

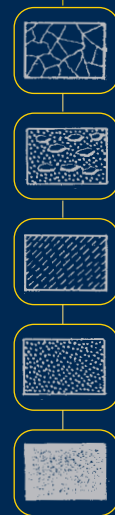


2007 Roofing Asphalt Proficiency Program Report

Proficiency Samples 05 and 06

JULY 2007

R. Michael Anderson
Michael T. Beavin



Asphalt Institute

Research and Laboratory Services





July 2007

To: Participants in the July 2007 Proficiency Sample Program for Roofing Asphalts

Re: Final Report for Proficiency Samples 05 and 06

Enclosed is information on the analysis of data from Roofing Asphalt Binder Proficiency Samples 05 and 06 distributed in May and June 2007. The first page of the report is a summary that indicates your laboratory's data compared to the average results for all participating labs, after discarding data that is three or more standard deviations from the mean. The information in the last two columns show a rating based on how closely your laboratory's data matches the average result for the sample/test. The highest rating is a "5" indicating results that are within one standard deviation of the mean. The lowest rating is a "0" indicating results that are three or more standard deviations from the mean. A negative sign before the rating means that the lab result is lower than the average; otherwise the lab result is higher than the average.

The next two pages of the report are summary tables showing statistical data for each test. The standard deviation and the acceptable range of two test results (multi-laboratory d2s) are calculated for each sample/test.

The following four pages of the report are scatter diagrams. For each test, Sample 05 results are plotted against Sample 06 results. Dashed vertical and horizontal lines represent the average value for each sample. It is desirable to be near the intersection of these two lines indicating that your laboratory's test results match the average results for all participating labs. It is also desirable that your laboratory's data point is close to the diagonal from the bottom left of the graph to the top right. Data points far from this diagonal may indicate a problem with test repeatability within the lab.

In the future, a set of performance charts will also be added to the report to allow you a look at the performance trend on a particular test over a period of time. In this manner a consistent bias can be identified leading to potential changes in equipment or laboratory procedures.

We appreciate your interest in the 2007 Proficiency Sample Program for Roofing Asphalts. Please contact me (859-288-4984 or manderson@asphaltinstitute.org) or our program coordinator, Mike Beavin (859-288-4973 or mtbeavin@asphaltinstitute.org) if you have any questions about the report or suggestions for improvement.

Sincerely,

Mike Anderson, P.E.
Director of Research and Laboratory Services - Asphalt Institute

July 2007 Roofing Asphalt Proficiency Sample Program Report Results for Laboratory

Sample Program Numbers 05 and 06

Test	Lab Data		Averages		Ratings	
	05	06	05	06	05	06
<i>ASTM D92</i>						
Flash Point by Cleveland Open Cup (F)			587.7	582.6		
<i>ASTM D36</i>						
Ring & Ball Softening Point (F)			204.9	204.6		
<i>ASTM D5</i>						
Penetration at 32F, 200g, 60s (0.1 mm)			9.9	9.6		
Penetration at 77F, 100g, 5s (0.1 mm)			16.2	15.6		
Penetration at 115F, 50g, 5s (0.1 mm)			28.8	28.6		
<i>ASTM D113</i>						
Ductility at 77F (cm)			3.0	3.0		
<i>ASTM D4402</i>						
Rotational Viscosity at 400F (cP)			297.3	291.3		
<i>ASTM D2746</i>						
Stain Index			8.3	8.1		

Notes:

Ratings shown were calculated from computed standard deviations. A negative number is an indication that the lab result is lower than the average. A positive ranking means that the lab result is higher than the average. Ratings are as follows:

- "5" data within 1.0 standard deviations of the mean.
- "4" data within 1.5 standard deviations of the mean.
- "3" data within 2.0 standard deviations of the mean.
- "2" data within 2.5 standard deviations of the mean.
- "1" data within 3.0 standard deviations of the mean.
- "0" data that is 3.0 or more standard deviations from the mean.

A blank result means that no data was supplied by the laboratory. Data resulting in a "0" rating is 3.0 or more standard deviations from the mean, and was therefore excluded from the statistical analysis.

Labs are cautioned that a single low rating, or pair of ratings, may not be cause for concern. However, a continuing trend of low ratings on several pairs of proficiency samples suggests that the laboratory should re-examine its test procedures and equipment to ascertain potential sources of error.

