Preliminary Metallurgical Assessment
Douay Gold Project

BL0166
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BASE Met Labs

PRELIMINARY METALLURGICAL ASSESSMENT DOUAY GOLD PROJECT BL0166

Contents

Appendices:

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1.0 Introduction

The Douay Gold Project is located 120 km north of Amos, Quebec. The project has many claims, covering several separate gold zones. Aurvista Gold Corporation owns either 100 percent or controlling interest in these claims and is interested in developing the project further. A program of metallurgical testing was authorized to support this development.

The deposit is generally described as a low grade gold deposit with 2.7 Mt of indicated resource at 2.76 g/tonne gold above 0.3 g/tonne gold cut off. The Inferred Resource is estimated at 115 Mt at 0.75 g/tonne Au above 0.3 g/tonne gold cut off.

Previous testing indicated that sample responded well to direct cyanidation achieving between 90 and 95 percent gold extraction. The testing also indicated that neither gravity nor flotation had favourable results. The testing was performed on a single composite grading 4.67 g/tonne gold.

This metallurgical program investigated several discrete zones of the project. Samples were selected to provide a wide spatial coverage of each zone with a range of gold feed grades that were close to the nominal resource grades.

A total of 10 composites were evaluated with direct cyanidation, flotation and gravity to ascertain preliminary recovery estimates and basic process parameters for cost estimation.

The report summarizes key results from this test program, using data summaries and graphical displays. Detailed results, such as condition sheets and full sizing distribution can be found in the Appendices as follows:

- Appendix A: Chain of Custody
- Appendix B: Metallurgical Testing
- Appendix C: Assays
- Appendix D: Comminution Testing
- Appendix E: Sizings
- Appendix F: Mineralogy

2.0 Composite Construction

The Aurvista geologist selected composites to achieve the following criteria:

- Include samples from multiple drill holes that provide a wide spatial coverage of each zone.
- Intervals selected from each drill hole were contiguous, representing a reasonable mining section.
- Overall gold grade of the selections achieved close to the resource grade of the deposit.

The samples provided for testing were quarter sawn drill core sections. The age of the core covered a wide range, some of the core originated from drilling in the early 90's to some of the more recent drill campaigns. Despite the age of some of the drill core, the sections were competent and showed no visible signs of oxidation.

Random pieces of core were removed for detailed in-situ density measurements using a dipped wax method. The results of this data can be found in Appendix D. The drill core designated for each composite was then crushed and screened to pass 3.35 mm in preparation for testing.

A summary of the drill holes used for each composite are shown in Table 1. A drill hole plan map and drill hole section maps with the samples used in the composites can be reviewed in Appendix A.

TABLE 1
COMPOSITE CONSTRUCTION

Composite	Hole ID	From	To	Au g/tonne	Mass Received kg
Z10	D-93-09	83.82	102.1	2.45	10.5
	DO-11-61	82.00	110.0	5.25	25.2
	DO-11-64	124.0	131.0	1.31	6.53
	DO-11-66	139.0	174.0	1.00	21.0
Z20	D-92-24	41.15	56.39	1.18	4.46
	DO-13-110	20.00	58.00	0.75	27.3
	DO-13-112	218.5	254.9	0.99	13.1
Z531	70531-2	401.0	425.2	1.40	9.81
	D-92-34A	343.1	358.1	3.32	7.94
	D-92-38	270.3	283.5	0.94	3.03
	D-92-39	307.9	323.1	5.16	7.55
	D-93-05	182.9	362.1	1.35	8.09
	DO-07-28	384.0	386.0	1.37	2.3
DW1	D-111	57.00	85.50	0.49	10.6
	D-112	31.50	46.50	2.32	10.5
	D-122	254.0	258.9	1.15	6.07
	D-123	96.00	150.0	1.60	9.62
	D-128	151.0	161.0	2.30	11.3
DW2	D-105	53.00	86.00	1.82	16.6
	D-107	57.50	72.50	5.52	13.4
	D-111	36.00	57.00	2.86	23.1
MZ	40687	274.9	281.0	3.34	4.44
	40694-1	322.2	340.5	1.42	12.1
	70521	363.3	365.5	0.99	2.23
	70527	573.3	579.7	0.98	3.88
	70554	404.0	411.5	4.15	3.46
	DO-07-29	272.8	273.4	0.95	1.59
	DO-07-30	102.5	107.5	1.29	1.83
	DO-07-31	208.2	219.0	2.09	7.09
NW1	4140-93-01	182.0	244.1	7.41	3.09
	4140-93-03	200.9	204.0	2.49	1.16
	4140-93-04	148.5	196.8	1.64	2.29
	4140-93-06	208.0	256.0	0.91	6.73
	4140-94-04	98.00	103.5	0.68	2.66
	4140-94-09	197.5	201.8	0.96	2.47
	4140-94-12	53.00	91.00	1.11	3.64
	4140-96-11	41.50	55.00	0.66	2.82
	4140-97-16	141.0	144.0	1.03	1.69
NW2	DO-13-131	131.5	309.5	0.82	17.6
	DO-13-133	133.5	291.0	0.45	10.4
	DO-11-68	423.0	432.0	0.90	9.25
POR1	DO-05-01	114.0	157.5	2.83	10.8
	DO-05-05	295.0	301.7	1.86	6.33
	DO-06-10	50.50	97.50	1.66	12.2
	DO-11-45	130.0	140.5	1.38	6.40
	DO-11-47	68.50	172.0	1.38	23.2
	DO-12-90	278.0	287.0	2.16	6.93
POR2	DO-11-70	196.5	249.0	2.12	39.6
	DO-13-128	73.50	88.00	1.32	8.66
	DO-13-129	201.0	210.0	1.68	8.90

3.0 Ore Characterization

Sample properties, such as comminution (crushing/grindability), chemical and mineral contents play an important role in process flowsheet development. These properties for the Douay composites are discussed in more detail in the following sub-sections.

3.1 Comminution Testing

A single Master Composite was constructed and subject to Bond ball mill work index testing to provide information regarding grinding energy requirements in a ball mill. A summary of the results is provided in Table 2. The Bond Ball Work Index value of the Master Composite was determined to be 18.5 kWh/tonne. On this basis, this sample would be considered relatively hard.

TABLE 2: COMMINUTION TEST RESULTS

Sample ID	Bond Ball Mill Work Index kWh/tonne
Master Composite	18.5

Note: Test data is located in Appendix D. The product size was 78µm K_{80}. The Master composite was an equal weighting of sample from each zone.

TABLE 3: COMPARATIVE BOND INDEX

Sample ID	Comparative BWi kWh/tonne
DW1	20.3
DW2	23.4
MZ	20.3
Z20	21.9
Z531	15.6
POR1	18.7
POR2	18.7
NW1	13.3
MZ	14.1
NW2	18.7

Shown in Table 3 are the results from a comparative Bond ball mill work index calculations. These results were calculated for each composite with an open circuit grind calibration test which is compared to the Master Composite of known work index. There was considerable variation in energy requirements from zone to zone. As the project advances, additional sampling and testing will be required to size the comminution circuit.

3.2 Chemical Content

Two representative head cuts were removed from each of the samples and analyzed for chemical content using standard analytical techniques. The results for elements of interest in this project are presented in Table 4. Full results are provided in Appendix C.

The samples contained between 0.8 and 4.0 g/tonne gold. Composite DW 2 contained a considerably higher concentration of gold compared to the other composites. Silver was also present in the samples ranging between 0.3 and 2.5 g/tonne. NW 1 and NW 2 contained higher concentrations of arsenic at 146 and 100 g/tonne. If the higher arsenic concentration is associated with arsenopyrite, this area may have potential for lower leaching performance. Gold associated with arsenopyrite can often be colloidal or refractory in nature.

The sulphur values range from 0.46 to 2.96 percent indicating the presence of sulphides. A flotation process could therefore be used to extract a gold bearing concentrate. Flotation tests will confirm if gold is associated with sulphides.

The carbon and organic carbon values in the composite are shown as C and TOC in the table, respectively. Organic carbon can be problematic for cyanide leaching of samples as it allows adsorption of dissolved gold, which ends up in the leach residue. This phenomenon is referred to as “preg-robbing”. The samples had very low levels of organic carbon, therefore no impact on leaching performance would be expected.

TABLE 4: HEAD ASSAY DATA

Composite	Analyte and Unit Symbol							
	S %	C %	TOC %	Au g/t	Ag g/t	Cu %	Zn g/t	As g/t
NW1	1.17	2.45	0.03	**1.70**	0.6	0.004	0.006	146
NW2	1.50	3.11	0.02	**0.78**	2.5	0.005	0.011	100
Z20	0.46	1.45	0.01	**0.78**	0.3	0.007	0.006	<2
Z531	1.67	3.02	0.02	**2.37**	0.8	0.012	0.028	9
POR1	1.36	2.12	0.01	**1.74**	0.7	0.011	0.007	4
POR2	1.55	3.04	0.01	**2.11**	0.7	0.015	0.008	65
MZ	1.04	2.10	0.01	**1.66**	1.3	0.004	0.015	38
DW1	1.56	2.40	0.02	**1.23**	0.7	0.011	0.009	8
DW2	1.57	2.62	0.02	**4.00**	1.0	0.011	0.007	3
Z10	2.96	2.60	0.02	**2.57**	0.6	0.010	0.006	5
Average	1.48	2.49	0.02	1.89	0.90	0.01	0.010	42

Note: Detailed Assay Data can be found in Appendix C.

3.3 Mineralogical Characterization

The mineral composition of the samples was determined by completing a Bulk Mineral Analysis (BMA) on an unsized sample from each of the composites. This analysis also provides sulphide distribution in the sample. The resulting data has been summarized in Figure 1 and Table 5. Table 5 displays the sulphide distribution in the samples. Detailed data can be found in Appendix F.

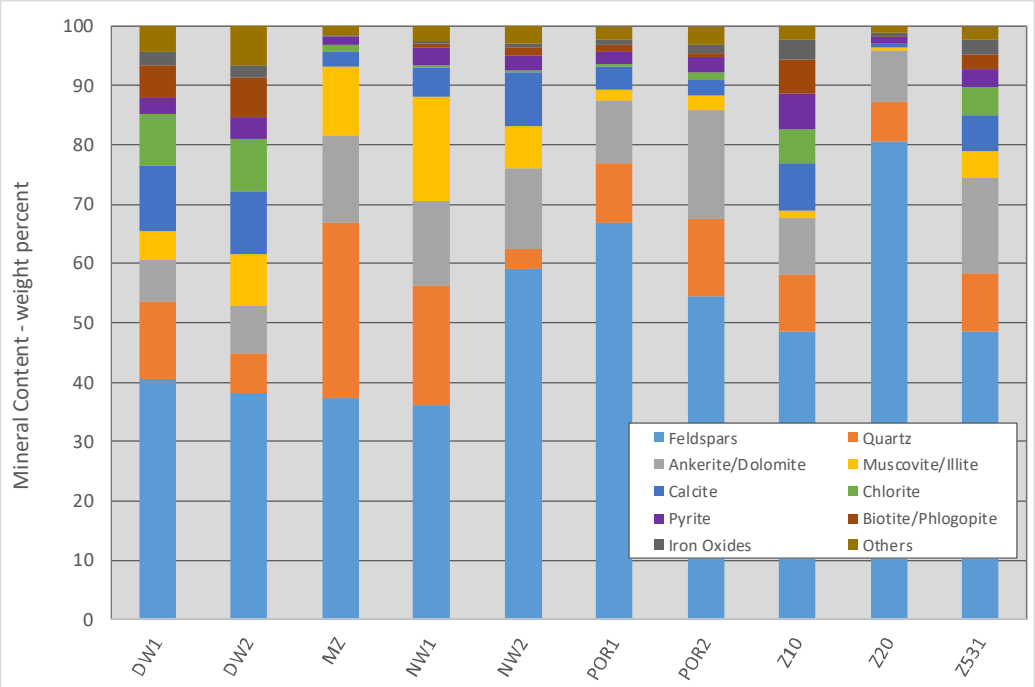
The samples consisted of mainly feldspars and quartz and carbonate minerals. The carbonate minerals observed were calcite, dolomite and ankerite. The presence of carbonate minerals is often favourable as these minerals can offset any potential acid generation from tailings and waste rock dumps.

The sulphide content of the samples ranged from 0.5 to 3 percent of the feed mass. The overwhelming majority of the sulphide mineralization occurred as pyrite. However, there were trace levels of other minerals that may influence the process.

Copper sulphide, galena, sphalerite and barite mineral in all ten samples was less than 0.1 and therefore not shown on the graph. None of these other minerals were in high enough concentrate to anticipate interference with gold extraction by cyanide leaching.

The two samples from the NW zone had elevated levels of arsenic, but no measurable levels of arsenopyrite were detected in the mineralogical scan. More detailed investigation would be required to define the arsenic bearing minerals in theses samples.

FIGURE 1
BULK MINERAL ANALYSIS RESULTS



Note: 1) Iron Oxides includes Magnetite, Hematite, Ilmenite, Ti-Hematite, Steel/Pure Iron, Ilmenite and Goethite.
2) Chlorite includes Epidote and Tourmaline; Calcite includes Mn-calcite.
3) Others includes trace amounts of Scheelite, CeSb-Mineral, Ni-Sulphide, SrAl-Phosphate and unresolved mineral species.

TABLE 5
SULPHIDE MINERAL DISTRIBUTION

Minerals	Distribution of Sulphur - percent									
	DW1	DW2	MZ	NW1	NW2	POR1	POR2	Z10	Z20	Z531
Cu-Sulphides	0.8	0.2	0.3	0.6	0.9	0.4	0.3	1.2	2.0	1.2
Galena	0	0.2	<0.1	0	0	0.1	0.1	<0.1	0.1	0.1
Sphalerite	0	0	0	0.7	<0.1	<0.1	0.3	0.1	0	0.2
Pyrite	98.8	98.8	99.6	98.3	98.9	99.3	99.3	97.6	97.6	97.2
Barite/Ca-Sulphate	0.4	0.7	0.1	0.4	0.2	0.2	<0.1	1.1	0.3	1.3
Total	100	100	100	100	100	100	100	100	100	100

4.0 Metallurgical Testing

The ten discrete zone samples from the Douay Gold Project were evaluated using typical gold extraction processes. These included whole ore leach tests, gravity concentration testing, rougher flotation testing and leaching of flotation concentrates. Test conditions, procedures and results are discussed in further detail in the following sub-sections.

4.1 Whole Ore Leach Tests

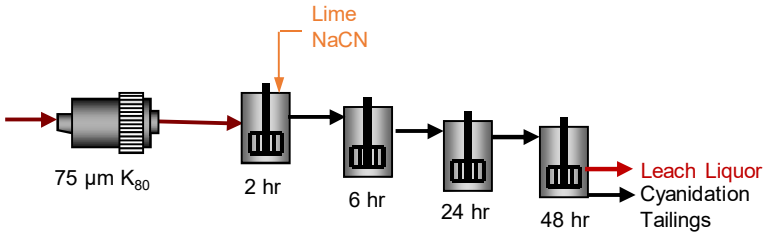
Standard 48-hour cyanidation bottle roll tests were conducted on each of the samples, ground to a nominal 75µm K_{80}. Sodium cyanide concentration of 1,000 ppm was utilized while pH in the circuits was maintained at 11.0 using lime. Samples were collected at 2, 6, 24 and 48 hours and assayed for gold and silver. Detailed test data and results are located in Appendix B. The flowsheet schematic used for these tests, along with a summary of the test results is shown in Figure 2.

Gold from the composites was between 52 and 94 percent extracted from the leach process, averaging at about 81 percent gold recovery. With an average sodium cyanide consumption of approximately 0.3 kg/tonne and an average lime consumption of approximately 1.4 kg/tonne.

Gold extraction from the NW1 and NW2 samples were exceptionally poor at an average 52 percent. Most of the samples displayed relatively fast cyanide leach kinetics reaching a plateau at about 6 hours. The only exception might have been the Z20 composite, showing extraction of gold to continue up until 48 hours.

Silver grades in the feed are relatively low and will only make a small contribution to potential revenue for the project. Extractions of silver by whole ore leach ranged from 65 to 89 percent. The silver leach kinetics were for the most part slower than gold. Many samples indicated continued silver dissolution at the 48 hour time period. This is common for silver as there are many silver minerals with slow cyanide leach kinetics.

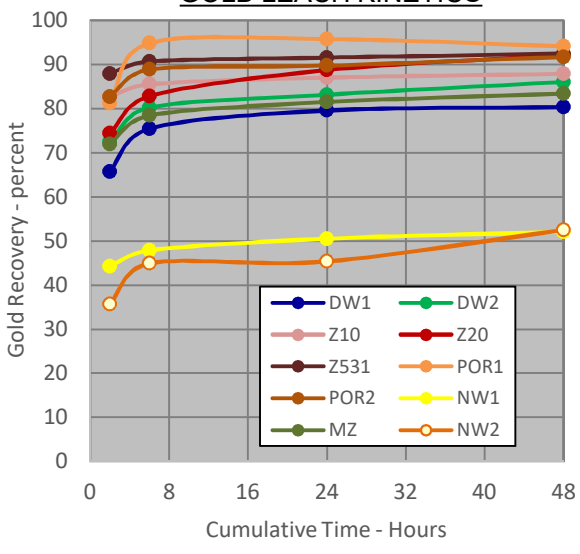
FIGURE 2
WHOLE ORE LEACH RESULTS



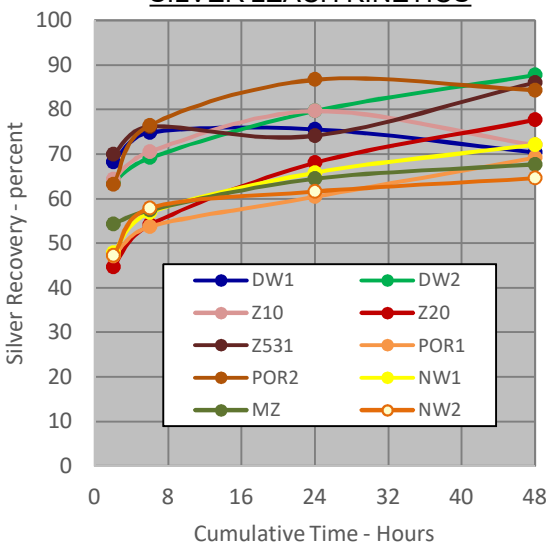
WHOLE ORE LEACH RESULTS

Sample ID	Test	P. Grind Size	NaCN	Au Extraction	Au Residue	Reagent Cons. - kg/tonne	
		µm K80	g/tonne	Percent	g/tonne	NaCN	Lime
DW1	1	75	1000	80.4	0.35	0.2	1.2
DW2	2	75	1000	86.0	0.40	0.2	1.4
Z10	3	75	1000	87.9	0.36	0.7	1.4
Z20	4	75	1000	92.2	0.06	0.2	1.4
Z531	5	75	1000	92.5	0.17	0.2	1.4
POR1	6	75	1000	94.1	0.09	0.3	1.5
POR2	7	75	1000	91.7	0.16	0.9	1.8
NW1	8	75	1000	52.1	0.90	0.1	1.0
MZ	9	75	1000	83.4	0.29	0.2	1.1
NW2	10	75	1000	52.5	0.43	0.3	1.4

GOLD LEACH KINETICS



SILVER LEACH KINETICS



Note: Detailed test conditions and results are located in Appendix B.

4.2 Gravity and Rougher Flotation Tests

To assess gold extraction by gravity and flotation, the composites were subject to a gravity concentration test followed by panning. The pan tailings along with the Knelson concentrator tailings were then subject to an open circuit rougher flotation testing. A primary grind size of 75µm K_{80} was targeted for these tests. A standard, low operating cost flotation process was conducted at natural pH and using Potassium Amyl Xanthate (PAX) as the collector.

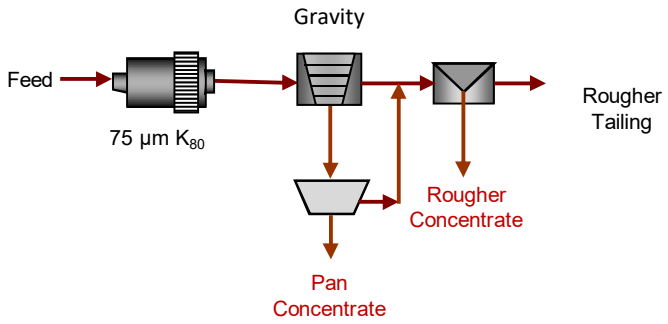
Detailed test data and results are located in Appendix B. The flowsheet schematic used for these tests, along with a summary of the test results in shown in Figure 3.

Gold recovery via gravity concentration varied considerably among the composites, ranging from 14 to 46 percent. Gold recovered to the pan concentrates assayed between 19 and 96 g/tonne. Based on this data, production of a high-grade gravity concentration for sale and high recovery will be unlikely for most of the samples.

Flotation of the sulphides was successful at recovering the remaining gold bearing minerals into concentrate. Another 49 to 78 percent of the gold in the gravity and pan tailings were recovered via rougher flotation. The concentrate grade ranged between 6 and 19 g/tonne gold. The combined recovery performance was relatively consistent across the composites. Total gold recovery ranged from 88 to 97 percent (average 92 percent) into a combined gravity- flotation concentrate. This concentrate would not be sufficiently high grade to market as a gold bearing sulphide concentrate. Further upgrading by concentrate cleaning was not considered at this stage in the testing because theoretical calculations of the potential upgrading of the concentrate indicated that gold would still fall short of targets to market the concentrate as a gold concentrate.

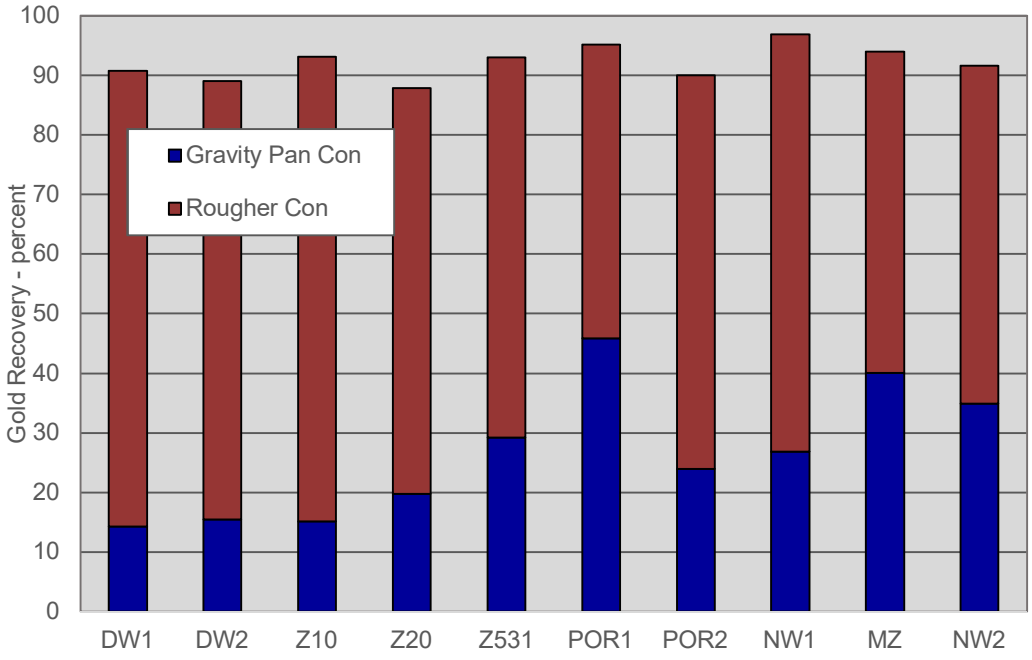
The combined gravity and flotation concentrate recovery at an average 92 percent of the feed gold was recovered at an average mass recovery of 9 percent. Sulphur recovery for the composites was 91 percent to a combined gravity and rougher concentrate. This would indicate that there is a strong association between gold and sulphur.

FIGURE 3
GRAVITY ROUGHER FLOTATION TESTING



Sample ID	Mass Pull %	Primary Grind Size µm K80	Au Recovery Extraction - %			Au Grade - g/tonne	
			Grav	Float	Total	Grav	Float
DW1	8.7	75	14.3	76.4	90.7	29.0	15.8
DW2	9.0	75	15.5	73.6	89.1	48.0	18.9
Z10	11.1	75	15.2	78.0	93.1	31.4	17.9
Z20	5.8	75	19.7	68.2	87.9	18.5	7.5
Z531	9.3	75	29.2	63.8	93.0	61.0	13.9
POR1	9.3	75	45.8	49.4	95.2	71.0	9.1
POR2	9.9	75	23.9	66.1	90.0	34.9	11.2
NW1	8.4	75	26.8	70.1	96.9	59.0	18.8
MZ	8.7	75	40.0	53.9	93.9	96.0	12.4
NW2	9.3	75	34.9	56.7	91.6	31.1	5.7

COMBINED GOLD RECOVERY BY GRAVITY AND FLOTATION



Note: Detailed Test data can be located in Appendix B

4.3 Gravity Rougher Concentrate Cyanidation Tests

To exploit the apparent relationship between gold and sulphides, additional gravity and rougher flotation tests were conducted followed by cyanide leaching of the rougher concentrate.

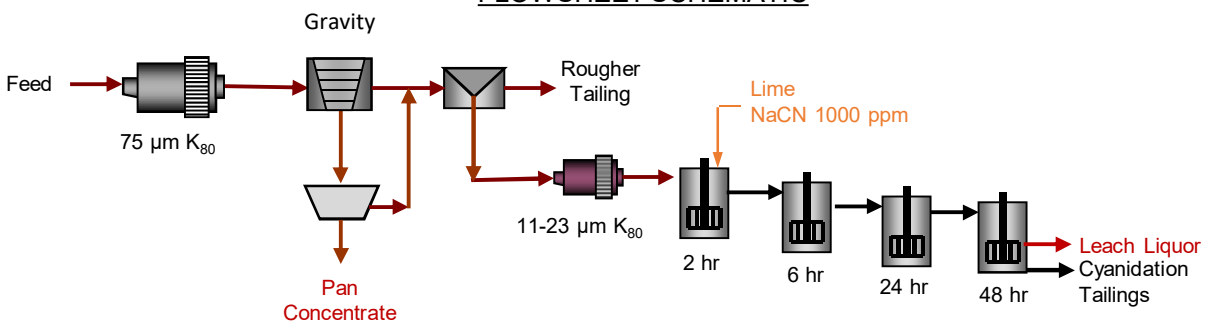
Similar to the previous tests, the samples were subject to a gravity concentration test followed by panning techniques. A primary grind size of 75µm K_{80} was targeted for these tests. The pan tailings along with the Knelson concentrator tailings were then subject to a rougher flotation testing. The concentrate from the rougher tests were homogenized and split into two equal samples which were reground targeting two regrind sizes and used as a feed for two further cyanidation tests. The regrind size targets were 20µm K_{80} and 15µm K_{80}. Detailed test data and results are located in Appendix B. The flowsheet schematic used for these tests, along with a summary of the test results in shown in Figure 4.

For these tests, a 2-kilogram sample feed was processed to produce sufficient concentrate for two leach tests. A higher rougher mass pull was also targeted to maximize gold recovery. On average, the rougher concentrates consisted of about 12 percent of the feed mass. By leaching the rougher concentrate, gold was between 45 and 82 percent extracted.

The graph at the bottom of Figure 4, displays gold recoveries for the ten composites using two different flowsheets; whole ore leach, and gravity float leach. On average, the best performance was achieved with the gravity-flotation-leach with the fine regrind. Reducing the concentrate size from nominally 20µm K_{80} to 15µm K_{80} increased the average total gold recovery by 2.6 percent.

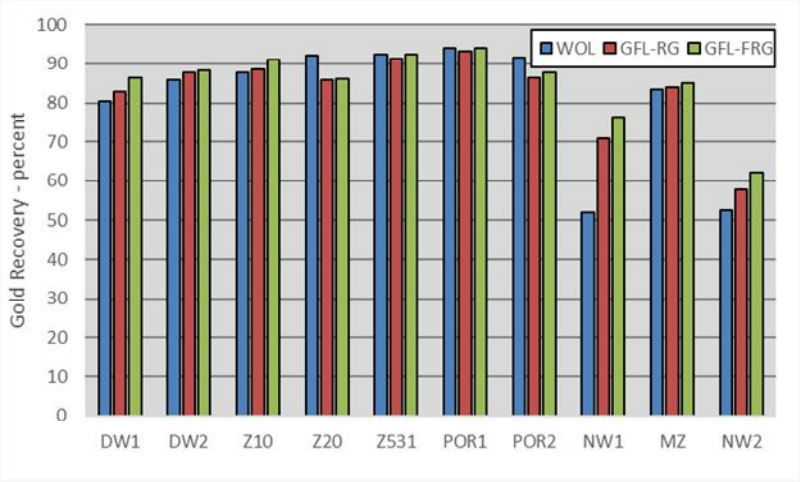
The gravity-flotation-leach process was an improvement over whole ore leaching for many of the samples. In particular, the DW1, DW2, NW1 and NW2 samples had better performance. The NW samples still have much poorer performance than the other composites. Additional testing will be required to understand why the NW samples have poorer performance.

FIGURE 4
FLOWSHEET SCHEMATIC



Composite	Process	Ro Con Mass	Grind Size µm K80		Au Recovery - Distribution %			Overall Reagent Cons. kg/tonne	
		Percent	PG	RG	Grav	Float -Leach	Total	NaCN	Lime
DW1	WOL	-	75	-	-	-	**80.4**	0.2	1.2
	GFL-RG	15.9	75	15.2	6.3	76.7	**83.0**	0.3	0.5
	GFL-FRG	15.9	75	10.6	6.3	80.0	**86.3**	0.3	0.6
DW2	WOL	-	75	-	-	-	**86.0**	0.2	1.4
	GFL-RG	11.8	75	15.9	9.3	78.5	**87.8**	0.2	0.5
	GFL-FRG	11.8	75	11.8	9.3	79.1	**88.4**	0.3	0.4
Z10	WOL	-	75	-	-	-	**87.9**	0.7	1.4
	GFL-RG	11.9	75	19.7	6.6	82.0	**88.6**	0.2	0.3
	GFL-FRG	11.9	75	12.2	6.6	84.5	**91.1**	0.3	0.4
Z20	WOL	-	75	-	-	-	**92.2**	0.2	1.4
	GFL-RG	11.6	75	16.5	20.0	65.8	**85.8**	0.1	0.3
	GFL-FRG	11.6	75	12.6	20.0	66.1	**86.1**	0.1	0.3
Z531	WOL	-	75	-	-	-	**92.5**	0.2	1.4
	GFL-RG	11.4	75	18.0	13.4	77.8	**91.2**	0.2	0.3
	GFL-FRG	11.4	75	15.4	13.4	78.9	**92.3**	0.2	0.4
POR1	WOL	-	75	-	-	-	**94.1**	0.3	1.5
	GFL-RG	11.3	75	17.2	24.1	69.2	**93.3**	0.1	0.3
	GFL-FRG	11.3	75	13.4	24.1	69.9	**94.0**	0.2	0.4
POR2	WOL	-	75	-	-	-	**91.7**	0.9	1.8
	GFL-RG	12.0	75	18.6	9.3	77.0	**86.3**	0.2	0.3
	GFL-FRG	12.0	75	12.6	9.3	78.6	**87.9**	0.3	0.4
NW1	WOL	-	75	-	-	-	**52.1**	0.1	1.0
	GFL-RG	12.0	75	17.1	13.6	57.3	**70.9**	0.1	0.3
	GFL-FRG	12.0	75	14.5	13.6	62.9	**76.5**	0.2	0.3
MZ	WOL	-	75	-	-	-	**83.4**	0.2	1.1
	GFL-RG	10.9	75	16.6	26.7	57.3	**84.0**	0.1	0.3
	GFL-FRG	10.9	75	14.7	26.7	58.3	**85.0**	0.1	0.3
NW2	WOL	-	75	-	-	-	**52.5**	0.3	1.4
	GFL-RG	11.4	75	23.2	12.6	45.1	**57.7**	0.1	0.2
	GFL-FRG	11.4	75	14.7	12.6	49.5	**62.1**	0.2	0.3

Note: WOL-Whole Ore Leach, GFL-RG Float Leach, GFL-FRG- Gravity Float Leach with finer regrind



Note: Detailed Test data can be located in Appendix B

5.0 Settling Tests

Settling tests were conducted on the rougher tailings from Tests 21 to 30. Magna Floc 1011 was used in all tests at a dosage of 10 g/tonne. This flocculent provided good performance for most of the samples. Results are summarized in Table 6. Detailed test data can be found in Appendix B.

Settling rates for the samples varied considerably, measuring between 48 and 516 mm/min at an average final density of approximately 60 percent solids.

TABLE 6: SETTLING TEST RESULTS

Composite ID	Product	Free Settling Rate (mm/min)	Tailing Volume m^3/t of solids	Final Density (% solids)
DW1	Test 21 Rougher Tailings	408	1.10	57.6
DW2	Test 22 Rougher Tailings	285	1.09	57.5
Z10	Test 23 Rougher Tailings	346	1.02	61.0
Z20	Test 24 Rougher Tailings	188	0.98	62.5
Z531	Test 25 Rougher Tailings	288	0.94	63.6
POR1	Test 26 Rougher Tailings	516	1.07	58.4
POR2	Test 27Rougher Tailings	207	1.02	60.4
NW1	Test 26 Rougher Tailings	245	1.11	57.0
MZ	Test 29 Rougher Tailings	48	1.05	59.2
NW2	Test 30 Rougher Tailings	75	0.94	63.9

Note: settling tests were conducted for a period of 24 to 96 hours.

6.0 Conclusions

Ten composites from the Douay Gold Project were submitted for metallurgical testing. The samples contained between 0.78 and 4.0 g/tonne gold. The average gold grade of the samples was 1.89 g/tonne. Silver was also detected in the samples, but the average grade was 0.9 g/tonne and would not contribute significantly to the project revenue.

The samples also contained on average 1.5 percent sulphur. Analysis for organic carbon, copper, zinc and arsenic; elements that can affect the process selection and performance, all came back at relatively low levels.

Analysis for mineral content indicated that the samples contained relatively low levels of pyrite, with trace levels of other sulphides. Feldspars, quartz and carbonate minerals dominated the remaining rock mass.

A Bond ball mill work index determination was performed on a master composite of all the zones and indicated the project mineralization is relatively hard. The work index value was 18.5 kWh/tonne. A comparative Bond ball index technique was used to estimate the hardness of the individual composites. This data indicated that there was considerable variation from zone to zone. As the project advances, additional testing will be required to adequately design the crushing and grinding circuit.

Each sample was evaluated at 75µm K_{80} using cyanide leaching at 1,000 ppm sodium cyanide concentration and pH 11. The response was highly variable; 4 samples achieved greater than 90 percent extraction. However, the average performance extraction was 81 percent, with 2 samples from the NW zone having only 52 percent extraction. Cyanide and lime consumption was low averaging 0.3 and 1.4 kg/tonne respectively.

Similarly, each composite was evaluated by gravity and flotation. The average gravity recovery was 26 percent with flotation recovering an additional 66 percent on average (total 92). The concentrate mass was between 8 and 12 percent, but the concentrate gold grade was insufficient to market this concentrate. The tests indicated a strong correlation between gold recovery and sulphur recovery, indicating that gold may be associated with the sulphides.

To exploit the sulphur and gold relationship, another series of test were performed to recover a gravity and flotation concentrate with cyanide leaching of the flotation concentrate. Leaching tests were performed on the flotation concentrate; reground to 2 different leach sizes: 20µm K_{80} and 15µm K_{80}. The finer regrind size produced the best performance when compared to the coarser

regrind and the whole ore cyanide leach performance. The average leach performance was 85 percent. This process improved the performance of the NW composites, but they still lagged in comparison to the other composites. The average recovery of this process, excluding the NW samples was 88.9 percent.

The gravity-flotation-leach (GFL) process will have capital and operating cost advantages over whole ore leach. Flotation process equipment would be required, but the subsequent leach circuit would be approximately one tenth the size of the whole ore leach process. The cyanide and lime consumption of the GFL process would be 0.2 and 0.4 kg/tonne of feed.

7.0 Recommendations

The initial testing indicated that a gravity-flotation-leaching process produced better overall metallurgical performance. Additional testing would be required to optimize the following items:

- Investigate a range of primary grind sizes for gravity and flotation.
- Optimize concentrate leach conditions including regrind size, cyanide dosage, pH and additives like lead nitrate.
- Investigate removal of the gravity circuit or include the gravity concentrate in the regrind and leaching circuit.
- Investigate flotation cleaning as a possible means of reducing the leaching circuit size.

Further development of the project will require a better understanding of the comminution properties of the various zones. Specific Bond Crushing, Bond Abrasion, Bond Rod mill testing or other comminution tests should be performed on coarser drill core material. The current drill core material available is too small in diameter and larger diameter drill core will be required for this testing.

A gold deportment study on the NW zones should be considered to better understand why this zone has inferior performance to the other zones. This material should be considered separately from the other zones.

APPENDIX A – CHAIN OF CUSTODY

APPENDIX A
CHAIN OF CUSTODY

Samples were received at Base Metallurgical Laboratories in a single shipment on January 10, 2017. Table A-1 provides the sample identification and mass information for the samples received. Composite information is also shown, as provided by Aurvista Gold.

Samples were received by composite in plastic buckets, with each individual drill interval bagged in plastic bags corresponding to the sample identification number. The drill core was air dried prior to sample preparation. Random core interval pieces were selected from each of the composites. The random pieces of core were wax dipped for an in-situ density measurement and were not used in the subsequent metallurgical composites. Select pictures of the samples, selected for density measurement are presented in Photo A-1.

For each composite, the remainder of the drill sample was crushed and screened to pass 3.35 mm or 6 mesh. The material was homogenized and riffled into 1 kg charges for subsequent metallurgical testing. The test charges were sealed in plastic bags to minimize oxidation.

Duplicate and representative head samples were removed from each composite. These samples were pulverized in preparation for assaying. Details of the head assays can be found in Appendix C, Table C-1.

TABLE A-1A
SAMPLE RECEIVED - Z10

Comp 3	Estimated	Actual
Mass(kg)	35.68	63.14
g/t	2.8	3.0

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
D-93-09	83.82	85.34	1.52	CX9401	2.01	Z10	1.22
D-93-09	85.34	86.87	1.53	CX9402	6.38	Z10	0.91
D-93-09	86.87	88.39	1.52	CX9403	4.15	Z10	0.79
D-93-09	88.39	89.92	1.53	CX9404	0.377	Z10	0.65
D-93-09	89.92	91.44	1.52	CX9405	5.51	Z10	0.75
D-93-09	91.44	92.96	1.52	CX9406	1.55	Z10	0.81
D-93-09	92.96	94.49	1.53	CX9407	3.46	Z10	0.87
D-93-09	94.49	96.01	1.52	CX9408	2.42	Z10	0.93
D-93-09	96.01	97.54	1.53	CX9409	1.03	Z10	0.68
D-93-09	97.54	99.06	1.52	CX9410	0.367	Z10	0.83
D-93-09	99.06	100.58	1.52	CX9411	1.48	Z10	1.15
D-93-09	100.58	102.11	1.53	CX9412	0.619	Z10	0.87
D-93-22	97.69	99.06	1.37	CX10983	2.13	Z10	
D-93-22	99.06	100.58	1.52	CX10984	1.44	Z10	
D-93-22	102.11	103.63	1.52	CX10986	0.446	Z10	
DO-11-61	82	83	1	K488594	0.321	Z10	1.23
DO-11-61	84	85	1	K488597	4.09	Z10	1.25
DO-11-61	86	87	1	K488599	0.423	Z10	1.32
DO-11-61	87	88	1	K488600	0.385	Z10	1.4
DO-11-61	88	89	1	K488601	0.967	Z10	1.31
DO-11-61	89	90	1	K488602	5.49	Z10	1.36
DO-11-61	94	95	1	K488607	0.582	Z10	1.24
DO-11-61	95	96	1	K488608	0.531	Z10	1.27
DO-11-61	98	99	1	K488611	5.32	Z10	1.55
DO-11-61	99	100	1	K488612	3.11	Z10	1.26
DO-11-61	100	101	1	K488613	2.59	Z10	1.19
DO-11-61	101	102	1	K488614	5.72	Z10	1.57
DO-11-61	102	103	1	K488615	11.5	Z10	1.4
DO-11-61	103	104	1	K488616	9.81	Z10	1.23
DO-11-61	104	105	1	K488617	17.2	Z10	
DO-11-61	105	106	1	K488619	22.3	Z10	1.47
DO-11-61	106	107	1	K488620	9.54	Z10	1.39
DO-11-61	107	108	1	K488621	2.94	Z10	1.32
DO-11-61	108	109	1	K488622	4.99	Z10	1.36
DO-11-61	109	110	1	K488623	6	Z10	1.05
DO-11-64	124	125	1	K491386	3.08	Z10	1.09
DO-11-64	126	127	1	K491388	1.06	Z10	1.15
DO-11-64	127	128	1	K491389	0.717	Z10	1.08

TABLE A-1A Continued
SAMPLE RECEIVED - Z10

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
DO-11-64	128	129	1	K491390	0.435	Z10	1.12
DO-11-64	129	130	1	K491391	1.67	Z10	1.07
DO-11-64	130	131	1	K491392	0.897	Z10	1.02
DO-11-66	139	140	1	K491741	0.754	Z10	0.9
DO-11-66	142	143	1	K491744	2.22	Z10	1.03
DO-11-66	143	144	1	K491745	3.29	Z10	1.07
DO-11-66	144	145	1	K491746	0.364	Z10	1.05
DO-11-66	146	147	1	K491748	0.312	Z10	1.15
DO-11-66	147	148	1	K491750	0.317	Z10	1.13
DO-11-66	148	149	1	K491751	0.39	Z10	0.94
DO-11-66	149	150	1	K491752	1.055	Z10	1.07
DO-11-66	150	151	1	K491753	1.675	Z10	0.97
DO-11-66	151	152	1	K491754	1.43	Z10	0.97
DO-11-66	152	153	1	K491755	2.19	Z10	1.21
DO-11-66	153	154	1	K491756	1.175	Z10	1.46
DO-11-66	154	155	1	K491757	0.814	Z10	0.96
DO-11-66	155	156	1	K491758	0.83	Z10	0.96
DO-11-66	162	163	1	K491766	0.308	Z10	1.08
DO-11-66	163	164	1	K491767	0.469	Z10	0.97
DO-11-66	165	166	1	K491769	0.35	Z10	1.12
DO-11-66	168	169.3	1.3	K491772	0.757	Z10	1.05
DO-11-66	172	173	1	K491775	0.415	Z10	0.92
DO-11-66	173	174	1	K491776	0.629	Z10	0.97

TABLE A-1B
SAMPLE RECEIVED - Z20

Comp 4	Estimated	Actual
Mass(kg)	34.982	44.84
g/t	1.2	0.9

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
D-92-20	350.52	352.04	1.52	CX18846	0.55	Z20	
D-92-20	412.76	414.53	1.77	CX18877	7.2	Z20	
D-92-20	414.53	416.05	1.52	CX18878	8.95	Z20	
D-92-20	417.58	419.1	1.52	CX18880	2.9	Z20	
D-92-20	419.92	420.62	0.7	CX18882	1.32	Z20	
D-92-24	41.15	42.67	1.52	CX18908	0.614	Z20	0.97
D-92-24	44.2	45.72	1.52	CX18910	3.12	Z20	
D-92-24	48.77	50.29	1.52	CX18913	0.373	Z20	
D-92-24	50.29	51.82	1.53	CX18914	1.05	Z20	0.88
D-92-24	51.82	53.34	1.52	CX18915	1.06	Z20	0.86
D-92-24	53.34	54.86	1.52	CX18916	1.6	Z20	0.92
D-92-24	54.86	56.39	1.53	CX18917	1.63	Z20	0.83
D-92-33	342.9	344.42	1.52	CX6968	0.543	Z20	
D-92-33	344.42	345.95	1.53	CX6969	0.583	Z20	
D-92-33	345.95	347.47	1.52	CX6970	0.385	Z20	
D-92-33	350.52	352.04	1.52	CX6973	0.72	Z20	
D-92-33	352.04	353.57	1.53	CX6974	1.07	Z20	
D-92-33	353.57	355.09	1.52	CX6975	1.14	Z20	
D-92-33	355.09	356.62	1.53	CX6976	0.696	Z20	
DO-13-110	20	21	1	N097512	1.08	Z20	0.67
DO-13-110	21	22.5	1.5	N097513	0.383	Z20	1.70
DO-13-110	22.5	24	1.5	N097514	0.837	Z20	1.34
DO-13-110	24	25.5	1.5	N097515	0.602	Z20	1.38
DO-13-110	25.5	27	1.5	N097516	0.723	Z20	1.35
DO-13-110	27	28.5	1.5	N097557	0.57	Z20	1.52
DO-13-110	28.5	30	1.5	N097517	0.916	Z20	1.42
DO-13-110	30	31	1	N097518	0.911	Z20	1.03
DO-13-110	31	32	1	N097519	1.97	Z20	0.96
DO-13-110	32	33.6	1.6	N097558	0.522	Z20	1.54
DO-13-110	33.6	35	1.4	N097521	0.688	Z20	1.25
DO-13-110	35	36.5	1.5	N097522	0.758	Z20	1.50
DO-13-110	36.5	38	1.5	N097523	0.822	Z20	1.37
DO-13-110	38	39.5	1.5	N097524	0.435	Z20	1.31
DO-13-110	39.5	41	1.5	N097525	0.657	Z20	1.44
DO-13-110	41	41.85	0.85	N097526	0.779	Z20	0.76
DO-13-110	41.85	43	1.15	N097527	1.175	Z20	1.00
DO-13-110	52	53.5	1.5	N097536	0.584	Z20	1.41
DO-13-110	53.5	55	1.5	N097537	0.628	Z20	1.44

TABLE A-1B Continued
SAMPLE RECEIVED - Z20

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
DO-13-110	55	56.5	1.5	N097538	0.607	Z20	1.40
DO-13-110	56.5	58	1.5	N097539	0.959	Z20	1.54
DO-13-112	218.5	220	1.5	N097916	1.255	Z20	1.63
DO-13-112	220	221.5	1.5	N097917	0.316	Z20	1.71
DO-13-112	224.5	226	1.5	N097920	0.317	Z20	1.75
DO-13-112	226	227.5	1.5	N097921	0.606	Z20	1.81
DO-13-112	227.5	229	1.5	N097922	1.32	Z20	1.76
DO-13-112	248	249.5	1.5	N097938	0.309	Z20	1.74
DO-13-112	251	252.5	1.5	N097941	1.475	Z20	1.73
DO-13-112	254	254.9	0.9	N097943	3.49	Z20	0.92

TABLE A-1C
SAMPLE RECEIVED - Z531

Comp 5	Estimated	Actual
Mass(kg)	35.3585	38.72
g/t	2.2	2.5

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
70531-2	400.99	402.34	1.35	CX6498	0.35	Z531	0.75
70531-2	402.34	403.86	1.52	CX6499	2.3	Z531	0.67
70531-2	403.86	405.38	1.52	CX6500	2.08	Z531	0.85
70531-2	405.38	406.91	1.53	CX5976	1.17	Z531	0.75
70531-2	406.91	408.43	1.52	CX5977	1.44	Z531	
70531-2	408.43	409.96	1.53	CX5978	3.47	Z531	
70531-2	409.96	411.48	1.52	CX5979	9.46	Z531	
70531-2	411.48	413	1.52	CX5980	4.91	Z531	
70531-2	413	414.53	1.53	CX5981	3.02	Z531	0.82
70531-2	414.53	416.05	1.52	CX5982	0.36	Z531	0.79
70531-2	416.05	417.58	1.53	CX5983	1.67	Z531	0.86
70531-2	417.58	419.1	1.52	CX5984	0.34	Z531	0.84
70531-2	419.1	420.62	1.52	CX5985	0.05	Z531	0.80
70531-2	420.62	422.15	1.53	CX5986	3.47	Z531	0.90
70531-2	422.15	423.67	1.52	CX5987	0.47	Z531	0.91
70531-2	423.67	425.2	1.53	CX5988	1.34	Z531	0.87
D-92-34A	343.08	344.42	1.34	CX7809	3.51	Z531	0.67
D-92-34A	344.42	345.95	1.53	CX7810	3.33	Z531	0.75
D-92-34A	345.95	347.47	1.52	CX7811	2.16	Z531	0.87
D-92-34A	347.47	349	1.53	CX7812	2.67	Z531	0.81
D-92-34A	349	350.52	1.52	CX7813	3.19	Z531	0.87
D-92-34A	350.52	352.04	1.52	CX7814	6.45	Z531	0.85
D-92-34A	352.04	353.57	1.53	CX7815	2.57	Z531	0.75
D-92-34A	353.57	355.09	1.52	CX7816	5.25	Z531	0.86
D-92-34A	355.09	356.62	1.53	CX7817	2.54	Z531	0.74
D-92-34A	356.62	358.14	1.52	CX7818	1.2	Z531	0.77
D-92-38	270.33	271.42	1.09	CX7916	0.704	Z531	0.89
D-92-38	275.69	276.73	1.04	CX7920	2.45	Z531	0.59
D-92-38	279.35	280.72	1.37	CX7923	0.487	Z531	0.83
D-92-38	282.12	283.46	1.34	CX7925	0.535	Z531	0.72
D-92-39	307.85	309.37	1.52	CX7499	3.27	Z531	0.94
D-92-39	309.37	310.9	1.53	CX7500	12.64	Z531	0.50
D-92-39	310.9	312.42	1.52	CX7501	6.06	Z531	0.68
D-92-39	312.42	313.94	1.52	CX7502	3.57	Z531	0.69
D-92-39	313.94	315.47	1.53	CX7503	3.82	Z531	0.86
D-92-39	315.47	316.99	1.52	CX7504	2.18	Z531	0.80
D-92-39	316.99	318.52	1.53	CX7505	6.43	Z531	0.65
D-92-39	318.52	320.04	1.52	CX7506	4.91	Z531	0.97

TABLE A-1C Continued
SAMPLE RECEIVED - Z531

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
D-92-39	320.04	321.56	1.52	CX7507	9.57	Z531	0.57
D-92-39	321.56	323.09	1.53	CX7508	3.97	Z531	0.89
D-93-05	182.88	184.4	1.52	CX9827	0.409	Z531	0.97
D-93-05	184.4	185.93	1.53	CX9828	0.766	Z531	1.01
D-93-05	185.93	187.45	1.52	CX9829	2.08	Z531	0.91
D-93-05	187.45	188.98	1.53	CX9830	1.08	Z531	0.88
D-93-05	239.27	240.79	1.52	CX9852	1.25	Z531	1.01
D-93-05	240.79	242.32	1.53	CX9853	1.97	Z531	0.90
D-93-05	357.53	359.05	1.52	CX9872	0.41	Z531	0.82
D-93-05	359.05	360.58	1.53	CX9873	1.82	Z531	0.79
D-93-05	360.58	362.1	1.52	CX9874	2.61	Z531	0.80
D-93-13	397.76	399.29	1.53	CX10837	1.1	Z531	
D-93-13	399.29	400.81	1.52	CX10838	3.98	Z531	
D-93-13	400.81	402.34	1.53	CX10839	0.6	Z531	
D-93-13	402.34	403.86	1.52	CX10840	1.32	Z531	
D-93-13	403.86	405.38	1.52	CX10841	2.8	Z531	
D-93-13	405.38	406.91	1.53	CX10842	1.72	Z531	
D-93-13	411.48	413	1.52	CX10846	1.51	Z531	
D-93-13	413	414.53	1.53	CX10847	0.95	Z531	
D-93-13	414.53	416.05	1.52	CX10848	1.32	Z531	
D-93-13	419.1	420.62	1.52	CX10851	1.92	Z531	
D-93-13	420.62	422.15	1.53	CX10852	1.08	Z531	
DO-07-28	384	385	1	23395	0.444	Z531	1.14
DO-07-28	385	386	1	23396	2.286	Z531	1.16

TABLE A-1D
SAMPLE RECEIVED - DW1

Comp 1	Estimated	Actual
Mass(kg)	28.197	48.06
g/t	1.6	1.6

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
D-111	57	58.5	1.5	75759	0.38	DW	1.97
D-111	58.5	60	1.5	75776	0.71	DW	1.56
D-111	67.5	69	1.5	75782	0.39	DW	1.77
D-111	70.5	72	1.5	75784	0.57	DW	1.71
D-111	73.5	75	1.5	75787	0.34	DW	1.76
D-111	84	85.5	1.5	75794	0.57	DW	1.81
D-112	31.5	33	1.5	75825	2.68	DW	1.57
D-112	33	34.5	1.5	75826	1.97	DW	1.64
D-112	34.5	36	1.5	75827	2.89	DW	
D-112	36	37.5	1.5	75828	0.98	DW	
D-112	37.5	39	1.5	75829	1.05	DW	1.41
D-112	39	40.5	1.5	75830	2.17	DW	1.01
D-112	40.5	42	1.5	75831	0.80	DW	
D-112	42	43.5	1.5	75832	5.30	DW	1.44
D-112	43.5	45	1.5	75834	1.66	DW	1.85
D-112	45	46.5	1.5	75835	1.63	DW	1.56
D-122	254	255	1	28212	1.53	DW	1.26
D-122	255	255.9	0.9	28213	1.27	DW	1.05
D-122	255.9	256.9	1	28214	0.43	DW	1.13
D-122	256.9	257.9	1	28215	1.63	DW	1.19
D-122	257.9	258.9	1	28216	0.90	DW	1.44
D-123	96	97	1	28301	1.85	DW	1.26
D-123	97	98	1	28303	0.41	DW	1.19
D-123	143	143.8	0.8	28349	1.40	DW	1.04
D-123	143.8	145	1.2	28350	0.58	DW	1.52
D-123	146.2	147.2	1	28352	0.94	DW	1.34
D-123	147.2	148.2	1	28353	3.29	DW	1.22
D-123	148.2	149	0.8	28354	3.24	DW	1.01
D-123	149	150	1	28356	1.58	DW	1.04
D-128	151	152	1	28768	0.80	DW	1.29
D-128	153	154	1	28770	2.02	DW	1.23
D-128	154	155	1	28771	2.20	DW	1.29
D-128	155	155.9	0.9	28772	10.12	DW	1.23
D-128	155.9	156.8	0.9	28773	1.50	DW	1.17
D-128	156.8	157.6	0.8	28775	1.28	DW	0.99
D-128	157.6	158.5	0.9	28776	1.09	DW	1.15
D-128	158.5	159.5	1	28777	0.62	DW	1.2
D-128	159.5	160	0.5	28778	1.69	DW	0.64
D-128	160	161	1	28779	0.95	DW	1.12

