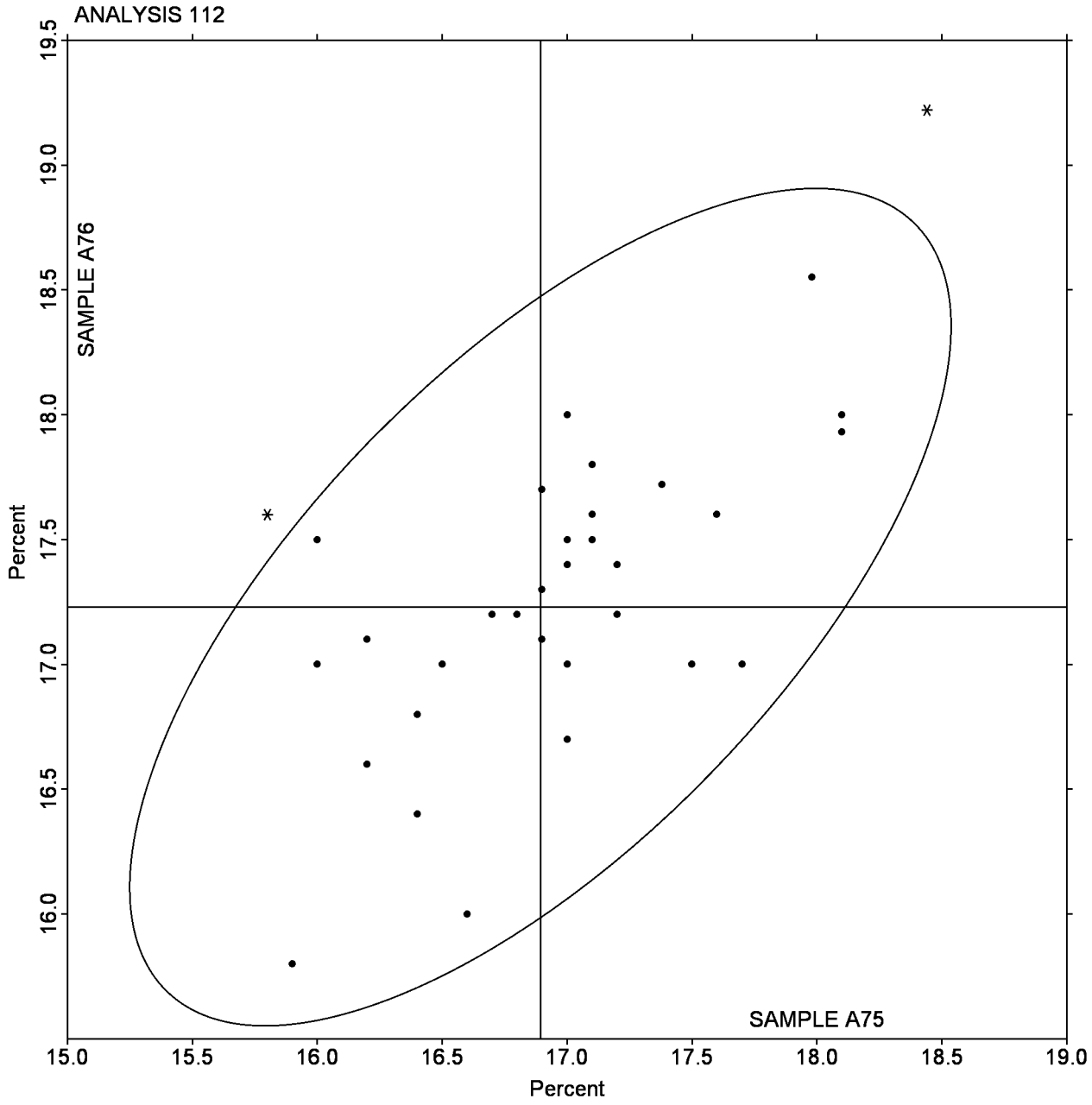
Interlaboratory Testing Program for Metals

Analysis 112

Elongation - Percent increase (in 4XD)

ASTM E8

SAMPLE A75 = 16.893 Percent SAMPLE A76 = 17.230 Percent



Interlaboratory Testing Program for Metals

Analysis 113

Reduction of Area - Percent

ASTM E8

		Sample A75			Sample A76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
1NKVM8		54.10	-0.25	-0.26	53.90	-0.28	-0.25	ZZ
287NCL		53.74	-0.61	-0.65	51.82	-2.36	-2.15	ZZ
2CVVJW		53.00	-1.35	-1.44	54.00	-0.18	-0.16	ZZ
2UADTW		54.00	-0.35	-0.37	54.00	-0.18	-0.16	ZZ
32W564		54.00	-0.35	-0.37	54.00	-0.18	-0.16	ZZ
33S3W4		53.90	-0.45	-0.48	55.20	1.02	0.93	ZZ
3LHC9R		54.40	0.05	0.06	53.60	-0.58	-0.53	ZZ
5HE7VU		55.40	1.05	1.13	53.70	-0.48	-0.44	ZZ
5JNBDF		53.60	-0.75	-0.80	55.00	0.82	0.74	ZZ
6S9QQ4		54.00	-0.35	-0.37	53.40	-0.78	-0.71	ZZ
6W6UFD		52.90	-1.45	-1.55	52.60	-1.58	-1.44	ZZ
76RH1Q		55.00	0.65	0.70	54.00	-0.18	-0.16	ZZ
7ZSBPE		54.90	0.55	0.59	53.40	-0.78	-0.71	ZZ
9HU383		54.80	0.45	0.48	55.10	0.92	0.84	ZZ
9YKKHB		56.50	2.15	2.30	54.30	0.12	0.11	ZZ
ARJPTC		54.90	0.55	0.59	55.20	1.02	0.93	ZZ
BKH9TM		54.20	-0.15	-0.16	54.40	0.22	0.20	ZZ
C3YZ2Y		53.00	-1.35	-1.44	53.00	-1.18	-1.07	ZZ
D4G825		54.00	-0.35	-0.37	52.00	-2.18	-1.98	ZZ
E3PAXM		54.60	0.25	0.27	55.40	1.22	1.11	ZZ
FCZ4TS		54.10	-0.25	-0.26	55.20	1.02	0.93	ZZ
GMX6NM		54.00	-0.35	-0.37	55.10	0.92	0.84	ZZ
GUZPBS		54.20	-0.15	-0.16	55.70	1.52	1.38	ZZ
KV7WEW		53.60	-0.75	-0.80	52.60	-1.58	-1.44	ZZ
KWRK6G		52.60	-1.75	-1.87	55.00	0.82	0.74	ZZ
KZY789		54.90	0.55	0.59	54.50	0.32	0.29	ZZ
L4RRQW		54.20	-0.15	-0.16	54.40	0.22	0.20	ZZ
L5W8FP		54.60	0.25	0.27	54.30	0.12	0.11	ZZ
LRSMWR		54.00	-0.35	-0.37	54.50	0.32	0.29	ZZ
N9D5KF		54.70	0.35	0.38	54.10	-0.08	-0.07	ZZ
NBGWTG		55.72	1.37	1.47	55.22	1.04	0.94	ZZ
SBVHYV		55.00	0.65	0.70	55.00	0.82	0.74	ZZ
SDPEHU		54.10	-0.25	-0.26	53.30	-0.88	-0.80	ZZ
T4DGYA		54.70	0.35	0.38	56.50	2.32	2.11	ZZ
UBSQCJ	*	57.15	2.80	3.00	56.09	1.91	1.74	ZZ
ULL4T2		55.20	0.85	0.91	54.60	0.42	0.38	ZZ
UTBBXS		52.81	-1.54	-1.64	53.77	-0.41	-0.37	ZZ
V8W5GA		54.10	-0.25	-0.26	52.30	-1.88	-1.71	ZZ
WT2DEH		53.50	-0.85	-0.91	52.70	-1.48	-1.35	ZZ
Y28MAL		54.40	0.05	0.06	53.30	-0.88	-0.80	ZZ
ZYNJ6V		55.70	1.35	1.45	55.20	1.02	0.93	ZZ

Interlaboratory Testing Program for Metals

Analysis 113

Reduction of Area - Percent

ASTM E8

Summary Statistics

	Sample A75		Sample A76	
Grand Means	54.347	Percent	54.180	Percent
Stnd Dev Btwn Labs	0.935	Percent	1.100	Percent

Statistics based on 41 **of** 41 **reporting participants**

Samples A75 , A76 : AISI 4340, AISI 4340

Analysis Notes for Test #113

No "X" flags were assigned for this analysis.

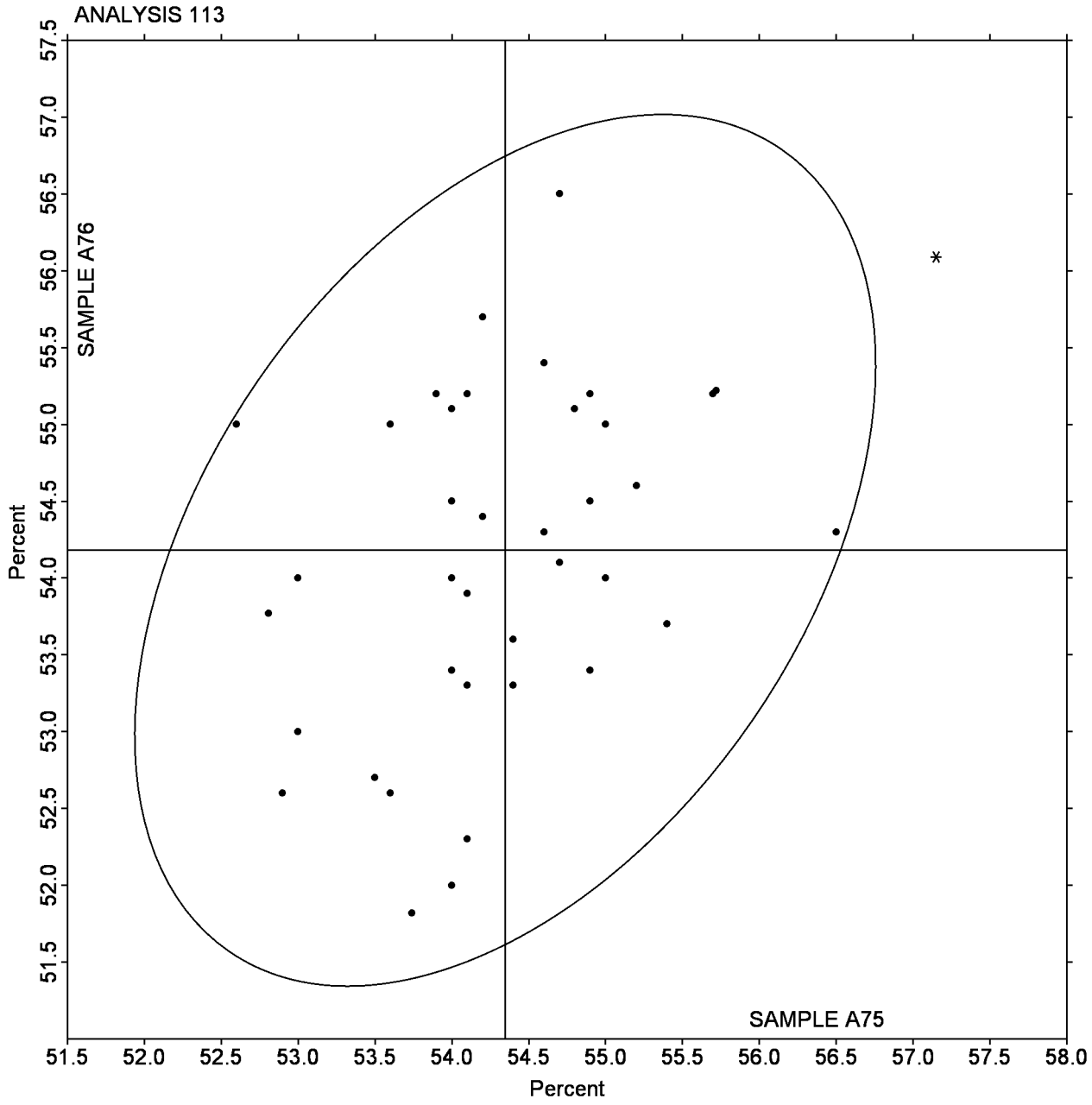
Interlaboratory Testing Program for Metals

Analysis 113

Reduction of Area - Percent

ASTM E8

SAMPLE A75 = 54.347 Percent SAMPLE A76 = 54.180 Percent



Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi

ASTM E8

		Sample P75			Sample P76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
14NGX6		148.96	0.01	0.00	142.28	-1.27	-0.74	ZZ
2W3AJR	X	159.98	11.03	6.48	153.31	9.75	5.67	ZZ
3C4KNV		149.30	0.35	0.21	145.80	2.24	1.30	ZZ
4FNDAV	X	114.70	-34.25	-20.14	143.90	0.34	0.20	ZZ
4K9ZFQ		150.30	1.35	0.79	143.90	0.34	0.20	ZZ
4LKFMZ		146.30	-2.65	-1.56	140.60	-2.96	-1.72	ZZ
4UPZRZ		148.00	-0.95	-0.56	141.30	-2.26	-1.31	ZZ
6CR4YK		147.70	-1.25	-0.73	146.30	2.74	1.60	ZZ
6VEF15		149.20	0.25	0.15	142.80	-0.76	-0.44	ZZ
7FJ683	X	148.20	-0.75	-0.44	99.20	-44.36	-25.80	ZZ
7GHPNN	*	150.40	1.45	0.85	148.70	5.14	2.99	ZZ
7T4T5B		149.70	0.75	0.44	144.00	0.44	0.26	ZZ
7XXDR2		147.80	-1.15	-0.68	142.30	-1.26	-0.73	ZZ
7Z8H1X		151.20	2.25	1.32	143.30	-0.26	-0.15	ZZ
83LS5N		147.80	-1.15	-0.68	145.20	1.64	0.96	ZZ
8DG1QP		149.81	0.86	0.51	146.18	2.63	1.53	ZZ
95DFK9		149.40	0.45	0.26	142.60	-0.96	-0.56	ZZ
A3Y5UW		150.10	1.15	0.68	143.90	0.34	0.20	ZZ
AM9CFF		146.00	-2.95	-1.73	140.50	-3.06	-1.78	ZZ
AZP2WY		147.07	-1.88	-1.11	144.60	1.05	0.61	ZZ
BW9QUG		147.80	-1.15	-0.68	141.70	-1.86	-1.08	ZZ
C4X6GX		150.40	1.45	0.85	144.40	0.84	0.49	ZZ
C6BZYQ		148.10	-0.85	-0.50	142.40	-1.16	-0.67	ZZ
CKK2VF		150.00	1.05	0.62	143.00	-0.56	-0.32	ZZ
D1WVFQ		146.60	-2.35	-1.38	144.50	0.94	0.55	ZZ
D4BX1V		151.13	2.18	1.28	142.86	-0.69	-0.40	ZZ
DVCH3A		149.90	0.95	0.56	142.60	-0.96	-0.56	ZZ
E69PHD		147.00	-1.95	-1.15	141.40	-2.16	-1.25	ZZ
ELD5N7		145.60	-3.35	-1.97	144.70	1.14	0.67	ZZ
F8MH68	*	144.31	-4.64	-2.73	142.57	-0.98	-0.57	ZZ
FWSSH1		146.00	-2.95	-1.73	140.00	-3.56	-2.07	ZZ
G6S713	X	149.00	0.05	0.03	150.70	7.14	4.15	ZZ
GDFM7N		147.79	-1.15	-0.68	143.88	0.32	0.19	ZZ
GE1TNZ		150.78	1.83	1.08	143.76	0.21	0.12	ZZ
GFLDTW		150.10	1.15	0.68	142.70	-0.86	-0.50	ZZ
GK66C4		149.30	0.35	0.21	142.10	-1.46	-0.85	ZZ
GUJFGX	X	139.67	-9.28	-5.45	143.88	0.32	0.19	ZZ
GVXZAD		148.94	-0.01	-0.01	144.44	0.89	0.52	ZZ
HKQP84		149.00	0.05	0.03	145.00	1.44	0.84	ZZ
JBFNG1		150.00	1.05	0.62	144.00	0.44	0.26	ZZ
K1G5SX		150.70	1.75	1.03	144.40	0.84	0.49	ZZ
K324K8	*	145.00	-3.95	-2.32	144.00	0.44	0.26	ZZ
K6H76D		148.91	-0.03	-0.02	143.27	-0.28	-0.16	ZZ
K8M9ZG		147.56	-1.39	-0.82	144.68	1.12	0.65	ZZ
KVR81V		149.30	0.35	0.21	143.90	0.34	0.20	ZZ

Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi

ASTM E8

WebCode	Data Flag	Sample P75 Lab Mean	Sample P75 Diff. from Grand Mean	Sample P75 CPV	Sample P76 Lab Mean	Sample P76 Diff. from Grand Mean	Sample P76 CPV	Instr Code
LGYGQK		147.20	-1.75	-1.03	140.70	-2.86	-1.66	ZZ
LY7D8V		148.82	-0.13	-0.08	144.09	0.53	0.31	ZZ
MC1F6D		150.84	1.89	1.11	146.49	2.93	1.71	ZZ
P7G89U		147.40	-1.55	-0.91	144.30	0.74	0.43	ZZ
PSZRKB		152.64	3.69	2.17	145.11	1.55	0.90	ZZ
QJ5PNT		149.50	0.55	0.32	142.10	-1.46	-0.85	ZZ
RFPT5H		147.30	-1.65	-0.97	140.20	-3.36	-1.95	ZZ
RSUPQV		150.70	1.75	1.03	145.10	1.54	0.90	ZZ
S6Y4QK		149.54	0.59	0.34	144.46	0.90	0.52	ZZ
S7SWNW		151.20	2.25	1.32	147.00	3.44	2.00	ZZ
S8AN77		149.68	0.73	0.43	145.62	2.06	1.20	ZZ
SPBPFL		150.00	1.05	0.62	143.00	-0.56	-0.32	ZZ
SRJ3TV		148.70	-0.25	-0.15	146.50	2.94	1.71	ZZ
SULZLB		149.80	0.85	0.50	143.30	-0.26	-0.15	ZZ
T1RSSD		149.00	0.05	0.03	140.00	-3.56	-2.07	ZZ
T4LXS9		150.00	1.05	0.62	143.00	-0.56	-0.32	ZZ
T8BDUB		149.30	0.35	0.21	142.60	-0.96	-0.56	ZZ
TUPT1M		150.10	1.15	0.68	143.60	0.04	0.03	ZZ
TUQNTD		148.50	-0.45	-0.26	144.00	0.44	0.26	ZZ
UE5Y1B		147.07	-1.88	-1.11	140.54	-3.01	-1.75	ZZ
V6YU4J		149.40	0.45	0.26	142.90	-0.66	-0.38	ZZ
V9PKQF	*	153.70	4.75	2.79	145.60	2.04	1.19	ZZ
VD7FQE		150.20	1.25	0.74	142.40	-1.16	-0.67	ZZ
VUGAG2		147.27	-1.68	-0.99	143.34	-0.21	-0.12	ZZ
W4CXB6		147.30	-1.65	-0.97	143.50	-0.06	-0.03	ZZ
WLYMEZ		148.32	-0.63	-0.37	142.23	-1.33	-0.77	ZZ
X6WSKX		151.93	2.98	1.75	142.69	-0.87	-0.50	ZZ
XY8D6A		149.50	0.55	0.32	144.60	1.04	0.61	ZZ
Y1724Y		149.50	0.55	0.32	143.70	0.14	0.08	ZZ
Y5P46Y		150.55	1.60	0.94	144.08	0.53	0.31	ZZ
YADNC7		149.67	0.72	0.42	145.55	1.99	1.16	ZZ
YC38ZH		147.40	-1.55	-0.91	140.90	-2.66	-1.55	ZZ
YHTJ2E		150.10	1.15	0.68	145.13	1.57	0.91	ZZ
YREWPF		148.00	-0.95	-0.56	144.00	0.44	0.26	ZZ
Z9V83Q		150.00	1.05	0.62	143.20	-0.36	-0.21	ZZ
ZC1QQW		148.00	-0.95	-0.56	143.00	-0.56	-0.32	ZZ
ZTQCZD		147.70	-1.25	-0.73	144.80	1.24	0.72	ZZ

Summary Statistics

	Sample P75		Sample P76	
Grand Means	148.949	ksi	143.560	ksi
Stnd Dev Btwn Labs	1.701	ksi	1.719	ksi

Statistics based on 77 **of** 82 **reporting participants**

Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi

ASTM E8

Samples P75 , P76 : AISI 4340, AISI 4340

Comments on assigned Data Flags for Test #140

2W3AJR (X) - Data for both samples are high.
4FNDAV (X) - Low data for Sample P75.
7FJ683 (X) - Low data for Sample P76.
G6S713 (X) - High data for Sample P76.
GUJFGX (X) - Low data for Sample P75.

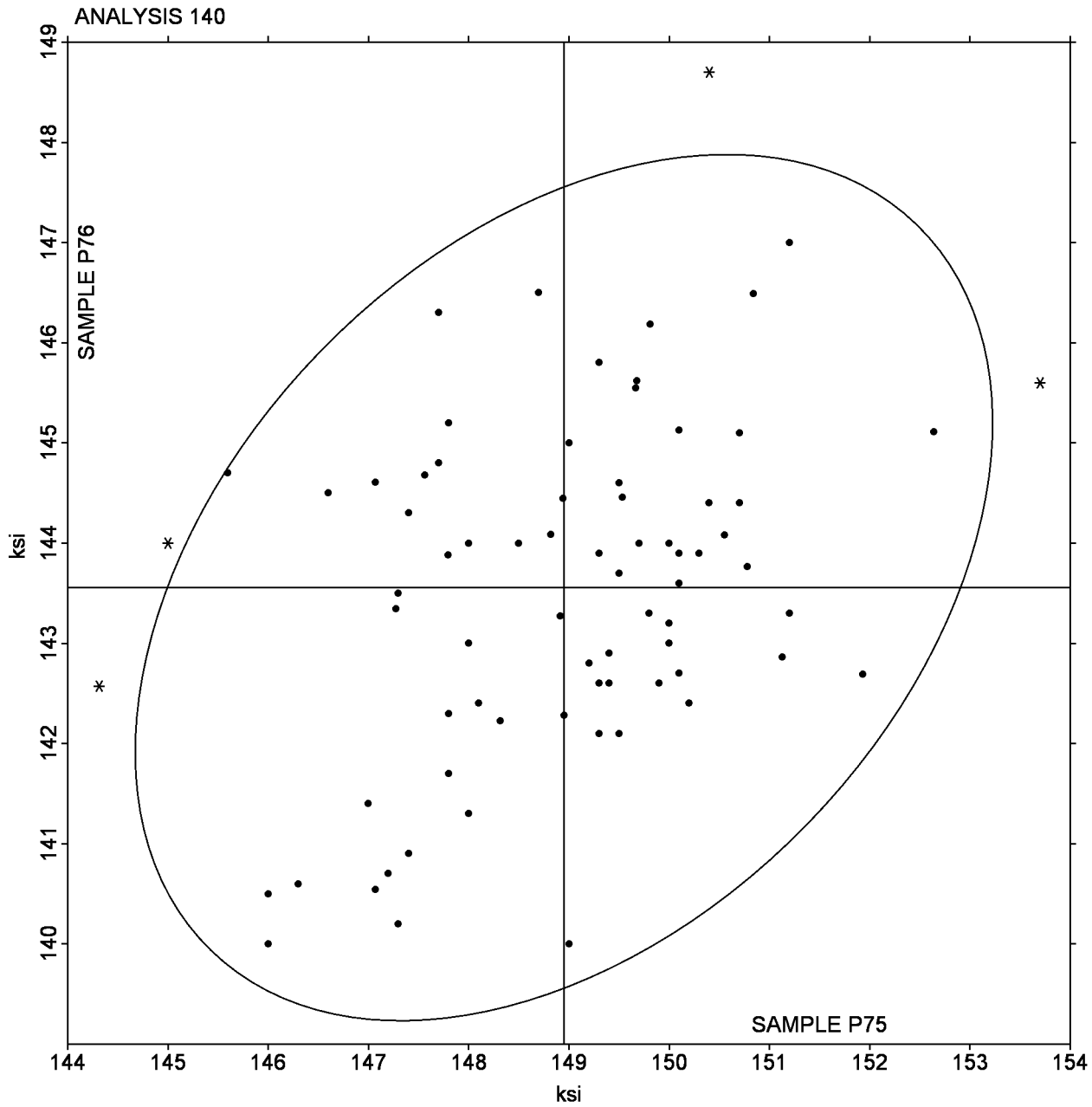
Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi

ASTM E8

SAMPLE P75 = 148.949 ksi SAMPLE P76 = 143.560 ksi



Interlaboratory Testing Program for Metals

Analysis 141

Yield Strength - ksi

ASTM E8

		Sample P75			Sample P76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
1DPFJR		121.99	-0.93	-0.44	118.22	1.18	0.66	ZZ
1VUXEG	X	139.09	16.17	7.68	125.17	8.12	4.57	ZZ
2ADWSX	*	124.40	1.48	0.70	122.10	5.06	2.84	ZZ
2CAD4V		124.44	1.52	0.72	117.48	0.44	0.25	ZZ
2RBYQF		119.80	-3.12	-1.48	116.60	-0.44	-0.25	ZZ
2RPR7B		123.30	0.38	0.18	115.00	-2.04	-1.15	ZZ
32UMH7		122.70	-0.22	-0.10	117.20	0.16	0.09	ZZ
3M9FSM		123.30	0.38	0.18	116.40	-0.64	-0.36	ZZ
3RS2ZS		123.80	0.88	0.42	117.20	0.16	0.09	ZZ
3SLGZB		125.00	2.08	0.99	117.00	-0.04	-0.03	ZZ
4DXQWM	X	133.73	10.81	5.13	127.20	10.15	5.71	ZZ
4HVJ4J		122.20	-0.72	-0.34	116.80	-0.24	-0.14	ZZ
4L39EW		121.00	-1.92	-0.91	116.00	-1.04	-0.59	ZZ
4V7S5M		120.90	-2.02	-0.96	114.70	-2.34	-1.32	ZZ
4VADP1		119.58	-3.33	-1.58	116.48	-0.56	-0.32	ZZ
68VH6U		120.00	-2.92	-1.39	118.00	0.96	0.54	ZZ
736M9R	*	119.08	-3.84	-1.83	112.41	-4.64	-2.61	ZZ
77LQ71		125.60	2.68	1.27	118.00	0.96	0.54	ZZ
7PHY3T	M				114.40	-2.64	-1.49	ZZ
7QYDCN		120.80	-2.12	-1.01	114.20	-2.84	-1.60	ZZ
8YHLCH		122.07	-0.85	-0.40	116.11	-0.93	-0.52	ZZ
9JVX8V		120.90	-2.02	-0.96	114.80	-2.24	-1.26	ZZ
9KV4XD		124.10	1.18	0.56	116.60	-0.44	-0.25	ZZ
9TNN86		122.00	-0.92	-0.44	117.00	-0.04	-0.03	ZZ
9ZDEW7		120.50	-2.42	-1.15	117.50	0.46	0.26	ZZ
A6G8JT		124.00	1.08	0.51	117.00	-0.04	-0.03	ZZ
AWC2XU		128.00	5.08	2.41	118.00	0.96	0.54	ZZ
B7HRQ8		124.70	1.78	0.85	119.00	1.96	1.10	ZZ
B8TG46		123.28	0.36	0.17	116.03	-1.01	-0.57	ZZ
BPM1WZ		120.24	-2.68	-1.27	117.92	0.87	0.49	ZZ
DMY3YL	X	113.57	-9.35	-4.44	119.40	2.35	1.32	ZZ
DWEBW3		122.10	-0.82	-0.39	119.70	2.66	1.49	ZZ
E4GJG8	X	101.86	-21.06	-10.00	117.16	0.12	0.07	ZZ
ER1TEJ		122.30	-0.62	-0.29	118.60	1.56	0.87	ZZ
F8S8TP	X	109.70	-13.22	-6.28	100.90	-16.14	-9.08	ZZ
FCV5HU		125.00	2.08	0.99	118.70	1.66	0.93	ZZ
FJG1DL		124.59	1.67	0.79	115.31	-1.74	-0.98	ZZ
FN9HVY		123.00	0.08	0.04	114.00	-3.04	-1.71	ZZ
FU2436		125.00	2.08	0.99	120.00	2.96	1.66	ZZ
FZWY6C		120.50	-2.42	-1.15	114.60	-2.44	-1.37	ZZ
H172YP		122.56	-0.36	-0.17	115.60	-1.45	-0.81	ZZ
H4J3RM		119.90	-3.02	-1.43	117.40	0.36	0.20	ZZ
H4R4ZD		120.40	-2.52	-1.20	115.10	-1.94	-1.09	ZZ
HDSSVB		123.91	0.99	0.47	118.57	1.53	0.86	ZZ
JUB4P4	*	118.20	-4.72	-2.24	117.10	0.06	0.03	ZZ

Interlaboratory Testing Program for Metals

Analysis 141

Yield Strength - ksi

ASTM E8

WebCode	Data Flag	Sample P75 Lab Mean	Sample P75 Diff. from Grand Mean	Sample P75 CPV	Sample P76 Lab Mean	Sample P76 Diff. from Grand Mean	Sample P76 CPV	Instr Code
KGRYDE		122.69	-0.23	-0.11	118.96	1.92	1.08	ZZ
L2GRKP		122.85	-0.07	-0.03	117.63	0.58	0.33	ZZ
L435SD		127.77	4.85	2.30	119.34	2.30	1.29	ZZ
LQMGZ3		122.30	-0.62	-0.29	118.60	1.56	0.87	ZZ
M1JRVR		123.00	0.08	0.04	114.60	-2.44	-1.37	ZZ
MVJ6LS		124.20	1.28	0.61	116.70	-0.34	-0.19	ZZ
N1AVLW		119.80	-3.12	-1.48	114.50	-2.54	-1.43	ZZ
N9NANL		124.70	1.78	0.85	117.70	0.66	0.37	ZZ
NQZSTY		125.40	2.48	1.18	119.90	2.86	1.61	ZZ
PHTJLX		122.70	-0.22	-0.10	115.30	-1.74	-0.98	ZZ
PVUVJ9		124.73	1.81	0.86	120.38	3.34	1.88	ZZ
Q3FCGD		120.50	-2.42	-1.15	115.90	-1.14	-0.64	ZZ
Q4WEED		123.90	0.98	0.47	116.90	-0.14	-0.08	ZZ
Q8LNC6		123.00	0.08	0.04	116.00	-1.04	-0.59	ZZ
R33YQP	X	113.71	-9.21	-4.37	115.45	-1.59	-0.90	ZZ
RA3H1H		123.20	0.28	0.13	116.10	-0.94	-0.53	ZZ
S32EN5		122.70	-0.22	-0.10	116.90	-0.14	-0.08	ZZ
SRL2DA		121.50	-1.42	-0.67	114.20	-2.84	-1.60	ZZ
UA36ND		123.00	0.08	0.04	116.60	-0.44	-0.25	ZZ
UNSNDH		123.90	0.98	0.47	119.50	2.46	1.38	ZZ
V5QTCJ		120.80	-2.12	-1.01	115.70	-1.34	-0.76	ZZ
VAHX42		124.49	1.57	0.75	115.92	-1.12	-0.63	ZZ
VW4K8N		126.80	3.88	1.84	117.40	0.36	0.20	ZZ
WXHT1E		124.00	1.08	0.51	117.60	0.56	0.31	ZZ
X54UED	X	124.40	1.48	0.70	111.00	-6.04	-3.40	ZZ
X8RQJA		124.10	1.18	0.56	118.10	1.06	0.59	ZZ
XEVC46	X	87.10	-35.82	-17.02	114.80	-2.24	-1.26	ZZ
XJW88R		121.30	-1.62	-0.77	119.60	2.56	1.44	ZZ
XXH4FF	X	121.30	-1.62	-0.77	80.20	-36.84	-20.72	ZZ
Y2DG7J	X	123.30	0.38	0.18	124.60	7.56	4.25	ZZ
YK3HN9		123.50	0.58	0.28	117.90	0.86	0.48	ZZ
ZHQ665		127.50	4.58	2.18	119.10	2.06	1.16	ZZ
ZSW5T1		123.33	0.41	0.19	116.50	-0.55	-0.31	ZZ
ZZBW65		125.70	2.78	1.32	117.10	0.06	0.03	ZZ

Summary Statistics

	Sample P75		Sample P76	
Grand Means	122.919	ksi	117.040	ksi
Stnd Dev Btwn Labs	2.105	ksi	1.778	ksi

Statistics based on 68 **of** 79 **reporting participants**

Samples P75 , P76 : AISI 4340, AISI 4340

Interlaboratory Testing Program for Metals

Analysis 141

Yield Strength - ksi

ASTM E8

Comments on assigned Data Flags for Test #141

1VUXEG (X) - Data for both samples are high.
4DXQWM (X) - Data for both samples are high.
7PHY3T (M) - Laboratory did not submit data for Sample P75.
DMY3YL (X) - Low data for Sample P75.
E4GJG8 (X) - Low data for Sample P75.
F8S8TP (X) - Data for both samples are low.
R33YQP (X) - Low data for Sample P75.
X54UED (X) - Low data for Sample P76.
XEVC46 (X) - Low data for Sample P75.
XXH4FF (X) - Low data for Sample P76.
Y2DG7J (X) - High data for Sample P76.