July 2007 Roofing Asphalt Proficiency Sample Program Report Summary Table

Sample 05

Test Result	No. Labs	Avg.	Standard Deviation (1s)	Coefficient of Variation (1s%)	Acceptable Range of Two Results	
					d2s	d2s%
ASTM D92	20	582.1	33.5	5.7%	94.7	16.3%
Flash Point by Cleveland Open Cup (F)	19	587.7	22.6	3.8%	64.0	10.9%
ASTM D36	22	204.9	5.8	2.8%	16.3	8.0%
Ring & Ball Softening Point (F)	22	204.9	5.8	2.8%	16.3	8.0%
ASTM D5	16	9.9	2.3	22.9%	6.4	64.8%
Penetration at 32F, 200g, 60s (0.1 mm)	16	9.9	2.3	22.9%	6.4	64.8%
ASTM D5	21	16.2	3.1	19.2%	8.8	54.5%
Penetration at 77F, 100g, 5s (0.1 mm)	21	16.2	3.1	19.2%	8.8	54.5%
ASTM D5	16	28.8	6.4	22.1%	18.0	62.6%
Penetration at 115F, 50g, 5s (0.1 mm)	16	28.8	6.4	22.1%	18.0	62.6%
ASTM D113	12	3.0	0.5	16.5%	1.4	46.6%
Ductility at 77F (cm)	12	3.0	0.5	16.5%	1.4	46.6%
ASTM D4402	16	297.3	32.3	10.9%	91.3	30.7%
Rotational Viscosity at 400F (cP)	16	297.3	32.3	10.9%	91.3	30.7%
ASTM D2746	12	8.3	2.8	33.9%	8.0	96.1%
Stain Index	12	8.3	2.8	33.9%	8.0	96.1%

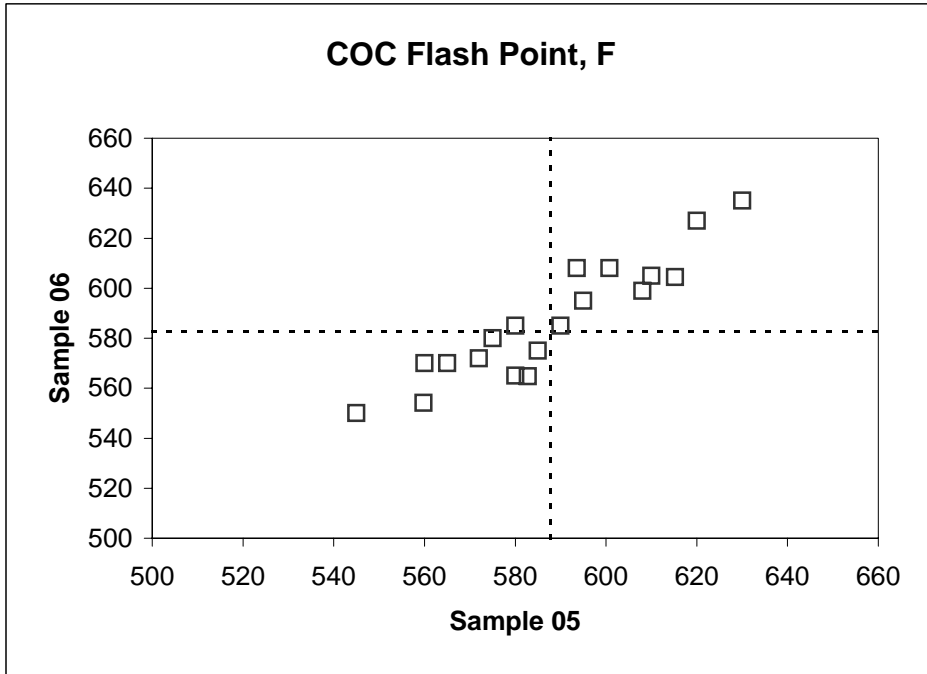
Note: Shaded cells show results after removing outlying data (3 or more standard deviations from the mean).

