

# FLOAT AND SINK PROFICIENCY TESTING

## REPORT TWENTY

Revision: 00

### Final report

NOVEMBER 2020

**PARTICIPANT CODE:**



**R BABOOLAL (SCHEME MANAGER)**

**THINKING QUALITY, QUALITY THINKING**

### EXECUTIVE SUMMARY

1. Sixteen samples were sent out to participants with 14 result submissions.
2. Since most of the results do not follow a Normal distribution, non-parametric statistics were used. This is a straightforward statistical calculation and can be found on the link below

<https://www.youtube.com/watch?v=qkl-HeMikzQ>

3. Observations at the differing densities

DENSITY	COMMENTS
1.30	Four participants obtained yields at this density. The yields were quite varied as well as well as the ash results obtained.
1.40	The yields were quite varied at this density as well. Two outliers were detected on ash determination. Once the outliers on ash were removed, the rest of the results were consistent, with the average and median being the same, as well as a low standard deviation of 0.56.
1.50	Extremely varied results on the yields and ash results obtained. One outlier detected on the yields.
1.60	Varied results with no outliers, on the yields. Ash results were generally acceptable with 2 outliers detected.
1.70	High variation in results observed. Three outliers detected on Ash.
1.80	Generally acceptable results received on the yields and ash
Sink 1.80	Three outliers detected on the yield. The ash determination was consistent with a low standard deviation and the mean and median similar.

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Dear Participant

Thank you for your participation in the Coal Concepts Float and Sink November 2020 proficiency testing scheme.

Your laboratory code is as per the cover page.

All results are totally confidential. Any results in ***bold, italics, underlined*** are outliers

Please take note of the following:

Non-parametric statistics were used to assess results since most data do not follow a Normal or Gaussian distribution. Therefore the calculation of outliers was done using the box and whisker plot. It also does not make sense to calculate z-scores due data variance and limitation.

All calculations can be made available upon request

The Coal Concepts scheme adheres to the requirements of ISO/IEC 17043: Conformity assessment – General requirements for proficiency testing.

Best Regards

R Baboolal

**LIST OF PARTICIPANTS IN ALPHABETICAL ORDER**

Bureau Veritas Inspectorate Laboratories - Middelburg
Bureau Veritas Inspectorate Laboratories - Tendele
Bureau Veritas Trading & Inspection SA - PTA
Bureau Veritas Inspectorate Laboratories – Moatize, Tete
Cotecna - Middelburg
Cotecna - Phola
Eyethu Coal - Wilge
Kufeziwe
Mpumamanzi
Noko Analytical Services - Witbank
SABS Secunda Laboratory
Sibonisiwe Coal Laboratory Services
Siza Laboratory Services - Middelburg
Siza Laboratory Services - Kinross
Umzamo Analytical Services
Vitrovian Analytical Services

**1. TYPE OF SAMPLE USED**

The coal used in this proficiency testing round was washed bituminous coal with low ash.

**2. PREPARATION OF SAMPLE**

Approximately 200kg's of sample with an approximate topsize of 50mm was sourced. This was crushed to approximately 12 mm using a jaw crusher. A conveyor fed splitter was used to split the bulk sample. It was then re-combined and split again. This was done 5 times and used as a homogenizing process. Eighteen by 10l buckets were placed near the bulk sample. Using a spade, small increments of the bulk sample were placed into each of the buckets. This was done until all the buckets contained about 10kgs of coal.

## 3. RESULTS

## 3.1 YIELDS AND ASH RESULTS AT DENSITY OF 1.30

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020			
ANALYTICAL PARAMETER : YIELDS AT F1.30			
	LAB ID	MASS (Kg)	%YIELD
	6f	0.24	1.20
	24f	0.35	8.10
	25f	0.40	9.20
	27f	0.16	3.81
<b>NUMBER OF RESULTS</b>	-	4	4
<b>OUTLIERS</b>	-	-	0
<b>AVERAGE</b>	-	-	<b>5.58</b>
<b>STD DEVIATION</b>	-	-	<b>3.73</b>
<b>MEDIAN</b>	-	-	<b>5.96</b>

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.30)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	6f	1.80	2.70	2.75
	24f	1.10	4.30	4.35
	25f	1.36	5.10	5.17
	27f	2.70	2.20	2.26
<b>NUMBER OF RESULTS</b>	-	4	4	4
<b>OUTLIERS</b>	-	-	-	<b>0</b>
<b>AVERAGE</b>	-	<b>1.74</b>	<b>3.58</b>	<b>3.63</b>
<b>STD DEVIATION</b>	-	-	<b>1.35</b>	<b>1.36</b>
<b>MEDIAN</b>	-	-	<b>3.50</b>	<b>3.55</b>