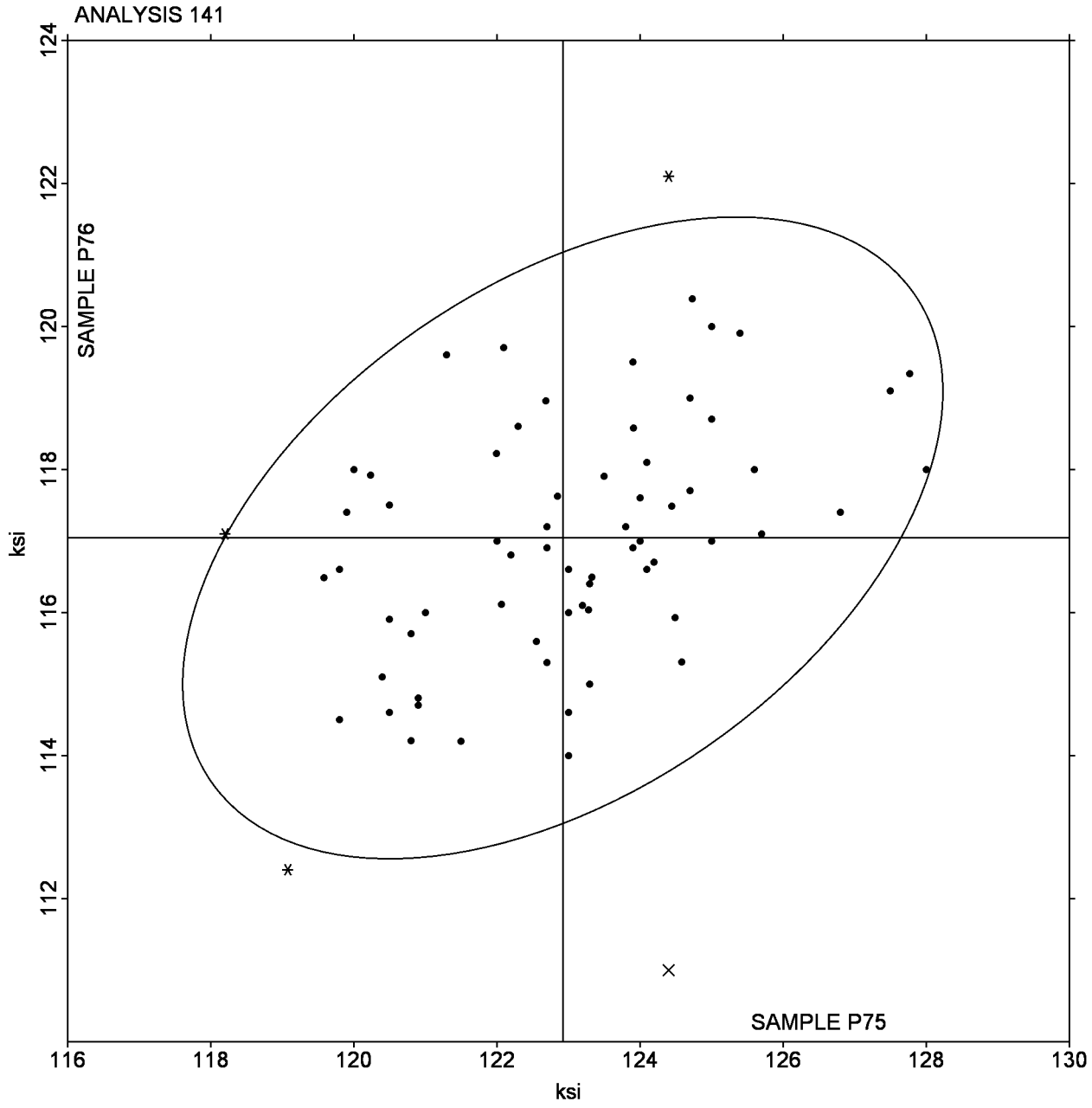
Interlaboratory Testing Program for Metals

Analysis 141

Yield Strength - ksi

ASTM E8

SAMPLE P75 = 122.919 ksi SAMPLE P76 = 117.040 ksi



Interlaboratory Testing Program for Metals

Analysis 142

Elongation - Percent Increase (In 4XD)

ASTM E8

WebCode	Data Flag	Sample P75 Lab Mean	Sample P75 Diff. from Grand Mean	Sample P75 CPV	Sample P76 Lab Mean	Sample P76 Diff. from Grand Mean	Sample P76 CPV	Instr Code
1QHKE4		16.80	-0.61	-0.46	17.40	-0.34	-0.29	ZZ
1SSWCY		16.00	-1.41	-1.08	16.00	-1.74	-1.48	ZZ
2XSRFU		15.30	-2.11	-1.61	15.80	-1.94	-1.65	ZZ
3EHWT6		17.50	0.09	0.07	18.00	0.26	0.22	ZZ
4S3RMB		16.00	-1.41	-1.08	16.00	-1.74	-1.48	ZZ
57V78G		17.00	-0.41	-0.31	17.00	-0.74	-0.63	ZZ
6MJAC5		17.50	0.09	0.07	17.50	-0.24	-0.20	ZZ
6XB3Z8		18.20	0.79	0.61	17.90	0.16	0.14	ZZ
6ZHNQW		14.50	-2.91	-2.22	15.60	-2.14	-1.82	ZZ
83GCSP		16.20	-1.21	-0.92	16.00	-1.74	-1.48	ZZ
883BX4		17.10	-0.31	-0.24	17.40	-0.34	-0.29	ZZ
8BXUS2		17.60	0.19	0.15	16.90	-0.84	-0.71	ZZ
8FFXQK		20.20	2.79	2.13	19.80	2.06	1.75	ZZ
8YYFQ3		18.00	0.59	0.45	19.20	1.46	1.24	ZZ
9FFWBZ	*	15.60	-1.81	-1.38	18.10	0.36	0.31	ZZ
9L9TDX		17.80	0.39	0.30	18.40	0.66	0.56	ZZ
9W74N3		18.60	1.19	0.91	19.75	2.01	1.71	ZZ
A1LGAW		16.00	-1.41	-1.08	17.00	-0.74	-0.63	ZZ
A1VA7C		18.10	0.69	0.53	19.30	1.56	1.33	ZZ
AV1A3Q		16.40	-1.01	-0.77	17.00	-0.74	-0.63	ZZ
BH4UAE		18.00	0.59	0.45	18.00	0.26	0.22	ZZ
C1E115		18.00	0.59	0.45	17.30	-0.44	-0.37	ZZ
C43C5C		18.50	1.09	0.83	18.70	0.96	0.82	ZZ
CLN1CM		16.50	-0.91	-0.69	16.00	-1.74	-1.48	ZZ
D17Z9F		17.00	-0.41	-0.31	17.00	-0.74	-0.63	ZZ
D7VWFX		18.30	0.89	0.68	18.60	0.86	0.73	ZZ
DHUQJ7		17.00	-0.41	-0.31	17.00	-0.74	-0.63	ZZ
DP95XP	X	34.00	16.59	12.68	38.00	20.26	17.22	ZZ
DV1HHL	M				18.00	0.26	0.22	ZZ
EH8LFY		19.00	1.59	1.22	18.70	0.96	0.82	ZZ
ELSJZA		17.00	-0.41	-0.31	16.50	-1.24	-1.05	ZZ
EMRYWP		18.00	0.59	0.45	17.50	-0.24	-0.20	ZZ
EZZA9Q	*	20.10	2.69	2.06	18.60	0.86	0.73	ZZ
FJDB4F		18.70	1.29	0.99	19.20	1.46	1.24	ZZ
FKGUK6		17.00	-0.41	-0.31	17.50	-0.24	-0.20	ZZ
FN47PE		19.00	1.59	1.22	18.00	0.26	0.22	ZZ
FVB8FV		17.30	-0.11	-0.08	17.00	-0.74	-0.63	ZZ
FVDWQ6	*	17.00	-0.41	-0.31	19.50	1.76	1.50	ZZ
GH3QH2		17.00	-0.41	-0.31	19.00	1.26	1.07	ZZ
KAW8LD		17.80	0.39	0.30	18.00	0.26	0.22	ZZ
KD1V3P		17.60	0.19	0.15	17.60	-0.14	-0.12	ZZ
KWEAM2		18.00	0.59	0.45	19.00	1.26	1.07	ZZ
L3S35E		15.70	-1.71	-1.30	16.40	-1.34	-1.14	ZZ
LBMTR7		19.00	1.59	1.22	18.00	0.26	0.22	ZZ
LTLX4H		19.00	1.59	1.22	19.00	1.26	1.07	ZZ

Interlaboratory Testing Program for Metals

Analysis 142

Elongation - Percent Increase (In 4XD)

ASTM E8

WebCode	Data Flag	Sample P75 Lab Mean	Sample P75 Diff. from Grand Mean	Sample P75 CPV	Sample P76 Lab Mean	Sample P76 Diff. from Grand Mean	Sample P76 CPV	Instr Code
M61ZRT		16.00	-1.41	-1.08	15.90	-1.84	-1.56	ZZ
M7X9TW	*	13.81	-3.60	-2.75	15.70	-2.04	-1.73	ZZ
P3WYWN		17.90	0.49	0.38	18.40	0.66	0.56	ZZ
PJ3ZS9		19.00	1.59	1.22	20.00	2.26	1.92	ZZ
PYHT96		17.00	-0.41	-0.31	17.80	0.06	0.05	ZZ
PYQ7A9		19.20	1.79	1.37	19.20	1.46	1.24	ZZ
QQ12A2		20.00	2.59	1.98	19.50	1.76	1.50	ZZ
QUTACN		18.00	0.59	0.45	18.00	0.26	0.22	ZZ
R28QMR		18.10	0.69	0.53	19.10	1.36	1.16	ZZ
R3L1E9		17.50	0.09	0.07	18.50	0.76	0.65	ZZ
RFEPYW		17.50	0.09	0.07	18.00	0.26	0.22	ZZ
RQGNJG		17.50	0.09	0.07	17.50	-0.24	-0.20	ZZ
RV26D1		16.36	-1.05	-0.80	16.39	-1.35	-1.15	ZZ
RVS6S3		16.60	-0.81	-0.62	17.10	-0.64	-0.54	ZZ
S1MC94		18.80	1.39	1.06	19.10	1.36	1.16	ZZ
SAA35J		18.00	0.59	0.45	18.00	0.26	0.22	ZZ
SBDYYA		20.30	2.89	2.21	20.20	2.46	2.09	ZZ
SMRA5D		16.90	-0.51	-0.39	18.00	0.26	0.22	ZZ
T2UY9Q		16.50	-0.91	-0.69	17.50	-0.24	-0.20	ZZ
TAYGN8		17.50	0.09	0.07	17.00	-0.74	-0.63	ZZ
TCGVJH		17.10	-0.31	-0.24	17.80	0.06	0.05	ZZ
TJ3KEY		17.20	-0.21	-0.16	18.00	0.26	0.22	ZZ
U4B1NH		16.50	-0.91	-0.69	18.00	0.26	0.22	ZZ
W95JHF		17.00	-0.41	-0.31	17.40	-0.34	-0.29	ZZ
WNA5XF		16.50	-0.91	-0.69	16.70	-1.04	-0.88	ZZ
WQKG1L		18.40	0.99	0.76	17.30	-0.44	-0.37	ZZ
WU862X		14.56	-2.85	-2.18	14.80	-2.94	-2.50	ZZ
XS2LZ8	*	14.30	-3.11	-2.37	16.40	-1.34	-1.14	ZZ
YBA5J1		18.00	0.59	0.45	18.00	0.26	0.22	ZZ
YS419M		16.70	-0.71	-0.54	16.90	-0.84	-0.71	ZZ
Z8B2PE		17.50	0.09	0.07	17.50	-0.24	-0.20	ZZ
Z8DN99		16.60	-0.81	-0.62	16.80	-0.94	-0.80	ZZ
Z8YWC2		18.10	0.69	0.53	19.10	1.36	1.16	ZZ
ZBDG2Q		16.80	-0.61	-0.46	16.60	-1.14	-0.97	ZZ
ZWFDH8		19.20	1.79	1.37	19.30	1.56	1.33	ZZ

Summary Statistics

	Sample P75		Sample P76	
Grand Means	17.408	Percent	17.740	Percent
Stnd Dev Btwn Labs	1.309	Percent	1.176	Percent

Statistics based on 78 **of** 80 **reporting participants**

Samples P75 , P76 : AISI 4340, AISI 4340

Interlaboratory Testing Program for Metals

Analysis 142

Elongation - Percent Increase (In 4XD)

ASTM E8

Comments on assigned Data Flags for Test #142

DP95XP (X) - Data for both samples are high.

DV1HHL (M) - Laboratory did not submit data for Sample P75.

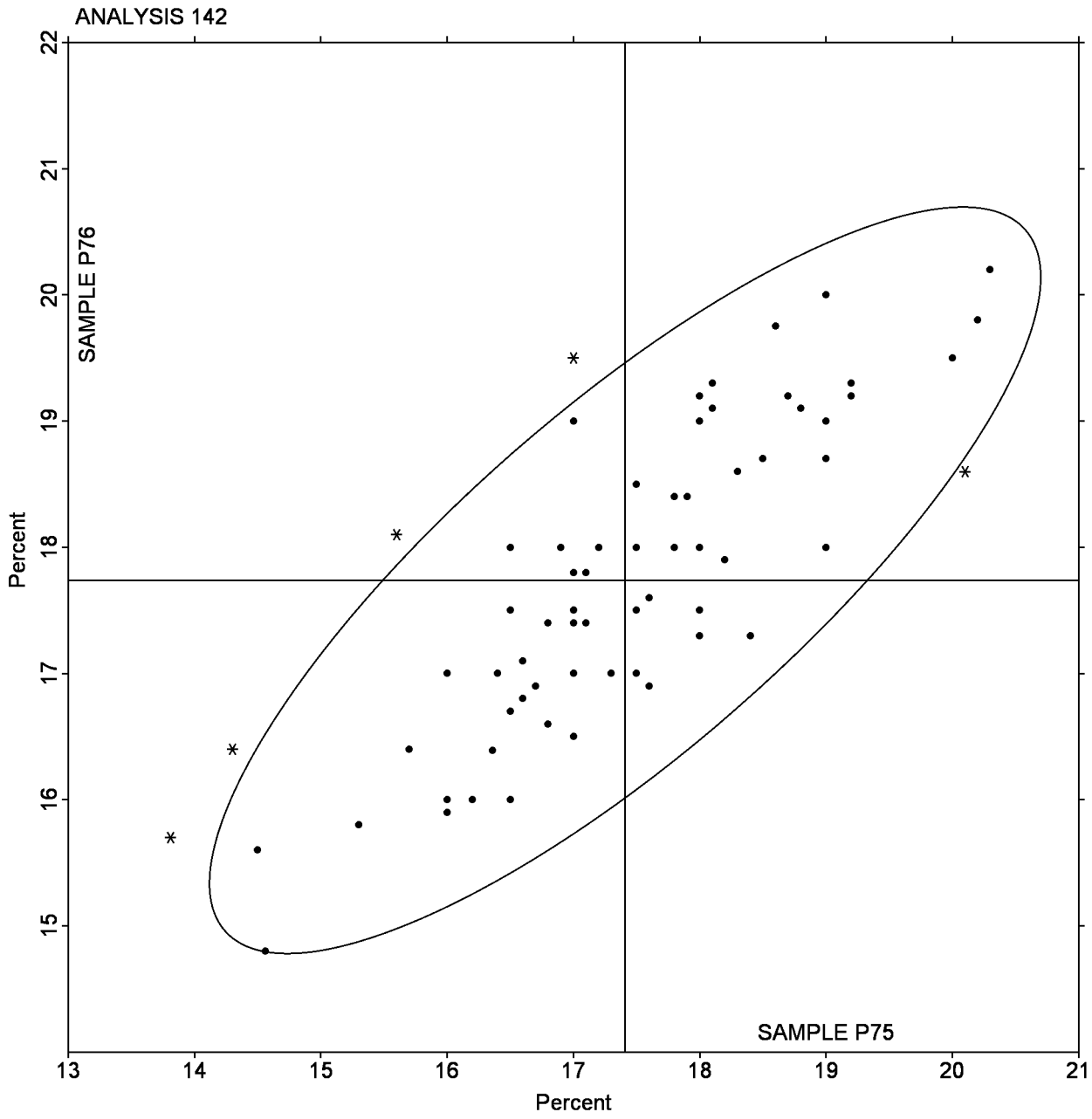
Interlaboratory Testing Program for Metals

Analysis 142

Elongation - Percent Increase (In 4XD)

ASTM E8

SAMPLE P75 = 17.408 Percent SAMPLE P76 = 17.740 Percent



Interlaboratory Testing Program for Metals

Analysis 143

Reduction of Area - Percent

ASTM E8

		Sample P75			Sample P76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
14KC3M		54.00	-0.45	-0.40	56.00	1.38	1.21	ZZ
1P6B4B		54.40	-0.05	-0.05	52.90	-1.72	-1.51	ZZ
2SKNMS		54.00	-0.45	-0.40	53.50	-1.12	-0.98	ZZ
3DRQM1		55.50	1.05	0.94	55.90	1.28	1.12	ZZ
3E3541	X	58.30	3.85	3.44	53.80	-0.82	-0.72	ZZ
3V7ZDF		55.60	1.15	1.02	56.00	1.38	1.21	ZZ
48VBGC		54.20	-0.25	-0.23	53.00	-1.62	-1.42	ZZ
4NHZ7M		54.00	-0.45	-0.40	53.00	-1.62	-1.42	ZZ
6LDT97	X	54.80	0.35	0.31	51.00	-3.62	-3.18	ZZ
6ZG491	X	34.30	-20.15	-18.00	34.80	-19.82	-17.38	ZZ
7BC3JR		55.20	0.75	0.67	55.30	0.68	0.60	ZZ
81THR2		54.80	0.35	0.31	54.90	0.28	0.24	ZZ
868AJS		54.40	-0.05	-0.05	56.20	1.58	1.38	ZZ
8KM4NJ		54.90	0.45	0.40	52.80	-1.82	-1.60	ZZ
8NWRM2		53.70	-0.75	-0.67	55.10	0.48	0.42	ZZ
8P1RRP	X	59.40	4.95	4.42	59.90	5.28	4.63	ZZ
9P222B		53.10	-1.35	-1.21	52.20	-2.42	-2.12	ZZ
A8WT4X	X	47.20	-7.25	-6.48	55.10	0.48	0.42	ZZ
AGSV3Y		55.00	0.55	0.49	56.00	1.38	1.21	ZZ
APDHRQ		53.90	-0.55	-0.49	55.20	0.58	0.51	ZZ
AYP52Y		56.00	1.55	1.38	55.30	0.68	0.60	ZZ
B5DM57		54.40	-0.05	-0.05	53.00	-1.62	-1.42	ZZ
CRJLR4	*	51.30	-3.15	-2.82	55.00	0.38	0.33	ZZ
CU9DZP	*	52.00	-2.45	-2.19	52.00	-2.62	-2.30	ZZ
DRG2QM		55.60	1.15	1.02	55.50	0.88	0.77	ZZ
E2387H		54.70	0.25	0.22	54.80	0.18	0.16	ZZ
EG3Y92		54.00	-0.45	-0.40	54.00	-0.62	-0.54	ZZ
F5AHGS		54.00	-0.45	-0.40	56.00	1.38	1.21	ZZ
FBU8WD		55.70	1.25	1.11	55.20	0.58	0.51	ZZ
FJ9DSD		56.00	1.55	1.38	55.00	0.38	0.33	ZZ
FSDNTY		56.00	1.55	1.38	55.00	0.38	0.33	ZZ
FT7ERA		55.00	0.55	0.49	56.70	2.08	1.82	ZZ
G15FMA		54.00	-0.45	-0.40	55.00	0.38	0.33	ZZ
G8J66F		56.00	1.55	1.38	54.00	-0.62	-0.54	ZZ
GNNAAM	*	51.50	-2.95	-2.64	54.70	0.08	0.07	ZZ
H6HHLN	X	54.00	-0.45	-0.40	65.20	10.58	9.28	ZZ
HYM27D		55.60	1.15	1.02	55.40	0.78	0.68	ZZ
JJTJKP		55.10	0.65	0.58	54.80	0.18	0.16	ZZ
JWNPPR		54.30	-0.15	-0.14	54.70	0.08	0.07	ZZ
KCKUVY		53.50	-0.95	-0.85	54.10	-0.52	-0.46	ZZ
KFT4UJ	X	51.20	-3.25	-2.91	51.50	-3.12	-2.74	ZZ
L1AGHJ		54.00	-0.45	-0.40	54.00	-0.62	-0.54	ZZ
L9Y134	*	56.70	2.25	2.01	57.20	2.58	2.26	ZZ
LDKBFA		54.30	-0.15	-0.14	55.10	0.48	0.42	ZZ
LGVYLU		54.40	-0.05	-0.05	55.02	0.40	0.35	ZZ

Interlaboratory Testing Program for Metals

Analysis 143

Reduction of Area - Percent

ASTM E8

WebCode	Data Flag	Sample P75 Lab Mean	Sample P75 Diff. from Grand Mean	Sample P75 CPV	Sample P76 Lab Mean	Sample P76 Diff. from Grand Mean	Sample P76 CPV	Instr Code
LJ6U7M		54.90	0.45	0.40	54.50	-0.12	-0.11	ZZ
M4LSVL		54.50	0.05	0.04	54.50	-0.12	-0.11	ZZ
M9KTUU		52.90	-1.55	-1.39	53.80	-0.82	-0.72	ZZ
MH55HV		53.00	-1.45	-1.30	54.00	-0.62	-0.54	ZZ
MR6KHM		54.60	0.15	0.13	54.70	0.08	0.07	ZZ
NLHEZS		54.30	-0.15	-0.14	55.40	0.78	0.68	ZZ
NRKAFY		53.50	-0.95	-0.85	56.00	1.38	1.21	ZZ
NUJBX2		55.00	0.55	0.49	55.00	0.38	0.33	ZZ
P8RHH7		53.40	-1.05	-0.94	53.70	-0.92	-0.81	ZZ
QJKXQ2		54.10	-0.35	-0.31	54.40	-0.22	-0.19	ZZ
QY4J81		52.90	-1.55	-1.39	53.20	-1.42	-1.25	ZZ
RVCMBS		53.50	-0.95	-0.85	53.50	-1.12	-0.98	ZZ
S8SWVZ		54.00	-0.45	-0.40	53.00	-1.62	-1.42	ZZ
SDNFGL		54.00	-0.45	-0.40	53.00	-1.62	-1.42	ZZ
SF41M8		56.00	1.55	1.38	57.00	2.38	2.09	ZZ
SJJLBW		54.70	0.25	0.22	54.70	0.08	0.07	ZZ
T242K3		53.50	-0.95	-0.85	53.50	-1.12	-0.98	ZZ
TB9ELX		55.20	0.75	0.67	54.00	-0.62	-0.54	ZZ
THQ51E		55.30	0.85	0.76	54.90	0.28	0.24	ZZ
TM237M		55.00	0.55	0.49	53.40	-1.22	-1.07	ZZ
TVJJ5F		53.50	-0.95	-0.85	54.00	-0.62	-0.54	ZZ
U4Q5TZ		55.20	0.75	0.67	55.20	0.58	0.51	ZZ
UM8JDY		56.50	2.05	1.83	55.90	1.28	1.12	ZZ
VA88KG		53.00	-1.45	-1.30	55.00	0.38	0.33	ZZ
VJDSJD		54.00	-0.45	-0.40	56.00	1.38	1.21	ZZ
VMF3K1		55.50	1.05	0.94	54.00	-0.62	-0.54	ZZ
VNQUAA		55.40	0.95	0.85	53.60	-1.02	-0.90	ZZ
VUBAWE		53.30	-1.15	-1.03	55.50	0.88	0.77	ZZ
WQCJG9		54.49	0.04	0.03	55.99	1.37	1.20	ZZ
XDUVLE		55.30	0.85	0.76	55.80	1.18	1.03	ZZ
Y7JR7C		56.00	1.55	1.38	53.00	-1.62	-1.42	ZZ
YBK9G3		55.20	0.75	0.67	54.10	-0.52	-0.46	ZZ
YHPP7G		55.60	1.15	1.02	53.80	-0.82	-0.72	ZZ
Z9W1C4		52.50	-1.95	-1.74	55.10	0.48	0.42	ZZ

Summary Statistics

	Sample P75		Sample P76	
Grand Means	54.453	Percent	54.620	Percent
Stnd Dev Btwn Labs	1.120	Percent	1.140	Percent

Statistics based on 72 **of** 79 **reporting participants**

Samples P75 , P76 : AISI 4340, AISI 4340

Interlaboratory Testing Program for Metals

Analysis 143

Reduction of Area - Percent

ASTM E8

Comments on assigned Data Flags for Test #143

3E3541 (X) - High data for Sample P75.
6LDT97 (X) - Low data for Sample P76.
6ZG491 (X) - Data for both samples are low.
8P1RRP (X) - Data for both samples are high.
A8WT4X (X) - Low data for Sample P75.
H6HHLN (X) - High data for Sample P76.
KFT4UJ (X) - Low data for Sample P75.

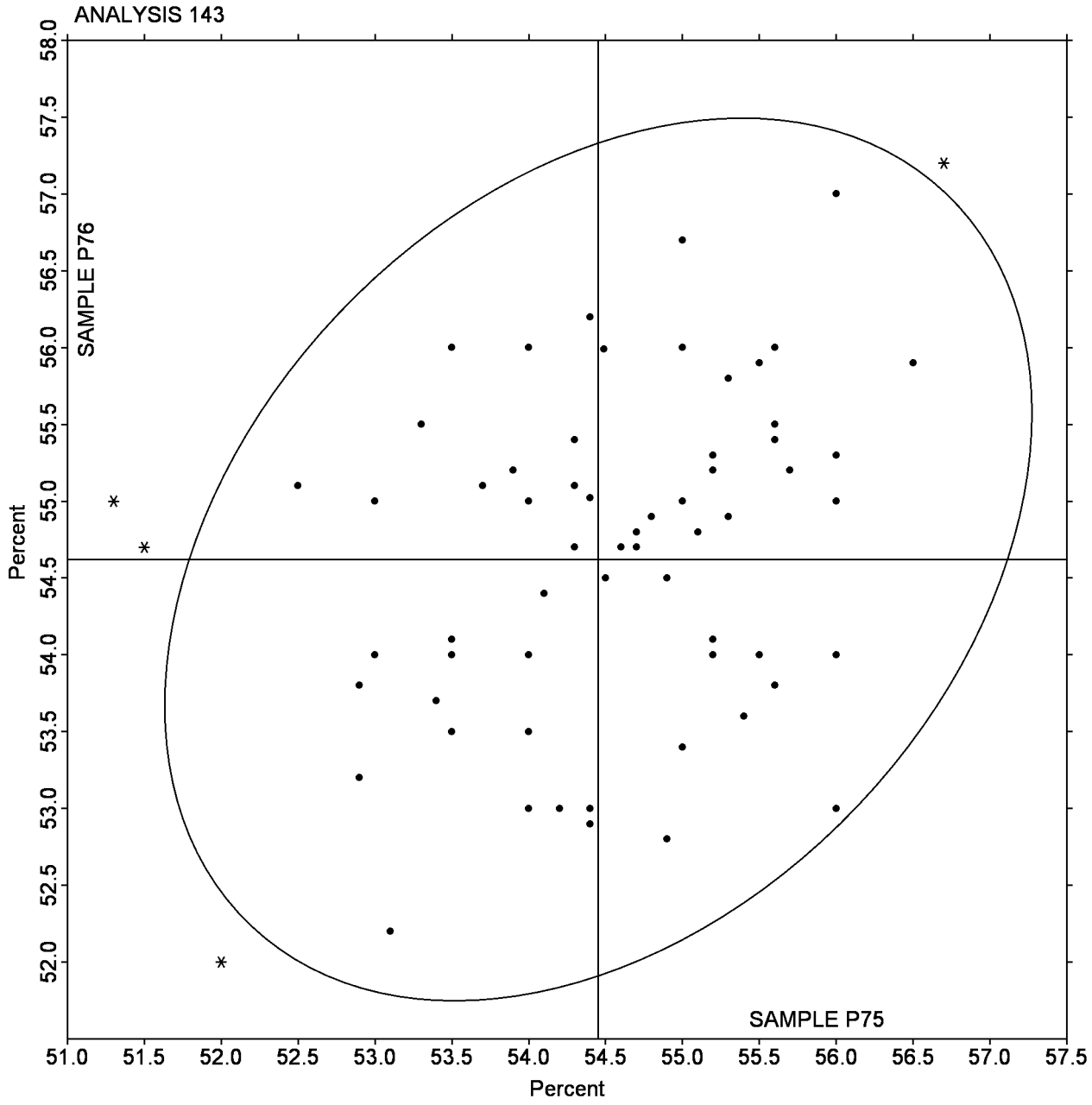
Interlaboratory Testing Program for Metals

Analysis 143

Reduction of Area - Percent

ASTM E8

SAMPLE P75 = 54.453 Percent SAMPLE P76 = 54.620 Percent



Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - Rockwell Hardness Number

ASTM E18

		Sample N75			Sample N76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2465WZ		87.42	-0.67	-0.99	90.70	-0.68	-1.22	CL
26BLBF		87.52	-0.57	-0.84	90.44	-0.94	-1.69	WI
2BZHQ5		89.66	1.57	2.30	92.36	0.98	1.76	UN
2M1Z9T		87.24	-0.85	-1.25	90.80	-0.58	-1.04	UN
34AV28		88.12	0.03	0.04	91.32	-0.06	-0.11	MI
3RQVF6		87.92	-0.17	-0.25	90.64	-0.74	-1.33	WI
3UMG5A		87.86	-0.23	-0.34	91.34	-0.04	-0.07	WI
489ZKS		89.30	1.21	1.77	91.80	0.42	0.75	CL
4DPVN8		86.82	-1.27	-1.87	90.26	-1.12	-2.01	NA
4MPYCJ		88.72	0.63	0.92	92.16	0.78	1.40	BU
4N3PL1	X	87.20	-0.89	-1.31	86.40	-4.98	-8.95	EM
4WVCET		87.12	-0.97	-1.43	90.64	-0.74	-1.33	WI
4YYP1E		87.82	-0.27	-0.40	90.86	-0.52	-0.94	NA
56A8TB		88.00	-0.09	-0.14	90.92	-0.46	-0.83	WI
5GKDDS	*	86.62	-1.47	-2.16	91.28	-0.10	-0.18	WI
5NVV42		89.00	0.91	1.33	92.28	0.90	1.62	FU
648C71		87.58	-0.51	-0.75	91.08	-0.30	-0.54	AK
7E4W9C		87.42	-0.67	-0.99	90.80	-0.58	-1.04	WI
7EBG5T		88.45	0.35	0.52	91.41	0.03	0.05	WI
7VKF9S		88.14	0.05	0.07	91.12	-0.26	-0.47	WI
8E5L4W	*	88.04	-0.05	-0.08	90.20	-1.18	-2.12	WI
8GJ1M4	*	88.96	0.87	1.27	90.80	-0.58	-1.04	LE
8TRXF6		87.84	-0.25	-0.37	91.52	0.14	0.25	WI
91RCGX		88.02	-0.07	-0.11	91.00	-0.38	-0.68	UN
95RLRA		88.35	0.26	0.38	91.77	0.39	0.70	UN
B219T7		89.00	0.91	1.33	91.80	0.42	0.75	WI
C7ALMQ		88.00	-0.09	-0.14	91.26	-0.12	-0.22	WI
C8S3W5		87.00	-1.09	-1.60	91.00	-0.38	-0.68	NA
DCHVNZ		87.60	-0.49	-0.72	91.62	0.24	0.43	XX
DDZVT8		88.30	0.21	0.30	91.58	0.20	0.36	NA
DH78CF		89.10	1.01	1.48	92.00	0.62	1.11	XX
EPFXVZ		87.48	-0.61	-0.90	91.02	-0.36	-0.65	WI
EUT26S		88.54	0.45	0.66	91.28	-0.10	-0.18	WI
FCSGA6		87.02	-1.07	-1.58	90.90	-0.48	-0.86	XX
FJKE89		88.78	0.69	1.01	91.62	0.24	0.43	WI
FU862Q		88.04	-0.05	-0.08	91.36	-0.02	-0.04	WI
G1FDMK		88.26	0.17	0.25	91.52	0.14	0.25	WI
G9K6JQ		89.30	1.21	1.77	92.70	1.32	2.37	WI
GYXL4B		87.94	-0.15	-0.22	91.06	-0.32	-0.58	CL
GZHKXT		88.88	0.79	1.16	91.96	0.58	1.04	BU
H1MA2X		88.18	0.09	0.13	90.92	-0.46	-0.83	WI
HPV6TL	*	87.18	-0.91	-1.34	91.78	0.40	0.72	CL
JYR2EZ		87.86	-0.23	-0.34	91.26	-0.12	-0.22	UN
K6R2RS		88.44	0.35	0.51	91.76	0.38	0.68	CL
KLS6HJ		89.20	1.11	1.63	92.50	1.12	2.01	AV

Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - Rockwell Hardness Number

ASTM E18

WebCode	Data Flag	Sample N75 Lab Mean	Sample N75 Diff. from Grand Mean	Sample N75 CPV	Sample N76 Lab Mean	Sample N76 Diff. from Grand Mean	Sample N76 CPV	Instr Code
KWJP2W		88.30	0.21	0.30	91.20	-0.18	-0.32	MI
L5SNAC		88.86	0.77	1.13	91.98	0.60	1.08	WI
LDSTP1		87.20	-0.89	-1.31	91.04	-0.34	-0.61	WI
LFZFG8		88.98	0.89	1.30	92.22	0.84	1.51	WI
LKG8L1		88.26	0.17	0.25	91.88	0.50	0.90	WI
LVMHNB		88.96	0.87	1.27	91.82	0.44	0.79	EM
M48MNW		88.80	0.71	1.04	92.00	0.62	1.11	WI
MSZQ3D		88.20	0.11	0.16	91.20	-0.18	-0.32	CL
NBKK3T		88.80	0.71	1.04	91.82	0.44	0.79	MI
NCKJDE		88.30	0.21	0.30	91.70	0.32	0.57	WI
ND1SK9		88.14	0.05	0.07	91.68	0.30	0.54	WI
NP1RLL		88.56	0.47	0.69	91.24	-0.14	-0.25	WI
NXWMKY		87.76	-0.33	-0.49	90.25	-1.13	-2.04	CL
NYXSNT		87.50	-0.59	-0.87	91.28	-0.10	-0.18	WI
PR2SSK		88.70	0.61	0.89	91.94	0.56	1.01	XX
PVD88G		88.42	0.33	0.48	91.12	-0.26	-0.47	IN
QB9HAE		88.24	0.15	0.22	91.84	0.46	0.83	WI
QGV6JH		88.12	0.03	0.04	90.58	-0.80	-1.44	LE
QR45JS		88.16	0.07	0.10	91.84	0.46	0.83	NA
QW2ARF		86.64	-1.45	-2.13	90.72	-0.66	-1.19	WI
RNP3GZ		87.18	-0.91	-1.34	90.86	-0.52	-0.94	WI
RQFTRQ		87.94	-0.15	-0.22	90.90	-0.48	-0.86	UN
SCMQY5		87.40	-0.69	-1.02	91.80	0.42	0.75	IN
SQ3BNX		87.96	-0.13	-0.20	91.64	0.26	0.47	UN
TW5F51		88.64	0.55	0.80	91.84	0.46	0.83	WI
UVR8KM		88.59	0.50	0.73	91.74	0.36	0.65	WI
V6PSVS		88.68	0.59	0.86	91.70	0.32	0.57	NA
VBMVTA		87.50	-0.59	-0.87	91.28	-0.10	-0.18	LE
W5GBEP		88.46	0.37	0.54	91.82	0.44	0.79	CL
YGXYBX		87.96	-0.13	-0.20	91.40	0.02	0.03	MA
YK7JFW		87.60	-0.49	-0.72	92.00	0.62	1.11	WI
Z1F7PV		86.56	-1.53	-2.25	90.32	-1.06	-1.91	WI
ZATZCY		88.00	-0.09	-0.14	92.00	0.62	1.11	WI
ZEHPBP		87.60	-0.49	-0.72	90.80	-0.58	-1.04	WI
ZPSZ88		88.32	0.23	0.33	91.22	-0.16	-0.29	WI

Summary Statistics

	Sample N75		Sample N76	
Grand Means	88.093	HRB	91.380	HRB
Stnd Dev Btwn Labs	0.681	HRB	0.556	HRB

Statistics based on 79 **of** 80 **reporting participants**

Samples N75 , N76 : brass, steel

Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - Rockwell Hardness Number

ASTM E18

Comments on assigned Data Flags for Test #119

4N3PL1 (X) - Low data for Sample N76.