TABLE A-1E

SAMPLE RECEIVED - DW2

Comp 2	Estimated	Actual
Mass(kg)	28.05	53.19
g/t	3.9	3.1

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
D-105	53	54	1	75590	0.33	DW	0.92
D-105	54	55	1	75591	6.51	DW	0.9
D-105	55	56	1	75592	1.21	DW	1.07
D-105	56	57.5	1.5	75593	1.99	DW	1.83
D-105	57.5	59	1.5	75594	0.66	DW	1.95
D-105	69	70	1	75602	1.00	DW	1.11
D-105	70	71	1	75603	1.05	DW	1.08
D-105	73	74	1	75606	0.48	DW	1.28
D-105	74	75	1	75608	2.55	DW	1.04
D-105	75	76	1	75609	5.99	DW	1.09
D-105	78	79	1	75612	0.47	DW	0.85
D-105	81	82	1	75615	2.59	DW	1.19
D-105	84	85	1	75619	1.89	DW	1.03
D-105	85	86	1	75620	0.34	DW	1.3
D-107	57.5	59	1.5	75518	4.00	DW	1.75
D-107	59	60.5	1.5	75519	9.79	DW	1.09
D-107	60.5	62	1.5	75520	13.65	DW	1.13
D-107	62	63.5	1.5	75521	18.29	DW	
D-107	63.5	65	1.5	75522	8.64	DW	1.16
D-107	65	66.5	1.5	75523	2.02	DW	1.64
D-107	66.5	68	1.5	75524	12.89	DW	1.54
D-107	68	69.5	1.5	75525	0.64	DW	1.85
D-107	69.5	71	1.5	75526	1.38	DW	1.69
D-107	71	72.5	1.5	75527	2.71	DW	1.56
D-111	36	37.5	1.5	75768	1.41	DW	1.86
D-111	37.5	39	1.5	75769	0.73	DW	1.64
D-111	39	40.5	1.5	75770	3.19	DW	1.94
D-111	40.5	42	1.5	75771	6.27	DW	1.71
D-111	42	43.5	1.5	75772	1.54	DW	2.13
D-111	43.5	45	1.5	75773	3.06	DW	1.76
D-111	45	46.5	1.5	75774	2.41	DW	1.68
D-111	46.5	48	1.5	75751	7.56	DW	1.21
D-111	48	49.5	1.5	75752	2.75	DW	1.18
D-111	49.5	51	1.5	75753	0.47	DW	1.35
D-111	51	52.5	1.5	75755	5.71	DW	1.49
D-111	52.5	54	1.5	75756	2.08	DW	1.45
D-111	54	55.5	1.5	75757	0.97	DW	1.85
D-111	55.5	57	1.5	75758	0.54	DW	1.89

TABLE A-1F
SAMPLE RECEIVED - MZ

Comp 9	Estimated	Actual
Mass(kg)	29.1965	36.58
g/t	1.5	1.9

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
40687	274.93	276.45	1.52	FX89265	2.26	MZ	0.87
40687	276.45	277.98	1.53	FX89266	4.87	MZ	0.59
40687	277.98	279.5	1.52	FX89280	3.98	MZ	0.90
40687	279.5	281.03	1.53	FX89281	5.69	MZ	1.06
40687	281.03	282.55	1.52	FX89282	0.38	MZ	1.02
40692	397.03	397.46	0.43	FX90805	1.68	MZ	
40692	397.46	397.79	0.33	FX90806	1.58	MZ	
40692	398.37	399.59	1.22	FX90808	0.27	MZ	
40692	399.59	401.12	1.53	FX90363	2.37	MZ	
40692	401.12	404.16	3.04	FX90364	0.79	MZ	
40692	404.16	407.21	3.05	FX90365	0.27	MZ	
40694-1	322.17	325.22	3.05	FX91603	0.31	MZ	0.78
40694-1	325.22	328.27	3.05	FX91604	0.45	MZ	1.85
40694-1	328.27	331.32	3.05	FX91605	0.27	MZ	1.68
40694-1	331.32	334.37	3.05	FX91606	0.65	MZ	1.85
40694-1	334.37	336.65	2.28	FX91607	0.69	MZ	1.51
40694-1	336.65	337.54	0.89	FX91608	7.3	MZ	0.57
40694-1	337.54	338.66	1.12	FX91609	2.81	MZ	0.73
40694-1	338.66	339.27	0.61	FX91610	7.51	MZ	0.38
40694-1	339.27	340.46	1.19	FX91611	3.19	MZ	0.82
40694-1	340.46	343.51	3.05	FX91612	0.86	MZ	1.89
70521	363.32	364.85	1.53	FX207984	1.03	MZ	1.02
70521	364.85	365.46	0.61	FX207985	1.85	MZ	0.50
70521	365.46	366.37	0.91	FX207986	0.34	MZ	0.71
70527	573.28	573.76	0.48	FX213271	0.51	MZ	0.42
70527	573.76	574.24	0.48	FX213272	0.41	MZ	0.36
70527	574.55	574.81	0.26	FX213274	3.57	MZ	0.18
70527	574.81	574.99	0.18	FX213275	2.67	MZ	0.16
70527	574.99	575.34	0.35	FX213276	2.5	MZ	0.26
70527	575.34	575.58	0.24	FX213277	1.51	MZ	0.18
70527	575.58	576.1	0.52	FX213278	0.93	MZ	0.34
70527	576.1	576.77	0.67	FX213279	0.89	MZ	0.54
70527	576.77	577.6	0.83	FX213280	0.41	MZ	0.53
70527	579.73	581.25	1.52	FX213283	0.48	MZ	0.91
70527	583.39	584.06	0.67	FX213286	0.75	MZ	
70527	584.06	584.48	0.42	FX213287	0.51	MZ	
70554	403.97	404.38	0.41	FX227851	8.43	MZ	0.20
70554	404.38	404.92	0.54	FX227852	0.86	MZ	0.36

TABLE A-1F Continued
SAMPLE RECEIVED - MZ

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
70554	404.92	405.44	0.52	FX227853	2.71	MZ	0.36
70554	405.44	405.63	0.19	FX227854	18.1	MZ	0.15
70554	405.63	406.09	0.46	FX227855	14.91	MZ	0.25
70554	406.09	406.42	0.33	FX227856	5.35	MZ	0.23
70554	406.42	406.73	0.31	FX227857	3.94	MZ	0.22
70554	409.51	409.9	0.39	FX227861	1.58	MZ	0.26
70554	409.9	410.26	0.36	FX227862	0.51	MZ	0.28
70554	410.26	410.69	0.43	FX227863	2.67	MZ	0.22
70554	410.69	411.04	0.35	FX227864	2.37	MZ	0.28
70554	411.04	411.46	0.42	FX227865	4.97	MZ	0.15
70554	411.46	412.3	0.84	FX227866	0.58	MZ	0.50
DO-07-29	272.8	273.4	0.6	36698	0.498	MZ	0.83
DO-07-29	273.4	274	0.6	36699	1.439	MZ	0.76
DO-07-30	102.5	103.5	1	36830	1.886	MZ	1.13
DO-07-30	107.5	108.1	0.6	36835	0.324	MZ	0.70
DO-07-31	207.6	208.2	0.6	45090	5.1	MZ	
DO-07-31	208.2	209.35	1.15	45091	0.479	MZ	0.48
DO-07-31	209.35	209.85	0.5	45092	6.713	MZ	1.18
DO-07-31	211	212	1	45096	0.596	MZ	1.16
DO-07-31	215	216	1	45100	0.908	MZ	0.97
DO-07-31	216	217	1	45101	2.405	MZ	0.92
DO-07-31	217	218	1	45102	1.806	MZ	0.96
DO-07-31	218	219	1	45103	1.091	MZ	0.88
DO-07-31	219	220	1	45105	0.34	MZ	0.54
DO-07-32	213	213.6	0.6	45312	0.599	MZ	

TABLE A-1G
SAMPLE RECEIVED - NW1

Comp 8	Estimated	Actual
Mass(kg)	21.6975	26.55
g/t	2.1	1.8

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
4140-93-01	182	182.9	0.9	447938	4.39	NW	0.47
4140-93-01	182.9	184	1.1	447939	8.64	NW	0.45
4140-93-01	184	185	1	447940	10.15	NW	0.34
4140-93-01	185	186	1	447941	13.51	NW	0.33
4140-93-01	186	186.95	0.95	447942	16.77	NW	0.49
4140-93-01	242.6	244.1	1.5	447971	0.814	NW	1.01
4140-93-03	200.9	202	1.1	476181	4.29	NW	0.63
4140-93-03	203	204	1	476183	0.356	NW	0.53
4140-93-04	148.5	150	1.5	476302	0.79	NW	0.82
4140-93-04	193	193.5	0.5	476331	0.34	NW	0.37
4140-93-04	195	196	1	476333	0.55	NW	0.62
4140-93-04	196	196.8	0.8	476334	5.52	NW	0.48
4140-93-06	208	209.5	1.5	476685	0.359	NW	0.74
4140-93-06	209.5	211	1.5	476686	0.79	NW	0.8
4140-93-06	211	212.5	1.5	476687	1.82	NW	0.77
4140-93-06	212.5	213.7	1.2	476688	0.96	NW	0.69
4140-93-06	249.1	250.3	1.2	476708	2.3	NW	0.57
4140-93-06	250.3	251.6	1.3	476709	0.58	NW	0.76
4140-93-06	251.6	253	1.4	476710	0.324	NW	0.78
4140-93-06	253	254	1	476711	0.448	NW	0.58
4140-93-06	254	255	1	476712	1.17	NW	0.6
4140-93-06	255	256	1	476713	0.413	NW	0.44
4140-94-04	98	99	1	22890	0.79	NW	0.63
4140-94-04	99	100.4	1.4	22891	0.75	NW	0.93
4140-94-04	101.8	102.9	1.1	22893	0.58	NW	0.67
4140-94-04	102.9	103.5	0.6	22894	0.51	NW	0.43
4140-94-09	197.5	199	1.5	501352	0.78	NW	0.84
4140-94-09	199	200.5	1.5	501353	1.27	NW	0.85
4140-94-09	200.5	201.8	1.3	501354	0.82	NW	0.78
4140-94-12	53	54	1	501742	1.363	NW	0.56
4140-94-12	54	55.5	1.5	501743	0.33	NW	0.89
4140-94-12	86.6	87.7	1.1	501760	0.65	NW	0.59
4140-94-12	87.7	88.7	1	501761	0.972	NW	0.44
4140-94-12	88.7	89.7	1	501762	0.99	NW	0.51
4140-94-12	89.7	91	1.3	501763	2.57	NW	0.65
4140-96-11	41.5	43	1.5	51677	0.807	NW	0.88
4140-96-11	46	47.5	1.5	51680	0.525	NW	0.9
4140-96-11	53.5	55	1.5	51685	0.645	NW	1.04
4140-97-16	141	142.5	1.5	82295	1.717	NW	0.84
4140-97-16	142.5	144	1.5	82296	0.348	NW	0.85

TABLE A-1H
SAMPLE RECEIVED - NW2

Comp 10	Estimated	Actual
Mass(kg)	21.175	37.26
g/t	0.7	0.7

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
DO-13-131	131.5	133	1.5	N113063	0.429	NW	1.4
DO-13-131	133	134.5	1.5	N113064	1.495	NW	1.3
DO-13-131	134.5	136	1.5	N113065	0.782	NW	1.41
DO-13-131	136	137.5	1.5	N113066	0.766	NW	1.39
DO-13-131	252.5	254	1.5	N113150	1.285	NW	1.29
DO-13-131	254	255.5	1.5	N113151	0.889	NW	1.27
DO-13-131	299	300.5	1.5	N113184	0.621	NW	1.28
DO-13-131	300.5	302	1.5	N113185	1.145	NW	1.31
DO-13-131	302	303.5	1.5	N113186	0.665	NW	1.53
DO-13-131	303.5	305	1.5	N113187	0.695	NW	1.33
DO-13-131	305	306.5	1.5	N113188	0.423	NW	1.36
DO-13-131	306.5	308	1.5	N113189	1.115	NW	1.43
DO-13-131	308	309.5	1.5	N113190	0.404	NW	1.3
DO-13-133	133.5	135	1.5	N113265	0.421	NW	1.46
DO-13-133	281.5	283	1.5	N113374	0.379	NW	1.43
DO-13-133	283	284	1	N113375	0.416	NW	1.14
DO-13-133	285	286.5	1.5	N113378	0.306	NW	1.56
DO-13-133	286.5	288	1.5	N113379	0.467	NW	1.58
DO-13-133	288	289.5	1.5	N113380	0.55	NW	1.62
DO-13-133	289.5	291	1.5	N113381	0.599	NW	1.62
DO-11-68	423	424.5	1.5	M036456	0.88	NW	1.56
DO-11-68	424.5	426	1.5	M036457	0.42	NW	1.54
DO-11-68	426	427.5	1.5	M036458	1.86	NW	1.55
DO-11-68	427.5	429	1.5	M036459	1.12	NW	1.69
DO-11-68	429	430.5	1.5	M036460	0.47	NW	1.34
DO-11-68	430.5	432	1.5	M036461	0.59	NW	1.57

TABLE A-1I
SAMPLE RECEIVED - POR1

Comp 6	Estimated	Actual
Mass(kg)	39.435	65.77
g/t	1.6	1.8

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
DO-05-01	114	115	1	62559	2.051	Porph_1	1.03
DO-05-01	115	116	1	62640	0.587	Porph_1	1.03
DO-05-01	116	117	1	62561	4.527	Porph_1	1.25
DO-05-01	117	118	1	62562	5.14	Porph_1	1.25
DO-05-01	118	119	1	62563	1.942	Porph_1	1.10
DO-05-01	145.5	147	1.5	62583	1.521	Porph_1	1.80
DO-05-01	151.5	153	1.5	62587	2.042	Porph_1	1.48
DO-05-01	156	157.5	1.5	62590	4.252	Porph_1	1.83
DO-05-05	295	296.3	1.3	12407	1.151	Porph_1	1.17
DO-05-05	296.3	297.5	1.2	12409	1.551	Porph_1	1.12
DO-05-05	297.5	299	1.5	12410	0.406	Porph_1	1.42
DO-05-05	299	300.4	1.4	12411	3.736	Porph_1	1.27
DO-05-05	300.4	301.7	1.3	12412	2.51	Porph_1	1.35
DO-06-10	50.5	52	1.5	23526-54744	3.243	Porph_1	1.79
DO-06-10	89.5	91	1.5	23559-54774	2.542	Porph_1	1.91
DO-06-10	91	92.5	1.5	23560-54775	1.02	Porph_1	1.94
DO-06-10	92.5	94	1.5	23561-54776	1.429	Porph_1	1.88
DO-06-10	94	95	1	23562-54777	1.354	Porph_1	1.25
DO-06-10	95	96	1	23563-54778	0.674	Porph_1	1.45
DO-06-10	96	97.5	1.5	23564-54779	1.16	Porph_1	1.94
DO-11-45	127	128.5	1.5	K486073	0.316	Porph_1	
DO-11-45	128.5	130	1.5	K486074	0.517	Porph_1	
DO-11-45	130	131.5	1.5	K486075	2.54	Porph_1	1.63
DO-11-45	131.5	133	1.5	K486076	0.713	Porph_1	
DO-11-45	136	137.5	1.5	K486079	1.865	Porph_1	1.56
DO-11-45	137.5	139	1.5	K486080	0.832	Porph_1	1.53
DO-11-45	139	140.5	1.5	K486081	0.304	Porph_1	1.68
DO-11-45	142	143.5	1.5	K486083	0.32	Porph_1	
DO-11-45	143.5	145	1.5	K486084	0.454	Porph_1	
DO-11-45	145	146.5	1.5	K486086	0.863	Porph_1	
DO-11-47	67	68.5	1.5	K489017	0.402	Porph_1	
DO-11-47	68.5	70	1.5	K489018	4.74	Porph_1	1.69
DO-11-47	70	71.5	1.5	K489019	1.575	Porph_1	1.80
DO-11-47	73	74.5	1.5	K489021	1.97	Porph_1	1.83
DO-11-47	121	122.5	1.5	K489055	0.852	Porph_1	1.58
DO-11-47	122.5	124	1.5	K489056	1.1	Porph_1	1.62
DO-11-47	124	125.5	1.5	K489057	0.465	Porph_1	1.59
DO-11-47	127	128.5	1.5	K489059	1.01	Porph_1	1.43

TABLE A-1I Continued
SAMPLE RECEIVED - POR1

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
DO-11-47	128.5	130	1.5	K489060	1.275	Porph_1	1.42
DO-11-47	140.5	142	1.5	K489069	0.589	Porph_1	1.58
DO-11-47	142	143.5	1.5	K489070	0.344	Porph_1	1.71
DO-11-47	143.5	145	1.5	K489071	0.736	Porph_1	2.02
DO-11-47	166	167.5	1.5	K489087	1.335	Porph_1	1.69
DO-11-47	167.5	169	1.5	K489088	0.475	Porph_1	1.41
DO-11-47	169	170.5	1.5	K489089	2.89	Porph_1	1.42
DO-11-47	170.5	172	1.5	K489090	1.09	Porph_1	0.39
DO-12-90	278	279	1	M041590	1.26	Porph_1	1.11
DO-12-90	279	280	1	M041591	2.88	Porph_1	1.05
DO-12-90	280	281	1	M041592	2.57	Porph_1	0.98
DO-12-90	282	283	1	M041594	0.58	Porph_1	0.95
DO-12-90	283	284	1	M041595	0.497	Porph_1	0.88
DO-12-90	284	285	1	M041597	5.62	Porph_1	1.07
DO-12-90	286	287	1	M041599	1.145	Porph_1	0.89

TABLE A-1J
SAMPLE RECEIVED - POR2

Comp 7	Estimated	Actual
Mass(kg)	37.84	57.18
g/t	1.6	1.9

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
DO-11-70	196.5	198	1.5	M036770	0.334	Porph_2	1.78
DO-11-70	198	199.5	1.5	M036771	2.87	Porph_2	1.78
DO-11-70	199.5	201	1.5	M036772	2.26	Porph_2	1.56
DO-11-70	201	202.5	1.5	M036773	2.46	Porph_2	1.57
DO-11-70	205.5	207	1.5	M036776	1.11	Porph_2	1.85
DO-11-70	216	217.5	1.5	M036784	1.19	Porph_2	1.83
DO-11-70	217.5	219	1.5	M036785	4.59	Porph_2	1.71
DO-11-70	219	220.5	1.5	M036786	4.62	Porph_2	1.61
DO-11-70	220.5	222	1.5	M036787	9.51	Porph_2	1.83
DO-11-70	222	223.5	1.5	M036788	2.8	Porph_2	1.77
DO-11-70	223.5	225	1.5	M036789	2.85	Porph_2	1.65
DO-11-70	226.5	228	1.5	M036791	0.783	Porph_2	1.72
DO-11-70	228	229.5	1.5	M036792	1.115	Porph_2	1.56
DO-11-70	229.5	231	1.5	M036794	1.18	Porph_2	1.69
DO-11-70	231	232.5	1.5	M036795	2.28	Porph_2	1.50
DO-11-70	232.5	234	1.5	M036796	0.34	Porph_2	1.73
DO-11-70	234	235.5	1.5	M036797	1.56	Porph_2	1.70
DO-11-70	235.5	237	1.5	M036798	0.773	Porph_2	1.80
DO-11-70	237	238.5	1.5	M036799	1.9	Porph_2	1.60
DO-11-70	238.5	240	1.5	M036800	1.79	Porph_2	1.82
DO-11-70	240	241.5	1.5	M036801	0.615	Porph_2	1.80
DO-11-70	244.5	246	1.5	M036804	0.391	Porph_2	1.97
DO-11-70	247.5	249	1.5	M036806	1.66	Porph_2	1.79
DO-11-72	111.5	113	1.5	M036971	0.9	Porph_2	
DO-11-72	113	114.5	1.5	M036972	0.486	Porph_2	
DO-11-72	116	117.5	1.5	M036974	0.838	Porph_2	
DO-11-72	117.5	119	1.5	M036975	1.065	Porph_2	
DO-11-72	119	120.5	1.5	M036976	0.396	Porph_2	
DO-11-72	120.5	122	1.5	M036977	1	Porph_2	
DO-11-72	122	123.5	1.5	M036979	0.618	Porph_2	
DO-11-72	126.5	128	1.5	M036982	0.815	Porph_2	
DO-11-72	141.5	143	1.5	M036993	0.39	Porph_2	
DO-11-72	144.5	146	1.5	M036995	0.323	Porph_2	
DO-11-72	146	147.5	1.5	M036996	0.569	Porph_2	
DO-11-72	147.5	149	1.5	M036997	0.334	Porph_2	
DO-13-128	73.5	75	1.5	N099737	0.964	Porph_2	1.46
DO-13-128	76.5	78	1.5	N099739	1.12	Porph_2	1.47
DO-13-128	78	79.5	1.5	N099740	2.8	Porph_2	1.48

TABLE A-1J Continued
SAMPLE RECEIVED - POR2

Hole ID	From	To	Length	Sample No.	Au g/tonne	Zone	Received Mass (kg)
DO-13-128	79.5	81	1.5	N099741	1.96	Porph_2	1.26
DO-13-128	85.2	86.5	1.3	N099745	0.52	Porph_2	1.42
DO-13-128	86.5	88	1.5	N099746	0.639	Porph_2	1.57
DO-13-129	201	202.5	1.5	N111116	0.34	Porph_2	1.96
DO-13-129	202.5	204	1.5	N111117	0.371	Porph_2	1.84
DO-13-129	204	205.5	1.5	N111119	0.532	Porph_2	1.80
DO-13-129	207	208.5	1.5	N111121	3.53	Porph_2	1.72
DO-13-129	208.5	210	1.5	N111122	4.14	Porph_2	1.58

PHOTOS A-1
SAMPLES RECEIVED

APPENDIX B – METALLURGICAL TESTING

APPENDIX B
METALLURGICAL TESTING

APPENDIX B
METALLURGICAL TESTING

Test No: BL0166-01
Date: 25-Jan-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Whole Ore Leach Test.
Sample: DW1
Sizing: 75µm K_{80} 13 minutes

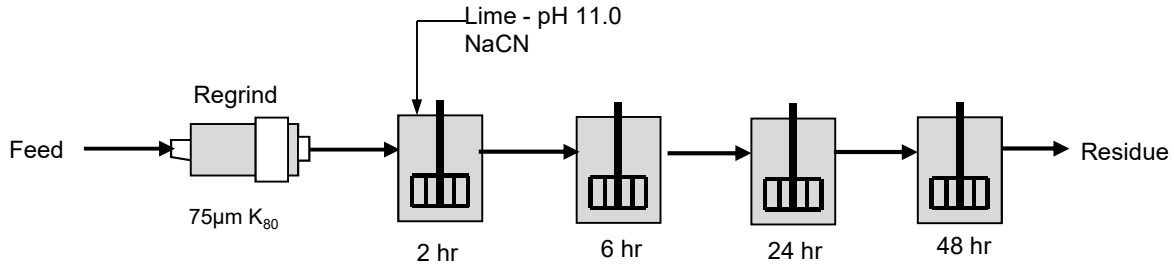
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.4		<1
Leach 1	0	2.00	0.98	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	1.98	0.02	11.0	11.0	>20
Leach 3	6	0.00	0.24	1.96	0.02	10.7	11.0	>20
Leach 4	24	0.10	0.00	1.90	0.06	11.0	11.0	>20
Leach 5	48	0.00	0.00	1.88	0.12	10.7	11.0	>20
Total	48	2.10	1.22	1.88	0.22	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Consumption	0.2 kg/tonne
Lime Consumption	1.2 kg/tonne

Flowsheet Schematic



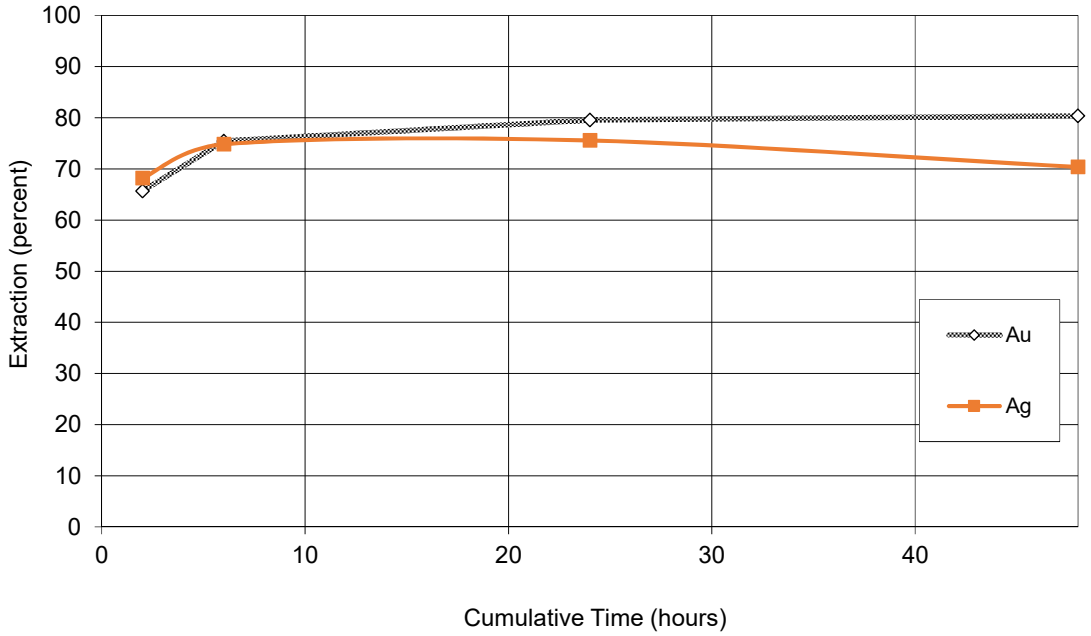
BL0166-01

DW1

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	2000	mL	0.58	0.23	65.7	68.2
Cyanide Liquor (6 hr)	6	2000	mL	0.66	0.25	75.4	74.8
Cyanide Liquor (24 hr)	24	2000	mL	0.69	0.25	79.6	75.6
Cyanide Liquor (48 hr)	48	2000	mL	0.69	0.23	80.4	70.4
Cyanidation Tails	-	1000	g	0.35	0.2	19.6	29.6
Calculated Feed		1000	g	1.77	0.7	100.0	100.0
Feed Assay				1.2	1		

Cyanide Leach Kinetic Curves



Test No: BL0166-02
Date: 25-Jan-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Whole Ore Leach Test.
Sample: DW2
Sizing: 75µm K_{80} 15 minutes

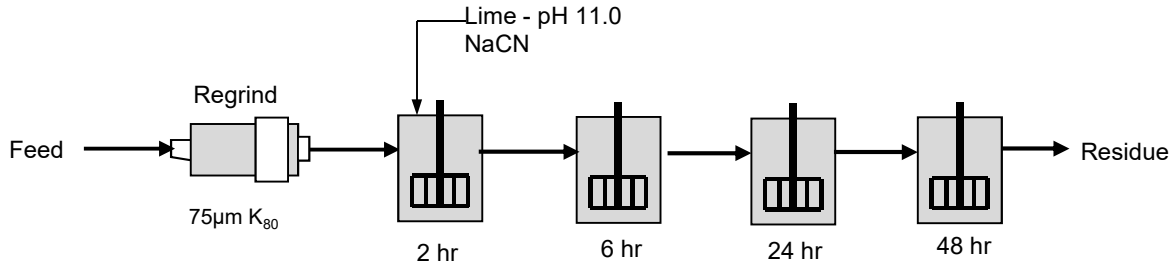
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.7		<1
Leach 1	0	2.00	0.92	-	-	11.0	11.0	<1
Leach 2	2	0.12	0.17	1.88	0.12	10.8	11.0	>20
Leach 3	6	0.00	0.19	2.00	0.00	10.8	11.0	>20
Leach 4	24	0.00	0.11	1.98	0.02	10.9	11.0	>20
Leach 5	48	0.00	0.00	1.96	0.02	10.7	11.0	>20
Total	48	2.12	1.39	1.96	0.16	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Consumption	0.2 kg/tonne
Lime Consumption	1.4 kg/tonne

Flowsheet Schematic



BL0166-02

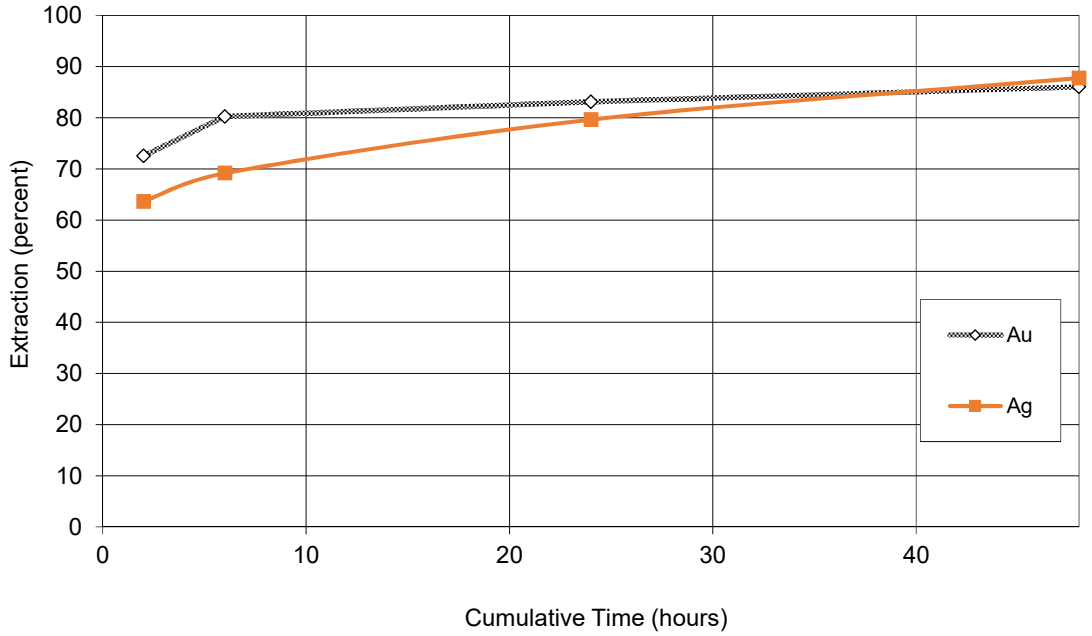
DW2

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	2000	mL	1.04	0.26	72.5	63.6
Cyanide Liquor (6 hr)	6	2000	mL	1.14	0.28	80.2	69.2
Cyanide Liquor (24 hr)	24	2000	mL	1.17	0.32	83.1	79.6
Cyanide Liquor (48 hr)	48	2000	mL	1.20	0.35	86.0	87.8
Cyanidation Tails*	-	1001	g	0.40	0.1	14.0	12.2
Calculated Feed		1001	g	2.87	0.8	100.0	100.0
Feed Assay				7.8	1		

*Ag values were below detection limit of <0.2. Value is estimated.

Cyanide Leach Kinetic Curves



Test No: BL0166-03
Date: 25-Jan-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Whole Ore Leach Test.
Sample: Z10
Sizing: 75µm K_{80} 13 minutes

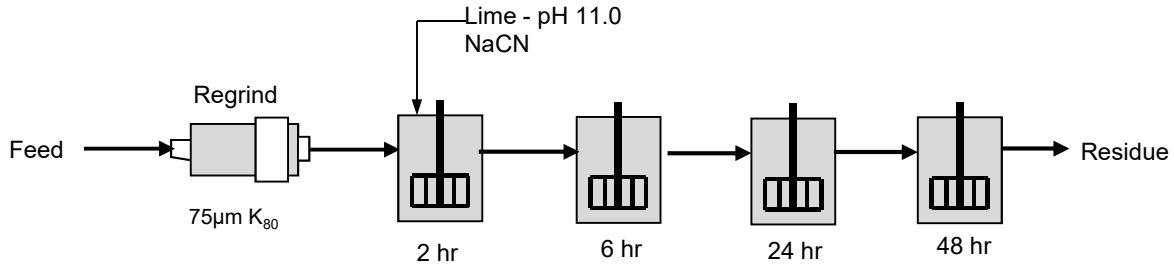
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.7		<1
Leach 1	0	2.00	0.95	-	-	11.0	11.0	<1
Leach 2	2	0.46	0.00	1.54	0.46	11.0	11.0	>20
Leach 3	6	0.06	0.24	1.94	0.06	10.7	11.0	>20
Leach 4	24	0.12	0.17	1.88	0.12	10.8	11.0	>20
Leach 5	48	0.00	0.00	1.92	0.08	10.6	11.0	>20
Total	48	2.64	1.36	1.92	0.72	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Consumption	0.7 kg/tonne
Lime Consumption	1.4 kg/tonne

Flowsheet Schematic



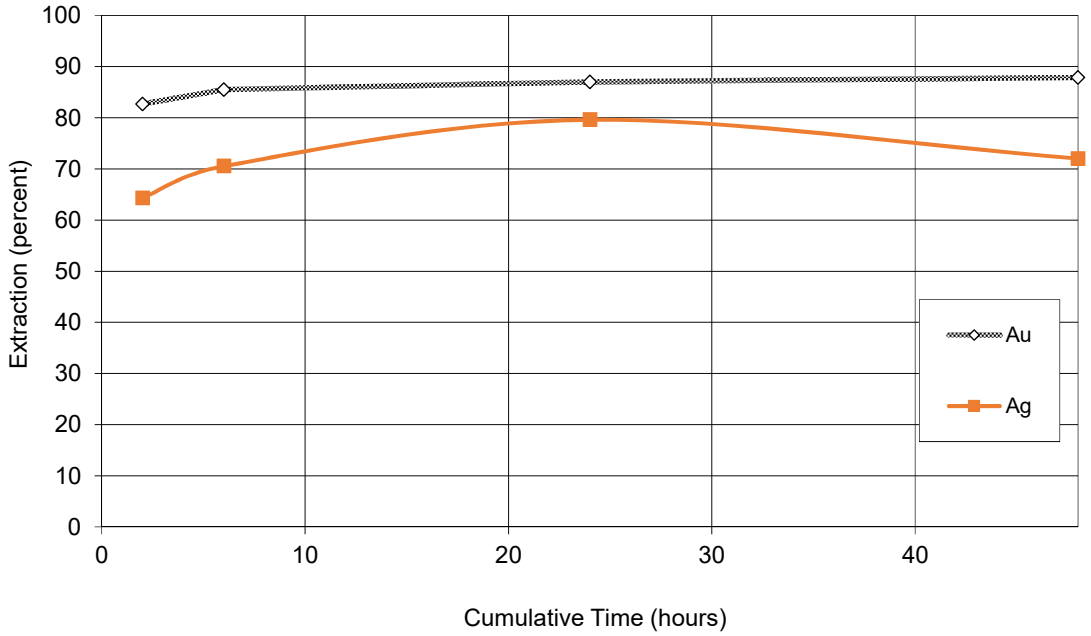
BL0166-03

Z10

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	2000	mL	1.24	0.23	82.7	64.3
Cyanide Liquor (6 hr)	6	2000	mL	1.27	0.25	85.5	70.5
Cyanide Liquor (24 hr)	24	2000	mL	1.28	0.28	87.0	79.6
Cyanide Liquor (48 hr)	48	2000	mL	1.28	0.25	87.9	72.0
Cyanidation Tails	-	1001	g	0.36	0.2	12.1	28.0
Calculated Feed		1001	g	3.00	0.7	100.0	100.0
Feed Assay				2.6	1		

Cyanide Leach Kinetic Curves



Test No: BL0166-04
Date: 25-Jan-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Whole Ore Leach Test.
Sample: Z20
Sizing: 75µm K_{80} 14 minutes

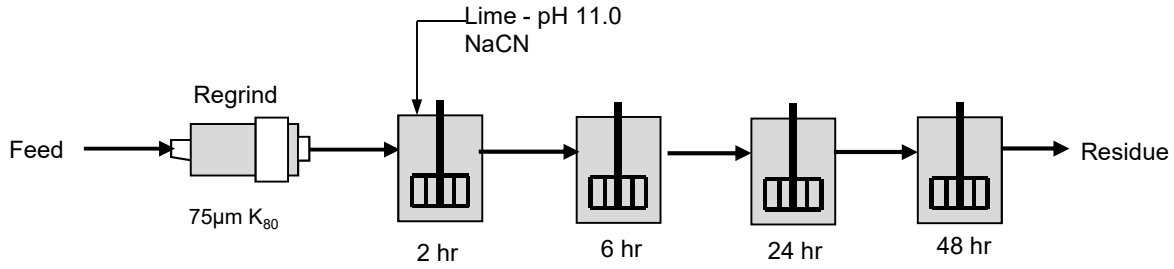
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.7		<1
Leach 1	0	2.00	0.96	-	-	11.0	11.0	<1
Leach 2	2	0.24	0.17	1.76	0.24	10.8	11.0	>20
Leach 3	6	0.00	0.09	2.00	0.00	10.9	11.0	>20
Leach 4	24	0.00	0.14	2.00	0.00	10.9	11.0	>20
Leach 5	48	0.00	0.00	2.00	0.00	11.0	11.0	>20
Total	48	2.24	1.36	2.00	0.24	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Consumption	0.2 kg/tonne
Lime Consumption	1.4 kg/tonne

Flowsheet Schematic



BL0166-04

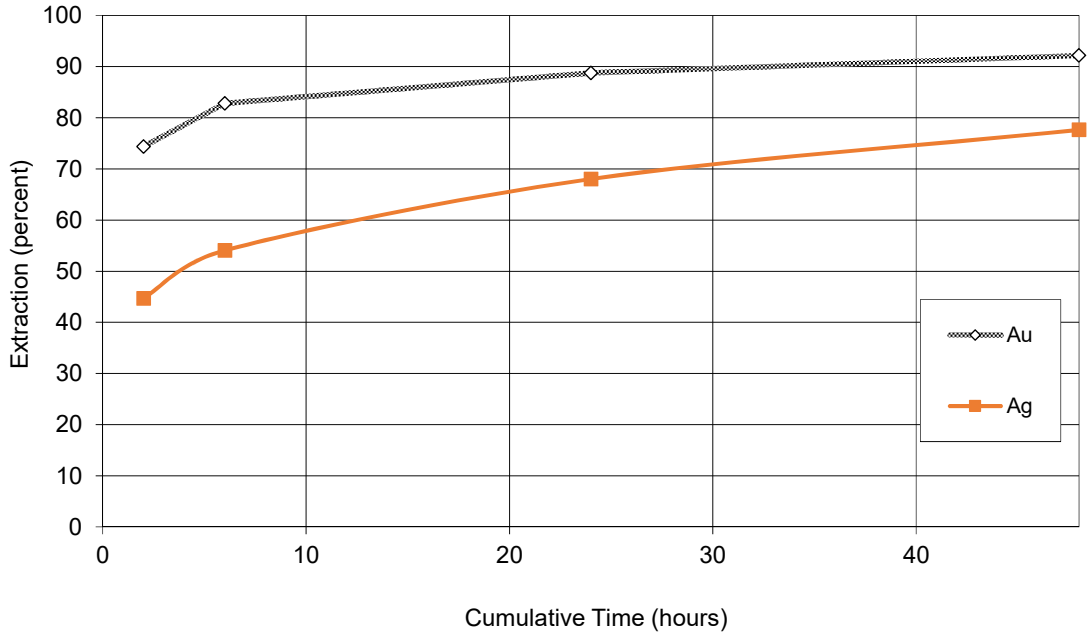
Z20

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	2000	mL	0.29	0.10	74.3	44.7
Cyanide Liquor (6 hr)	6	2000	mL	0.32	0.12	82.8	54.1
Cyanide Liquor (24 hr)	24	2000	mL	0.34	0.15	88.7	68.0
Cyanide Liquor (48 hr)	48	2000	mL	0.35	0.17	92.2	77.6
Cyanidation Tails*	-	1002	g	0.06	0.1	7.8	22.4
Calculated Feed		1002	g	0.78	0.4	100.0	100.0
Feed Assay				0.8	0.3		

*Ag values were below detection limit of <0.2. Value is estimated.

Cyanide Leach Kinetic Curves



Test No: BL0166-05
Date: 25-Jan-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Whole Ore Leach Test.
Sample: Z531
Sizing: 75µm K_{80} 10 minutes

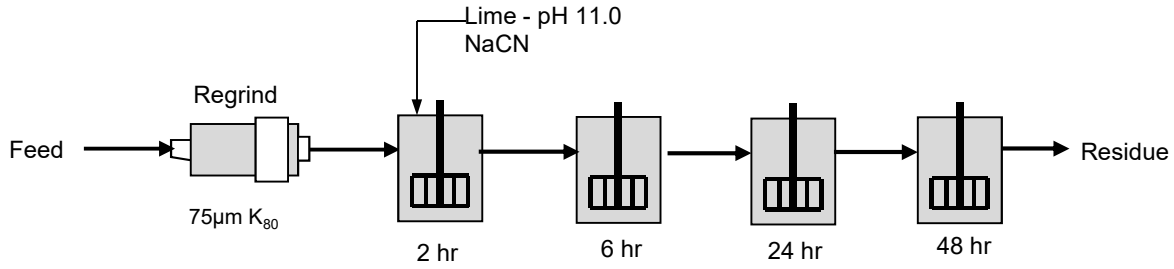
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.7		<1
Leach 1	0	2.00	0.92	-	-	11.0	11.0	<1
Leach 2	2	0.24	0.14	1.76	0.24	10.8	11.0	>20
Leach 3	6	0.00	0.18	2.00	0.00	10.8	11.0	>20
Leach 4	24	0.00	0.20	2.00	0.00	10.8	11.0	>20
Leach 5	48	0.00	0.00	2.00	0.00	10.9	11.0	>20
Total	48	2.24	1.44	2.00	0.24	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Consumption	0.2 kg/tonne
Lime Consumption	1.4 kg/tonne

Flowsheet Schematic



BL0166-05

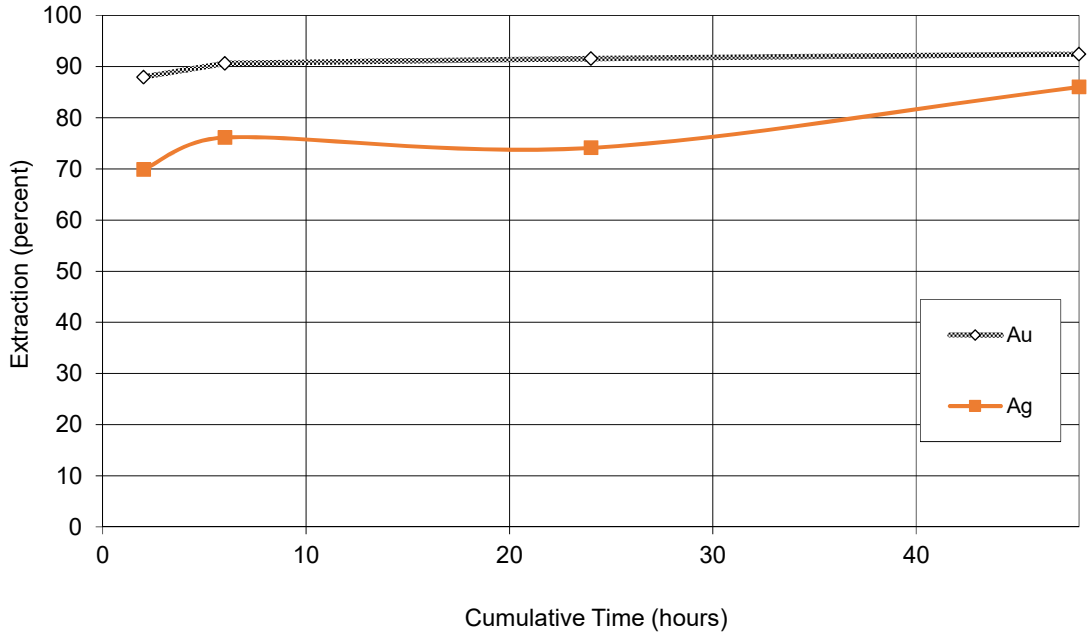
Z531

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	2000	mL	0.97	0.25	88.0	69.9
Cyanide Liquor (6 hr)	6	2000	mL	0.99	0.27	90.7	76.1
Cyanide Liquor (24 hr)	24	2000	mL	0.99	0.26	91.6	74.1
Cyanide Liquor (48 hr)	48	2000	mL	0.99	0.30	92.5	86.0
Cyanidation Tails*	-	1002	g	0.17	0.1	7.5	14.0
Calculated Feed		1002	g	2.20	0.7	100.0	100.0
Feed Assay				2.4	1		

*Ag values were below detection limit of <0.2. Value is estimated.

Cyanide Leach Kinetic Curves



Test No: BL0166-06
Date: 25-Jan-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Whole Ore Leach Test.
Sample: POR1
Sizing: 75µm K_{80} 12 minutes

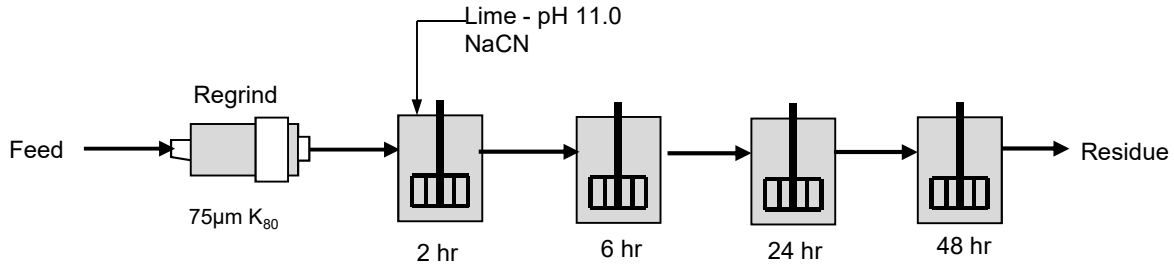
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.6		<1
Leach 1	0	2.00	0.95	-	-	11.0	11.0	<1
Leach 2	2	0.16	0.15	1.84	0.16	10.8	11.0	>20
Leach 3	6	0.00	0.23	2.00	0.00	10.7	11.0	>20
Leach 4	24	0.12	0.12	1.88	0.12	10.9	11.0	>20
Leach 5	48	0.00	0.00	2.00	0.00	10.8	11.0	>20
Total	48	2.28	1.45	2.00	0.28	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Consumption	0.3 kg/tonne
Lime Consumption	1.5 kg/tonne

Flowsheet Schematic



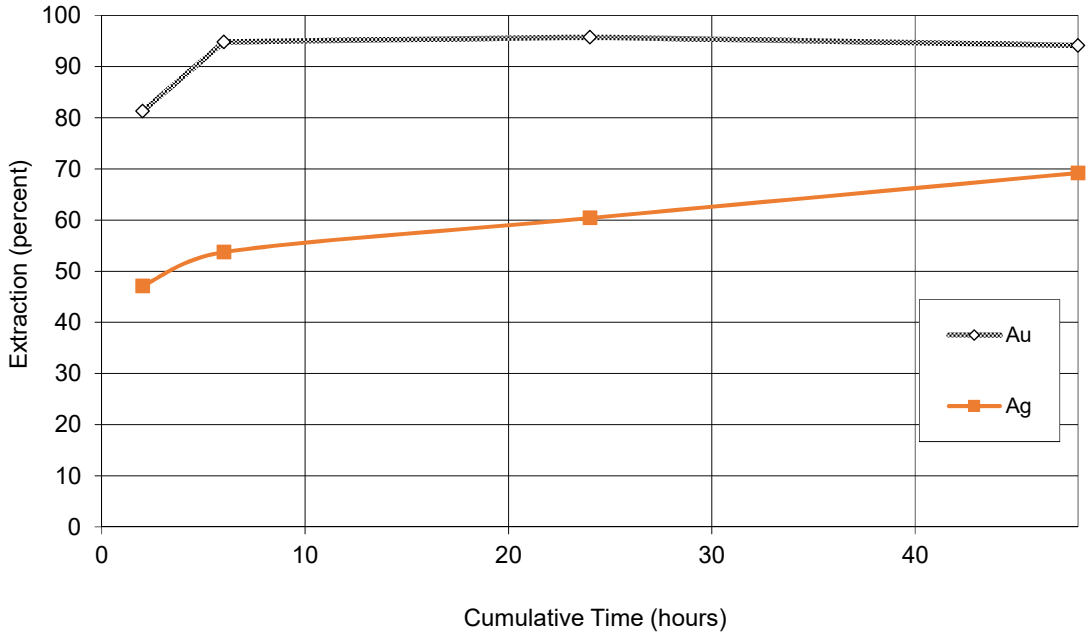
BL0166-06

POR1

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	2000	mL	0.64	0.23	81.3	47.1
Cyanide Liquor (6 hr)	6	2000	mL	0.74	0.26	94.8	53.7
Cyanide Liquor (24 hr)	24	2000	mL	0.74	0.29	95.7	60.4
Cyanide Liquor (48 hr)	48	2000	mL	0.72	0.33	94.1	69.2
Cyanidation Tails	-	1003	g	0.09	0.3	5.9	30.8
Calculated Feed		1003	g	1.57	1.0	100.0	100.0
Feed Assay				1.7	1		

Cyanide Leach Kinetic Curves



Test No: BL0166-07
Date: 25-Jan-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Whole Ore Leach Test.
Sample: POR2
Sizing: 75µm K_{80} 12 minutes

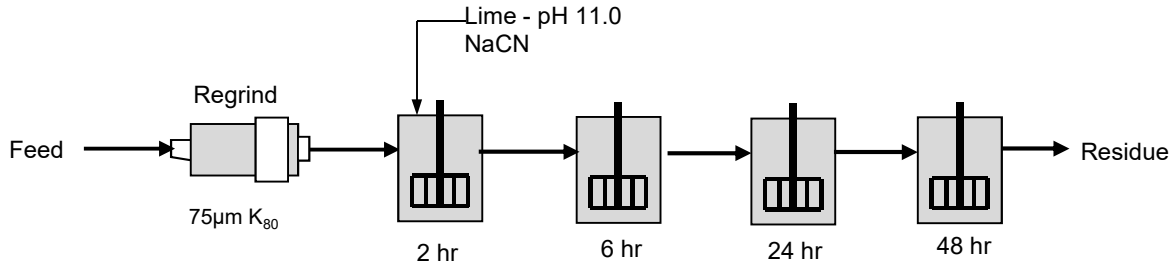
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.5		<1
Leach 1	0	2.00	0.97	-	-	11.0	11.0	<1
Leach 2	2	0.68	0.22	1.32	0.68	10.7	11.0	>20
Leach 3	6	0.10	0.23	1.90	0.10	10.7	11.0	>20
Leach 4	24	0.00	0.35	1.96	0.04	10.6	11.0	>20
Leach 5	48	0.00	0.00	1.90	0.06	10.5	11.0	>20
Total	48	2.78	1.77	1.90	0.88	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Consumption	0.9 kg/tonne
Lime Consumption	1.8 kg/tonne

Flowsheet Schematic



BL0166-07

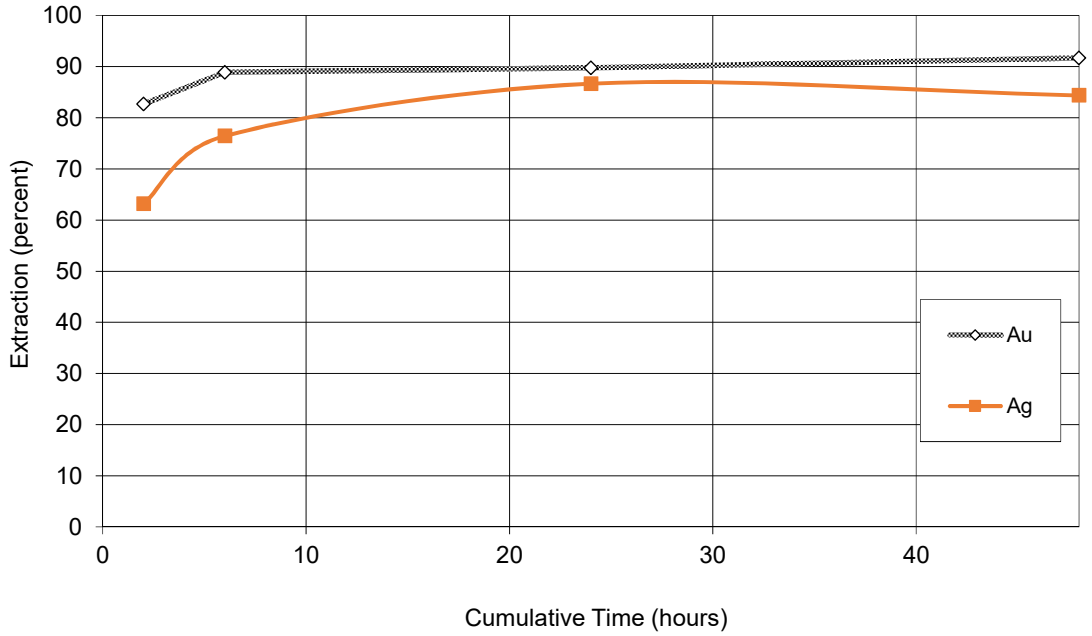
POR2

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	2000	mL	0.77	0.20	82.7	63.2
Cyanide Liquor (6 hr)	6	2000	mL	0.82	0.24	88.9	76.4
Cyanide Liquor (24 hr)	24	2000	mL	0.82	0.27	89.7	86.7
Cyanide Liquor (48 hr)	48	2000	mL	0.83	0.26	91.7	84.4
Cyanidation Tails*	-	991	g	0.16	0.1	8.3	15.6
Calculated Feed		991	g	1.88	0.6	100.0	100.0
Feed Assay				2.1	1		

*Ag values were below detection limit of <0.2. Value is estimated.