Non parametric stats on yield results	
Quartile 1	2.51
Quartile 2	5.96
Quartile 3	8.65
INTERQUARTILE RANGE (IQR)	6.15
1.5 X IQR	9.22
Acceptable lower limit	0.0
Acceptable upper limit	17.87
Results outside acceptable limits	0

Non parametric stats on DB results	
Quartile 1	2.51
Quartile 2	3.55
Quartile 3	4.76
INTERQUARTILE RANGE (IQR)	2.25
1.5 X IQR	3.38
Acceptable lower limit	0.00
Acceptable upper limit	8.14
Results outside acceptable limits	0

## 3.2 YIELDS AND ASH RESULTS AT DENSITY OF 1.40

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020			
ANALYTICAL PARAMETER : YIELDS AT F1.40			
	LAB ID	MASS (Kg)	%YIELD
	5f	1.05	10.40
	6f	0.54	2.70
	7f	0.42	4.40
	11f	0.43	5.77
	14f	0.32	3.21
	15f	0.51	5.10
	18f	0.46	4.70
	19f	0.54	5.40
	20f	0.26	3.50
	21f	0.82	8.16
	23f	0.43	4.27
	24f	0.54	12.40
	25f	0.45	10.30
	27f	0.26	6.19
NUMBER OF RESULTS	-	14	14
OUTLIERS	-	-	0
AVERAGE	-	-	6.18
STD DEVIATION	-	-	2.99
MEDIAN	-	-	5.25

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.40)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	5f	2.70	3.00	3.08
	6f	1.40	2.50	2.54
	7f	1.20	2.20	2.23
	11f	1.40	2.90	2.94
	14f	0.96	1.40	1.41
	15f	0.70	2.60	2.62
	18f	1.20	2.00	2.02
	19f	4.55	2.32	2.43
	20f	1.00	2.50	2.53
	21f	3.60	2.30	2.39
	23f	1.45	3.61	3.66
	<b>24f*</b>	<b>1.50</b>	<b>7.20</b>	<b>7.31</b>
	<b>25f*</b>	<b>1.40</b>	<b>7.30</b>	<b>7.40</b>
	27f	1.50	2.50	2.54
NUMBER OF RESULTS	-	14	14	14
OUTLIERS	-	-	2	2
AVERAGE	-	1.75	2.49	2.53
STD DEVIATION	-	-	0.55	0.56
MEDIAN	-	-	2.50	2.53

Non parametric stats on Yield results	
Quartile 1	4.27
Quartile 2	5.25
Quartile 3	8.16
INTERQUARTILE RANGE (IQR)	3.89
1.5 X IQR	5.84
Acceptable lower limit	0.00
Acceptable upper limit	14.00
Results outside acceptable limits	0

Non parametric stats on DB results	
Quartile 1	2.39
Quartile 2	2.54
Quartile 3	3.08
INTERQUARTILE RANGE (IQR)	0.70
1.5 X IQR	1.05
Acceptable lower limit	1.34
Acceptable upper limit	4.13
Results outside acceptable limits	24f, 25f



## 3.3 YIELDS AND ASH RESULTS AT DENSITY OF 1.50

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020			
ANALYTICAL PARAMETER : YIELDS AT F1.50			
	LAB ID	MASS (Kg)	%YIELD
	5f	0.65	6.50
	6f	0.88	4.50
	7f	0.21	2.20
	14f	0.30	3.02
	15f	0.14	1.40
	18f	0.19	1.90
	19f	0.09	0.90
	20f	0.21	2.90
	<b>21f</b>	<b>4.14</b>	<b>41.19</b>
	23f	0.47	4.67
	24f	0.90	20.70
	25f	0.95	21.80
	27f	0.30	7.14
NUMBER OF RESULTS	-	13	13
OUTLIERS	-	-	1
AVERAGE	-	-	6.47
STD DEVIATION	-	-	7.17
MEDIAN	-	-	3.76