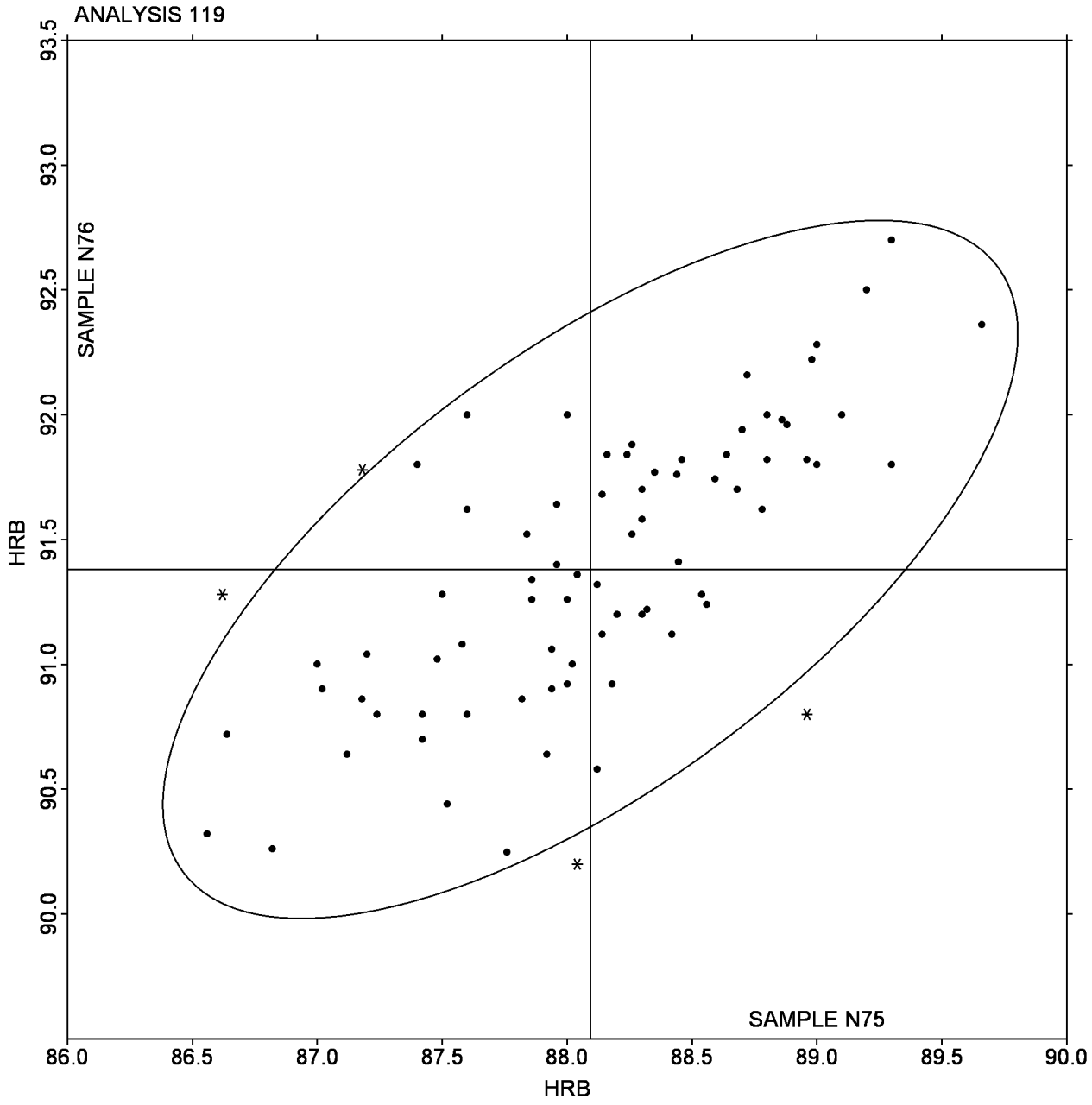
Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - Rockwell Hardness Number

ASTM E18

SAMPLE N75 = 88.093 HRB SAMPLE N76 = 91.380 HRB



Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)

ASTM E384

		Sample S75			Sample S76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
139W5W		372.8	-10.1	-0.80	418.6	-16.3	-1.18	BU
1HBX5X		388.6	5.7	0.45	426.6	-8.3	-0.60	LE
1JN3KC		368.4	-14.5	-1.15	431.6	-3.3	-0.24	LE
1WN4UW		365.6	-17.3	-1.38	429.0	-5.9	-0.43	BU
1YM59C		381.6	-1.3	-0.10	443.2	8.3	0.60	FU
2K4RUK	*	397.8	14.9	1.19	425.2	-9.7	-0.71	AN
3RXRKR		388.2	5.3	0.42	442.0	7.1	0.51	BU
3ULKQX		389.4	6.5	0.52	446.6	11.7	0.85	AT
3XC7GN		404.4	21.5	1.71	458.0	23.1	1.67	WT
3ZSBS4		409.0	26.1	2.08	466.2	31.3	2.27	BU
45QXPP		393.3	10.4	0.83	429.1	-5.9	-0.42	BU
4B5N3U		377.2	-5.7	-0.45	444.2	9.3	0.67	LE
58ALVJ		370.6	-12.3	-0.98	434.2	-0.7	-0.05	LE
5AE8HW		369.5	-13.4	-1.07	440.2	5.3	0.38	BU
6756L3		397.8	14.9	1.19	458.6	23.7	1.72	LE
68H6ZL		367.2	-15.7	-1.25	408.7	-26.2	-1.90	WI
6RBZHC		383.6	0.7	0.06	435.4	0.5	0.03	LE
6XEGVG		394.4	11.5	0.92	444.4	9.5	0.69	LE
7BEPE5		356.6	-26.3	-2.09	413.8	-21.1	-1.53	WT
7WW2X8		389.8	6.9	0.55	438.6	3.7	0.27	XX
824VEA		380.2	-2.7	-0.21	434.2	-0.7	-0.05	BU
8C1XKX		374.2	-8.7	-0.69	428.2	-6.7	-0.49	SH
8QD251		381.2	-1.7	-0.14	436.5	1.6	0.12	CL
98XZMH		365.0	-17.9	-1.43	414.6	-20.3	-1.47	LE
9EQ2YA		354.2	-28.7	-2.29	416.2	-18.7	-1.36	LI
APG4F4		399.9	17.0	1.35	458.2	23.3	1.69	BU
BE1XM8		374.8	-8.1	-0.64	439.8	4.9	0.35	WI
BP2QP8		398.6	15.7	1.25	442.8	7.9	0.57	BU
BTWUMY		355.4	-27.5	-2.19	409.6	-25.4	-1.84	FU
BVKAW7		374.2	-8.7	-0.69	426.6	-8.3	-0.60	LE
CTLNHF		375.3	-7.6	-0.61	424.9	-10.0	-0.73	BU
DBP3JR		390.4	7.5	0.60	428.6	-6.3	-0.46	LE
DQFFLG		376.8	-6.1	-0.48	423.9	-11.0	-0.80	BU
DSJURG		371.6	-11.3	-0.90	424.8	-10.1	-0.74	MI
DVM484		380.4	-2.5	-0.20	418.8	-16.1	-1.17	WT
DZJWXS	X	371.6	-11.3	-0.90	459.6	24.7	1.79	BU
EFJLN4		383.9	1.0	0.08	438.5	3.5	0.26	BU
FFEZLM		387.4	4.5	0.36	457.4	22.5	1.63	LE
G6CTHQ		388.2	5.3	0.42	445.0	10.1	0.73	MI
GEP23N		391.6	8.7	0.69	434.8	-0.1	-0.01	BU
GLM51N		374.6	-8.3	-0.66	431.6	-3.3	-0.24	LE
GM3YSE		378.0	-4.9	-0.39	427.4	-7.5	-0.55	BU
GPT8QB		402.4	19.5	1.55	456.6	21.7	1.57	LE
GXVF4Y		384.8	1.9	0.15	435.2	0.3	0.02	BU
GZ17XH		383.2	0.3	0.02	440.2	5.3	0.38	AN

Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)

ASTM E384

		Sample S75			Sample S76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
H4GNLU		381.4	-1.5	-0.12	438.2	3.3	0.24	AN
H6QVSV		387.2	4.3	0.34	435.4	0.5	0.03	BU
HAYWGY		383.2	0.3	0.02	435.7	0.8	0.06	WT
HRZWT6		398.0	15.1	1.20	450.8	15.9	1.15	WT
J4KAEZ		380.0	-2.9	-0.23	419.6	-15.3	-1.11	LE
JQ1XAY		364.0	-18.9	-1.51	421.8	-13.1	-0.95	LE
KEEQVP		396.4	13.5	1.07	428.7	-6.2	-0.45	LE
KPAZ6R		361.4	-21.5	-1.71	413.0	-21.9	-1.59	XX
KRTCC9		387.4	4.5	0.36	441.8	6.9	0.50	LE
KTAPN4	*	390.6	7.7	0.61	464.5	29.5	2.14	BU
LJWR9D		368.8	-14.1	-1.12	408.2	-26.7	-1.94	ST
LN49XN		402.2	19.3	1.54	440.4	5.4	0.40	MI
LQ4HS7		388.8	5.9	0.47	441.8	6.9	0.50	BU
M8DUTE		374.5	-8.4	-0.67	428.5	-6.5	-0.47	MI
MDL3T3		407.8	24.9	1.98	457.2	22.3	1.62	LE
MV69D7	X	370.6	-12.3	-0.98	395.8	-39.1	-2.84	LE
N4SZJE		391.0	8.1	0.65	445.0	10.1	0.73	SH
N6KHC6		395.0	12.1	0.96	449.0	14.1	1.02	WT
NJYD3K		401.4	18.5	1.47	445.7	10.7	0.78	CL
P4C73H		360.7	-22.2	-1.77	416.9	-18.1	-1.31	WI
P8MTS9		383.4	0.5	0.04	438.4	3.5	0.25	MI
QB6WNH		383.4	0.5	0.04	438.8	3.9	0.28	BU
QV1MX5		375.9	-7.0	-0.56	424.0	-10.9	-0.79	LE
R3KYXK		403.8	20.9	1.66	455.0	20.1	1.46	AN
RHB4LC		396.8	13.9	1.11	433.0	-1.9	-0.14	BU
RMNPCD		402.8	19.9	1.59	455.4	20.5	1.48	WT
RPCFKX		377.3	-5.6	-0.45	440.7	5.8	0.42	WT
RWDEM6		380.8	-2.1	-0.17	433.8	-1.1	-0.08	WT
RZ5GPF	X	400.4	17.5	1.40	420.1	-14.8	-1.07	WT
S9X3T4		373.0	-9.9	-0.79	417.2	-17.7	-1.29	FU
SJ46F8		391.0	8.1	0.65	447.0	12.1	0.88	LE
SP7UH3		375.6	-7.3	-0.58	438.0	3.1	0.22	CL
TCFEDS		381.6	-1.3	-0.10	412.1	-22.8	-1.65	XX
TFD11P		389.9	7.0	0.56	431.4	-3.6	-0.26	WT
TPB4HY		374.0	-8.9	-0.71	439.8	4.9	0.35	CL
TPVDEE		391.2	8.3	0.66	449.4	14.4	1.05	LE
U2LFJT		390.9	8.0	0.64	444.9	9.9	0.72	BU
U86HR2		383.2	0.3	0.02	442.8	7.9	0.57	FU
UNP3RN		401.8	18.9	1.51	465.0	30.1	2.18	SH
V4TWV2		373.4	-9.5	-0.76	429.0	-5.9	-0.43	BU
VMQUX4		365.0	-17.9	-1.43	413.4	-21.5	-1.56	CM
VNGU1J		387.2	4.3	0.34	428.6	-6.3	-0.46	XX
W2DHEY		386.6	3.7	0.29	434.8	-0.1	-0.01	BU
W2JDY5		387.2	4.3	0.34	433.4	-1.5	-0.11	CL
W5LFGA		369.8	-13.1	-1.04	416.0	-18.9	-1.37	ST

Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)

ASTM E384

WebCode	Data Flag	Sample S75 Lab Mean	Sample S75 Diff. from Grand Mean	Sample S75 CPV	Sample S76 Lab Mean	Sample S76 Diff. from Grand Mean	Sample S76 CPV	Instr Code
WQHCH9		369.4	-13.5	-1.08	410.8	-24.2	-1.75	SH
X5MD6G		365.4	-17.5	-1.39	411.8	-23.1	-1.68	BU
YJMB5Z		369.9	-13.0	-1.04	434.3	-0.6	-0.05	BU
Z9GNZT		398.8	15.9	1.27	448.8	13.9	1.01	BU
ZAEW1E		376.6	-6.3	-0.50	435.8	0.9	0.06	BU
ZLZZKJ		385.0	2.1	0.17	435.0	0.1	0.00	LE
ZUH147		378.1	-4.8	-0.38	431.6	-3.3	-0.24	BU
ZV1QR1		394.6	11.7	0.93	438.0	3.1	0.22	XX

Summary Statistics

	Sample S75		Sample S76	
Grand Means	382.90	HK 500 gf	434.90	HK 500 gf
Stnd Dev Btwn Labs	12.55	HK 500 gf	13.79	HK 500 gf

Statistics based on 95 **of** 98 **reporting participants**

Samples S75 , S76 : steel, steel

Comments on assigned Data Flags for Test #121

DZJWXS (X) - Inconsistent in testing between samples and inconsistent within the determinations for Sample S75.
MV69D7 (X) - Inconsistent in testing between samples, data for Sample S76 are low.
RZ5GPF (X) - Inconsistent in testing between samples.

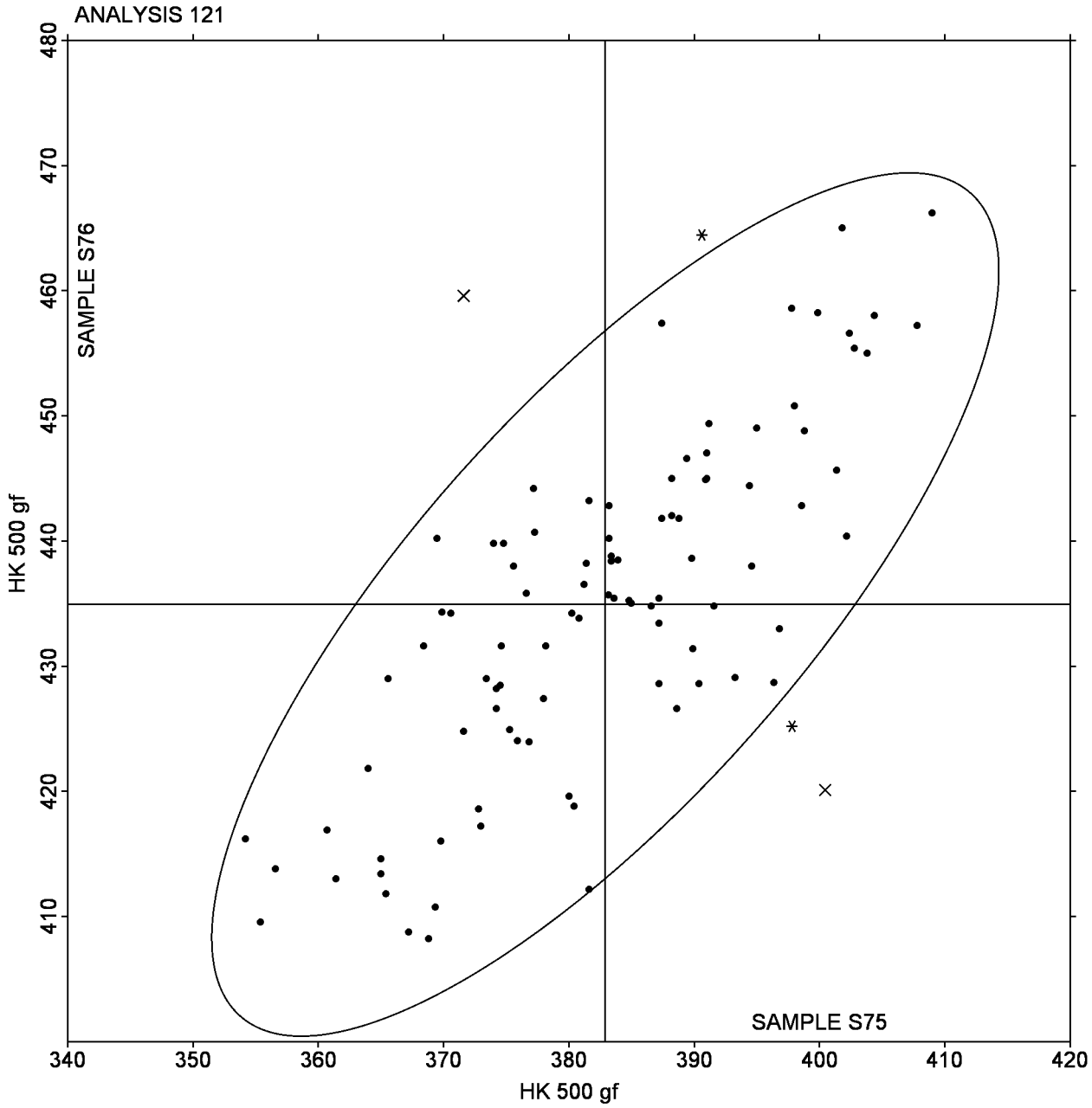
Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)

ASTM E384

SAMPLE S75 = 382.90 HK 500 gf SAMPLE S76 = 434.90 HK 500 gf



Interlaboratory Testing Program for Metals

Analysis 122

Microhardness - Knoop Hardness Number (200 gf)

ASTM E384

		Sample S75			Sample S76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
1ASUXV		399.8	10.5	0.70	448.4	4.9	0.32	LE
1B5G6A		417.0	27.7	1.84	466.8	23.3	1.50	AN
1Y8JXQ		380.6	-8.7	-0.58	438.8	-4.7	-0.30	FU
34WSL8		404.2	14.9	0.99	453.0	9.5	0.61	XX
3G6W1W		388.7	-0.6	-0.04	456.3	12.9	0.82	BU
3K1XMJ		376.7	-12.6	-0.84	415.5	-28.0	-1.80	XX
3L1RQT		389.6	0.3	0.02	458.8	15.3	0.98	FU
3METC4		413.5	24.2	1.61	452.1	8.6	0.55	MI
3MYFBM		383.0	-6.3	-0.42	439.2	-4.3	-0.27	MI
3WHYDR		384.2	-5.1	-0.34	444.8	1.3	0.09	BU
5GGXRT		409.5	20.2	1.34	457.5	14.0	0.90	BU
5J7SDW		418.3	29.0	1.93	453.5	10.1	0.65	LE
5ZD9KA		368.2	-21.1	-1.40	433.6	-9.9	-0.63	LE
6G38EY		393.2	3.9	0.26	438.6	-4.9	-0.31	LE
7RDWTT		380.8	-8.5	-0.56	435.6	-7.9	-0.50	BU
8N3ZJ2		397.2	7.9	0.53	449.8	6.3	0.41	AN
94EBTQ		386.4	-2.9	-0.19	446.4	2.9	0.19	AN
9TLZSY		387.8	-1.5	-0.10	443.4	-0.1	0.00	BU
A12Q7D		390.2	0.9	0.06	446.0	2.5	0.16	LE
AB5DAG		379.7	-9.6	-0.64	425.7	-17.8	-1.14	WI
BRRE4Z		415.2	25.9	1.72	463.8	20.3	1.30	WT
CP5DZH		383.0	-6.3	-0.42	437.8	-5.6	-0.36	BU
CYS8FL		411.6	22.3	1.48	474.6	31.1	2.00	LE
D251HT		369.6	-19.7	-1.31	416.4	-27.1	-1.73	ST
DAXEFX		407.8	18.5	1.23	461.2	17.8	1.14	LE
E94D3Z		397.4	8.1	0.54	433.4	-10.1	-0.64	AN
G1KEPT		377.0	-12.3	-0.82	433.6	-9.9	-0.63	FU
GAM4GB		391.8	2.5	0.17	458.0	14.5	0.93	WT
HR1SH4		387.3	-2.0	-0.13	432.1	-11.3	-0.73	BU
HZJBGG		384.0	-5.3	-0.35	430.0	-13.4	-0.86	LE
J415HV		374.4	-14.9	-0.99	419.8	-23.7	-1.52	LE
JBQTK4	X	377.2	-12.1	-0.80	393.2	-50.3	-3.22	LE
JFUA7Z		367.0	-22.3	-1.48	418.2	-25.3	-1.62	BU
JNHB1W		402.2	12.9	0.86	444.6	1.1	0.07	XX
L81F3S		381.6	-7.7	-0.51	429.0	-14.5	-0.93	CM
L8URLD		377.5	-11.8	-0.78	441.9	-1.5	-0.10	MI
LF32CL		386.7	-2.6	-0.17	436.9	-6.5	-0.42	CL
LRFGMD		392.4	3.1	0.21	444.2	0.7	0.05	CL
M5FWQ2		355.4	-33.9	-2.25	418.6	-24.9	-1.59	LI
M6URGF		402.0	12.7	0.84	445.0	1.5	0.10	BU
MCPGB5		411.2	21.9	1.46	479.2	35.7	2.29	BU
N9UDKG	*	389.6	0.3	0.02	467.6	24.1	1.55	BU
NL5TLV		377.1	-12.2	-0.81	450.0	6.5	0.42	AT
P4Q4A3		378.6	-10.7	-0.71	436.3	-7.2	-0.46	MI
PU99JD		388.8	-0.5	-0.03	461.0	17.5	1.12	LE

Interlaboratory Testing Program for Metals

Analysis 122

Microhardness - Knoop Hardness Number (200 gf)

ASTM E384

WebCode	Data Flag	Sample S75 Lab Mean	Sample S75 Diff. from Grand Mean	Sample S75 CPV	Sample S76 Lab Mean	Sample S76 Diff. from Grand Mean	Sample S76 CPV	Instr Code
PUP7VK		372.6	-16.7	-1.11	419.0	-24.5	-1.57	XX
QQWNQZ		382.0	-7.3	-0.48	430.8	-12.7	-0.81	WT
RQNRA2		388.8	-0.5	-0.03	442.4	-1.1	-0.07	CL
RV7XNA		397.2	7.9	0.53	453.0	9.5	0.61	WT
RWQW6S		390.2	0.9	0.06	435.0	-8.5	-0.54	LE
S47WQG		382.8	-6.5	-0.43	452.6	9.1	0.58	BU
S6EBZA		395.6	6.3	0.42	456.6	13.1	0.84	LE
SE37JX		383.4	-5.9	-0.39	440.4	-3.1	-0.20	LE
SSCQEH		415.2	25.9	1.72	476.0	32.5	2.09	BU
TJY8HG		359.6	-29.7	-1.97	416.0	-27.5	-1.76	WT
U71DJ7		377.2	-12.1	-0.80	435.0	-8.5	-0.54	LE
ULXQNQ		363.2	-26.1	-1.73	428.8	-14.7	-0.94	LE
V711RS		386.5	-2.8	-0.18	453.6	10.1	0.65	BU
W6R8VG		393.8	4.5	0.30	457.8	14.3	0.92	BU
W8LX6P		393.4	4.1	0.27	432.0	-11.5	-0.73	LE
WLMJK8		359.9	-29.4	-1.96	415.2	-28.2	-1.81	SH
WM5HT4		378.6	-10.7	-0.71	429.4	-14.1	-0.90	ST
WM6TWC		414.0	24.7	1.64	471.6	28.1	1.80	LE
XCJMGV		374.2	-15.1	-1.00	434.2	-9.3	-0.59	MI
YCZLH4		402.0	12.7	0.84	447.2	3.7	0.24	BU
YGR1Q1		402.0	12.8	0.85	447.6	4.1	0.26	CL
YUQP52		403.8	14.5	0.96	448.8	5.3	0.34	XX
Z4BXKU		408.6	19.3	1.28	451.8	8.3	0.53	LE
ZXEGE1	M				445.2	1.7	0.11	WT

Summary Statistics

	Sample	Sample S76
Grand Means	389.29 HK 200 gf	443.50 HK 200 gf
Stnd Dev Btwn Labs	15.05 HK 200 gf	15.60 HK 200 gf

Statistics based on 67 **of** 69 **reporting participants**

Samples , S76 : steel, steel

Comments on assigned Data Flags for Test #122

JBQTK4 (X) - Low data for Sample S76 and inconsistent within the determinations for Sample S76.

ZXEGE1 (M) - Laboratory did not submit data for Sample S75.

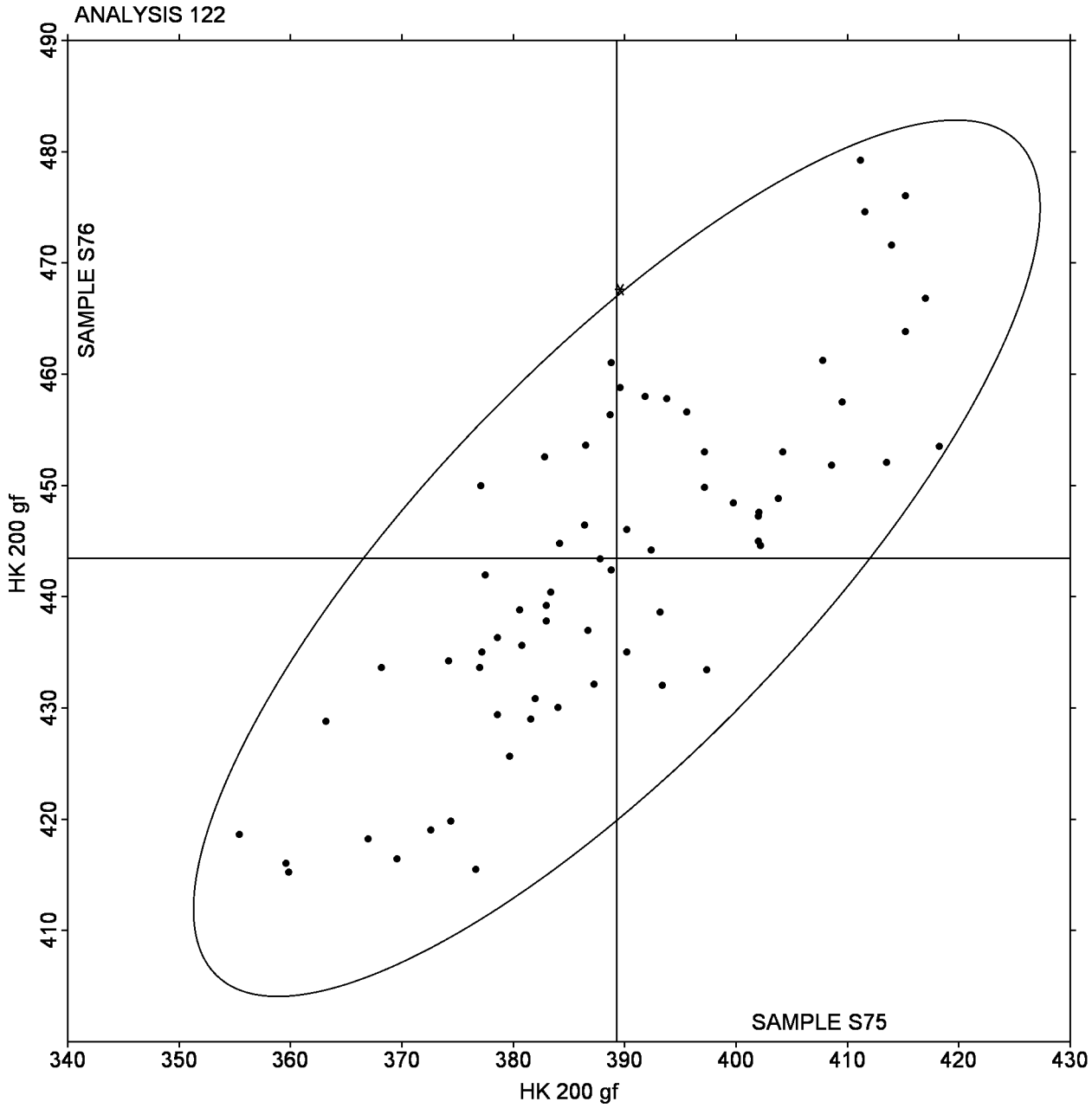
Interlaboratory Testing Program for Metals

Analysis 122

Microhardness - Knoop Hardness Number (200 gf)

ASTM E384

SAMPLE = 389.29 HK 200 gf SAMPLE S76 = 443.50 HK 200 gf



Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)

ASTM E384

		Sample S75			Sample S76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
1FB4L5		354.2	-11.4	-0.82	413.0	-6.9	-0.50	BU
1G5WGR		383.0	17.5	1.26	440.6	20.7	1.49	AK
1M9WQD	M				423.2	3.3	0.24	WT
1RY4EP		361.2	-4.3	-0.31	428.2	8.3	0.60	MI
1TVU5H		353.4	-12.1	-0.87	414.2	-5.7	-0.41	LE
2GG7FG		380.0	14.5	1.04	423.0	3.1	0.22	XX
2LEKJS		370.6	5.1	0.36	423.6	3.7	0.26	FU
32RUA4		365.4	-0.1	-0.01	414.2	-5.7	-0.41	SH
34TDTF		370.6	5.1	0.36	427.6	7.7	0.55	XX
3BP8TX		351.8	-13.8	-0.99	400.2	-19.8	-1.42	BU
3ETVRV		366.8	1.3	0.09	424.4	4.5	0.32	LE
3RTCKW		373.9	8.4	0.60	428.5	8.5	0.61	BU
3VWKMS		368.8	3.3	0.23	426.4	6.5	0.47	CL
43DBHY		380.4	14.9	1.07	421.6	1.7	0.12	BU
46BX5V		357.1	-8.4	-0.61	407.9	-12.0	-0.87	LE
47ZD2Y		358.6	-6.9	-0.50	427.0	7.0	0.51	BU
49KV4W		365.6	0.1	0.01	411.1	-8.8	-0.63	CL
4AF9KB		376.7	11.1	0.80	440.4	20.5	1.48	MA
4CZTEZ		352.4	-13.1	-0.95	413.4	-6.5	-0.47	WT
4EXFD5		385.6	20.1	1.45	437.6	17.7	1.27	FU
4FDMYC		361.2	-4.3	-0.31	419.2	-0.7	-0.05	LE
4PK6TU		337.2	-28.3	-2.04	400.0	-19.9	-1.43	LE
5D1W1U		371.8	6.3	0.45	429.6	9.7	0.70	LE
6CQ8H7		355.8	-9.7	-0.70	410.8	-9.1	-0.66	BU
6EVT8T		368.6	3.1	0.22	409.4	-10.5	-0.76	LE
6HKRZS		340.8	-24.7	-1.78	386.8	-33.1	-2.38	BU
74UQG4		364.8	-0.7	-0.05	413.8	-6.1	-0.44	BU
7B1K3L		357.6	-7.9	-0.57	415.6	-4.3	-0.31	BU
7ZB6BA		360.1	-5.4	-0.39	413.7	-6.3	-0.45	BU
8CZNMT		346.8	-18.7	-1.35	401.8	-18.1	-1.30	XX
8G9WQ2		367.4	1.9	0.13	424.6	4.7	0.34	AK
8L7N58		360.4	-5.1	-0.37	423.4	3.5	0.25	LE
9EYTCD		375.3	9.8	0.71	428.9	9.0	0.65	XX
9RZYZK		367.2	1.7	0.12	417.2	-2.7	-0.20	CL
9TXAB7	X	399.8	34.2	2.47	429.5	9.6	0.69	LE
A1MTU1		349.8	-15.7	-1.13	411.2	-8.7	-0.63	FU
A9RMNM		370.8	5.3	0.38	422.8	2.9	0.21	SH
AXM9SS		386.3	20.7	1.49	444.1	24.1	1.74	XX
B1BNHF		373.2	7.7	0.55	426.8	6.9	0.50	LE
B3L4X9		354.4	-11.1	-0.80	408.6	-11.3	-0.81	SH
BGJ6L8		373.0	7.5	0.54	422.2	2.3	0.16	LE
BK8E48		340.4	-25.1	-1.81	396.2	-23.7	-1.71	BU
BLL3A1		353.8	-11.7	-0.85	406.4	-13.5	-0.97	XX
BU339J		367.0	1.5	0.11	421.0	1.1	0.08	XX
C1TVFX		352.8	-12.7	-0.92	409.6	-10.4	-0.75	WT

Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)