Cyanide Leach Kinetic Curves



Test No: BL0166-08
Date: 25-Jan-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Whole Ore Leach Test.
Sample: NW1
Sizing: 75µm K_{80} 8.5 minutes

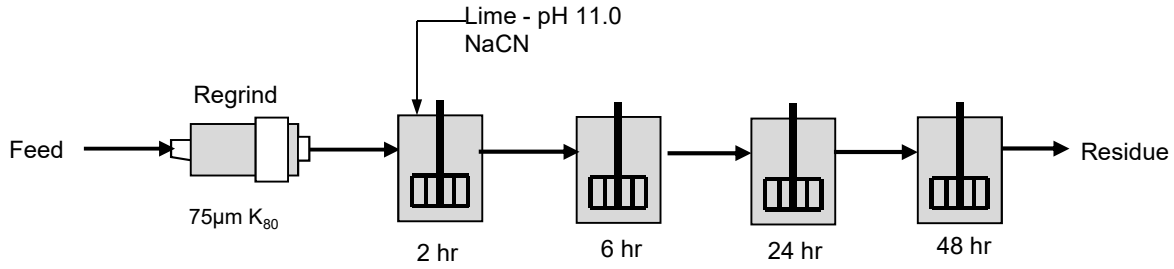
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.7		<1
Leach 1	0	2.00	0.83	-	-	11.0	11.0	<1
Leach 2	2	0.10	0.00	1.90	0.10	11.0	11.0	>20
Leach 3	6	0.00	0.15	2.00	0.00	10.8	11.0	>20
Leach 4	24	0.00	0.00	2.00	0.00	11.0	11.0	>20
Leach 5	48	0.00	0.00	2.00	0.00	10.6	11.0	>20
Total	48	2.10	0.98	2.00	0.10	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Consumption	0.1 kg/tonne
Lime Consumption	1.0 kg/tonne

Flowsheet Schematic



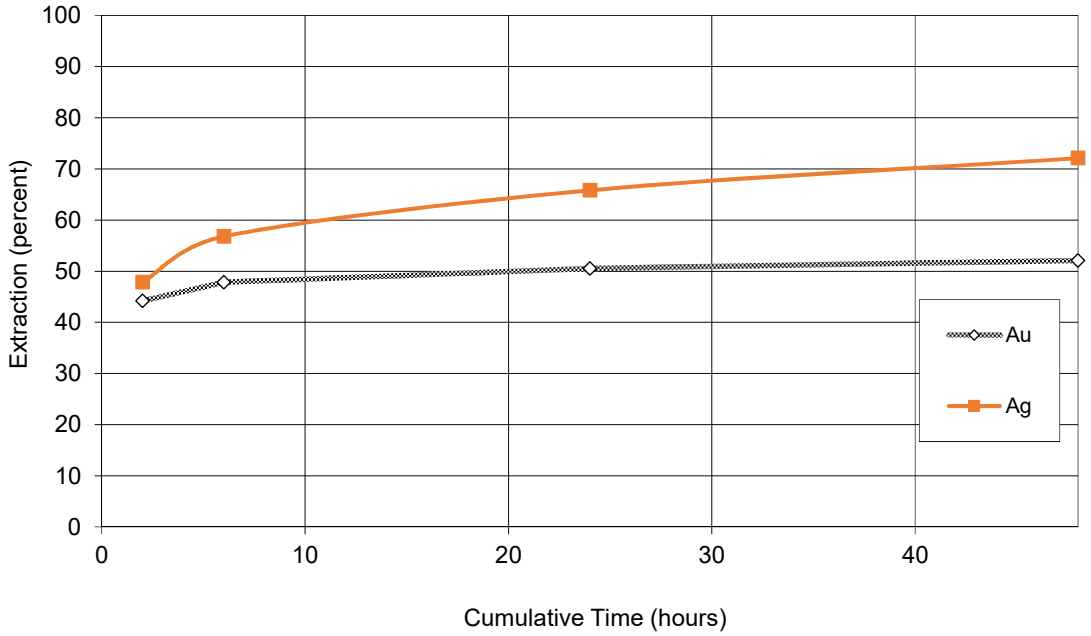
BL0166-08

NW1

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	2000	mL	0.41	0.17	44.2	47.9
Cyanide Liquor (6 hr)	6	2000	mL	0.44	0.20	47.9	56.8
Cyanide Liquor (24 hr)	24	2000	mL	0.46	0.23	50.5	65.8
Cyanide Liquor (48 hr)	48	2000	mL	0.47	0.25	52.1	72.1
Cyanidation Tails	-	991	g	0.90	0.2	47.9	27.9
Calculated Feed		991	g	1.87	0.7	100.0	100.0
Feed Assay				1.7	1		

Cyanide Leach Kinetic Curves



Test No: BL0166-09
Date: 25-Jan-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Whole Ore Leach Test.
Sample: MZ
Sizing: 75µm K_{80} 9 minutes

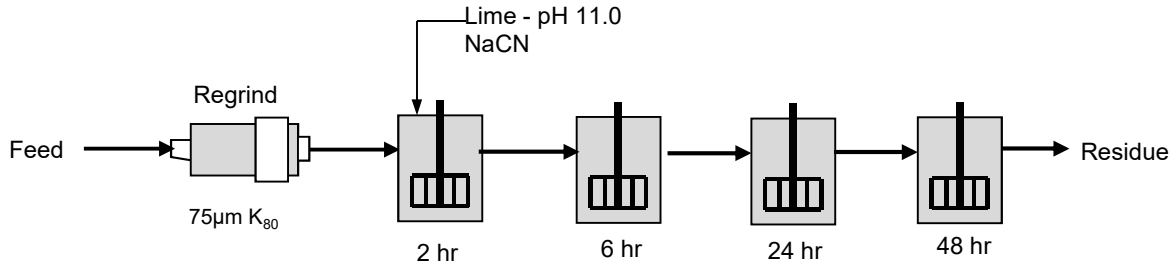
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.4		<1
Leach 1	0	2.00	0.89	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	1.96	0.04	11.0	11.0	>20
Leach 3	6	0.08	0.18	1.92	0.04	10.8	11.0	>20
Leach 4	24	0.14	0.00	1.86	0.14	11.0	11.0	>20
Leach 5	48	0.00	0.00	2.00	0.00	10.8	11.0	>20
Total	48	2.22	1.07	2.00	0.22	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Consumption	0.2 kg/tonne
Lime Consumption	1.1 kg/tonne

Flowsheet Schematic



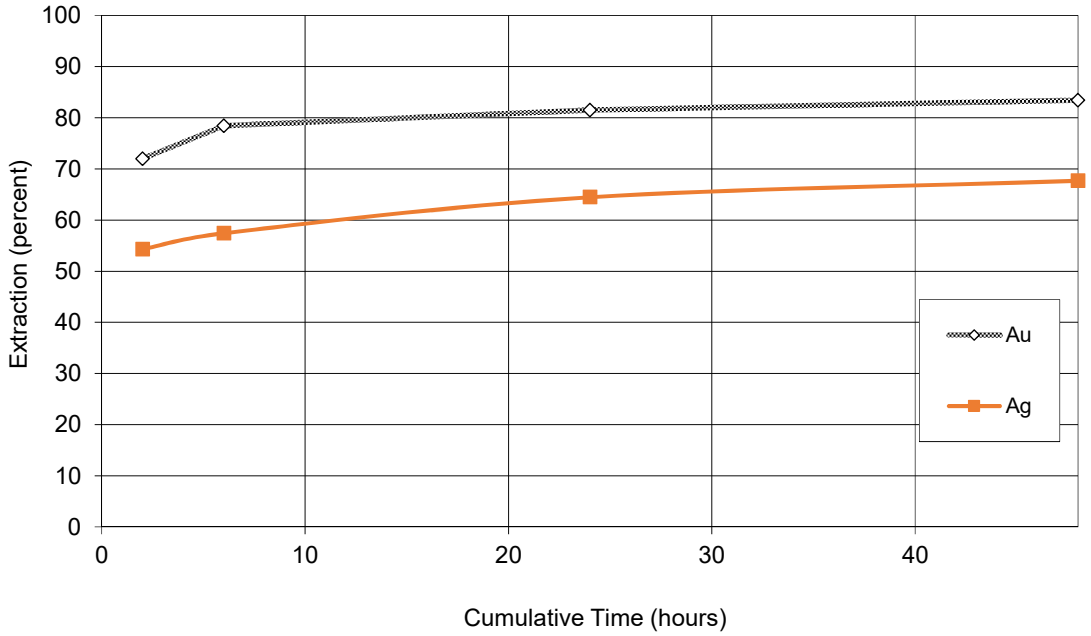
BL0166-09

MZ

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	2000	mL	0.63	0.42	72.0	54.3
Cyanide Liquor (6 hr)	6	2000	mL	0.68	0.44	78.4	57.4
Cyanide Liquor (24 hr)	24	2000	mL	0.70	0.49	81.5	64.5
Cyanide Liquor (48 hr)	48	2000	mL	0.71	0.51	83.4	67.7
Cyanidation Tails	-	1000	g	0.29	0.5	16.6	32.3
Calculated Feed		1000	g	1.75	1.5	100.0	100.0
Feed Assay				1.7	1		

Cyanide Leach Kinetic Curves



Test No: BL0166-10
Date: 25-Jan-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Whole Ore Leach Test.
Sample: NW2
Sizing: 75µm K_{80} 12 minutes

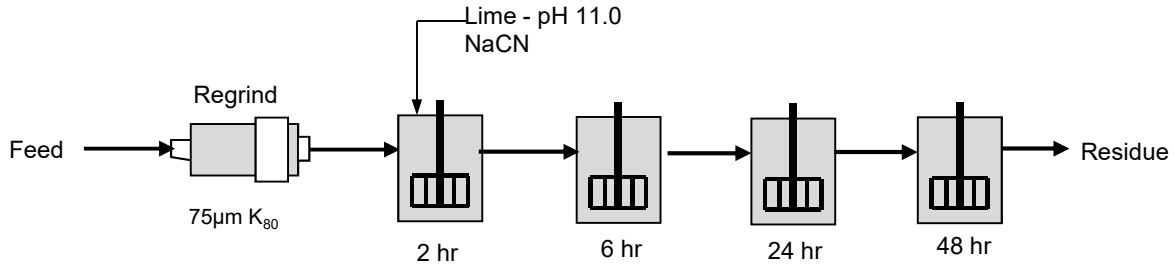
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.8		<1
Leach 1	0	2.00	0.95	-	-	11.0	11.0	<1
Leach 2	2	0.30	0.07	1.70	0.30	10.9	11.0	>20
Leach 3	6	0.00	0.17	1.96	0.04	10.8	11.0	>20
Leach 4	24	0.00	0.16	1.96	0.00	10.9	11.0	>20
Leach 5	48	0.00	0.00	1.96	0.00	10.8	11.0	>20
Total	48	2.30	1.35	1.96	0.34	-	-	-

Mass of Sample	1000
Volume of Water	2000
Pulp Density	33

NaCN Consumption	0.3 kg/tonne
Lime Consumption	1.4 kg/tonne

Flowsheet Schematic



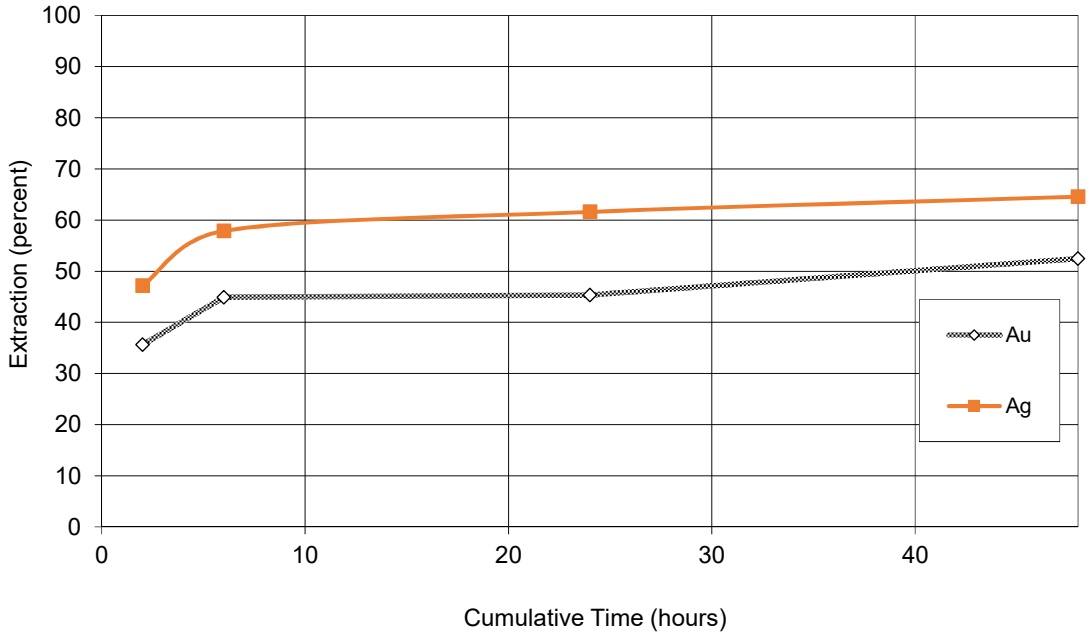
BL0166-10

NW2

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	2000	mL	0.16	0.60	35.6	47.2
Cyanide Liquor (6 hr)	6	2000	mL	0.20	0.73	44.9	57.9
Cyanide Liquor (24 hr)	24	2000	mL	0.20	0.77	45.4	61.6
Cyanide Liquor (48 hr)	48	2000	mL	0.23	0.80	52.5	64.6
Cyanidation Tails	-	1002	g	0.43	0.9	47.5	35.4
Calculated Feed		1002	g	0.90	2.5	100.0	100.0
Feed Assay				0.8	3		

Cyanide Leach Kinetic Curves

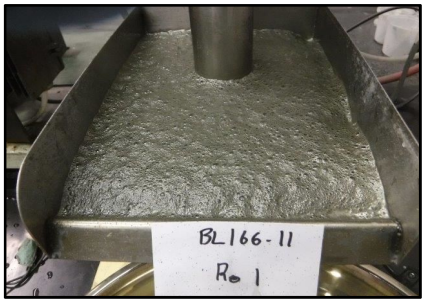


Test No: BL0166-11
Date: 25-Jan-17
Test Type: Rougher Test.
Test Objective: Preliminary Gravity/Flotation Test.
Sample: 1 kg of DW1
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				13		
Knelson						
Pan						
Rougher 1	10		45	2	8.5	100
Rougher 2	10		30	2	8.5	74
Rougher 3	5		30	2	8.5	73
Rougher 4	5		30	2	8.4	67

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-11 DW1

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.9	8.8	29	14.00	44.1	14.3	15.6	22.8
Ro Con 1	3.8	38.2	33	15.00	30.9	71.5	72.4	69.2
Ro Con 2*	1.1	11.2	4.54	0.10	3.82	2.9	0.1	2.5
Ro Con 3*	1.8	17.7	1.35	0.10	0.83	1.3	0.2	0.9
Ro Con 4*	1.9	19.3	0.65	0.10	0.38	0.7	0.2	0.4
Rougher Tail*	90.4	900.3	0.18	0.10	0.08	9.3	11.4	4.2
Recalc. Feed	100.0	995.5	1.79	0.79	1.71	100	100	100
Measured Feed			1.23	0.70	1.56			

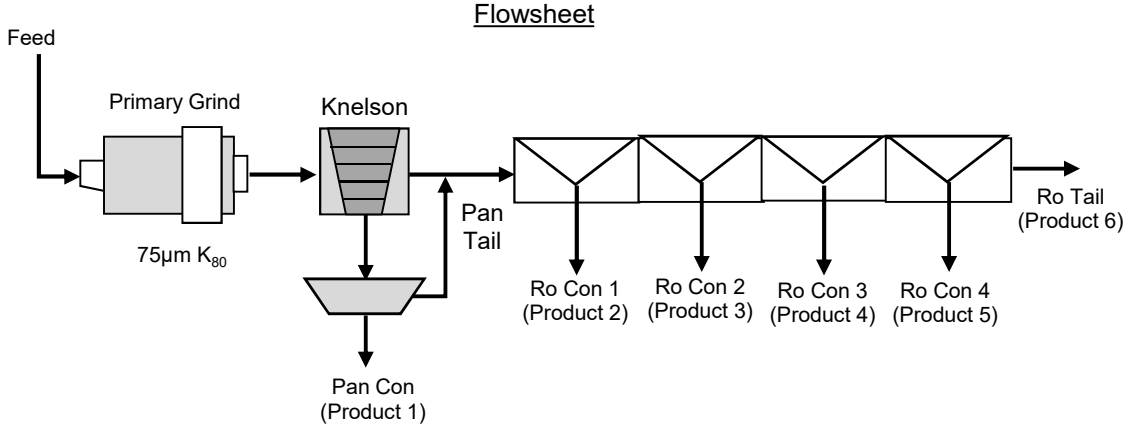
*Ag assays were below detection limit. Value is estimated.

BL0166-11 DW1

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.9	8.8	29	14.00	44.1	14.3	15.6	22.8
Products 2	3.8	38.2	33	15.00	30.9	71.5	72.4	69.2
Products 2 to 3	5.0	49.4	27	11.62	24.8	74.4	72.6	71.7
Products 2 to 4	6.7	67.1	20	8.58	18.4	75.7	72.8	72.6
Products 2 to 5	8.7	86.4	16	6.69	14.4	76.4	73.0	73.0
Product 6	90.4	900.3	0.18	0.100	0.08	9.3	11.4	4.2
Recalc. Feed	100.0	995.5	1.79	0.79	1.71	100	100	100

Flowsheet

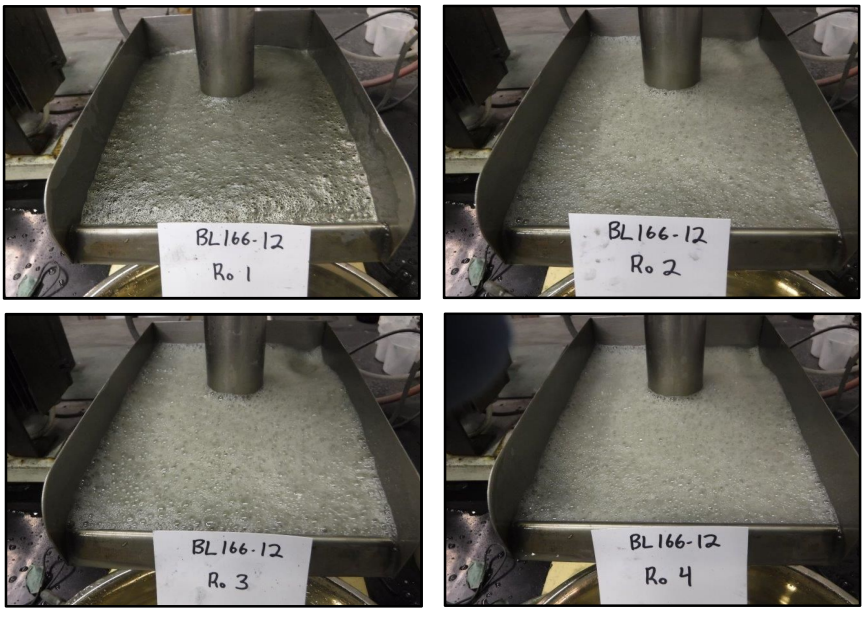


Test No: BL0166-12
Date: 25-Jan-17
Test Type: Rougher Test.
Test Objective: Preliminary Gravity/Flotation Test.
Sample: 1 kg of DW2
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				15		
Knelson						
Pan						
Rougher 1	10		60	2	8.4	59
Rougher 2	10		30	2	8.6	56
Rougher 3	5		30	2	8.5	56
Rougher 4	5		30	2	8.6	55

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-12 DW2

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.7	7.4	48	19.00	42.5	15.5	17.1	20.7
Ro Con 1	4.1	40.9	38	11.00	24.9	67.0	54.6	67.1
Ro Con 2	1.6	16.1	5.8	3.00	4.37	4.1	5.9	4.6
Ro Con 3*	1.7	16.8	2.4	0.20	1.24	1.8	0.4	1.4
Ro Con 4*	1.6	15.6	1.18	0.20	0.63	0.8	0.4	0.6
Rougher Tail*	90.2	894.9	0.28	0.20	0.09	10.9	21.7	5.5
Recalc. Feed	100.0	991.7	2.32	0.83	1.53	100	100	100
Measured Feed			4.00	0.80	1.57			

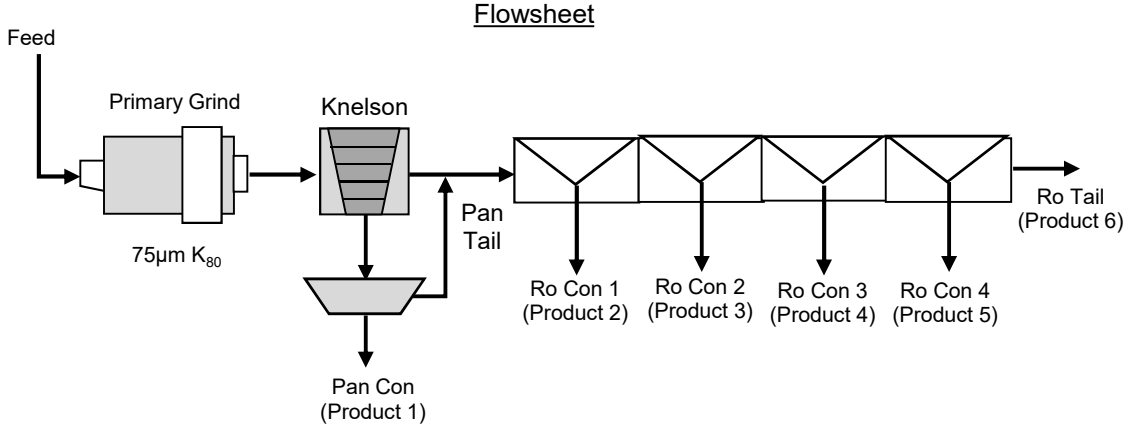
*Ag assays were below detection limit. Value is estimated.

BL0166-12 DW2

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.7	7.4	48	19.00	42.5	15.5	17.1	20.7
Products 1 to 2	4.1	40.9	38	11.00	24.9	67.0	54.6	67.1
Products 1 to 3	5.7	57.0	29	8.74	19.1	71.0	60.4	71.8
Products 1 to 4	7.4	73.8	23	6.80	15.0	72.8	60.8	73.1
Products 1 to 5	9.0	89.4	19	5.65	12.5	73.6	61.2	73.8
Product 6	90.2	894.9	0.28	0.200	0.09	10.9	21.7	5.5
Recalc. Feed	100.0	991.7	2.32	0.83	1.53	100	100	100

Flowsheet

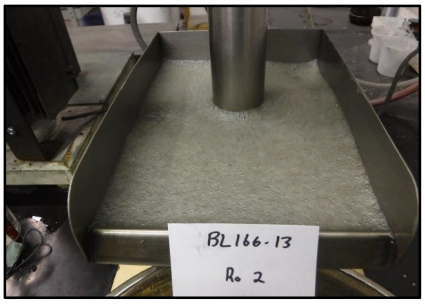


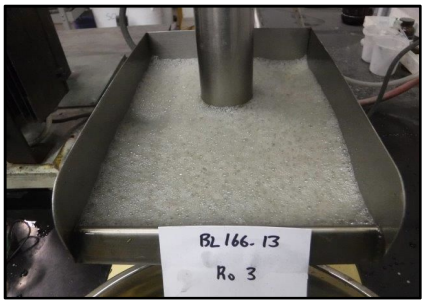
Test No: BL0166-13
Date: 26-Jan-17
Test Type: Rougher Test.
Test Objective: Preliminary Gravity/Flotation Test.
Sample: 1 kg of Z10
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				13		
Knelson						
Pan						
Rougher 1	10		45	2	8.8	240
Rougher 2	10		30	2	8.8	210
Rougher 3	5		30	2	8.8	203
Rougher 4	5		30	2	8.7	203

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap





BL0166-13 Z10

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	1.2	12.3	31	10.00	51.4	15.2	16.3	20.5
Ro Con 1	6.4	63.4	30	7.00	31.1	73.5	58.8	63.9
Ro Con 2	2.0	19.5	4.0	5.00	9.16	3.1	12.9	5.8
Ro Con 3*	1.4	14.3	1.6	0.10	4.26	0.9	0.2	2.0
Ro Con 4*	1.4	13.5	0.93	0.10	2.63	0.5	0.2	1.2
Rougher Tail*	87.6	872.5	0.20	0.10	0.24	6.9	11.6	6.7
Recalc. Feed	100.0	995.5	2.56	0.76	3.10	100	100	100
Measured Feed			2.57	0.60	2.96			

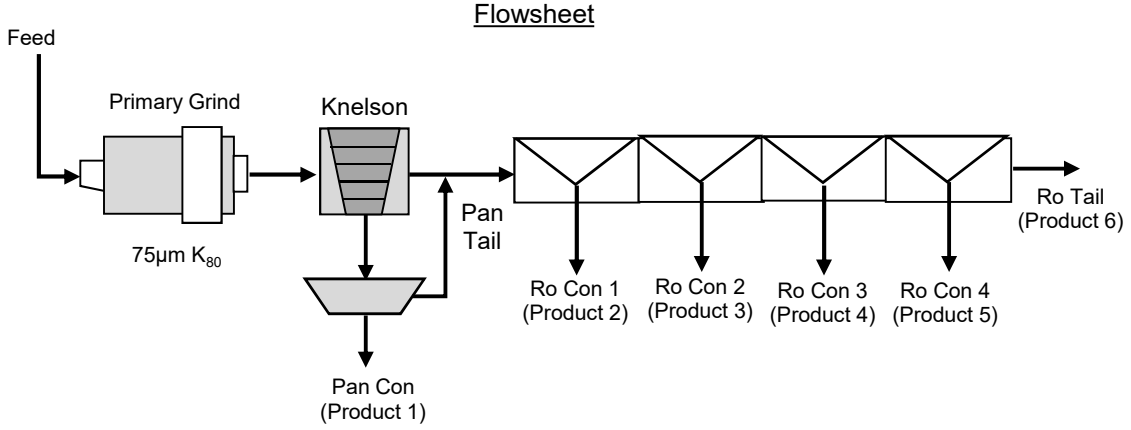
*Ag assays were below detection limit. Value is estimated.

BL0166-13 Z10

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	1.2	12.3	31	10.00	51.4	15.2	16.3	20.5
Products 1 to 2	6.4	63.4	30	7.00	31.1	73.5	58.8	63.9
Products 1 to 3	8.3	82.9	24	6.53	25.9	76.6	71.8	69.7
Products 1 to 4	9.8	97.2	20	5.58	22.7	77.5	71.9	71.7
Products 1 to 5	11.1	110.7	18	4.91	20.3	78.0	72.1	72.8
Product 6	87.6	872.5	0.20	0.100	0.24	6.9	11.6	6.7
Recalc. Feed	100.0	995.5	2.56	0.76	3.10	100	100	100

Flowsheet

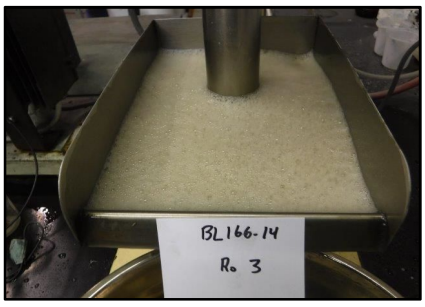


Test No: BL0166-14
Date: 26-Jan-17
Test Type: Rougher Test.
Test Objective: Preliminary Gravity/Flotation Test.
Sample: 1 kg of Z20
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				14		
Knelson						
Pan						
Rougher 1	10		45	2	8.8	190
Rougher 2	5		30	2	8.6	189
Rougher 3	5		30	2	8.7	195
Rougher 4	5		30	2	8.6	192

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-14 Z20

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.7	6.8	19	14.00	14.9	19.7	27.5	20.9
Ro Con 1	2.2	22.1	18	7.00	11.4	62.0	44.6	52.0
Ro Con 2*	1.5	14.9	1.8	0.10	2.41	4.2	0.4	7.4
Ro Con 3*	1.1	10.5	0.7	0.10	1.00	1.1	0.3	2.2
Ro Con 4*	1.1	10.6	0.50	0.10	0.65	0.8	0.3	1.4
Rougher Tail*	93.5	930.4	0.08	0.10	0.08	12.1	26.8	16.1
Recalc. Feed	100.0	995.3	0.64	0.35	0.49	100	100	100
Measured Feed			0.78	0.25	0.46			

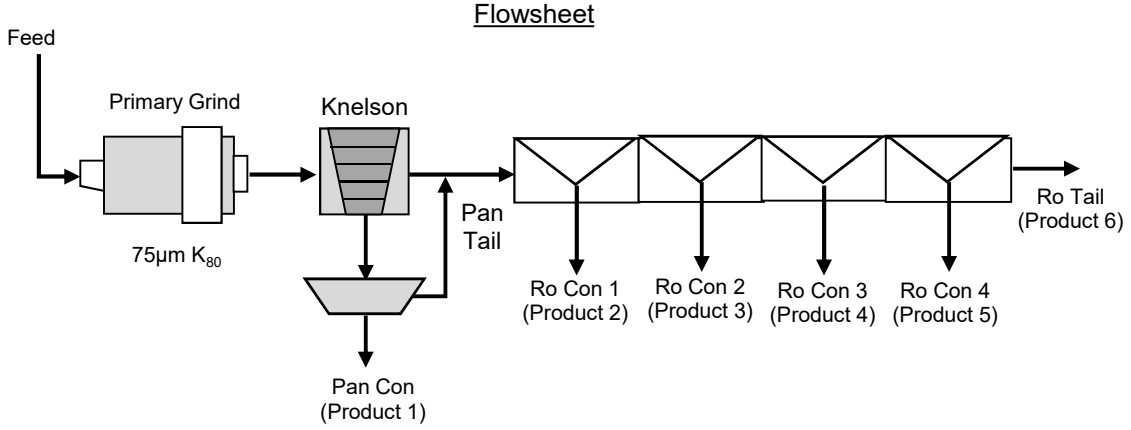
*Ag assays were below detection limit. Value is estimated.

BL0166-14 Z20

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.7	6.8	19	14.00	14.9	19.7	27.5	20.9
Products 1 to 2	2.2	22.1	18	7.00	11.4	62.0	44.6	52.0
Products 1 to 3	3.7	37.0	11	4.22	7.8	66.2	45.1	59.4
Products 1 to 4	4.8	47.5	9	3.31	6.3	67.4	45.4	61.6
Products 1 to 5	5.8	58.1	7	2.72	5.3	68.2	45.7	63.0
Product 6	93.5	930.4	0.08	0.100	0.08	12.1	26.8	16.1
Recalc. Feed	100.0	995.3	0.64	0.35	0.49	100	100	100

Flowsheet



Test No: BL0166-15
Date: 26-Jan-17
Test Type: Rougher Test.
Test Objective: Preliminary Gravity/Flotation Test.
Sample: 1 kg of Z531
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				10		
Knelson						
Pan						
Rougher 1	10		45	2	8.8	185
Rougher 2	10		30	2	8.8	187
Rougher 3	5		30	2	8.7	190
Rougher 4	5		30	2	8.8	191

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap

BL0166-15 Z531

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con*	1.0	9.6	61	77.00	38.6	29.2	52.7	22.9
Ro Con 1	4.4	44.0	27	11.00	23.4	59.6	34.5	63.8
Ro Con 2	1.4	14.4	3.9	3.00	4.58	2.8	3.1	4.1
Ro Con 3**	1.9	18.6	1.0	0.10	1.42	0.9	0.1	1.6
Ro Con 4	1.5	15.2	0.70	3.00	1.00	0.5	3.3	0.9
Rougher Tail**	89.8	892.0	0.16	0.10	0.12	7.0	6.4	6.6
Recalc. Feed	100.0	993.8	2.02	1.41	1.62	100	100	100
Measured Feed			2.37	0.75	1.67			

*Au assays were below detection limit. Value is estimated.

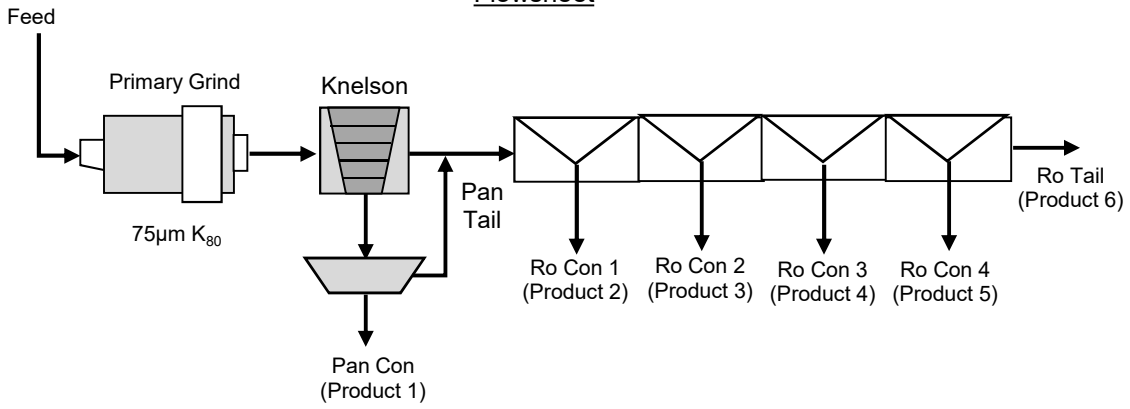
**Ag assays were below detection limit. Value is estimated.

BL0166-15 Z531

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	1.0	9.6	61	77.00	38.6	29.2	52.7	22.9
Products 1 to 2	4.4	44.0	27	11.00	23.4	59.6	34.5	63.8
Products 1 to 3	5.9	58.4	21	9.03	18.8	62.4	37.6	67.8
Products 1 to 4	7.7	77.0	17	6.87	14.6	63.3	37.7	69.5
Products 1 to 5	9.3	92.2	14	6.23	12.3	63.8	41.0	70.4
Product 6	89.8	892.0	0.16	0.100	0.12	7.0	6.4	6.6
Recalc. Feed	100.0	993.8	2.02	1.41	1.62	100	100	100

Flowsheet

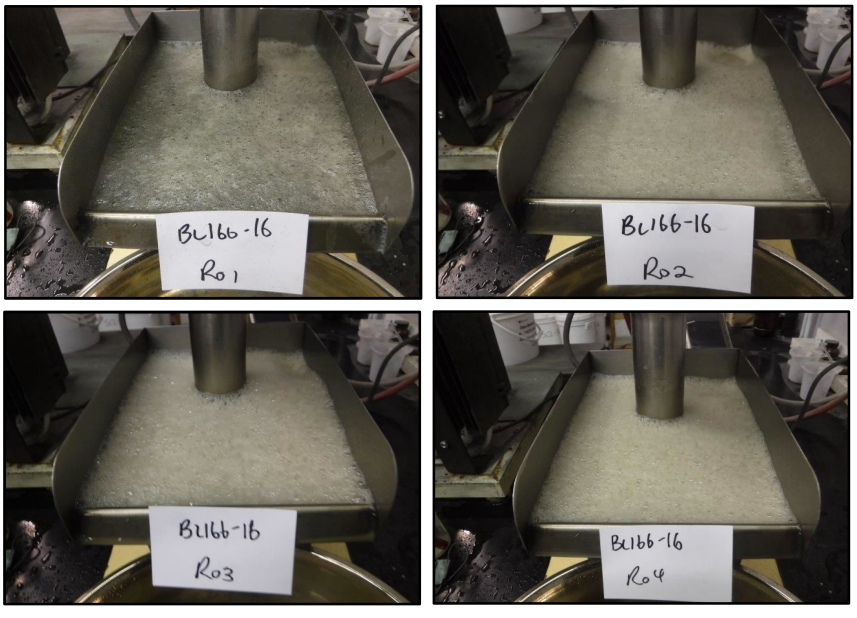


Test No: BL0166-16
Date: 26-Jan-17
Test Type: Rougher Test.
Test Objective: Preliminary Gravity/Flotation Test.
Sample: 1 kg of POR1
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				12		
Knelson						
Pan						
Rougher 1	10		60	2	8.7	140
Rougher 2	10		30	2	8.6	167
Rougher 3	5		30	2	8.7	170
Rougher 4	5		30	2	8.7	175

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-16 POR1

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	1.0	9.7	71	23.00	42.2	45.8	32.2	27.7
Ro Con 1	3.5	34.9	20	8.00	21.0	46.4	40.3	49.6
Ro Con 2*	2.1	20.8	1.40	0.20	3.91	1.9	0.6	5.5
Ro Con 3*	1.5	14.5	0.63	0.20	1.83	0.6	0.4	1.8
Ro Con 4*	1.2	11.7	0.54	0.20	1.22	0.4	0.3	1.0
Rougher Tail*	90.8	902.0	0.08	0.20	0.24	4.8	26.1	14.5
Recalc. Feed	100.0	993.6	1.51	0.70	1.49	100	100	100
Measured Feed			1.74	0.70	1.36			

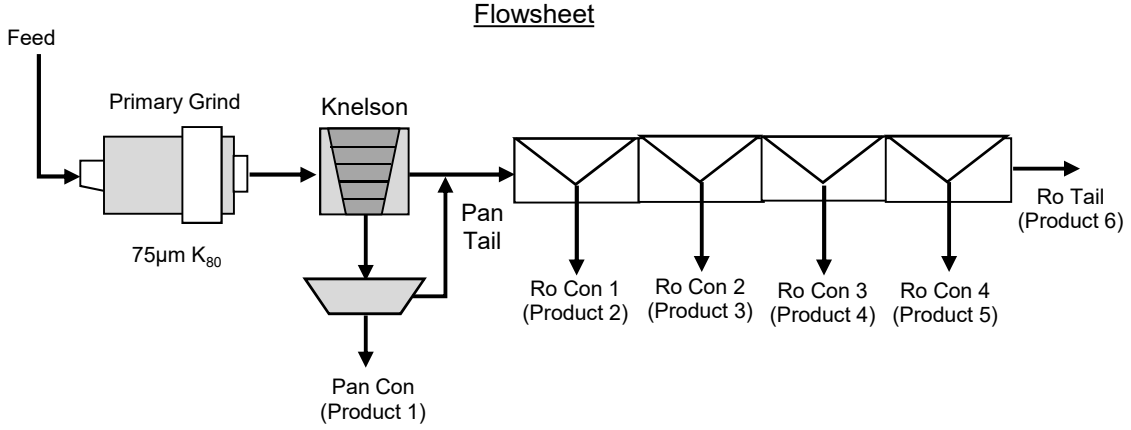
*Ag assays were below detection limit. Value is estimated.

BL0166-16 POR1

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	1.0	9.7	71	23.00	42.2	45.8	32.2	27.7
Products 1 to 2	3.5	34.9	20	8.00	21.0	46.4	40.3	49.6
Products 1 to 3	5.6	55.7	13	5.09	14.6	48.4	40.9	55.1
Products 1 to 4	7.1	70.2	10	4.08	12.0	49.0	41.4	56.9
Products 1 to 5	8.2	81.9	9	3.52	10.4	49.4	41.7	57.8
Product 6	90.8	902.0	0.08	0.200	0.24	4.8	26.1	14.5
Recalc. Feed	100.0	993.6	1.51	0.70	1.49	100	100	100

Flowsheet

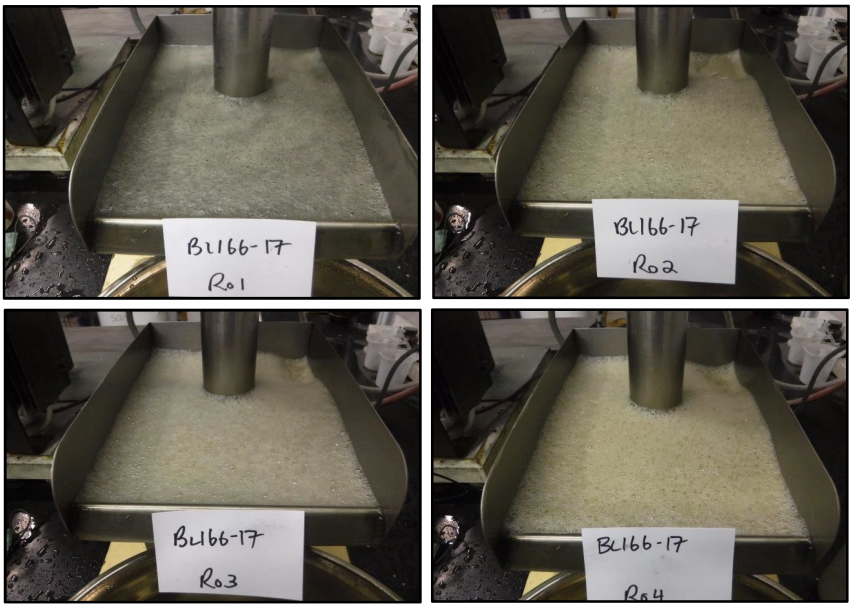


Test No: BL0166-17
Date: 26-Jan-17
Test Type: Rougher Test.
Test Objective: Preliminary Gravity/Flotation Test.
Sample: 1 kg of POR2
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				12		
Knelson						
Pan						
Rougher 1	10		60	2	8.7	170
Rougher 2	10		30	2	8.7	174
Rougher 3	5		30	2	8.7	175
Rougher 4	5		30	2	8.7	177

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-17 POR2

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	1.2	11.5	35	14.00	26.7	23.9	25.7	20.8
Ro Con 1	4.7	46.6	22	7.00	17.4	61.1	52.1	55.0
Ro Con 2*	1.8	17.7	2.8	0.10	5.80	2.9	0.3	7.0
Ro Con 3	1.6	15.8	1.3	3.00	2.71	1.2	7.6	2.9
Ro Con 4*	1.9	18.6	0.81	0.10	1.56	0.9	0.3	2.0
Rougher Tail*	88.9	883.7	0.19	0.10	0.21	10.0	14.1	12.4
Recalc. Feed	100.0	993.9	1.69	0.63	1.48	100	100	100
Measured Feed			2.11	0.65	1.55			

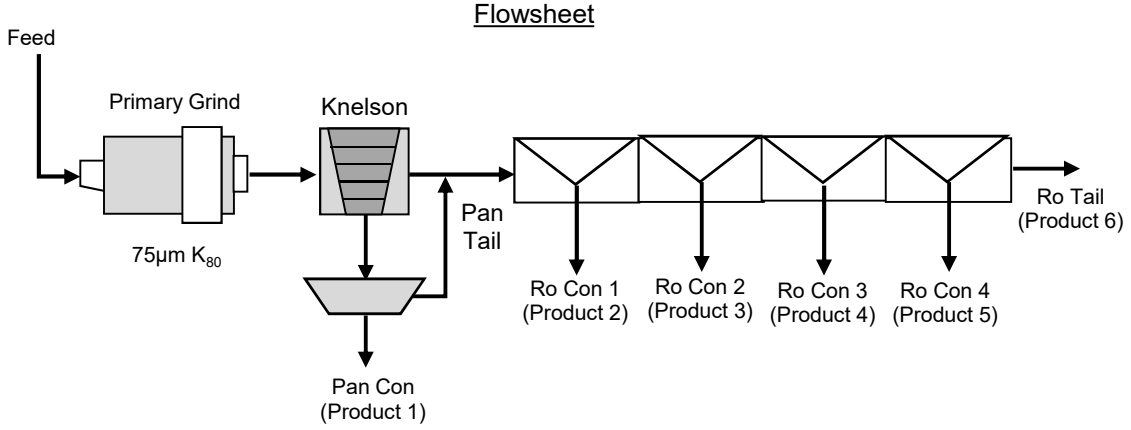
*Ag assays were below detection limit. Value is estimated.

BL0166-17 POR2

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	1.2	11.5	35	14.00	26.7	23.9	25.7	20.8
Products 1 to 2	4.7	46.6	22	7.00	17.4	61.1	52.1	55.0
Products 1 to 3	6.5	64.3	17	5.10	14.2	64.0	52.3	61.9
Products 1 to 4	8.1	80.1	14	4.69	11.9	65.2	59.9	64.8
Products 1 to 5	9.9	98.7	11	3.82	10.0	66.1	60.2	66.8
Product 6	88.9	883.7	0.19	0.100	0.21	10.0	14.1	12.4
Recalc. Feed	100.0	993.9	1.69	0.63	1.48	100	100	100

Flowsheet

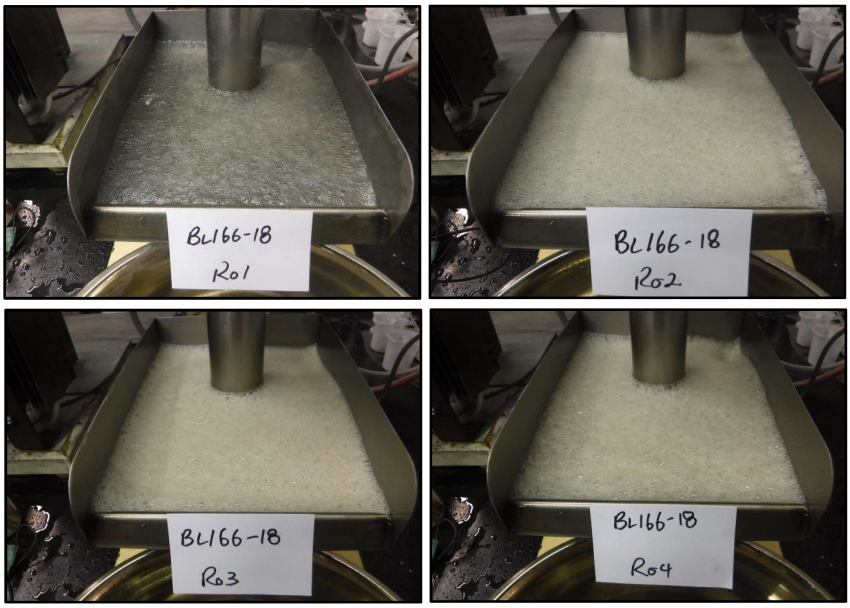


Test No: BL0166-18
Date: 26-Jan-17
Test Type: Rougher Test.
Test Objective: Preliminary Gravity/Flotation Test.
Sample: 1 kg of NW1
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				8.5		
Knelson						
Pan						
Rougher 1	10		60	2	8.7	163
Rougher 2	10		30	2	8.7	172
Rougher 3	5		30	2	8.7	174
Rougher 4	5		30	2	8.7	176

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-18 NW1

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	1.0	10.2	59	19.00	33.2	26.8	27.3	29.4
Ro Con 1	3.3	32.3	45	13.00	19.1	64.7	59.2	53.6
Ro Con 2*	1.8	17.5	4.7	0.10	3.55	3.6	0.2	5.4
Ro Con 3*	1.7	16.6	1.2	0.10	1.19	0.9	0.2	1.7
Ro Con 4*	1.7	17.2	1.01	0.10	0.95	0.8	0.2	1.4
Rougher Tail*	90.6	899.4	0.08	0.10	0.11	3.1	12.7	8.4
Recalc. Feed	100.0	993.2	2.26	0.71	1.16	100	100	100
Measured Feed			1.70	0.60	1.17			

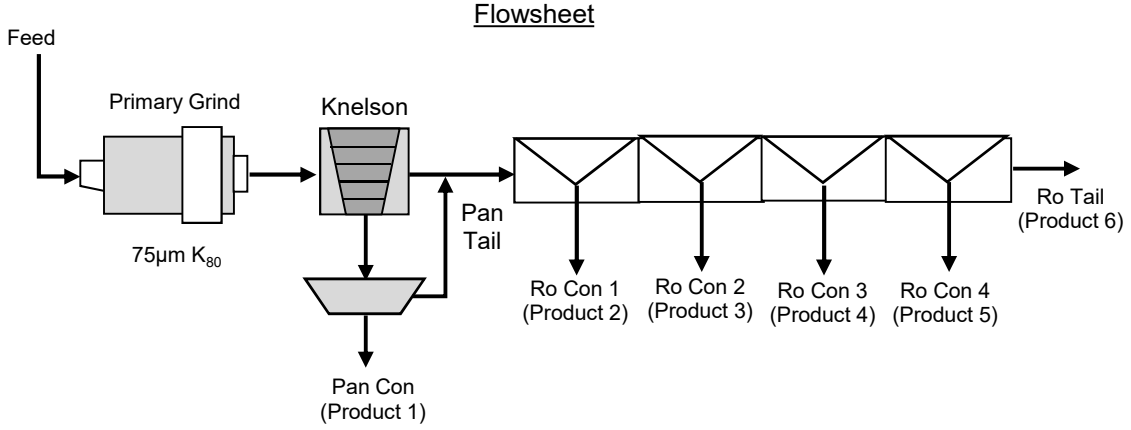
*Ag assays were below detection limit. Value is estimated.

BL0166-18 NW1

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	1.0	10.2	59	19.00	33.2	26.8	27.3	29.4
Products 1 to 2	3.3	32.3	45	13.00	19.1	64.7	59.2	53.6
Products 1 to 3	5.0	49.8	31	8.47	13.6	68.4	59.5	59.0
Products 1 to 4	6.7	66.4	23	6.38	10.5	69.3	59.7	60.8
Products 1 to 5	8.4	83.6	19	5.08	8.6	70.1	60.0	62.2
Product 6	90.6	899.4	0.08	0.100	0.11	3.1	12.7	8.4
Recalc. Feed	100.0	993.2	2.26	0.71	1.16	100	100	100

Flowsheet



Test No: BL0166-19
Date: 26-Jan-17
Test Type: Rougher Test.
Test Objective: Preliminary Gravity/Flotation Test.
Sample: 1 kg of MZ
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				9		
Knelson						
Pan						
Rougher 1	10		60	2	8.5	170
Rougher 2	10		30	2	8.5	176
Rougher 3	5		30	2	8.6	178
Rougher 4	5		30	2	8.6	180

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap

BL0166-19 MZ

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.8	8.3	96	42.00	38.4	40.0	27.2	29.4
Ro Con 1	3.6	35.6	28	22.00	17.0	49.7	61.1	55.8
Ro Con 2	1.9	18.9	2.8	3.00	2.62	2.6	4.4	4.6
Ro Con 3*	1.6	15.8	1.1	0.10	1.11	0.9	0.1	1.6
Ro Con 4*	1.6	16.3	0.78	0.10	0.62	0.6	0.1	0.9
Rougher Tail*	90.4	896.3	0.14	0.10	0.09	6.1	7.0	7.6
Recalc. Feed	100.0	991.2	2.01	1.29	1.09	100	100	100
Measured Feed			1.66	1.25	1.04			

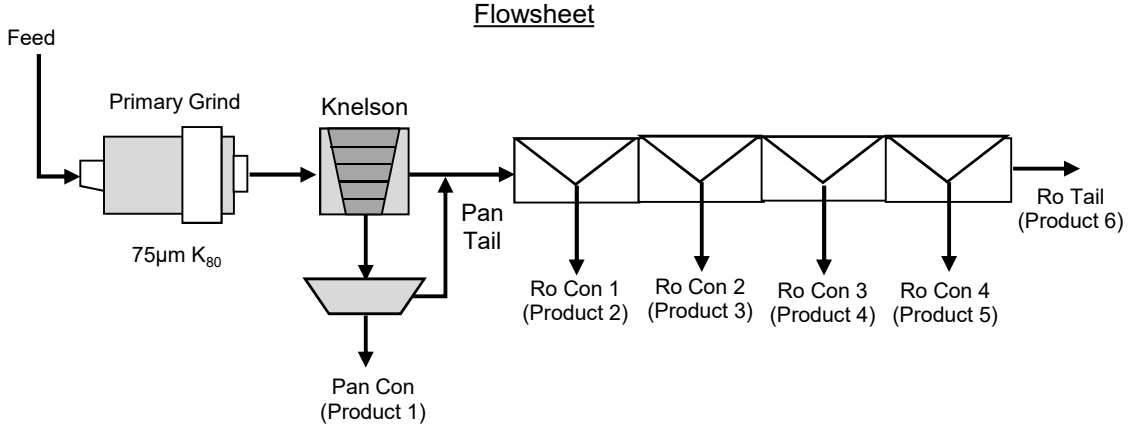
*Ag assays were below detection limit. Value is estimated.

BL0166-19 MZ

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.8	8.3	96	42.00	38.4	40.0	27.2	29.4
Products 1 to 2	3.6	35.6	28	22.00	17.0	49.7	61.1	55.8
Products 1 to 3	5.5	54.5	19	15.41	12.0	52.4	65.5	60.4
Products 1 to 4	7.1	70.3	15	11.97	9.6	53.2	65.7	62.0
Products 1 to 5	8.7	86.6	12	9.74	7.9	53.9	65.8	63.0
Product 6	90.4	896.3	0.14	0.100	0.09	6.1	7.0	7.6
Recalc. Feed	100.0	991.2	2.01	1.29	1.09	100	100	100

Flowsheet

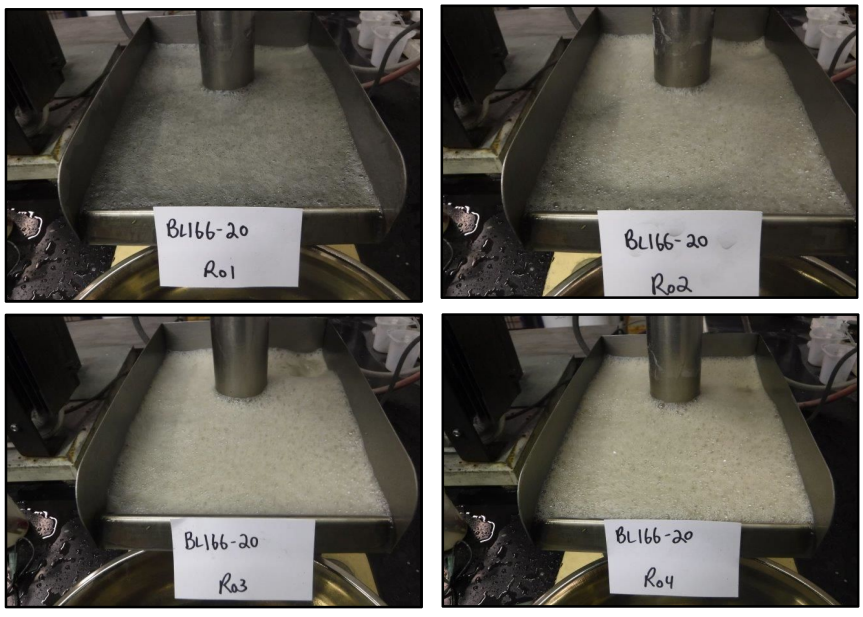


Test No: BL0166-20
Date: 26-Jan-17
Test Type: Rougher Test.
Test Objective: Preliminary Gravity/Flotation Test.
Sample: 1 kg of NW2
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				12		
Knelson						
Pan						
Rougher 1	10		60	2	8.7	160
Rougher 2	10		30	2	8.7	169
Rougher 3	5		30	2	8.7	169
Rougher 4	5		30	2	8.7	172

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-20 NW2

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	1.0	10.4	31	17.00	41.1	34.9	7.1	29.1
Ro Con 1	3.7	36.9	12	31.00	19.6	47.8	46.0	49.3
Ro Con 2	2.2	21.4	2.6	9.00	5.05	5.9	7.7	7.4
Ro Con 3	1.6	16.3	1.0	4.00	1.95	1.8	2.6	2.2
Ro Con 4*	1.8	17.5	0.62	1.00	1.19	1.2	0.7	1.4
Rougher Tail*	89.7	890.6	0.09	1.00	0.18	8.4	35.8	10.6
Recalc. Feed	100.0	993.1	0.93	2.50	1.48	100	100	100
Measured Feed			0.78	2.50	1.50			

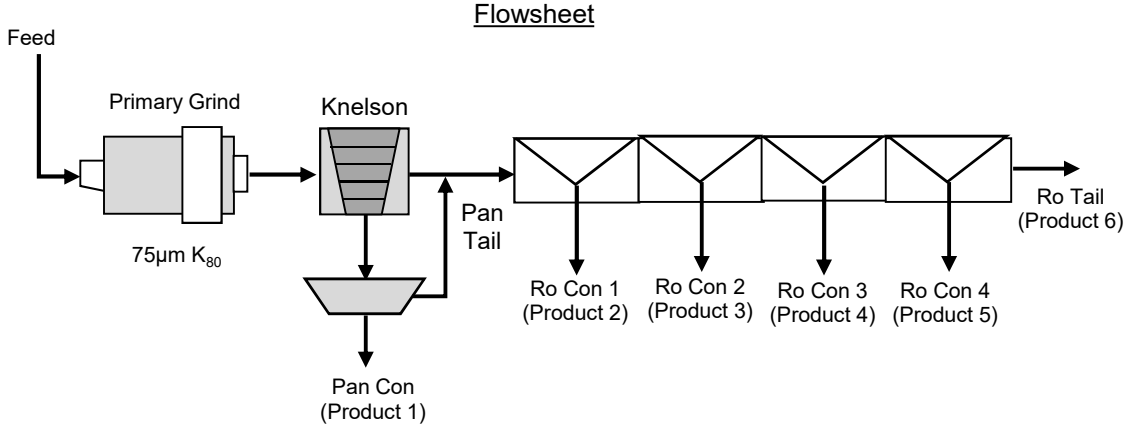
*Ag assays were below detection limit. Value is estimated.