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.50)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	5f	2.40	1.60	1.64
	6f	2.80	2.60	2.67
	7f	1.30	5.40	5.47
	11f	4.20	3.50	3.65
	14f	1.15	1.60	1.62
	15f	1.00	6.50	6.57
	18f	1.70	5.90	6.00
	19f	0.98	2.78	2.81
	20f	1.20	6.50	6.58
	21f	5.60	3.50	3.71
	23f	2.38	4.53	4.64
	24f	2.90	7.60	7.83
	25f	2.77	7.40	7.61
	27f	1.90	2.80	2.85
NUMBER OF RESULTS	-	14	14	14
OUTLIERS	-	-	-	0
AVERAGE	-	2.31	4.44	4.55
STD DEVIATION	-	-	2.09	2.14
MEDIAN	-	-	4.02	4.17

Non parametric stats on yield results	
Quartile 1	2.05
Quartile 2	4.50
Quartile 3	13.92
INTERQUARTILE RANGE (IQR)	11.87
1.5 X IQR	17.81
Acceptable lower limit	-15.76
Acceptable upper limit	31.73
Results outside acceptable limits	21f

Non parametric stats on DB results	
Quartile 1	2.81
Quartile 2	4.17
Quartile 3	6.57
INTERQUARTILE RANGE (IQR)	3.76
1.5 X IQR	5.64
Acceptable lower limit	-2.83
Acceptable upper limit	12.20
Results outside acceptable limits	0

## 3.4 YIELDS AND ASH RESULTS AT DENSITY OF 1.60

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020			
ANALYTICAL PARAMETER : YIELDS AT F1.60			
	LAB ID	MASS (Kg)	%YIELD
	5f	4.20	41.80
	6f	4.42	22.40
	7f	4.57	48.00
	11f	3.61	48.46
	14f	4.09	41.33
	15f	5.29	53.20
	18f	4.35	44.30
	19f	2.42	24.20
	20f	2.77	37.60
	21f	4.54	45.17
	23f	4.63	45.98
	24f	0.78	18.00
	25f	0.87	20.00
	27f	0.14	3.33
NUMBER OF RESULTS	-	14	14
OUTLIERS	-	-	0
AVERAGE	-	-	35.27
STD DEVIATION	-	-	14.87
MEDIAN	-	-	41.57

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.60)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	5f	3.70	2.10	2.18
	6f	3.70	2.30	2.39
	7f	4.00	2.30	2.40
	11f	5.20	3.60	3.80
	14f	3.08	2.10	2.17
	15f	3.70	2.30	2.39
	18f	3.30	2.10	2.17
	19f	4.47	3.05	3.19
	20f	3.50	3.50	3.63
	21f	5.50	4.40	4.66
	23f	4.87	2.25	2.37
	<b>24f*</b>	<b>3.20</b>	<b>12.90</b>	<b>13.33</b>
	<b>25f*</b>	<b>3.00</b>	<b>12.40</b>	<b>12.78</b>
	27f	5.20	3.20	3.38
NUMBER OF RESULTS	-	14	14	14
OUTLIERS	-	-	2	2
AVERAGE	-	4.09	2.77	2.89
STD DEVIATION	-	-	0.76	0.82
MEDIAN	-	-	2.30	2.39

Non parametric stats on yield results	
Quartile 1	22.40
Quartile 2	41.57
Quartile 3	45.98
INTERQUARTILE RANGE (IQR)	23.58
1.5 X IQR	35.37
Acceptable lower limit	-12.97
Acceptable upper limit	81.35
Results outside acceptable limits	0

Non parametric stats on DB results	
Quartile 1	2.37
Quartile 2	2.79
Quartile 3	3.80
INTERQUARTILE RANGE (IQR)	1.43
1.5 X IQR	2.15
Acceptable lower limit	0.22
Acceptable upper limit	5.95
Results outside acceptable limits	24f, 25f

## 3.5 YIELDS AND ASH RESULTS AT DENSITY OF 1.70

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020			
ANALYTICAL PARAMETER : YIELDS AT F1.70			
	LAB ID	MASS (Kg)	%YIELD
	5f	3.85	38.30
	6f	3.44	17.40
	7f	3.98	41.80
	11f	3.13	42.01
	14f	4.78	48.28
	15f	3.64	36.60
	18f	4.46	45.50
	19f	6.22	62.10
	20f	3.83	52.00
	21f	0.13	1.29
	23f	4.18	41.51
	24f	0.87	20.00
	25f	0.78	17.90
	27f	2.94	70.00
NUMBER OF RESULTS	-	14	14
OUTLIERS	-	-	0
AVERAGE	-	3.30	38.19
STD DEVIATION	-	1.68	18.62
MEDIAN		3.74	41.66