July 2007 Roofing Asphalt Proficiency Sample Program Report Summary Table

Sample 06

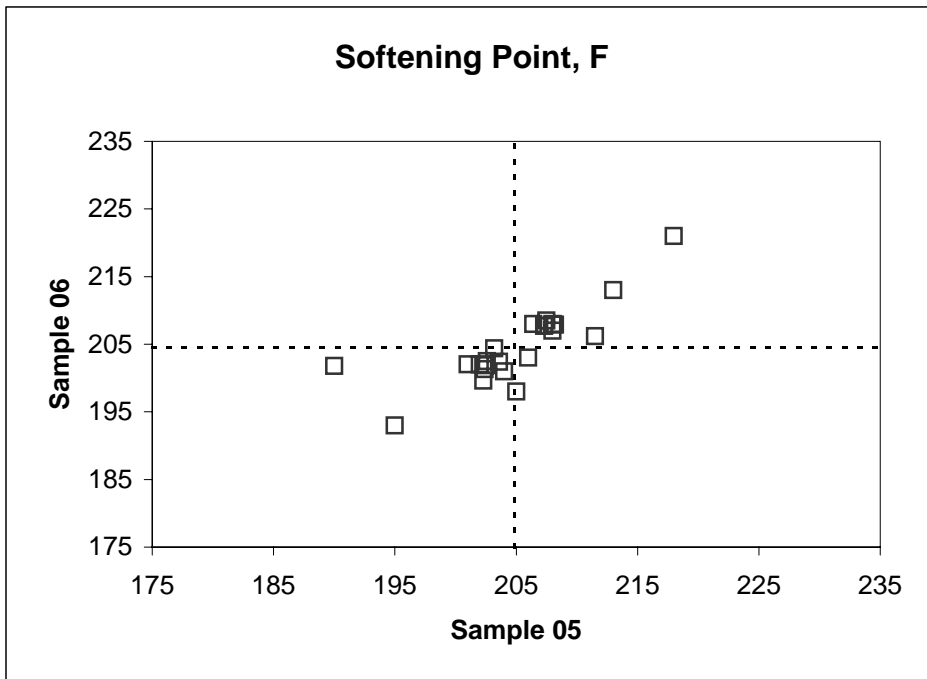
Test Result	No. Labs	Avg.	Standard Deviation (1s)	Coefficient of Variation (1s%)	Acceptable Range of Two Results	
					d2s	d2s%
ASTM D92	20	582.6	30.1	5.2%	85.2	14.6%
Flash Point by Cleveland Open Cup (F)	20	582.6	30.1	5.2%	85.2	14.6%
ASTM D36	22	204.6	5.7	2.8%	16.0	7.8%
Ring & Ball Softening Point (F)	22	204.6	5.7	2.8%	16.0	7.8%
ASTM D5	16	9.6	2.5	25.7%	7.0	72.8%
Penetration at 32F, 200g, 60s (0.1 mm)	16	9.6	2.5	25.7%	7.0	72.8%
ASTM D5	21	15.6	2.2	13.9%	6.1	39.2%
Penetration at 77F, 100g, 5s (0.1 mm)	21	15.6	2.2	13.9%	6.1	39.2%
ASTM D5	16	28.6	7.0	24.6%	19.9	69.7%
Penetration at 115F, 50g, 5s (0.1 mm)	16	28.6	7.0	24.6%	19.9	69.7%
ASTM D113	12	3.0	0.5	15.8%	1.4	44.7%
Ductility at 77F (cm)	12	3.0	0.5	15.8%	1.4	44.7%
ASTM D4402	16	291.3	33.5	11.5%	94.7	32.5%
Rotational Viscosity at 400F (cP)	16	291.3	33.5	11.5%	94.7	32.5%
ASTM D2746	12	8.1	3.3	40.4%	9.2	114.2%
Stain Index	12	8.1	3.3	40.4%	9.2	114.2%

Note: Shaded cells show results after removing outlying data (3 or more standard deviations from the mean).