BL0166-20 NW2

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	1.0	10.4	31	17.00	41.1	34.9	7.1	29.1
Products 1 to 2	3.7	36.9	12	31.00	19.6	47.8	46.0	49.3
Products 1 to 3	5.9	58.3	9	22.92	14.3	53.7	53.7	56.7
Products 1 to 4	7.5	74.6	7	18.79	11.6	55.5	56.4	58.8
Products 1 to 5	9.3	92.1	6	15.41	9.6	56.7	57.1	60.2
Product 6	89.7	890.6	0.09	1.000	0.18	8.4	35.8	10.6
Recalc. Feed	100.0	993.1	0.93	2.50	1.48	100	100	100

Flowsheet

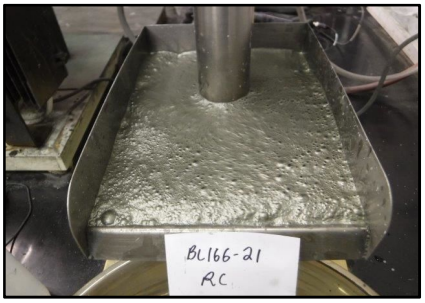


Test No: BL0166-21
Date: 8-Feb-17
Test Type: Rougher Test.
Test Objective: Produce Rougher Concentrate for Leaching.
Sample: 2x1 kg of DW1
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				13		
Knelson						
Pan						
Rougher 1	10		30	2	8.9	160
Rougher 2	10		30	2	8.9	169
Rougher 3	5		30	2	8.8	169
Rougher 4	5		15	2	8.8	172

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-21 DW1

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.3	5.5	41	13.00	42.1	6.3	4.8	7.4
Ro Con	15.9	315.9	9	4.00	8.6	82.0	84.1	87.6
Rougher Tail*	83.8	1668.0	0.25	0.10	0.09	11.7	11.1	4.9
Recalc. Feed	100.0	1989.4	1.79	0.75	1.56	100	100	100
Measured Feed			1.23	0.70	1.56			

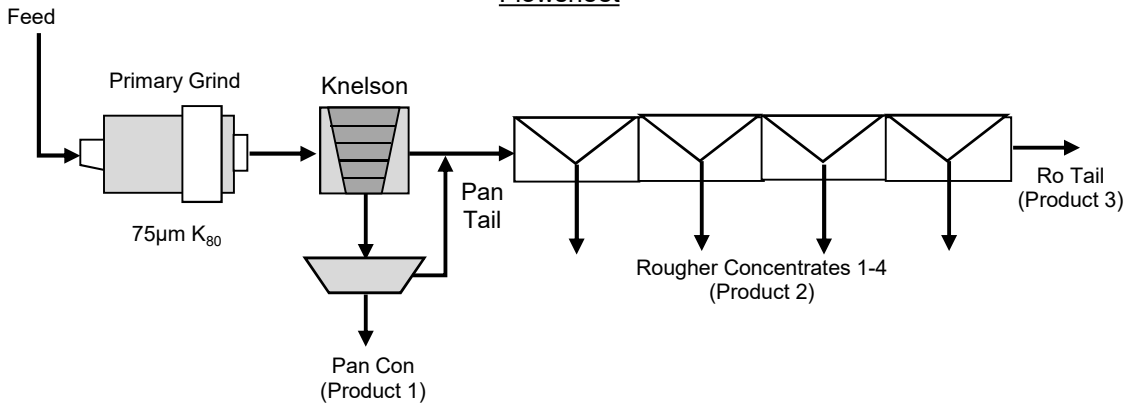
*Ag assays were below detection limit. Value is estimated.

BL0166-21 DW1

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.3	5.5	41	13.00	42.1	6.3	4.8	7.4
Products 1 to 2	16.2	321.4	10	4.15	9.2	88.3	88.9	95.1
Product 3	83.8	1668.0	0.25	0.100	0.09	11.7	11.1	4.9
Recalc. Feed	100.0	1989.4	1.79	0.75	1.56	100	100	100

Flowsheet

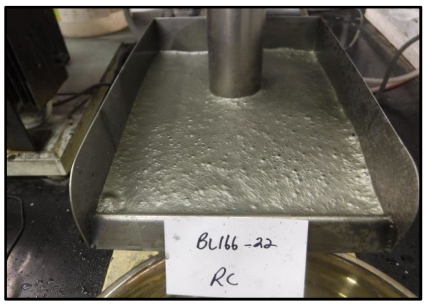


Test No: BL0166-22
Date: 8-Feb-17
Test Type: Rougher Test.
Test Objective: Produce Rougher Concentrate for Leaching.
Sample: 2x1 kg of DW2
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				15		
Knelson						
Pan						
Rougher 1	10		30	2	8.8	145
Rougher 2	10		30	2	8.8	148
Rougher 3	5		30	2	8.8	146
Rougher 4	5		15	2	8.8	143

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-22 DW2

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.4	7.7	74	20.00	38.4	9.3	10.2	9.8
Ro Con	11.8	235.7	21	5.00	10.8	80.8	78.2	84.8
Rougher Tail*	87.8	1753.8	0.35	0.100	0.09	9.9	11.6	5.4
Recalc. Feed	100.0	1997.2	3.07	0.75	1.50	100	100	100
Measured Feed			4.00	0.80	1.57			

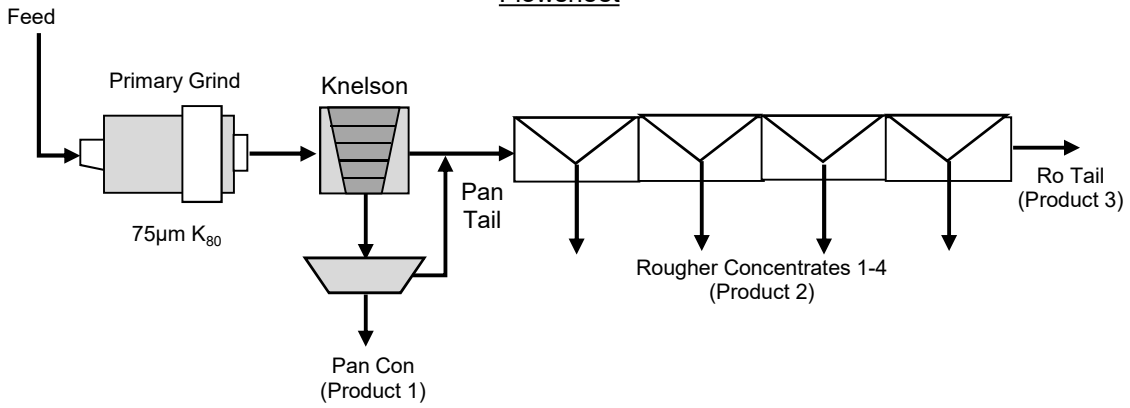
*Ag assays were below detection limit. Value is estimated.

BL0166-22 DW2

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.4	7.7	74	20.00	38.4	9.3	10.2	9.8
Products 1 to 2	12.2	243.4	23	5.47	11.7	90.1	88.4	94.6
Product 3	87.8	1753.8	0.35	0.100	0.09	9.9	11.6	5.4
Recalc. Feed	100.0	1997.2	3.07	0.75	1.50	100	100	100

Flowsheet

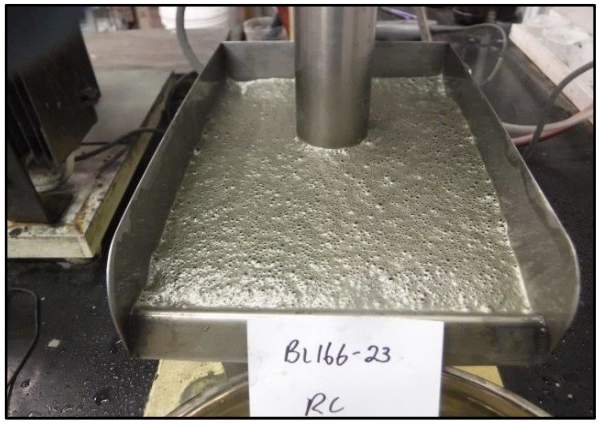


Test No: BL0166-23
Date: 8-Feb-17
Test Type: Rougher Test.
Test Objective: Produce Rougher Concentrate for Leaching.
Sample: 2x1 kg of Z10
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				13		
Knelson						
Pan						
Rougher 1	10		30	2	8.7	140
Rougher 2	10		30	2	8.8	130
Rougher 3	5		15	2	8.8	130
Rougher 4	5		15	2	8.8	135

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-23 Z10

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.4	8.6	47	20.42	44.7	6.6	11.4	6.2
Ro Con	11.9	237.1	22	5.00	23.0	86.8	77.2	88.3
Rougher Tail*	87.7	1747.6	0.23	0.100	0.19	6.5	11.4	5.4
Recalc. Feed	100.0	1993.3	3.03	0.77	3.10	100	100	100
Measured Feed			2.57	0.60	2.96			

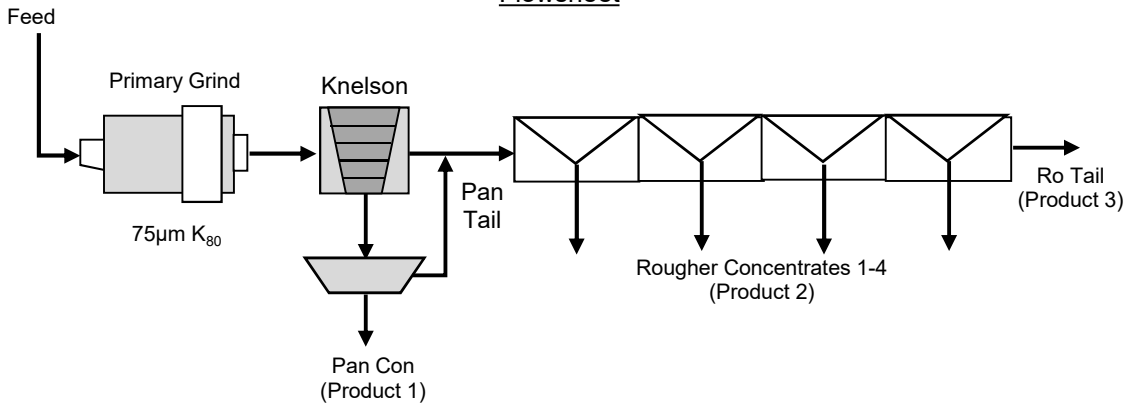
*Ag assays were below detection limit. Value is estimated.

BL0166-23 Z10

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.4	8.6	47	20.42	44.7	6.6	11.4	6.2
Products 1 to 2	12.3	245.7	23	5.54	23.8	93.5	88.6	94.6
Product 3	87.7	1747.6	0.23	0.100	0.19	6.5	11.4	5.4
Recalc. Feed	100.0	1993.3	3.03	0.77	3.10	100	100	100

Flowsheet



Test No: BL0166-24
Date: 8-Feb-17
Test Type: Rougher Test.
Test Objective: Produce Rougher Concentrate for Leaching.
Sample: 2x1 kg of Z20
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				14		
Knelson						
Pan						
Rougher 1	10		30	2	8.2	113
Rougher 2	5		30	2	8.6	114
Rougher 3	5		15	2	8.5	120
Rougher 4	5		15	2	8.6	130

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap

BL0166-24 Z20

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.4	7.7	41	23.50	20.8	20.0	30.8	16.0
Ro Con*	11.6	230.7	4.68	1.00	3.0	67.8	39.3	69.6
Rougher Tail*	88.0	1755.5	0.11	0.100	0.08	12.2	29.9	14.4
Recalc. Feed	100.0	1993.9	0.80	0.29	0.50	100	100	100
Measured Feed			0.78	0.25	0.46			

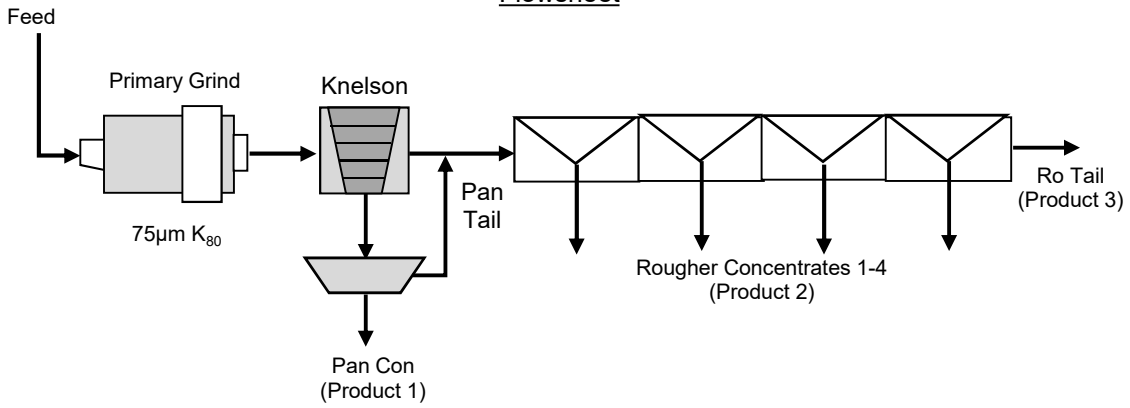
*Ag assays were below detection limit. Value is estimated.

BL0166-24 Z20

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.4	7.7	41	23.50	20.8	20.0	30.8	16.0
Products 1 to 2	12.0	238.4	6	1.73	3.6	87.8	70.1	85.6
Product 3	88.0	1755.5	0.11	0.100	0.08	12.2	29.9	14.4
Recalc. Feed	100.0	1993.9	0.80	0.29	0.50	100	100	100

Flowsheet



Test No: BL0166-25
Date: 8-Feb-17
Test Type: Rougher Test.
Test Objective: Produce Rougher Concentrate for Leaching.
Sample: 2x1 kg of Z531
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				10		
Knelson						
Pan						
Rougher 1	10		30	2	8.7	114
Rougher 2	10		30	2	8.7	113
Rougher 3	5		15	2	8.7	112
Rougher 4	5		15	2	8.7	113

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap

BL0166-25 Z531

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.4	8.5	61	18.28	37.1	13.4	10.6	9.5
Ro Con	11.4	227.0	14	5.00	12.4	80.8	77.4	84.6
Rougher Tail*	88.2	1760.0	0.13	0.100	0.11	5.9	12.0	5.9
Recalc. Feed	100.0	1995.5	1.93	0.73	1.67	100	100	100
Measured Feed			2.37	0.75	1.67			

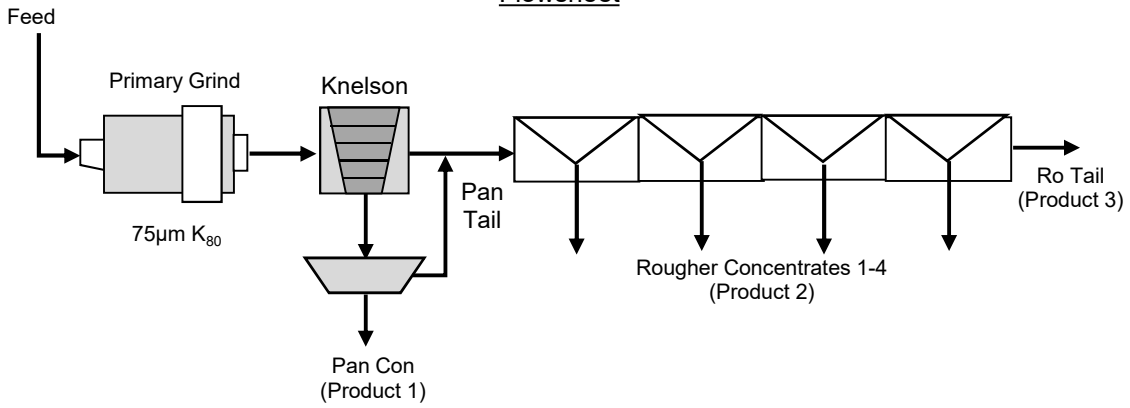
*Ag assays were below detection limit. Value is estimated.

BL0166-25 Z531

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.4	8.5	61	18.28	37.1	13.4	10.6	9.5
Products 1 to 2	11.8	235.5	15	5.48	13.3	94.1	88.0	94.1
Product 3	88.2	1760.0	0.13	0.100	0.11	5.9	12.0	5.9
Recalc. Feed	100.0	1995.5	1.93	0.73	1.67	100	100	100

Flowsheet



Test No: BL0166-26
Date: 8-Feb-17
Test Type: Rougher Test.
Test Objective: Produce Rougher Concentrate for Leaching.
Sample: 2x1 kg of POR1
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				12		
Knelson						
Pan						
Rougher 1	10		30	2	8.6	87
Rougher 2	10		30	2	8.6	89
Rougher 3	5		15	2	8.6	84
Rougher 4	5		15	2	8.6	82

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap

BL0166-26 POR1

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.4	7.6	105	39.38	48.8	24.1	16.4	12.4
Ro Con	11.3	224.4	11	6.00	10.9	71.5	73.9	81.5
Rougher Tail*	88.4	1761.4	0.08	0.10	0.10	4.4	9.7	6.1
Recalc. Feed	100.0	1993.4	1.65	0.91	1.50	100	100	100
Measured Feed			1.74	0.70	1.36			

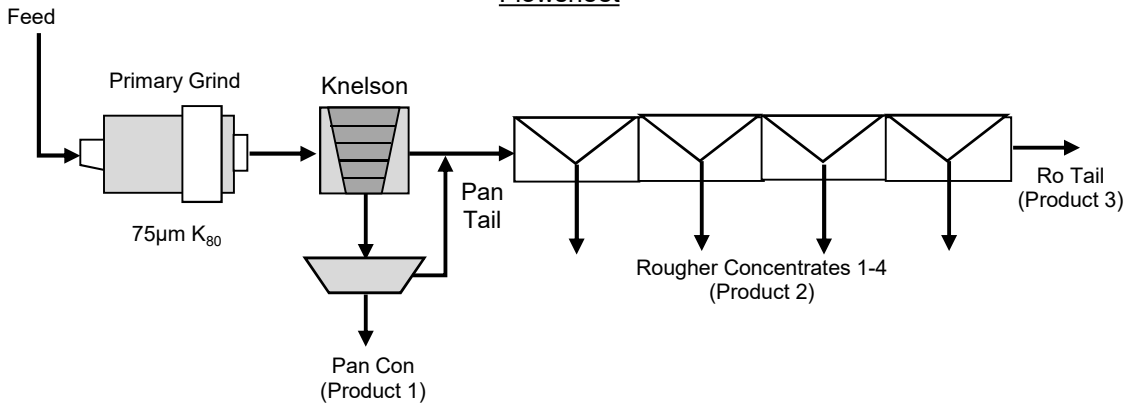
*Ag assays were below detection limit. Value is estimated.

BL0166-26 POR1

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.4	7.6	105	39.38	48.8	24.1	16.4	12.4
Products 1 to 2	11.6	232.0	14	7.09	12.1	95.6	90.3	93.9
Product 3	88.4	1761.4	0.08	0.100	0.10	4.4	9.7	6.1
Recalc. Feed	100.0	1993.4	1.65	0.91	1.50	100	100	100

Flowsheet



Test No: BL0166-27
Date: 8-Feb-17
Test Type: Rougher Test.
Test Objective: Produce Rougher Concentrate for Leaching.
Sample: 2x1 kg of POR2
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				12		
Knelson						
Pan						
Rougher 1	10		30	2	8.6	80
Rougher 2	10		30	2	8.6	79
Rougher 3	5		15	2	8.6	77
Rougher 4	5		15	2	8.6	75

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap

BL0166-27 POR2

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.2	4.6	79	23.00	49.1	10.4	7.9	7.2
Ro Con*	12.0	239.7	12	1.50	10.8	80.6	26.8	82.6
Rougher Tail*	87.8	1754.9	0.18	0.50	0.18	8.9	65.3	10.2
Recalc. Feed	100.0	1999.2	1.74	0.67	1.57	100	100	100
Measured Feed			2.11	0.65	1.55			

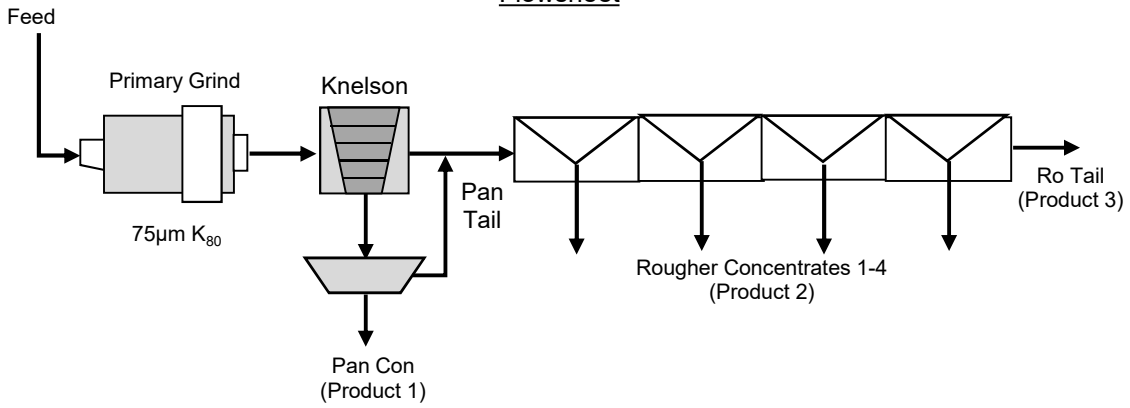
*Ag assays were below detection limit. Value is estimated.

BL0166-27 POR2

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.2	4.6	79	23.00	49.1	10.4	7.9	7.2
Products 1 to 2	12.2	244.3	13	1.90	11.5	91.1	34.7	89.8
Product 3	87.8	1754.9	0.18	0.500	0.18	8.9	65.3	10.2
Recalc. Feed	100.0	1999.2	1.74	0.67	1.57	100	100	100

Flowsheet

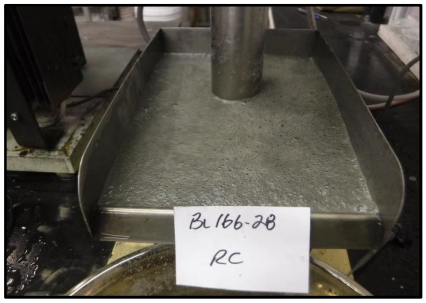


Test No: BL0166-28
Date: 8-Feb-17
Test Type: Rougher Test.
Test Objective: Produce Rougher Concentrate for Leaching.
Sample: 2x1 kg of NW1
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				8.5		
Knelson						
Pan						
Rougher 1	10		30	2	8.6	79
Rougher 2	10		30	2	8.6	80
Rougher 3	5		30	2	8.6	79
Rougher 4	5		15	2	8.5	83

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap



BL0166-28 NW1

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.3	5.9	77	28.00	47.3	13.6	12.8	13.2
Ro Con	12.0	237.1	12	4.00	7.0	82.6	73.7	78.1
Rougher Tail*	87.7	1739.7	0.07	0.10	0.11	3.9	13.5	8.7
Recalc. Feed	100.0	1982.7	1.68	0.65	1.07	100	100	100
Measured Feed			1.70	0.60	1.17			

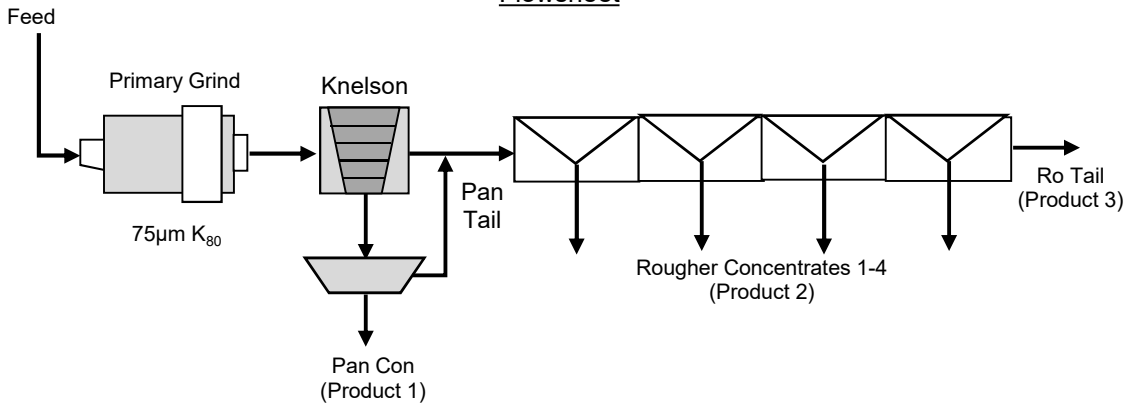
*Ag assays were below detection limit. Value is estimated.

BL0166-28 NW1

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.3	5.9	77	28.00	47.3	13.6	12.8	13.2
Products 1 to 2	12.3	243.0	13	4.58	7.9	96.1	86.5	91.3
Product 3	87.7	1739.7	0.07	0.100	0.11	3.9	13.5	8.7
Recalc. Feed	100.0	1982.7	1.68	0.65	1.07	100	100	100

Flowsheet



Test No: BL0166-29
Date: 8-Feb-17
Test Type: Rougher Test.
Test Objective: Produce Rougher Concentrate for Leaching.
Sample: 2x1 kg of MZ
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				9		
Knelson						
Pan						
Rougher 1	10		30	2	8.3	82
Rougher 2	10		30	2	8.4	80
Rougher 3	5		30	2	8.4	80
Rougher 4	5		15	2	8.4	75

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap

BL0166-29 MZ

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.3	6.6	139	75.00	40.1	26.7	21.0	13.2
Ro Con	10.9	216.0	11	7.00	7.2	66.1	64.1	77.8
Rougher Tail*	88.8	1762.9	0.14	0.20	0.10	7.1	14.9	9.1
Recalc. Feed	100.0	1985.5	1.73	1.19	1.01	100	100	100
Measured Feed			1.66	1.25	1.04			

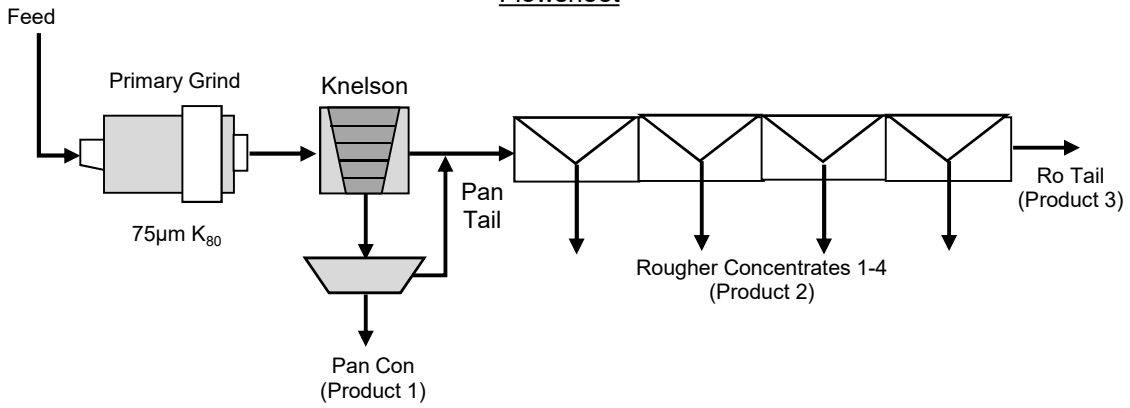
*Ag assays were below detection limit. Value is estimated.

BL0166-29 MZ

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.3	6.6	139	75.00	40.1	26.7	21.0	13.2
Products 1 to 2	11.2	222.6	14	9.02	8.2	92.9	85.1	90.9
Product 3	88.8	1762.9	0.14	0.200	0.10	7.1	14.9	9.1
Recalc. Feed	100.0	1985.5	1.73	1.19	1.01	100	100	100

Flowsheet



Test No: BL0166-30
Date: 8-Feb-17
Test Type: Rougher Test.
Test Objective: Produce Rougher Concentrate for Leaching.
Sample: 2x1 kg of NW2
Nominal Sizing: 75µm K_{80}

Stage	Reagents - g/tonne			Time Minutes	Electrochemistry	
	PAX		MIBC		pH	Eh-mV
Primary Grind				12		
Knelson						
Pan						
Rougher 1	10		30	2	8.7	70
Rougher 2	10		30	2	8.7	87
Rougher 3	5		30	2	8.7	62
Rougher 4	5		15	2	8.7	55

Primary Grind	
Mill	Mild Steel
Media	20 kg Mild
Water Addn:	500 ml

Flotation Information	Rougher
Flotation Device:	D12
Cell Volume - Litres:	4.4
Impellar Speed - rpm:	800
Flotation Gas:	Air
Water Type:	Kamloops Tap

BL0166-30 NW2

Metallurgical Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Pan Con	0.4	7.7	27	24	45.6	12.6	3.7	11.6
Ro Con	11.4	228.8	6	16	10.4	79.4	73.3	78.6
Rougher Tail*	88.2	1765.7	0.08	0.65	0.17	8.0	23.0	9.7
Recalc. Feed	100.0	2002.2	0.83	2.49	1.51	100	100	100
Measured Feed			0.78	2.50	1.50			

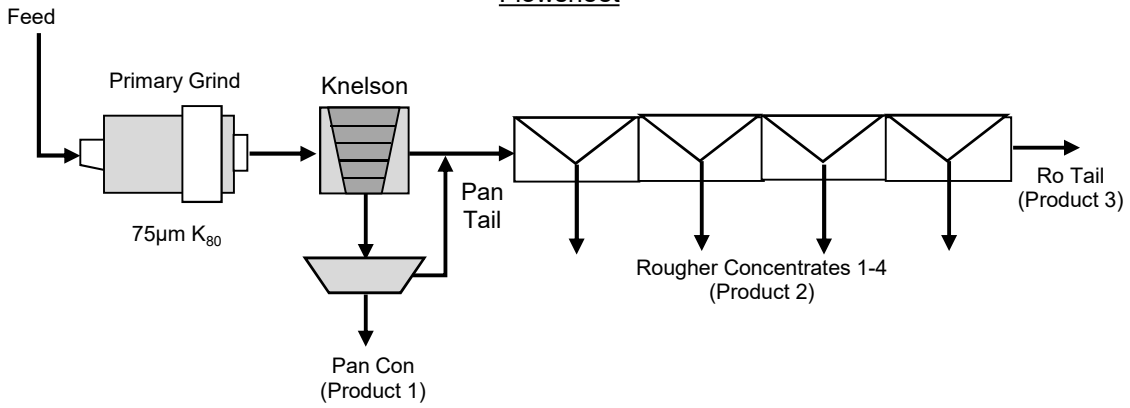
*Ag assays were below detection limit. Value is estimated.

BL0166-30 NW2

Cumulative Balance

Product	Weight		Assay - percent or g/t			Distribution - percent		
	%	grams	Au	Ag	S	Au	Ag	S
Product 1	0.4	7.7	27	24.25	45.6	12.6	3.7	11.6
Products 1 to 2	11.8	236.5	6	16.27	11.5	92.0	77.0	90.3
Product 3	88.2	1765.7	0.08	0.650	0.17	8.0	23.0	9.7
Recalc. Feed	100.0	2002.2	0.83	2.49	1.51	100	100	100

Flowsheet



Test No: BL0166-31
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Coarse Regrind Leach Test.
Sample: Test 21 Rougher Concentrate
Sizing: 15µm K_{80} 2 minutes

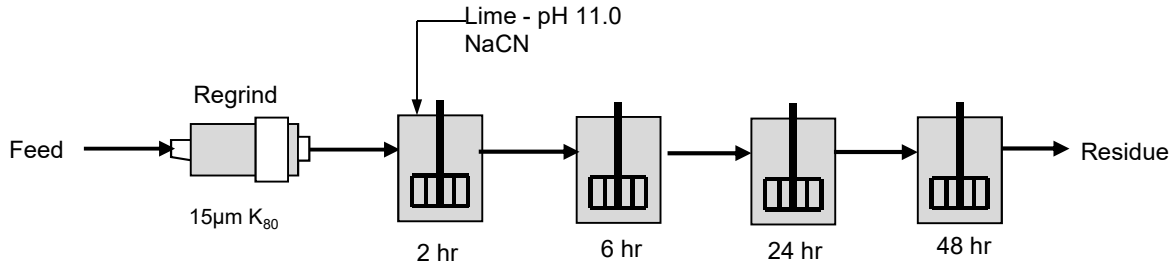
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8		<1
Leach 1	0	0.20	0.20	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.17	0.03	11.1	11.0	>20
Leach 3	6	0.05	0.04	0.15	0.02	10.9	11.0	>20
Leach 4	24	0.06	0.08	0.14	0.06	10.7	11.0	>20
Leach 5	48	0.00	0.00	0.15	0.05	11.0	11.0	>20
Total	48	0.31	0.32	0.15	0.16	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.6 kg/tonne
Lime Consumption	3.2 kg/tonne

Flowsheet Schematic



BL0166-31

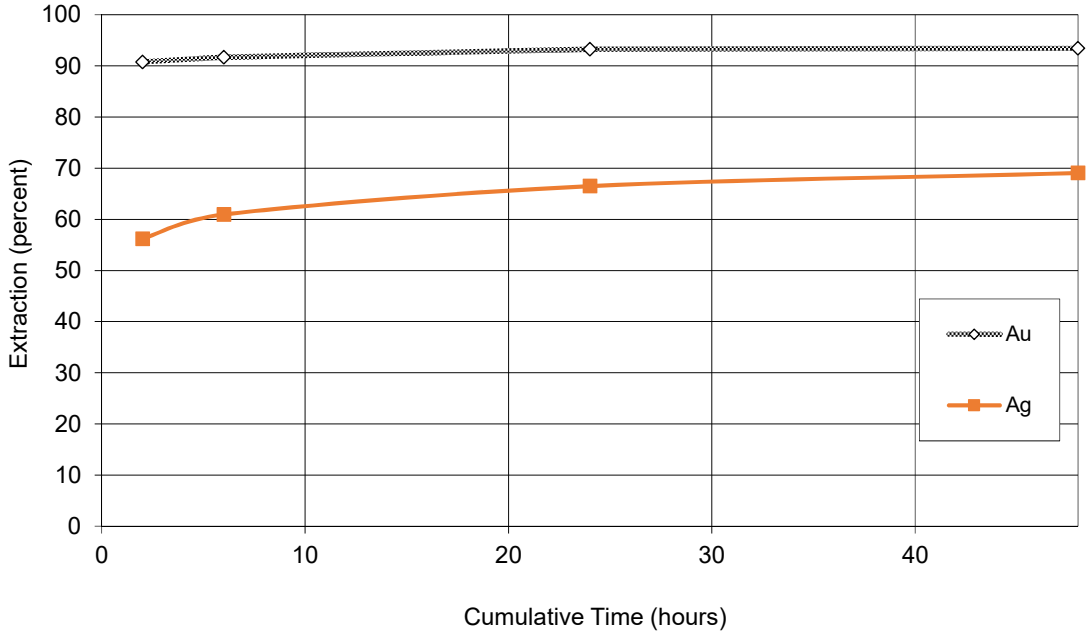
Test 21 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	3.55	1.32	90.8	56.2
Cyanide Liquor (6 hr)	6	200	mL	3.23	1.30	91.7	60.9
Cyanide Liquor (24 hr)	24	200	mL	2.97	1.30	93.3	66.5
Cyanide Liquor (48 hr)	48	200	mL	2.68	1.23	93.5	69.0
Cyanidation Tails*	-	97	g	0.53	1.5	6.5	31.0
Calculated Feed		97	g	8.06	4.8	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-32
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Fine Regrind Leach Test.
Sample: Test 21 Rougher Concentrate
Sizing: 11µm K_{80} 4 minutes

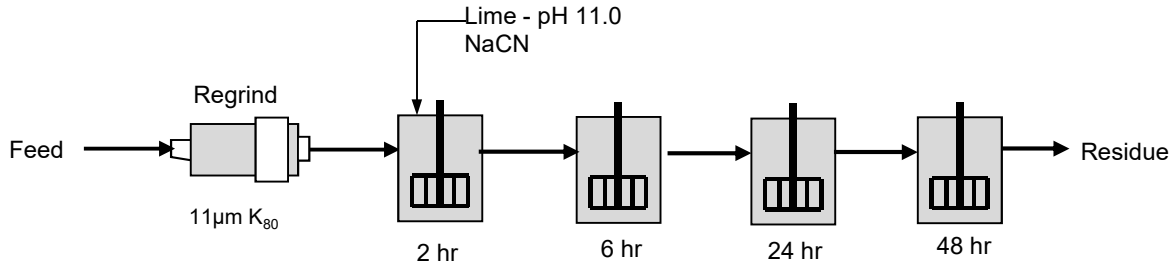
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.2		<1
Leach 1	0	0.20	0.21	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.07	0.17	0.03	10.7	11.0	>20
Leach 3	6	0.05	0.00	0.15	0.02	11.0	11.0	>20
Leach 4	24	0.09	0.11	0.11	0.09	10.4	11.0	>20
Leach 5	48	0.00	0.00	0.13	0.07	10.8	11.0	>20
Total	48	0.34	0.39	0.13	0.21	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	2.1 kg/tonne
Lime Consumption	3.9 kg/tonne

Flowsheet Schematic



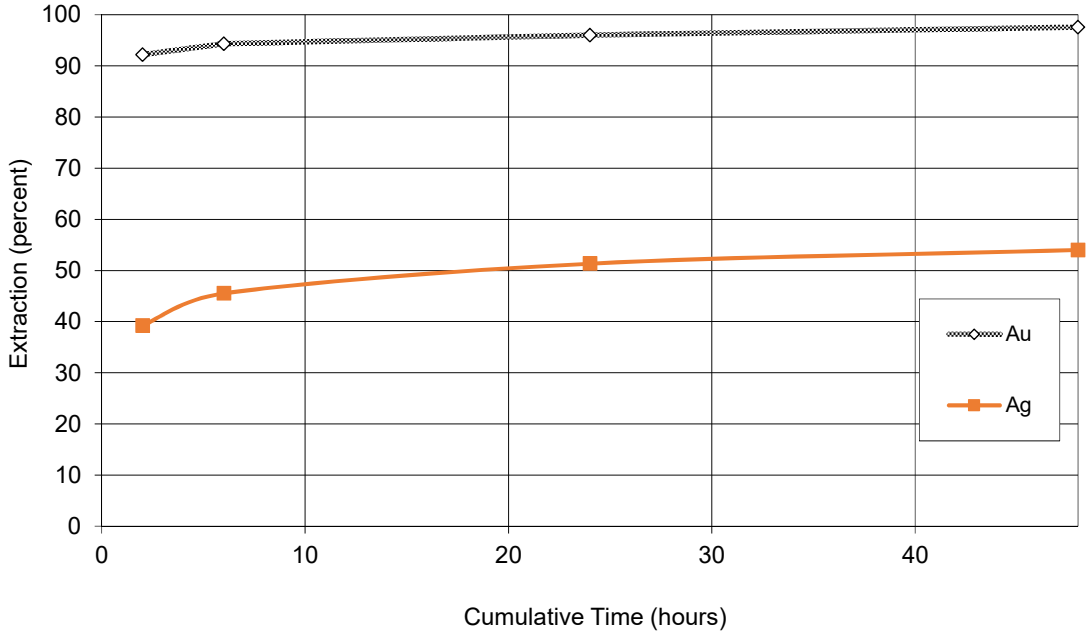
BL0166-32

Test 21 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	4.84	1.66	92.2	39.2
Cyanide Liquor (6 hr)	6	200	mL	4.47	1.76	94.4	45.5
Cyanide Liquor (24 hr)	24	200	mL	4.11	1.83	96.0	51.3
Cyanide Liquor (48 hr)	48	200	mL	3.78	1.76	97.6	54.0
Cyanidation Tails	-	97	g	0.26	4.0	2.4	46.0
Calculated Feed		97	g	10.8	8.7	100.0	100.0

Cyanide Leach Kinetic Curves



Test No: BL0166-33
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Coarse Regrind Leach Test.
Sample: Test 22 Rougher Concentrate
Sizing: 16µm K_{80} 1 minutes

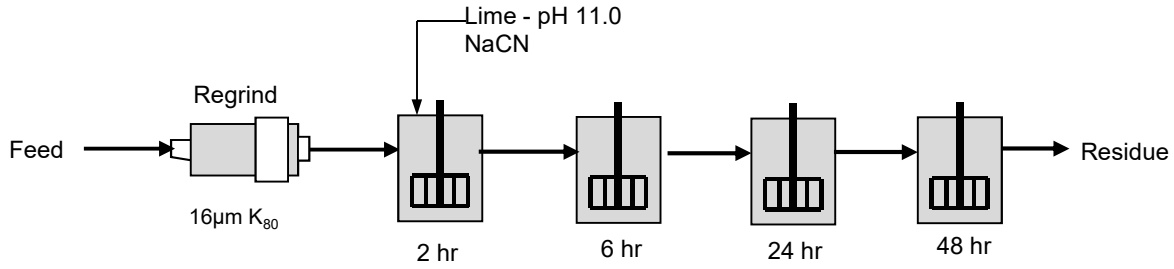
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.1		<1
Leach 1	0	0.20	0.27	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.17	0.03	11.0	11.0	>20
Leach 3	6	0.06	0.07	0.14	0.03	10.7	11.0	>20
Leach 4	24	0.06	0.06	0.14	0.06	10.8	11.0	>20
Leach 5	48	0.00	0.00	0.14	0.06	11.0	11.0	>20
Total	48	0.32	0.40	0.14	0.18	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.8 kg/tonne
Lime Consumption	4.0 kg/tonne

Flowsheet Schematic



BL0166-33

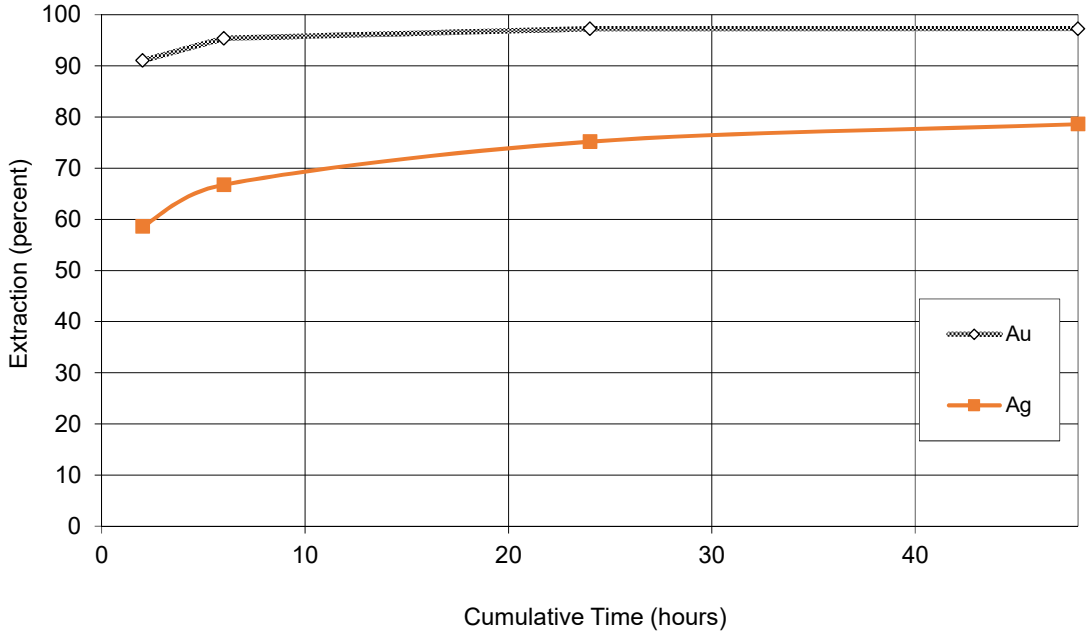
Test 22 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	9.16	2.01	91.0	58.6
Cyanide Liquor (6 hr)	6	200	mL	8.68	2.09	95.4	66.8
Cyanide Liquor (24 hr)	24	200	mL	8.00	2.17	97.2	75.2
Cyanide Liquor (48 hr)	48	200	mL	7.20	2.07	97.2	78.6
Cyanidation Tails*	-	98	g	0.57	1.5	2.8	21.4
Calculated Feed		98	g	20.6	7.0	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-34
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Fine Regrind Leach Test.
Sample: Test 22 Rougher Concentrate
Sizing: 12µm K_{80} 3 minutes

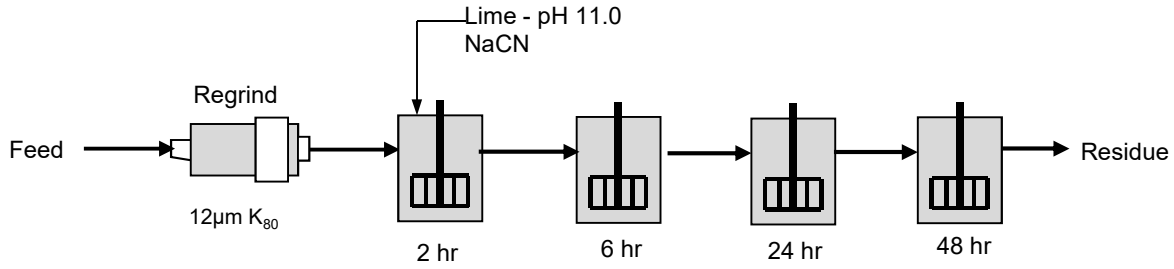
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.3		<1
Leach 1	0	0.20	0.21	-	-	11.0	11.0	<1
Leach 2	2	0.05	0.02	0.15	0.05	10.9	11.0	>20
Leach 3	6	0.04	0.05	0.16	0.04	10.8	11.0	>20
Leach 4	24	0.09	0.09	0.11	0.09	10.7	11.0	>20
Leach 5	48	0.00	0.00	0.14	0.06	10.9	11.0	>20
Total	48	0.38	0.37	0.14	0.24	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	2.4 kg/tonne
Lime Consumption	3.7 kg/tonne

Flowsheet Schematic



BL0166-34

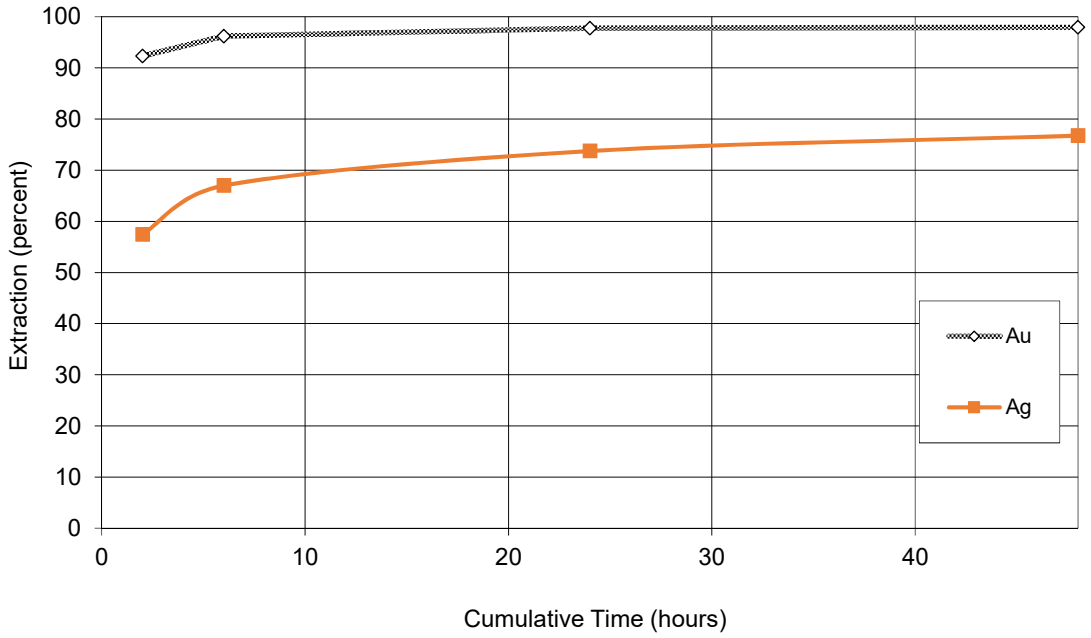
Test 22 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	8.78	1.81	92.3	57.4
Cyanide Liquor (6 hr)	6	200	mL	8.27	1.93	96.2	67.0
Cyanide Liquor (24 hr)	24	200	mL	7.59	1.95	97.7	73.7
Cyanide Liquor (48 hr)	48	200	mL	6.85	1.85	97.9	76.8
Cyanidation Tails*	-	98	g	0.40	1.5	2.1	23.2
Calculated Feed		98	g	19.5	6.5	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-35
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Coarse Regrind Leach Test.
Sample: Test 23 Rougher Concentrate
Sizing: 20µm K_{80} 1 minutes

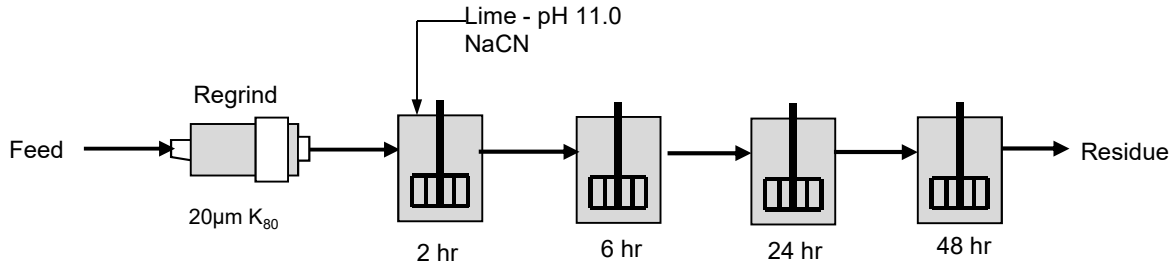
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.2		<1
Leach 1	0	0.20	0.19	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.17	0.03	11.4	11.0	>20
Leach 3	6	0.07	0.00	0.13	0.04	11.0	11.0	>20
Leach 4	24	0.07	0.08	0.13	0.07	10.6	11.0	>20
Leach 5	48	0.00	0.00	0.15	0.05	11.0	11.0	>20
Total	48	0.34	0.27	0.15	0.19	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.9 kg/tonne
Lime Consumption	2.7 kg/tonne

Flowsheet Schematic



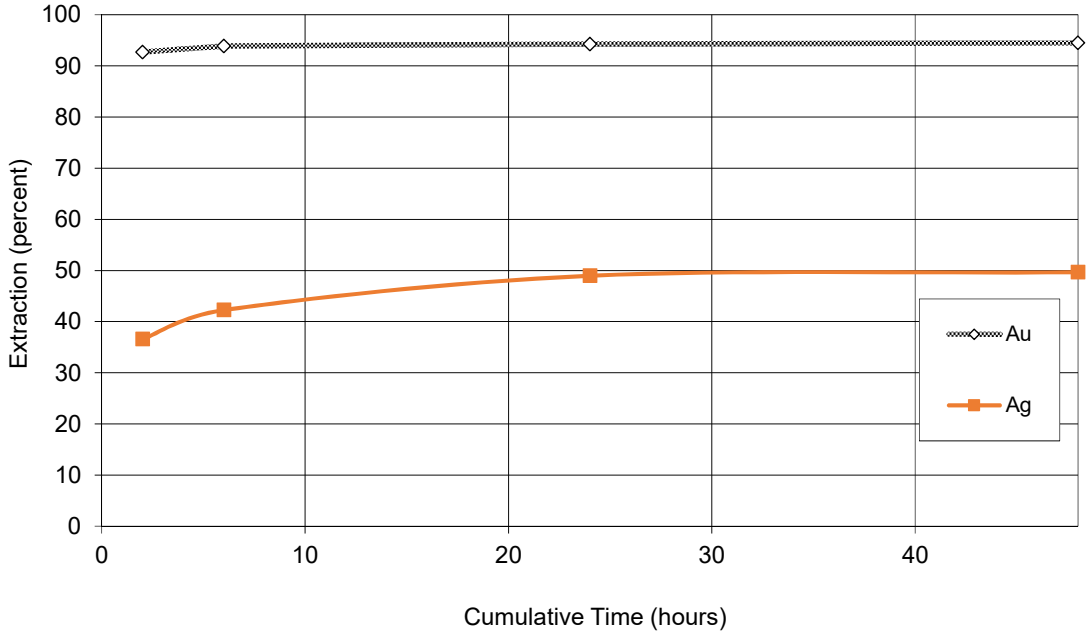
BL0166-35

Test 23 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	8.72	1.79	92.7	36.6
Cyanide Liquor (6 hr)	6	200	mL	7.96	1.89	93.9	42.3
Cyanide Liquor (24 hr)	24	200	mL	7.20	2.03	94.3	49.0
Cyanide Liquor (48 hr)	48	200	mL	6.50	1.86	94.5	49.7
Cyanidation Tails	-	99	g	1.05	5.0	5.5	50.3
Calculated Feed		99	g	19.1	9.9	100.0	100.0

Cyanide Leach Kinetic Curves



Test No: BL0166-36
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Fine Regrind Leach Test.
Sample: Test 23 Rougher Concentrate
Sizing: 12µm K_{80} 3 minutes

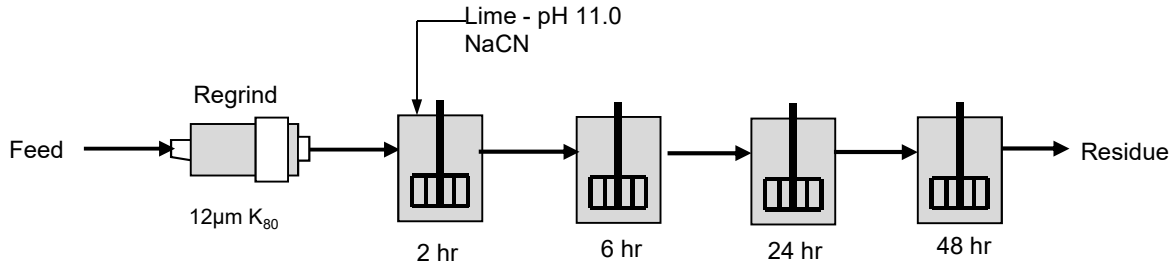
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.4		<1
Leach 1	0	0.20	0.19	-	-	11.0	11.0	<1
Leach 2	2	0.07	0.02	0.13	0.07	10.9	11.0	>20
Leach 3	6	0.04	0.04	0.16	0.04	10.8	11.0	>20
Leach 4	24	0.08	0.11	0.12	0.08	10.4	11.0	>20
Leach 5	48	0.00	0.00	0.14	0.06	10.8	11.0	>20
Total	48	0.39	0.36	0.14	0.25	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	2.5 kg/tonne
Lime Consumption	3.6 kg/tonne