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.70)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	5f	4.00	3.50	3.65
	6f	4.00	3.50	3.65
	7f	3.70	3.50	3.63
	11f	5.80	2.20	2.34
	14f	2.95	4.00	4.12
	15f	3.80	3.30	3.43
	18f	3.60	3.30	3.42
	19f	1.85	7.98	8.13
	20f	3.70	5.10	5.30
	<u>21f*</u>	4.50	<u>16.10</u>	<u>16.86</u>
	23f	4.86	3.40	3.57
	<u>24f*</u>	4.20	<u>18.70</u>	<u>19.52</u>
	<u>25f*</u>	3.94	<u>18.00</u>	<u>18.74</u>
	27f	5.00	3.50	3.68
NUMBER OF RESULTS	-	14	14	14
OUTLIERS	-	-	-	3
AVERAGE	-	3.89	3.93	4.08
STD DEVIATION	-	-	1.50	1.51
MEDIAN			3.50	3.65

Non parametric stats on yield results	
Quartile 1	20.00
Quartile 2	41.66
Quartile 3	48.28
INTERQUARTILE RANGE (IQR)	28.28
1.5 X IQR	42.42
Acceptable lower limit	-22.42
Acceptable upper limit	90.70
Results outside acceptable limits	0

Non parametric stats on DB results	
Quartile 1	3.57
Quartile 2	3.67
Quartile 3	8.13
INTERQUARTILE RANGE (IQR)	4.56
1.5 X IQR	6.84
Acceptable lower limit	-3.26
Acceptable upper limit	14.97
Results outside acceptable limits	21f, 24f, 25f

## 3.6 YIELDS AND ASH RESULTS AT DENSITY OF 1.80

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020			
ANALYTICAL PARAMETER : YIELDS AT F1.80			
	LAB ID	MASS (Kg)	%YIELD
	5f	0.05	0.50
	6f	0.18	0.90
	7f	0.17	1.80
	11f	0.09	1.21
	14f	0.23	2.31
	15f	0.13	1.30
	19f	0.34	3.40
	18f	0.15	1.50
	20f	0.13	1.80
	21f	0.18	1.79
	23f	0.17	1.69
	24f	0.24	5.50
	<b>25f</b>	<b>0.33</b>	<b>7.60</b>
	27f	0.16	3.81
NUMBER OF RESULTS	-	14	14
OUTLIERS	-	-	1
AVERAGE	-	-	2.12
STD DEVIATION	-	-	1.37
MEDIAN	-	-	1.79

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.80)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	5f	3.50	15.80	16.37
	6f	2.30	18.70	19.14
	7f	3.60	17.10	17.74
	11f	4.80	17.40	18.28
	<b>14f*</b>	3.00	<b>11.20</b>	<b>11.55</b>
	15f	3.30	16.00	16.55
	18f	3.20	17.30	17.87
	<b>19f*</b>	4.14	<b>11.12</b>	<b>11.60</b>
	20f	3.30	17.10	17.68
	21f	5.00	18.40	19.37
	23f	4.16	16.40	17.11
	24f	3.20	18.70	19.32
	25f	3.00	18.10	18.66
	27f	4.80	16.10	16.91
NUMBER OF RESULTS	-	14	14	14
OUTLIERS	-	-	2	2
AVERAGE	-	3.66	17.26	17.92
STD DEVIATION	-	-	1.05	1.06
MEDIAN	-	-	17.20	17.81

Non parametric stats on yield results	
Quartile 1	1.30
Quartile 2	1.80
Quartile 3	3.40
INTERQUARTILE RANGE (IQR)	2.10
1.5 X IQR	3.15
Acceptable lower limit	-1.85
Acceptable upper limit	6.55
Results outside acceptable limits	25f

Non parametric stats on DB results	
Quartile 1	16.55
Quartile 2	17.71
Quartile 3	18.66
INTERQUARTILE RANGE (IQR)	2.11
1.5 X IQR	3.17
Acceptable lower limit	13.38
Acceptable upper limit	21.83
Results outside acceptable limits	14f, 19f