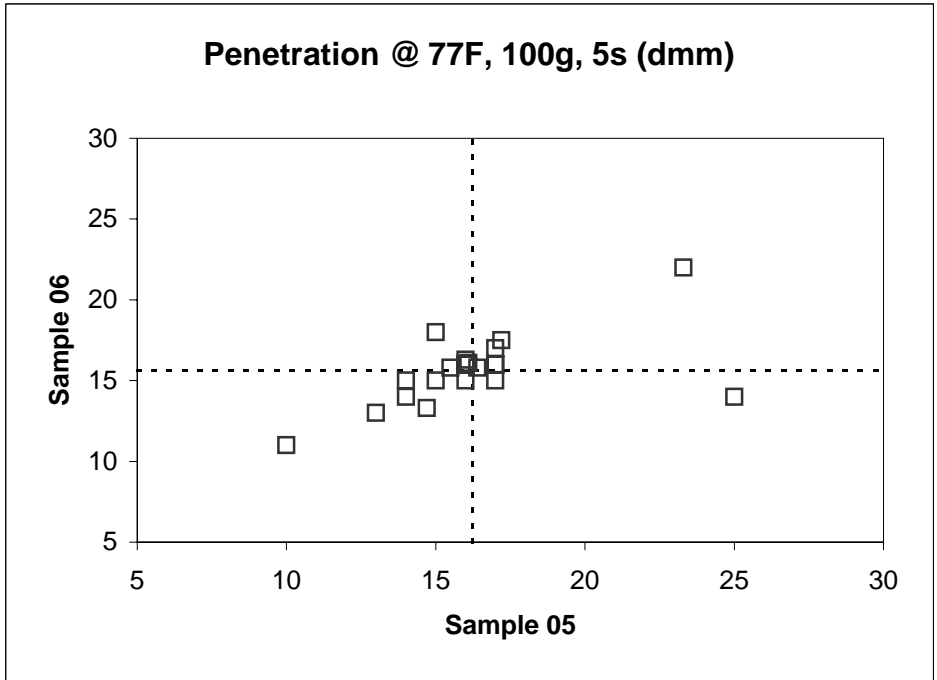
Sample 05	Average	587.7	Std. Dev.	22.6
Sample 06	Average	582.6	Std. Dev.	30.1

Lab #'s Excluded: 15



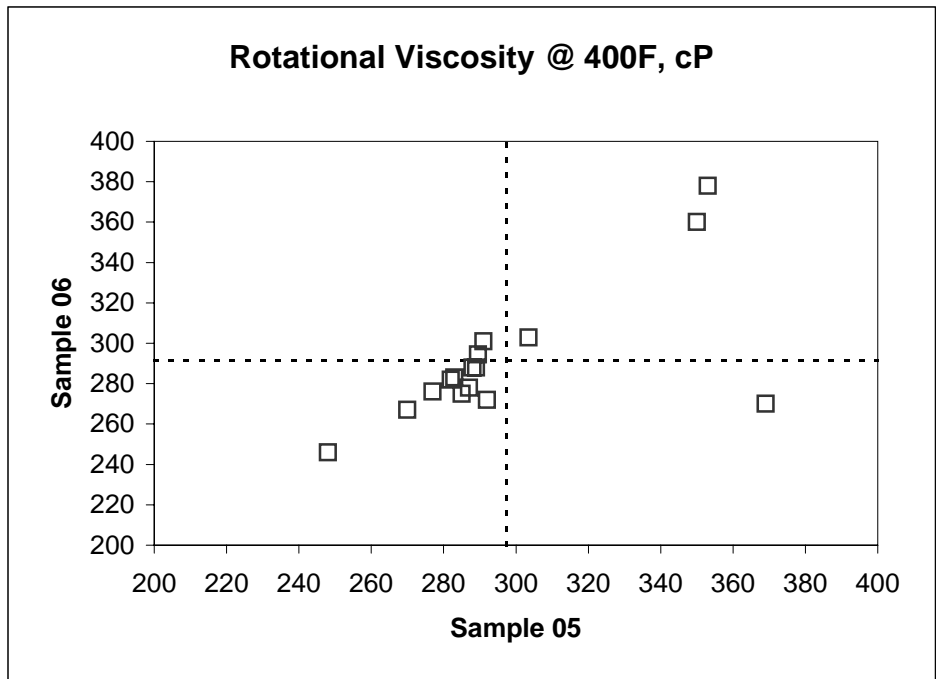
Sample 05	Average	204.9	Std. Dev.	5.8
Sample 06	Average	204.6	Std. Dev.	5.7