Flowsheet Schematic



BL0166-36

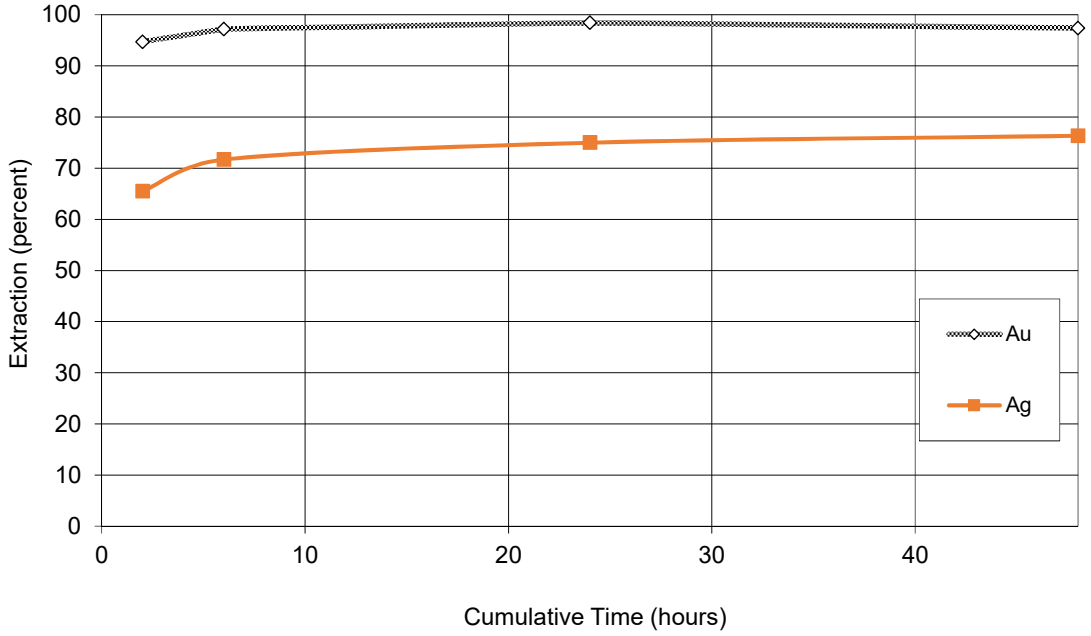
Test 23 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	10.04	2.03	94.7	65.5
Cyanide Liquor (6 hr)	6	200	mL	9.30	2.02	97.2	71.7
Cyanide Liquor (24 hr)	24	200	mL	8.50	1.92	98.4	75.0
Cyanide Liquor (48 hr)	48	200	mL	7.54	1.77	97.4	76.3
Cyanidation Tails*	-	98	g	0.56	1.5	2.6	23.7
Calculated Feed		98	g	21.7	6.3	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-37
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Coarse Regrind Leach Test.
Sample: Test 24 Rougher Concentrate
Sizing: 17µm K_{80} 1 minutes

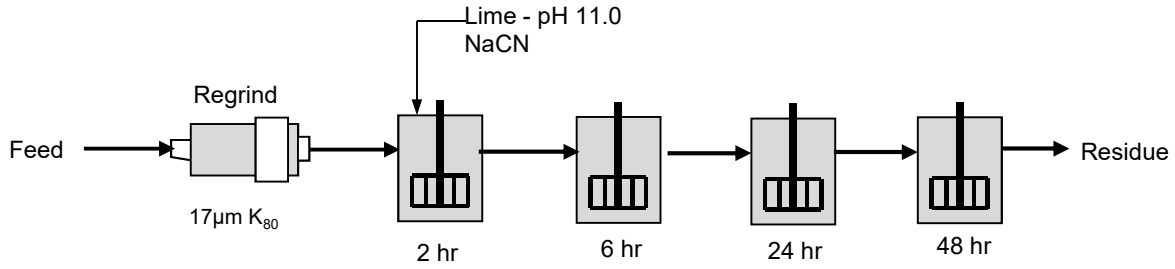
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.6		<1
Leach 1	0	0.20	0.18	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.20	0.00	11.2	11.0	>20
Leach 3	6	0.00	0.00	0.18	0.02	11.1	11.0	>20
Leach 4	24	0.06	0.04	0.14	0.04	10.8	11.0	>20
Leach 5	48	0.00	0.00	0.17	0.03	11.0	11.0	>20
Total	48	0.26	0.22	0.17	0.09	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	0.9 kg/tonne
Lime Consumption	2.2 kg/tonne

Flowsheet Schematic



BL0166-37

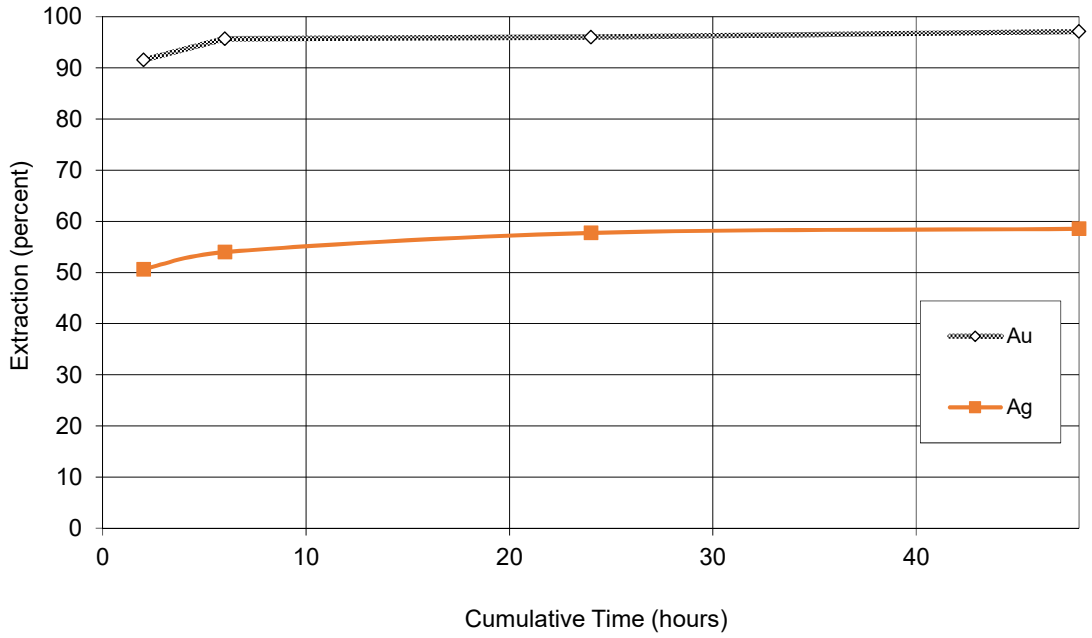
Test 24 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	2.19	0.89	91.6	50.6
Cyanide Liquor (6 hr)	6	200	mL	2.07	0.86	95.7	54.0
Cyanide Liquor (24 hr)	24	200	mL	1.87	0.84	96.0	57.7
Cyanide Liquor (48 hr)	48	200	mL	1.71	0.77	97.1	58.5
Cyanidation Tails*	-	97	g	0.14	1.5	2.9	41.5
Calculated Feed		97	g	4.92	3.6	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-38
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Fine Regrind Leach Test.
Sample: Test 24 Rougher Concentrate
Sizing: 13µm K_{80} 3 minutes

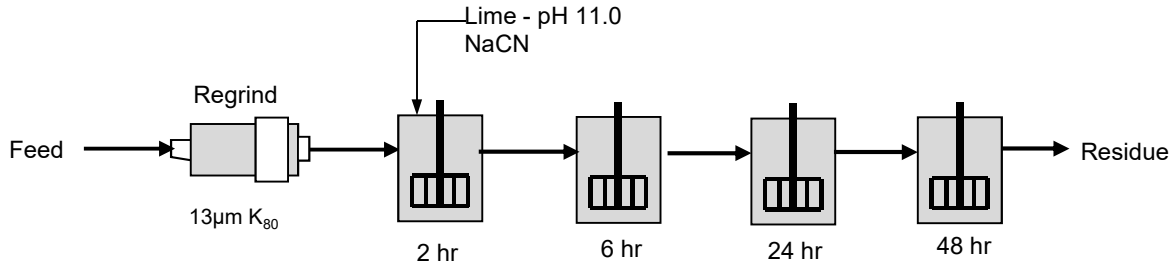
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.6		<1
Leach 1	0	0.20	0.17	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.02	0.18	0.02	10.9	11.0	>20
Leach 3	6	0.05	0.03	0.15	0.03	10.9	11.0	>20
Leach 4	24	0.00	0.05	0.17	0.03	10.9	11.0	>20
Leach 5	48	0.00	0.00	0.13	0.04	11.0	11.0	>20
Total	48	0.25	0.27	0.13	0.12	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.2 kg/tonne
Lime Consumption	2.7 kg/tonne

Flowsheet Schematic



BL0166-38

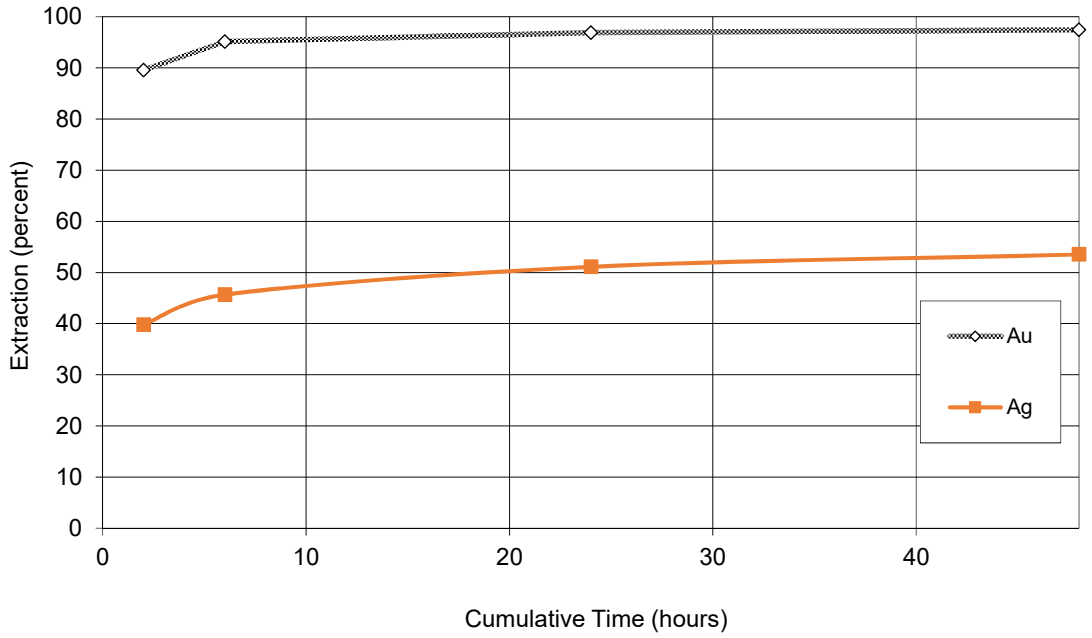
Test 24 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	1.83	0.63	89.6	39.8
Cyanide Liquor (6 hr)	6	200	mL	1.76	0.66	95.1	45.7
Cyanide Liquor (24 hr)	24	200	mL	1.62	0.68	96.9	51.1
Cyanide Liquor (48 hr)	48	200	mL	1.47	0.65	97.5	53.5
Cyanidation Tails*	-	98	g	0.11	1.5	2.5	46.5
Calculated Feed		98	g	4.17	3.2	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-39
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Coarse Regrind Leach Test.
Sample: Test 25 Rougher Concentrate
Sizing: 18µm K_{80} 1 minutes

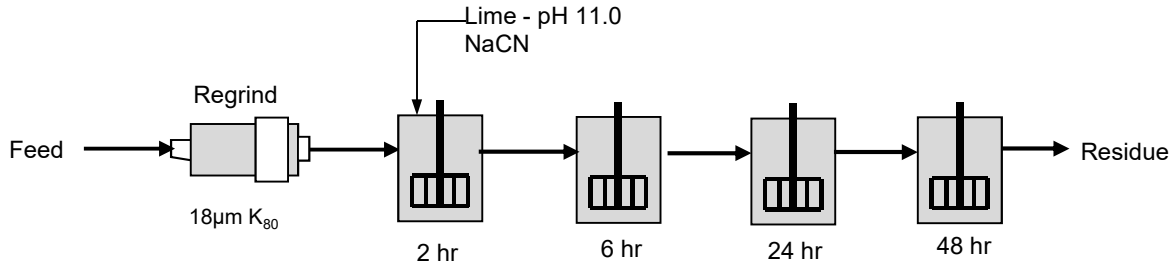
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.5		<1
Leach 1	0	0.20	0.18	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.18	0.02	11.4	11.0	>20
Leach 3	6	0.05	0.00	0.15	0.03	11.2	11.0	>20
Leach 4	24	0.06	0.07	0.14	0.06	10.8	11.0	>20
Leach 5	48	0.00	0.00	0.12	0.08	11.1	11.0	>20
Total	48	0.31	0.25	0.12	0.19	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.9 kg/tonne
Lime Consumption	2.5 kg/tonne

Flowsheet Schematic



BL0166-39

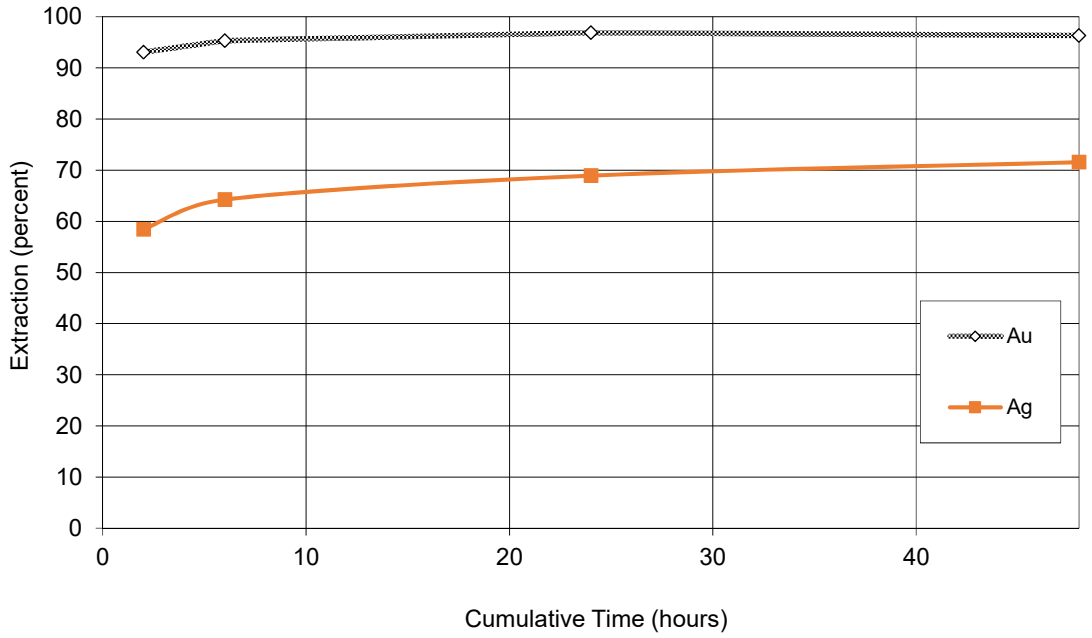
Test 25 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	5.29	1.51	93.1	58.4
Cyanide Liquor (6 hr)	6	200	mL	4.89	1.51	95.3	64.3
Cyanide Liquor (24 hr)	24	200	mL	4.49	1.48	96.9	68.9
Cyanide Liquor (48 hr)	48	200	mL	4.01	1.40	96.3	71.6
Cyanidation Tails*	-	98	g	0.42	1.5	3.7	28.4
Calculated Feed		98	g	11.6	5.3	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-40
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Fine Regrind Leach Test.
Sample: Test 25 Rougher Concentrate
Sizing: 15µm K_{80} 3 minutes

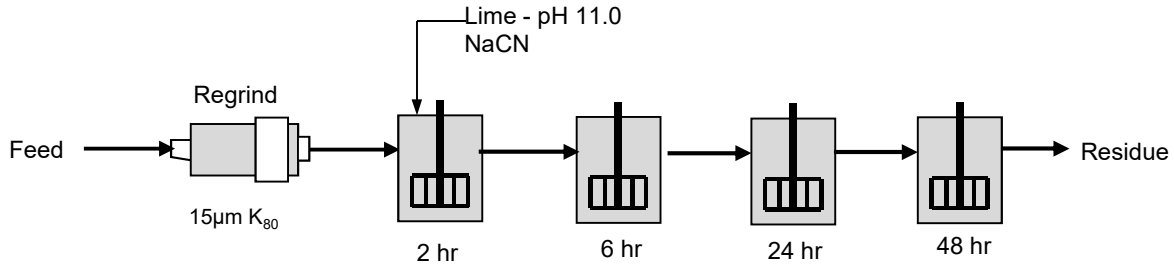
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.4		<1
Leach 1	0	0.20	0.17	-	-	11.0	11.0	<1
Leach 2	2	0.04	0.00	0.16	0.04	11.0	11.0	>20
Leach 3	6	0.00	0.06	0.17	0.03	10.7	11.0	>20
Leach 4	24	0.09	0.09	0.11	0.06	10.5	11.0	>20
Leach 5	48	0.00	0.00	0.13	0.07	11.0	11.0	>20
Total	48	0.33	0.32	0.13	0.20	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	2.0 kg/tonne
Lime Consumption	3.2 kg/tonne

Flowsheet Schematic



BL0166-40

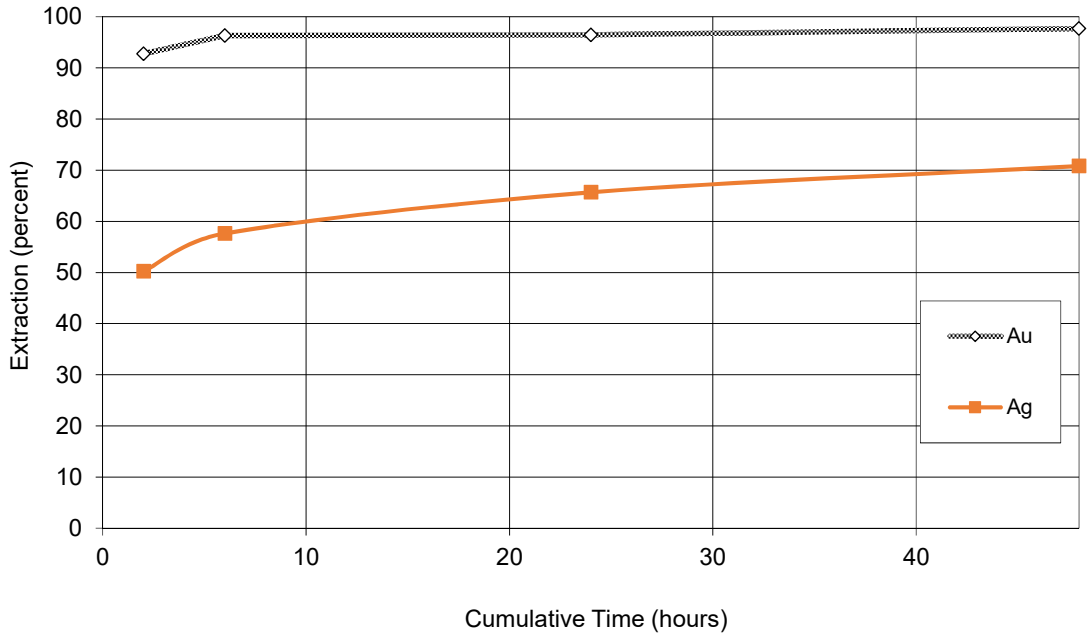
Test 25 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	5.20	1.26	92.7	50.2
Cyanide Liquor (6 hr)	6	200	mL	4.88	1.32	96.3	57.6
Cyanide Liquor (24 hr)	24	200	mL	4.40	1.39	96.5	65.7
Cyanide Liquor (48 hr)	48	200	mL	4.03	1.38	97.7	70.8
Cyanidation Tails*	-	98	g	0.26	1.5	2.3	29.2
Calculated Feed		98	g	11.5	5.1	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-41
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Coarse Regrind Leach Test.
Sample: Test 26 Rougher Concentrate
Sizing: 17µm K_{80} 1 minutes

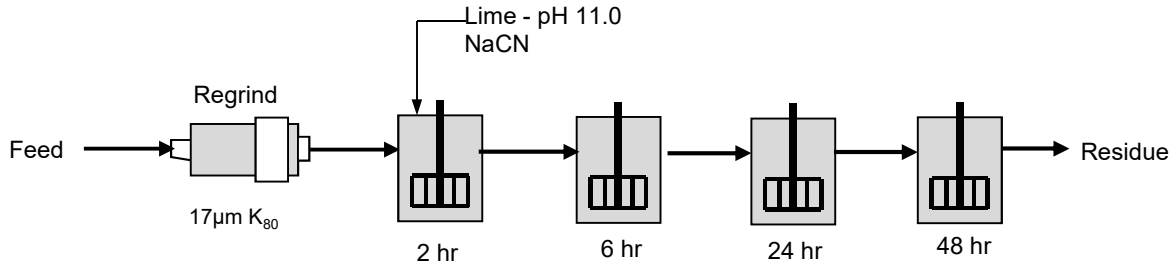
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.4		<1
Leach 1	0	0.20	0.17	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.20	0.00	11.1	11.0	>20
Leach 3	6	0.04	0.04	0.16	0.04	10.9	11.0	>20
Leach 4	24	0.04	0.06	0.16	0.04	10.8	11.0	>20
Leach 5	48	0.00	0.00	0.16	0.04	11.1	11.0	>20
Total	48	0.28	0.27	0.16	0.12	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.2 kg/tonne
Lime Consumption	2.7 kg/tonne

Flowsheet Schematic



BL0166-41

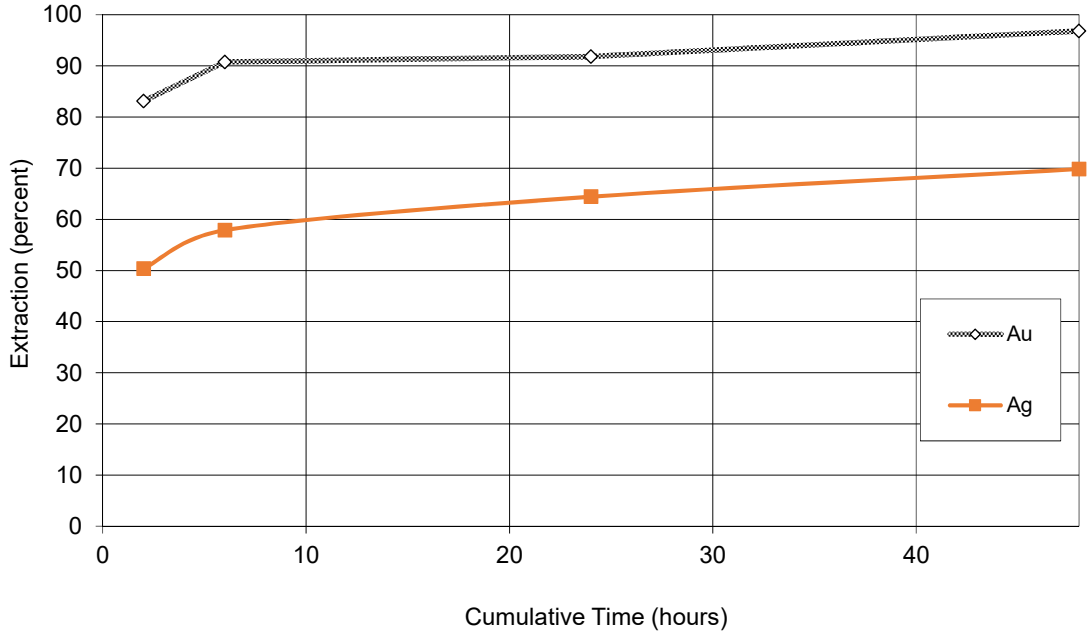
Test 26 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	3.59	1.21	83.1	50.3
Cyanide Liquor (6 hr)	6	200	mL	3.56	1.27	90.8	57.9
Cyanide Liquor (24 hr)	24	200	mL	3.25	1.30	91.8	64.4
Cyanide Liquor (48 hr)	48	200	mL	3.14	1.30	96.8	69.8
Cyanidation Tails*	-	97	g	0.29	1.5	3.2	30.2
Calculated Feed		97	g	8.93	5.0	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-42
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Fine Regrind Leach Test.
Sample: Test 26 Rougher Concentrate
Sizing: 13µm K_{80} 3 minutes

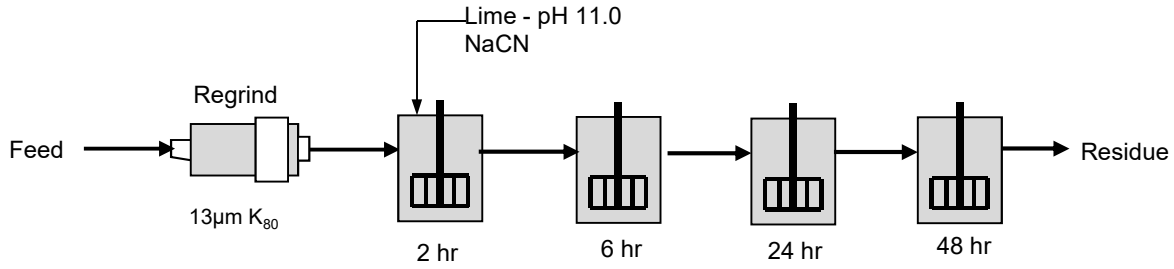
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.4		<1
Leach 1	0	0.20	0.18	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.02	0.17	0.03	10.9	11.0	>20
Leach 3	6	0.06	0.05	0.14	0.03	10.8	11.0	>20
Leach 4	24	0.04	0.06	0.16	0.04	10.8	11.0	>20
Leach 5	48	0.00	0.00	0.12	0.08	10.8	11.0	>20
Total	48	0.30	0.31	0.12	0.18	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.8 kg/tonne
Lime Consumption	3.1 kg/tonne

Flowsheet Schematic



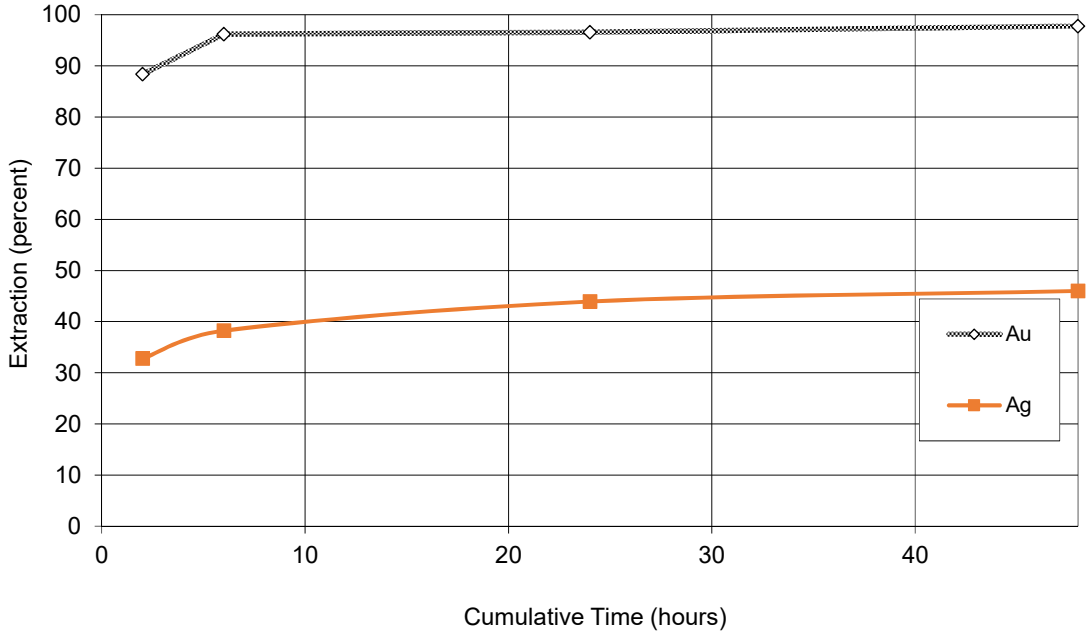
BL0166-42

Test 26 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	3.58	1.19	88.4	32.8
Cyanide Liquor (6 hr)	6	200	mL	3.54	1.27	96.2	38.2
Cyanide Liquor (24 hr)	24	200	mL	3.20	1.35	96.6	43.9
Cyanide Liquor (48 hr)	48	200	mL	2.93	1.29	97.8	46.0
Cyanidation Tails	-	98	g	0.18	4.0	2.2	54.0
Calculated Feed		98	g	8.26	7.4	100.0	100.0

Cyanide Leach Kinetic Curves



Test No: BL0166-43
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Coarse Regrind Leach Test.
Sample: Test 27 Rougher Concentrate
Sizing: 19µm K_{80} 1 minutes

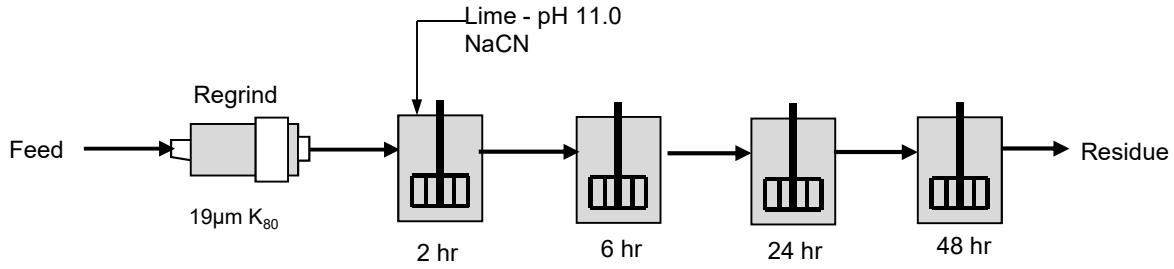
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.5		<1
Leach 1	0	0.20	0.18	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.17	0.03	11.2	11.0	>20
Leach 3	6	0.07	0.00	0.13	0.04	11.0	11.0	>20
Leach 4	24	0.00	0.08	0.18	0.02	10.6	11.0	>20
Leach 5	48	0.00	0.00	0.11	0.07	11.0	11.0	>20
Total	48	0.27	0.26	0.11	0.16	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.6 kg/tonne
Lime Consumption	2.6 kg/tonne

Flowsheet Schematic



BL0166-43

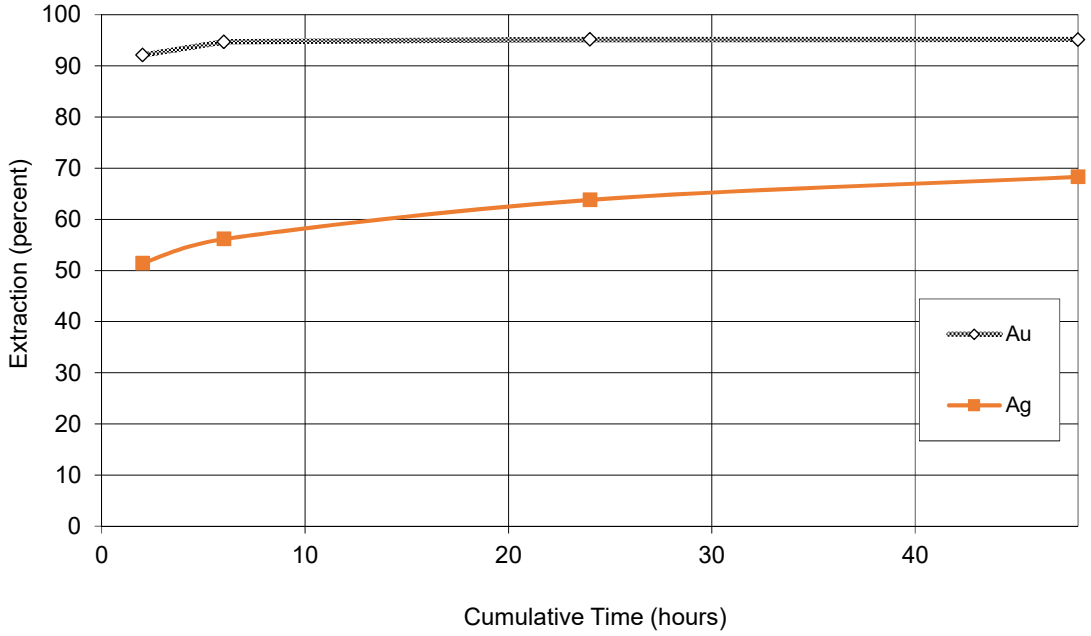
Test 27 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	4.46	1.20	92.1	51.4
Cyanide Liquor (6 hr)	6	200	mL	4.14	1.19	94.7	56.1
Cyanide Liquor (24 hr)	24	200	mL	3.75	1.25	95.2	63.8
Cyanide Liquor (48 hr)	48	200	mL	3.37	1.23	95.1	68.3
Cyanidation Tails*	-	99	g	0.48	1.5	4.9	31.7
Calculated Feed		99	g	9.82	4.7	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-44
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Fine Regrind Leach Test.
Sample: Test 27 Rougher Concentrate
Sizing: 13µm K_{80} 3 minutes

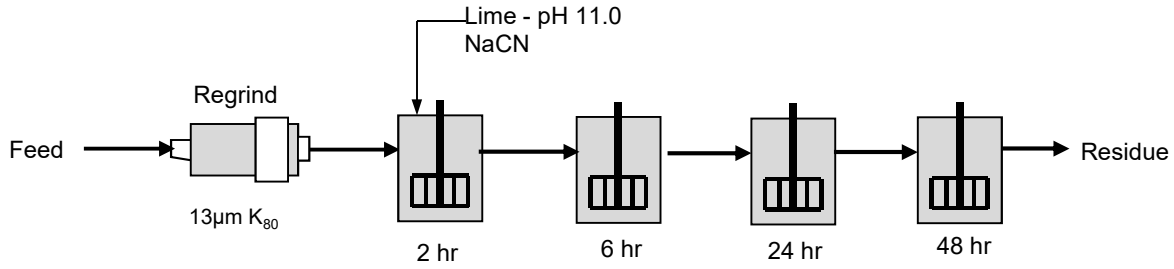
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.4		<1
Leach 1	0	0.20	0.20	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.03	0.18	0.02	10.8	11.0	>20
Leach 3	6	0.08	0.04	0.12	0.06	10.8	11.0	>20
Leach 4	24	0.07	0.10	0.13	0.07	10.5	11.0	>20
Leach 5	48	0.00	0.00	0.13	0.07	10.9	11.0	>20
Total	48	0.35	0.37	0.13	0.22	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	2.2 kg/tonne
Lime Consumption	3.7 kg/tonne

Flowsheet Schematic



BL0166-44

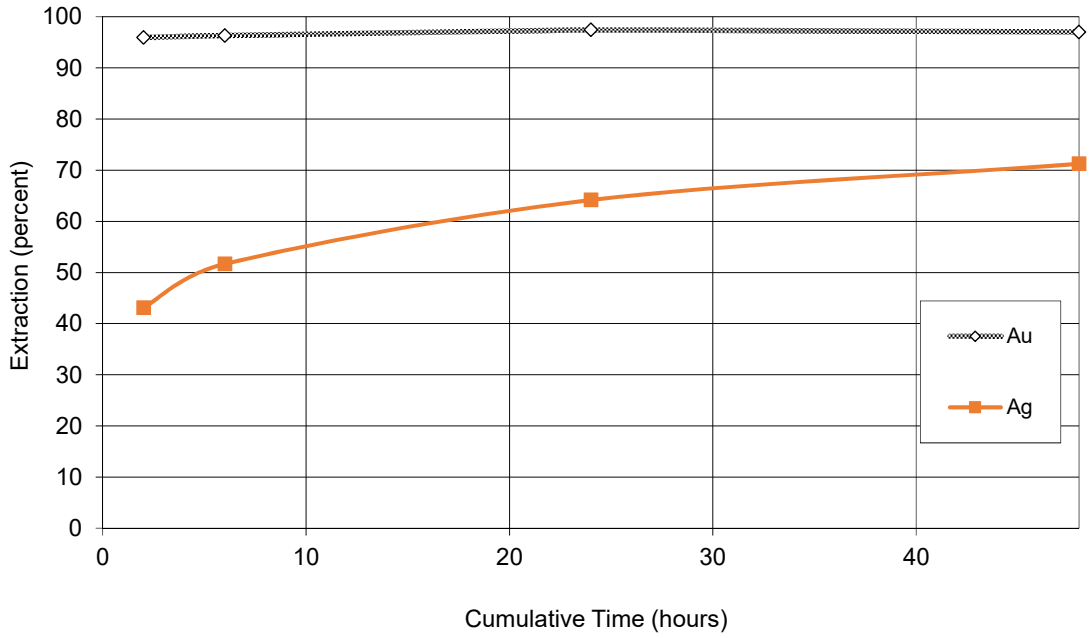
Test 27 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	4.70	1.11	95.9	43.1
Cyanide Liquor (6 hr)	6	200	mL	4.25	1.22	96.3	51.7
Cyanide Liquor (24 hr)	24	200	mL	3.88	1.42	97.5	64.2
Cyanide Liquor (48 hr)	48	200	mL	3.47	1.46	97.0	71.2
Cyanidation Tails*	-	99	g	0.30	1.5	3.0	28.8
Calculated Feed		99	g	9.92	5.2	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-45
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Coarse Regrind Leach Test.
Sample: Test 28 Rougher Concentrate
Sizing: 17µm K_{80} 1 minutes

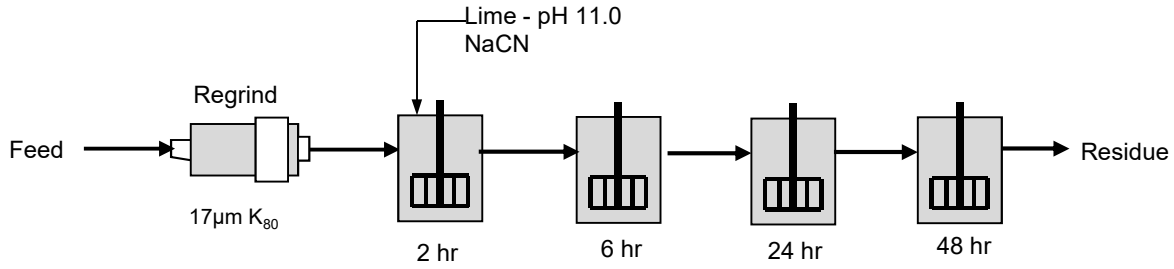
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.4		<1
Leach 1	0	0.20	0.20	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.20	0.00	11.3	11.0	>20
Leach 3	6	0.04	0.00	0.16	0.04	11.1	11.0	>20
Leach 4	24	0.04	0.06	0.16	0.04	10.8	11.0	>20
Leach 5	48	0.00	0.00	0.17	0.03	11.0	11.0	>20
Total	48	0.28	0.26	0.17	0.11	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.1 kg/tonne
Lime Consumption	2.6 kg/tonne

Flowsheet Schematic



BL0166-45

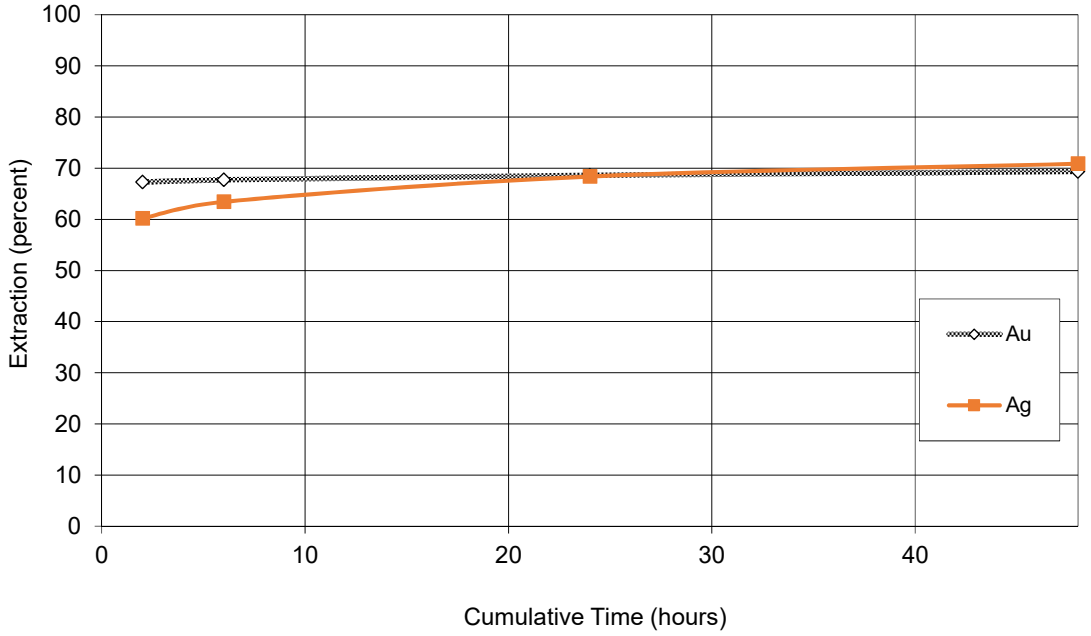
Test 28 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	3.62	1.52	67.3	60.2
Cyanide Liquor (6 hr)	6	200	mL	3.28	1.45	67.7	63.4
Cyanide Liquor (24 hr)	24	200	mL	3.00	1.43	68.6	68.4
Cyanide Liquor (48 hr)	48	200	mL	2.74	1.35	69.4	70.9
Cyanidation Tails*	-	98	g	3.36	1.5	30.6	29.1
Calculated Feed		98	g	11.0	5.1	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-46
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Fine Regrind Leach Test.
Sample: Test 28 Rougher Concentrate
Sizing: 15µm K_{80} 3 minutes

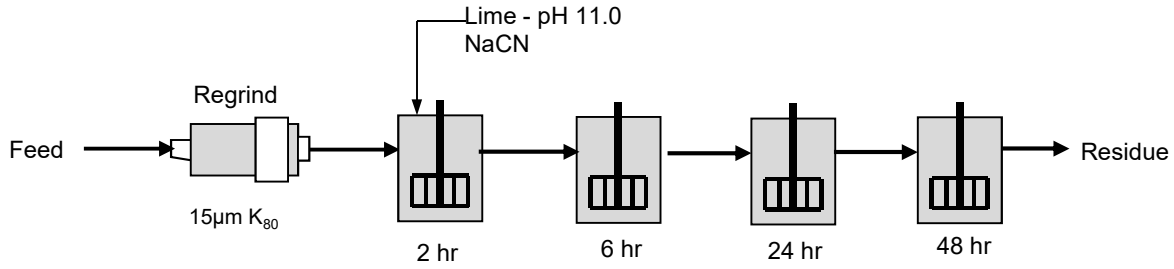
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.5		<1
Leach 1	0	0.20	0.18	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.19	0.01	11.2	11.0	>20
Leach 3	6	0.06	0.00	0.14	0.05	11.0	11.0	>20
Leach 4	24	0.04	0.07	0.16	0.04	10.7	11.0	>20
Leach 5	48	0.00	0.00	0.16	0.04	11.1	11.0	>20
Total	48	0.30	0.25	0.16	0.14	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.4 kg/tonne
Lime Consumption	2.5 kg/tonne

Flowsheet Schematic



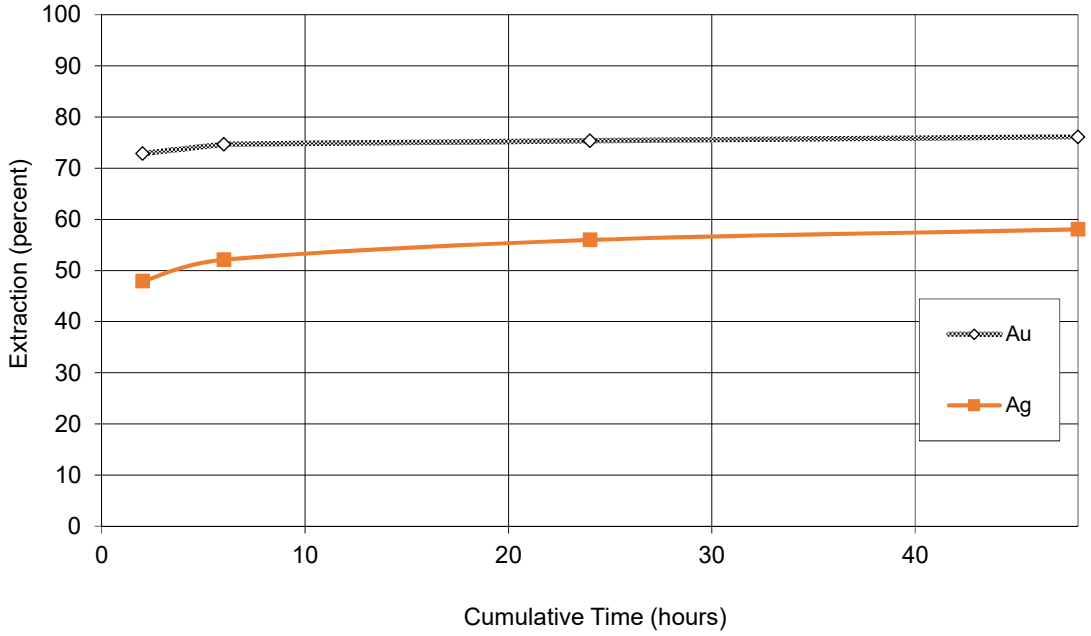
BL0166-46

Test 28 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	4.10	1.67	72.9	47.9
Cyanide Liquor (6 hr)	6	200	mL	3.79	1.65	74.7	52.1
Cyanide Liquor (24 hr)	24	200	mL	3.45	1.62	75.3	56.0
Cyanide Liquor (48 hr)	48	200	mL	3.15	1.53	76.1	58.0
Cyanidation Tails	-	98	g	2.75	3.0	23.9	42.0
Calculated Feed		98	g	11.5	7.1	100.0	100.0

Cyanide Leach Kinetic Curves



Test No: BL0166-47
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Coarse Regrind Leach Test.
Sample: Test 29 Rougher Concentrate
Sizing: 17µm K_{80} 1 minutes

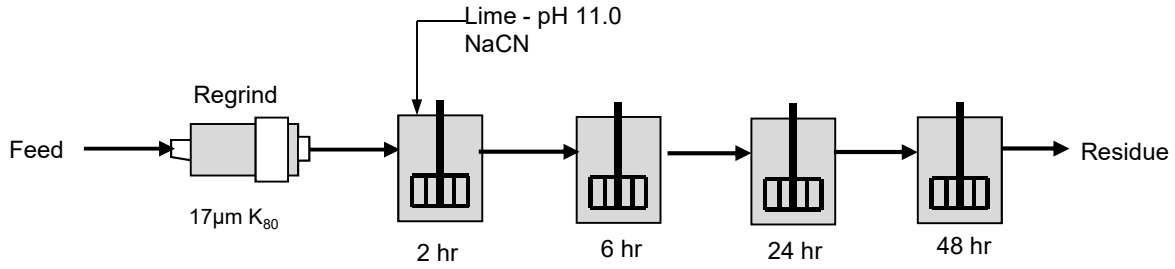
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.5		<1
Leach 1	0	0.20	0.17	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.20	0.00	11.2	11.0	>20
Leach 3	6	0.04	0.00	0.16	0.04	11.0	11.0	>20
Leach 4	24	0.00	0.08	0.17	0.03	10.7	11.0	>20
Leach 5	48	0.00	0.00	0.15	0.02	11.2	11.0	>20
Total	48	0.24	0.25	0.15	0.09	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	0.9 kg/tonne
Lime Consumption	2.5 kg/tonne

Flowsheet Schematic



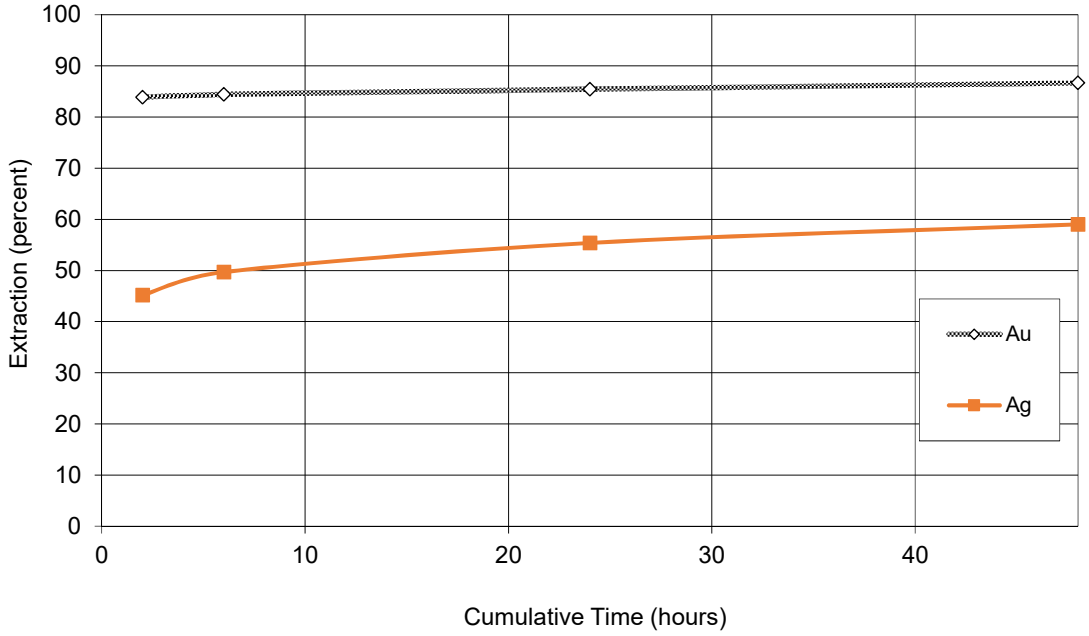
BL0166-47

Test 29 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	3.95	2.68	83.9	45.2
Cyanide Liquor (6 hr)	6	200	mL	3.58	2.68	84.4	49.7
Cyanide Liquor (24 hr)	24	200	mL	3.27	2.75	85.5	55.4
Cyanide Liquor (48 hr)	48	200	mL	3.00	2.69	86.7	59.0
Cyanidation Tails	-	97	g	1.29	5.0	13.3	41.0
Calculated Feed		97	g	9.68	12.2	100.0	100.0

Cyanide Leach Kinetic Curves



Test No: BL0166-48
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Fine Regrind Leach Test.
Sample: Test 29 Rougher Concentrate
Sizing: 15µm K_{80} 3 minutes

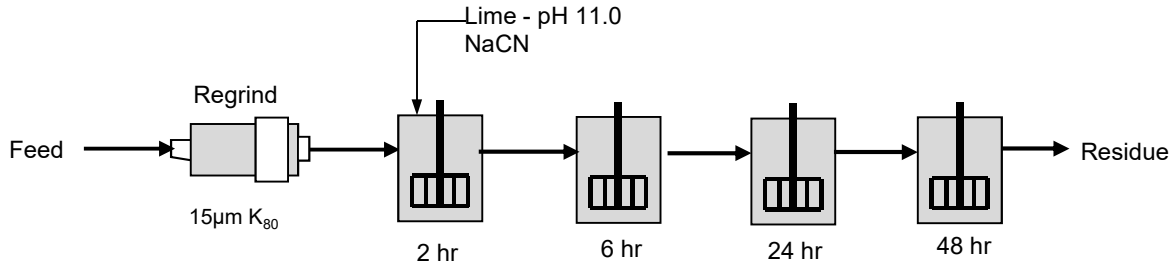
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.2		<1
Leach 1	0	0.20	0.19	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.20	0.00	11.1	11.0	>20
Leach 3	6	0.00	0.04	0.18	0.02	10.8	11.0	>20
Leach 4	24	0.07	0.08	0.13	0.05	10.7	11.0	>20
Leach 5	48	0.00	0.00	0.17	0.03	11.1	11.0	>20
Total	48	0.27	0.31	0.17	0.10	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.0 kg/tonne
Lime Consumption	3.1 kg/tonne

Flowsheet Schematic



BL0166-48

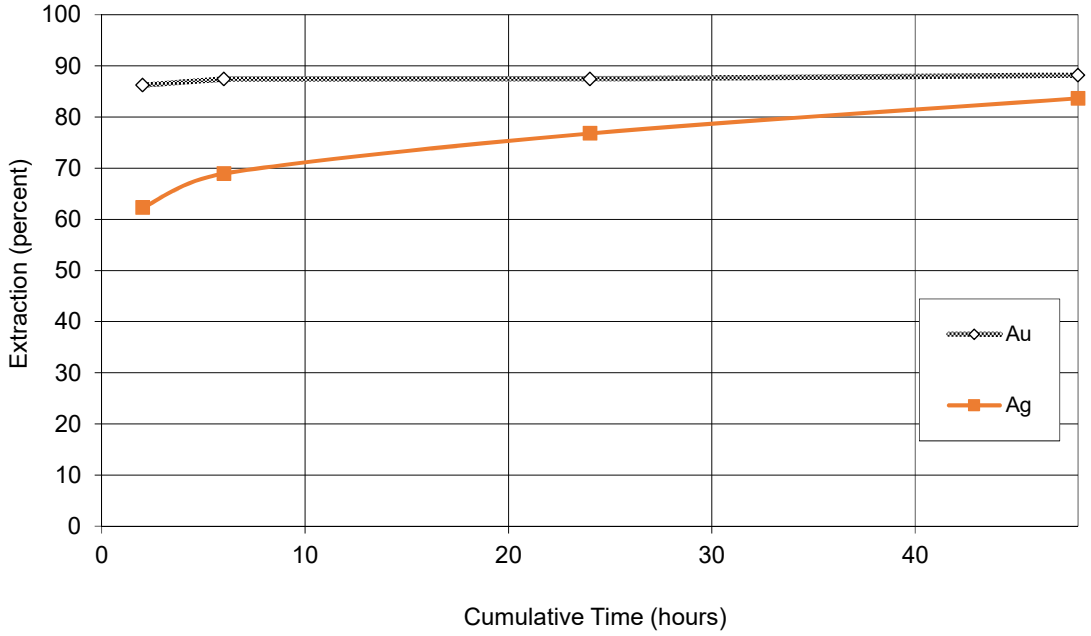
Test 29 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	3.95	2.78	86.2	62.3
Cyanide Liquor (6 hr)	6	200	mL	3.61	2.80	87.4	68.9
Cyanide Liquor (24 hr)	24	200	mL	3.25	2.87	87.4	76.8
Cyanide Liquor (48 hr)	48	200	mL	2.96	2.89	88.2	83.7
Cyanidation Tails*	-	97	g	1.11	1.5	11.8	16.3
Calculated Feed		97	g	9.42	9.2	100.0	100.0

* Ag estimated, assay value was <3 g/t.