## 3.7 YIELDS AND ASH RESULTS AT DENSITY OF SINK 1.80

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020			
ANALYTICAL PARAMETER : YIELDS AT Si 1.80			
	LAB ID	MASS (Kg)	%YIELD
	5f	0.25	2.50
	6f	0.18	0.90
	7f	0.18	1.90
	11f	0.19	2.55
	14f	0.18	1.86
	15f	0.23	2.30
	18f	0.20	2.00
	19f	0.29	2.90
	20f	0.16	2.20
	21f	0.24	2.39
	23f	0.19	1.89
	<b>24f*</b>	<b>0.66</b>	<b>15.20</b>
	<b>25f*</b>	<b>0.57</b>	<b>13.10</b>
	<b>27f*</b>	<b>0.24</b>	<b>5.71</b>
NUMBER OF RESULTS	-	14	14
OUTLIERS	-	-	3
AVERAGE	-	-	2.13
STD DEVIATION	-	-	0.52
MEDIAN	-	-	2.20

COAL CONCEPTS - PROFICIENCY TESTING - NOVEMBER 2020				
ANALYTICAL PARAMETER : ISO ASH (%) (Sink portion after density1.80)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	5f	1.90	66.00	67.28
	6f	1.10	63.50	64.21
	7f	2.20	71.40	73.01
	11f	2.10	71.40	72.93
	14f	1.79	62.40	63.54
	15f	3.20	59.50	61.47
	18f	1.80	68.50	69.76
	19f	2.26	66.76	68.30
	20f	1.50	65.50	66.50
	21f	1.40	66.40	67.34
	23f	1.77	65.20	66.37
	24f	1.90	68.70	70.03
	25f	2.04	69.10	70.54
	27f	2.30	65.00	66.53
NUMBER OF RESULTS	-	14	14	14
OUTLIERS	-	-	0	0
AVERAGE	-	2.04	66.38	67.70
STD DEVIATION	-	-	3.32	3.36
MEDIAN	-	-	66.20	67.31

Non parametric stats on yield results	
Quartile 1	1.90
Quartile 2	2.35
Quartile 3	2.90
INTERQUARTILE RANGE (IQR)	1.00
1.5 X IQR	1.50
Acceptable lower limit	0.40
Acceptable upper limit	4.40
Results outside acceptable limits	24f, 25f, 27f

Non parametric stats on DB results	
Quartile 1	66.37
Quartile 2	67.31
Quartile 3	70.03
INTERQUARTILE RANGE (IQR)	3.66
1.5 X IQR	5.48
Acceptable lower limit	60.89
Acceptable upper limit	75.51
Results outside acceptable limits	0

#### 4. HOMOGENEITY CHECK

SAMPLE NO.	TEST PORTION 1	TEST PORTION 2	sample av (Xt)	range (Wt)	range sqd
1	3,19	3,85	3,52	0,66	0,4356
2	3,16	3,80	3,48	0,64	0,4096
3	4,27	3,54	3,91	0,73	0,5329
4	4,39	3,57	3,98	0,82	0,6724
5	3,22	3,56	3,39	0,34	0,1156
6	3,18	3,60	3,39	0,42	0,1764
7	3,41	3,05	3,23	0,36	0,1296
8	3,43	3,00	3,22	0,43	0,1849
9	3,43	3,80	3,62	0,37	0,1369
10	3,87	3,72	3,80	0,15	0,0225
GENERAL AVERAGE			3,55		
STANDARD DEVIATION			0,268		
WITHIN SAMPLE STANDARD DEVIATION			0,375		
BETWEEN SAMPLE STANDARD DEVIATION			0,038		

#### 5. STABILITY CHECK

SAMPLE NO.	TEST PORTION 1	TEST PORTION 2	sample av (Xt)	range (Wt)	range sqd
1	3,21	3,85	3,53	0,64	0,4096
2	3,19	3,80	3,50	0,61	0,3721
3	4,40	3,54	3,97	0,86	0,7396
4	4,40	3,57	3,99	0,83	0,6889
5	3,19	3,56	3,38	0,37	0,1369
6	3,15	3,60	3,38	0,45	0,2025
7	3,40	3,03	3,22	0,37	0,1369
8	3,43	3,00	3,22	0,43	0,1849
9	3,43	3,81	3,62	0,38	0,1444
10	3,86	3,72	3,79	0,14	0,0196
GENERAL AVERAGE			3,56		
STANDARD DEVIATION			0,282		
WITHIN SAMPLE STANDARD DEVIATION			0,390		
BETWEEN SAMPLE STANDARD DEVIATION			0,061		

***The Float and sink samples were confirmed to be sufficiently homogenous and stable.***

#### 6. CONCLUSION

Generally acceptable/comparable results were obtained.

The ash results were very good considering this is obtained from a washed fraction (sampling). (If the compounding contributions from sample preparation and testing errors are taken into account as well.)