Lab #'s Excluded: None



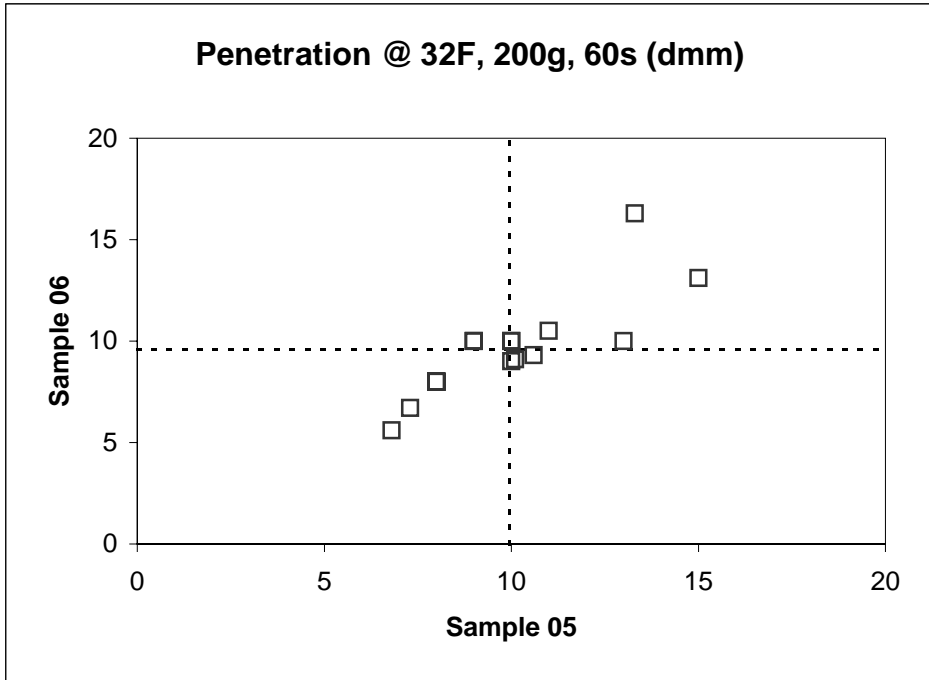
Sample 05	Average	16.2	Std. Dev.	3.1
Sample 06	Average	15.6	Std. Dev.	2.2

Lab #'s Excluded: None



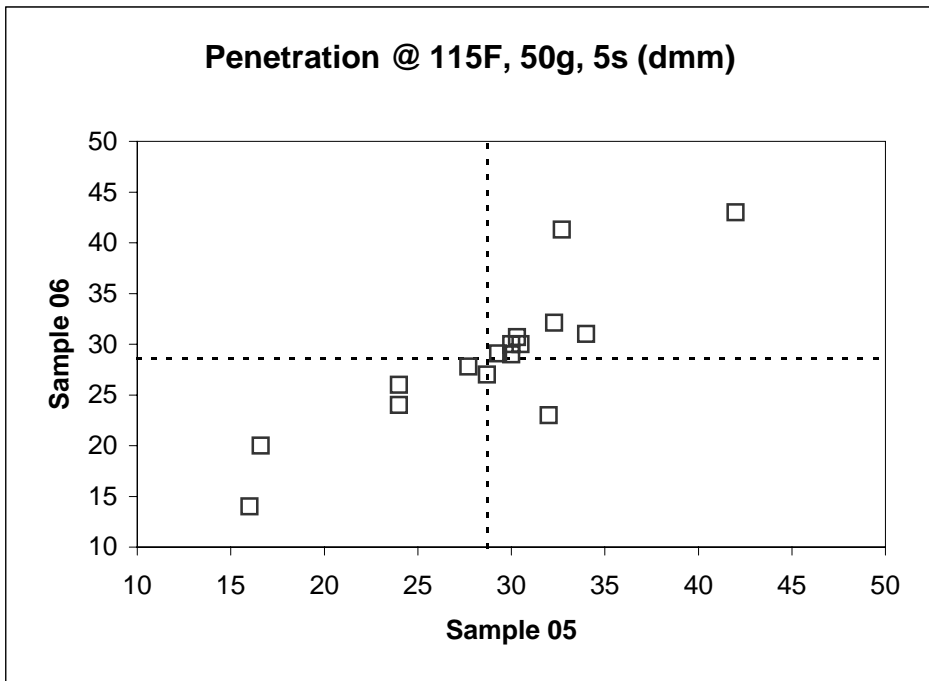
Sample 05	Average	297.3	Std. Dev.	32.3
Sample 06	Average	291.3	Std. Dev.	33.5