Cyanide Leach Kinetic Curves



Test No: BL0166-49
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Coarse Regrind Leach Test.
Sample: Test 30 Rougher Concentrate
Sizing: 23µm K_{80} 1 minutes

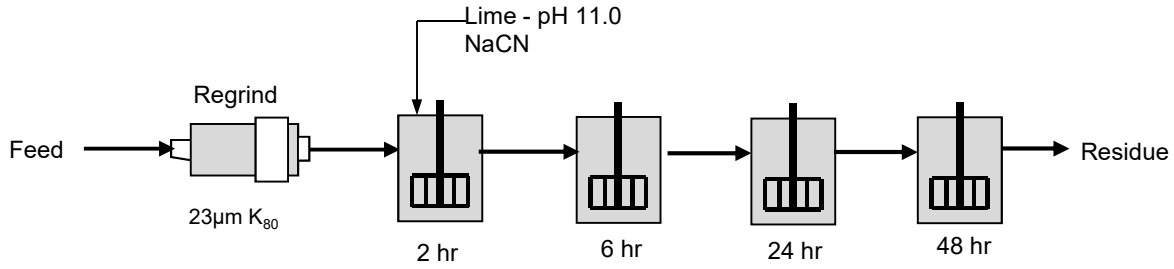
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.5		<1
Leach 1	0	0.20	0.18	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.00	0.18	0.02	11.4	11.0	>20
Leach 3	6	0.04	0.00	0.16	0.02	11.2	11.0	>20
Leach 4	24	0.04	0.03	0.16	0.04	10.9	11.0	>20
Leach 5	48	0.00	0.00	0.17	0.03	10.9	11.0	>20
Total	48	0.28	0.21	0.17	0.11	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.1 kg/tonne
Lime Consumption	2.1 kg/tonne

Flowsheet Schematic



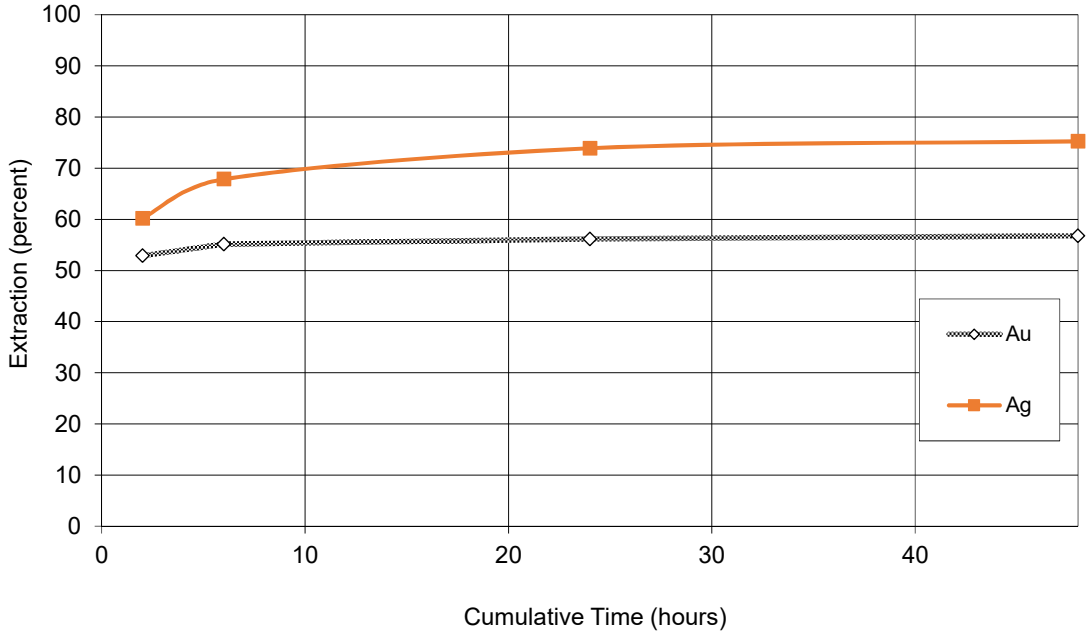
BL0166-49

Test 30 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	1.59	4.75	52.9	60.2
Cyanide Liquor (6 hr)	6	200	mL	1.50	4.88	55.2	67.8
Cyanide Liquor (24 hr)	24	200	mL	1.38	4.87	56.2	73.9
Cyanide Liquor (48 hr)	48	200	mL	1.26	4.49	56.8	75.2
Cyanidation Tails	-	98	g	2.66	4.0	43.2	24.8
Calculated Feed		98	g	6.15	16.2	100.0	100.0

Cyanide Leach Kinetic Curves



Test No: BL0166-50
Date: 15-Feb-17
Test Type: Standard bottle roll procedure.
Test Objective: Preliminary Fine Regrind Leach Test.
Sample: Test 30 Rougher Concentrate
Sizing: 15µm K_{80} 3 minutes

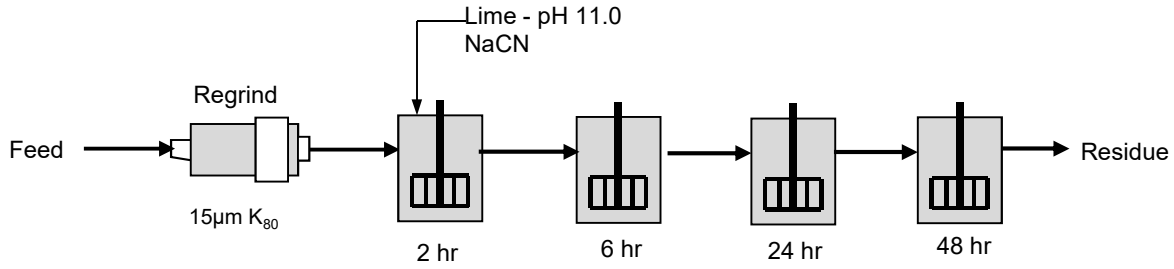
Cyanide Leaching @ pH 11, 1000ppm NaCN, oxygen sparged, 33% solids.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH		Dissolved O_2 (mg/L)
		NaCN	CaO	NaCN	NaCN	Measured	Adjusted	
Natural	-					8.5		<1
Leach 1	0	0.20	0.17	-	-	11.0	11.0	<1
Leach 2	2	0.00	0.02	0.18	0.02	10.9	11.0	>20
Leach 3	6	0.05	0.04	0.15	0.03	10.8	11.0	>20
Leach 4	24	0.06	0.06	0.14	0.06	10.8	11.0	>20
Leach 5	48	0.00	0.00	0.15	0.05	10.9	11.0	>20
Total	48	0.31	0.29	0.15	0.16	-	-	-

Mass of Sample	100
Volume of Water	200
Pulp Density	33

NaCN Consumption	1.6 kg/tonne
Lime Consumption	2.9 kg/tonne

Flowsheet Schematic



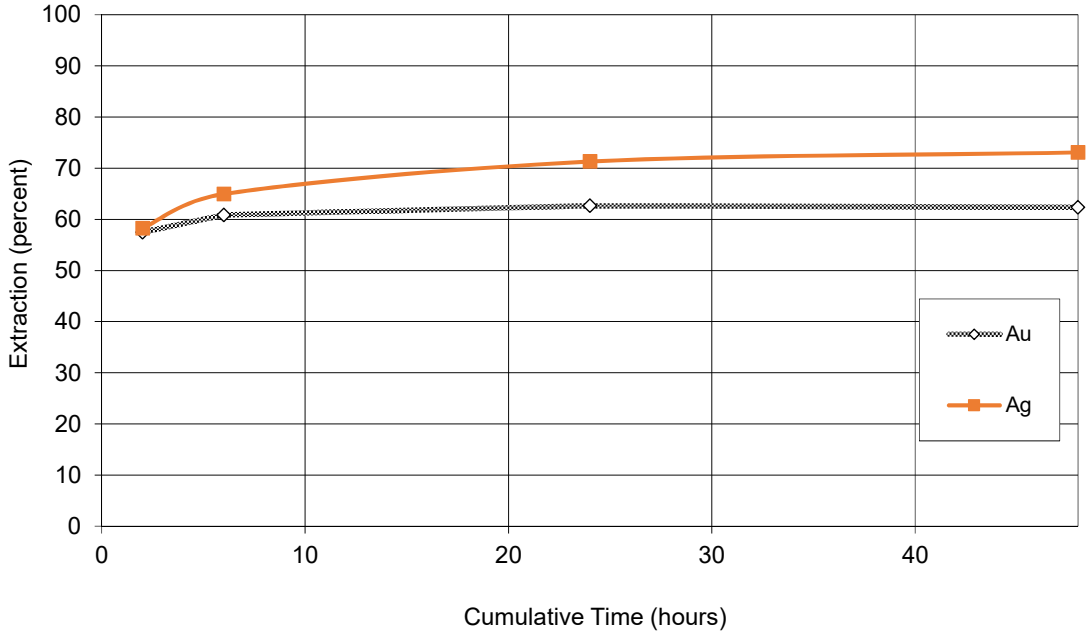
BL0166-50

Test 30 Rougher Concentrate

Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Vol or Mass	Units	Assay - g/tonne		Distribution - percent	
				Au	Ag	Au	Ag
Cyanide Liquor (2 hr)	2	200	mL	1.70	5.30	57.5	58.2
Cyanide Liquor (6 hr)	6	200	mL	1.63	5.38	60.9	64.9
Cyanide Liquor (24 hr)	24	200	mL	1.52	5.42	62.7	71.3
Cyanide Liquor (48 hr)	48	200	mL	1.36	5.04	62.4	73.1
Cyanidation Tails	-	98	g	2.27	5.0	37.6	26.9
Calculated Feed		98	g	6.04	18.6	100.0	100.0

Cyanide Leach Kinetic Curves



SETTLING TEST - SUMMARY

Composite ID	Product	Free Settling Rate (mm/min)	Tailing Volume m^3/t of solids	Final Density (% solids)
DW1	Test 21 Rougher Tailings	408	1.10	57.6
DW2	Test 22 Rougher Tailings	285	1.09	57.5
Z10	Test 23 Rougher Tailings	346	1.02	61.0
Z20	Test 24 Rougher Tailings	188	0.98	62.5
Z531	Test 25 Rougher Tailings	288	0.94	63.6
POR1	Test 26 Rougher Tailings	516	1.07	58.4
POR2	Test 27Rougher Tailings	207	1.02	60.4
NW1	Test 26 Rougher Tailings	245	1.11	57.0
MZ	Test 29 Rougher Tailings	48	1.05	59.2
NW2	Test 30 Rougher Tailings	75	0.94	63.9

Note: Magna Floc 1011 was used in all tests @ 10g/t. Details of the tests can be found in Appendix B.

TABLE B-1A
Test 21 Rougher Tail
BL166

SETTLING DATA

Elapsed Time (min)	Interface Height (ml)	Interface Height (mm)
0.00	1000	345
0.08	890	307
0.17	770	266
0.25	650	224
0.33	530	183
0.50	410	141
0.58	310	107
0.75	280	97
1.00	250	86
1.50	195	67
2.00	180	62
2.50	170	59
3.00	165	57
5.0	155	53
15.0	140	48
120.0	135	47
5760	120	41

TEST CONDITIONS

Parameter	Value
Solids S.G.	2.74
Solids Weight (g)	109
Solids Volume (ml)	39.8
pH (as tested)	8.8
pH modifier (g/t)	-
Flocculant Type	Magna Floc 1011
Flocculant (g/t)	10
Temperature (C)	18.6
Slurry Volume (ml)	1000
Slurry S.G.	1.07
Final Slurry Volume	120
Initial Percent Solids	10.2
Final Percent Solids	57.6

Final Tailings (m3/t solids) **1.10**

Settling Rate

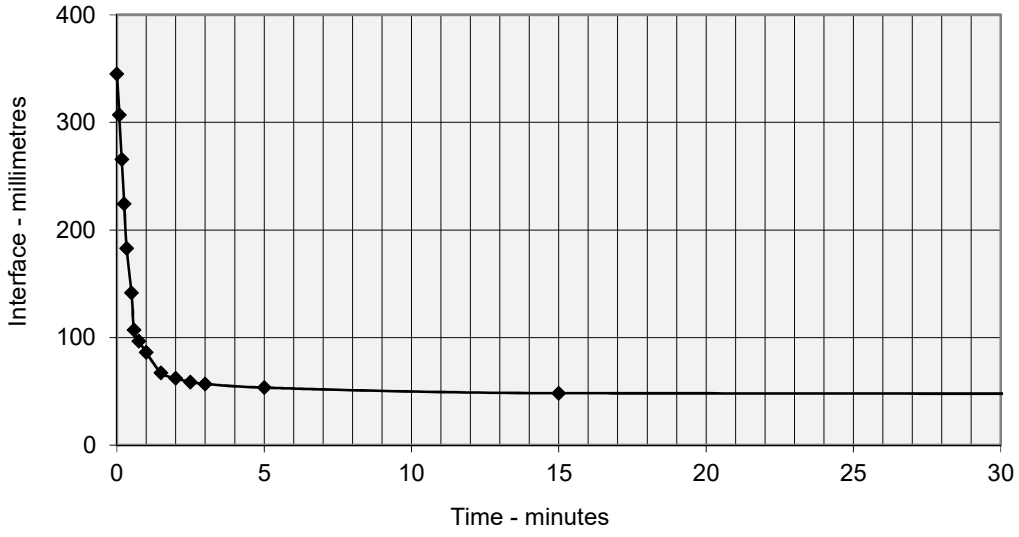


TABLE B-1B
Test 22 Rougher Tail
BL166

SETTLING DATA

Elapsed Time (min)	Interface Height (ml)	Interface Height (mm)
0.00	1000	345
0.08	995	343
0.17	870	300
0.25	790	273
0.33	725	250
0.42	660	228
0.50	590	204
0.67	450	155
0.83	340	117
1.0	300	104
1.3	270	93
1.5	255	88
2.0	225	78
2.5	210	72
3.0	190	66
4.0	175	60
5.0	165	57
11.0	145	50
45.0	140	48
120.0	130	45
5760.0	120	41

TEST CONDITIONS

Parameter	Value
Solids S.G.	2.87
Solids Weight (g)	110.2
Solids Volume (ml)	38.4
pH (as tested)	8.8
pH modifier (g/t)	-
Flocculant Type	Magna Floc 1011
Flocculant (g/t)	10
Temperature (C)	18.6
Slurry Volume (ml)	1000
Slurry S.G.	1.07
Final Slurry Volume	120
Initial Percent Solids	10.3
Final Percent Solids	57.5

Final Tailings (m3/t solids) **1.09**

Settling Rate

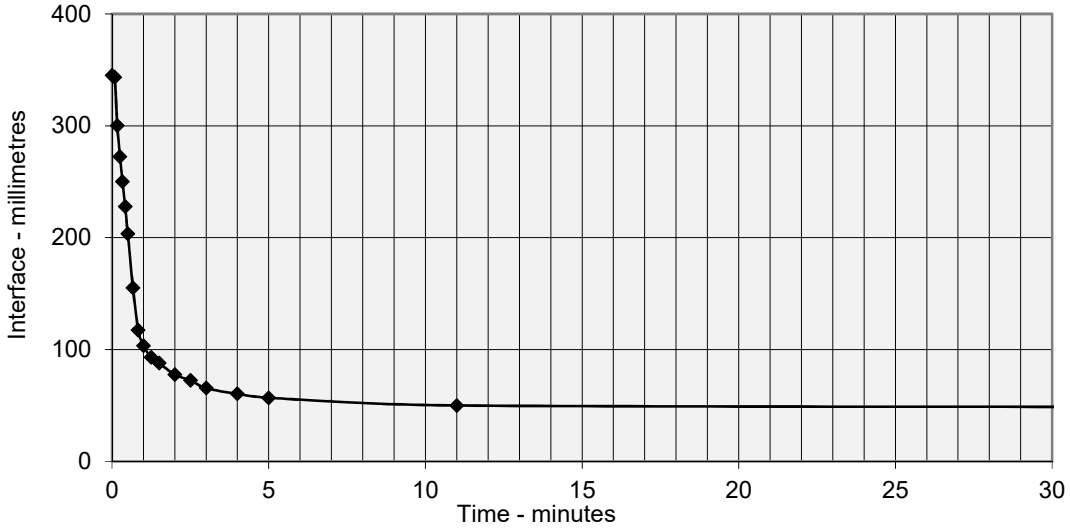


TABLE B-1C
Test 23 Rougher Tail
BL166

SETTLING DATA

Elapsed Time (min)	Interface Height (ml)	Interface Height (mm)
0.00	1000	360
0.08	870	313
0.17	790	284
0.25	700	252
0.33	595	214
0.42	495	178
0.50	390	140
0.75	280	101
1.00	240	86
1.3	220	79
1.5	205	74
2.0	185	67
2.5	175	63
3.0	165	59
7.0	145	52
45.0	130	47
120.0	125	45
5760.0	120	40

TEST CONDITIONS

Parameter	Value
Solids S.G.	2.6
Solids Weight (g)	107.5
Solids Volume (ml)	41.3
pH (as tested)	8.8
pH modifier (g/t)	-
Flocculant Type	Magna Floc 1011
Flocculant (g/t)	10
Temperature (C)	18.6
Slurry Volume (ml)	1000
Slurry S.G.	1.06
Final Slurry Volume	110
Initial Percent Solids	10.1
Final Percent Solids	61.0

Final Tailings (m3/t solids) **1.02**

Settling Rate

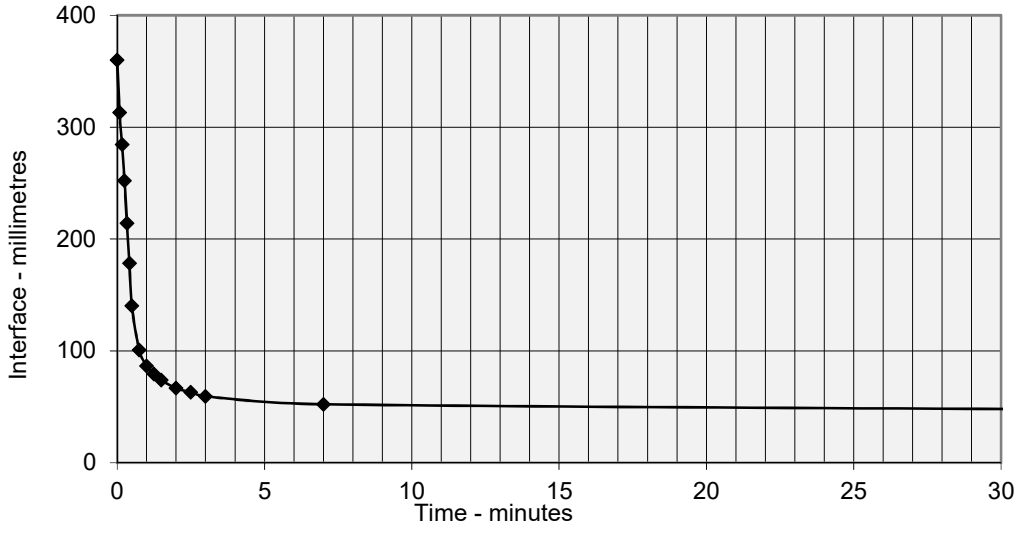


TABLE B-1D
Test 24 Rougher Tail
BL166

SETTLING DATA

Elapsed Time (min)	Interface Height (ml)	Interface Height (mm)
0.00	1000	362
0.08	960	348
0.17	910	329
0.25	860	311
0.33	810	293
0.42	770	279
0.50	730	264
0.75	610	221
1.00	500	181
1.5	320	116
2.0	270	98
2.5	240	87
3.0	220	80
35.0	123	45
60.0	120	43
1440.0	120	43

TEST CONDITIONS

Parameter	Value
Solids S.G.	2.64
Solids Weight (g)	122.5
Solids Volume (ml)	46.4
pH (as tested)	8.6
pH modifier (g/t)	-
Flocculant Type	Magna Floc 1011
Flocculant (g/t)	10
Temperature (C)	18.6
Slurry Volume (ml)	1000
Slurry S.G.	1.07
Final Slurry Volume	120
Initial Percent Solids	11.4
Final Percent Solids	62.5

Final Tailings (m3/t solids) **0.98**

Settling Rate

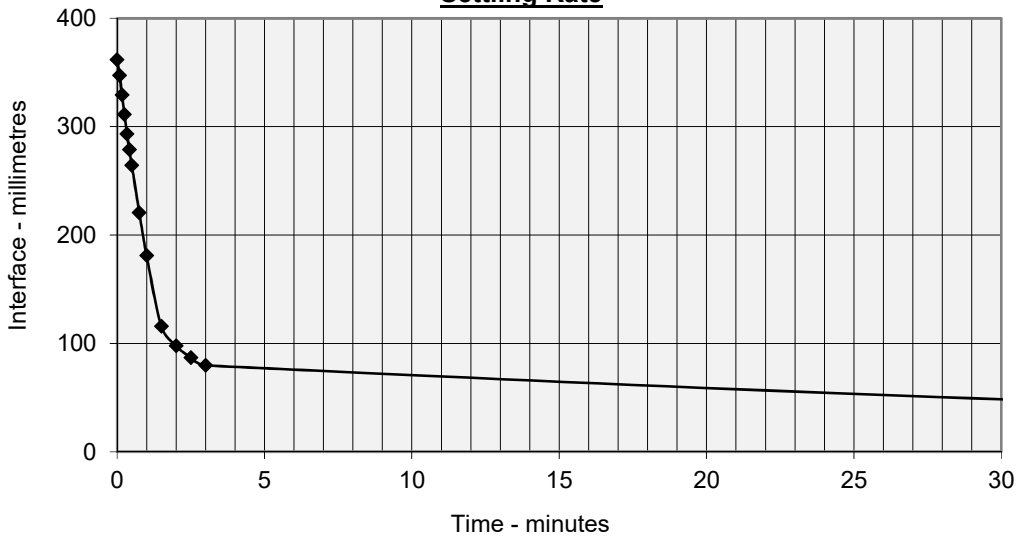


TABLE B-1E
Test 25 Rougher Tail
BL166

SETTLING DATA

Elapsed Time (min)	Interface Height (ml)	Interface Height (mm)
0.00	1000	360
0.08	920	331
0.17	840	302
0.25	760	274
0.33	690	248
0.42	630	227
0.50	560	202
0.75	400	144
1.00	290	104
1.3	250	90
1.5	230	83
2.0	210	76
2.5	190	68
3.0	170	61
35.0	110	40
60.0	105	38
1440.0	120	38

TEST CONDITIONS

Parameter	Value
Solids S.G.	2.69
Solids Weight (g)	111.2
Solids Volume (ml)	41.3
pH (as tested)	8.7
pH modifier (g/t)	-
Flocculant Type	Magna Floc 1011
Flocculant (g/t)	10
Temperature (C)	18.6
Slurry Volume (ml)	1000
Slurry S.G.	1.07
Final Slurry Volume	105
Initial Percent Solids	10.4
Final Percent Solids	63.6

Final Tailings (m3/t solids) **0.94**

Settling Rate

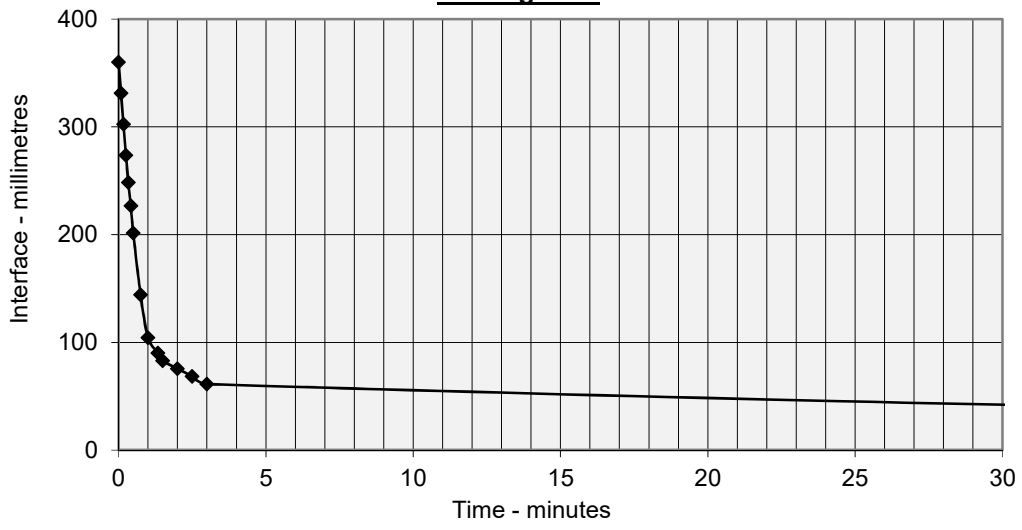


TABLE B-1F
Test 26 Rougher Tail
BL166

SETTLING DATA

Elapsed Time (min)	Interface Height (ml)	Interface Height (mm)
0.00	1000	366
0.08	830	304
0.17	720	264
0.25	600	220
0.33	475	174
0.42	330	121
0.50	295	108
0.67	260	95
0.75	250	92
1.0	240	88
2.0	210	77
2.5	180	66
3.0	170	62
40.0	130	48
60.0	125	46
1440.0	120	46

TEST CONDITIONS

Parameter	Value
Solids S.G.	2.78
Solids Weight (g)	116.6
Solids Volume (ml)	41.9
pH (as tested)	8.6
pH modifier (g/t)	-
Flocculant Type	Magna Floc 1011
Flocculant (g/t)	10
Temperature (C)	18.6
Slurry Volume (ml)	1000
Slurry S.G.	1.07
Final Slurry Volume	125
Initial Percent Solids	10.9
Final Percent Solids	58.4

Final Tailings (m3/t solids) **1.07**

Settling Rate

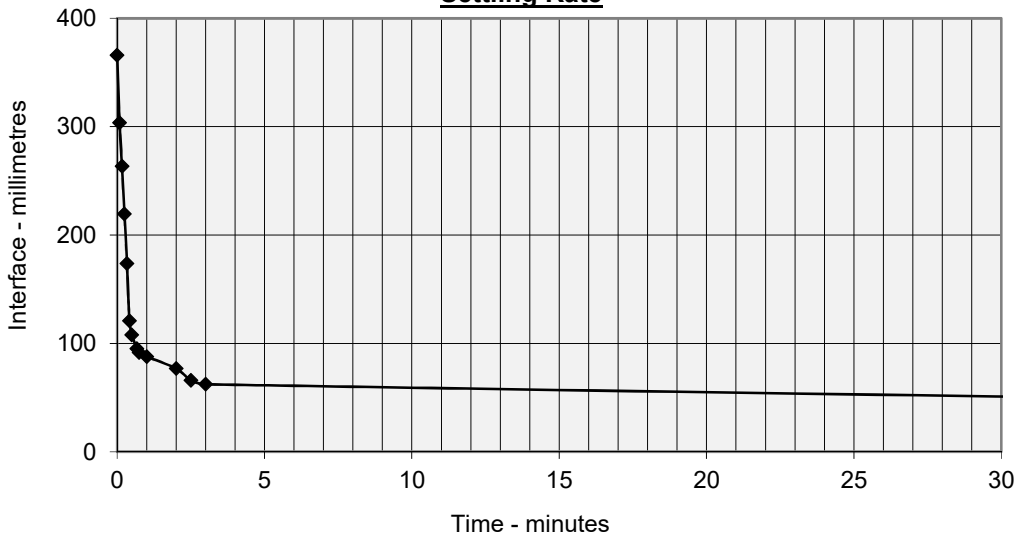


TABLE B-1G
Test 27 Rougher Tail
BL166

SETTLING DATA

Elapsed Time (min)	Interface Height (ml)	Interface Height (mm)
0.00	1000	345
0.08	945	326
0.17	890	307
0.25	820	283
0.33	770	266
0.42	720	248
0.58	630	217
0.75	550	190
1.00	440	152
1.3	340	117
1.5	295	102
2.0	255	88
2.5	230	79
3.0	210	72
5.0	170	59
7.0	155	53
10.0	140	48
18.0	130	45
105.0	120	41
1440.0	120	41

TEST CONDITIONS

Parameter	Value
Solids S.G.	2.72
Solids Weight (g)	117.2
Solids Volume (ml)	43.1
pH (as tested)	8.6
pH modifier (g/t)	-
Flocculant Type	Magna Floc 1011
Flocculant (g/t)	10
Temperature (C)	18.6
Slurry Volume (ml)	1000
Slurry S.G.	1.07
Final Slurry Volume	120
Initial Percent Solids	10.9
Final Percent Solids	60.4

Final Tailings (m3/t solids) **1.02**

Settling Rate

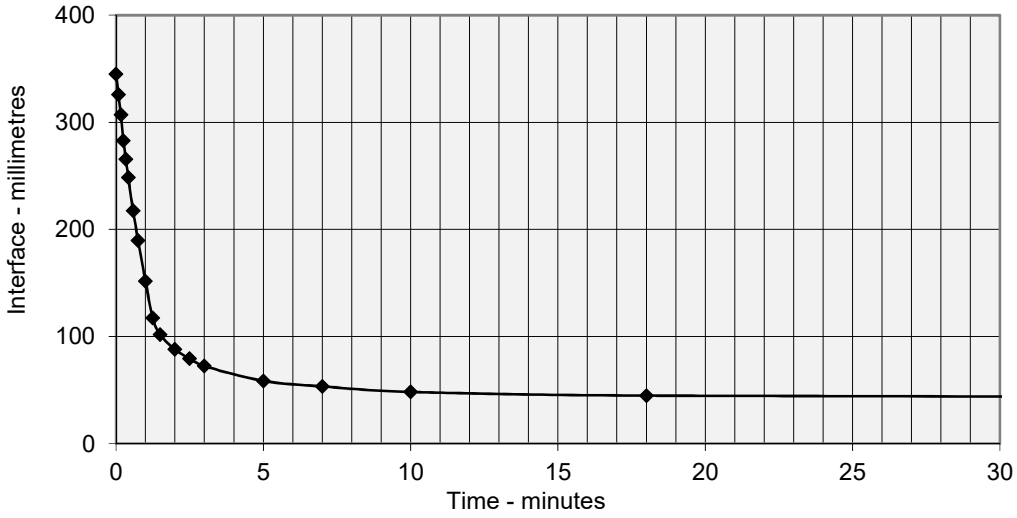


TABLE B-1H
Test 28 Rougher Tail
BL166

SETTLING DATA

Elapsed Time (min)	Interface Height (ml)	Interface Height (mm)
0.00	1000	345
0.08	940	324
0.17	860	297
0.25	780	269
0.33	720	248
0.42	650	224
0.50	585	202
0.58	520	179
0.67	460	159
0.8	410	141
0.8	370	128
0.9	350	121
1.0	330	114
1.3	295	102
1.5	270	93
2.0	240	83
2.5	220	76
3.0	205	71
4.0	185	64
5.0	170	59
6.0	165	57
8.0	150	52
10.0	145	50
15.0	135	47
105.0	120	41
1440.0	120	41

TEST CONDITIONS

Parameter	Value
Solids S.G.	2.77
Solids Weight (g)	107.7
Solids Volume (ml)	38.9
pH (as tested)	8.5
pH modifier (g/t)	-
Flocculant Type	Magna Floc 1011
Flocculant (g/t)	10
Temperature (C)	18.6
Slurry Volume (ml)	1000
Slurry S.G.	1.07
Final Slurry Volume	120
Initial Percent Solids	10.1
Final Percent Solids	57.0

Final Tailings (m3/t solids) **1.11**

Settling Rate

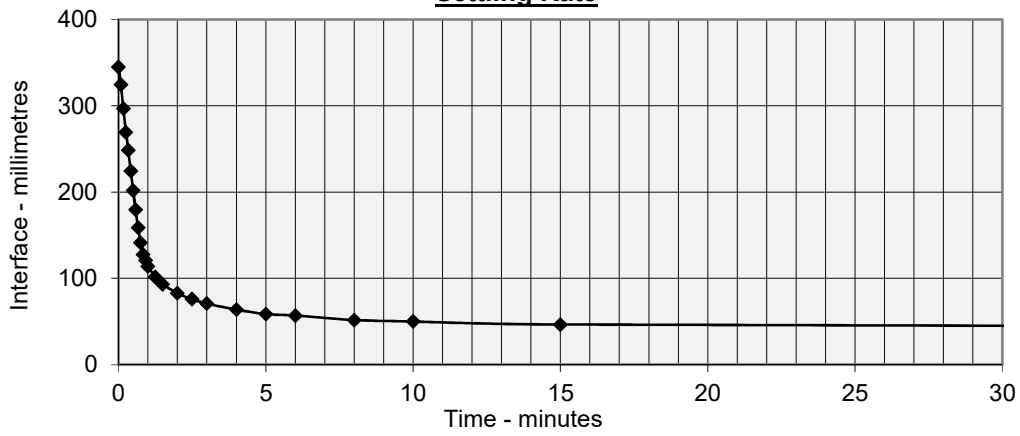


TABLE B-1I
Test 29 Rougher Tail
BL166

SETTLING DATA

Elapsed Time (min)	Interface Height (ml)	Interface Height (mm)
0.00	1000	345
0.08	990	342
0.25	960	331
0.50	905	312
0.75	860	297
1.00	815	281
1.50	740	255
2.00	675	233
2.50	610	210
3.0	530	183
3.5	480	166
4.0	430	148
4.5	375	129
5.0	330	114
5.8	280	97
6.5	260	90
7.0	250	86
8.0	230	79
9.0	210	72
10.0	190	66
13.0	175	60
17.0	160	55
35.0	145	50
100.0	135	47
1440.0	120	45

TEST CONDITIONS

Parameter	Value
Solids S.G.	2.75
Solids Weight (g)	123.4
Solids Volume (ml)	44.9
pH (as tested)	8.4
pH modifier (g/t)	-
Flocculant Type	Magna Floc 1011
Flocculant (g/t)	10
Temperature (C)	18.6
Slurry Volume (ml)	1000
Slurry S.G.	1.08
Final Slurry Volume	130
Initial Percent Solids	11.5
Final Percent Solids	59.2

Final Tailings (m3/t solids) **1.05**

Settling Rate

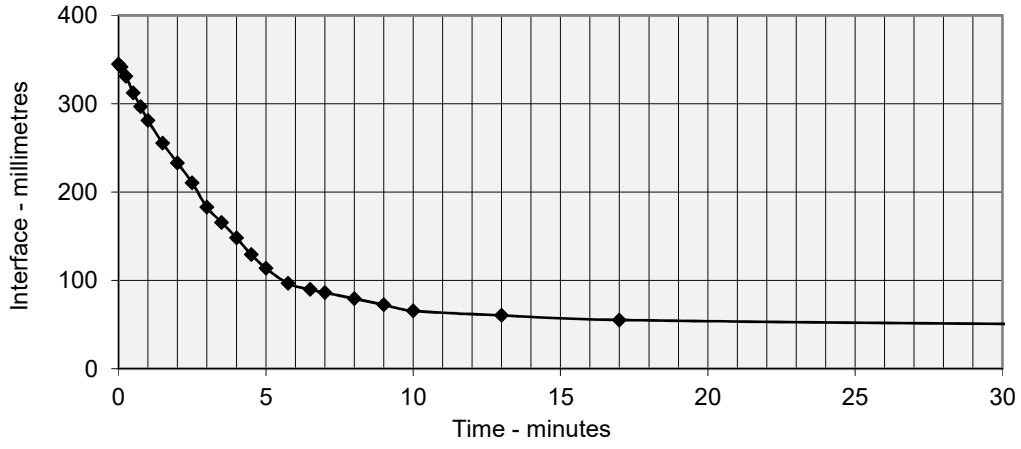


TABLE B-1J
Test 30 Rougher Tail
BL166

SETTLING DATA

Elapsed Time (min)	Interface Height (ml)	Interface Height (mm)
0.00	1000	362
0.08	985	357
0.17	950	344
0.25	920	333
0.50	845	306
0.75	775	281
1.00	720	261
1.50	620	224
2.00	530	192
2.5	450	163
3.0	380	138
3.5	310	112
4.0	250	91
4.5	205	74
5.0	195	71
5.5	175	63
6.0	165	60
7.0	145	52
11.0	120	43
40.0	110	40
120.0	105	38
1560.0	120	38

TEST CONDITIONS

Parameter	Value
Solids S.G.	2.67
Solids Weight (g)	111.7
Solids Volume (ml)	41.8
pH (as tested)	8.7
pH modifier (g/t)	-
Flocculant Type	Magna Floc 1011
Flocculant (g/t)	10
Temperature (C)	18.6
Slurry Volume (ml)	1000
Slurry S.G.	1.07
Final Slurry Volume	105
Initial Percent Solids	10.5
Final Percent Solids	63.9

Final Tailings (m3/t solids) **0.94**

Settling Rate

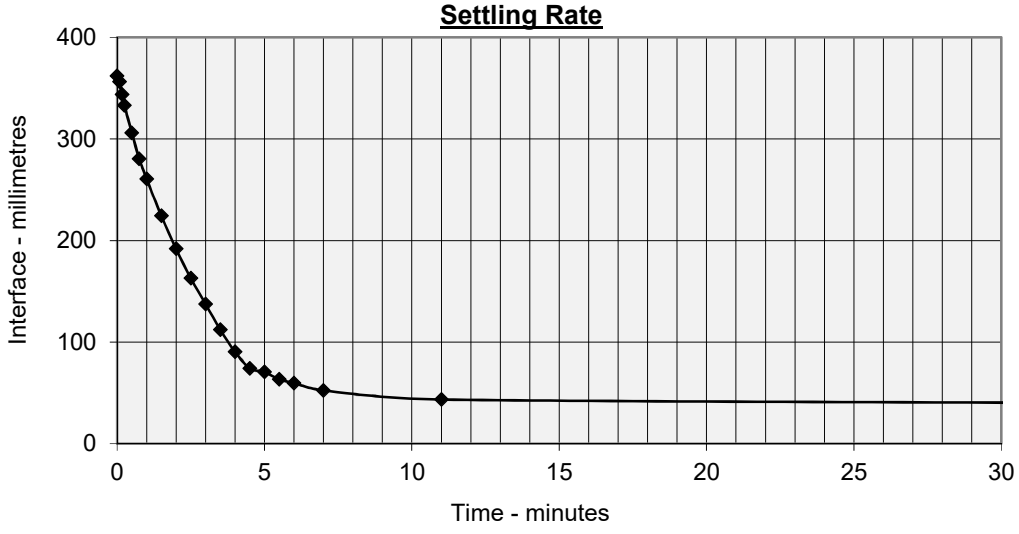


TABLE B-2
APPARENT DENSITIES

Comp ID	Piece	Sample Mass Air (g)	Sample Mass with Wax (g)	Sample Mass Water (g)	Apparent Density
DW1	1	102.2	104.7	65.7	2.83
	2	104.3	106.8	66.9	2.82
	3	123.2	126.3	80.9	2.94
	4	147.1	150.8	94.4	2.82
	5	123.6	126.6	81.5	2.96
	6	76.2	78.1	48.9	2.82
	7	92.0	94.4	59.4	2.85
	8	111.3	114.1	72.2	2.88
	Average	**110.0**	**112.7**	**71.2**	**2.86**
DW2	1	102.3	104.8	66.6	2.90
	2	83.0	85.0	53.7	2.87
	3	88.5	90.7	56.8	2.82
	4	91.9	94.3	59.3	2.85
	5	101.0	103.4	67.5	3.05
	6	113.1	116.0	73.2	2.86
	7	82.3	84.3	53.3	2.87
	8	78.0	80.0	51.7	3.00
	9	115.9	118.7	75.0	2.87
	Average	**95.1**	**97.5**	**61.9**	**2.90**
Z10	1	117.1	118.7	75.8	2.85
	2	91.8	93.2	59.4	2.85
	3	132.7	134.9	87.9	2.98
	4	153.7	156.0	103.1	3.06
	5	97.4	99.2	63.5	2.89
	6	83.0	84.7	53.9	2.88
	7*	60.6	62.3	38.6	2.79
	8	133.1	135.0	88.8	3.03
	Average	**108.7**	**110.5**	**71.4**	**2.92**
Z20	1	87.0	89.2	54.1	2.67
	2	73.4	75.2	45.4	2.65
	3	89.0	91.2	55.4	2.68
	4	97.5	99.8	60.2	2.64
	5	110.2	112.8	68.5	2.67
	6	87.4	89.5	54.9	2.72
	Average	**90.7**	**92.9**	**56.4**	**2.67**
Z531	1	65.8	67.3	42.4	2.84
	2	69.5	71.2	44.2	2.78
	3	65.6	67.2	42.2	2.83
	4	51.1	52.4	32.7	2.80
	5	62.4	64.0	38.9	2.68
	6**	95.5	97.9	62.2	2.90
	Average	**68.3**	**70.0**	**43.8**	**2.80**

TABLE B-2 Continued
APPARENT DENSITIES

Comp ID	Piece	Sample Mass Air (g)	Sample Mass with Wax (g)	Sample Mass Water (g)	Apparent Density
POR1	1	134.1	137.4	87.7	2.92
	2	107.0	109.6	68.2	2.78
	3	93.9	96.1	57.8	2.63
	4	82.3	84.2	53.4	2.87
	5	88.9	91.0	55.5	2.69
	6	105.1	107.6	65.8	2.70
	7	115.7	118.5	75.0	2.87
	8	91.7	93.9	56.7	2.65
	Average	**102.3**	**104.8**	**65.0**	**2.76**
POR2	1	103.1	105.6	64.9	2.73
	2	86.7	88.8	57.3	2.98
	3	107.6	110.1	70.0	2.89
	4	116.2	118.7	74.3	2.80
	5	92.2	94.3	60.0	2.90
	6	114.8	117.8	72.9	2.77
	7	122.9	125.4	80.0	2.89
	Average	**106.2**	**108.7**	**68.5**	**2.85**
NW1	1	48.9	50.8	31.5	2.85
	2	40.2	41.2	25.8	2.81
	3	34.0	35.1	21.4	2.72
	4	53.5	54.9	34.3	2.82
	5	55.0	56.6	34.9	2.78
	6	47.5	49.1	30.2	2.80
	Average	**46.5**	**47.9**	**29.7**	**2.80**
MZ	1	63.0	64.6	39.5	2.71
	2	56.3	57.9	35.3	2.71
	3	54.5	55.9	34.2	2.71
	4	45.6	46.8	28.5	2.70
	5	41.2	42.4	25.9	2.72
	6	60.6	62.0	39.4	2.89
	7**	103.7	105.5	67.3	2.87
	Average	**60.7**	**62.1**	**38.6**	**2.76**
NW2	1	91.7	93.9	57.5	2.71
	2	86.6	88.7	55.4	2.81
	3	84.5	86.9	53.4	2.75
	4	98.1	100.9	62.9	2.83
	5	109.5	112.2	69.0	2.73
	6	97.4	99.9	61.1	2.71
	Average	**94.6**	**97.1**	**59.9**	**2.76**

Note: The wax used for the wax coating method had a density of 0.87kg/L.

TABLE B-3
SPECIFIC GRAVITY

Sample ID	Methyl Hydrate g to fill 100mL	Residual Methyl Hydrate - grams	Sample Mass grams	Total Mass grams	Bottle No. / grams	SG
BL166-21 Rougher Tailing	79.2	0.3	10.0	86.3	A: 86.26	2.74
BL166-22 Rougher Tailing	79.2	0.2	11.2	87.3	B: 69.87	2.87
BL166-23 Rougher Tailing	79.1	0.2	10.4	86.3	C: 64.98	2.60
BL166-24 Rougher Tailing	79.1	0.2	10.3	86.3	D: 61.45	2.64
BL166-25 Rougher Tailing	79.1	0.2	10.3	86.3	E: 64.38	2.69
BL166-26 Rougher Tailing	79.1	0.2	10.0	86.2	F: 70.79	2.78
BL166-27 Rougher Tailing	79.2	0.2	10.1	86.4	G: 62.53	2.72
BL166-28 Rougher Tailing	79.2	0.2	10.2	86.5	H: 70.26	2.77
BL166-29 Rougher Tailing	79.3	0.2	11.4	87.3	I: 62.93	2.75
BL166-30 Rougher Tailing	79.2	0.2	11.4	87.2	J: 68.49	2.67

Note: Total mass includes the sample and methyl hydrate required to fill flask to 100mL.

APPENDIX C – ASSAYS

APPENDIX C
ASSAYS

Reference
Activation Laboratories Ltd. Certificates of Analyses

TABLE C-1
HEAD ASSAY DATA

Sample	S %	C %	TOC %	Au ppm	Ag ppm	Cu ppm	Zn ppm	As ppm	Cd ppm
NW1 Head 1	1.18	2.43	0.02	1.75	0.50	42	66	144	< 0.5
NW1 Head 2	1.16	2.46	0.03	1.64	0.70	43	62	147	< 0.5
Average	**1.17**	**2.45**	**0.03**	**1.70**	**0.60**	**43**	**64**	**146**	**< 0.5**
NW2 Head 1	1.48	3.10	0.02	0.82	2.60	49	112	99	< 0.5
NW2 Head 2	1.51	3.12	0.02	0.73	2.40	46	107	100	< 0.5
Average	**1.50**	**3.11**	**0.02**	**0.78**	**2.50**	**48**	**110**	**100**	**< 0.5**
Z20 Head 1	0.43	1.44	0.01	0.87	0.20	68	65	< 2	< 0.5
Z20 Head 2	0.48	1.46	0.01	0.69	0.30	65	64	< 2	< 0.5
Average	**0.46**	**1.45**	**0.01**	**0.78**	**0.25**	**67**	**65**	**< 2**	**< 0.5**
Z531 Head 1	1.68	3.04	0.02	2.27	0.70	122	255	10	< 0.5
Z531 Head 2	1.66	3.00	0.01	2.46	0.80	114	313	8	0.7
Average	**1.67**	**3.02**	**0.02**	**2.37**	**0.75**	**118**	**284**	**9**	**0.7**
POR1 Head 1	1.35	2.13	0.02	2.07	0.90	113	66	< 2	< 0.5
POR1 Head 2	1.36	2.10	0.01	1.40	0.50	101	65	4	< 0.5
Average	**1.36**	**2.12**	**0.01**	**1.74**	**0.70**	**107**	**66**	**4**	**< 0.5**
POR2 Head 1	1.57	3.09	0.01	1.85	0.80	149	85	55	< 0.5
POR2 Head 2	1.52	2.99	0.01	2.36	0.50	147	82	75	0.9
Average	**1.55**	**3.04**	**0.01**	**2.11**	**0.65**	**148**	**84**	**65**	**0.9**
MZ Head 1	1.02	2.06	0.01	1.55	0.90	42	158	38	< 0.5
MZ Head 2	1.05	2.13	0.02	1.76	1.60	44	137	38	< 0.5
Average	**1.04**	**2.10**	**0.01**	**1.66**	**1.25**	**43**	**148**	**38**	**< 0.5**
DW1 Head 1	1.52	2.42	0.02	1.31	0.70	106	86	11	< 0.5
DW1 Head 2	1.59	2.38	0.02	1.15	0.70	114	90	4	< 0.5
Average	**1.56**	**2.40**	**0.02**	**1.23**	**0.70**	**110**	**88**	**8**	**< 0.5**
DW2 Head 1	1.56	2.61	0.02	4.00	0.80	110	72	3	< 0.5
DW2 Head 2	1.57	2.62	0.02	11.6	1.20	102	70	3	< 0.5
Average	**1.57**	**2.62**	**0.02**	**7.80**	**1.00**	**106**	**71**	**3**	**< 0.5**
Z10 Head 1	2.90	2.59	0.03	2.69	0.60	94	60	6	< 0.5
Z10 Head 2	3.02	2.60	0.02	2.45	0.60	96	58	4	< 0.5
Average	**2.96**	**2.60**	**0.02**	**2.57**	**0.60**	**95**	**59**	**5**	**< 0.5**

TABLE C-1 Continued
HEAD ASSAY DATA

Sample	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Al %	B ppm	Ba ppm	Be ppm	Bi ppm
NW1 Head 1	860	8	56	19	1.02	< 10	65	0.6	< 2
NW1 Head 2	896	7	58	21	1.00	< 10	53	0.6	< 2
Average	**878**	**8**	**57**	**20**	**1.01**	**< 10**	**59**	**0.6**	**< 2**
NW2 Head 1	1180	125	35	43	0.52	< 10	43	0.9	< 2
NW2 Head 2	1160	113	31	37	0.51	< 10	42	0.9	4
Average	**1170**	**119**	**33**	**40**	**0.515**	**< 10**	**43**	**0.9**	**4**
Z20 Head 1	687	28	15	8	0.21	< 10	198	< 0.5	8
Z20 Head 2	687	39	16	6	0.18	< 10	123	< 0.5	3
Average	**687**	**34**	**16**	**7**	**0.20**	**< 10**	**161**	**< 0.5**	**6**
Z531 Head 1	1500	2	81	< 2	1.04	< 10	31	< 0.5	< 2
Z531 Head 2	1390	2	79	2	0.97	< 10	33	< 0.5	< 2
Average	**1445**	**2**	**80**	**2**	**1.01**	**< 10**	**32**	**< 0.5**	**< 2**
POR1 Head 1	1030	11	27	18	0.54	< 10	39	0.5	5
POR1 Head 2	1030	11	29	11	0.59	< 10	31	0.6	7
Average	**1030**	**11**	**28**	**15**	**0.57**	**< 10**	**35**	**0.6**	**6**
POR2 Head 1	1430	27	49	16	0.44	< 10	39	0.5	< 2
POR2 Head 2	1420	26	46	16	0.44	< 10	38	< 0.5	< 2
Average	**1425**	**27**	**48**	**16**	**0.44**	**< 10**	**39**	**0.5**	**< 2**
MZ Head 1	820	2	33	68	0.66	< 10	69	< 0.5	< 2
MZ Head 2	798	1	34	31	0.73	< 10	77	< 0.5	< 2
Average	**809**	**2**	**34**	**50**	**0.70**	**< 10**	**73**	**< 0.5**	**< 2**
DW1 Head 1	1640	3	77	6	1.74	< 10	59	0.7	< 2
DW1 Head 2	1620	2	75	3	1.75	< 10	72	0.7	< 2
Average	**1630**	**3**	**76**	**5**	**1.75**	**< 10**	**66**	**0.7**	**< 2**
DW2 Head 1	1600	< 1	79	4	2.02	< 10	44	0.9	< 2
DW2 Head 2	1610	1	78	< 2	1.98	< 10	52	0.9	< 2
Average	**1605**	**1**	**79**	**4**	**2.00**	**< 10**	**48**	**0.9**	**< 2**
Z10 Head 1	1640	4	61	16	1.05	< 10	23	0.9	< 2
Z10 Head 2	1600	4	59	15	1.01	< 10	26	0.9	< 2
Average	**1620**	**4**	**60**	**16**	**1.03**	**< 10**	**25**	**0.9**	**< 2**

TABLE C-1 Continued
HEAD ASSAY DATA

Sample	Ca %	Co ppm	Cr ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
NW1 Head 1	5.26	20	55	3.52	< 10	2	0.57	45	1.15
NW1 Head 2	5.10	20	64	3.66	< 10	< 1	0.55	44	1.19
Average	**5.18**	**20**	**60**	**3.59**	**< 10**	**2**	**0.56**	**45**	**1.17**
NW2 Head 1	6.86	14	43	3.47	< 10	< 1	0.41	51	1.50
NW2 Head 2	6.77	14	33	3.46	< 10	< 1	0.41	50	1.48
Average	**6.82**	**14**	**38**	**3.47**	**< 10**	**< 1**	**0.41**	**51**	**1.49**
Z20 Head 1	3.07	9	60	2.40	< 10	< 1	0.14	28	0.66
Z20 Head 2	3.08	11	58	2.41	< 10	< 1	0.12	27	0.66
Average	**3.08**	**10**	**59**	**2.41**	**< 10**	**< 1**	**0.13**	**28**	**0.66**
Z531 Head 1	5.63	41	86	5.48	< 10	< 1	0.42	< 10	2.34
Z531 Head 2	5.26	36	90	5.04	< 10	< 1	0.38	< 10	2.16
Average	**5.45**	**39**	**88**	**5.26**	**< 10**	**< 1**	**0.40**	**< 10**	**2.25**
POR1 Head 1	4.74	21	58	3.72	< 10	< 1	0.31	34	0.98
POR1 Head 2	4.77	23	63	3.88	< 10	< 1	0.35	35	1.01
Average	**4.76**	**22**	**61**	**3.80**	**< 10**	**< 1**	**0.33**	**35**	**1.00**
POR2 Head 1	5.23	24	62	5.28	< 10	< 1	0.19	32	1.57
POR2 Head 2	5.20	24	72	5.21	< 10	< 1	0.20	32	1.56
Average	**5.22**	**24**	**67**	**5.25**	**< 10**	**< 1**	**0.20**	**32**	**1.57**
MZ Head 1	4.05	19	44	3.38	< 10	< 1	0.25	< 10	0.91
MZ Head 2	3.96	19	47	3.41	< 10	< 1	0.27	10	0.92
Average	**4.01**	**19**	**46**	**3.40**	**< 10**	**< 1**	**0.26**	**10**	**0.92**
DW1 Head 1	5.63	36	70	6.18	< 10	< 1	0.58	< 10	2.08
DW1 Head 2	5.49	35	71	6.16	< 10	< 1	0.58	< 10	2.01
Average	**5.56**	**36**	**71**	**6.17**	**< 10**	**< 1**	**0.58**	**< 10**	**2.05**
DW2 Head 1	6.14	38	117	6.66	< 10	< 1	0.71	21	2.35
DW2 Head 2	6.16	39	118	6.47	< 10	< 1	0.69	18	2.31
Average	**6.15**	**39**	**118**	**6.57**	**< 10**	**< 1**	**0.70**	**20**	**2.33**
Z10 Head 1	5.17	32	77	7.16	< 10	< 1	0.51	15	1.94
Z10 Head 2	5.11	32	71	7.06	< 10	2	0.5	15	1.89
Average	**5.14**	**32**	**74**	**7.11**	**< 10**	**2**	**0.51**	**15**	**1.92**