The use of non-parametric statistics had been applied

End of report

**COAL CONCEPTS: Terms and Conditions**Return of results:

Laboratories participate in proficiency testing programs on the understanding that they will be sharing their results and information **anonymously** with other laboratories performing the same analysis. No return of results compromises the spirit of the programs, and reports will not be sent to laboratories unless they return results. Payment in full is required from all laboratories enrolling whether they return results or not.

Errors in Participant Proficiency Testing Results:

Proficiency testing reports should reflect the level of accuracy that a regular testing client would receive.

If a participant finds an error in their proficiency testing results, they may notify us in writing and change their submission **PRIOR** to the due date for return.

Changes after this time will not be accepted.

Coal Concepts' reports results *as submitted* by participants.

On occasion, it seems as though participants have mixed up the samples or not processed the samples according to the instructions. Coal Concepts cannot make assumptions of this nature and change results 'to suit'. We also cannot compromise the integrity of the programs by suggesting to some participants that they should review their results prior to the due date. (This is unfair to other participants) It is the responsibility of the participants to check all aspects of the program, including sample identification, preparation, testing instructions, calculations and reporting of the results prior to results submission.

If samples are not in good condition on arrival to the participant laboratory, Coal Concepts must be notified in writing IMMEDIATELY, as often samples can be replaced in good time. Claims about samples received in bad condition will not be accepted after the report has been issued.

Late Enrolments and Late Results:

Late enrolment requests cannot always be accommodated, as sample manufacture must be scheduled well in advance to the shipping date of the program to allow all necessary quality assurance activities to be carried out.

Shipping of PT materials and evaluating test results from PTPs out of cycle with the mainstream programs is considerably time consuming and therefore costly.

In order not to disadvantage participants able to comply with time frames, Coal Concepts may charge a late fee in the following circumstances:

Requests that Coal concepts staff enters results on behalf of participants

Requests to record results after the due date

Requests for PTP participation that is out of cycle with the scheduled dates

Shipping fees and Customs clearance:

Costs incurred for shipping samples and clearance of same through customs are the responsibility of the participating laboratory unless otherwise indicated

Non-payment of fees:

Coal Concepts retains the right to withhold reports and/or test materials and services when invoices are outstanding.

Confidentiality of results:

All data and information received by Coal Concepts from its clients are considered confidential unless the client has given express permission to pass on information.

Definitions:

The dictionary definitions of "collusion" and "falsification" are as follows.

· *Collusion*: A secret agreement or cooperation for a fraudulent or deceitful purpose.

· *Falsification*: Deliberately changing something to be false. In proficiency testing terms, collusion is comparing data (and perhaps changing data) to fit in with a believed "correct" result. This is contrary to the spirit of proficiency testing programs, which are issued with the intention of providing an objective comparison of a laboratory's performance with others. Coal Concepts tries to minimise the occurrence of collusion by being aware that laboratories should be objective when they report their results, and should therefore not know the intended results at the time they are reporting to us.

Answers are not provided to clients until results have been submitted.

To prevent collusion and falsification our advice to clients is:

DON'T confer with others about PT samples or results.

DO accept the fact that everyone makes errors.

DON'T average the results or opinions of every person in the laboratory before selecting the answer to be submitted. Instead, use one of the answers AS SUBMITTED to you and take advantage of the Coal Concepts internal QA services and submit all answers generated by the technicians.

DO have confidence in your own results.

Proficiency Testing (PT) is a compulsory part of laboratory accreditation, but it is also an important tool for giving you confidence in your results. "Enhancing" your PT results with assistance from another participant cannot increase confidence in your laboratory's performance.

Coal concepts' testing staff are not told what the expected results are, nor what we are expecting.

We subject ALL results to analysis, even if they are different.

The staff have the right to check that the results we enter on their behalf are correctly transcribed.

Clients are always welcome to contact Coal Concepts to seek advice or information about collusion or falsification of data.

Policy for Participant Appeal of PT Performance Assessment:

If participants disagree with their performance assessment in a proficiency report, they should inform Coal Concepts in writing.

The response will include Coal Concepts interpretation of the outcome of the reassessment and an explanation of that outcome. (For example, explanation of a calculation, or the rationale for the outcome of the evaluation.)

If a mistake has been made by Coal Concepts, it will be dealt with via Coal Concepts' non-conformance system.

Liability

In no event shall a party's liability to the other party for direct damages exceed an amount equal to the value of the amount for the PT Programme, under that specific month