

**This is your Performance Analysis Report
from Containerboard Program Cycle #412, January 2004**

For guidance on interpreting this report, please refer to the [Report Guide](#), located in the Containerboard section of our website www.collaborativetesting.com. If you need assistance with interpreting the statistics and terms used in the report, please reference the [Key to Terms in the Containerboard Program](#) that can be found on the reverse of this page or on the CTS website. As always, you may contact the Containerboard Program Analyst for assistance with any aspect of the program.

On each, "Current Month Performance Report" there is a WebCode printed in the upper right corner. Use your WebCodes to identify your results in the Participant Summary Report that is now available on our website. In order to maintain confidentiality, your WebCode will be unique for each analysis and will change with each report.

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Here is a sample of an Individual Report sent to participants in the CTS Containerboard Interlaboratory Testing Program. You can view the Summary Report of all participants' data on this Website.

Laboratory Manager
Company Name
123 Main Street
Your Town, Your State 12345

Key to Terms in the Containerboard Program

Weekly Results

Laboratory Data

- LabCode - Laboratory identification code used to maintain information on a confidential basis.
- Weekly Mean - The average of the test results obtained by the participant for each week that data was reported.

Consensus Data

- Wk Mean - For each week, the average of the Means for all the participants, excluding those laboratories flagged with an 'X'.
- Avg SDr - For each week, the average of the within-laboratory standard deviations (SDr's) for all the participants, excluding those laboratories flagged with an 'X'. The Avg SDr is an indication of the variation of measurements within an average laboratory.
- SD btwn Labs - For each week, the standard deviation of the laboratory Means about the Wk Mean, excluding those laboratories flagged with an 'X'. The SD btwn Labs is an indication of the precision of measurement between the laboratories.
- Labs Incl - The number of laboratory Means included in the Wk Mean.
- Labs Excl'd - The number of laboratory Means reported but excluded from the Wk Mean for that week due to outlying results ('X' following Mean).
- Labs not rcvd - The number of laboratories failing to report for that week.

Monthly Results

Laboratory Data

- Mean - For each laboratory, the average of the weekly Means reported for this month.
- CPV - Comparative Performance Value, an indication of how well a laboratory's Mean agrees with the other participants. The CPV is a ratio indicating the number of standard deviations from the consensus mean (e.g. Wk Mean). The closer a laboratory's CPV is to zero, the more consistent its results are with the other participants' data. Formula: $(\text{Lab Mean} - \text{Grand Mean}) / \text{SD btwn Labs}$
- SDr - For each laboratory, the average of the weekly within-lab standard deviations (SDr's) for all reported Weekly Means this month.
- SD Wks - The standard deviation of the laboratory's weekly Means, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.

Consensus Data

- Month Mean - The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for this month.
- Avg SDr - For the current month, the average of the within-laboratory standard deviations (SDr's), excluding those laboratories flagged with an 'X'.
- SD btwn Labs - For the current month, the standard deviation of the Means about the Month Mean, excluding those flagged with an 'X'.
- SD Wks - For the current month, the average of the laboratory between week standard deviations (SD Wks) for all the participants.