TABLE C-1 Continued
HEAD ASSAY DATA

Sample	Na %	P %	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	Th ppm	Te ppm
NW1 Head 1	0.04	0.14	1.10	6	3	595	0.01	< 20	6
NW1 Head 2	0.04	0.14	1.11	6	3	621	0.01	< 20	12
Average	**0.04**	**0.14**	**1.11**	**6**	**3**	**608**	**0.01**	**< 20**	**9**
NW2 Head 1	0.03	0.24	1.53	7	4	1250	0.01	< 20	2
NW2 Head 2	0.03	0.24	1.47	7	4	1200	0.01	< 20	< 1
Average	**0.03**	**0.24**	**1.50**	**7**	**4**	**1225**	**0.01**	**< 20**	**2**
Z20 Head 1	0.12	0.08	0.41	3	4	263	< 0.01	< 20	< 1
Z20 Head 2	0.10	0.08	0.43	2	4	251	< 0.01	< 20	4
Average	**0.11**	**0.08**	**0.42**	**3**	**4**	**257**	**< 0.01**	**< 20**	**4**
Z531 Head 1	0.07	0.03	1.54	4	16	206	0.04	< 20	2
Z531 Head 2	0.06	0.03	1.46	4	15	199	0.04	< 20	< 1
Average	**0.06**	**0.03**	**1.50**	**4**	**16**	**203**	**0.04**	**< 20**	**2**
POR1 Head 1	0.17	0.07	1.23	4	10	393	0.02	< 20	< 1
POR1 Head 2	0.19	0.08	1.29	3	11	397	0.02	< 20	3
Average	**0.18**	**0.07**	**1.26**	**4**	**11**	**395**	**0.02**	**< 20**	**3**
POR2 Head 1	0.08	0.06	1.47	6	14	529	0.02	< 20	5
POR2 Head 2	0.08	0.06	1.37	4	14	537	0.02	< 20	< 1
Average	**0.08**	**0.06**	**1.42**	**5**	**14**	**533**	**0.02**	**< 20**	**5**
MZ Head 1	0.07	0.05	0.98	6	5	231	< 0.01	< 20	6
MZ Head 2	0.07	0.05	0.98	7	5	242	< 0.01	< 20	4
Average	**0.07**	**0.05**	**0.98**	**7**	**5**	**237**	**< 0.01**	**< 20**	**5**
DW1 Head 1	0.06	0.05	1.38	4	18	347	0.12	< 20	3
DW1 Head 2	0.06	0.05	1.43	6	18	332	0.13	< 20	3
Average	**0.06**	**0.05**	**1.41**	**5**	**18**	**340**	**0.13**	**< 20**	**3**
DW2 Head 1	0.05	0.15	1.44	4	20	332	0.16	< 20	4
DW2 Head 2	0.05	0.14	1.40	5	20	323	0.17	< 20	4
Average	**0.05**	**0.14**	**1.42**	**5**	**20**	**328**	**0.17**	**< 20**	**4**
Z10 Head 1	0.09	0.03	2.80	5	17	171	0.12	< 20	7
Z10 Head 2	0.09	0.03	2.81	5	17	168	0.11	< 20	8
Average	**0.09**	**0.03**	**2.81**	**5**	**17**	**170**	**0.12**	**< 20**	**8**

TABLE C-1 Continued
HEAD ASSAY DATA

Sample	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zr ppm
NW1 Head 1	< 2	< 10	55	< 10	12	10
NW1 Head 2	< 2	< 10	55	< 10	12	5
Average	**< 2**	**< 10**	**55**	**< 10**	**12**	**8**
NW2 Head 1	3	< 10	67	< 10	15	3
NW2 Head 2	< 2	< 10	67	< 10	14	2
Average	**3**	**< 10**	**67**	**< 10**	**15**	**3**
Z20 Head 1	< 2	< 10	38	< 10	6	8
Z20 Head 2	< 2	< 10	37	< 10	6	6
Average	**< 2**	**< 10**	**38**	**< 10**	**6**	**7**
Z531 Head 1	< 2	< 10	118	< 10	6	7
Z531 Head 2	< 2	< 10	110	< 10	5	7
Average	**< 2**	**< 10**	**114**	**< 10**	**6**	**7**
POR1 Head 1	< 2	< 10	63	< 10	9	33
POR1 Head 2	< 2	< 10	66	< 10	9	34
Average	**< 2**	**< 10**	**65**	**< 10**	**9**	**34**
POR2 Head 1	< 2	< 10	86	< 10	9	25
POR2 Head 2	< 2	< 10	83	< 10	9	25
Average	**< 2**	**< 10**	**85**	**< 10**	**9**	**25**
MZ Head 1	< 2	< 10	24	< 10	5	12
MZ Head 2	< 2	< 10	24	< 10	5	12
Average	**< 2**	**< 10**	**24**	**< 10**	**5**	**12**
DW1 Head 1	< 2	< 10	141	< 10	9	10
DW1 Head 2	< 2	< 10	141	< 10	9	11
Average	**< 2**	**< 10**	**141**	**< 10**	**9**	**11**
DW2 Head 1	< 2	< 10	166	< 10	13	9
DW2 Head 2	< 2	< 10	164	< 10	13	9
Average	**< 2**	**< 10**	**165**	**< 10**	**13**	**9**
Z10 Head 1	< 2	< 10	164	< 10	9	20
Z10 Head 2	< 2	< 10	161	< 10	8	20
Average	**< 2**	**< 10**	**163**	**< 10**	**9**	**20**

TABLE C-2
COMPARISON OF RECALCULATED AND MEASURED HEADS

Composite	Test No.	Assay - percent or g/tonne		
		Au	Ag	S
DW1	1	1.77	0.5	
	11	1.79	0.8	1.71
	21	1.79	0.8	1.56
Head 1		**1.31**	**0.7**	**1.52**
Head 2		**1.15**	**0.7**	**1.59**
DW2	2	2.87	0.7	
	12	2.32	0.8	1.53
	22	3.07	0.8	1.50
Head 1		**4.00**	**0.8**	**1.56**
Head 2		**11.6**	**1.2**	**1.57**
Z10	3	3.00	0.5	
	13	2.56	0.8	3.1
	23	3.03	0.8	3.1
Head 1		**2.69**	**0.6**	**2.90**
Head 2		**2.45**	**0.6**	**3.02**
Z20	4	0.78	0.3	
	14	0.64	0.3	0.5
	24	0.80	0.3	0.5
Head 1		**0.87**	**0.2**	**0.43**
Head 2		**0.69**	**0.3**	**0.48**
Z531	5	2.20	0.6	
	15	2.02	1.4	1.6
	25	1.93	0.7	1.7
Head 1		**2.27**	**0.7**	**1.68**
Head 2		**2.46**	**0.8**	**1.66**
POR1	6	1.57	0.7	
	16	1.51	0.7	1.5
	26	1.65	0.9	1.5
Head 1		**2.07**	**0.9**	**1.35**
Head 2		**1.40**	**0.5**	**1.36**
POR2	7	1.88	0.5	
	17	1.69	0.6	1.5
	27	1.74	0.7	1.6
Head 1		**1.85**	**0.8**	**1.57**
Head 2		**2.36**	**0.5**	**1.52**
NW1	8	1.87	0.5	
	18	2.26	0.7	1.2
	28	1.68	0.6	1.1
Head 1		**1.75**	**0.5**	**1.18**
Head 2		**1.64**	**0.7**	**1.16**

TABLE C-2 Continued

COMPARISON OF RECALCULATED AND MEASURED HEADS

Composite	Test No.	Assay - percent or g/tonne		
		Au	Ag	S
MZ	9	1.75	1.0	
	19	2.01	1.3	1.1
	29	1.73	1.2	1.0
Head 1		**1.55**	**0.9**	**1.02**
Head 2		**1.76**	**1.6**	**1.05**
NW2	10	0.90	1.6	
	20	0.93	2.5	1.5
	30	0.83	2.5	1.5
Head 1		**0.82**	**2.6**	**1.48**
Head 2		**0.73**	**2.4**	**1.51**

Quality Analysis ... *Innovative Technologies*

Date Submitted: 18-Jan-17
Invoice No.: A17-00506
Invoice Date: 25-Jan-17
Your Reference: BL166

Base Metallurgical Laboratories Ltd.
4-1425 Cariboo Place
Kamloops BC
Canada

ATTN: Bradly Angove

CERTIFICATE OF ANALYSIS

20 Pulp samples were submitted for analysis.

The following analytical package(s) were requested: Code 1A2-ICP Au-Fire Assay ICPOES 30g

REPORT **A17-00506**

Notes:

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

ACTIVATION LABORATORIES LTD.
41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5
TELEPHONE +905 648-9611 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Date Submitted: 18-Jan-17
Invoice No.: A17-00506
Invoice Date: 25-Jan-17
Your Reference: BL166

Base Metallurgical Laboratories Ltd.
4-1425 Cariboo Place
Kamloops BC
Canada

ATTN: Bradly Angove

CERTIFICATE OF ANALYSIS

20 Pulp samples were submitted for analysis.

The following analytical package(s) were requested: Code 1E3-Kamloops Aqua Regia ICP(AQUAGEO)

REPORT **A17-00506**

Notes:

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

ACTIVATION LABORATORIES LTD.
9989 Dallas Drive, Kamloops, British Columbia, Canada, V2C 6T4
TELEPHONE +250 573-4484 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Kamloops@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
Lower Limit	2	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10
Method Code	FA-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
BL166 DW1 Hd1	1310	0.7	< 0.5	106	1640	3	77	6	86	1.74	11	< 10	59	0.7	< 2	5.63	36	70	6.18	< 10	< 1	0.58	< 10
BL166 DW1 Hd2	1150	0.7	< 0.5	114	1620	2	75	3	90	1.75	4	< 10	72	0.7	< 2	5.49	35	71	6.16	< 10	< 1	0.58	< 10
BL166 DW2 Hd1	4000	0.8	< 0.5	110	1600	< 1	79	4	72	2.02	3	< 10	44	0.9	< 2	6.14	38	117	6.66	< 10	< 1	0.71	21
BL166 DW2 Hd2	11600	1.2	< 0.5	102	1610	1	78	< 2	70	1.98	3	< 10	52	0.9	< 2	6.16	39	118	6.47	< 10	< 1	0.69	18
BL166 Z10 Hd1	2690	0.6	< 0.5	94	1640	4	61	16	60	1.05	6	< 10	23	0.9	< 2	5.17	32	77	7.16	< 10	< 1	0.51	15
BL166 Z10 Hd2	2450	0.6	< 0.5	96	1600	4	59	15	58	1.01	4	< 10	26	0.9	< 2	5.11	32	71	7.06	< 10	2	0.50	15
BL166 Z20 Hd1	874	0.2	< 0.5	68	687	28	15	8	65	0.21	< 2	< 10	198	< 0.5	8	3.07	9	60	2.40	< 10	< 1	0.14	28
BL166 Z20 Hd2	688	0.3	< 0.5	65	687	39	16	6	64	0.18	< 2	< 10	123	< 0.5	3	3.08	11	58	2.41	< 10	< 1	0.12	27
BL166 Z531 Hd1	2270	0.7	< 0.5	122	1500	2	81	< 2	255	1.04	10	< 10	31	< 0.5	< 2	5.63	41	86	5.48	< 10	< 1	0.42	< 10
BL166 Z531 Hd2	2460	0.8	0.7	114	1390	2	79	2	313	0.97	8	< 10	33	< 0.5	< 2	5.26	36	90	5.04	< 10	< 1	0.38	< 10
BL166 POR1 Hd1	2070	0.9	< 0.5	113	1030	11	27	18	66	0.54	< 2	< 10	39	0.5	5	4.74	21	58	3.72	< 10	< 1	0.31	34
BL166 POR1 Hd2	1400	0.5	< 0.5	101	1030	11	29	11	65	0.59	4	< 10	31	0.6	7	4.77	23	63	3.88	< 10	< 1	0.35	35
BL166 POR2 Hd1	1850	0.8	< 0.5	149	1430	27	49	16	85	0.44	55	< 10	39	0.5	< 2	5.23	24	62	5.28	< 10	< 1	0.19	32
BL166 POR2 HD2	2360	0.5	0.9	147	1420	26	46	16	82	0.44	75	< 10	38	< 0.5	< 2	5.20	24	72	5.21	< 10	< 1	0.20	32
BL166 NW1 Hd1	1750	0.5	< 0.5	42	860	8	56	19	66	1.02	144	< 10	65	0.6	< 2	5.26	20	55	3.52	< 10	2	0.57	45
BL166 NW1 Hd2	1640	0.7	< 0.5	43	896	7	58	21	62	1.00	147	< 10	53	0.6	< 2	5.10	20	64	3.66	< 10	< 1	0.55	44
BL166 NW2 Hd1	824	2.6	< 0.5	49	1180	125	35	43	112	0.52	99	< 10	43	0.9	< 2	6.86	14	43	3.47	< 10	< 1	0.41	51
BL166 NW2 Hd2	727	2.4	< 0.5	46	1160	113	31	37	107	0.51	100	< 10	42	0.9	4	6.77	14	33	3.46	< 10	< 1	0.41	50
BL166 MZ Hd1	1550	0.9	< 0.5	42	820	2	33	68	158	0.66	38	< 10	69	< 0.5	< 2	4.05	19	44	3.38	< 10	< 1	0.25	< 10
BL166 MZ Hd2	1760	1.6	< 0.5	44	798	1	34	31	137	0.73	38	< 10	77	< 0.5	< 2	3.96	19	47	3.41	< 10	< 1	0.27	10

Analyte Symbol	Mg	Na	P	S	Sb	Sc	Sr	Ti	Th	Te	Tl	U	V	W	Y	Zr
Unit Symbol	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	0.01	0.001	0.001	0.01	2	1	1	0.01	20	1	2	10	1	10	1	1
Method Code	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
BL166 DW1 Hd1	2.08	0.056	0.050	1.38	4	18	347	0.12	< 20	3	< 2	< 10	141	< 10	9	10
BL166 DW1 Hd2	2.01	0.059	0.048	1.43	6	18	332	0.13	< 20	3	< 2	< 10	141	< 10	9	11
BL166 DW2 Hd1	2.35	0.050	0.152	1.44	4	20	332	0.16	< 20	4	< 2	< 10	166	< 10	13	9
BL166 DW2 Hd2	2.31	0.051	0.135	1.40	5	20	323	0.17	< 20	4	< 2	< 10	164	< 10	13	9
BL166 Z10 Hd1	1.94	0.090	0.031	2.80	5	17	171	0.12	< 20	7	< 2	< 10	164	< 10	9	20
BL166 Z10 Hd2	1.89	0.087	0.029	2.81	5	17	168	0.11	< 20	8	< 2	< 10	161	< 10	8	20
BL166 Z20 Hd1	0.66	0.115	0.081	0.41	3	4	263	< 0.01	< 20	< 1	< 2	< 10	38	< 10	6	8
BL166 Z20 Hd2	0.66	0.102	0.083	0.43	2	4	251	< 0.01	< 20	4	< 2	< 10	37	< 10	6	6
BL166 Z531 Hd1	2.34	0.066	0.034	1.54	4	16	206	0.04	< 20	2	< 2	< 10	118	< 10	6	7
BL166 Z531 Hd2	2.16	0.060	0.034	1.46	4	15	199	0.04	< 20	< 1	< 2	< 10	110	< 10	5	7
BL166 POR1 Hd1	0.98	0.170	0.072	1.23	4	10	393	0.02	< 20	< 1	< 2	< 10	63	< 10	9	33
BL166 POR1 Hd2	1.01	0.186	0.076	1.29	3	11	397	0.02	< 20	3	< 2	< 10	66	< 10	9	34
BL166 POR2 Hd1	1.57	0.080	0.062	1.47	6	14	529	0.02	< 20	5	< 2	< 10	86	< 10	9	25
BL166 POR2 HD2	1.56	0.080	0.063	1.37	4	14	537	0.02	< 20	< 1	< 2	< 10	83	< 10	9	25
BL166 NW1 Hd1	1.15	0.039	0.135	1.10	6	3	595	0.01	< 20	6	< 2	< 10	55	< 10	12	10
BL166 NW1 Hd2	1.19	0.040	0.140	1.11	6	3	621	0.01	< 20	12	< 2	< 10	55	< 10	12	5
BL166 NW2 Hd1	1.50	0.031	0.237	1.53	7	4	1250	0.01	< 20	2	3	< 10	67	< 10	15	3
BL166 NW2 Hd2	1.48	0.030	0.235	1.47	7	4	1200	0.01	< 20	< 1	< 2	< 10	67	< 10	14	2
BL166 MZ Hd1	0.91	0.066	0.051	0.98	6	5	231	< 0.01	< 20	6	< 2	< 10	24	< 10	5	12
BL166 MZ Hd2	0.92	0.071	0.052	0.98	7	5	242	< 0.01	< 20	4	< 2	< 10	24	< 10	5	12

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
Lower Limit	2	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10
Method Code	FA-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas		28.1	2.6	1120	798	15	29	657	700	0.33	355	10	248	0.8	1390	0.79	4	6	22.2	< 10	< 1	0.03	< 10
GXR-1 Cert		31.0	3.30	1110	852	18.0	41.0	730	760	3.52	427	15.0	750	1.22	1380	0.960	8.20	12.0	23.6	13.8	3.90	0.050	7.50
GXR-4 Meas		3.3	< 0.5	6300	141	341	39	44	73	2.76	102	< 10	50	1.5	18	0.93	14	56	3.05	< 10	< 1	1.62	52
GXR-4 Cert		4.0	0.860	6520	155	310	42.0	52.0	73.0	7.20	98.0	4.50	1640	1.90	19.0	1.01	14.6	64.0	3.09	20.0	0.110	4.01	64.5
GXR-6 Meas		0.3	< 0.5	63	966	2	22	86	115	6.67	201	< 10	1000	0.9	< 2	0.20	13	76	5.09	10	3	1.01	< 10
GXR-6 Cert		1.30	1.00	66.0	1010	2.40	27.0	101	118	17.7	330	9.80	1300	1.40	0.290	0.180	13.8	96.0	5.58	35.0	0.0680	1.87	13.9
OREAS 922 (AQUA REGIA) Meas		0.7	< 0.5	2290	809	< 1	38	62	275	3.00	6		83	0.8	5	0.47	22	52	5.16	< 10		0.47	39
OREAS 922 (AQUA REGIA) Cert		0.851	0.28	2176	730	0.69	34.3	60	256	2.72	6.12		70	0.65	10.3	0.324	19.4	40.7	5.05	7.62		0.376	32.5
OREAS 923 (AQUA REGIA) Meas		1.7	< 0.5	4150	850	< 1	31	76	333	2.82	5		66	0.7	14	0.45	23	42	5.58	< 10		0.39	35
OREAS 923 (AQUA REGIA) Cert		1.62	0.40	4248	850	0.84	32.7	81	335	2.80	7.07		54	0.61	21.8	0.326	22.2	39.4	5.91	8.01		0.322	30.0
OREAS 16A (FA-Ancaster) Meas	1820																						
OREAS 16A (FA-Ancaster) Cert	1810																						
Oreas 203 Meas	901																						
Oreas 203 Cert	871.000																						
BL166 Z10 Hd2 Orig	2470																						
BL166 Z10 Hd2 Dup	2430																						
BL166 POR2 Hd1 Orig		1.0	< 0.5	148	1440	26	49	16	82	0.44	53	< 10	39	0.5	< 2	5.25	25	61	5.30	< 10	< 1	0.19	32
BL166 POR2 Hd1 Dup		0.6	< 0.5	151	1430	27	48	16	89	0.44	58	< 10	40	0.5	< 2	5.21	23	63	5.25	< 10	< 1	0.19	32
BL166 NW2 Hd1 Orig	841																						
BL166 NW2 Hd1 Dup	806																						
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10
Method Blank	< 2																						

Analyte Symbol	Mg	Na	P	S	Sb	Sc	Sr	Ti	Th	Te	Tl	U	V	W	Y	Zr
Unit Symbol	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	0.01	0.001	0.001	0.01	2	1	1	0.01	20	1	2	10	1	10	1	1
Method Code	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas	0.13	0.048	0.042	0.20	81	1	137	< 0.01	< 20	16	< 2	31	94	135	26	9
GXR-1 Cert	0.217	0.0520	0.0650	0.257	122	1.58	275	0.036	2.44	13.0	0.390	34.9	80.0	164	32.0	38.0
GXR-4 Meas	1.59	0.133	0.126	1.74	6	7	59	0.15	< 20	4	< 2	< 10	87	14	12	7
GXR-4 Cert	1.66	0.564	0.120	1.77	4.80	7.70	221	0.29	22.5	0.970	3.20	6.20	87.0	30.8	14.0	186
GXR-6 Meas	0.38	0.098	0.030	0.01	3	18	31		< 20	< 1	3	< 10	168	< 10	5	9
GXR-6 Cert	0.609	0.104	0.0350	0.0160	3.60	27.6	35.0		5.30	0.0180	2.20	1.54	186	1.90	14.0	110
OREAS 922 (AQUA REGIA) Meas	1.36	0.032	0.064	0.38	3	4	14		< 20		< 2	< 10	43	< 10	23	21
OREAS 922 (AQUA REGIA) Cert	1.33	0.021	0.063	0.386	0.57	3.15	15.0		14.5		0.14	1.98	29.4	1.12	16.0	22.3
OREAS 923 (AQUA REGIA) Meas	1.37		0.058	0.59	3	4	11		< 20		< 2	< 10	40	< 10	21	30
OREAS 923 (AQUA REGIA) Cert	1.43		0.061	0.684	0.58	3.09	13.6		14.3		0.12	1.80	30.6	1.96	14.3	22.5
OREAS 16A (FA-Ancaster) Meas																
OREAS 16A (FA-Ancaster) Cert																
Oreas 203 Meas																
Oreas 203 Cert																
BL166 Z10 Hd2 Orig																
BL166 Z10 Hd2 Dup																
BL166 POR2 Hd1 Orig	1.57	0.080	0.063	1.47	6	14	533	0.02	< 20	3	< 2	< 10	86	< 10	9	25
BL166 POR2 Hd1 Dup	1.57	0.080	0.062	1.47	7	14	526	0.02	< 20	7	< 2	< 10	86	< 10	9	25
BL166 NW2 Hd1 Orig																
BL166 NW2 Hd1 Dup																
Method Blank	< 0.01	0.012	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 20	< 1	< 2	< 10	< 1	< 10	< 1	< 1
Method Blank																

Quality Analysis ... *Innovative Technologies*

Date Submitted: 27-Jan-17
Invoice No.: A17-00821
Invoice Date: 07-Feb-17
Your Reference: BL166

Base Metallurgical Laboratories Ltd.
4-1425 Cariboo Place
Kamloops BC
Canada

ATTN: Bradly Angove

CERTIFICATE OF ANALYSIS

20 Pulp samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-ICP Kamloops Au-Fire Assay ICPOES 30g

Code 1A3-Ag-Kamloops Au, Ag-Fire Assay Gravimetric (QOP Fire Assay Tbay)

Code 8-AR Kamloops Code 8-Assays Kamloops

REPORT **A17-00821**

Notes:

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

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E-MAIL Kamloops@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Analyte Symbol	Au	Au	Ag	Ag
Unit Symbol	ppb	g/tonne	g/tonne	ppm
Lower Limit	2	0.03	3	3
Method Code	FA-ICP	FA-GRA	FA-GRA	ICP-OES
BL166-11 Pan Con		29.2	14	
BL166-12 Pan Con		48.3	19	
BL166-13 Pan Con		31.4	10	
BL166-14 Pan Con		18.5	14	
BL166-15 Pan Con		< 0.03	77	
BL166-16 Pan Con		71.0	23	
BL166-17 Pan Con		34.9	14	
BL166-18 Pan Con		59.0	19	
BL166-19 Pan Con		96.0	42	
BL166-20 Pan Con		31.1	17	
BL166-11 Ro 1	> 30000	33.4		15
BL166-11 Ro 2	4540			< 3
BL166-11 Ro 3	1350			< 3
BL166-11 Ro 4	649			< 3
BL166-11 RT	184			< 3
BL166-12 Ro 1	> 30000	37.6		11
BL166-12 Ro 2	5780			3
BL166-12 Ro 3	2440			< 3
BL166-12 Ro 4	1180			< 3
BL166-12 RT	281			< 3

Analyte Symbol	Au	Au	Ag	Ag
Unit Symbol	ppb	g/tonne	g/tonne	ppm
Lower Limit	2	0.03	3	3
Method Code	FA-ICP	FA-GRA	FA-GRA	ICP-OES
MP-1b Meas				48
MP-1b Cert				47.0
OxQ75 Meas		49.1	150	
OxQ75 Cert		50.03	153.9	
CCU-1d Meas				117
CCU-1d Cert				120.7
HiSilP1 Meas		11.8		
HiSilP1 Cert		12.05		
CZN-4 Meas				51
CZN-4 Cert				51.4
SQ47 Meas		39.5	125	
SQ47 Cert		39.88	122.3	
OxQ90 Meas		24.4		
OxQ90 Cert		24.88		
PTC-1b Meas				52
PTC-1b Cert				53.1
OREAS 16A (FA-Ancaster) Meas	1760			
OREAS 16A (FA-Ancaster) Cert	1810			
Oreas 203 Meas	903			
Oreas 203 Cert	871.000			
BL166-11 Pan Con Orig		36.7	19	
BL166-11 Pan Con Dup		21.7	10	
BL166-12 Pan Con Orig		47.3	17	
BL166-12 Pan Con Dup		49.2	21	
BL166-13 Pan Con Orig		33.9	4	
BL166-13 Pan Con Dup		28.1	12	
BL166-15 Pan Con Orig		< 0.03	72	
BL166-15 Pan Con Dup		< 0.03	81	
BL166-16 Pan Con Orig		69.1	22	
BL166-16 Pan Con Dup		72.9	23	

Analyte Symbol	Au	Au	Ag	Ag
Unit Symbol	ppb	g/tonne	g/tonne	ppm
Lower Limit	2	0.03	3	3
Method Code	FA-ICP	FA-GRA	FA-GRA	ICP-OES
BL166-17 Pan Con Orig		38.9	12	
BL166-17 Pan Con Dup		27.9	13	
BL166-18 Pan Con Orig		58.0	20	
BL166-18 Pan Con Dup		59.9	19	
BL166-19 Pan Con Orig		97.8	37	
BL166-19 Pan Con Dup		94.2	47	
BL166-20 Pan Con Orig		36.3	6	
BL166-20 Pan Con Dup		26.0	28	
BL166-12 Ro 1 Orig	> 30000			
BL166-12 Ro 1 Dup	> 30000			
BL166-12 RT Orig				< 3
BL166-12 RT Dup				< 3
Method Blank				< 3
Method Blank	< 2			
Method Blank	< 2			
Method Blank		< 0.03	< 3	
Method Blank		< 0.03		

Quality Analysis ... *Innovative Technologies*

Date Submitted: 30-Jan-17
Invoice No.: A17-00875
Invoice Date: 07-Feb-17
Your Reference: BL166

Base Metallurgical Laboratories Ltd.
4-1425 Cariboo Place
Kamloops BC
Canada

ATTN: Bradly Angove

CERTIFICATE OF ANALYSIS

40 Pulp samples were submitted for analysis.

The following analytical package(s) were requested: Code 1A2-ICP Kamloops Au-Fire Assay ICPOES 30g

Code 8-AR Kamloops Code 8-Assays Kamloops

REPORT **A17-00875**

Notes:

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

ACTIVATION LABORATORIES LTD.
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Analyte Symbol	Au	Ag	Au
Unit Symbol	ppb	ppm	g/tonne
Lower Limit	2	3	0.03
Method Code	FA-ICP	ICP-OES	FA-GRA
BL166-13 Ro 1	29500	7	
BL166-13 Ro 2	4020	5	
BL166-13 Ro 3	1640	< 3	
BL166-13 Ro 4	931	< 3	
BL166-13 RT	200	< 3	
BL166-14 Ro 1	17900	7	
BL166-14 Ro 2	1820	< 3	
BL166-14 Ro 3	677	< 3	
BL166-14 Ro 4	504	< 3	
BL166-14 RT	83	< 3	
BL166-15 Ro 1	27200	11	
BL166-15 Ro 2	3880	3	
BL166-15 Ro 3	1010	< 3	
BL166-15 Ro 4	697	3	
BL166-15 RT	158	< 3	
BL166-16 Ro 1	20000	8	
BL166-16 Ro 2	1400	< 3	
BL166-16 Ro 3	628	< 3	
BL166-16 Ro 4	537	< 3	
BL166-16 RT	80	< 3	
BL166-17 Ro 1	22000	7	
BL166-17 Ro 2	2760	< 3	
BL166-17 Ro 3	1270	3	
BL166-17 Ro 4	810	< 3	
BL166-17 Ro T	189	< 3	
BL166-18 Ro 1	> 30000	13	30.5
BL166-18 Ro 2	4660	< 3	
BL166-18 Ro 3	1240	< 3	
BL166-18 Ro 4	1010	< 3	
BL166-18 RT	78	< 3	
BL166-19 Ro 1	27800	22	
BL166-19 Ro 2	2770	3	
BL166-19 Ro 3	1110	< 3	
BL166-19 Ro 4	781	< 3	
BL166-19 RT	135	< 3	
BL166-20 Ro 1	12000	31	
BL166-20 Ro 2	2560	9	
BL166-20 Ro 3	1040	4	
BL166-20 Ro 4	619	< 3	
BL166-20 RT	87	< 3	

Analyte Symbol	Au	Ag	Au
Unit Symbol	ppb	ppm	g/tonne
Lower Limit	2	3	0.03
Method Code	FA-ICP	ICP-OES	FA-GRA
MP-1b Meas		48	
MP-1b Cert		47.0	
CCU-1d Meas		120	
CCU-1d Cert		120.7	
HiSilP1 Meas			11.8
HiSilP1 Cert			12.05
CZN-4 Meas		50	
CZN-4 Cert		51.4	
OxQ90 Meas			24.4
OxQ90 Cert			24.88
PTC-1b Meas		51	
PTC-1b Cert		53.1	
OREAS 16A (FA-Ancaster) Meas	1810		
OREAS 16A (FA-Ancaster) Cert	1810		
OREAS 16A (FA-Ancaster) Meas	1810		
OREAS 16A (FA-Ancaster) Cert	1810		
Oreas 203 Meas	885		
Oreas 203 Cert	871.000		
OREAS 203 Meas	887		
OREAS 203 Cert	871		
BL166-14 Ro 1 Orig	18400		
BL166-14 Ro 1 Dup	17500		
BL166-15 Ro 3 Orig		< 3	
BL166-15 Ro 3 Dup		< 3	
BL166-16 Ro 2 Orig	1440		
BL166-16 Ro 2 Dup	1350		
BL166-18 Ro 2 Orig		3	
BL166-18 Ro 2 Dup		< 3	

Analyte Symbol	Au	Ag	Au
Unit Symbol	ppb	ppm	g/tonne
Lower Limit	2	3	0.03
Method Code	FA-ICP	ICP-OES	FA-GRA
BL166-18 Ro 4 Orig	1010		
BL166-18 Ro 4 Dup	1020		
Method Blank	< 2		
Method Blank	< 2		
Method Blank	< 2		
Method Blank		< 3	
Method Blank			< 0.03

Quality Analysis ... *Innovative Technologies*

Date Submitted: 30-Jan-17
Invoice No.: A17-00881
Invoice Date: 01-Feb-17
Your Reference: BL166

Base Metallurgical Laboratories Ltd.
4-1425 Cariboo Place
Kamloops BC
Canada

ATTN: Bradly Angove

CERTIFICATE OF ANALYSIS

10 Pulp samples were submitted for analysis.

The following analytical package(s) were requested: Code 1A2-ICP Kamloops Au-Fire Assay ICPOES 30g

Code 8-AR Kamloops Code 8-Assays Kamloops

REPORT **A17-00881**

Notes:

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

ACTIVATION LABORATORIES LTD.
9989 Dallas Drive, Kamloops, British Columbia, Canada, V2C 6T4
TELEPHONE +250 573-4484 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Kamloops@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Analyte Symbol	Au	Ag
Unit Symbol	ppb	ppm
Lower Limit	2	3
Method Code	FA-ICP	ICP-OES
BL166-01 CNTL	347	< 3
BL166-02 CNTL	400	< 3
BL166-03 CNTL	363	< 3
BL166-04 CNTL	61	< 3
BL166-05 CNTL	166	< 3
BL166-06 CNTL	92	< 3
BL166-07 CNTL	156	< 3
BL166-08 CNTL	897	< 3
BL166-09 CNTL	290	< 3
BL166-10 CNTL	426	< 3

Analyte Symbol	Au	Ag
Unit Symbol	ppb	ppm
Lower Limit	2	3
Method Code	FA-ICP	ICP-OES
MP-1b Meas		49
MP-1b Cert		47.0
CCU-1d Meas		123
CCU-1d Cert		120.7
CZN-4 Meas		51
CZN-4 Cert		51.4
PTC-1b Meas		52
PTC-1b Cert		53.1
OREAS 16A (FA-Ancaster) Meas	1810	
OREAS 16A (FA-Ancaster) Cert	1810	
OREAS 203 Meas	962	
OREAS 203 Cert	871	
BL166-05 CNTL Orig		< 3
BL166-05 CNTL Dup		< 3
BL166-06 CNTL Orig	98	
BL166-06 CNTL Dup	86	
Method Blank	< 2	
Method Blank		< 3

Quality Analysis ... *Innovative Technologies*

Date Submitted: 30-Jan-17
Invoice No.: A17-00881 (i)
Invoice Date: 06-Feb-17
Your Reference: BL166

Base Metallurgical Laboratories Ltd.
4-1425 Cariboo Place
Kamloops BC
Canada

ATTN: Bradly Angove

CERTIFICATE OF ANALYSIS

10 Pulp samples were submitted for analysis.

The following analytical package(s) were requested: Code 1A2-ICP Kamloops Au-Fire Assay ICPOES 30g

Code 8-AR Kamloops Code 8-Assays Kamloops

REPORT **A17-00881 (i)**

Notes:

CERTIFIED BY:

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Quality Control

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Analyte Symbol	Ag
Unit Symbol	ppm
Lower Limit	0.2
Method Code	AR-ICP
BL166-01 CNTL	0.2
BL166-02 CNTL	< 0.2
BL166-03 CNTL	0.2
BL166-04 CNTL	< 0.2
BL166-05 CNTL	< 0.2
BL166-06 CNTL	0.3
BL166-07 CNTL	< 0.2
BL166-08 CNTL	0.2
BL166-09 CNTL	0.5
BL166-10 CNTL	0.9

Analyte Symbol	Ag
Unit Symbol	ppm
Lower Limit	0.2
Method Code	AR-ICP
GXR-1 Meas	27.3
GXR-1 Cert	31.0
GXR-4 Meas	3.5
GXR-4 Cert	4.0
GXR-6 Meas	0.2
GXR-6 Cert	1.30
OREAS 922 (AQUA REGIA) Meas	0.9
OREAS 922 (AQUA REGIA) Cert	0.851
BL166-10 CNTL Orig	0.8
BL166-10 CNTL Dup	0.9
Method Blank	< 0.2

Quality Analysis ... *Innovative Technologies*

Date Submitted: 09-Feb-17
Invoice No.: A17-01243
Invoice Date: 21-Feb-17
Your Reference: BL166

Base Metallurgical Laboratories Ltd.
4-1425 Cariboo Place
Kamloops BC
Canada

ATTN: Bradly Angove

CERTIFICATE OF ANALYSIS

36 Pulp samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-ICP Kamloops Au-Fire Assay ICPOES 30g

Code 1A3-Kamloops Au - Fire Assay Gravimetric (QOP AA-Au)

Code 8-AR Kamloops Code 8-Assays Kamloops

REPORT **A17-01243**

Notes:

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

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Analyte Symbol	Au	Ag	Au	Ag
Unit Symbol	ppb	ppm	g/tonne	g/tonne
Lower Limit	2	3	0.03	3
Method Code	FA-ICP	ICP-OES	FA-GRA	FA-GRA
BL166-21 Pan con			40.5	13
BL166-22 Pan con			74.2	20
BL166-23 Pan con			46.3	17
BL166-23 Pan con Dup			47.1	26
BL166-24 Pan con			38.9	20
BL166-24 Pan con Dup			46.3	31
BL166-25 Pan con			58.1	15
BL166-25 Pan con Dup			65.0	24
BL166-26 Pan con			102	31
BL166-26 Pan con Dup			112	63
BL166-27 Pan con			78.9	23
BL166-28 Pan con			76.5	28
BL166-29 Pan con			139	75
BL166-30 Pan con			25.8	20
BL166-30 Pan con Dup			29.6	33
BL166-21 RC	9220	4		
BL166-22 RC	21000	5		
BL166-23 RC	22100	5		
BL166-24 RC	4680	< 3		
BL166-25 RC	13700	5		
BL166-26 RC	10500	6		
BL166-27 RC	11700	< 3		
BL166-28 RC	11600	4		
BL166-29 RC	10500	7		
BL166-30 RC	5740	16		
BL166-21 RT	250	< 3		
BL166-22 RT	346	< 3		
BL166-23 RT	225	< 3		
BL166-24 RT	111	< 3		
BL166-25 RT	128	< 3		

Analyte Symbol	Au	Ag	Au	Ag
Unit Symbol	ppb	ppm	g/tonne	g/tonne
Lower Limit	2	3	0.03	3
Method Code	FA-ICP	ICP-OES	FA-GRA	FA-GRA
BL166-26 RT	82	< 3		
BL166-27 RT	430	< 3		
BL166-28 RT	74	< 3		
BL166-29 RT	139	< 3		
BL166-30 RT	75	< 3		

Analyte Symbol	Au	Ag	Au	Ag
Unit Symbol	ppb	ppm	g/tonne	g/tonne
Lower Limit	2	3	0.03	3
Method Code	FA-ICP	ICP-OES	FA-GRA	FA-GRA
MP-1b Meas		49		
MP-1b Cert		47.0		
OxQ75 Meas			48.2	147
OxQ75 Cert			50.03	153.9
CCU-1d Meas		121		
CCU-1d Cert		120.7		
HiSilP1 Meas	12100			
HiSilP1 Cert	12050.00			
CZN-4 Meas		48		
CZN-4 Cert		51.4		
SQ47 Meas			39.9	120
SQ47 Cert			39.88	122.3
PTC-1b Meas		52		
PTC-1b Cert		53.1		
BL166-24 RC Orig	4660			
BL166-24 RC Dup	4690			
BL166-22 RT Orig	317			
BL166-22 RT Dup	374			
BL166-23 RT Orig		< 3		
BL166-23 RT Dup		< 3		
Method Blank		< 3		
Method Blank	< 2			
Method Blank			< 0.03	< 3

Quality Analysis ... *Innovative Technologies*

Date Submitted: 09-Feb-17
Invoice No.: A17-01243-ReAssay
Invoice Date: 03-Mar-17
Your Reference: BL166

Base Metallurgical Laboratories Ltd.
4-1425 Cariboo Place
Kamloops BC
Canada

ATTN: Bradly Angove

CERTIFICATE OF ANALYSIS

36 Pulp samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-ICP Kamloops Au-Fire Assay ICPOES 30g

Code 1A3-Kamloops Au - Fire Assay Gravimetric (QOP AA-Au)

Code 8-AR Kamloops Code 8-Assays Kamloops

REPORT **A17-01243-ReAssay**

Notes:

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

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E-MAIL Kamloops@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Analyte Symbol	Au
Unit Symbol	ppb
Lower Limit	2
Method Code	FA-ICP
BL166-27 RT	177

Analyte Symbol	Au
Unit Symbol	ppb
Lower Limit	2
Method Code	FA-ICP
HiSilP1 Meas	11800
HiSilP1 Cert	12050.00
OxH82 Meas	1280
OxH82 Cert	1280
Method Blank	< 2

Quality Analysis ... *Innovative Technologies*

Date Submitted: 20-Feb-17
Invoice No.: A17-01534
Invoice Date: 24-Feb-17
Your Reference: BL166

Base Metallurgical Laboratories Ltd.
4-1425 Cariboo Place
Kamloops BC
Canada

ATTN: Bradly Angove

CERTIFICATE OF ANALYSIS

20 Pulp samples were submitted for analysis.

The following analytical package(s) were requested: Code 1A2-ICP Kamloops Au-Fire Assay ICPOES 30g

Code 8-AR Kamloops Code 8-Assays Kamloops

REPORT **A17-01534**

Notes:

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

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Analyte Symbol	Au	Ag
Unit Symbol	ppb	ppm
Lower Limit	2	3
Method Code	FA-ICP	ICP-OES
BL166-31 CNTL	527	< 3
BL166-32 CNTL	264	4
BL166-33 CNTL	566	< 3
BL166-34 CNTL	401	< 3
BL166-35 CNTL	1050	5
BL166-36 CNTL	563	< 3
BL166-37 CNTL	142	< 3
BL166-38 CNTL	106	< 3
BL166-39 CNTL	424	< 3
BL166-40 CNTL	263	< 3
BL166-41 CNTL	285	< 3
BL166-42 CNTL	183	4
BL166-43 CNTL	480	< 3
BL166-44 CNTL	296	< 3
BL166-45 CNTL	3360	< 3
BL166-46 CNTL	2750	3
BL166-47 CNTL	1290	5
BL166-48 CNTL	1110	< 3
BL166-49 CNTL	2660	4
BL166-50 CNTL	2270	5

Analyte Symbol	Au	Ag
Unit Symbol	ppb	ppm
Lower Limit	2	3
Method Code	FA-ICP	ICP-OES
MP-1b Meas		49
MP-1b Cert		47.0
CCU-1d Meas		118
CCU-1d Cert		120.7
HiSilP1 Meas	12800	
HiSilP1 Cert	12050.00	
HiSilP1 Meas	11100	
HiSilP1 Cert	12050.00	
CZN-4 Meas		50
CZN-4 Cert		51.4
PTC-1b Meas		51
PTC-1b Cert		53.1
BL166-43 CNTL Orig		< 3
BL166-43 CNTL Dup		< 3
BL166-45 CNTL Orig	3400	
BL166-45 CNTL Dup	3320	
BL166-50 CNTL Orig	2280	
BL166-50 CNTL Dup	2260	
Method Blank		< 3
Method Blank	< 2	
Method Blank	< 2	
Method Blank	< 2	

APPENDIX D – COMMINUTION

APPENDIX D
COMMINUTION TESTING

TABLE D-1A

BOND BALL MILL WORK INDEX DETERMINATION TEST

BL166 - Master Composite

Weight of 700 ml Sample :	1261.7 g	Aperture Test Sieve :	106µm
1/3.5 of Sample Weight :	360.5 g	Percent Undersize :	10.0%

Cycle	Weight of New Feed	Number of Revolutions	Weight of Oversize	Weight of Undersize			
				Product	Feed	Net Product	Net/Rev
1	1261.7	250	931.5	330.2	126.2	204.0	0.82
2	330.2	401	854.5	407.2	33.0	374.2	0.93
3	407.2	343	891.8	369.9	40.7	329.2	0.960
4	369.9	337	902.8	358.9	37.0	321.9	0.955
5	358.9	340	904.4	357.3	35.9	321.4	0.946

BOND'S WORK INDEX FORMULA

$$Wi = (44.5 \times 1.102) / (Pi^{.23} \times Gpb^{.82} \times (10/\sqrt{P} - 10/\sqrt{F}))$$

Pi = Sieve Size Tested	106	µm
Gbp = Net undersize produced per revolution of mill.	0.95	g
P = 80% Passing size of test product.	76	µm
F = 80% Passing size of test feed.	2330	µm

BOND BALL WORK INDEX (Wi) 18.5 kw-hr/tonne

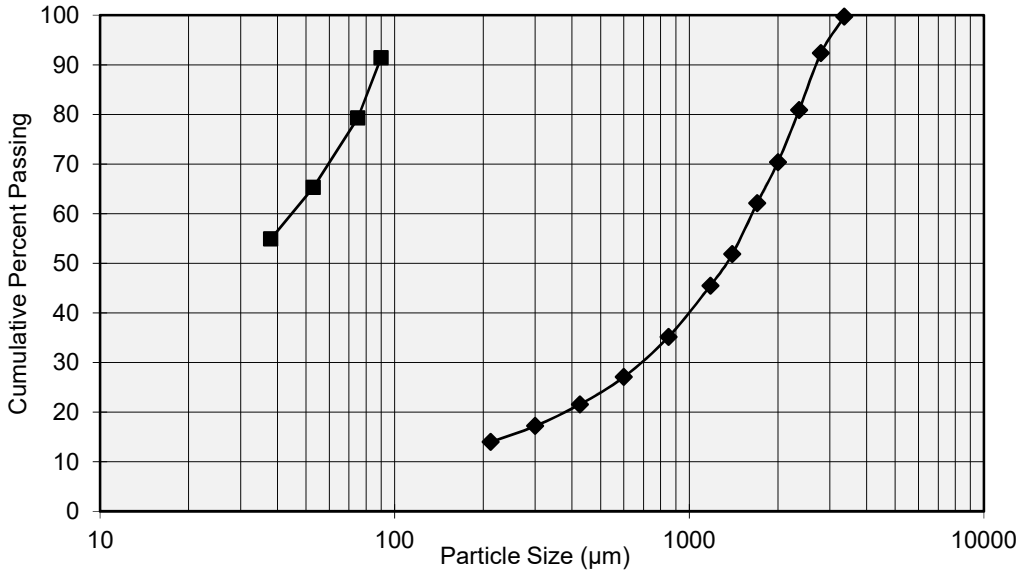
TABLE D-1B

BOND BALL MILL WORK INDEX SIZINGS

BL166 - Master Composite

Particle Size		Feed to Cycle 1			Equilibrium Cycle Undersize		
mesh	µm	Weight (g) Retained	Weight % Retained	Cumulative % Passing	Weight (g) Retained	Weight % Retained	Cumulative % Passing
6 Mesh	3360	0.60	0.30	99.7	-	-	-
7 Mesh	2800	14.70	7.35	92.4	-	-	-
8 Mesh	2360	23.00	11.50	80.9	-	-	-
9 Mesh	2000	20.90	10.45	70.4	-	-	-
10 Mesh	1700	16.60	8.30	62.1	-	-	-
12 Mesh	1400	20.50	10.25	51.9	-	-	-
14 Mesh	1180	12.70	6.35	45.5	-	-	-
20 Mesh	850	20.70	10.35	35.2	-	-	-
28 Mesh	600	16.10	8.05	27.1	-	-	-
35 Mesh	425	11.10	5.55	21.6	-	-	-
48 Mesh	300	8.70	4.35	17.2	-	-	-
65 Mesh	212	6.40	3.20	14.0	-	-	-
100 Mesh	150	4.50	2.25	11.8	-	-	-
150 Mesh	106	3.50	1.75	10.0	-	-	-
170 Mesh	90	-	-	-	8.60	8.60	91.4
200 Mesh	75	-	-	-	12.10	12.10	79.3
270 Mesh	53	-	-	-	14.00	14.00	65.3
400 Mesh	38	-	-	-	10.40	10.40	54.9
TOTAL		200.0	100.00	**	100.0	100.00	**
		K80 = 2330µm				**K80 = 76µm**	

Particle Size Distribution Plot



APPENDIX E – SIZINGS

APPENDIX E
SIZINGS

TABLE E-1
GRIND CALIBRATION DATA

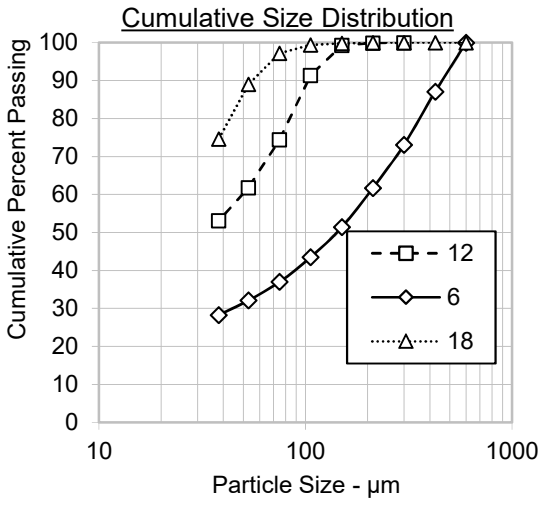
DW1

Sieve Size (µm)	Cumulative Percent Passing		
	Grind 1	Grind 2	Grind 3
600	100.0	100.0	100.0
425	87.1	100.0	100.0
300	73.1	100.0	100.0
212	61.7	99.9	100.0
150	51.4	99.3	99.8
106	43.5	91.4	99.4
75	37.0	74.4	97.2
53	32.1	61.8	89.0
38	28.3	53.1	74.6

Parameter	Grind Calibration Data		
	Grind 1	Grind 2	Grind 3
Grind Time - min	6	12	18
Sample - g	1000	1000	1000
Water - mL	500	500	500
K_{80} - µm	356	84	43

Grinding Mill: DT

Grinding Media: 20kg Mild Steel



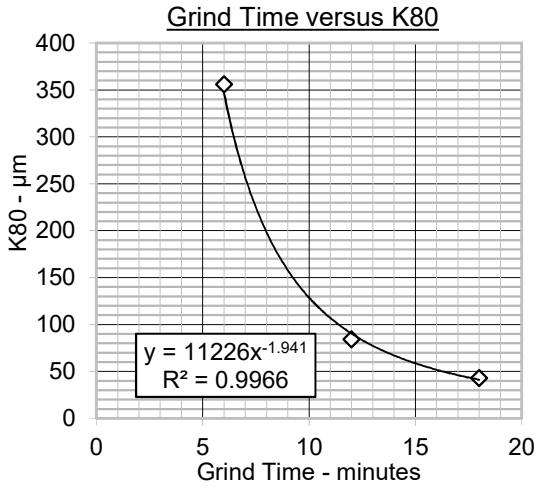


TABLE E-2
GRIND CALIBRATION DATA

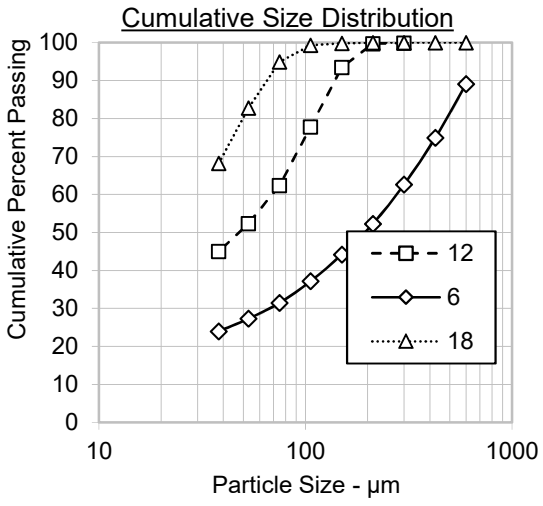
DW2

Sieve Size (µm)	Cumulative Percent Passing		
	Grind 1	Grind 2	Grind 3
600	89.1	100.0	100.0
425	74.9	100.0	100.0
300	62.6	99.9	100.0
212	52.3	99.7	100.0
150	44.2	93.5	99.8
106	37.2	77.8	99.3
75	31.5	62.4	94.9
53	27.3	52.4	82.8
38	24.0	45.0	68.2

Parameter	Grind Calibration Data		
	Grind 1	Grind 2	Grind 3
Grind Time - min	6	12	18
Sample - g	1000	1000	1000
Water - mL	500	500	500
K_{80} - µm	481	111	50

Grinding Mill: BM

Grinding Media: 20kg Mild Steel



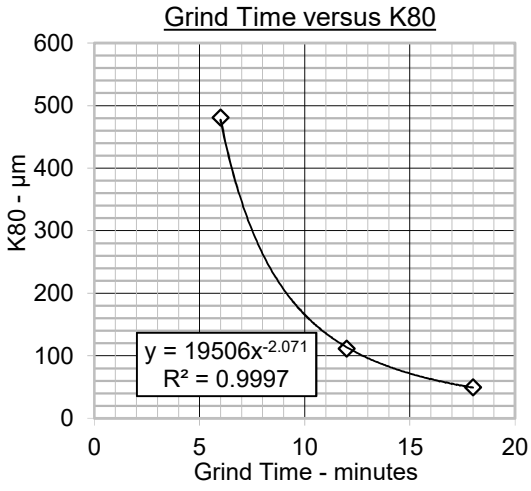


TABLE E-3
GRIND CALIBRATION DATA

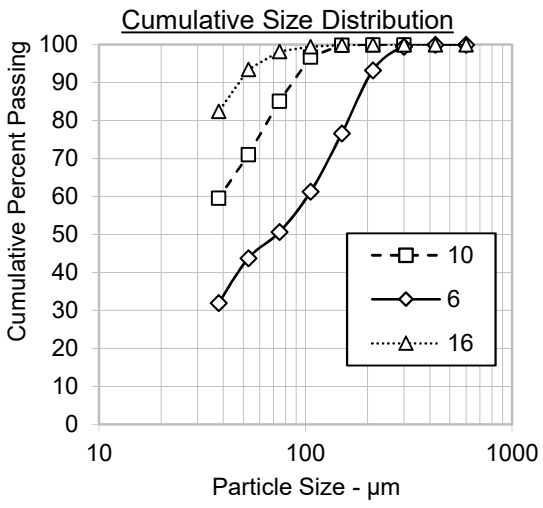
MZ

Sieve Size (µm)	Cumulative Percent Passing		
	Grind 1	Grind 2	Grind 3
600	100.0	100.0	100.0
425	100.0	100.0	100.0
300	99.5	100.0	100.0
212	93.2	100.0	100.0
150	76.6	99.9	99.9
106	61.3	96.8	99.5
75	50.7	85.1	98.2
53	43.8	71.1	93.5
38	32.0	59.6	82.4

Parameter	Grind Calibration Data		
	Grind 1	Grind 2	Grind 3
Grind Time - min	6	10	16
Sample - g	1000	1000	1000
Water - mL	500	500	500
K_{80} - µm	161	66	35

Grinding Mill: DT

Grinding Media: 20kg Mild Steel



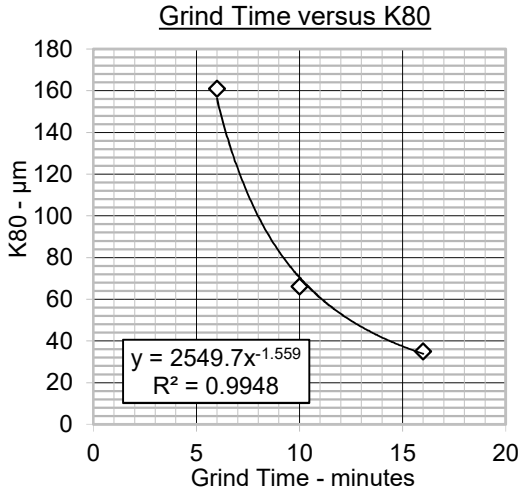


TABLE E-4
GRIND CALIBRATION DATA

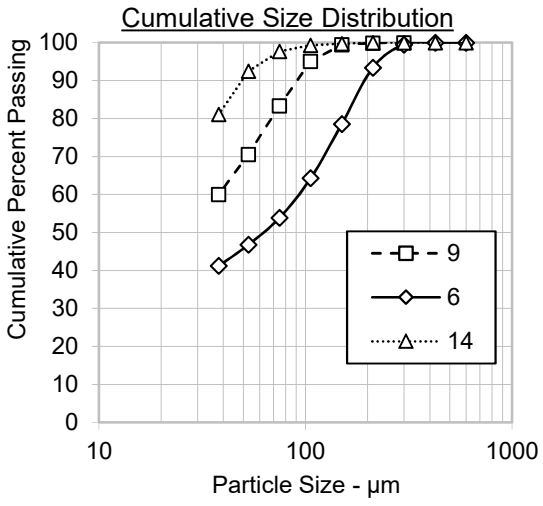
NW1

Sieve Size (µm)	Cumulative Percent Passing		
	Grind 1	Grind 2	Grind 3
600	100.0	100.0	100.0
425	100.0	100.0	100.0
300	99.5	100.0	100.0
212	93.4	99.9	100.0
150	78.6	99.5	99.7
106	64.3	95.1	99.3
75	53.9	83.4	97.7
53	46.8	70.6	92.5
38	41.2	60.0	81.1

Parameter	Grind Calibration Data		
	Grind 1	Grind 2	Grind 3
Grind Time - min	6	9	14
Sample - g	1000	1000	1000
Water - mL	500	500	500
K_{80} - µm	155	68	34