ASTM E384

		Sample S75			Sample S76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
CDQWEL		368.4	2.9	0.21	411.0	-8.9	-0.64	MI
CE3XNM		377.6	12.1	0.87	421.8	1.9	0.14	XX
CXFR1M	X	323.6	-41.9	-3.02	410.8	-9.1	-0.66	WT
D13HYA		386.6	21.1	1.52	438.6	18.7	1.34	LE
DJPPXF		364.4	-1.1	-0.08	421.2	1.3	0.09	MI
E48GQ4		375.4	9.9	0.71	434.8	14.9	1.07	LE
EES689		358.8	-6.7	-0.49	421.0	1.1	0.08	MA
EK6NYP		372.4	6.9	0.49	417.4	-2.5	-0.18	BU
EMX5CR		365.9	0.4	0.03	426.5	6.6	0.48	MI
EPNTVY		357.2	-8.3	-0.60	412.4	-7.5	-0.54	BU
ERYHKV		355.8	-9.7	-0.70	398.4	-21.5	-1.55	ST
FE5K89	X	352.4	-13.1	-0.95	385.6	-34.3	-2.47	BU
FEA7XX	*	375.6	10.1	0.72	446.2	26.3	1.89	LE
FNN9D3		361.4	-4.1	-0.30	417.2	-2.7	-0.20	CL
FZNL31		367.8	2.2	0.16	425.1	5.1	0.37	MI
GATSZV		351.8	-13.7	-0.99	400.0	-19.9	-1.43	LE
GB3PGT		363.3	-2.3	-0.16	420.9	1.0	0.07	WT
GDWYPR		377.0	11.5	0.83	434.6	14.7	1.06	MI
GRQBC5	*	335.0	-30.5	-2.20	384.4	-35.5	-2.56	BU
GRUV4T		367.0	1.5	0.11	421.0	1.1	0.08	WT
HBKP1F		375.6	10.1	0.72	423.7	3.7	0.27	WT
HCPBAN		377.2	11.7	0.84	427.6	7.7	0.55	LE
HRWDY2	*	386.6	21.1	1.52	423.9	4.0	0.29	BU
HW9Y9A		356.8	-8.7	-0.63	417.6	-2.3	-0.17	BU
JJFAPN		373.6	8.1	0.58	416.4	-3.5	-0.25	AK
JVEGNY	*	403.4	37.9	2.73	443.2	23.3	1.68	XX
KE6GPL		358.4	-7.1	-0.51	413.8	-6.1	-0.44	LE
KGQ6F7		385.0	19.5	1.40	440.8	20.9	1.50	BU
L6AWVM		382.4	16.8	1.21	433.8	13.9	1.00	XX
LBS143		356.8	-8.7	-0.63	421.0	1.1	0.08	LE
LQBJZS		351.6	-14.0	-1.01	411.0	-8.9	-0.64	SH
LSF5LQ		389.4	23.9	1.72	439.8	19.9	1.43	BU
LVN9UL		360.2	-5.3	-0.38	417.0	-2.9	-0.21	BU
LYAMFE		372.6	7.1	0.51	425.2	5.3	0.38	BU
M45NC1		397.6	32.1	2.31	446.8	26.9	1.93	LE
M4CNSQ		372.6	7.1	0.51	435.4	15.5	1.11	BU
MGBEBG		371.8	6.2	0.45	423.5	3.5	0.25	CL
MJP29N		377.4	11.9	0.85	441.0	21.1	1.52	AN
MK244F		383.4	17.9	1.29	439.0	19.1	1.37	WT
MMU1N8		369.0	3.5	0.25	423.8	3.9	0.28	CM
NG3Z9Y		360.6	-4.9	-0.36	424.4	4.5	0.32	LE
NNAHLH		359.8	-5.7	-0.41	405.0	-14.9	-1.07	AK
P2C5WK	X	354.6	-10.9	-0.79	438.6	18.7	1.34	SH
PDLYZX		374.0	8.5	0.61	432.2	12.3	0.88	BU
PKPMGZ		345.2	-20.3	-1.47	403.8	-16.1	-1.16	LI

Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)

ASTM E384

WebCode	Data Flag	Sample S75 Lab Mean	Sample S75 Diff. from Grand Mean	Sample S75 CPV	Sample S76 Lab Mean	Sample S76 Diff. from Grand Mean	Sample S76 CPV	Instr Code
Q8VF9M		354.0	-11.5	-0.83	409.2	-10.7	-0.77	LE
Q9FARV		348.4	-17.1	-1.23	400.8	-19.1	-1.38	LE
QLX37H		387.2	21.7	1.56	430.0	10.1	0.73	WT
QX692B		366.7	1.2	0.09	435.9	16.0	1.15	XX
RAHNH3		351.2	-14.3	-1.03	400.6	-19.3	-1.39	CL
RFMVEZ		353.7	-11.8	-0.85	413.7	-6.2	-0.45	WT
RT7AGW		345.4	-20.1	-1.45	399.2	-20.7	-1.49	FU
T95HM4		362.2	-3.3	-0.24	417.4	-2.5	-0.18	CL
UZZ28J		370.5	5.0	0.36	419.4	-0.6	-0.04	WT
VC161F		333.2	-32.3	-2.33	391.8	-28.1	-2.02	CM
W1RZ78		373.0	7.4	0.54	431.7	11.8	0.85	EM
W3V4AU		374.0	8.5	0.61	429.6	9.7	0.70	BU
W4L565		358.8	-6.7	-0.49	401.1	-18.8	-1.35	BU
W9456K		343.4	-22.1	-1.59	395.6	-24.3	-1.75	LE
WDF3HX		386.6	21.1	1.52	430.0	10.1	0.73	WZ
WGWQR1		363.2	-2.3	-0.17	427.8	7.9	0.57	WZ
WRJEUD	*	375.3	9.7	0.70	449.0	29.1	2.10	FU
WVP2PV		348.8	-16.7	-1.21	400.8	-19.1	-1.38	BU
WX81UC		350.4	-15.1	-1.09	404.8	-15.1	-1.09	BU
X28CMY	*	404.2	38.7	2.78	450.0	30.1	2.17	XX
XYV3UX		365.0	-0.5	-0.04	421.0	1.1	0.08	LE
YQJVNB		348.3	-17.3	-1.24	398.4	-21.5	-1.55	FU
Z1KGTE		343.1	-22.4	-1.61	408.7	-11.3	-0.81	XX
Z3E4HQ		369.1	3.6	0.26	424.6	4.7	0.34	MI
Z5U3EL		373.8	8.3	0.60	430.8	10.9	0.78	WT
ZMZKMX		366.9	1.3	0.10	419.2	-0.7	-0.05	MA
ZPWEL8		369.2	3.7	0.26	413.0	-6.9	-0.50	FU
ZWWNG1		366.8	1.3	0.09	429.0	9.1	0.65	AK

Summary Statistics

	Sample S75		Sample S76	
Grand Means	365.54	HV 500 gf	419.90	HV 500 gf
Stnd Dev Btwn Labs	13.88	HV 500 gf	13.89	HV 500 gf

Statistics based on 112 **of** 118 **reporting participants**

Samples S75 , S76 : steel, steel

Comments on assigned Data Flags for Test #123

1M9WQD (M) - Laboratory did not submit data for Sample S75.

9TXAB7 (X) - Inconsistent in testing between samples.

CXFR1M (X) - Inconsistent in testing between samples, data for Sample S75 are low.

FE5K89 (X) - Inconsistent in testing between samples.

P2C5WK (X) - Inconsistent in testing between samples and inconsistent within the determinations for Sample S75.

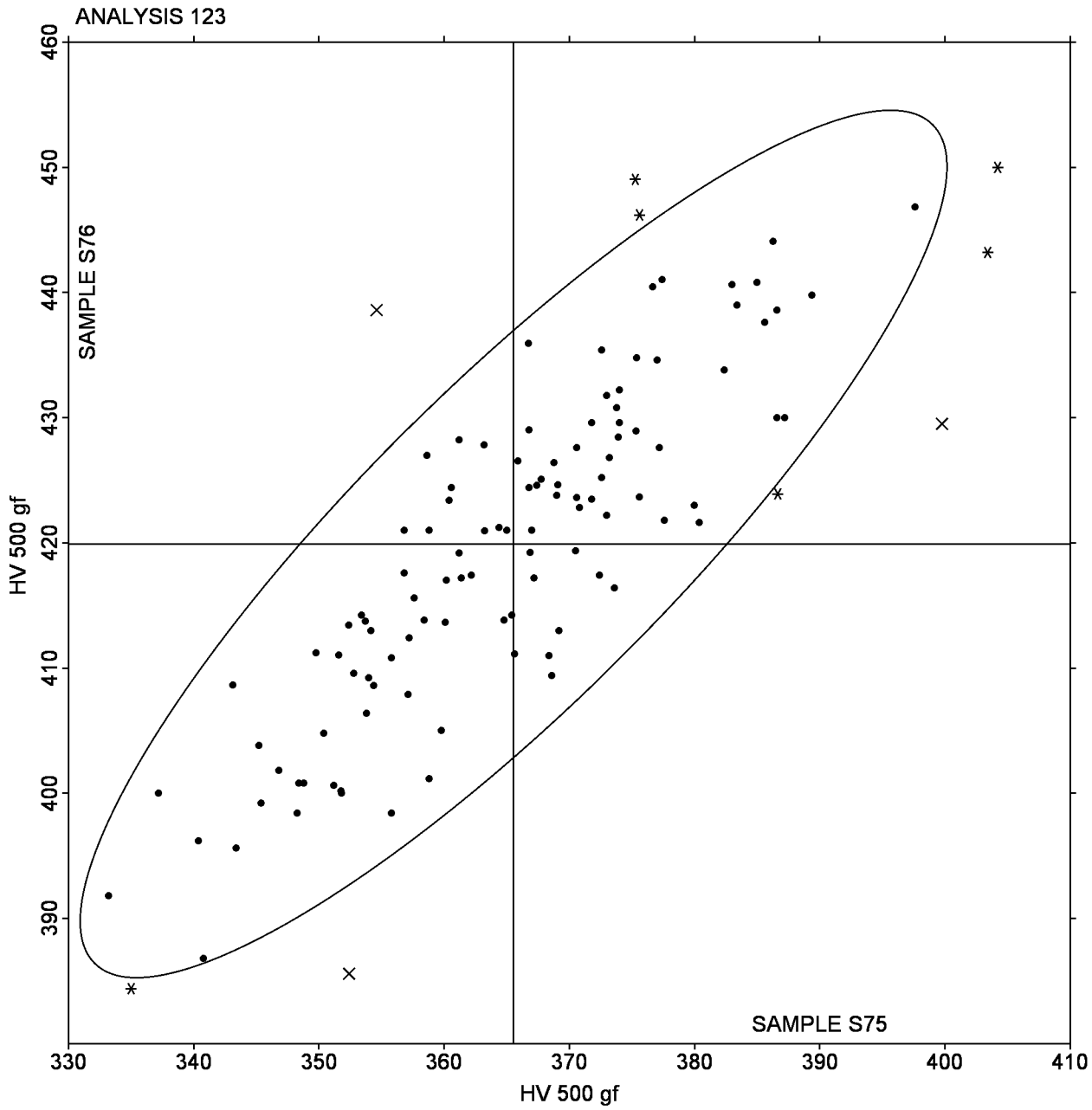
Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)

ASTM E384

SAMPLE S75 = 365.54 HV 500 gf SAMPLE S76 = 419.90 HV 500 gf



Interlaboratory Testing Program for Metals

Analysis 135

Brinell Hardness - HBW

ASTM E10

WebCode	Data Flag	Sample D75 Lab Mean	Sample D75 Diff. from Grand Mean	Sample D75 CPV	Sample D76 Lab Mean	Sample D76 Diff. from Grand Mean	Sample D76 CPV	Instr Code
184AUW		329.8	-8.0	-1.60	386.8	-8.2	-1.12	EM
1852Z6		334.6	-3.2	-0.64	393.2	-1.8	-0.25	DE
1E8457		335.4	-2.4	-0.48	393.0	-2.0	-0.27	DE
1XU9M4		339.0	1.2	0.23	398.0	3.0	0.41	ST
31HM6Q		333.4	-4.4	-0.88	385.8	-9.2	-1.25	KI
3F4SS8		341.0	3.2	0.63	401.0	6.0	0.82	WI
42DAH1		341.0	3.2	0.63	401.0	6.0	0.82	NS
47EENS		334.4	-3.4	-0.68	394.0	-1.0	-0.14	DE
4MSUQN	*	325.0	-12.8	-2.56	388.0	-7.0	-0.95	LS
5RCERG		341.0	3.2	0.63	401.0	6.0	0.82	TI
6MZLSP		341.0	3.2	0.63	393.2	-1.8	-0.25	XX
6VHUWD		341.0	3.2	0.63	401.0	6.0	0.82	WI
8BL3UJ		341.0	3.2	0.63	395.0	0.0	0.00	ST
8JJM6P		333.8	-4.0	-0.80	386.8	-8.2	-1.12	DE
8PXVSW		339.4	1.6	0.31	400.4	5.4	0.73	NA
9YCNGC		341.0	3.2	0.63	393.2	-1.8	-0.25	TI
9ZET72		337.0	-0.8	-0.16	388.0	-7.0	-0.95	RI
A1ECD8		341.0	3.2	0.63	399.2	4.2	0.57	TI
B2GE4P		338.2	0.4	0.07	406.2	11.2	1.52	WI
CSVB3U		339.8	2.0	0.39	398.6	3.6	0.49	TI
CVY2JW		341.0	3.2	0.63	401.0	6.0	0.82	WI
CZYX1G		339.0	1.2	0.23	396.8	1.8	0.24	DE
DAZHGF		336.6	-1.2	-0.24	389.6	-5.4	-0.74	DE
DJ757F		343.8	6.0	1.19	404.6	9.6	1.31	AL
DL8VZH		335.0	-2.8	-0.56	388.0	-7.0	-0.95	DE
FB43SN		341.0	3.2	0.63	406.6	11.6	1.58	LS
FDF1LS		332.2	-5.6	-1.12	393.4	-1.6	-0.22	TI
FSGS7U		335.0	-2.8	-0.56	388.0	-7.0	-0.95	TI
GU3S6A	*	325.2	-12.6	-2.52	380.8	-14.2	-1.93	DE
GYRQ4C		347.0	9.2	1.83	402.2	7.2	0.98	RI
HHLMCK		331.0	-6.8	-1.36	388.0	-7.0	-0.95	ST
J1JJRD		341.0	3.2	0.63	398.4	3.4	0.46	TI
J457DK	X	59.0	-278.8	-55.74	65.3	-329.7	-44.90	EM
KBNCTR		341.0	3.2	0.63	401.0	6.0	0.82	TI
KETSQX		341.0	3.2	0.63	388.0	-7.0	-0.95	XX
LD15YC		339.0	1.2	0.23	399.2	4.2	0.57	AV
LRP3VG	X	319.8	-18.0	-3.60	373.4	-21.6	-2.95	MA
LRVQRA		331.0	-6.8	-1.36	388.0	-7.0	-0.95	DE
M1BSFV		341.0	3.2	0.63	406.6	11.6	1.58	TI
M3WZG3		339.0	1.2	0.23	398.4	3.4	0.46	SD
MNEJ8D		335.0	-2.8	-0.56	388.0	-7.0	-0.95	DE
MQ4VYZ		341.0	3.2	0.63	409.4	14.4	1.96	NA
MYKCUR		341.0	3.2	0.63	388.0	-7.0	-0.95	RI
N941EX		331.2	-6.6	-1.32	390.2	-4.8	-0.65	TI
Q4A8Q6		336.0	-1.8	-0.36	397.4	2.4	0.33	NA

Interlaboratory Testing Program for Metals

Analysis 135

Brinell Hardness - HBW

ASTM E10

WebCode	Data Flag	Sample D75 Lab Mean	Sample D75 Diff. from Grand Mean	Sample D75 CPV	Sample D76 Lab Mean	Sample D76 Diff. from Grand Mean	Sample D76 CPV	Instr Code
Q57ZZE		333.4	-4.4	-0.88	388.8	-6.2	-0.85	ER
QF8V9Q		332.2	-5.6	-1.12	390.2	-4.8	-0.65	MA
R4QSA5	X	349.8	12.0	2.39	388.0	-7.0	-0.95	AN
RDWDJ6	*	352.8	15.0	2.99	413.6	18.6	2.53	TI
RSR5RL		337.2	-0.6	-0.12	394.4	-0.6	-0.08	RI
RWTHYS		340.0	2.2	0.43	408.0	13.0	1.77	WI
SJ8J34		338.0	0.2	0.04	393.0	-2.0	-0.27	DE
SLTM91		339.0	1.2	0.23	393.0	-2.0	-0.27	NA
TNLR55		341.4	3.6	0.71	404.8	9.8	1.33	PI
TTSB4C		341.0	3.2	0.63	401.0	6.0	0.82	LS
UC4T3J		338.2	0.4	0.07	396.8	1.8	0.24	SP
UGWJ63		329.2	-8.6	-1.72	389.8	-5.2	-0.71	XX
USWNDN		339.4	1.6	0.31	395.8	0.8	0.11	LS
V4QVHP		331.0	-6.8	-1.36	380.2	-14.8	-2.02	ST
V578TM		331.0	-6.8	-1.36	388.0	-7.0	-0.95	TI
VDHXBL		341.0	3.2	0.63	388.0	-7.0	-0.95	DE
WAYSJN		341.0	3.2	0.63	388.0	-7.0	-0.95	LS
WK3UTM		334.4	-3.4	-0.68	391.7	-3.3	-0.46	EM
X76E14		349.2	11.4	2.27	409.6	14.6	1.99	TI
XAVXMH		341.0	3.2	0.63	388.0	-7.0	-0.95	AM
Y4GXY4		337.0	-0.8	-0.16	393.6	-1.4	-0.19	XX
Z41CBS		341.0	3.2	0.63	388.0	-7.0	-0.95	RI
Z5WWAJ		338.4	0.6	0.11	396.2	1.2	0.16	NA
ZQYZWG	X	3.3	-334.5	-66.89	3.0	-392.0	-53.38	WI

Summary Statistics

	Sample D75		Sample D76	
Grand Means	337.82	HBW	395.00	HBW
Stnd Dev Btwn Labs	5.00	HBW	7.34	HBW

Statistics based on 65 **of** 69 **reporting participants**

Samples D75 , D76 : steel, steel

Comments on assigned Data Flags for Test #135

J457DK (X) - Extreme data.

LRP3VG (X) - Data for both samples are low. Possible systematic error.

R4QSA5 (X) - Inconsistent in testing between samples and inconsistent within the determinations for Sample D75.

ZQYZWG (X) - Data were reported in mm instead of HBW.

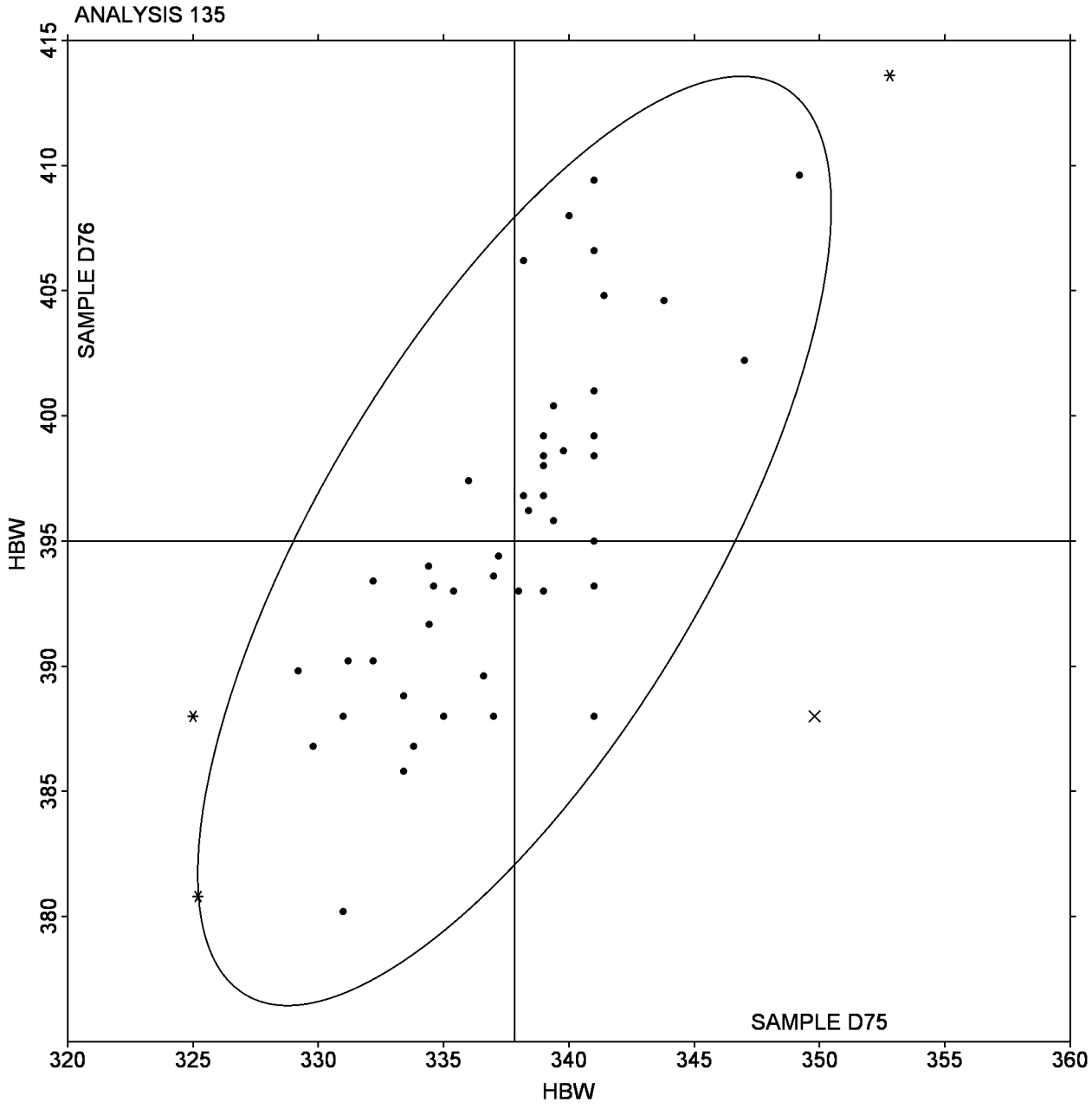
Interlaboratory Testing Program for Metals

Analysis 135

Brinell Hardness - HBW

ASTM E10

SAMPLE D75 = 337.82 HBW SAMPLE D76 = 395.00 HBW



Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent CARBON (C)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
1B3AX8		0.195	0.003	0.44	0.411	-0.009	-1.23	OE
1J6KJM		0.190	-0.002	-0.30	0.421	0.001	0.15	OE
2CX68P		0.196	0.004	0.71	0.406	-0.014	-1.90	OE
2GG4XA		0.190	-0.002	-0.25	0.423	0.003	0.47	CO
2HWYVY		0.196	0.004	0.66	0.418	-0.002	-0.25	OE
3BNAP3		0.179	-0.013	-2.09	0.423	0.004	0.48	OE
3UM4FH	X	0.190	-0.002	-0.30	0.380	-0.040	-5.34	OE
46JU2D		0.189	-0.003	-0.46	0.412	-0.008	-1.10	GD
47MLMP		0.177	-0.015	-2.39	0.411	-0.009	-1.18	OE
4EB1RL		0.193	0.001	0.23	0.422	0.002	0.24	OE
4LBXJC		0.193	0.001	0.23	0.424	0.004	0.60	OE
4MAKZG		0.189	-0.003	-0.46	0.413	-0.007	-0.92	CI
4P558Z		0.196	0.004	0.71	0.415	-0.005	-0.65	OE
56174W		0.198	0.006	1.03	0.407	-0.013	-1.68	OE
58NSXS	X	0.172	-0.020	-3.18	0.406	-0.014	-1.86	GD
5H4GEK		0.193	0.001	0.18	0.426	0.006	0.78	OE
5HV9XW		0.197	0.005	0.82	0.423	0.003	0.38	OE
6RHB8E		0.201	0.009	1.47	0.421	0.002	0.20	CO
6RJ46N	X	0.188	-0.004	-0.62	0.453	0.033	4.44	OE
7BGDXT		0.194	0.002	0.28	0.415	-0.005	-0.65	CO
7HKMTH		0.191	-0.001	-0.20	0.417	-0.003	-0.34	IR
81RTJG		0.186	-0.006	-1.00	0.418	-0.002	-0.20	OE
8B12V2		0.187	-0.005	-0.78	0.427	0.007	0.91	OE
8BVB8J		0.195	0.003	0.44	0.421	0.001	0.11	DR
8GBK4P		0.201	0.009	1.40	0.434	0.014	1.90	OE
8HFZWG		0.198	0.006	1.03	0.422	0.002	0.24	OE
8KEW3F		0.189	-0.003	-0.52	0.424	0.004	0.51	CO
8UJU3C	*	0.175	-0.017	-2.65	0.404	-0.016	-2.17	OE
95BVNU		0.191	-0.001	-0.14	0.432	0.012	1.60	OE
99BK67		0.197	0.005	0.87	0.421	0.001	0.11	CI
99RN15		0.194	0.002	0.28	0.413	-0.007	-0.87	DR
A5H5S5		0.202	0.010	1.62	0.416	-0.004	-0.52	OE
A7T26T		0.184	-0.008	-1.26	0.406	-0.014	-1.89	OE
AQVPYT		0.197	0.005	0.76	0.426	0.006	0.87	OE
ASRZDU		0.197	0.005	0.76	0.434	0.014	1.94	OE
AZMJJQ	*	0.205	0.013	2.10	0.409	-0.011	-1.50	OE
B8VDA8		0.193	0.001	0.23	0.429	0.009	1.23	OE
B91HMC		0.203	0.011	1.78	0.434	0.014	1.90	OE
C9MQHS		0.190	-0.002	-0.25	0.419	-0.001	-0.16	OE
CHFR3C		0.184	-0.008	-1.26	0.417	-0.003	-0.38	IR
CSZUXY	*	0.206	0.014	2.20	0.440	0.020	2.74	OE
D1JR1W		0.189	-0.003	-0.48	0.434	0.014	1.92	DR
D3MP6M		0.186	-0.006	-0.94	0.415	-0.005	-0.65	XX
EDDHXT		0.196	0.004	0.60	0.435	0.016	2.08	OE
ES487B		0.191	-0.001	-0.09	0.420	0.000	0.02	CO

Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent

CARBON (C)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
F1V4TF		0.189	-0.003	-0.52	0.417	-0.003	-0.38	OE
F8SPXE		0.191	-0.001	-0.14	0.421	0.001	0.15	CI
FTUXSR		0.200	0.008	1.30	0.413	-0.007	-0.87	OE
FUHWNV		0.184	-0.008	-1.21	0.422	0.002	0.29	OE
FXDBPL		0.192	0.000	-0.05	0.429	0.009	1.17	OE
GNPTUV		0.182	-0.010	-1.64	0.406	-0.014	-1.81	OE
GZ9DYE		0.188	-0.003	-0.56	0.429	0.010	1.29	OE
H869VG		0.180	-0.012	-1.85	0.418	-0.002	-0.25	OE
J2RSGK		0.191	-0.001	-0.14	0.420	0.000	0.02	CI
JC6R8P		0.190	-0.002	-0.25	0.415	-0.005	-0.70	CI
JCA43C		0.190	-0.002	-0.30	0.410	-0.010	-1.32	OE
JS6J25		0.201	0.009	1.40	0.417	-0.003	-0.34	OE
JVPSYJ		0.193	0.001	0.19	0.417	-0.002	-0.33	CI
KDK3GZ		0.193	0.001	0.12	0.412	-0.008	-1.01	OE
KKGM6D		0.185	-0.007	-1.05	0.417	-0.003	-0.36	AA
L4EVQW		0.193	0.001	0.12	0.414	-0.006	-0.74	OE
LJA6EL		0.197	0.005	0.87	0.431	0.011	1.49	OE
LVFJW9		0.196	0.004	0.60	0.418	-0.002	-0.20	OE
MBRJLY		0.191	-0.001	-0.17	0.418	-0.002	-0.20	OE
MTMX1A		0.189	-0.003	-0.49	0.426	0.006	0.78	XX
MVEHUV	*	0.209	0.017	2.74	0.433	0.013	1.76	OE
MXZZJM		0.189	-0.003	-0.46	0.419	-0.001	-0.11	CI
NKMWV3		0.191	-0.001	-0.14	0.419	-0.001	-0.11	CO
PAFGQX		0.182	-0.010	-1.53	0.408	-0.012	-1.54	DR
PKG1V6		0.192	0.000	0.08	0.421	0.001	0.18	OE
PLRG2H		0.193	0.001	0.12	0.418	-0.002	-0.20	OE
PQBCQN		0.196	0.004	0.66	0.415	-0.005	-0.70	OE
PTDSG6	*	0.204	0.012	1.99	0.412	-0.008	-1.01	OE
PU2T3L		0.203	0.011	1.83	0.421	0.001	0.20	DR
PXER1B	X	0.200	0.008	1.30	0.447	0.027	3.59	GD
PZDBET		0.188	-0.004	-0.62	0.421	0.001	0.15	CI
QHHSVR		0.189	-0.003	-0.41	0.414	-0.006	-0.78	CO
QJER54		0.189	-0.003	-0.41	0.426	0.006	0.87	CI
QTQGYN		0.189	-0.003	-0.46	0.420	0.000	-0.03	CI
QZQCTG	*	0.191	-0.001	-0.20	0.400	-0.020	-2.62	OE
R3V6GE		0.189	-0.003	-0.52	0.417	-0.003	-0.38	CI
R93JNB		0.197	0.005	0.76	0.417	-0.003	-0.43	OE
RQW1XS		0.191	-0.001	-0.09	0.422	0.002	0.29	CO
SPG24H		0.189	-0.003	-0.41	0.426	0.006	0.87	GD
T6G7CE		0.188	-0.004	-0.62	0.420	0.000	0.06	CO
TLV1Z3		0.188	-0.004	-0.57	0.419	-0.001	-0.07	CO
TPZTSF		0.184	-0.008	-1.26	0.416	-0.004	-0.47	OE
TTMLKG		0.185	-0.007	-1.05	0.419	-0.001	-0.16	CO
U9X7VR		0.192	0.000	-0.04	0.426	0.006	0.87	CI
UP3Z18		0.191	-0.001	-0.14	0.419	-0.001	-0.07	CO

Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent

CARBON (C)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
UU4KND		0.197	0.005	0.82	0.420	0.000	0.02	OE
V1ATYJ		0.202	0.010	1.67	0.425	0.005	0.73	DR
V42P8Z		0.186	-0.006	-0.94	0.426	0.006	0.78	OE
V6QBBM		0.193	0.001	0.23	0.424	0.004	0.60	OE
VA4CPY		0.196	0.004	0.66	0.426	0.006	0.82	OE
VA7DSR	X	0.209	0.017	2.74	0.446	0.026	3.55	OE
VHJJBV	X	0.254	0.062	9.98	0.435	0.015	2.03	CO
VMPH4M		0.189	-0.003	-0.46	0.415	-0.005	-0.61	OE
VNPTER		0.185	-0.007	-1.16	0.407	-0.013	-1.68	CI
W88T5R		0.187	-0.005	-0.73	0.428	0.008	1.14	OE
WBJ7EP		0.182	-0.010	-1.60	0.418	-0.001	-0.19	OE
WT1DEG		0.209	0.017	2.74	0.412	-0.008	-1.10	OE
WT4NBC		0.203	0.011	1.83	0.433	0.013	1.81	IR
X39AYP		0.188	-0.004	-0.62	0.419	-0.001	-0.11	OE
XS35T8	X	0.173	-0.019	-2.97	0.392	-0.028	-3.78	OE
XYMM61		0.190	-0.002	-0.30	0.422	0.002	0.33	OE
Y1TETK	X	0.177	-0.015	-2.44	0.380	-0.040	-5.34	OE
YCT1D3		0.189	-0.003	-0.46	0.416	-0.004	-0.56	CI
YVL69V		0.191	-0.001	-0.09	0.415	-0.005	-0.61	GD
YWS4GR		0.192	0.000	0.04	0.422	0.003	0.34	OE
Z4BUVC		0.191	-0.001	-0.20	0.423	0.003	0.38	CI
Z7VWZP		0.195	0.003	0.55	0.423	0.003	0.42	OE

Summary Statistics

	Sample L75		Sample L76	
Grand Means	0.1919	Percent	0.4200	Percent
Stnd Dev Btwn Labs	0.0063	Percent	0.0075	Percent

Statistics based on 103 **of** 112 **reporting participants**

Samples L75 , L76 : AISI 8620, AISI 8740

Comments on assigned Data Flags for Test #170

3UM4FH (X) - Low data for Sample L76.
58NSXS (X) - Low data for Sample L75.
6RJ46N (X) - High data for Sample L76.
PXER1B (X) - High data for Sample L76.
VA7DSR (X) - High data for Sample L76.
VHJJBV (X) - High data for Sample L75.
XS35T8 (X) - Data for both samples are low.
Y1TETK (X) - Low data for Sample L76.