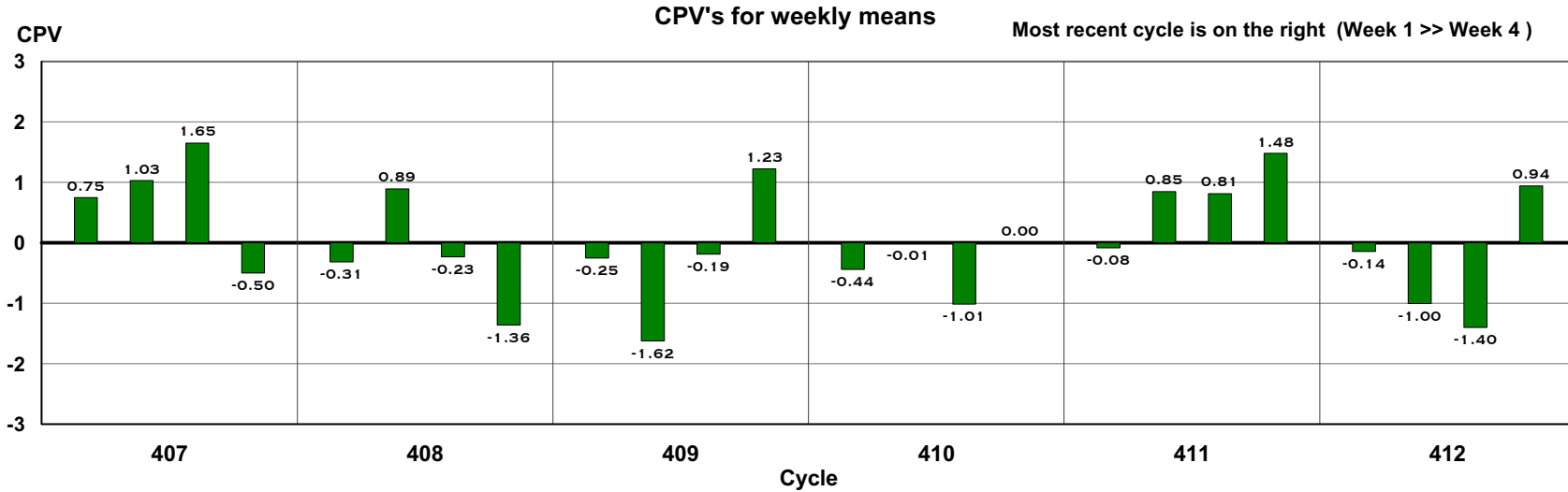
Cumulative Results

Laboratory Data

- Mean - For each lab, the average of all the Means reported for the weeks shown.
- CPV - A ratio indicating the number of standard deviations the Mean (Cumulative) falls from the consensus mean (Grand Mean).
- Wks - The number of weeks included in the cumulative period.
- SD Wks - For the cumulative period, the standard deviation among the laboratory's weekly Means.

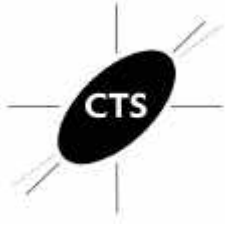
Consensus Data

- Grand Mean - The average of the Means for all the participants in the cumulative period, excluding those laboratories flagged with an 'X.'
- Avg SDr - For the cumulative period, the avg of the within-laboratory standard deviations (SDr's), excluding laboratories flagged with an 'X'.
- SD btwn Labs - For the cumulative period, the standard deviation of the Means, excluding those laboratories flagged with an 'X'.
- SD Wks - For the cumulative period, the average of the laboratory between week standard deviations (SD Wks') for all the participants.



Test Month & Letter	Sample Code	Weekly Results				Monthly Results	Cumulative Results
		Week 1 Lab Mean (CPV)	Week 2 Lab Mean (CPV)	Week 3 Lab Mean (CPV)	Week 4 Lab Mean (CPV)		
11AAA1 412 January (A)	42T	105.1 (-0.14)	101.2 (-1.00)	100.1 (-1.40)	110.9 (0.94)	104.3 (-0.47)	105.4(-0.16)
##### 411 December (N)	42T	105.5 (-0.08)	108.2 (0.85)	109.1 (0.81)	111.9 (1.48)	108.7 (0.78)	105.5(-0.08)
##### 410 November (M)	42T	104.2 (-0.44)	105.8 (-0.01)	100.5 (-1.01)	Data missing	103.5 (-0.61)	105.5(-0.03)
##### 409 October (L)	42T	104.2 (-0.25)	97.8 (-1.62)	105.1 (-0.19)	111.2 (1.23)	104.6 (-0.27)	106.3(0.17)
##### 408 September (K)	42T	104.4 (-0.31)	110.0 (0.89)	104.7 (-0.23)	99.5 (-1.36)	104.7 (-0.32)	106.3(0.24)
##### 407 August (J)	42T	109.3 (0.75)	110.2 (1.03)	113.8 (1.65)	102.3 (-0.50)	108.9 (0.96)	106.6(0.47)

Sample report



Current Month Analysis Report - January
Analysis #205
Bursting Strength (Mullen), 42 lb Linerboard- 42T
using TAPPI Official Test Method T807