Lab #'s Excluded: None



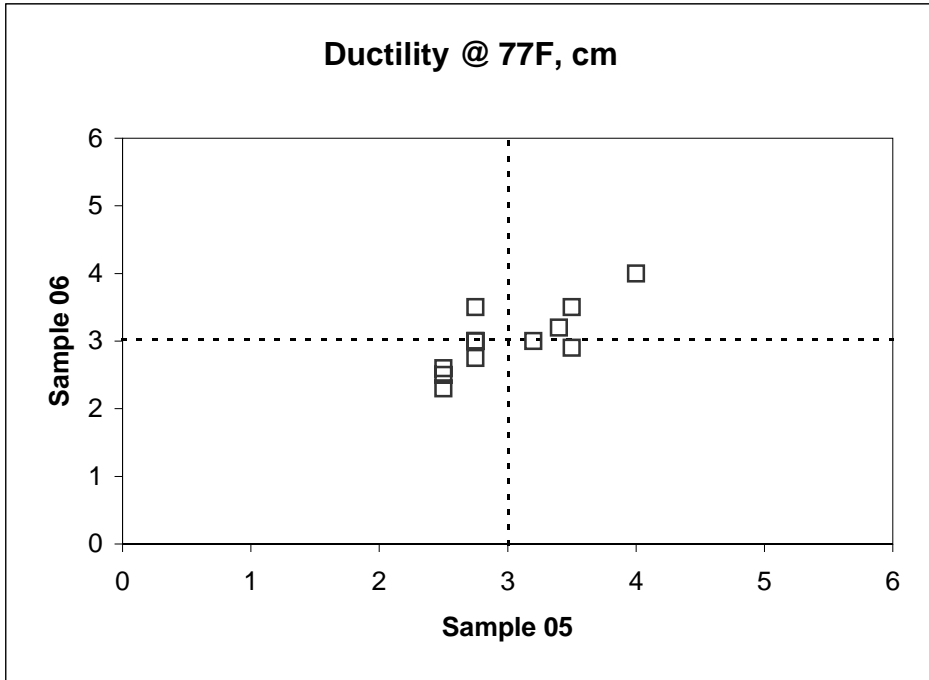
Sample 05	Average	9.9	Std. Dev.	2.3
Sample 06	Average	9.6	Std. Dev.	2.5

Lab #'s Excluded: None



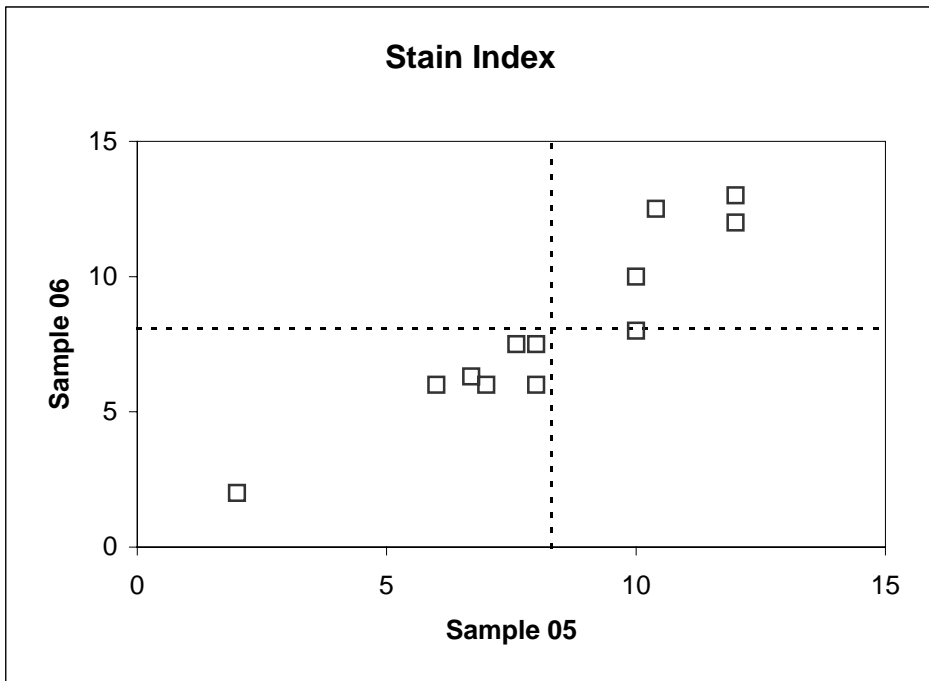
Sample 05	Average	28.8	Std. Dev.	6.4
Sample 06	Average	28.6	Std. Dev.	7.0

Lab #'s Excluded: None



Sample 05	Average	3.0	Std. Dev.	0.5
Sample 06	Average	3.0	Std. Dev.	0.5

Lab #'s Excluded: None



Sample 05	Average	8.3	Std. Dev.	2.8
Sample 06	Average	8.1	Std. Dev.	3.3

Lab #'s Excluded: None



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