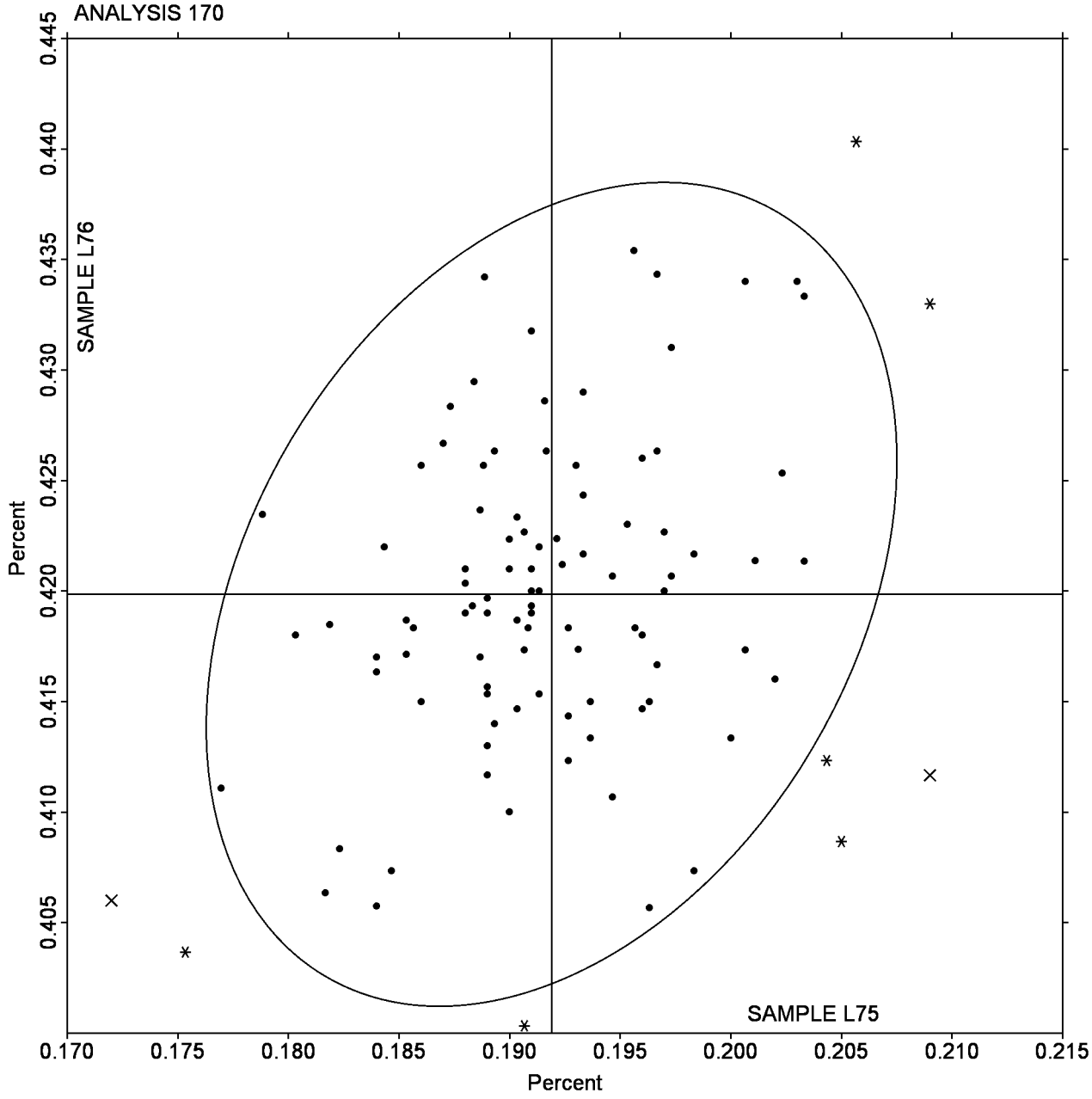
Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent

CARBON (C)

SAMPLE L75 = 0.1919 Percent SAMPLE L76 = 0.4200 Percent



Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent

MANGANESE (Mn)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
1K96PT	*	0.835	0.017	1.60	0.946	0.029	2.48	OE
1NS9EK	X	0.835	0.017	1.66	0.969	0.052	4.41	IC
2C47F3		0.802	-0.016	-1.56	0.903	-0.014	-1.15	OE
2EKALT		0.800	-0.018	-1.76	0.890	-0.027	-2.26	OE
2FGPFD		0.811	-0.007	-0.66	0.919	0.002	0.18	IC
2HDW4Q		0.815	-0.003	-0.34	0.910	-0.007	-0.56	OE
2R3BME		0.810	-0.008	-0.82	0.910	-0.007	-0.56	DR
2XNDM6	X	0.793	-0.025	-2.40	0.877	-0.040	-3.43	OE
351PEX		0.806	-0.012	-1.18	0.904	-0.013	-1.07	OE
3F3XBT		0.793	-0.025	-2.40	0.892	-0.025	-2.15	AA
3M56HM		0.818	0.000	-0.01	0.917	0.000	0.04	OE
3PUWX9		0.820	0.002	0.18	0.933	0.016	1.40	OE
3SNKVV		0.807	-0.011	-1.05	0.914	-0.003	-0.28	OE
4A1W7Y		0.824	0.006	0.53	0.916	-0.001	-0.05	OE
4KDE6V		0.840	0.022	2.12	0.930	0.013	1.12	OE
4STYCN		0.827	0.009	0.86	0.914	-0.003	-0.22	GD
5BABBW		0.810	-0.008	-0.79	0.917	0.000	-0.02	OE
5VFS6V		0.817	-0.001	-0.14	0.913	-0.004	-0.30	OE
63JX9R		0.813	-0.005	-0.47	0.903	-0.014	-1.16	OE
6UTZBB		0.820	0.002	0.15	0.921	0.004	0.38	OE
757T95		0.822	0.004	0.34	0.922	0.005	0.44	OE
7BWTUG		0.830	0.012	1.12	0.923	0.006	0.52	DR
87HU8A		0.819	0.001	0.05	0.912	-0.005	-0.39	OE
8A13KG		0.806	-0.012	-1.14	0.906	-0.011	-0.93	OE
8MUVZD		0.811	-0.007	-0.67	0.899	-0.018	-1.55	OE
92NW2B		0.810	-0.008	-0.79	0.907	-0.010	-0.87	DR
951SCG		0.813	-0.005	-0.51	0.920	0.003	0.27	OE
9WGQUS		0.827	0.009	0.88	0.927	0.010	0.85	OE
ACW3DA		0.831	0.013	1.21	0.936	0.019	1.63	OE
AS7TWW		0.810	-0.008	-0.79	0.910	-0.007	-0.59	OE
AW3SM7		0.799	-0.019	-1.82	0.903	-0.014	-1.18	OE
B4JV5U		0.827	0.009	0.82	0.920	0.003	0.26	DR
BRKCWE		0.804	-0.014	-1.37	0.936	0.019	1.60	GD
BZ6JAK		0.818	0.000	0.00	0.917	0.000	0.03	OE
CBYPEH		0.831	0.013	1.21	0.944	0.027	2.28	OE
CDLGZZ		0.818	0.000	-0.01	0.910	-0.007	-0.62	IC
CM8FCY		0.810	-0.008	-0.76	0.903	-0.014	-1.21	OE
D3NVST		0.813	-0.005	-0.50	0.910	-0.007	-0.59	OE
D5H5LY		0.800	-0.018	-1.71	0.905	-0.011	-0.97	OE
DGBGZZ		0.826	0.008	0.76	0.911	-0.006	-0.50	DR
DT4U94		0.824	0.006	0.53	0.917	0.000	0.04	OE
E7VEQQ		0.827	0.009	0.86	0.929	0.012	1.00	OE
E9BJGX		0.818	0.000	-0.05	0.924	0.007	0.63	OE
EEX7Q1		0.818	0.000	-0.05	0.916	-0.001	-0.08	OE
EJDKLT		0.803	-0.015	-1.47	0.891	-0.026	-2.24	OE

Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent

MANGANESE (Mn)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
EUCA7P		0.805	-0.013	-1.24	0.918	0.001	0.12	GD
F339DE		0.828	0.010	0.92	0.925	0.008	0.69	OE
FFZUYX		0.819	0.001	0.11	0.919	0.002	0.21	DR
FRM5T5		0.822	0.004	0.34	0.916	-0.001	-0.05	OE
FZ7YPZ		0.826	0.008	0.73	0.933	0.016	1.37	OE
GE2Q9F		0.822	0.004	0.41	0.929	0.012	1.03	OE
GNUYT6		0.824	0.006	0.53	0.918	0.001	0.07	OE
GQA3U4		0.814	-0.004	-0.37	0.911	-0.006	-0.53	OE
HALGN4		0.822	0.004	0.37	0.925	0.008	0.72	OE
HBP8R4		0.825	0.007	0.70	0.924	0.007	0.63	OE
J5312R		0.822	0.004	0.35	0.920	0.003	0.30	OE
JB4JQW		0.821	0.003	0.28	0.926	0.009	0.78	OE
JKC5FW		0.828	0.010	0.92	0.932	0.015	1.32	OE
JXHEW6		0.832	0.014	1.34	0.931	0.014	1.20	OE
K8PBYG		0.812	-0.006	-0.63	0.926	0.009	0.75	GD
K9PN45		0.825	0.007	0.63	0.924	0.007	0.63	OE
KCBWHN		0.832	0.014	1.31	0.938	0.021	1.77	XR
KDPWLM		0.817	-0.001	-0.08	0.913	-0.004	-0.30	OE
KE9ZLD		0.804	-0.014	-1.40	0.898	-0.019	-1.58	OE
KVDFTJ		0.816	-0.002	-0.18	0.916	-0.001	-0.08	OE
LHYG3Q		0.833	0.015	1.47	0.927	0.010	0.83	OE
LQLPZ7		0.816	-0.002	-0.18	0.917	0.000	0.01	OE
LZZXT3		0.825	0.007	0.69	0.921	0.004	0.32	OE
M14H42		0.801	-0.017	-1.69	0.910	-0.007	-0.56	OE
MC9963		0.826	0.008	0.76	0.932	0.015	1.26	OE
MEF5TZ		0.826	0.008	0.76	0.918	0.001	0.07	DR
MNZL43		0.821	0.003	0.24	0.917	0.000	-0.02	OE
NGS346		0.807	-0.011	-1.04	0.909	-0.008	-0.69	XX
NPUNL4		0.820	0.002	0.18	0.926	0.009	0.75	OE
P5VFPC		0.815	-0.004	-0.35	0.913	-0.004	-0.32	XX
P6JDMF		0.815	-0.003	-0.31	0.923	0.006	0.49	OE
PBLLP8		0.820	0.002	0.18	0.910	-0.007	-0.59	OE
PCF6KR		0.830	0.012	1.15	0.937	0.020	1.69	OE
Q6FU58	*	0.846	0.028	2.67	0.942	0.025	2.17	OE
Q7XH8M		0.820	0.002	0.15	0.916	-0.001	-0.10	OE
QAJEFC		0.814	-0.004	-0.40	0.918	0.001	0.07	IC
QHEEZH		0.823	0.005	0.50	0.915	-0.002	-0.19	OE
QHKLKF	*	0.807	-0.011	-1.08	0.888	-0.029	-2.46	DC
R44PHU		0.811	-0.007	-0.69	0.919	0.002	0.18	OE
R5A2V4	*	0.804	-0.014	-1.34	0.885	-0.032	-2.72	GD
RGML8M		0.797	-0.021	-2.05	0.931	0.014	1.17	WD
RKR5B7		0.813	-0.005	-0.50	0.917	0.000	-0.02	GD
RL2JT9		0.820	0.002	0.15	0.917	0.000	0.01	OE
RYCYUM		0.817	-0.001	-0.08	0.914	-0.003	-0.25	OE
SAJVBJ		0.816	-0.002	-0.24	0.911	-0.006	-0.50	OE

Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent

MANGANESE (Mn)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
SB84DW		0.819	0.001	0.11	0.923	0.006	0.49	OE
SGCP28		0.825	0.007	0.70	0.925	0.008	0.69	OE
TB8MNQ		0.812	-0.006	-0.60	0.917	0.000	0.04	OE
TD1K6H		0.822	0.004	0.35	0.913	-0.004	-0.37	DR
TND9JA		0.827	0.009	0.82	0.927	0.010	0.89	OE
TPDPDD		0.819	0.001	0.11	0.917	0.000	0.04	OE
TPXLHF		0.816	-0.002	-0.18	0.920	0.003	0.26	OE
TQ1BKB		0.804	-0.014	-1.37	0.913	-0.004	-0.33	OE
TTU6PJ		0.823	0.005	0.44	0.917	0.000	0.04	OE
ULQMXS		0.807	-0.011	-1.11	0.920	0.003	0.26	OE
V3U7A4	X	0.847	0.029	2.80	0.961	0.044	3.76	OE
V9W252	*	0.830	0.012	1.16	0.910	-0.007	-0.56	OE
VU8KMA		0.820	0.002	0.15	0.916	-0.001	-0.05	OE
W9UN6J		0.823	0.005	0.50	0.920	0.003	0.24	OE
WW4UWA		0.797	-0.021	-2.05	0.904	-0.013	-1.10	OE
XBARFK		0.821	0.003	0.28	0.920	0.003	0.26	OE
XDVQL2	*	0.850	0.032	3.09	0.943	0.026	2.25	GD
XQCKX6		0.832	0.014	1.31	0.917	0.000	0.04	OE
ZC17TG	*	0.794	-0.024	-2.37	0.889	-0.028	-2.38	OE
ZQSACE		0.817	-0.001	-0.11	0.909	-0.008	-0.64	DR
ZS8DP2		0.828	0.010	0.99	0.910	-0.007	-0.59	OE

Summary Statistics

	Sample L75		Sample L76	
Grand Means	0.8182	Percent	0.9170	Percent
Stnd Dev Btwn Labs	0.0103	Percent	0.0117	Percent

Statistics based on 106 **of** 111 **reporting participants**

Samples L75 , L76 : AISI 8620, AISI 8740

Comments on assigned Data Flags for Test #171

1NS9EK (X) - High data for Sample L76 and inconsistent within the determinations for Sample L76.

2XNDM6 (X) - Low data for Sample L76.

V3U7A4 (X) - Data for both samples are high.

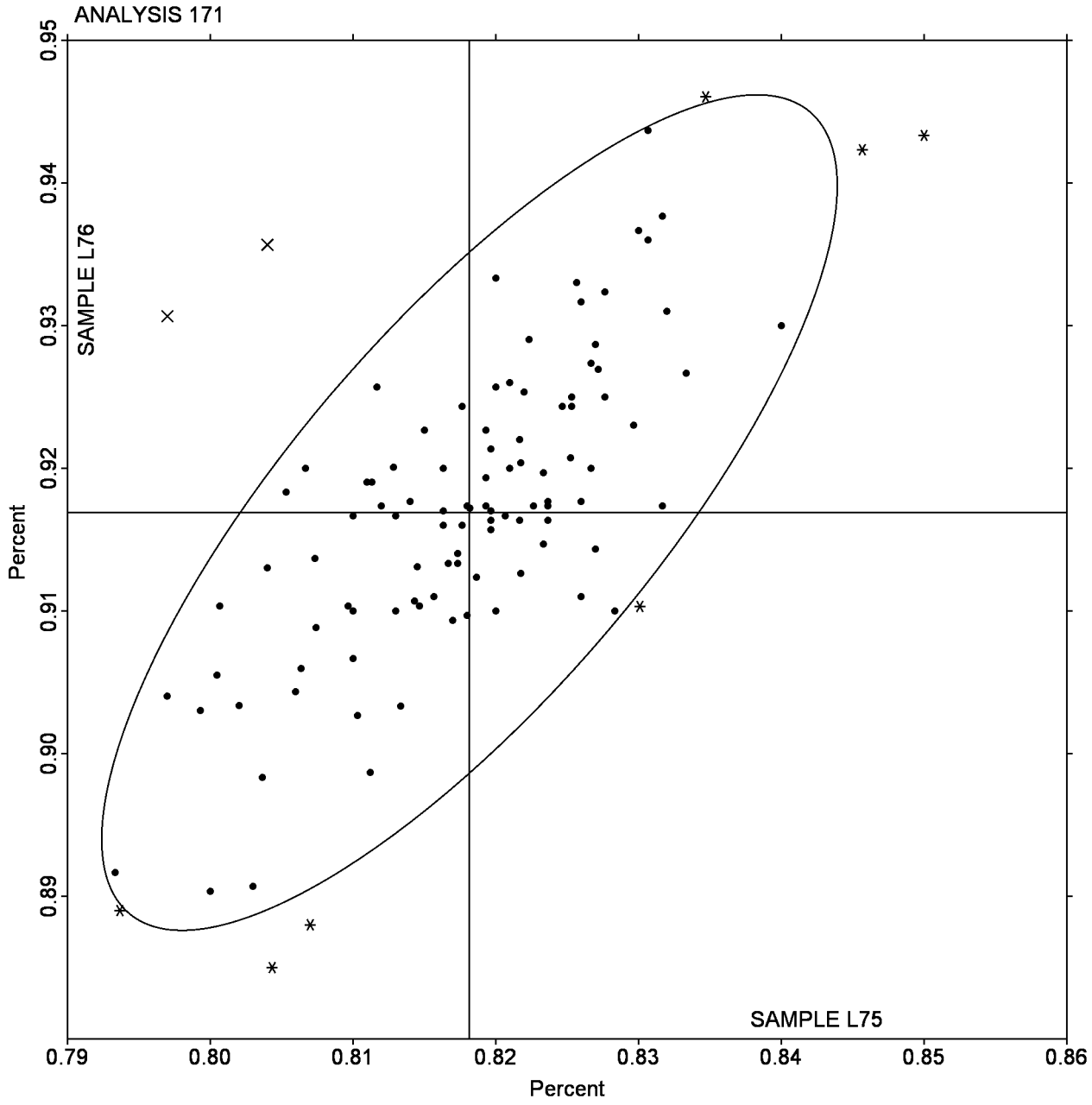
Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent

MANGANESE (Mn)

SAMPLE L75 = 0.8182 Percent SAMPLE L76 = 0.9170 Percent



Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent

PHOSPHORUS(P)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
156BSQ		0.0090	0.0001	0.16	0.0244	0.0002	0.23	OE
19YH5V		0.0077	-0.0012	-1.49	0.0237	-0.0005	-0.44	OE
1FJ1HP		0.0092	0.0003	0.32	0.0246	0.0004	0.39	OE
2A2T2X		0.0079	-0.0010	-1.23	0.0234	-0.0007	-0.69	OE
2AEX9P		0.0096	0.0007	0.80	0.0244	0.0002	0.23	OE
2H7Y8C		0.0083	-0.0006	-0.71	0.0236	-0.0006	-0.57	OE
2PZAW3		0.0089	0.0000	-0.04	0.0243	0.0002	0.17	OE
2VF155	X	0.0070	-0.0019	-2.27	0.0170	-0.0072	-6.88	OE
3EDH6H		0.0107	0.0018	2.19	0.0251	0.0009	0.87	OE
3LQTS4		0.0089	0.0000	-0.04	0.0240	-0.0002	-0.15	OE
3RCH8W		0.0080	-0.0009	-1.07	0.0220	-0.0022	-2.07	OE
3TWPDL		0.0080	-0.0009	-1.11	0.0231	-0.0011	-1.05	OE
3VJGY2		0.0108	0.0019	2.23	0.0248	0.0006	0.62	IC
4RSXTG		0.0085	-0.0004	-0.44	0.0252	0.0011	1.03	OE
4T9431		0.0076	-0.0013	-1.59	0.0242	0.0000	0.04	OE
57FSBT		0.0083	-0.0006	-0.68	0.0241	0.0000	-0.02	OE
64REX9		0.0091	0.0002	0.20	0.0234	-0.0007	-0.69	DR
72P2DM		0.0090	0.0001	0.12	0.0240	-0.0002	-0.15	OE
774J53		0.0083	-0.0006	-0.75	0.0251	0.0009	0.91	OE
7B3FQ8		0.0099	0.0010	1.20	0.0237	-0.0005	-0.47	OE
7ERUKS		0.0085	-0.0004	-0.51	0.0233	-0.0008	-0.79	OE
7NQ65M		0.0093	0.0004	0.48	0.0242	0.0000	0.04	OE
7P3P2C	*	0.0110	0.0021	2.51	0.0250	0.0008	0.81	OE
82J8QY		0.0080	-0.0009	-1.07	0.0227	-0.0015	-1.43	OE
82YZUW		0.0089	0.0000	0.04	0.0245	0.0004	0.36	GD
8789X5	X	0.0125	0.0036	4.26	0.0254	0.0013	1.23	DR
8A45G6		0.0100	0.0011	1.36	0.0255	0.0013	1.26	DR
8NDBC1		0.0081	-0.0008	-0.91	0.0237	-0.0005	-0.47	OE
8V1AB7		0.0097	0.0008	0.92	0.0230	-0.0012	-1.11	OE
9PNCZZ		0.0082	-0.0007	-0.87	0.0229	-0.0013	-1.24	OE
AYQL7P		0.0090	0.0001	0.12	0.0250	0.0008	0.81	IC
B8392P		0.0084	-0.0005	-0.63	0.0241	-0.0001	-0.05	XX
BDKNMD		0.0100	0.0011	1.32	0.0237	-0.0005	-0.47	GD
BKG6JY		0.0090	0.0001	0.12	0.0250	0.0009	0.84	OE
BL9PH6		0.0091	0.0002	0.20	0.0243	0.0001	0.11	OE
C371AM		0.0086	-0.0003	-0.36	0.0239	-0.0002	-0.21	OE
CECYZT		0.0082	-0.0007	-0.87	0.0248	0.0006	0.59	OE
CTENU7		0.0090	0.0001	0.12	0.0240	-0.0002	-0.15	DR
CXLU3D		0.0087	-0.0002	-0.28	0.0240	-0.0002	-0.15	OE
DAZNGV		0.0089	0.0000	0.04	0.0243	0.0001	0.11	OE
DDM542		0.0093	0.0004	0.52	0.0239	-0.0003	-0.25	OE
DHSLWS	X	0.0117	0.0028	3.31	0.0240	-0.0002	-0.15	DR
E1NVGZ		0.0080	-0.0009	-1.11	0.0246	0.0005	0.46	OE
EZYDN6		0.0090	0.0001	0.12	0.0248	0.0006	0.62	DR
F2QWEJ	*	0.0110	0.0021	2.51	0.0240	-0.0002	-0.15	OE

Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent

PHOSPHORUS(P)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
FAT296		0.0093	0.0004	0.52	0.0240	-0.0002	-0.15	OE
FEJ3VM		0.0090	0.0001	0.16	0.0243	0.0002	0.17	OE
FM7JXC		0.0087	-0.0002	-0.28	0.0237	-0.0005	-0.47	OE
FQB367		0.0080	-0.0009	-1.07	0.0230	-0.0012	-1.11	OE
FYJHST		0.0077	-0.0012	-1.47	0.0230	-0.0012	-1.11	DC
G531MF		0.0079	-0.0010	-1.19	0.0235	-0.0007	-0.63	OE
GB6QKL		0.0091	0.0002	0.28	0.0258	0.0016	1.55	GD
GM6GW5		0.0082	-0.0007	-0.87	0.0250	0.0008	0.81	OE
GRGFEC		0.0087	-0.0002	-0.28	0.0257	0.0015	1.45	OE
GSF85C		0.0086	-0.0003	-0.40	0.0252	0.0011	1.03	OE
HEQQ7S	X	0.0084	-0.0005	-0.63	0.0287	0.0045	4.37	OE
HKWUYR		0.0090	0.0001	0.12	0.0240	-0.0002	-0.15	OE
HM4YUH		0.0087	-0.0002	-0.28	0.0227	-0.0015	-1.43	OE
HQN4Y4		0.0089	0.0000	-0.04	0.0245	0.0004	0.36	OE
JAY2LZ		0.0099	0.0010	1.16	0.0239	-0.0003	-0.28	OE
JC4MD6	X	0.0049	-0.0040	-4.82	0.0180	-0.0062	-5.94	IC
JMY66S	X	0.0056	-0.0033	-3.90	0.0217	-0.0025	-2.39	OE
KEBP53		0.0074	-0.0015	-1.83	0.0227	-0.0015	-1.43	OE
KTFW1Z		0.0088	-0.0001	-0.08	0.0236	-0.0006	-0.53	OE
KY5DCQ		0.0089	0.0000	0.04	0.0242	0.0000	0.01	OE
KYUET1	X	0.0057	-0.0032	-3.86	0.0197	-0.0045	-4.31	OE
L4FMV6		0.0083	-0.0006	-0.67	0.0221	-0.0020	-1.94	GD
LJTTGV		0.0093	0.0004	0.52	0.0247	0.0005	0.49	OE
LWUU62		0.0097	0.0008	0.92	0.0257	0.0015	1.45	OE
M2KJ64		0.0100	0.0011	1.32	0.0257	0.0015	1.45	OE
MMJB5A		0.0094	0.0005	0.64	0.0245	0.0004	0.36	OE
N4K2MV	*	0.0070	-0.0019	-2.27	0.0217	-0.0025	-2.39	OE
PH6511		0.0076	-0.0013	-1.55	0.0222	-0.0020	-1.88	OE
PZ2TYS	X	0.0110	0.0021	2.51	0.0277	0.0035	3.37	OE
Q1LZ76	X	0.0097	0.0008	0.92	0.0210	-0.0032	-3.03	OE
R4XM4C		0.0079	-0.0010	-1.23	0.0239	-0.0003	-0.25	IC
R5DCHE		0.0100	0.0011	1.32	0.0241	-0.0001	-0.05	OE
RC2NEC		0.0080	-0.0009	-1.07	0.0220	-0.0022	-2.07	GD
REZ252		0.0073	-0.0016	-1.87	0.0227	-0.0015	-1.43	OE
RHTLU8		0.0087	-0.0002	-0.28	0.0243	0.0002	0.17	OE
RV3MPW		0.0091	0.0002	0.24	0.0263	0.0021	2.06	GD
SY5S2G		0.0090	0.0001	0.12	0.0230	-0.0012	-1.11	OE
TAPBPR		0.0100	0.0011	1.32	0.0253	0.0012	1.13	OE
TF6FWM		0.0089	0.0000	0.00	0.0237	-0.0004	-0.41	OE
TKP2YN		0.0088	-0.0001	-0.12	0.0239	-0.0002	-0.21	OE
TPXG8B		0.0092	0.0003	0.36	0.0264	0.0022	2.16	OE
TQQ1RJ		0.0093	0.0004	0.52	0.0247	0.0005	0.49	OE
U34822		0.0087	-0.0002	-0.24	0.0250	0.0009	0.84	OE
U7AXVJ		0.0088	-0.0001	-0.16	0.0251	0.0009	0.91	OE
UYQ2H4		0.0087	-0.0002	-0.28	0.0250	0.0008	0.81	OE

Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent

PHOSPHORUS(P)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
V84FQG		0.0095	0.0006	0.76	0.0257	0.0015	1.48	OE
VHGAAX		0.0087	-0.0002	-0.28	0.0257	0.0015	1.45	OE
W46TQ2		0.0096	0.0007	0.88	0.0234	-0.0008	-0.76	OE
W7QGUS	X	0.0106	0.0017	2.03	0.0287	0.0045	4.33	OE
WEAV54		0.0084	-0.0005	-0.59	0.0257	0.0015	1.45	AA
XDB74K		0.0084	-0.0005	-0.63	0.0243	0.0002	0.17	OE
XGU6PG		0.0099	0.0010	1.16	0.0233	-0.0009	-0.85	DR
XKGTB3		0.0087	-0.0002	-0.20	0.0237	-0.0005	-0.47	OE
XTSWQ2		0.0099	0.0010	1.20	0.0244	0.0002	0.23	XX
Y4VEV3		0.0095	0.0006	0.72	0.0260	0.0019	1.80	GD
YEQX4F		0.0092	0.0003	0.36	0.0259	0.0018	1.71	OE
YZVDK7	*	0.0095	0.0006	0.76	0.0216	-0.0026	-2.46	OE
Z8S566		0.0090	0.0001	0.12	0.0237	-0.0005	-0.47	OE
Z9MJJ5	X	0.0100	0.0011	1.32	0.0283	0.0042	4.01	OE
ZDGQ13	*	0.0113	0.0024	2.91	0.0247	0.0005	0.49	OE
ZHW8CP		0.0080	-0.0009	-1.07	0.0240	-0.0002	-0.15	OE

Summary Statistics

	Sample L75		Sample L76	
Grand Means	0.00890	Percent	0.02420	Percent
Stnd Dev Btwn Labs	0.00084	Percent	0.00104	Percent

Statistics based on 95 **of** 106 **reporting participants**

Samples L75 , L76 : AISI 8620, AISI 8740

Comments on assigned Data Flags for Test #172

2VF155 (X) - Low data for Sample L76.
8789X5 (X) - High data for Sample L75.
DHSLWS (X) - High data for Sample L75.
HEQQ7S (X) - High data for Sample L76 and inconsistent within the determinations for Sample L76.
JC4MD6 (X) - Data for both samples are low.
JMY66S (X) - Low data for Sample L75 and inconsistent within the determinations for Sample L75.
KYUET1 (X) - Data for both samples are low.
PZ2TYS (X) - High data for Sample L76.
Q1LZ76 (X) - Low data for Sample L76.
W7QGUS (X) - High data for Sample L76.
Z9MJJ5 (X) - High data for Sample L76.

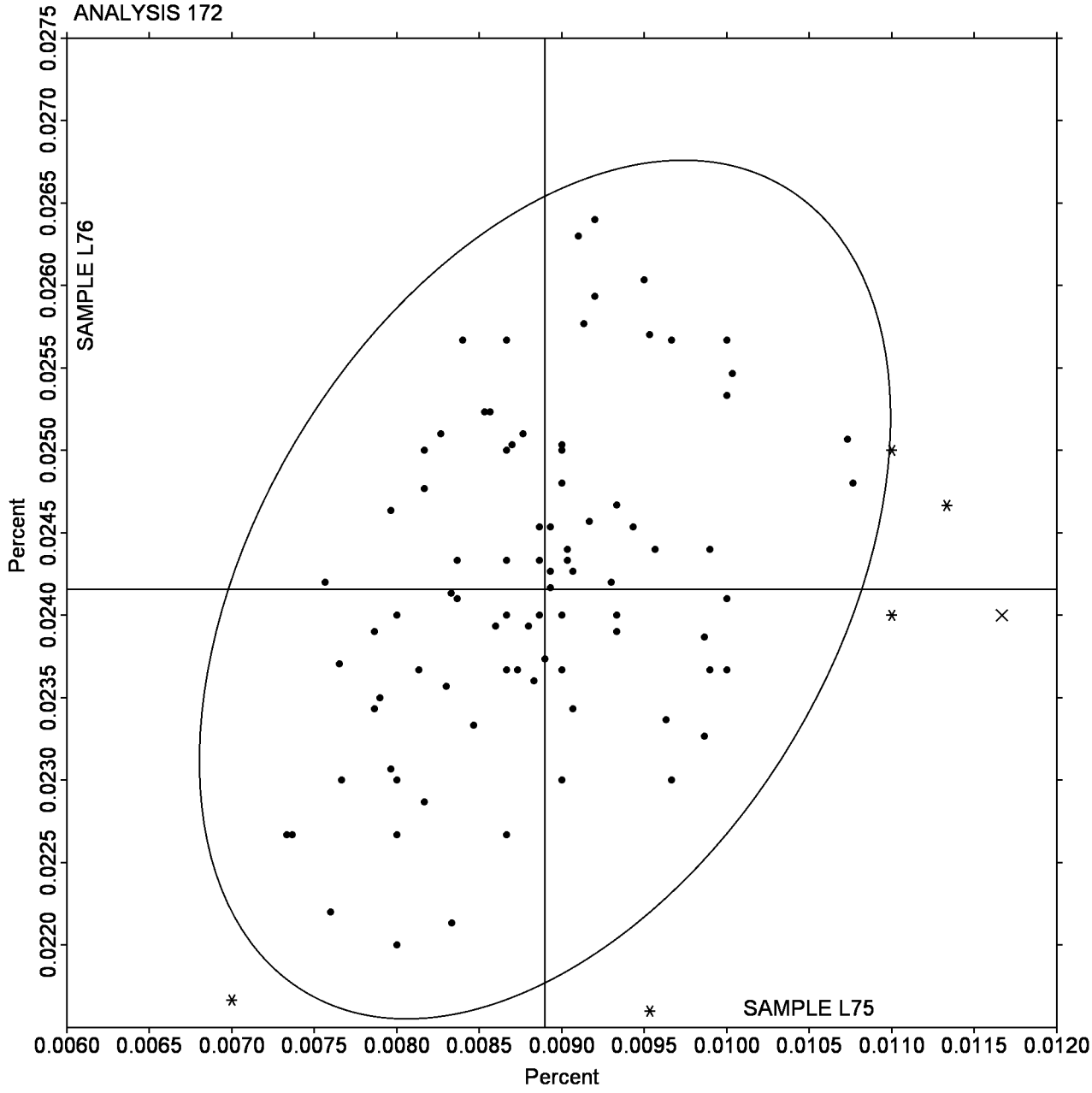
Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent

PHOSPHORUS(P)

SAMPLE L75 = 0.00890 Percent SAMPLE L76 = 0.02420 Percent



Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent

SULFUR (S)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
16EXBB		0.0245	-0.0001	-0.05	0.0088	0.0001	0.11	OE
1ACXN3		0.0213	-0.0033	-2.31	0.0085	-0.0002	-0.20	OE
1U5YH6	*	0.0230	-0.0016	-1.11	0.0110	0.0023	2.38	OE
27PAA7		0.0257	0.0011	0.73	0.0090	0.0003	0.32	CO
2K1ZRH		0.0240	-0.0006	-0.42	0.0075	-0.0012	-1.27	CI
2K2CDX		0.0227	-0.0019	-1.34	0.0083	-0.0004	-0.37	OE
2NA2Y1		0.0250	0.0004	0.25	0.0088	0.0001	0.14	GD
2THJ5H		0.0231	-0.0015	-1.07	0.0080	-0.0007	-0.75	XX
3R8ULG		0.0252	0.0006	0.43	0.0085	-0.0002	-0.20	OE
3W6JLW		0.0257	0.0011	0.76	0.0110	0.0023	2.38	OE
43HLW4		0.0261	0.0015	1.06	0.0077	-0.0010	-1.03	OE
481H5T		0.0253	0.0007	0.50	0.0073	-0.0014	-1.41	OE
489JH8		0.0227	-0.0019	-1.34	0.0079	-0.0008	-0.82	OE
4HWG6S		0.0255	0.0009	0.61	0.0085	-0.0002	-0.24	OE
4R2KZ4		0.0241	-0.0005	-0.35	0.0101	0.0014	1.47	OE
4UXPLQ		0.0233	-0.0013	-0.88	0.0086	-0.0001	-0.10	OE
4ZMRB9		0.0246	0.0000	0.02	0.0106	0.0019	1.93	DR
54J9EE		0.0250	0.0004	0.27	0.0085	-0.0002	-0.24	OE
57SUEU		0.0260	0.0014	0.96	0.0093	0.0006	0.66	OE
5D2AF9		0.0249	0.0003	0.20	0.0095	0.0008	0.80	OE
5F1CYC		0.0251	0.0005	0.36	0.0087	0.0000	-0.03	OE
5JW82K		0.0251	0.0005	0.37	0.0086	-0.0001	-0.09	CI
5K69TK		0.0264	0.0018	1.26	0.0088	0.0001	0.11	OE
5YM55V		0.0220	-0.0026	-1.81	0.0077	-0.0010	-0.99	GD
63AEGU		0.0240	-0.0006	-0.42	0.0088	0.0001	0.14	OE
6F7RCR		0.0273	0.0027	1.89	0.0093	0.0006	0.63	OE
6SMH7Y		0.0245	-0.0001	-0.08	0.0082	-0.0005	-0.55	CI
7WJWQG		0.0253	0.0007	0.48	0.0104	0.0017	1.80	OE
8AKFT8		0.0227	-0.0019	-1.34	0.0098	0.0011	1.14	OE
9ACNA9		0.0253	0.0007	0.50	0.0080	-0.0007	-0.72	OE
9N163N		0.0229	-0.0017	-1.16	0.0096	0.0009	0.97	OE
9WVLAL	X	0.0190	-0.0056	-3.88	0.0070	-0.0017	-1.75	OE
9XEJLR		0.0223	-0.0023	-1.58	0.0080	-0.0007	-0.72	CI
9ZC1KD		0.0232	-0.0014	-1.00	0.0086	-0.0001	-0.13	OE
AAYURY		0.0247	0.0001	0.04	0.0093	0.0006	0.66	OE
AGUEHM		0.0259	0.0013	0.87	0.0090	0.0003	0.28	XX
AHP5CX		0.0262	0.0016	1.12	0.0069	-0.0018	-1.82	CI
B5EE3E		0.0233	-0.0013	-0.88	0.0087	0.0000	-0.03	OE
BCPCLL	*	0.0207	-0.0039	-2.73	0.0083	-0.0004	-0.37	OE
BT57DM		0.0254	0.0008	0.52	0.0083	-0.0004	-0.37	CI
C6L86S		0.0240	-0.0006	-0.44	0.0076	-0.0011	-1.16	CO
CAVG91		0.0246	0.0000	-0.03	0.0100	0.0013	1.38	DR
CET8P8		0.0240	-0.0006	-0.42	0.0101	0.0014	1.45	OE
CGST62		0.0255	0.0009	0.62	0.0080	-0.0007	-0.68	OE
CNZQ5X		0.0274	0.0028	1.96	0.0091	0.0004	0.45	OE

Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent

SULFUR (S)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
CRGVQ3		0.0243	-0.0003	-0.19	0.0068	-0.0019	-1.99	OE
DAG4ZD		0.0247	0.0001	0.04	0.0090	0.0003	0.32	OE
DQ2HFJ		0.0247	0.0001	0.04	0.0090	0.0003	0.32	CO
E45KWC	X	0.0305	0.0059	4.08	0.0094	0.0007	0.73	OE
ECSUQE		0.0263	0.0017	1.19	0.0090	0.0003	0.32	CO
EMHNPB	X	0.0256	0.0010	0.71	0.0121	0.0034	3.48	CO
EMQK7N		0.0240	-0.0006	-0.42	0.0083	-0.0004	-0.37	OE
EU8G6Q		0.0236	-0.0010	-0.72	0.0076	-0.0011	-1.10	CO
EY6FHM		0.0234	-0.0012	-0.86	0.0075	-0.0012	-1.27	IR
F94PRH		0.0236	-0.0010	-0.68	0.0097	0.0010	1.00	OE
FCGL2J	X	0.0170	-0.0076	-5.25	0.0097	0.0010	1.00	OE
FLJHH7		0.0230	-0.0016	-1.11	0.0090	0.0003	0.32	XX
G1MGM4		0.0247	0.0001	0.04	0.0077	-0.0010	-1.06	CI
G5GXV1		0.0250	0.0004	0.27	0.0073	-0.0014	-1.41	OE
GH3UQG		0.0248	0.0002	0.16	0.0104	0.0017	1.76	OE
H1R5VV		0.0251	0.0005	0.36	0.0085	-0.0002	-0.17	DR
H9BMY2		0.0218	-0.0028	-1.97	0.0074	-0.0013	-1.34	OE
J8A53R		0.0228	-0.0018	-1.25	0.0093	0.0006	0.66	OE
JERQ4H		0.0228	-0.0018	-1.25	0.0088	0.0001	0.07	AA
JJ39YW		0.0240	-0.0006	-0.44	0.0083	-0.0004	-0.44	CI
JUWT4J		0.0247	0.0001	0.04	0.0077	-0.0010	-1.06	OE
JWMWV5		0.0223	-0.0023	-1.58	0.0077	-0.0010	-1.06	OE
K5GRPM		0.0249	0.0003	0.22	0.0076	-0.0011	-1.16	CI
KK4TSY		0.0271	0.0025	1.70	0.0091	0.0004	0.38	OE
KPEJTT		0.0263	0.0017	1.19	0.0093	0.0006	0.66	OE
KQCYQ5		0.0276	0.0030	2.05	0.0103	0.0016	1.69	OE
KQKGZV		0.0253	0.0007	0.50	0.0107	0.0020	2.04	OE
LR2UNX		0.0255	0.0009	0.59	0.0097	0.0010	1.04	DR
M4X7W8		0.0260	0.0014	0.96	0.0090	0.0003	0.28	OE
MGAP65		0.0230	-0.0016	-1.09	0.0077	-0.0010	-1.03	IR
MRR65D		0.0230	-0.0016	-1.11	0.0087	0.0000	-0.03	OE
N4M1RQ		0.0247	0.0001	0.04	0.0080	-0.0007	-0.72	CO
N85AFP		0.0251	0.0005	0.34	0.0089	0.0002	0.18	OE
NCE44N		0.0243	-0.0003	-0.19	0.0083	-0.0004	-0.41	CI
NSPUYF		0.0240	-0.0006	-0.42	0.0080	-0.0007	-0.72	GD
PXP8TE		0.0257	0.0011	0.73	0.0100	0.0013	1.35	OE
Q3XM1Q		0.0273	0.0027	1.89	0.0098	0.0011	1.18	CO
Q9BTHJ		0.0245	-0.0001	-0.10	0.0079	-0.0008	-0.82	CI
QSHEFH		0.0234	-0.0012	-0.81	0.0092	0.0005	0.56	OE
R57SHZ		0.0263	0.0017	1.19	0.0100	0.0013	1.35	OE
R7LXGQ		0.0273	0.0027	1.89	0.0077	-0.0010	-1.06	CI
S338MC	X	0.0237	-0.0009	-0.65	0.0123	0.0036	3.76	OE
S8WNA7		0.0243	-0.0003	-0.19	0.0085	-0.0002	-0.20	OE
S9QDFL		0.0229	-0.0017	-1.21	0.0081	-0.0006	-0.58	OE
SURQVL		0.0270	0.0024	1.66	0.0103	0.0016	1.69	OE

Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent

SULFUR (S)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
SX7HZF		0.0270	0.0024	1.66	0.0080	-0.0007	-0.72	CO
SZZELM		0.0243	-0.0003	-0.24	0.0088	0.0001	0.14	CI
TJWMQH		0.0249	0.0003	0.18	0.0074	-0.0013	-1.37	CI
UASQZD		0.0247	0.0001	0.06	0.0087	0.0000	0.04	OE
UH9L1U		0.0252	0.0006	0.43	0.0075	-0.0012	-1.20	CO
UPKKZR		0.0267	0.0021	1.42	0.0077	-0.0010	-1.06	CO
UX9DRW		0.0248	0.0002	0.13	0.0083	-0.0004	-0.41	DR
VR98XC		0.0250	0.0004	0.25	0.0081	-0.0006	-0.58	DR
WE3H5V	X	0.0193	-0.0053	-3.65	0.0073	-0.0014	-1.41	OE
WUE4AR		0.0227	-0.0019	-1.30	0.0087	0.0000	-0.03	GD
WVBA4J		0.0231	-0.0015	-1.04	0.0087	0.0000	-0.03	OE
WZ3LQS		0.0260	0.0014	0.96	0.0083	-0.0004	-0.37	OE
X966NP		0.0238	-0.0008	-0.54	0.0072	-0.0015	-1.51	CO
XB6ZA2	*	0.0263	0.0017	1.19	0.0113	0.0026	2.72	OE
XTKQJ7		0.0243	-0.0003	-0.19	0.0089	0.0002	0.21	OE
YAX66E		0.0237	-0.0009	-0.65	0.0081	-0.0006	-0.61	OE
YQTVDR	X	0.0254	0.0008	0.52	0.0123	0.0036	3.72	GD
YXFMW5		0.0260	0.0014	0.96	0.0090	0.0003	0.32	CI
ZCHP2B		0.0249	0.0003	0.20	0.0091	0.0004	0.38	OE

Summary Statistics

	Sample L75		Sample L76	
Grand Means	0.02461	Percent	0.00870	Percent
Stnd Dev Btwn Labs	0.00144	Percent	0.00097	Percent

Statistics based on 102 **of** 109 **reporting participants**

Samples L75 , L76 : AISI 8620, AISI 8740

Comments on assigned Data Flags for Test #173

9WVLAL (X) - Low data for Sample L75.
E45KWC (X) - High data for Sample L75.
EMHNPB (X) - High data for Sample L76.
FCGL2J (X) - Low data for Sample L76.
S338MC (X) - High data for Sample L76.
WE3H5V (X) - Low data for Sample L75.
YQTVDR (X) - High data for Sample L76.

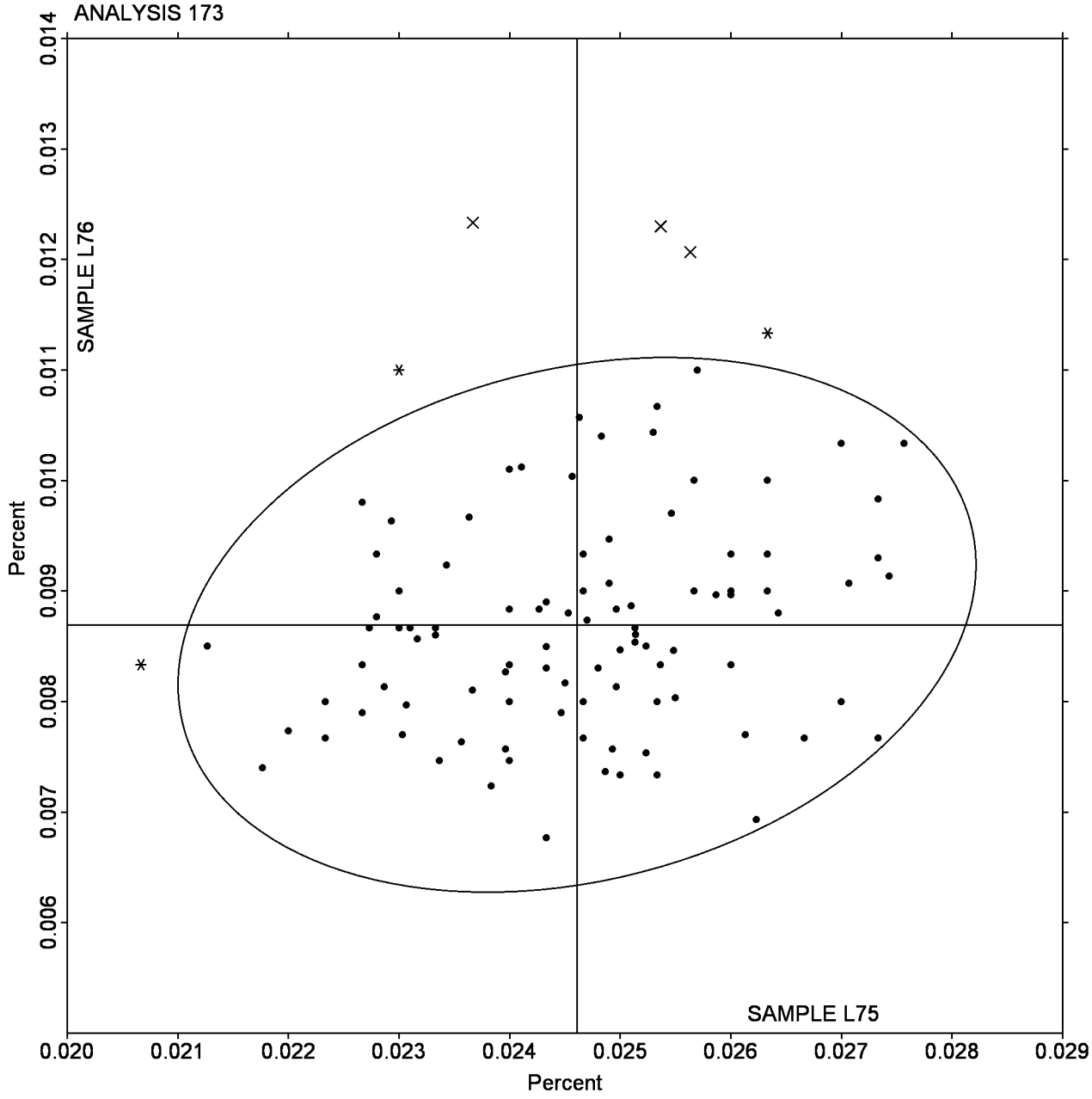
Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent

SULFUR (S)

SAMPLE L75 = 0.02461 Percent SAMPLE L76 = 0.00870 Percent



Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent

SILICON (Si)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
143LU4		0.214	-0.004	-0.92	0.245	-0.005	-0.91	IC
1L4ESQ		0.228	0.010	2.05	0.259	0.009	1.59	OE
1QFRKE	X	0.230	0.012	2.47	0.253	0.004	0.64	OE
1ZTB1L		0.222	0.004	0.81	0.259	0.009	1.59	GD
2LPRC7		0.208	-0.010	-2.03	0.236	-0.013	-2.40	OE
2MYL19		0.223	0.005	1.01	0.252	0.002	0.34	OE
2UPB43		0.221	0.003	0.53	0.253	0.003	0.52	IC
37E3AH		0.219	0.001	0.25	0.253	0.003	0.52	OE
3PHNZN		0.218	0.000	-0.02	0.248	-0.002	-0.32	OE
52FH6E		0.216	-0.002	-0.50	0.246	-0.004	-0.72	XX
5BPPP8		0.218	0.000	-0.09	0.249	0.000	-0.08	OE
5FTNJ7	*	0.210	-0.008	-1.68	0.247	-0.003	-0.55	OE
5GHMCS		0.219	0.001	0.19	0.239	-0.010	-1.87	WD
5LEQ36		0.221	0.003	0.53	0.255	0.006	1.00	OE
6EUGHL		0.220	0.002	0.39	0.254	0.004	0.70	OE
6N7JST		0.222	0.004	0.81	0.251	0.002	0.28	OE
6NT5CW		0.213	-0.005	-1.13	0.246	-0.004	-0.73	OE
7E1GL6		0.225	0.007	1.50	0.259	0.009	1.59	OE
7KQ48Y		0.216	-0.002	-0.37	0.247	-0.002	-0.44	GD
82U6TW		0.210	-0.008	-1.65	0.238	-0.012	-2.17	OE
88VHPU		0.220	0.002	0.32	0.251	0.001	0.22	OE
8BMGFX		0.216	-0.002	-0.51	0.251	0.001	0.16	DR
8QQ879		0.219	0.001	0.19	0.242	-0.008	-1.39	OE
929CGR		0.226	0.008	1.64	0.259	0.010	1.71	GD
9YMTNV		0.212	-0.006	-1.27	0.240	-0.010	-1.75	OE
AA6B6K		0.224	0.006	1.15	0.258	0.008	1.47	OE
AD7RTF		0.217	-0.001	-0.23	0.246	-0.003	-0.61	OE
AGKFJC		0.214	-0.004	-0.85	0.243	-0.007	-1.27	OE
AYDE16		0.222	0.004	0.81	0.253	0.004	0.64	OE
B16CHS		0.219	0.001	0.12	0.250	0.000	-0.02	OE
BSLHZ8		0.218	0.000	-0.02	0.250	0.001	0.10	DR
BX9Q7L		0.219	0.001	0.25	0.251	0.002	0.28	OE
CJ31NQ		0.217	-0.001	-0.23	0.250	0.000	0.04	OE
CNV8XF		0.215	-0.003	-0.57	0.245	-0.004	-0.79	OE
CUX4F9	*	0.208	-0.010	-2.09	0.245	-0.005	-0.91	OE
DD7N55		0.216	-0.003	-0.52	0.245	-0.004	-0.81	OE
DPKS9E		0.214	-0.004	-0.92	0.244	-0.005	-0.97	OE
E1G9KZ		0.219	0.001	0.12	0.250	0.001	0.10	OE
E33ZL5		0.216	-0.002	-0.44	0.247	-0.003	-0.55	OE
EQRU8G		0.220	0.002	0.39	0.250	0.000	0.04	OE
EXBXD1		0.220	0.002	0.39	0.250	0.000	0.04	OE
EYPCXT		0.225	0.007	1.43	0.254	0.004	0.70	DC
F2F2LW		0.222	0.004	0.81	0.254	0.004	0.76	OE
FHSLCR		0.212	-0.006	-1.27	0.248	-0.002	-0.32	OE
FMRT4R		0.225	0.007	1.50	0.258	0.009	1.53	OE

Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent

SILICON (Si)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
FYBYNP		0.227	0.009	1.77	0.260	0.010	1.83	DR
G55MKE		0.215	-0.003	-0.57	0.250	0.000	-0.02	OE
G7X5E8		0.218	0.000	-0.09	0.249	-0.001	-0.15	OE
G9RM5K		0.222	0.004	0.74	0.255	0.005	0.88	DR
GHRK8Q		0.217	-0.001	-0.17	0.257	0.007	1.30	OE
GYMPZL		0.213	-0.005	-1.06	0.248	-0.002	-0.32	DR
H847SW		0.227	0.009	1.77	0.260	0.010	1.83	OE
HEWRHT		0.214	-0.004	-0.92	0.241	-0.009	-1.57	OE
HL9CW3		0.215	-0.003	-0.71	0.243	-0.007	-1.21	OE
HTPSHQ	*	0.208	-0.010	-2.16	0.235	-0.015	-2.70	OE
HYQZMW		0.221	0.003	0.53	0.255	0.006	1.00	OE
J3ZEWK		0.213	-0.005	-1.13	0.244	-0.005	-0.97	GD
J9Y2AF		0.215	-0.003	-0.57	0.248	-0.001	-0.26	OE
JWTM5G		0.208	-0.010	-2.09	0.236	-0.014	-2.46	OE
JXHGRQ		0.222	0.004	0.74	0.254	0.004	0.70	OE
K1KXZY		0.222	0.004	0.88	0.253	0.003	0.58	OE
K3WW7D		0.221	0.003	0.61	0.251	0.001	0.24	AA
KGGAHF	X	0.235	0.017	3.57	0.270	0.020	3.56	OE
KWT63X		0.225	0.007	1.43	0.257	0.008	1.35	OE
L8XWZA		0.219	0.001	0.25	0.252	0.003	0.46	OE
LQ1ZNG		0.215	-0.003	-0.64	0.251	0.002	0.28	0E
LRARB4		0.218	0.000	0.05	0.255	0.006	1.00	GD
M8MQVS		0.220	0.002	0.32	0.252	0.002	0.40	OE
MMT7TF		0.213	-0.005	-0.98	0.245	-0.004	-0.80	OE
MYL97N		0.224	0.006	1.15	0.254	0.004	0.70	OE
N5VY7G		0.218	0.000	-0.09	0.251	0.002	0.28	OE
NDPCTL		0.228	0.009	1.95	0.263	0.014	2.42	OE
NJTS3A		0.224	0.006	1.22	0.252	0.003	0.46	IC
NYAYR2		0.216	-0.002	-0.44	0.252	0.002	0.34	OE
P4UJ18		0.215	-0.003	-0.59	0.249	-0.001	-0.14	OE
P6XZY3	X	0.240	0.022	4.54	0.268	0.018	3.20	DR
PFU11C		0.210	-0.008	-1.68	0.240	-0.010	-1.75	GD
PX1BYR		0.217	-0.001	-0.19	0.250	0.001	0.11	OE
QDUZ9P		0.218	0.000	-0.09	0.249	0.000	-0.08	OE
QKYB8F		0.218	0.000	0.05	0.250	0.000	0.04	OE
RBB3L6		0.226	0.008	1.64	0.259	0.009	1.59	OE
RHYFG7		0.218	0.000	0.05	0.251	0.001	0.16	OE
RVWKET		0.212	-0.006	-1.27	0.244	-0.006	-1.09	OE
RX6HY2		0.214	-0.004	-0.86	0.247	-0.003	-0.51	OE
SBJAXR		0.219	0.001	0.19	0.245	-0.005	-0.91	GD
SP4CDC		0.212	-0.006	-1.33	0.243	-0.007	-1.27	OE
SWRHJ5		0.215	-0.003	-0.72	0.247	-0.002	-0.41	OE
T6CD9S		0.216	-0.002	-0.51	0.249	0.000	-0.08	OE
TQ1GSR	*	0.223	0.005	1.08	0.249	0.000	-0.08	OE
TQFWUJ		0.218	0.000	0.05	0.249	-0.001	-0.14	OE

Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent

SILICON (Si)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
TWVJJH	*	0.209	-0.009	-1.79	0.236	-0.013	-2.39	OE
TXPTHS		0.224	0.006	1.15	0.253	0.004	0.64	OE
U5MQ3P		0.220	0.002	0.32	0.253	0.003	0.58	OE
UB5TLG		0.219	0.001	0.19	0.251	0.001	0.22	OE
UTCXCG	X	0.251	0.033	6.82	0.285	0.035	6.25	OE
UXP6PK		0.216	-0.002	-0.42	0.249	-0.001	-0.21	DR
V8SMC9		0.218	0.000	0.05	0.250	0.000	-0.02	OE
VACNXH		0.225	0.007	1.50	0.254	0.005	0.82	DR
VWBWFZ		0.224	0.006	1.22	0.256	0.006	1.06	DR
WMZSHU		0.218	0.000	-0.09	0.246	-0.003	-0.61	OE
X4BUG1		0.227	0.009	1.77	0.258	0.008	1.41	OE
XBR864		0.220	0.002	0.39	0.250	0.000	0.04	OE
XGFRCD		0.219	0.001	0.12	0.251	0.001	0.24	XX
XSDLHW		0.210	-0.008	-1.61	0.242	-0.007	-1.33	OE
YHVQJJ		0.219	0.001	0.23	0.247	-0.002	-0.45	OE
YPBXRS		0.217	-0.001	-0.16	0.252	0.003	0.46	OE
Z4TYBQ		0.221	0.003	0.60	0.253	0.003	0.58	OE
Z847L9		0.218	0.000	-0.09	0.250	0.000	0.04	OE
ZCF33A		0.216	-0.002	-0.44	0.249	-0.001	-0.14	OE
ZDPVTC		0.217	-0.001	-0.23	0.248	-0.002	-0.32	OE

Summary Statistics

	Sample L75		Sample L76	
Grand Means	0.2181	Percent	0.2500	Percent
Stnd Dev Btwn Labs	0.0048	Percent	0.0056	Percent

Statistics based on 103 **of** 110 **reporting participants**

Samples L75 , L76 : AISI 8620, AISI 8740

Comments on assigned Data Flags for Test #174

1QFRKE (X) - Inconsistent within the determinations for Sample L76.
KGGAHF (X) - Data for both samples are high.
P6XZY3 (X) - Data for both samples are high.
UTCXCG (X) - Data for both samples are high.

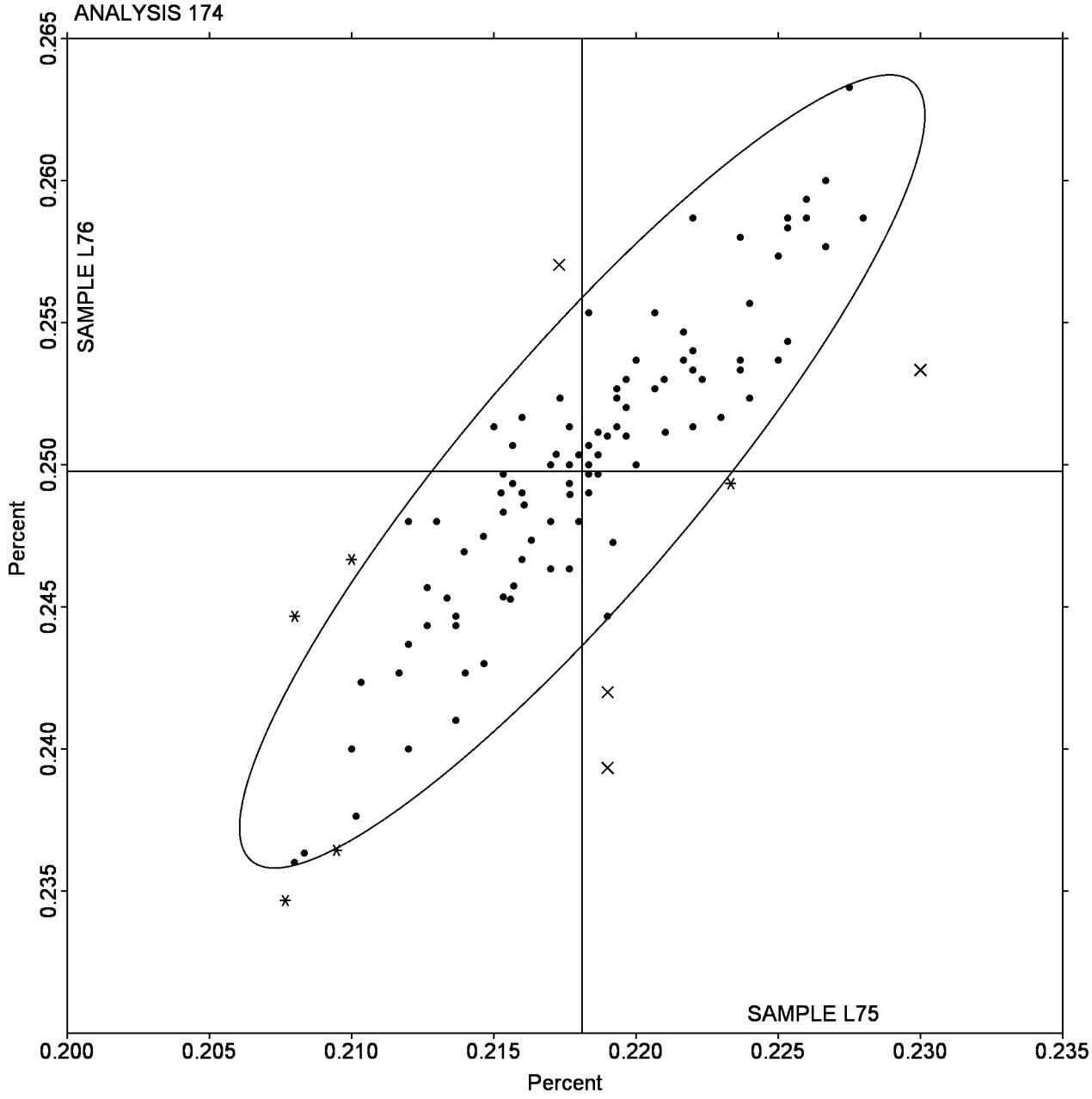
Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent

SILICON (Si)

SAMPLE L75 = 0.2181 Percent SAMPLE L76 = 0.2500 Percent



Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent

COPPER (Cu)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
15RT8S		0.124	0.004	1.21	0.111	0.002	0.61	OE
1JEEMU		0.122	0.002	0.69	0.112	0.002	0.73	OE
1TAA78		0.119	-0.001	-0.35	0.107	-0.002	-0.78	OE
1TE1KT		0.121	0.001	0.38	0.110	0.001	0.26	OE
2MZ89U	X	0.124	0.004	1.31	0.121	0.012	4.10	WD
2QDQDA		0.120	0.000	0.07	0.111	0.001	0.36	XX
2TJB3Q		0.125	0.006	1.73	0.115	0.005	1.78	OE
3JGASG		0.125	0.005	1.52	0.113	0.003	1.19	OE
3LLKMD		0.115	-0.005	-1.49	0.106	-0.004	-1.37	OE
3SNYE8		0.120	0.000	-0.04	0.110	0.000	0.15	OE
49ASTJ		0.115	-0.005	-1.49	0.103	-0.006	-2.18	DR
4ELA25		0.120	0.000	0.07	0.110	0.000	0.15	OE
5DXV2N		0.124	0.004	1.31	0.112	0.003	0.96	GD
5FGGCC	X	0.109	-0.011	-3.37	0.099	-0.010	-3.61	IC
5ZB8BG		0.117	-0.002	-0.77	0.110	0.000	0.03	OE
6PPZDV		0.120	0.000	0.07	0.107	-0.002	-0.78	OE
6S8YSQ	*	0.113	-0.006	-2.02	0.108	-0.002	-0.67	OE
6UJARK		0.120	0.001	0.17	0.110	0.000	0.15	OE
7QKPMF		0.114	-0.006	-1.81	0.106	-0.003	-1.13	OE
8V1TKT		0.119	-0.001	-0.30	0.109	-0.001	-0.24	OE
92HNSA		0.126	0.006	1.83	0.115	0.005	1.89	OE
973VY9		0.119	0.000	-0.14	0.106	-0.004	-1.25	GD
9Q37SZ		0.118	-0.002	-0.56	0.109	0.000	-0.09	OE
A4NWP8	*	0.125	0.006	1.73	0.110	0.001	0.26	OE
ARNHSB		0.122	0.003	0.79	0.111	0.002	0.61	OE
B62MYR	X	0.092	-0.028	-8.67	0.084	-0.026	-8.93	OE
B8DKST		0.121	0.002	0.48	0.112	0.002	0.73	GD
BMK6BG		0.119	0.000	-0.14	0.108	-0.001	-0.44	OE
C461MR	*	0.125	0.005	1.63	0.117	0.007	2.59	OE
C4AF3D		0.125	0.005	1.63	0.113	0.003	1.19	OE
C53QAZ		0.116	-0.004	-1.29	0.108	-0.002	-0.67	OE
D4JWD4		0.123	0.004	1.11	0.113	0.003	1.19	OE
D8R1VK	X	0.127	0.007	2.15	0.100	-0.010	-3.35	DR
DQGA5P		0.119	0.000	-0.14	0.109	-0.001	-0.20	OE
EC5EE3		0.118	-0.002	-0.56	0.108	-0.002	-0.55	OE
F252TP	*	0.121	0.001	0.27	0.114	0.005	1.66	GD
FMS29Z		0.116	-0.003	-1.08	0.105	-0.004	-1.48	OE
FPLW4N	X	0.105	-0.015	-4.53	0.102	-0.008	-2.82	OE
GABTPJ		0.115	-0.005	-1.62	0.105	-0.005	-1.58	OE
GAUKX4		0.121	0.001	0.35	0.108	-0.002	-0.66	OE
GNACRV		0.120	0.001	0.17	0.110	0.000	0.15	DR
GWMT2Z		0.120	0.000	0.07	0.110	0.000	0.15	OE
GZ2QUY	*	0.117	-0.003	-0.87	0.104	-0.006	-1.95	OE
HCZ1UQ		0.120	0.000	-0.04	0.109	0.000	-0.09	OE
HYZ3TG		0.119	-0.001	-0.35	0.110	0.001	0.26	OE

Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent

COPPER (Cu)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
JALVVX		0.118	-0.002	-0.51	0.107	-0.003	-0.95	OE
JNUKM5	*	0.112	-0.008	-2.54	0.104	-0.006	-1.95	OE
JVHLJH	X	0.101	-0.019	-5.97	0.087	-0.022	-7.77	OE
JVN7JQ	*	0.119	-0.001	-0.35	0.113	0.003	1.08	IC
JXJV5K		0.113	-0.006	-2.03	0.104	-0.005	-1.89	OE
JYL7GE		0.117	-0.003	-1.03	0.107	-0.002	-0.82	OE
K4X83G		0.120	0.000	0.07	0.110	0.000	0.15	OE
K8EP41		0.121	0.001	0.27	0.109	0.000	-0.09	OE
K8N2XP		0.117	-0.002	-0.77	0.108	-0.002	-0.67	DR
KVR5JP		0.121	0.001	0.27	0.112	0.002	0.73	XR
L29F49		0.123	0.003	1.00	0.112	0.002	0.73	OE
LBZ9SM		0.120	0.001	0.17	0.111	0.002	0.61	OE
LCE4QA		0.123	0.004	1.11	0.113	0.004	1.31	OE
LG5PZ4		0.127	0.007	2.25	0.115	0.006	2.01	GD
LJVR5S		0.120	0.000	-0.04	0.109	0.000	-0.09	OE
LZEVYD		0.118	-0.002	-0.66	0.108	-0.001	-0.44	OE
M573K8	X	0.105	-0.015	-4.72	0.110	0.000	0.15	OE
M5Q49V		0.115	-0.004	-1.39	0.105	-0.004	-1.48	OE
M77PEH		0.119	0.000	-0.14	0.110	0.000	0.15	DR
M7G8RS		0.118	-0.002	-0.56	0.109	0.000	-0.17	OE
MDZCXR		0.120	0.000	0.07	0.110	0.000	0.03	OE
MJKR42		0.120	0.001	0.17	0.113	0.003	1.08	OE
NHS1VD		0.113	-0.006	-2.02	0.103	-0.006	-2.18	OE
NKYAZ6		0.117	-0.002	-0.77	0.108	-0.002	-0.55	GD
NP3UJC	X	0.117	-0.003	-0.87	0.098	-0.012	-4.16	OE
NSW1F4		0.122	0.003	0.79	0.113	0.003	1.08	OE
P26724		0.118	-0.001	-0.45	0.109	0.000	-0.06	OE
P7WGDN		0.119	-0.001	-0.35	0.107	-0.002	-0.78	OE
QBK2MP		0.123	0.004	1.11	0.113	0.004	1.31	OE
QK4HTB		0.121	0.001	0.38	0.111	0.001	0.38	OE
R7779B		0.123	0.003	1.03	0.109	-0.001	-0.18	DR
SHJBYZ		0.121	0.002	0.48	0.110	0.000	0.15	OE
SPXB3A		0.119	0.000	-0.14	0.104	-0.005	-1.83	OE
TNVW35		0.128	0.009	2.67	0.112	0.002	0.85	OE
TRWTMJ		0.117	-0.002	-0.77	0.107	-0.002	-0.78	OE
TTVBE8		0.122	0.002	0.69	0.111	0.001	0.50	OE
U361ZB		0.116	-0.003	-1.08	0.109	-0.001	-0.32	IC
USDRXH		0.124	0.004	1.31	0.114	0.004	1.54	OE
V2E7QC		0.120	0.000	0.07	0.110	0.000	0.03	OE
V55NQ4		0.113	-0.007	-2.10	0.103	-0.006	-2.16	AA
V7GKRA		0.122	0.002	0.59	0.111	0.001	0.50	OE
VD9B3J	*	0.126	0.006	1.94	0.117	0.007	2.47	OE
VM22ZC		0.120	0.000	-0.04	0.107	-0.002	-0.78	OE
VXXWP2		0.120	0.000	0.07	0.110	0.000	0.15	OE
W3YMEK		0.120	0.000	-0.09	0.110	0.000	0.07	OE

Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent

COPPER (Cu)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
W53BRE		0.114	-0.005	-1.70	0.106	-0.004	-1.37	OE
WCYMXY		0.124	0.004	1.21	0.110	0.000	0.15	OE
WZ728V		0.124	0.004	1.31	0.113	0.003	1.08	DR
XAF6K6		0.120	0.000	0.07	0.110	0.000	0.15	OE
XUL8B3		0.120	0.000	0.07	0.110	0.000	0.15	OE
Y3AVRK		0.120	0.000	0.04	0.108	-0.002	-0.66	XX
YEA98G		0.123	0.004	1.11	0.110	0.000	0.15	OE
YMBKE3		0.118	-0.002	-0.56	0.110	0.000	0.15	DC
Z3GQFR		0.119	-0.001	-0.32	0.108	-0.001	-0.38	OE
Z5PJ8A		0.120	0.000	0.07	0.108	-0.001	-0.44	OE
Z9XXP3		0.121	0.001	0.27	0.109	0.000	-0.09	OE
ZCDT7D		0.121	0.001	0.38	0.111	0.001	0.38	OE
ZEUCK3		0.121	0.001	0.27	0.111	0.001	0.50	IC
ZH3SK3		0.120	0.000	0.07	0.110	0.000	0.15	GD
ZSJUH6		0.120	0.001	0.17	0.110	0.001	0.26	OE
ZV3AQ8		0.117	-0.003	-0.83	0.107	-0.002	-0.83	DR

Summary Statistics

	Sample L75		Sample L76	
Grand Means	0.1198	Percent	0.1100	Percent
Stnd Dev Btwn Labs	0.0032	Percent	0.0029	Percent

Statistics based on 96 **of** 106 **reporting participants**

Samples L75 , L76 : AISI 8620, AISI 8740

Comments on assigned Data Flags for Test #175

2MZ89U (X) - High data for Sample L76.
5FGGCC (X) - Data for both samples are low.
B62MYR (X) - Data for both samples are low.
D8R1VK (X) - Low data for Sample L76.
FPLW4N (X) - Data for both samples are low.
JVHLJH (X) - Data for both samples are low.
M573K8 (X) - Low data for Sample L75.
NP3UJC (X) - Low data for Sample L76.