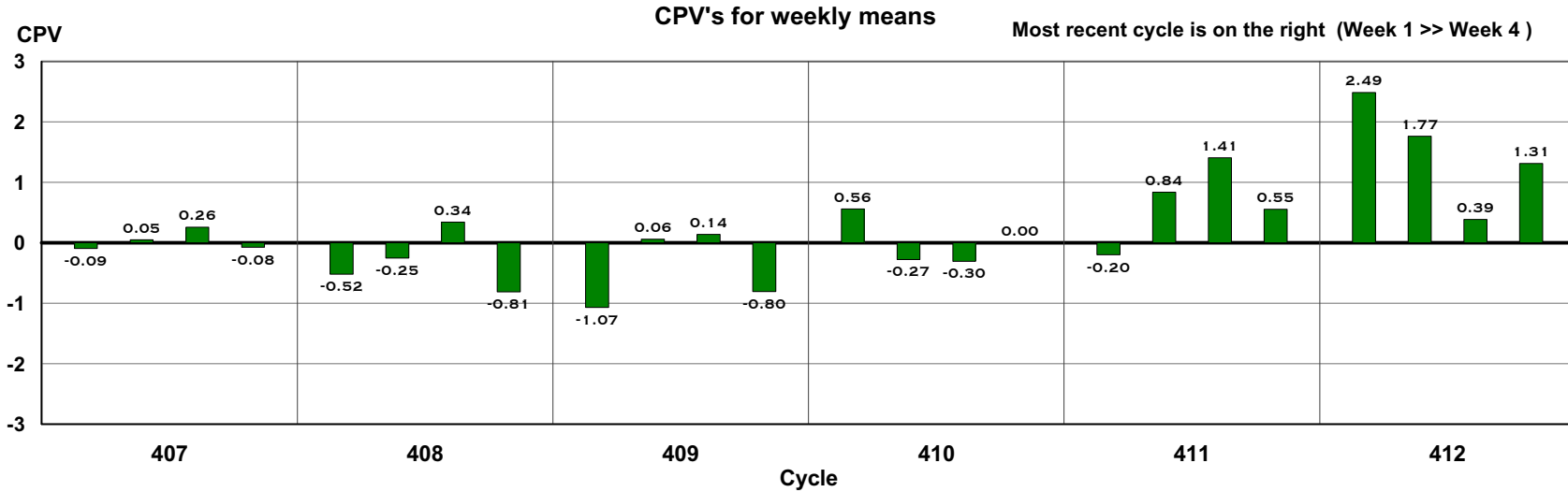
Lab Code: **A**
Web Code: 11AAA1
Data in units of: PSI

LabCode	Weekly Means				Monthly Results				Cumulative Results (16 weeks max)				
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks
****A	105.1	101.2	100.1	110.9	104.3	-0.47	12.3	4.9	105.4	-0.16	11.1	4.3	15
Consensus Results (all labs)													
Wk Mean	105.70	105.81	106.29	105.95	Month Mean		106.04	Grand Mean		105.92			
Avg SDr	11.53	11.52	11.46	11.58	Avg SDr		11.60	Avg SDr		11.34			
SD btwn Labs	4.17	4.58	4.43	5.27	SD btwn Labs		3.61	SD btwn Labs		3.25			
Labs Incd	81	82	81	74	SD btwn Wks		3.64	SD btwn Wks		3.90			
Labs Exclcd	1	0	0	0	Labs Incd		85	Labs Incd		85			
Labs not rcvd	3	3	4	11									

Your laboratory's within-week variation (SDr) was consistent with other laboratories.

Your laboratory's week-to-week variation (SD Wks) was consistent with other laboratories.

Sample report



Test Month & Letter	Sample Code	Weekly Results				Monthly Results	Cumulative Results
		Week 1 Lab Mean (CPV)	Week 2 Lab Mean (CPV)	Week 3 Lab Mean (CPV)	Week 4 Lab Mean (CPV)		
11BBB1 412 January (A)	42T	111.7 (2.49)*	109.4 (1.77)	99.1 (0.39)	102.5 (1.31)	105.7 (1.29)	98.3(0.44)
Warning: The Laboratory Mean for Week 1 has a warning signal.							
##### 411 December (N)	42T	94.2 (-0.20)	100.2 (0.84)	105.1 (1.41)	98.3 (0.55)	99.5 (0.65)	94.9(-0.01)
##### 410 November (M)	42T	99.4 (0.56)	93.1 (-0.27)	92.7 (-0.30)	Data missing	95.1 (-0.03)	93.4(-0.23)
##### 409 October (L)	42T	87.9 (-1.07)	95.4 (0.06)	95.8 (0.14)	89.5 (-0.80)	92.2 (-0.51)	91.8(-0.41)
##### 408 September (K)	42T	91.6 (-0.52)	93.2 (-0.25)	96.8 (0.34)	90.2 (-0.81)	93.0 (-0.36)	93.1(-0.19)
##### 407 August (J)	42T	93.4 (-0.09)	93.8 (0.05)	95.0 (0.26)	93.1 (-0.08)	93.8 (0.03)	94.1(0.02)