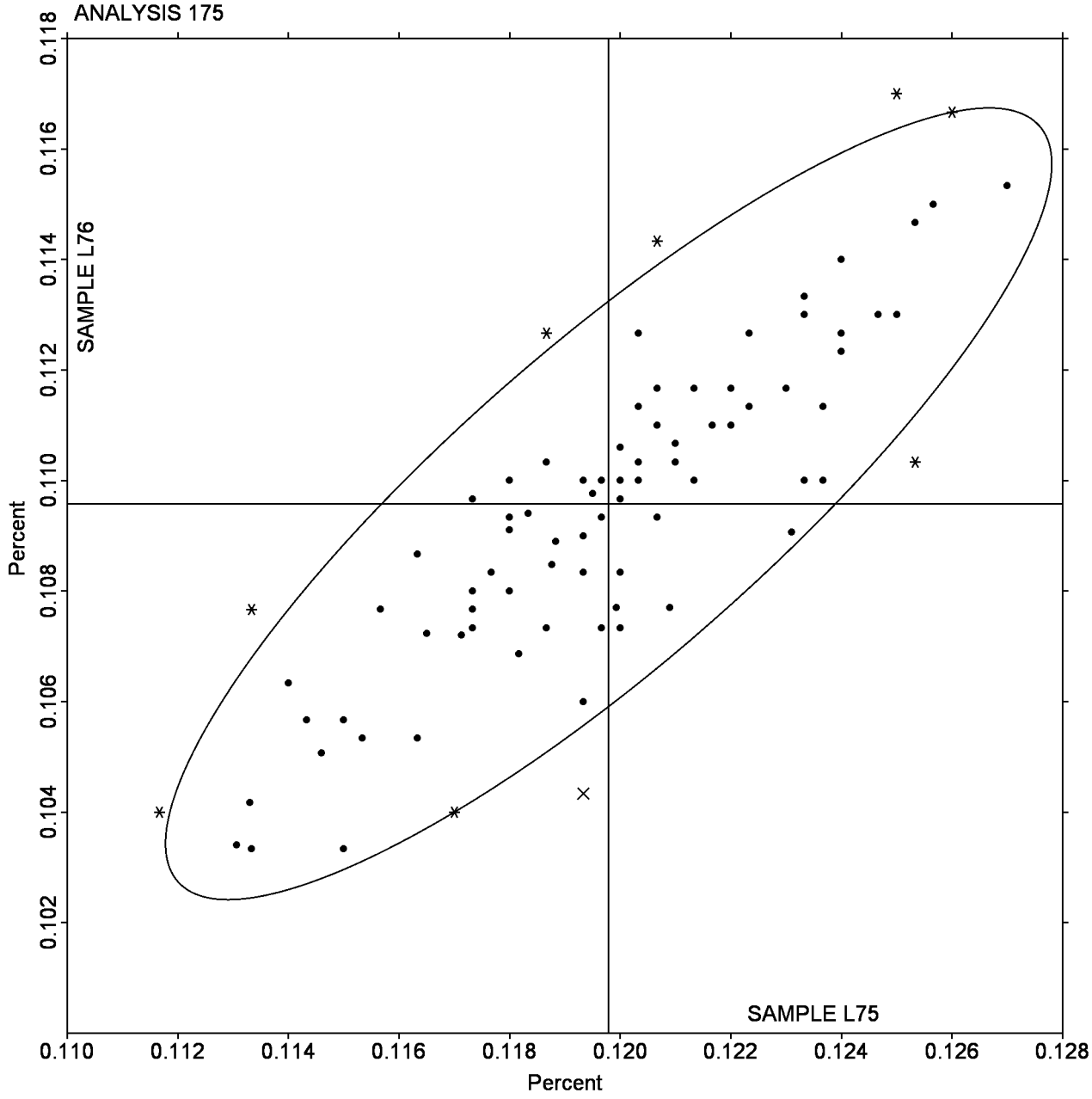
Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent

COPPER (Cu)

SAMPLE L75 = 0.1198 Percent SAMPLE L76 = 0.1100 Percent



Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent

NICKEL (Ni)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
1XZCPV		0.430	-0.017	-1.80	0.487	-0.018	-2.02	OE
2XHJUQ		0.453	0.006	0.58	0.504	-0.001	-0.09	DR
3FNZ84		0.448	0.001	0.12	0.502	-0.003	-0.31	IC
3KS4GQ		0.453	0.006	0.58	0.507	0.002	0.24	OE
3M1J64	*	0.422	-0.025	-2.68	0.477	-0.027	-3.06	OE
3NT5H7		0.436	-0.011	-1.17	0.495	-0.010	-1.09	OE
3UKSRQ	X	0.402	-0.045	-4.71	0.456	-0.049	-5.42	AA
3ZT4QB		0.442	-0.005	-0.54	0.500	-0.004	-0.50	OE
43UCL1		0.450	0.003	0.30	0.500	-0.005	-0.54	OE
4LTNAR		0.447	0.000	-0.05	0.507	0.002	0.20	GD
4T5L68		0.447	0.000	-0.02	0.504	-0.001	-0.09	OE
522ZJ7	X	0.350	-0.097	-10.21	0.400	-0.105	-11.67	OE
5KP4PT		0.452	0.005	0.51	0.511	0.007	0.72	OE
5X5RCL		0.428	-0.019	-1.98	0.491	-0.013	-1.50	OE
6HGGZ8		0.446	-0.001	-0.09	0.503	-0.001	-0.17	DR
6KTP8H		0.460	0.013	1.35	0.497	-0.008	-0.91	OE
6M9Q2V		0.440	-0.007	-0.72	0.501	-0.004	-0.46	DR
72E59W	X	0.429	-0.018	-1.94	0.475	-0.029	-3.28	OE
7G3FLE		0.444	-0.003	-0.32	0.503	-0.002	-0.20	XX
7T82DJ		0.459	0.012	1.21	0.529	0.024	2.65	GD
88GBPY		0.446	-0.001	-0.12	0.502	-0.003	-0.35	OE
8CKL5F		0.453	0.006	0.58	0.510	0.005	0.58	OE
8EX3SK		0.440	-0.007	-0.75	0.500	-0.005	-0.54	OE
8TVU9V	*	0.437	-0.010	-1.10	0.508	0.003	0.32	OE
91Z7EP	*	0.435	-0.012	-1.28	0.507	0.002	0.20	OE
9PKCXT	X	0.478	0.031	3.24	0.545	0.040	4.47	DC
9ZDXV9		0.447	0.000	0.02	0.512	0.008	0.84	GD
A1P196		0.446	-0.001	-0.12	0.504	-0.001	-0.13	OE
AC6Q8S		0.447	0.000	-0.05	0.510	0.005	0.58	OE
ACBFH2		0.426	-0.021	-2.19	0.483	-0.022	-2.44	OE
ADSYY7	X	0.347	-0.100	-10.56	0.389	-0.116	-12.90	IC
AEQVCE		0.452	0.005	0.47	0.509	0.004	0.43	OE
AVTE3Q		0.450	0.003	0.30	0.500	-0.005	-0.54	OE
AXKF8D		0.465	0.018	1.91	0.520	0.015	1.69	OE
AYHNNC	*	0.464	0.017	1.73	0.529	0.025	2.73	OE
BEN65B		0.446	-0.001	-0.16	0.506	0.001	0.13	OE
BFZZR5		0.446	-0.001	-0.09	0.500	-0.005	-0.53	OE
BQP9CY		0.452	0.005	0.54	0.509	0.004	0.46	OE
BXJ31D		0.452	0.005	0.47	0.510	0.006	0.61	OE
BYX9MV		0.447	0.000	0.02	0.500	-0.005	-0.54	OE
C3BQRY	X	0.515	0.068	7.15	0.586	0.081	9.06	OE
CD37TX		0.449	0.002	0.19	0.505	0.000	-0.02	DR
CSZAEW		0.439	-0.008	-0.82	0.498	-0.006	-0.72	OE
DR1XAA		0.438	-0.009	-0.93	0.490	-0.015	-1.69	GD
DYTZWN		0.450	0.003	0.30	0.510	0.005	0.58	OE

Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent

NICKEL (Ni)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
E5UKNL		0.445	-0.002	-0.26	0.504	0.000	-0.05	OE
ECW7J2		0.442	-0.005	-0.58	0.499	-0.005	-0.61	OE
EHU21Q		0.453	0.006	0.61	0.510	0.005	0.58	IC
ENXVT7		0.461	0.014	1.45	0.522	0.017	1.88	OE
EZU5D6		0.451	0.004	0.40	0.510	0.006	0.61	OE
FF7MKD		0.449	0.002	0.19	0.513	0.008	0.87	GD
FHEQCP		0.461	0.014	1.49	0.512	0.007	0.76	OE
FLEZFR		0.448	0.001	0.09	0.504	0.000	-0.05	OE
FQCFWD		0.433	-0.014	-1.52	0.489	-0.016	-1.80	GD
GRPKVP		0.452	0.005	0.49	0.510	0.005	0.59	DR
GRWYZC		0.431	-0.016	-1.70	0.492	-0.013	-1.47	OE
H8YJBC		0.436	-0.011	-1.21	0.491	-0.013	-1.50	OE
HCSYQD	*	0.460	0.013	1.35	0.502	-0.002	-0.28	OE
HTS8W6	*	0.453	0.006	0.60	0.496	-0.008	-0.94	OE
JAPJ2L		0.449	0.002	0.23	0.505	0.000	0.02	OE
JENFMR		0.446	-0.001	-0.16	0.506	0.001	0.09	OE
JK1JW2		0.456	0.009	0.96	0.511	0.006	0.69	DR
JQRD19	*	0.423	-0.024	-2.57	0.481	-0.023	-2.62	OE
JX25AK		0.446	-0.001	-0.12	0.505	0.000	0.02	OE
KD8QGY		0.444	-0.003	-0.33	0.498	-0.007	-0.76	OE
KHSU7Y		0.446	-0.001	-0.09	0.500	-0.004	-0.50	OE
KTXUCH		0.437	-0.010	-1.04	0.502	-0.002	-0.28	OE
KUF3WQ		0.437	-0.010	-1.03	0.496	-0.009	-1.02	XR
L4ZMD4		0.449	0.002	0.23	0.511	0.006	0.65	WD
LN34AD		0.460	0.013	1.35	0.510	0.005	0.58	OE
M95JZQ		0.456	0.009	0.89	0.513	0.008	0.91	OE
N57ES7		0.457	0.010	1.03	0.507	0.002	0.24	DR
NHS1X1		0.449	0.002	0.23	0.506	0.001	0.13	OE
NLCX82		0.456	0.009	0.93	0.514	0.009	0.98	OE
PAD7KG		0.444	-0.003	-0.30	0.504	0.000	-0.05	OE
PEQ7M4		0.463	0.016	1.66	0.517	0.012	1.32	OE
PRX9WD		0.444	-0.003	-0.30	0.500	-0.005	-0.57	OE
PWAB8J		0.457	0.010	1.03	0.510	0.005	0.59	OE
QD52L5	X	0.420	-0.027	-2.82	0.503	-0.001	-0.17	OE
QF5WP9	*	0.469	0.022	2.30	0.528	0.023	2.54	OE
RBP63S	X	0.468	0.021	2.23	0.269	-0.236	-26.26	GD
RBUY5T	*	0.432	-0.015	-1.63	0.505	0.000	-0.02	OE
RT49D5		0.447	0.000	-0.05	0.503	-0.001	-0.17	DR
S5MFFJ		0.442	-0.005	-0.51	0.502	-0.003	-0.31	OE
S8WW6V		0.443	-0.004	-0.40	0.503	-0.001	-0.17	OE
SK8HFB		0.448	0.001	0.05	0.509	0.005	0.50	IC
SPY27S		0.454	0.007	0.75	0.511	0.006	0.69	OE
TA21HD		0.466	0.019	1.95	0.519	0.014	1.58	OE
UFURUL		0.456	0.009	0.93	0.504	-0.001	-0.13	OE
UM9D5W		0.449	0.002	0.19	0.511	0.006	0.69	OE

Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent

NICKEL (Ni)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
UPS45U		0.458	0.011	1.10	0.518	0.013	1.43	OE
US83YF		0.447	0.000	0.00	0.506	0.001	0.08	XX
VC7331		0.458	0.011	1.14	0.498	-0.007	-0.80	OE
VNMNZ8		0.450	0.003	0.33	0.503	-0.002	-0.20	DR
VWYR21		0.453	0.006	0.58	0.513	0.008	0.91	OE
VY91BL		0.442	-0.005	-0.54	0.502	-0.003	-0.35	OE
W7ZD74		0.435	-0.012	-1.24	0.494	-0.010	-1.17	OE
WMNSY4		0.439	-0.008	-0.81	0.500	-0.005	-0.56	OE
WUN7PD	*	0.472	0.025	2.58	0.531	0.026	2.91	OE
XDFV3L		0.453	0.006	0.66	0.508	0.003	0.35	OE
XES34N		0.440	-0.007	-0.79	0.509	0.004	0.46	OE
XHBMAH		0.445	-0.002	-0.23	0.510	0.005	0.54	OE
XLLFMA		0.453	0.006	0.66	0.512	0.007	0.76	OE
XS4C28		0.444	-0.003	-0.30	0.502	-0.003	-0.31	OE
XWL65W		0.454	0.007	0.72	0.507	0.002	0.24	OE
XZEVZ4		0.446	-0.001	-0.16	0.502	-0.003	-0.35	OE
Y2RT8N		0.439	-0.008	-0.81	0.500	-0.004	-0.49	OE
YBVBYD		0.454	0.007	0.72	0.508	0.003	0.32	OE
YTVR8X		0.442	-0.005	-0.51	0.501	-0.004	-0.46	OE
Z6VDQ2		0.435	-0.012	-1.25	0.495	-0.010	-1.08	OE

Summary Statistics

	Sample L75		Sample L76	
Grand Means	0.4472	Percent	0.5050	Percent
Stnd Dev Btwn Labs	0.0095	Percent	0.0090	Percent

Statistics based on 99 **of** 110 **reporting participants**

Samples L75 , L76 : AISI 8620, AISI 8740

Comments on assigned Data Flags for Test #176

3UKSRQ (X) - Data for both samples are low.
522ZJ7 (X) - Data for both samples are low.
72E59W (X) - Low data for Sample L76.
9PKCXT (X) - Data for both samples are high.
ADSYY7 (X) - Data for both samples are low.
C3BQRY (X) - Data for both samples are low.
QD52L5 (X) - Low data for Sample L75.
RBP63S (X) - Extreme data for Sample L76.

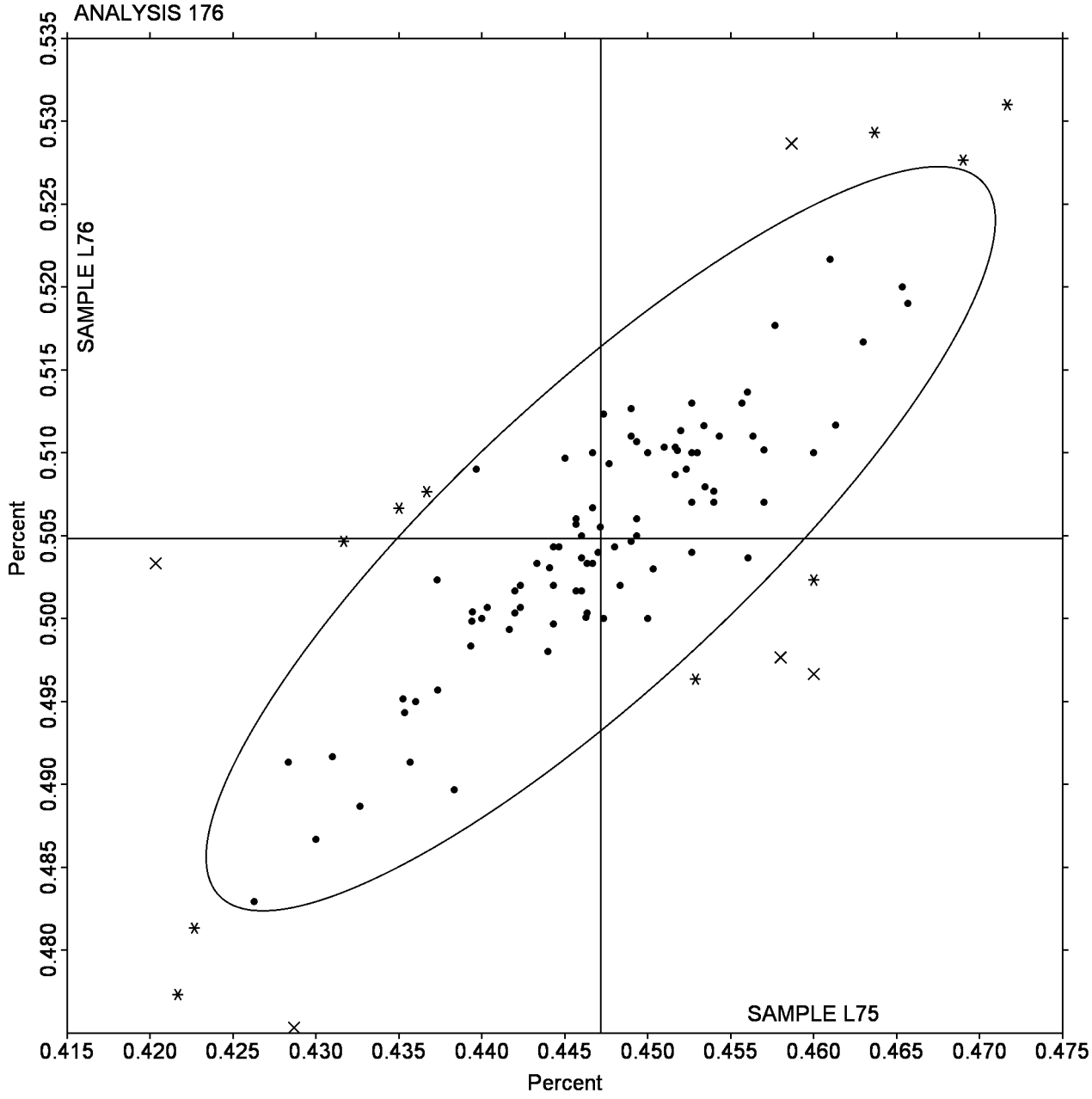
Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent

NICKEL (Ni)

SAMPLE L75 = 0.4472 Percent SAMPLE L76 = 0.5050 Percent



Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent

CHROMIUM (Cr)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
183G4R		0.482	-0.006	-0.82	0.497	-0.005	-0.73	OE
1ELCPP		0.490	0.002	0.29	0.500	-0.002	-0.26	OE
1PYVNJ		0.482	-0.006	-0.82	0.496	-0.006	-0.82	OE
1U9RNM		0.486	-0.002	-0.26	0.497	-0.005	-0.73	GD
1WPWS4		0.474	-0.014	-1.94	0.488	-0.014	-1.94	OE
1X3SD2		0.491	0.003	0.43	0.503	0.001	0.12	OE
297MQQ	X	0.459	-0.029	-4.04	0.483	-0.019	-2.67	OE
2F327H		0.481	-0.007	-0.95	0.501	-0.001	-0.11	OE
337M3V		0.476	-0.012	-1.65	0.502	0.000	0.03	OE
34A9C1		0.490	0.002	0.34	0.503	0.002	0.22	OE
3BSCPG		0.489	0.001	0.14	0.503	0.001	0.10	OE
3JEFXQ	*	0.491	0.003	0.38	0.514	0.012	1.69	GD
3PK8V2		0.478	-0.010	-1.41	0.497	-0.004	-0.64	OE
3WNM5Q		0.489	0.001	0.11	0.501	-0.001	-0.11	OE
59E85P		0.480	-0.008	-1.09	0.500	-0.002	-0.26	OE
6YNSEF		0.477	-0.011	-1.46	0.491	-0.011	-1.54	OE
6YVPBZ		0.495	0.007	0.93	0.510	0.008	1.12	IC
7FHYWL		0.482	-0.006	-0.77	0.496	-0.006	-0.87	OE
7JB1H8		0.487	-0.001	-0.12	0.496	-0.006	-0.82	IC
8G82ZX		0.492	0.004	0.57	0.503	0.001	0.17	OE
8QLZUG		0.502	0.014	1.95	0.516	0.014	2.02	DR
8UM8RJ	X	0.431	-0.057	-7.91	0.444	-0.058	-8.20	AA
9AZYK4		0.497	0.009	1.21	0.510	0.008	1.16	OE
9LV4AK	*	0.510	0.022	3.05	0.520	0.018	2.59	GD
9NBCZP		0.479	-0.009	-1.23	0.495	-0.007	-1.01	OE
9PHJ7J		0.490	0.002	0.29	0.505	0.003	0.41	GD
A7TVBD		0.475	-0.013	-1.74	0.490	-0.012	-1.72	OE
AHLMF5		0.486	-0.002	-0.22	0.500	-0.002	-0.26	OE
AJ8VWD		0.488	0.000	-0.03	0.501	0.000	-0.07	OE
AQWJQY		0.475	-0.013	-1.85	0.490	-0.012	-1.65	DR
BP4QWF		0.484	-0.004	-0.49	0.501	-0.001	-0.11	OE
CA3VA4		0.495	0.007	0.98	0.512	0.010	1.45	GD
CE6ZGP	X	0.448	-0.040	-5.56	0.468	-0.034	-4.80	OE
CHJB3F		0.480	-0.008	-1.09	0.490	-0.012	-1.68	OE
CK7YD1		0.488	0.000	0.01	0.502	0.000	0.04	XX
CKXC9U		0.484	-0.004	-0.56	0.497	-0.005	-0.66	OE
CU5GFF		0.471	-0.017	-2.34	0.501	-0.001	-0.16	DR
D1HR37	*	0.479	-0.009	-1.22	0.487	-0.015	-2.16	OE
D6K5HF		0.493	0.005	0.70	0.507	0.005	0.74	OE
DMQJDR		0.482	-0.006	-0.82	0.499	-0.003	-0.40	OE
DMXWF1		0.487	-0.001	-0.12	0.504	0.002	0.31	OE
EABN57		0.483	-0.005	-0.63	0.502	0.001	0.08	OE
EFBDTN	*	0.504	0.016	2.18	0.522	0.020	2.82	XR
EJ65P2	X	0.459	-0.029	-3.95	0.458	-0.044	-6.22	IC
ESSYMX		0.491	0.003	0.38	0.504	0.002	0.31	DR

Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent

CHROMIUM (Cr)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
EUK5CH	X	0.517	0.029	3.98	0.503	0.002	0.22	DR
F2KHXR		0.484	-0.004	-0.54	0.499	-0.003	-0.40	OE
F3L4Y7		0.491	0.003	0.36	0.508	0.006	0.86	OE
F5DKKD		0.493	0.005	0.75	0.506	0.005	0.64	OE
F7DEP3		0.486	-0.002	-0.26	0.500	-0.002	-0.26	OE
FGSNTF		0.486	-0.002	-0.31	0.498	-0.004	-0.54	OE
G418LK		0.480	-0.008	-1.12	0.493	-0.009	-1.22	OE
G4MVYQ		0.490	0.002	0.29	0.500	-0.002	-0.26	OE
G7DK4N		0.486	-0.002	-0.26	0.501	-0.001	-0.16	OE
GFSCFQ		0.488	0.000	-0.03	0.503	0.001	0.12	OE
GMUMMH		0.491	0.003	0.38	0.504	0.003	0.36	OE
GQMYU5		0.485	-0.003	-0.46	0.498	-0.004	-0.51	XX
HE4BMV	*	0.490	0.002	0.24	0.493	-0.009	-1.30	OE
HETDN6		0.477	-0.011	-1.51	0.490	-0.012	-1.68	OE
HP2814	*	0.481	-0.007	-1.00	0.504	0.002	0.31	DR
J9SMPQ		0.482	-0.006	-0.77	0.495	-0.007	-1.01	OE
JXQCFH		0.478	-0.010	-1.37	0.498	-0.004	-0.59	IC
K6G5N1		0.469	-0.019	-2.66	0.501	-0.001	-0.11	OE
K9C62A		0.485	-0.003	-0.40	0.505	0.003	0.41	OE
KMW2BA	*	0.510	0.022	3.05	0.520	0.018	2.59	OE
KP5SEQ		0.485	-0.003	-0.36	0.501	-0.001	-0.16	OE
KQWEQM	X	0.477	-0.011	-1.55	0.505	0.004	0.50	OE
KR9K73	X	0.430	-0.058	-7.96	0.440	-0.061	-8.74	OE
LRWLDX		0.495	0.007	1.03	0.510	0.008	1.12	OE
MAV8ZP		0.495	0.007	0.95	0.511	0.009	1.25	OE
MPG616		0.491	0.003	0.38	0.506	0.004	0.60	OE
MZE4WQ		0.488	0.000	0.06	0.503	0.001	0.12	OE
NBLB6G		0.489	0.001	0.11	0.506	0.004	0.55	OE
NE1FN6		0.484	-0.004	-0.54	0.498	-0.004	-0.59	OE
NNJBWT		0.500	0.012	1.67	0.517	0.015	2.16	OE
NR3RH1		0.505	0.017	2.29	0.503	0.001	0.15	OE
NR9MHY	X	0.430	-0.058	-7.96	0.537	0.035	4.95	GD
NXT4M6		0.487	-0.001	-0.08	0.501	-0.001	-0.16	OE
QA22GF		0.481	-0.007	-0.91	0.496	-0.005	-0.78	OE
QQ5W6L		0.492	0.004	0.61	0.504	0.003	0.36	OE
RQEHW2		0.491	0.003	0.43	0.505	0.004	0.50	OE
RXJSF7		0.491	0.003	0.43	0.500	-0.002	-0.26	OE
S9P65Y		0.488	0.000	0.01	0.499	-0.003	-0.45	OE
SDW7VP	*	0.498	0.010	1.40	0.501	-0.001	-0.11	OE
SS6VDC		0.485	-0.003	-0.40	0.500	-0.001	-0.21	DR
SX8LAP		0.474	-0.014	-1.88	0.489	-0.013	-1.87	OE
T1JZGG		0.480	-0.008	-1.09	0.500	-0.002	-0.26	OE
T1V9XA		0.492	0.004	0.57	0.500	-0.002	-0.30	OE
UM2U1V	X	0.458	-0.030	-4.13	0.479	-0.023	-3.24	OE
UTEFG5		0.494	0.006	0.88	0.510	0.009	1.21	OE

Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent

CHROMIUM (Cr)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
V8Y6NC		0.492	0.004	0.52	0.504	0.002	0.26	OE
VGHX6G		0.486	-0.002	-0.26	0.495	-0.007	-1.01	OE
WCUDBS	X	0.500	0.012	1.72	0.522	0.021	2.92	GD
WRT6A5		0.496	0.008	1.07	0.508	0.006	0.88	DC
WU4GLJ		0.485	-0.003	-0.41	0.500	-0.001	-0.19	OE
WY2ZJB		0.489	0.001	0.11	0.503	0.001	0.12	DR
X2XLZZ		0.492	0.004	0.57	0.508	0.006	0.83	OE
X8FK38		0.489	0.001	0.14	0.502	0.000	0.07	OE
XBJ4HS		0.500	0.012	1.67	0.510	0.008	1.16	OE
XEEJL4		0.484	-0.004	-0.59	0.497	-0.005	-0.68	OE
XH426G		0.481	-0.007	-0.91	0.498	-0.004	-0.52	OE
XQR2V5		0.490	0.002	0.34	0.504	0.003	0.36	OE
XR1ZVF	X	0.511	0.023	3.15	0.527	0.026	3.63	OE
XWXC75		0.486	-0.002	-0.26	0.501	0.000	-0.07	OE
XXTVDU		0.499	0.011	1.58	0.516	0.014	1.97	WD
Y3GXY6		0.490	0.002	0.29	0.506	0.004	0.60	OE
YDD3GP		0.487	-0.001	-0.08	0.501	-0.001	-0.11	OE
YF9J55	X	0.450	-0.038	-5.29	0.459	-0.042	-6.04	OE
YWA914		0.497	0.009	1.21	0.503	0.002	0.22	OE
Z3L6QB		0.480	-0.008	-1.14	0.494	-0.008	-1.11	OE
ZR9VB4	*	0.499	0.011	1.53	0.504	0.003	0.36	DR

Summary Statistics

	Sample L75		Sample L76	
Grand Means	0.4879	Percent	0.5020	Percent
Stnd Dev Btwn Labs	0.0072	Percent	0.0070	Percent

Statistics based on 95 **of** 111 **reporting participants**

Samples L75 , L76 : AISI 8620, AISI 8740

Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent CHROMIUM (Cr)

Comments on assigned Data Flags for Test #177

297MQQ (X) - Low data for Sample L75 and inconsistent within the determinations for Sample L76.
8UM8RJ (X) - Data for both samples are low. Possible systematic error.
CE6ZGP (X) - Data for both samples are low. Possible systematic error.
EJ65P2 (X) - Data for both samples are low and inconsistent within the determinations for both samples.
EUK5CH (X) - High data for Sample L75.
KQWEQM (X) - Inconsistent within the determinations for Sample L75.
KR9K73 (X) - Data for both samples are low. Possible systematic error.
NR9MHY (X) - Low data for Sample L75. High data for Sample L76.
UM2U1V (X) - Data for both samples are low. Possible systematic error.
WCUDBS (X) - High data for Sample L76 and inconsistent within the determinations for both samples.
XR1ZVF (X) - Data for both samples are high. Possible systematic error.
YF9J55 (X) - Data for both samples are low. Possible systematic error.

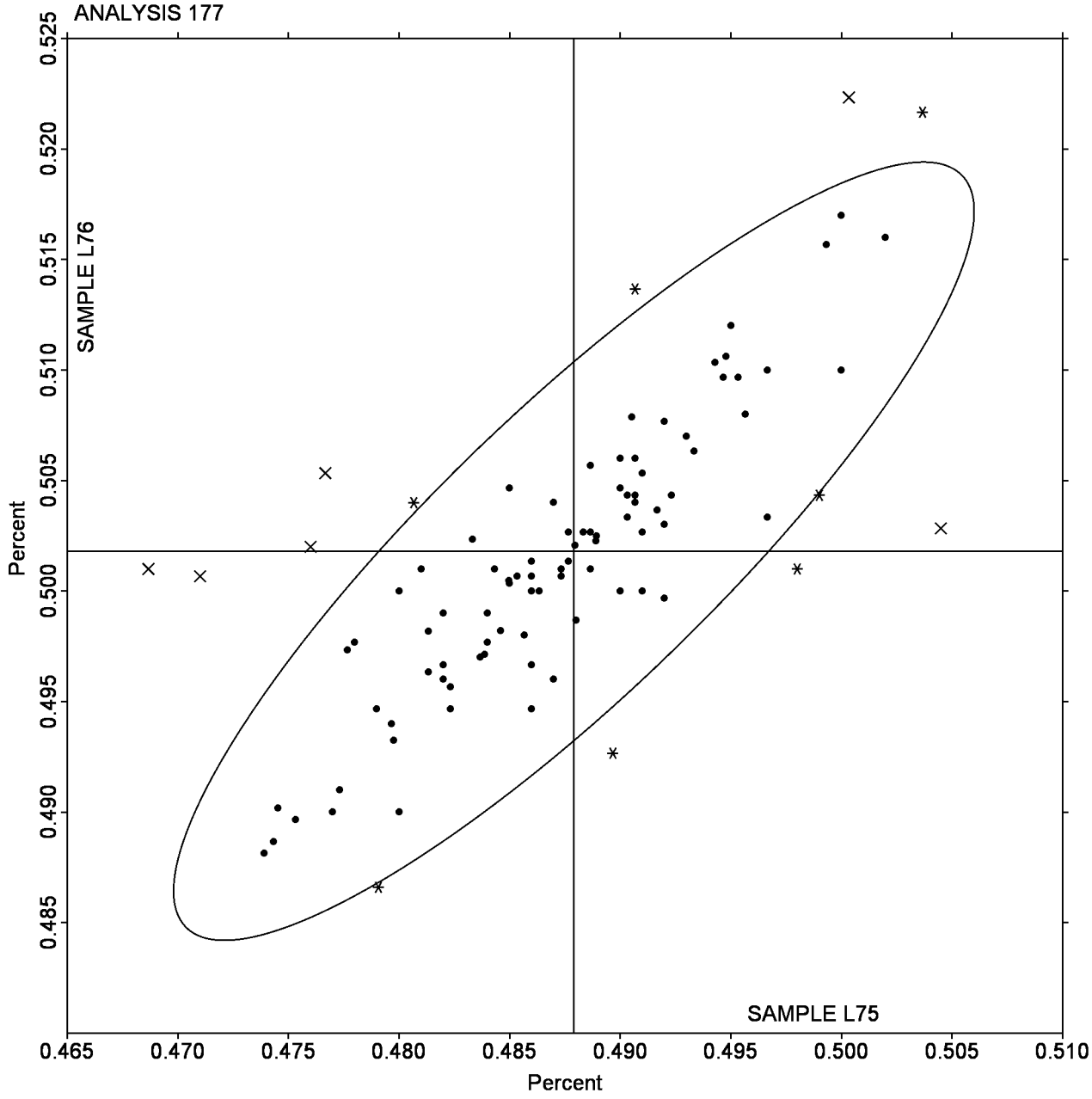
Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent

CHROMIUM (Cr)

SAMPLE L75 = 0.4879 Percent SAMPLE L76 = 0.5020 Percent



Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent

MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
15AQMD		0.173	0.005	1.11	0.211	0.005	0.98	OE
1M6DC4		0.167	-0.001	-0.34	0.208	0.002	0.49	OE
1RXRS8		0.171	0.002	0.55	0.211	0.005	1.03	OE
1Y5XAV		0.176	0.007	1.80	0.205	-0.001	-0.30	AA
253M3T		0.163	-0.005	-1.30	0.200	-0.006	-1.33	OE
2BVK1W	X	0.182	0.014	3.27	0.223	0.017	3.56	OE
2YXDPR		0.175	0.007	1.59	0.214	0.008	1.61	DR
4C31LS		0.164	-0.004	-0.98	0.202	-0.004	-0.84	GD
4NJVN2		0.168	0.000	-0.02	0.205	-0.001	-0.21	OE
5FG16C		0.169	0.000	0.06	0.206	0.000	0.07	GD
65LL6M		0.170	0.002	0.46	0.207	0.001	0.28	OE
671A3R		0.164	-0.004	-1.06	0.203	-0.003	-0.63	OE
6J3WXB		0.165	-0.003	-0.74	0.205	-0.001	-0.28	OE
6NBPMA		0.170	0.001	0.30	0.207	0.001	0.21	IC
6UCPNQ		0.159	-0.009	-2.18	0.195	-0.011	-2.23	OE
74QFBE		0.171	0.003	0.63	0.207	0.001	0.14	OE
7H3AAC		0.165	-0.003	-0.82	0.201	-0.005	-0.98	OE
7LZ6SW		0.173	0.005	1.11	0.214	0.008	1.69	OE
82R78H		0.167	-0.002	-0.42	0.204	-0.002	-0.35	OE
9MLBJ7		0.169	0.000	0.06	0.207	0.001	0.21	OE
9NUBVM		0.162	-0.006	-1.54	0.206	0.000	0.07	OE
A3GFMW		0.171	0.002	0.55	0.210	0.004	0.91	OE
AKPSPD		0.168	0.000	-0.10	0.206	0.000	0.07	XX
AURNMJ		0.161	-0.007	-1.78	0.197	-0.009	-1.95	OE
BG96RK		0.168	-0.001	-0.18	0.206	0.000	0.07	OE
BKSD3T		0.169	0.001	0.22	0.206	0.000	0.00	OE
CAB6JN		0.167	-0.001	-0.26	0.206	0.000	0.00	OE
CE87UC		0.169	0.001	0.14	0.204	-0.002	-0.49	DR
CJP55F		0.170	0.001	0.34	0.207	0.001	0.18	OE
CKV8G4	*	0.180	0.012	2.79	0.220	0.014	2.93	OE
CRNR71		0.169	0.001	0.22	0.205	-0.001	-0.28	OE
CUAKMV		0.165	-0.004	-0.90	0.203	-0.003	-0.63	OE
DDL622		0.166	-0.002	-0.53	0.205	-0.001	-0.31	XX
E19T47		0.161	-0.007	-1.70	0.206	0.000	0.07	OE
E99PH5		0.167	-0.001	-0.29	0.204	-0.002	-0.47	OE
E9SZA5	*	0.180	0.012	2.79	0.218	0.012	2.58	OE
ERZZK5		0.167	-0.002	-0.42	0.204	-0.002	-0.42	OE
EWA2P1		0.170	0.002	0.38	0.210	0.004	0.84	OE
F5B9PQ		0.168	0.000	-0.02	0.205	-0.001	-0.21	OE
F7Y6XD		0.164	-0.004	-1.06	0.201	-0.005	-0.98	IC
FKAQY1		0.172	0.003	0.79	0.211	0.005	1.05	DR
GJ4ZQX		0.171	0.003	0.63	0.205	-0.001	-0.14	OE
GLPFWB		0.173	0.005	1.19	0.213	0.007	1.54	OE
GP1231	X	0.172	0.004	0.87	0.199	-0.007	-1.47	OE
GTJQMA	X	0.180	0.012	2.79	0.222	0.016	3.42	OE

Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent

MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
GYY34L	*	0.174	0.005	1.27	0.207	0.001	0.21	OE
GZT6RB		0.175	0.007	1.67	0.216	0.010	2.10	OE
HZA4TR		0.167	-0.001	-0.34	0.205	-0.001	-0.28	OE
J5ZTXR	X	0.182	0.013	3.19	0.213	0.007	1.54	OE
JD2WH9	*	0.157	-0.011	-2.67	0.194	-0.012	-2.44	OE
JQ8ZHJ		0.171	0.003	0.63	0.211	0.005	1.05	OE
JR1B8H		0.165	-0.003	-0.82	0.206	0.000	-0.07	XR
JRDKWL		0.173	0.005	1.11	0.207	0.001	0.21	DC
JT6GJS		0.168	0.000	-0.10	0.206	0.000	0.07	OE
K1L2B2		0.165	-0.004	-0.90	0.202	-0.004	-0.77	GD
KPKJG2		0.170	0.002	0.46	0.207	0.001	0.21	OE
L2FV4C		0.172	0.003	0.79	0.208	0.002	0.42	DR
LFMZAJ		0.167	-0.001	-0.34	0.205	-0.001	-0.28	OE
LGK1KH		0.171	0.002	0.55	0.212	0.006	1.19	OE
LLFWE5	X	0.168	-0.001	-0.18	0.222	0.016	3.28	WD
LS8AKK		0.168	-0.001	-0.18	0.197	-0.009	-1.88	DR
M58GUG		0.166	-0.002	-0.57	0.202	-0.004	-0.75	OE
N12W8N		0.166	-0.002	-0.58	0.206	0.000	0.00	OE
N1Q4RS		0.162	-0.007	-1.62	0.200	-0.006	-1.26	OE
N719J4		0.166	-0.002	-0.50	0.203	-0.003	-0.63	OE
NPDVTC		0.172	0.004	0.95	0.210	0.004	0.91	OE
NT95YQ		0.169	0.000	0.06	0.208	0.002	0.42	OE
NUU6A3		0.164	-0.004	-1.06	0.203	-0.003	-0.56	GD
PK23JX		0.165	-0.003	-0.82	0.204	-0.002	-0.45	OE
PQ3LCJ		0.170	0.002	0.38	0.210	0.004	0.84	OE
PZPVR5		0.171	0.003	0.63	0.207	0.001	0.21	OE
R5AZLZ		0.170	0.001	0.26	0.205	-0.001	-0.17	OE
RB7MBM		0.177	0.008	1.99	0.217	0.011	2.30	OE
RK85J3		0.162	-0.006	-1.46	0.200	-0.006	-1.19	DR
S6N7LT		0.171	0.003	0.71	0.206	0.000	0.07	GD
SMSNL2		0.176	0.007	1.75	0.216	0.010	2.10	OE
SXCDKS		0.172	0.004	0.85	0.209	0.003	0.61	OE
T12DYL		0.169	0.001	0.22	0.204	-0.002	-0.42	OE
T7NTKR		0.169	0.001	0.13	0.205	-0.001	-0.13	OE
THDXVP		0.170	0.001	0.30	0.205	-0.001	-0.28	OE
TN164F		0.158	-0.010	-2.43	0.195	-0.011	-2.37	OE
TQS5M1		0.171	0.002	0.55	0.208	0.002	0.49	OE
TR3H4X		0.163	-0.005	-1.30	0.203	-0.003	-0.70	OE
TVRZNT		0.173	0.005	1.19	0.210	0.004	0.84	OE
TXGXHE		0.170	0.002	0.50	0.205	-0.001	-0.19	OE
U69S18		0.166	-0.003	-0.66	0.202	-0.004	-0.77	OE
UJ17BS		0.168	-0.001	-0.19	0.203	-0.003	-0.61	XX
UT4FZ5		0.169	0.001	0.14	0.208	0.002	0.35	IC
UXWRK3	X	0.180	0.012	2.79	0.213	0.007	1.54	GD
V34ZKR		0.170	0.002	0.38	0.210	0.004	0.84	OE

Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent

MOLYBDENUM (Mo)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
V7H3PT	*	0.158	-0.011	-2.59	0.196	-0.010	-2.16	OE
VBM3AQ		0.169	0.000	0.10	0.205	-0.001	-0.24	OE
VCWHP4		0.170	0.002	0.46	0.206	0.000	0.00	OE
VGYUXG		0.170	0.002	0.46	0.208	0.002	0.49	OE
VPWPPG		0.166	-0.003	-0.62	0.206	0.000	0.05	OE
VZ2GP8		0.172	0.004	0.95	0.210	0.004	0.77	OE
WBJBQT	X	0.136	-0.032	-7.72	0.181	-0.025	-5.17	GD
WDUADN		0.164	-0.004	-1.06	0.198	-0.008	-1.68	IC
WHRQVJ	X	0.187	0.019	4.48	0.228	0.022	4.68	OE
WN9B5P		0.168	0.000	-0.10	0.203	-0.003	-0.63	OE
X1M6LL		0.168	0.000	-0.10	0.206	0.000	0.00	OE
XG8923	X	0.177	0.008	1.99	0.190	-0.016	-3.35	DR
XHDSLR		0.166	-0.002	-0.58	0.202	-0.004	-0.84	OE
XQDDNC		0.171	0.003	0.74	0.208	0.002	0.48	DR
XQGWS1		0.167	-0.001	-0.34	0.205	-0.001	-0.21	OE
Y5QYZP		0.168	0.000	-0.02	0.207	0.001	0.28	OE
YC4XEK		0.164	-0.004	-1.06	0.197	-0.009	-1.82	OE
Z752T1		0.161	-0.007	-1.78	0.205	-0.001	-0.28	OE
Z9AG8K		0.169	0.001	0.22	0.206	0.000	-0.02	OE
ZNFPDF		0.170	0.001	0.30	0.205	-0.001	-0.14	OE
ZUPYTM		0.167	-0.002	-0.42	0.208	0.002	0.42	DR

Summary Statistics

	Sample L75		Sample L76	
Grand Means	0.1684	Percent	0.2060	Percent
Stnd Dev Btwn Labs	0.0042	Percent	0.0048	Percent

Statistics based on 97 **of** 111 **reporting participants**

Samples L75 , L76 : AISI 8620, AISI 8740

Comments on assigned Data Flags for Test #178

2BVK1W (X) - Data for both samples are high.
GP1231 (X) - Inconsistent in testing between samples and inconsistent within the determinations for both samples.
GTJQMA (X) - Data for both samples are high.
J5ZTXR (X) - High data for Sample L75.
LLFWE5 (X) - High data for Sample L76.
UXWRK3 (X) - High data for Sample L75 and inconsistent within the determinations for Sample L76.
WBJBQT (X) - Data for both samples are low and inconsistent within the determinations for both samples.
WHRQVJ (X) - Data for both samples are high.
XG8923 (X) - Low data for Sample L76 and inconsistent within the determinations for Sample L75.

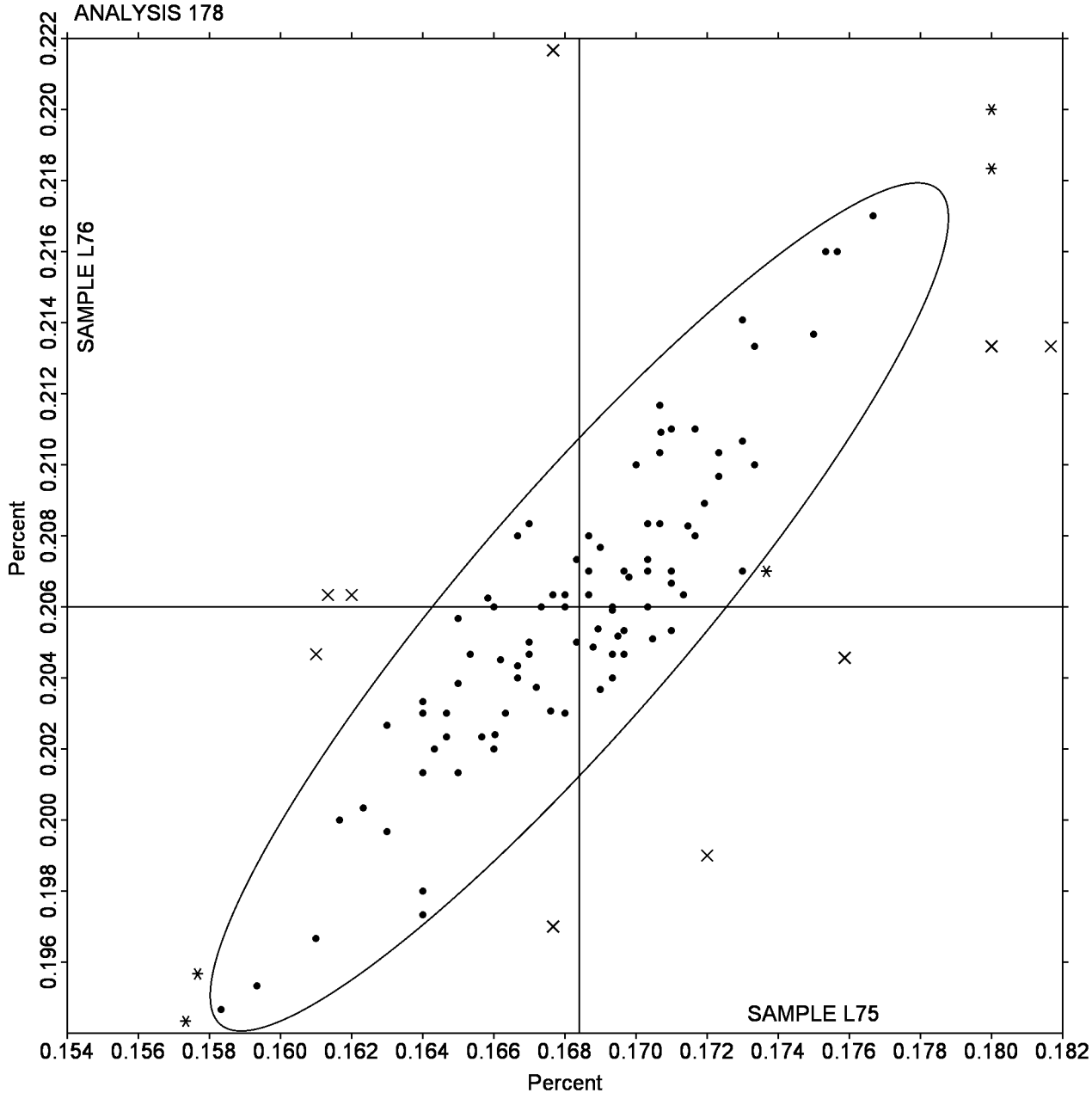
Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent

MOLYBDENUM (Mo)

SAMPLE L75 = 0.1684 Percent SAMPLE L76 = 0.2060 Percent



Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent

ALUMINUM (Al)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
13Y3TS		0.0232	-0.0024	-1.40	0.0168	-0.0005	-0.35	DR
1SCP7Y		0.0248	-0.0008	-0.47	0.0146	-0.0027	-1.83	WD
1UEJUH		0.0230	-0.0026	-1.56	0.0159	-0.0014	-0.94	OE
21FZ33		0.0254	-0.0002	-0.14	0.0167	-0.0006	-0.42	OE
36RY4B		0.0263	0.0007	0.44	0.0183	0.0011	0.73	OE
3G4PPU		0.0238	-0.0018	-1.05	0.0146	-0.0027	-1.86	GD
3NSDDV		0.0250	-0.0006	-0.35	0.0173	0.0001	0.04	OE
4HLBEU		0.0290	0.0034	2.02	0.0200	0.0027	1.87	OE
4P2QKT	X	0.0320	0.0064	3.81	0.0170	-0.0003	-0.19	OE
4U48VT		0.0263	0.0007	0.44	0.0177	0.0004	0.27	OE
52CMTA		0.0243	-0.0013	-0.75	0.0173	0.0001	0.04	OE
53JX53		0.0254	-0.0002	-0.14	0.0169	-0.0004	-0.28	OE
65W2W8		0.0270	0.0014	0.83	0.0190	0.0017	1.18	DR
68QVEP		0.0267	0.0011	0.64	0.0190	0.0017	1.18	OE
6HRJAM		0.0251	-0.0005	-0.28	0.0173	0.0000	0.00	OE
6KXFUW		0.0278	0.0022	1.33	0.0187	0.0014	0.98	OE
6LM6D3		0.0267	0.0011	0.64	0.0200	0.0027	1.87	OE
71ZSJD		0.0248	-0.0008	-0.49	0.0167	-0.0006	-0.39	GD
7EGPHP		0.0250	-0.0006	-0.35	0.0169	-0.0004	-0.28	IC
7K59GG		0.0264	0.0008	0.46	0.0177	0.0004	0.27	OE
89EQ45		0.0229	-0.0027	-1.62	0.0145	-0.0027	-1.88	OE
8SSMTQ		0.0239	-0.0017	-1.03	0.0165	-0.0008	-0.53	OE
8ZHZA2		0.0250	-0.0006	-0.35	0.0170	-0.0003	-0.19	OE
941BYB		0.0235	-0.0021	-1.25	0.0155	-0.0017	-1.19	OE
A93STB		0.0279	0.0023	1.35	0.0200	0.0027	1.84	OE
AZDK3U		0.0275	0.0019	1.11	0.0181	0.0009	0.59	OE
B81LLG	X	0.0233	-0.0023	-1.38	0.0127	-0.0046	-3.16	OE
BQMVZ4		0.0271	0.0015	0.87	0.0191	0.0018	1.23	OE
BWEG4R		0.0274	0.0018	1.05	0.0187	0.0014	0.95	XR
CRR8EJ	X	0.0308	0.0052	3.09	0.0240	0.0067	4.61	AA
CWF9MJ		0.0290	0.0034	2.02	0.0207	0.0034	2.32	OE
CZ4Z62		0.0259	0.0003	0.18	0.0170	-0.0002	-0.17	OE
D41DPK		0.0262	0.0006	0.36	0.0187	0.0015	1.00	OE
D81VDP		0.0272	0.0016	0.95	0.0174	0.0001	0.09	OE
DL46C7		0.0280	0.0024	1.43	0.0200	0.0027	1.87	OE
DVQLCU		0.0277	0.0021	1.25	0.0188	0.0015	1.04	OE
DZLKBC		0.0249	-0.0007	-0.41	0.0165	-0.0008	-0.53	OE
E8D3LS		0.0250	-0.0006	-0.35	0.0170	-0.0003	-0.19	OE
E8VMBR	X	0.0163	-0.0093	-5.51	0.0077	-0.0096	-6.58	OE
EBYV1F	*	0.0230	-0.0026	-1.54	0.0180	0.0007	0.50	IC
EEJSGJ	*	0.0277	0.0021	1.23	0.0163	-0.0009	-0.65	DR
EKAZV4		0.0246	-0.0010	-0.61	0.0162	-0.0011	-0.76	OE
ESGVD7		0.0250	-0.0006	-0.35	0.0167	-0.0006	-0.42	OE
F5QZHC		0.0267	0.0011	0.64	0.0179	0.0006	0.43	DR
FCEEEB		0.0263	0.0007	0.44	0.0160	-0.0013	-0.87	OE

Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent

ALUMINUM (Al)

		Sample L75			Sample L76			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
FL3N5N		0.0272	0.0016	0.95	0.0194	0.0022	1.48	DR
FL5TGG		0.0280	0.0024	1.43	0.0170	-0.0003	-0.19	OE
FPWFEY		0.0254	-0.0002	-0.10	0.0169	-0.0004	-0.26	XX
FQH66P		0.0280	0.0024	1.43	0.0190	0.0017	1.18	OE
FRA5B3		0.0242	-0.0014	-0.85	0.0165	-0.0008	-0.53	OE
FSBFJY		0.0260	0.0004	0.24	0.0183	0.0010	0.70	IC
G3PC8G		0.0250	-0.0006	-0.35	0.0170	-0.0003	-0.19	GD
GTHBD2	*	0.0207	-0.0049	-2.90	0.0137	-0.0036	-2.47	IC
H99WME		0.0250	-0.0006	-0.35	0.0163	-0.0009	-0.65	OE
HJ92D8		0.0236	-0.0020	-1.17	0.0143	-0.0030	-2.04	OE
HLAVX7		0.0257	0.0001	0.04	0.0159	-0.0014	-0.94	OE
HZRAXC		0.0230	-0.0026	-1.54	0.0153	-0.0019	-1.33	OE
JHQRTM		0.0285	0.0029	1.71	0.0186	0.0013	0.91	OE
JKN5ZK		0.0246	-0.0010	-0.57	0.0172	0.0000	-0.03	OE
K3AU5D		0.0225	-0.0031	-1.82	0.0158	-0.0015	-1.03	OE
K6YAST		0.0267	0.0011	0.64	0.0176	0.0003	0.20	OE
KWMPDS		0.0267	0.0011	0.64	0.0137	-0.0036	-2.47	OE
LKA4WA		0.0254	-0.0002	-0.12	0.0170	-0.0002	-0.17	OE
LNQ6K2		0.0238	-0.0018	-1.09	0.0159	-0.0013	-0.92	OE
LZ55J2		0.0230	-0.0026	-1.54	0.0153	-0.0019	-1.33	OE
M67KVV		0.0243	-0.0013	-0.77	0.0174	0.0001	0.09	OE
M6FEMG		0.0255	-0.0001	-0.06	0.0172	-0.0001	-0.05	OE
MJFGPX		0.0237	-0.0019	-1.11	0.0179	0.0006	0.41	GD
MT8W59		0.0247	-0.0009	-0.55	0.0160	-0.0013	-0.87	OE
MXZBB4		0.0263	0.0007	0.44	0.0172	-0.0001	-0.07	GD
MZFV2Z		0.0236	-0.0020	-1.21	0.0151	-0.0021	-1.47	GD
MZJW6T		0.0243	-0.0013	-0.77	0.0165	-0.0008	-0.55	OE
P9DEDR		0.0247	-0.0009	-0.55	0.0157	-0.0016	-1.10	OE
PLPV62		0.0257	0.0001	0.04	0.0183	0.0011	0.73	OE
Q1RRGF		0.0257	0.0001	0.04	0.0170	-0.0003	-0.19	OE
Q7DURS		0.0257	0.0001	0.04	0.0170	-0.0003	-0.19	OE
QWTNNE		0.0270	0.0014	0.85	0.0175	0.0002	0.13	OE
RC6PFJ		0.0252	-0.0004	-0.25	0.0177	0.0004	0.27	OE
RY6KZP		0.0268	0.0012	0.70	0.0180	0.0008	0.52	OE
S1E6NY	*	0.0290	0.0034	2.00	0.0174	0.0002	0.11	OE
S8ZEC7		0.0287	0.0031	1.83	0.0193	0.0021	1.41	OE
SVSH6Z		0.0250	-0.0006	-0.35	0.0163	-0.0009	-0.65	OE
SWFF3A		0.0266	0.0010	0.62	0.0171	-0.0001	-0.10	GD
T1PB5C		0.0236	-0.0020	-1.19	0.0156	-0.0017	-1.17	OE
TX67FF		0.0254	-0.0002	-0.12	0.0170	-0.0003	-0.19	OE
UJVVPV		0.0252	-0.0004	-0.23	0.0171	-0.0002	-0.12	IC
V9EQNW		0.0232	-0.0024	-1.44	0.0151	-0.0022	-1.51	OE
VD99K8		0.0257	0.0001	0.04	0.0182	0.0010	0.66	OE
W2FN28		0.0259	0.0003	0.18	0.0172	-0.0001	-0.05	OE
WEACC9		0.0237	-0.0019	-1.15	0.0153	-0.0019	-1.33	OE

Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent

ALUMINUM (Al)

WebCode	Data Flag	Sample L75 Lab Mean	Sample L75 Diff. from Grand Mean	Sample L75 CPV	Sample L76 Lab Mean	Sample L76 Diff. from Grand Mean	Sample L76 CPV	Instr Code
WH3K56		0.0270	0.0014	0.83	0.0187	0.0014	0.95	DC
WN37D4		0.0250	-0.0006	-0.35	0.0190	0.0017	1.18	OE
WS6VBW		0.0276	0.0020	1.19	0.0198	0.0025	1.73	OE
X5QVNF		0.0276	0.0020	1.17	0.0194	0.0022	1.48	OE
XFS3GT		0.0263	0.0007	0.44	0.0183	0.0011	0.73	OE
XRUAFB		0.0244	-0.0012	-0.73	0.0169	-0.0004	-0.26	DR
Y196LB		0.0287	0.0031	1.87	0.0205	0.0032	2.19	OE
Y36HXW		0.0269	0.0013	0.78	0.0165	-0.0008	-0.55	OE
YGL32A		0.0240	-0.0016	-0.95	0.0167	-0.0006	-0.42	OE
YVTE4A		0.0253	-0.0003	-0.20	0.0159	-0.0014	-0.97	OE
ZGAVDE		0.0243	-0.0013	-0.75	0.0177	0.0004	0.27	OE
ZL1SJR		0.0253	-0.0003	-0.16	0.0160	-0.0013	-0.87	DR
ZL5Q4D		0.0266	0.0010	0.60	0.0186	0.0013	0.88	XX

Summary Statistics

	Sample L75		Sample L76	
Grand Means	0.02560	Percent	0.01730	Percent
Stnd Dev Btwn Labs	0.00168	Percent	0.00146	Percent

Statistics based on 98 **of** 103 **reporting participants**

Samples L75 , L76 : AISI 8620, AISI 8740

Comments on assigned Data Flags for Test #179

4P2QKT (X) - High data for Sample L75.
B81LLG (X) - Low data for Sample L76.
CRR8EJ (X) - Data for both samples are high.
E8VMBR (X) - Data for both samples are low.

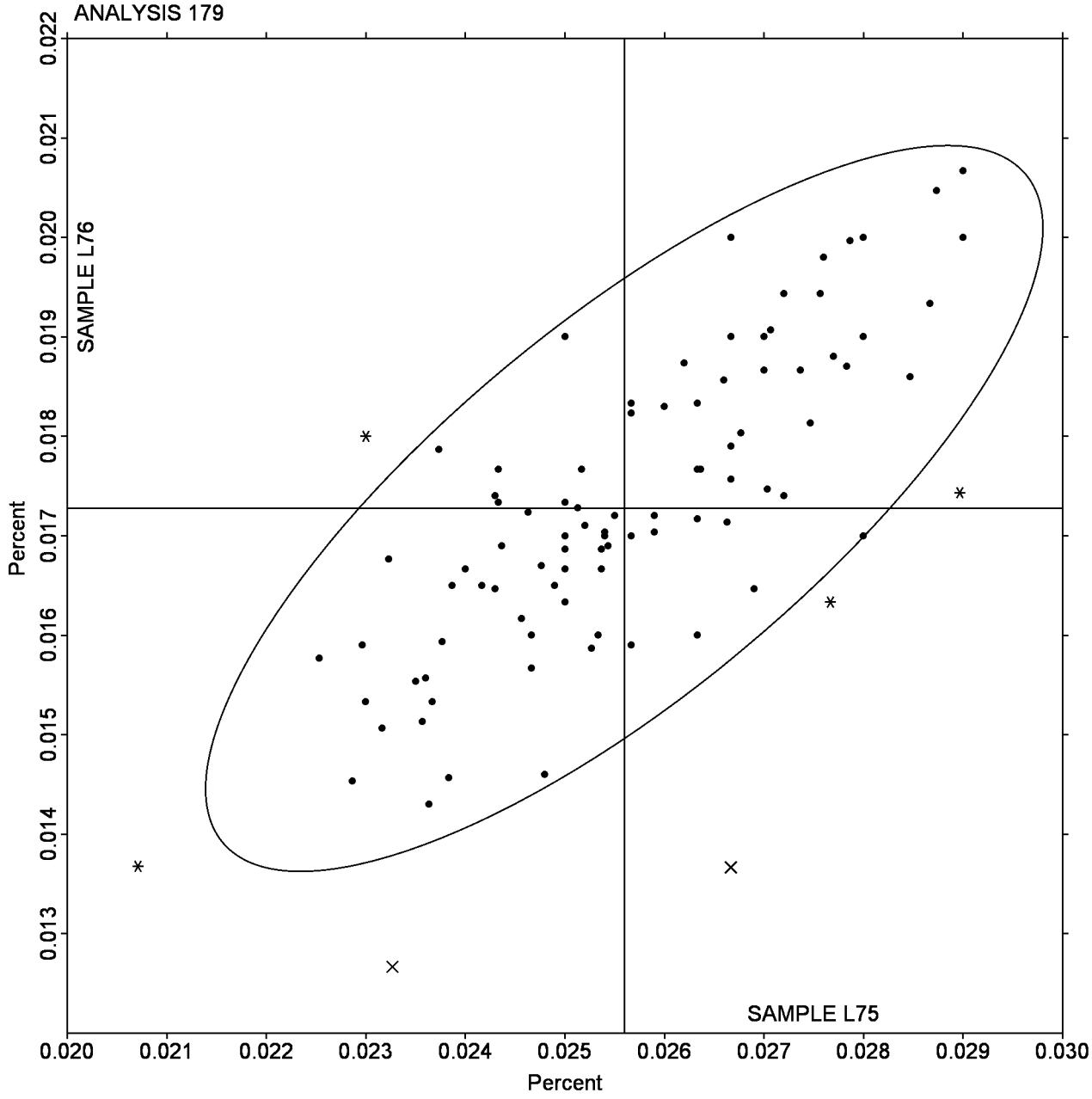
Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent

ALUMINUM (Al)

SAMPLE L75 = 0.02560 Percent SAMPLE L76 = 0.01730 Percent



Instrument and Method Code List - Report# 85

Instrument information as provided by laboratories

Analysis Analysis Name

105 Tensile Strength: Lab-Machined Flat Aluminum

Instrument code and description

ZZ Instruments No Longer Tracked

110 Tensile Strength: Pre-Machined Round Steel

Instrument code and description

ZZ Instruments No Longer Tracked

119 Rockwell Hardness: B Scale

Instrument code and description

AK Akashi
AV Avery
BU Buehler
CL Clark
EM EMCO
FU Future-Tech
IN Indentec
LE Leco
MA Matsuzawa
MI Mitutoyo
NA New Age Industries
UN United Testing Systems
WI Wilson / Instron Instruments
XX Instrument manufacturer not specified by lab

121 Microhardness: Knoop Indenters (500 gf)

Instrument code and description

AN Antonik
AT ATS
BU Buehler, Ltd.
CL Clark
CM Clemex
FU Future-Tech
LE Leco
LI Leitz
MI Mitutoyo
SH Shimadzu
ST Struers
WI Wilson-Wolpert/Instron
WT Wilson-Wolpert-Tukon
XX Instrument manufacturer not specified by lab

122 Microhardness: Knoop Indenters (200 gf)

Instrument code and description

AN Antonik
AT ATS
BU Buehler, Ltd.
CL Clark

122 Microhardness: Knoop Indenters (200 gf)

Instrument code and description

CM	Clemex
FU	Future-Tech
LE	Leco
LI	Leitz
MI	Mitutoyo
SH	Shimadzu
ST	Struers
WI	Wilson-Wolpert/Instron
WT	Wilson-Wolpert-Tukon
XX	Instrument manufacturer not specified by lab

123 Microhardness: Vickers Indenters (500 gf)

Instrument code and description

AK	Akashi
AN	Antonik
BU	Buehler, Ltd.
CL	Clark
CM	Clemex
EM	EMCO TEST M1C-100
FU	Future-Tech
LE	Leco
LI	Leitz
MA	Matsuzawa
MI	Mitutoyo
SH	Shimadzu
ST	Struers
WT	Wilson-Wolpert-Tukon
WZ	Zwick
XX	Instrument manufacturer not specified by lab

135 Brinell Hardness

Instrument code and description

AL	Amsler
AM	Ametek
AN	Antonik
AV	Avery
DE	Detroit Testing
EM	EMCO
ER	Ernst
KI	King Tester
LS	Louis Small
MA	Matsuzawa
NA	New Age Industries
NS	Nakai Seiki Works
PI	Pittsburgh
RI	Riehle
SD	Service Diamond
SP	Service Physical Tester
ST	Steel City
TI	Tinius Olsen
WI	Wilson / Instron Instruments
XX	Instrument manufacturer not specified by lab

140 Tensile Strength: Lab-Machined Round Steel

Instrument code and description

ZZ	Instruments No Longer Tracked

170 Carbon & Low Alloy Steel, Element #1

Method code and description

AA	Atomic Absorption Spectrophotometry
CI	Combustion/IR
CO	Combustion
DR	Direct Reading Optical Emission Spectrometr
GD	Glow Discharge Spectroscopy
IR	IR (Absorption/Detection)
OE	Optical Emission Spectrometry
XX	Method not specified by lab