Sample report



Current Month Analysis Report - January
Analysis #215
Ring Crush, 42 lb Linerboard- 42T
using TAPPI Official Test Method T822

Lab Code: **A**
Web Code: 11BBB1
Data in units of: pounds

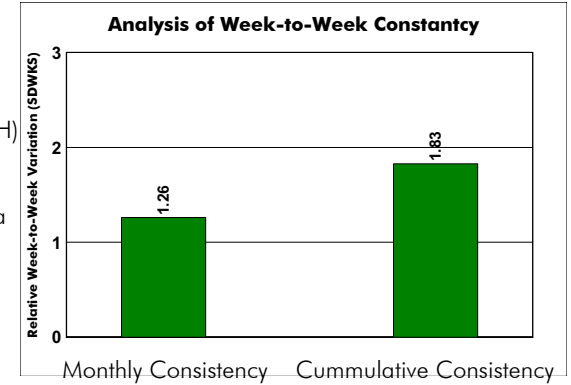
LabCode	Weekly Means				Monthly Results				Cumulative Results (16 weeks max)				
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks
****A	111.7 *	109.4	99.1	102.5	105.7	1.29	5.4	5.9	98.3	0.44	4.5	6.8 H	15
Consensus Results (all labs)													
Wk Mean	97.12	96.53	96.32	95.66	Month Mean		96.68	Grand Mean		95.87			
Avg SDr	4.72	4.45	4.73	4.78	Avg SDr		4.72	Avg SDr		4.63			
SD btwn Labs	5.86	7.29	7.19	5.21	SD btwn Labs		6.99	SD btwn Labs		5.46			
Labs Incd	75	81	75	68	SD btwn Wks		4.66	SD btwn Wks		3.72			
Labs Exclcd	5	0	1	3	Labs Incd		82	Labs Incd		79			
Labs not rcvd	2	1	6	11									

Your laboratory's within-week variation (SDr) was consistent with other laboratories.

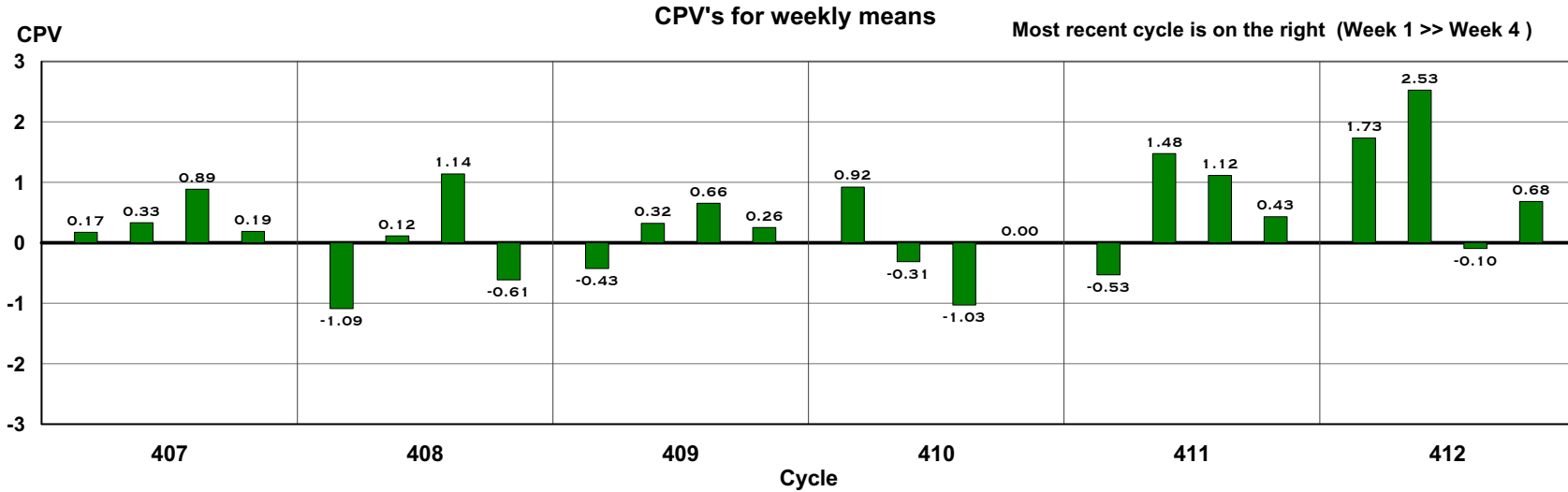
Warning: The between week variation of your means was high for this cumulative period.

This section evaluates your laboratory's ability to maintain constant measurement performance from week-to-week within the month. The value and bar below show how variable your weekly means were compared to the average laboratory.

A relative week-to-week variation of 1.00 indicates average constancy. A laboratory will be flagged (H) for a relative week-to-week variation greater than the critical limit flagged (L) for a relative variation less than 0.18



Sample report



Test Month & Letter	Sample Code	Weekly Results				Monthly Results	Cumulative Results
		Week 1 Lab Mean (CPV)	Week 2 Lab Mean (CPV)	Week 3 Lab Mean (CPV)	Week 4 Lab Mean (CPV)		
11CCC1 412 January (A)	69V	171.6 (1.73)	182.2 (2.53)*	156.6 (-0.10)	162.1 (0.68)	168.1 (1.37)	158.8(0.56)
Warning: The Laboratory Mean for Week 2 has a warning signal.							
##### 411 December (N)	69V	149.6 (-0.53)	165.1 (1.48)	163.6 (1.12)	158.9 (0.43)	159.3 (0.67)	153.9(0.22)
##### 410 November (M)	69V	162.5 (0.92)	149.9 (-0.31)	144.9 (-1.03)	Data missing	152.4 (-0.14)	151.9(0.07)
##### 409 October (L)	69V	147.9 (-0.43)	155.4 (0.32)	157.3 (0.66)	155.0 (0.26)	153.9 (0.18)	151.7(0.06)
##### 408 September (K)	69V	142.3 (-1.09)	150.8 (0.12)	158.4 (1.14)	146.5 (-0.61)	149.5 (-0.18)	149.5(-0.18)
##### 407 August (J)	69S	141.8 (0.17)	142.8 (0.33)	147.0 (0.89)	141.7 (0.19)	143.3 (0.43)	140.3(-0.15)

Sample report



Current Month Analysis Report - January
Analysis #216
Ring Crush, 69 lb Linerboard- 69V
using TAPPI Official Test Method T822

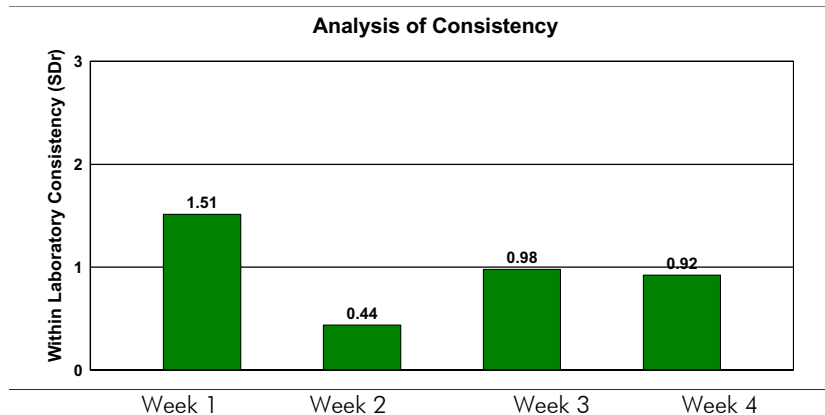
Lab Code: **A**
Web Code: 11CCC1
Data in units of: pounds

LabCode	Weekly Means				Monthly Results				Cumulative Results (16 weeks max)				
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks
****A	171.6	182.2 *L	156.6	162.1	168.1	1.37	7.0	11.2H	158.8	0.56	6.6	9.7 H	15
Consensus Results (all labs)													
Wk Mean	156.74	157.65	157.37	156.71	Month Mean		157.53		Grand Mean		155.17		
Avg SDr	6.75	6.72	6.99	6.70	Avg SDr		6.74		Avg SDr		6.65		
SD btwn Labs	8.57	9.72	8.12	7.88	SD btwn Labs		7.74		SD btwn Labs		6.56		
Labs Incd	80	82	76	71	SD btwn Wks		4.46		SD btwn Wks		5.64		
Labs Exclcd	1	0	1	1	Labs Incd		81		Labs Incd		80		
Labs not rcvd	1	0	5	10									

Warning: The between week variation of your means is high for this month.

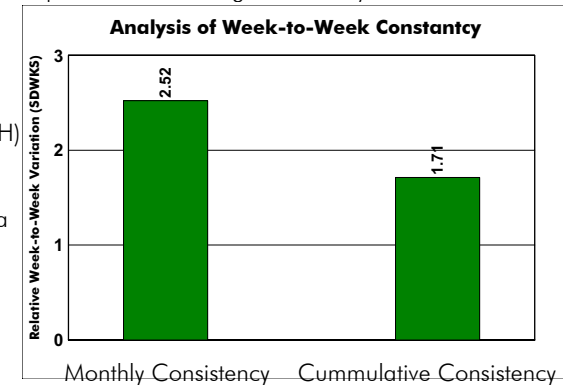
Warning: The between week variation of your means was high for this cumulative period.

This section compares the consistency within your laboratory's weekly measurements to the average for all laboratories. A value of 1.00 indicates average consistency. A laboratory will be flagged (H) for a high relative variation and flagged (L) for a low relative variation.

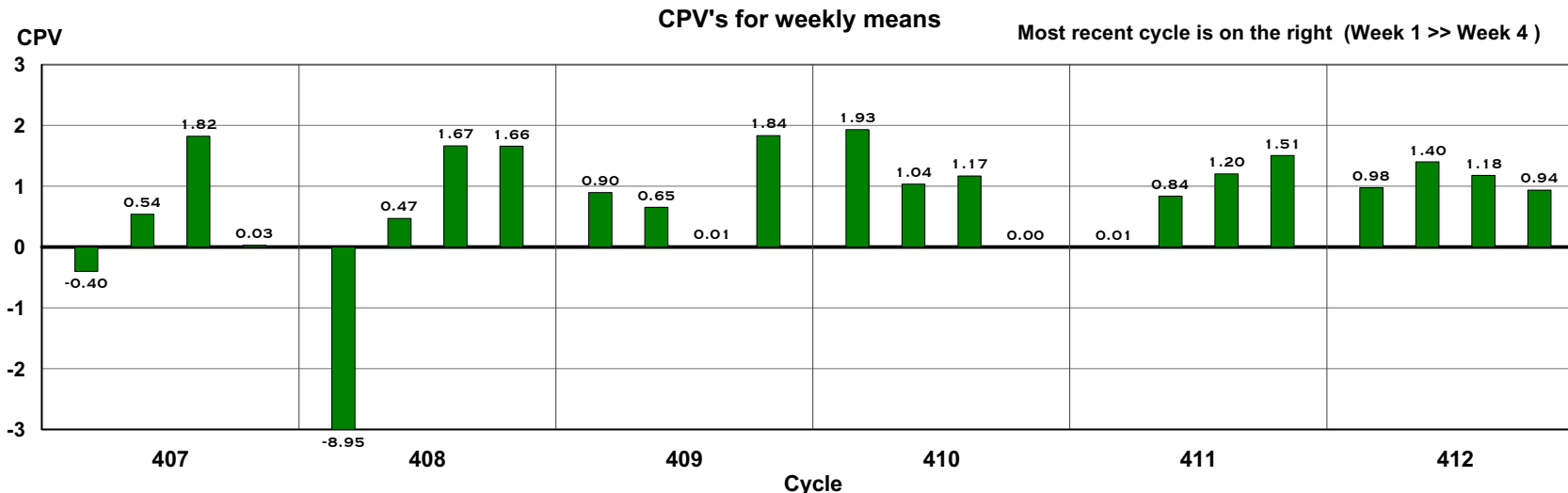


This section evaluates your laboratory's ability to maintain constant measurement performance from week-to-week within the month. The value and bar below show how variable your weekly means were compared to the average laboratory.

A relative week-to-week variation of 1.00 indicates average constancy. A laboratory will be flagged (H) for a relative week-to-week variation greater than the critical limit flagged (L) for a relative variation less than 0.18.



Sample report



Test Month & Letter	Sample Code	Weekly Results				Monthly Results	Cumulative Results
		Week 1 Lab Mean (CPV)	Week 2 Lab Mean (CPV)	Week 3 Lab Mean (CPV)	Week 4 Lab Mean (CPV)		
11DDD1 412 January (A)	CM6	59.8 (0.98)	61.3 (1.40)	60.8 (1.18)	60.6 (0.94)	60.6 (1.26)	60.5(1.28)
##### 411 December (N)	CM6	58.1 (0.01)	59.7 (0.84)	60.7 (1.20)	61.6 (1.51)	60.0 (0.96)	58.9(0.55)
##### 410 November (M)	CM6	63.1 (1.93)	60.5 (1.04)	61.2 (1.17)	Data missing	61.6 (1.51)	58.7(0.43)
##### 409 October (L)	CM6	60.2 (0.90)	59.8 (0.65)	57.8 (0.01)	62.7 (1.84)	60.1 (0.99)	59.0(0.51)
##### 408 September (K)	CM6	35.6 (-8.95)X	58.7 (0.47)	61.7 (1.67)	62.0 (1.66)	54.5 (-1.25)	59.3(0.74)
##### 407 August (J)	CM6	56.7 (-0.40)	59.1 (0.54)	63.2 (1.82)	57.8 (0.03)	59.2 (0.55)	60.8(1.38)

Sample report



Current Month Analysis Report - January
Analysis #240
Flat Crush Strength (CMT), 26 lb Corrugating Medium- CM6
using TAPPI Official Test Method T809

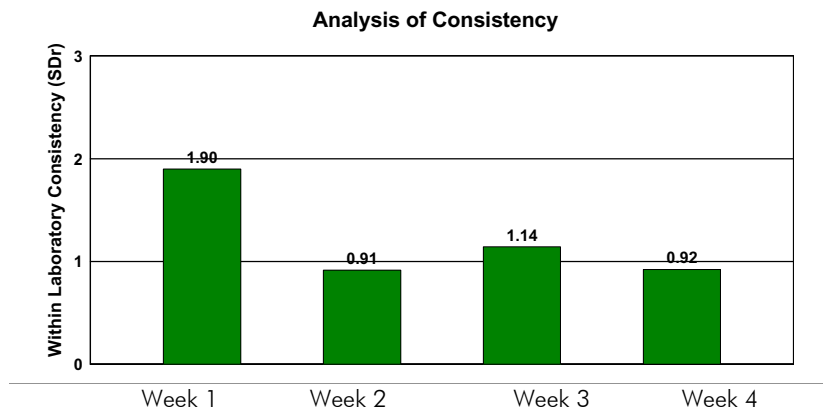
Lab Code: **A**
Web Code: 11DDD1
Data in units of: pounds

LabCode	Weekly Means				Monthly Results				Cumulative Results (16 weeks max)				
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks
****A	59.8 H	61.3	60.8	60.6	60.6	1.26	3.9	0.6	60.5	1.28	3.6	1.4	15
Consensus Results (all labs)													
Wk Mean	57.64	57.92	57.79	58.17	Month Mean		57.95		Grand Mean		57.95		
Avg SDr	3.07	3.14	3.16	2.86	Avg SDr		3.06		Avg SDr		3.15		
SD btwn Labs	2.22	2.41	2.55	2.60	SD btwn Labs		2.13		SD btwn Labs		2.02		
Labs Incd	62	60	64	59	SD btwn Wks		1.55		SD btwn Wks		2.00		
Labs Exclcd	2	2	0	0	Labs Incd		64		Labs Incd		66		
Labs not rcvd	2	4	2	7									

Warning: The variation of reported data within Week 1 is high.

This section compares the consistency within your laboratory's weekly measurements to the average for all laboratories. A value of 1.00 indicates average consistency. A laboratory will be flagged (H) for a high relative variation and flagged (L) for a low relative variation.

Your laboratory's week-to-week variation (SD Wks) was consistent with other laboratories.



Sample report