Grinding Mill: BM

Grinding Media: 20kg Mild Steel



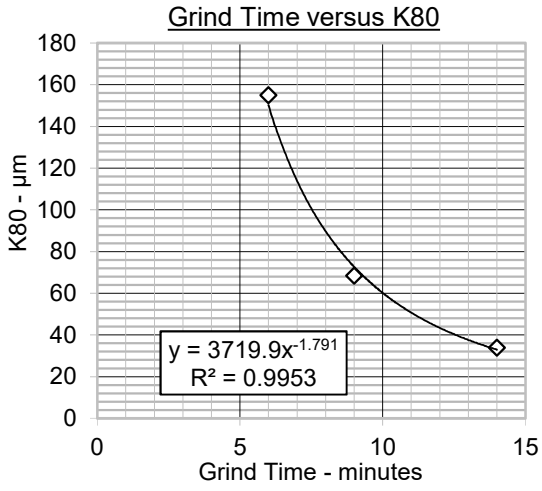


TABLE E-5
GRIND CALIBRATION DATA

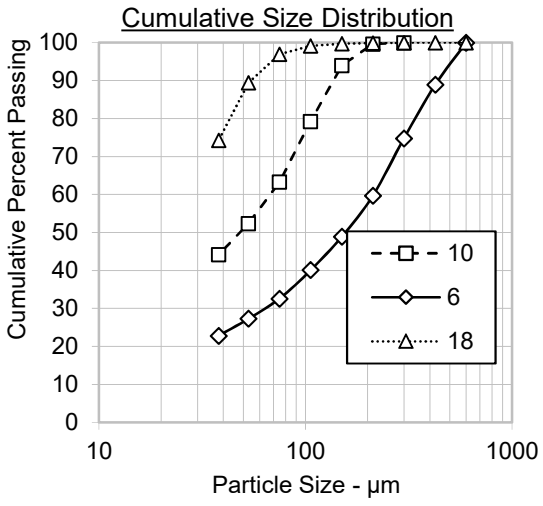
NW2

Sieve Size (µm)	Cumulative Percent Passing		
	Grind 1	Grind 2	Grind 3
600	100.0	100.0	100.0
425	88.9	100.0	100.0
300	74.8	100.0	100.0
212	59.7	99.6	99.9
150	48.9	94.0	99.7
106	40.1	79.2	99.1
75	32.6	63.3	96.9
53	27.3	52.4	89.4
38	22.8	44.2	74.3

Parameter	Grind Calibration Data		
	Grind 1	Grind 2	Grind 3
Grind Time - min	6	10	18
Sample - g	1000	1000	1000
Water - mL	500	500	500
K_{80} - µm	341	108	43

Grinding Mill: BM

Grinding Media: 20kg Mild Steel



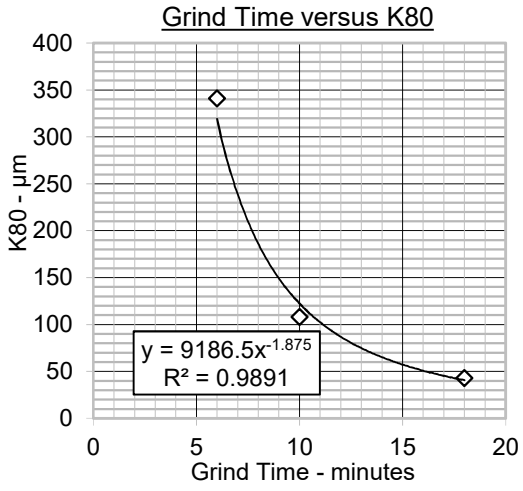


TABLE E-6
GRIND CALIBRATION DATA

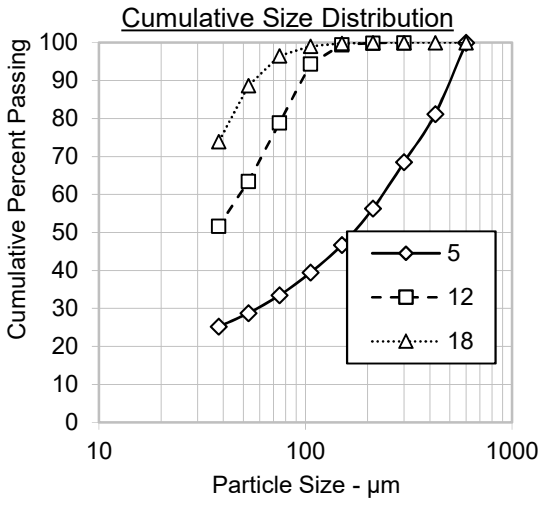
POR1

Sieve Size (µm)	Cumulative Percent Passing		
	Grind 1	Grind 2	Grind 3
600	100.0	100.0	100.0
425	81.2	100.0	100.0
300	68.5	100.0	100.0
212	56.3	99.9	100.0
150	46.7	99.5	99.8
106	39.5	94.4	99.0
75	33.5	78.9	96.5
53	28.8	63.5	88.7
38	25.2	51.7	73.9

Parameter	Grind Calibration Data		
	Grind 1	Grind 2	Grind 3
Grind Time - min	5	12	18
Sample - g	1000	1000	1000
Water - mL	500	500	500
K_{80} - µm	411	77	44

Grinding Mill: BM

Grinding Media: 20kg Mild Steel



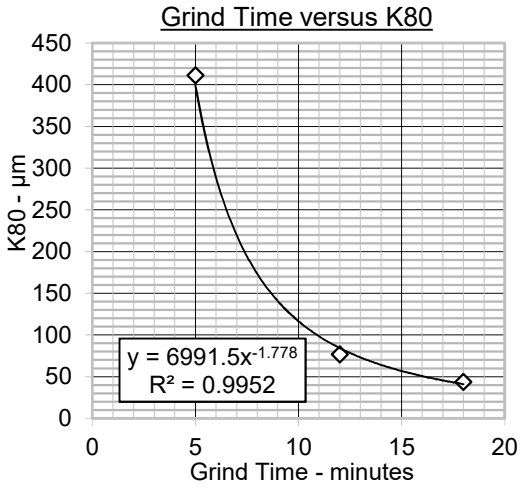


TABLE E-7
GRIND CALIBRATION DATA

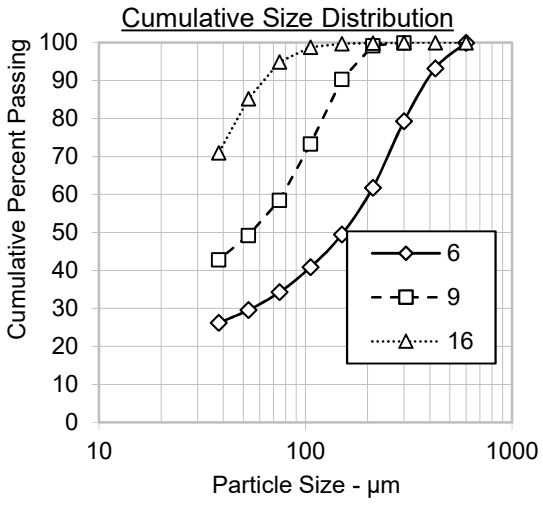
POR2

Sieve Size (µm)	Cumulative Percent Passing		
	Grind 1	Grind 2	Grind 3
600	100.0	100.0	100.0
425	93.2	100.0	100.0
300	79.3	100.0	100.0
212	61.8	99.2	99.9
150	49.5	90.4	99.7
106	40.9	73.3	98.8
75	34.3	58.5	94.9
53	29.6	49.2	85.2
38	26.2	42.8	71.0

Parameter	Grind Calibration Data		
	Grind 1	Grind 2	Grind 3
Grind Time - min	6	9	16
Sample - g	2000	2000	2000
Water - mL	1000	1000	1000
K_{80} - µm	305	121	47

Grinding Mill: DT

Grinding Media: 20kg Mild Steel



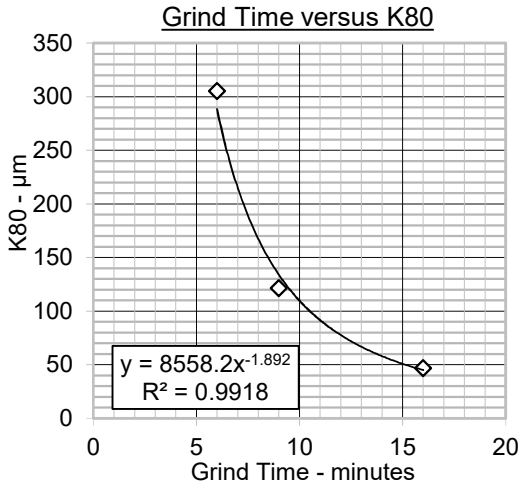


TABLE E-8
GRIND CALIBRATION DATA

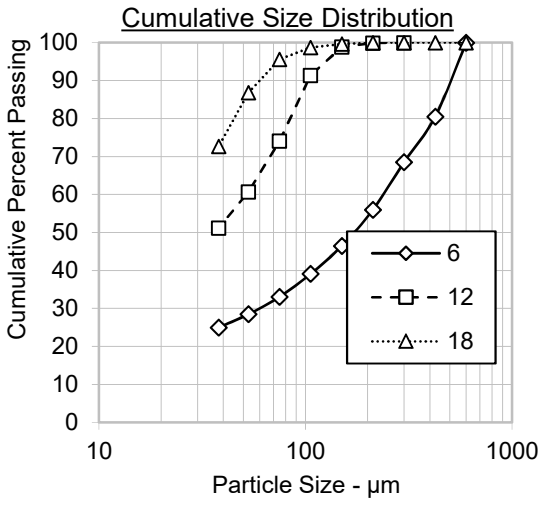
Z10

Sieve Size (µm)	Cumulative Percent Passing		
	Grind 1	Grind 2	Grind 3
600	100.0	100.0	100.0
425	80.5	100.0	100.0
300	68.5	100.0	100.0
212	56.0	99.9	100.0
150	46.5	98.9	99.6
106	39.1	91.4	98.7
75	33.1	74.1	95.6
53	28.5	60.7	86.8
38	25.0	51.2	72.7

Parameter	Grind Calibration Data		
	Grind 1	Grind 2	Grind 3
Grind Time - min	6	12	18
Sample - g	1000	1000	1000
Water - mL	500	500	500
K_{80} - µm	419	84	45

Grinding Mill: DT

Grinding Media: 20kg Mild Steel



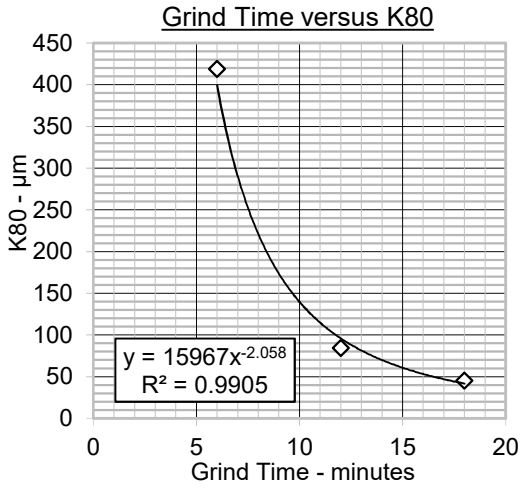


TABLE E-9
GRIND CALIBRATION DATA

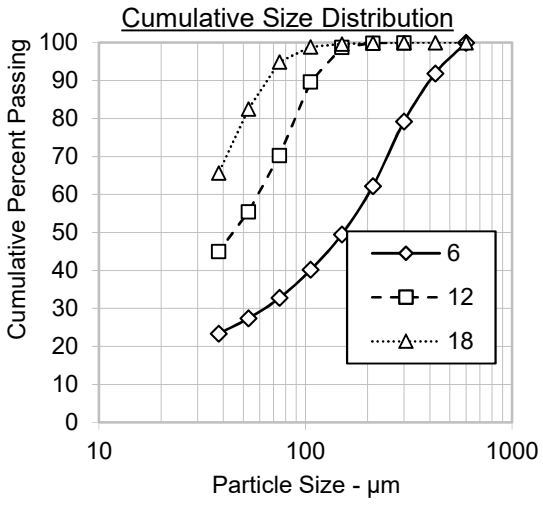
Z20

Sieve Size (µm)	Cumulative Percent Passing		
	Grind 1	Grind 2	Grind 3
600	100.0	100.0	100.0
425	91.9	100.0	100.0
300	79.2	100.0	100.0
212	62.2	99.9	99.9
150	49.5	98.8	99.6
106	40.2	89.7	98.9
75	32.8	70.3	94.9
53	27.4	55.5	82.5
38	23.4	45.0	65.7

Parameter	Grind Calibration Data		
	Grind 1	Grind 2	Grind 3
Grind Time - min	6	12	18
Sample - g	1000	1000	1000
Water - mL	500	500	500
K_{80} - µm	307	89	50

Grinding Mill: BM

Grinding Media: 20kg Mild Steel



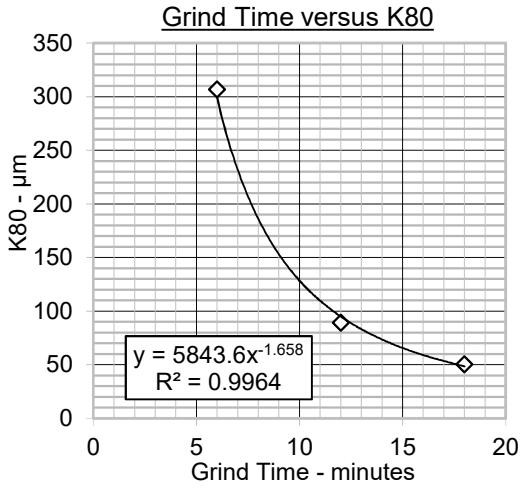


FIGURE E-10
GRIND CALIBRATION DATA

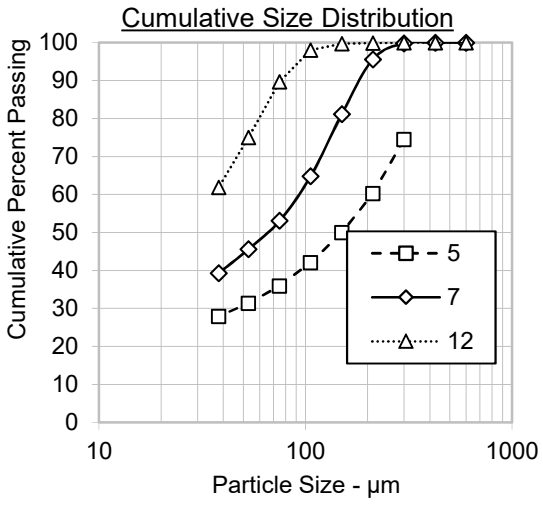
Z531

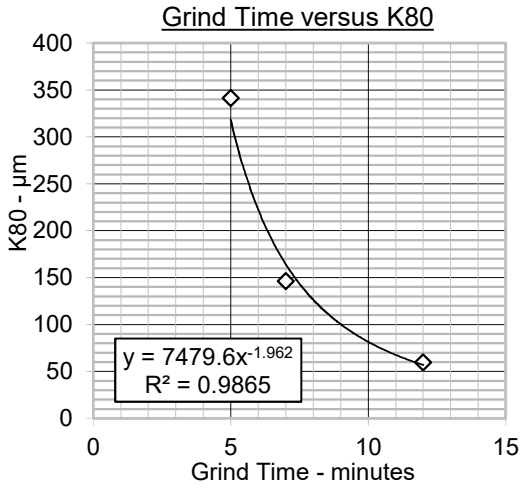
Sieve Size (µm)	Cumulative Percent Passing		
	Grind 1	Grind 2	Grind 3
600	100.0	100.0	100.0
425	100.0	89.3	100.0
300	99.8	74.5	100.0
212	95.6	60.3	99.9
150	81.2	50.0	99.7
106	64.8	42.1	98.0
75	53.1	35.9	89.7
53	45.6	31.4	75.0
38	39.3	27.9	61.9

Parameter	Grind Calibration Data		
	Grind 1	Grind 2	Grind 3
Grind Time - min	7	5	12
Sample - g	1000	1000	1000
Water - mL	500	500	500
K_{80} - µm	146	341	60

Grinding Mill: DT

Grinding Media: 20kg Mild Steel





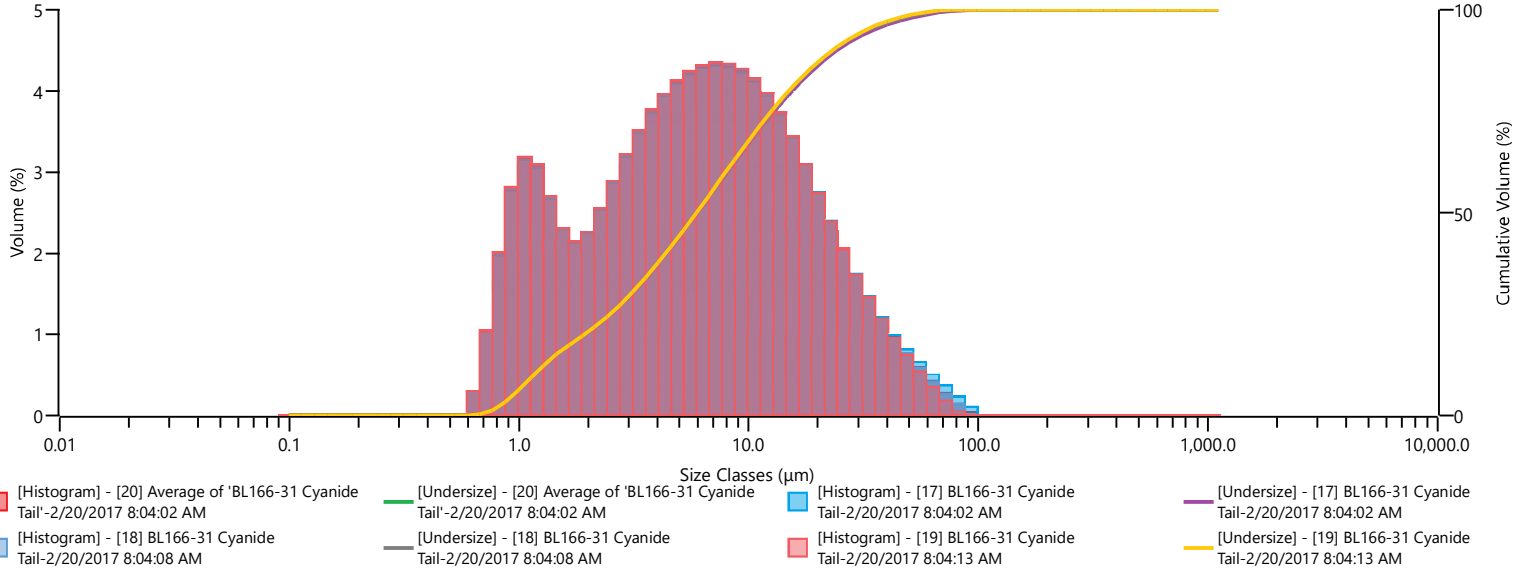
Measurement Details	
Operator Name	basemetlabs
Sample Name	Average of 'BL166-31 Cyanide Tail'
SOP File Name	HydroEV.cfg

Measurement Details	
Analysis Date Time	2/20/2017 8:04:02 AM
Measurement Date Time	2/20/2017 8:04:02 AM
Result Source	Averaged

Analysis	
Particle Name	Silica (RI 1.45, AI 0.1)
Particle Refractive Index	1.450
Particle Absorption Index	0.100
Dispersant Name	Water
Dispersant Refractive Index	1.330
Scattering Model	Mie
Analysis Model	General Purpose
Weighted Residual	1.50 %
Laser Obscuration	13.54 %

Result	
Dv (50)	5.95 µm
Dv (10)	1.16 µm
Dv (80)	15.2 µm
Dv (90)	23.6 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	21.67	9.86	66.95	45.6	97.77	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	24.21	11.2	71.08	51.8	98.54	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	27.09	12.7	75.02	58.9	99.13	272	100.00		
0.146	0.00	0.675	0.29	3.12	30.29	14.5	78.74	66.9	99.55	310	100.00		
0.166	0.00	0.767	1.32	3.55	33.79	16.4	82.16	76.0	99.82	352	100.00		
0.188	0.00	0.872	3.30	4.03	37.53	18.7	85.25	86.4	99.96	400	100.00		
0.214	0.00	0.991	6.09	4.58	41.48	21.2	87.99	98.1	100.00	454	100.00		
0.243	0.00	1.13	9.25	5.21	45.58	24.1	90.37	111	100.00	516	100.00		
0.276	0.00	1.28	12.32	5.92	49.79	27.4	92.42	127	100.00	586	100.00		
0.314	0.00	1.45	15.00	6.72	54.08	31.1	94.16	144	100.00	666	100.00		
0.357	0.00	1.65	17.29	7.64	58.40	35.3	95.61	163	100.00	756	100.00		
0.405	0.00	1.88	19.42	8.68	62.71	40.1	96.81	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-32 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 1:21:16 PM
Measurement Date Time 2/20/2017 1:21:16 PM
Result Source Averaged

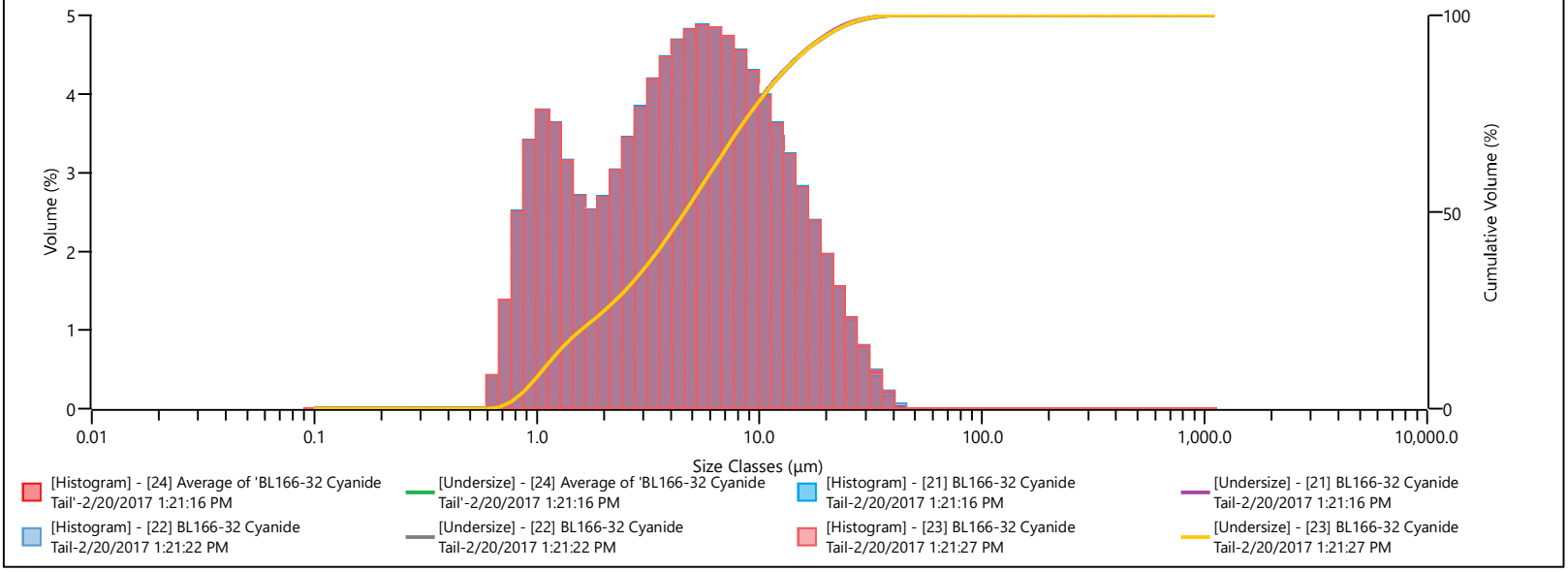
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.56 %
Laser Obscuration 15.17 %

Result

Dv (50) 4.61 µm
Dv (10) 1.07 µm
Dv (80) 10.6 µm
Dv (90) 15.3 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	26.18	9.86	77.88	45.6	100.00	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	29.21	11.2	81.85	51.8	100.00	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	32.65	12.7	85.47	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.43	3.12	36.48	14.5	88.70	66.9	100.00	310	100.00		
0.166	0.00	0.767	1.81	3.55	40.66	16.4	91.50	76.0	100.00	352	100.00		
0.188	0.00	0.872	4.31	4.03	45.12	18.7	93.88	86.4	100.00	400	100.00		
0.214	0.00	0.991	7.72	4.58	49.80	21.2	95.84	98.1	100.00	454	100.00		
0.243	0.00	1.13	11.51	5.21	54.61	24.1	97.38	111	100.00	516	100.00		
0.276	0.00	1.28	15.13	5.92	59.48	27.4	98.53	127	100.00	586	100.00		
0.314	0.00	1.45	18.28	6.72	64.32	31.1	99.31	144	100.00	666	100.00		
0.357	0.00	1.65	20.98	7.64	69.05	35.3	99.77	163	100.00	756	100.00		
0.405	0.00	1.88	23.50	8.68	73.59	40.1	99.98	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-33 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 1:39:46 PM
Measurement Date Time 2/20/2017 1:39:46 PM
Result Source Averaged

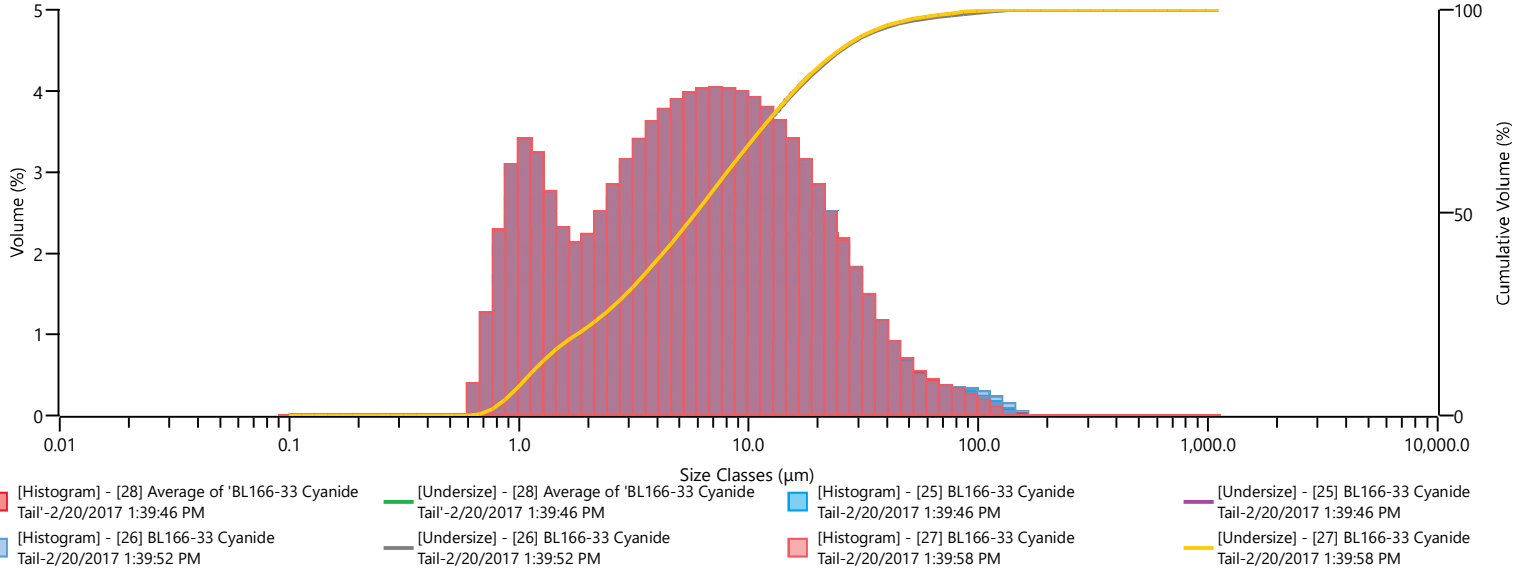
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.42 %
Laser Obscuration 15.46 %

Result

Dv (50) 5.89 µm
Dv (10) 1.11 µm
Dv (80) 15.9 µm
Dv (90) 25.1 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	23.05	9.86	66.14	45.6	96.88	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	25.55	11.2	70.04	51.8	97.55	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	28.38	12.7	73.82	58.9	98.07	272	100.00		
0.146	0.00	0.675	0.40	3.12	31.52	14.5	77.44	66.9	98.49	310	100.00		
0.166	0.00	0.767	1.66	3.55	34.92	16.4	80.84	76.0	98.86	352	100.00		
0.188	0.00	0.872	3.93	4.03	38.52	18.7	83.97	86.4	99.19	400	100.00		
0.214	0.00	0.991	7.01	4.58	42.29	21.2	86.81	98.1	99.48	454	100.00		
0.243	0.00	1.13	10.41	5.21	46.17	24.1	89.32	111	99.73	516	100.00		
0.276	0.00	1.28	13.63	5.92	50.13	27.4	91.49	127	99.90	586	100.00		
0.314	0.00	1.45	16.38	6.72	54.13	31.1	93.31	144	99.98	666	100.00		
0.357	0.00	1.65	18.70	7.64	58.15	35.3	94.80	163	100.00	756	100.00		
0.405	0.00	1.88	20.82	8.68	62.17	40.1	95.98	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-34 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 1:45:12 PM
Measurement Date Time 2/20/2017 1:45:12 PM
Result Source Averaged

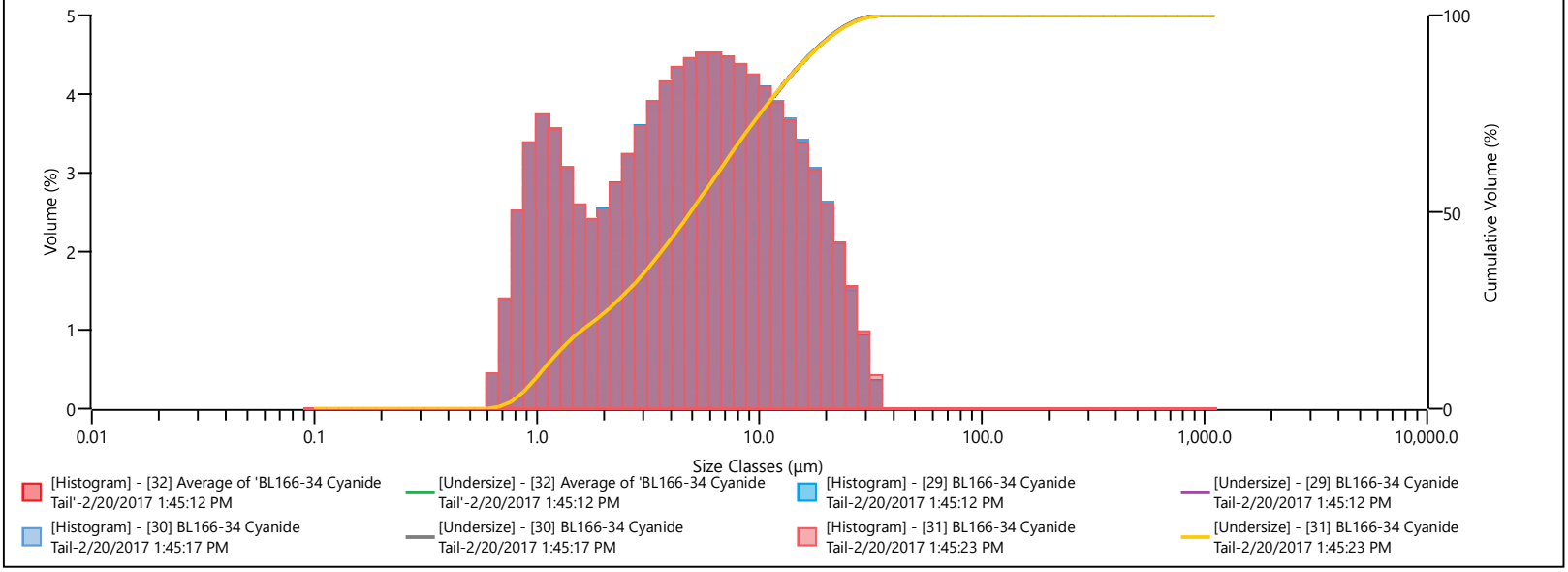
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.88 %
Laser Obscuration 14.55 %

Result

Dv (50) 4.89 µm
Dv (10) 1.07 µm
Dv (80) 11.8 µm
Dv (90) 16.9 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	25.65	9.86	74.32	45.6	100.00	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	28.52	11.2	78.41	51.8	100.00	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	31.75	12.7	82.31	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.45	3.12	35.34	14.5	85.98	66.9	100.00	310	100.00		
0.166	0.00	0.767	1.85	3.55	39.25	16.4	89.38	76.0	100.00	352	100.00		
0.188	0.00	0.872	4.36	4.03	43.41	18.7	92.42	86.4	100.00	400	100.00		
0.214	0.00	0.991	7.74	4.58	47.75	21.2	95.04	98.1	100.00	454	100.00		
0.243	0.00	1.13	11.48	5.21	52.21	24.1	97.14	111	100.00	516	100.00		
0.276	0.00	1.28	15.04	5.92	56.72	27.4	98.68	127	100.00	586	100.00		
0.314	0.00	1.45	18.10	6.72	61.24	31.1	99.63	144	100.00	666	100.00		
0.357	0.00	1.65	20.70	7.64	65.70	35.3	100.00	163	100.00	756	100.00		
0.405	0.00	1.88	23.11	8.68	70.08	40.1	100.00	186	100.00	859	100.00		

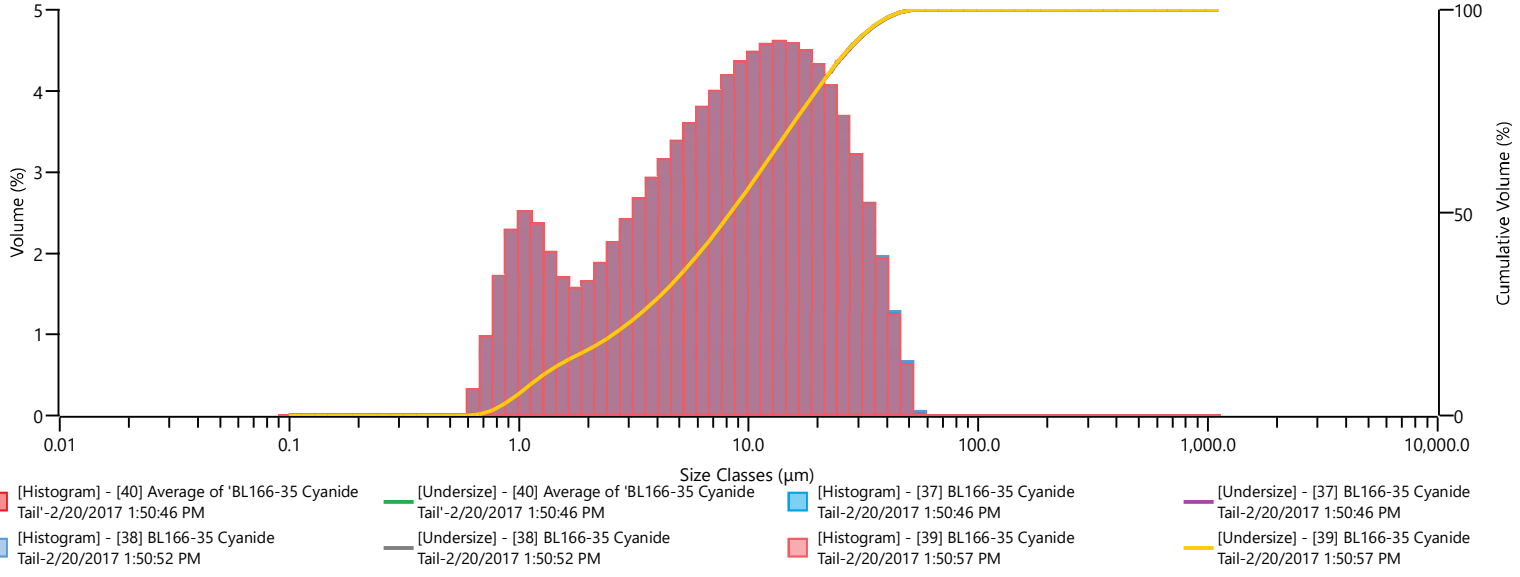
Measurement Details	
Operator Name	basemetlabs
Sample Name	Average of 'BL166-35 Cyanide Tail'
SOP File Name	HydroEV.cfg

Measurement Details	
Analysis Date Time	2/20/2017 1:50:46 PM
Measurement Date Time	2/20/2017 1:50:46 PM
Result Source	Averaged

Analysis	
Particle Name	Silica (RI 1.45, AI 0.1)
Particle Refractive Index	1.450
Particle Absorption Index	0.100
Dispersant Name	Water
Dispersant Refractive Index	1.330
Scattering Model	Mie
Analysis Model	General Purpose
Weighted Residual	1.01 %
Laser Obscuration	13.94 %

Result	
Dv (50)	8.37 µm
Dv (10)	1.27 µm
Dv (80)	19.7 µm
Dv (90)	27.1 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	17.09	9.86	55.52	45.6	99.32	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	18.97	11.2	60.00	51.8	99.96	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	21.10	12.7	64.57	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.33	3.12	23.51	14.5	69.17	66.9	100.00	310	100.00		
0.166	0.00	0.767	1.30	3.55	26.18	16.4	73.76	76.0	100.00	352	100.00		
0.188	0.00	0.872	3.02	4.03	29.10	18.7	78.24	86.4	100.00	400	100.00		
0.214	0.00	0.991	5.31	4.58	32.25	21.2	82.56	98.1	100.00	454	100.00		
0.243	0.00	1.13	7.81	5.21	35.62	24.1	86.61	111	100.00	516	100.00		
0.276	0.00	1.28	10.17	5.92	39.21	27.4	90.29	127	100.00	586	100.00		
0.314	0.00	1.45	12.19	6.72	43.01	31.1	93.49	144	100.00	666	100.00		
0.357	0.00	1.65	13.88	7.64	47.00	35.3	96.11	163	100.00	756	100.00		
0.405	0.00	1.88	15.44	8.68	51.18	40.1	98.06	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-36 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 2:09:38 PM
Measurement Date Time 2/20/2017 2:09:38 PM
Result Source Averaged

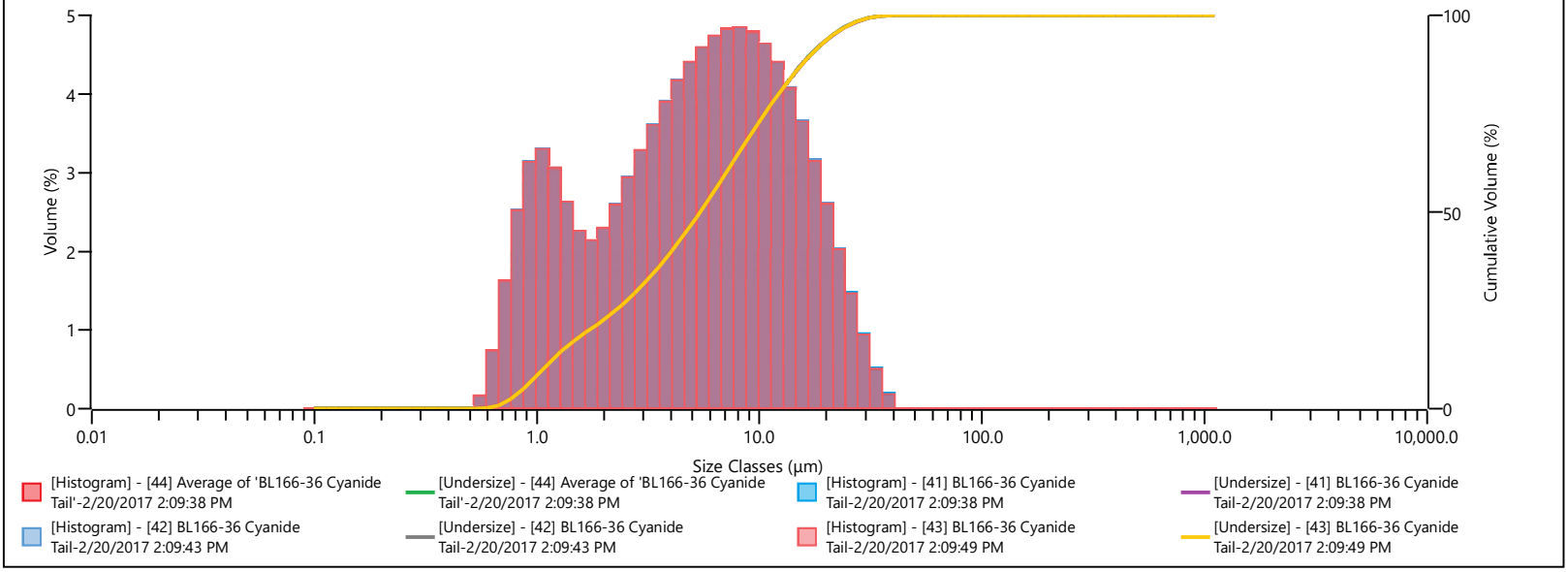
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.01 %
Laser Obscuration 20.54 %

Result

Dv (50) 5.40 µm
Dv (10) 1.06 µm
Dv (80) 12.2 µm
Dv (90) 17.0 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	23.82	9.86	72.41	45.6	100.00	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	26.41	11.2	77.04	51.8	100.00	240	100.00	1110	100.00
0.128	0.00	0.594	0.16	2.75	29.34	12.7	81.43	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.90	3.12	32.62	14.5	85.50	66.9	100.00	310	100.00		
0.166	0.00	0.767	2.53	3.55	36.22	16.4	89.14	76.0	100.00	352	100.00		
0.188	0.00	0.872	5.04	4.03	40.12	18.7	92.29	86.4	100.00	400	100.00		
0.214	0.00	0.991	8.18	4.58	44.28	21.2	94.89	98.1	100.00	454	100.00		
0.243	0.00	1.13	11.47	5.21	48.68	24.1	96.92	111	100.00	516	100.00		
0.276	0.00	1.28	14.53	5.92	53.26	27.4	98.38	127	100.00	586	100.00		
0.314	0.00	1.45	17.14	6.72	57.99	31.1	99.32	144	100.00	666	100.00		
0.357	0.00	1.65	19.40	7.64	62.80	35.3	99.82	163	100.00	756	100.00		
0.405	0.00	1.88	21.53	8.68	67.63	40.1	100.00	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-37 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 2:15:41 PM
Measurement Date Time 2/20/2017 2:15:41 PM
Result Source Averaged

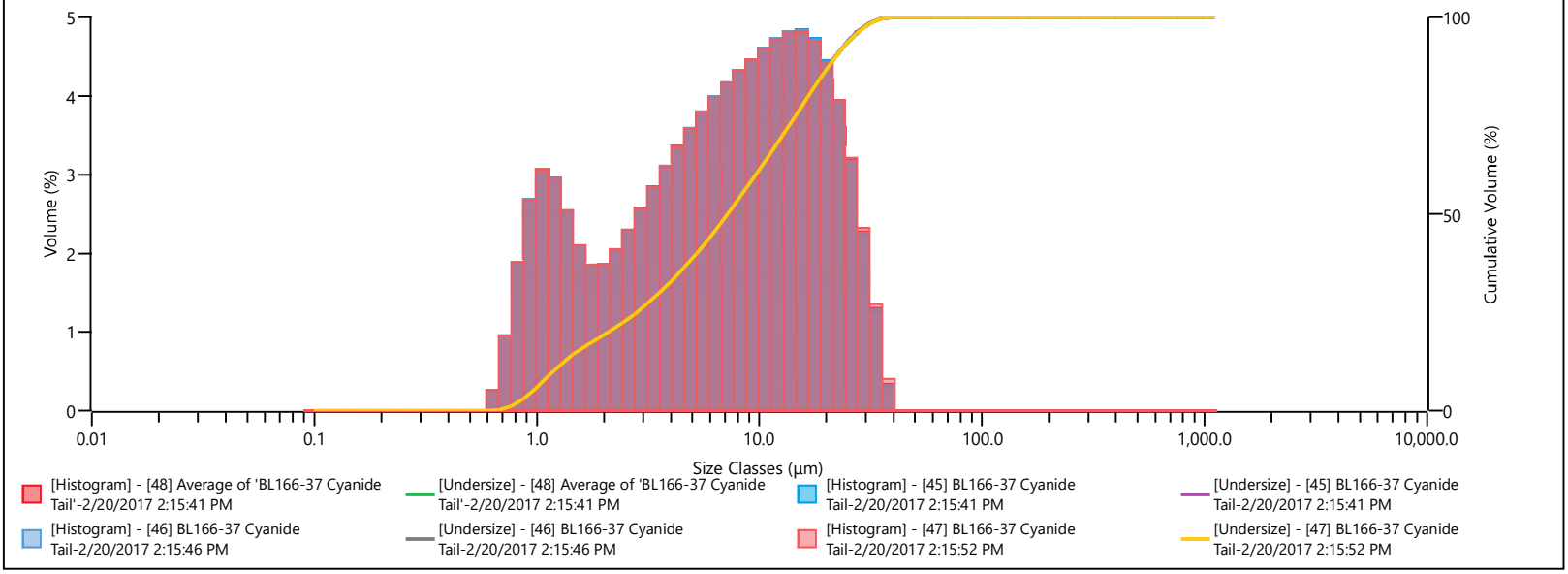
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.86 %
Laser Obscuration 12.26 %

Result

Dv (50) 7.18 µm
Dv (10) 1.18 µm
Dv (80) 16.5 µm
Dv (90) 22.0 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	20.21	9.86	60.80	45.6	100.00	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	22.26	11.2	65.40	51.8	100.00	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	24.56	12.7	70.13	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.26	3.12	27.13	14.5	74.94	66.9	100.00	310	100.00		
0.166	0.00	0.767	1.22	3.55	29.98	16.4	79.77	76.0	100.00	352	100.00		
0.188	0.00	0.872	3.11	4.03	33.09	18.7	84.49	86.4	100.00	400	100.00		
0.214	0.00	0.991	5.79	4.58	36.45	21.2	88.93	98.1	100.00	454	100.00		
0.243	0.00	1.13	8.85	5.21	40.04	24.1	92.86	111	100.00	516	100.00		
0.276	0.00	1.28	11.81	5.92	43.85	27.4	96.06	127	100.00	586	100.00		
0.314	0.00	1.45	14.36	6.72	47.84	31.1	98.34	144	100.00	666	100.00		
0.357	0.00	1.65	16.47	7.64	52.01	35.3	99.65	163	100.00	756	100.00		
0.405	0.00	1.88	18.33	8.68	56.33	40.1	100.00	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-38 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 2:21:11 PM
Measurement Date Time 2/20/2017 2:21:11 PM
Result Source Averaged

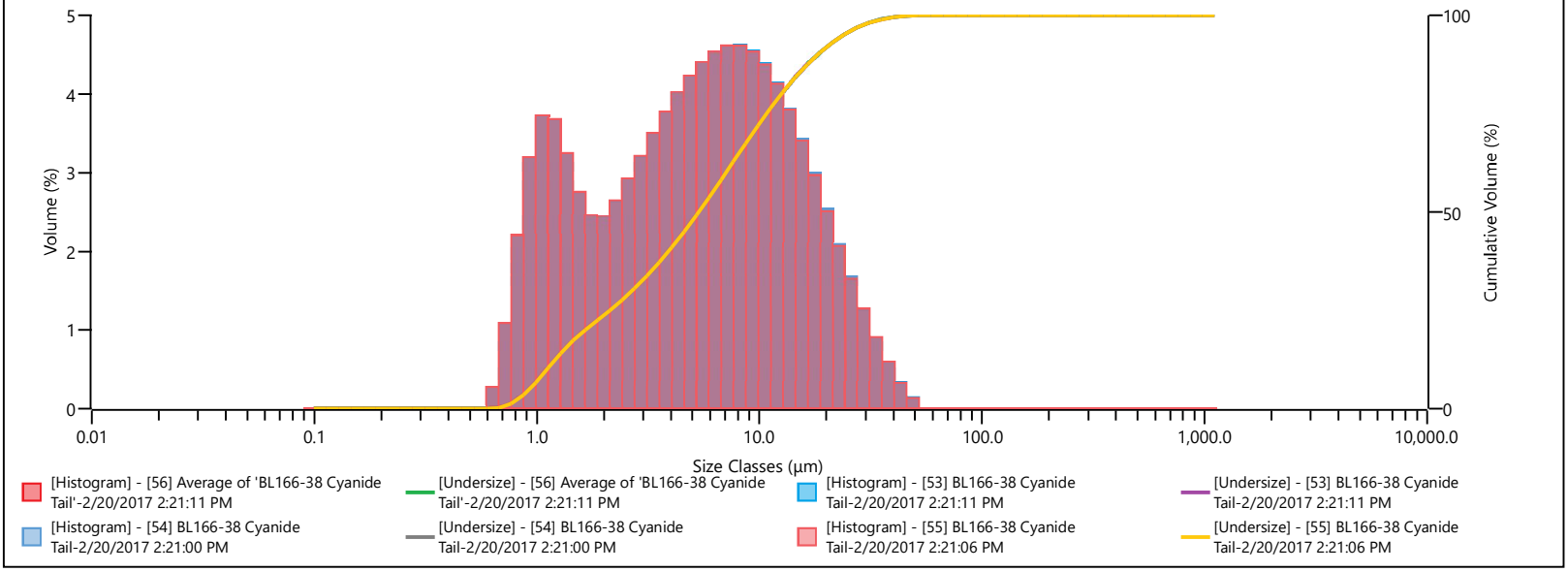
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.73 %
Laser Obscuration 12.75 %

Result

Dv (50) 5.33 µm
Dv (10) 1.11 µm
Dv (80) 12.6 µm
Dv (90) 18.2 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	24.98	9.86	71.87	45.6	99.87	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	27.62	11.2	76.24	51.8	100.00	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	30.53	12.7	80.37	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.27	3.12	33.74	14.5	84.17	66.9	100.00	310	100.00		
0.166	0.00	0.767	1.35	3.55	37.23	16.4	87.57	76.0	100.00	352	100.00		
0.188	0.00	0.872	3.54	4.03	40.99	18.7	90.54	86.4	100.00	400	100.00		
0.214	0.00	0.991	6.73	4.58	45.00	21.2	93.06	98.1	100.00	454	100.00		
0.243	0.00	1.13	10.44	5.21	49.21	24.1	95.13	111	100.00	516	100.00		
0.276	0.00	1.28	14.11	5.92	53.61	27.4	96.79	127	100.00	586	100.00		
0.314	0.00	1.45	17.35	6.72	58.13	31.1	98.05	144	100.00	666	100.00		
0.357	0.00	1.65	20.09	7.64	62.73	35.3	98.96	163	100.00	756	100.00		
0.405	0.00	1.88	22.54	8.68	67.34	40.1	99.55	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-39 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 2:30:44 PM
Measurement Date Time 2/20/2017 2:30:44 PM
Result Source Averaged

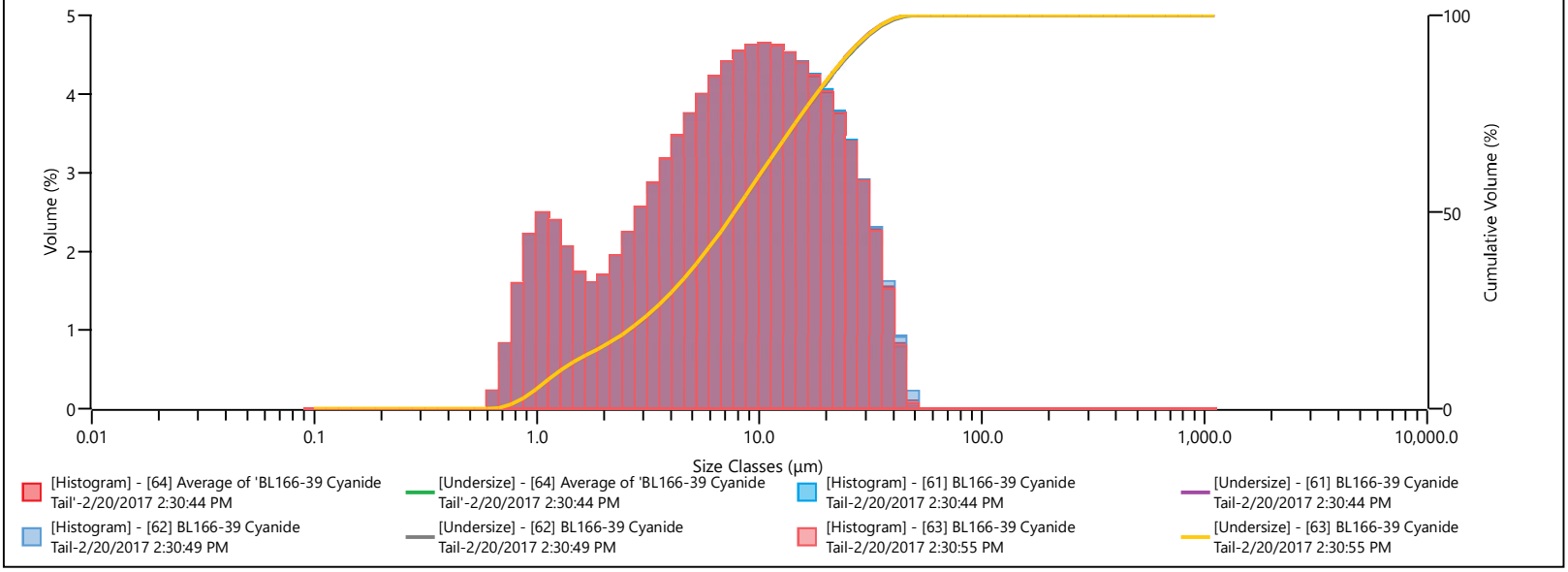
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.51 %
Laser Obscuration 11.53 %

Result

Dv (50) 7.74 µm
Dv (10) 1.30 µm
Dv (80) 18.0 µm
Dv (90) 25.1 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	16.88	9.86	58.72	45.6	99.88	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	18.83	11.2	63.37	51.8	100.00	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	21.07	12.7	67.98	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.24	3.12	23.63	14.5	72.50	66.9	100.00	310	100.00		
0.166	0.00	0.767	1.08	3.55	26.50	16.4	76.90	76.0	100.00	352	100.00		
0.188	0.00	0.872	2.67	4.03	29.68	18.7	81.13	86.4	100.00	400	100.00		
0.214	0.00	0.991	4.89	4.58	33.15	21.2	85.15	98.1	100.00	454	100.00		
0.243	0.00	1.13	7.38	5.21	36.89	24.1	88.91	111	100.00	516	100.00		
0.276	0.00	1.28	9.78	5.92	40.90	27.4	92.31	127	100.00	586	100.00		
0.314	0.00	1.45	11.84	6.72	45.13	31.1	95.21	144	100.00	666	100.00		
0.357	0.00	1.65	13.58	7.64	49.54	35.3	97.49	163	100.00	756	100.00		
0.405	0.00	1.88	15.18	8.68	54.09	40.1	99.05	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-40 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 2:38:12 PM
Measurement Date Time 2/20/2017 2:38:12 PM
Result Source Averaged

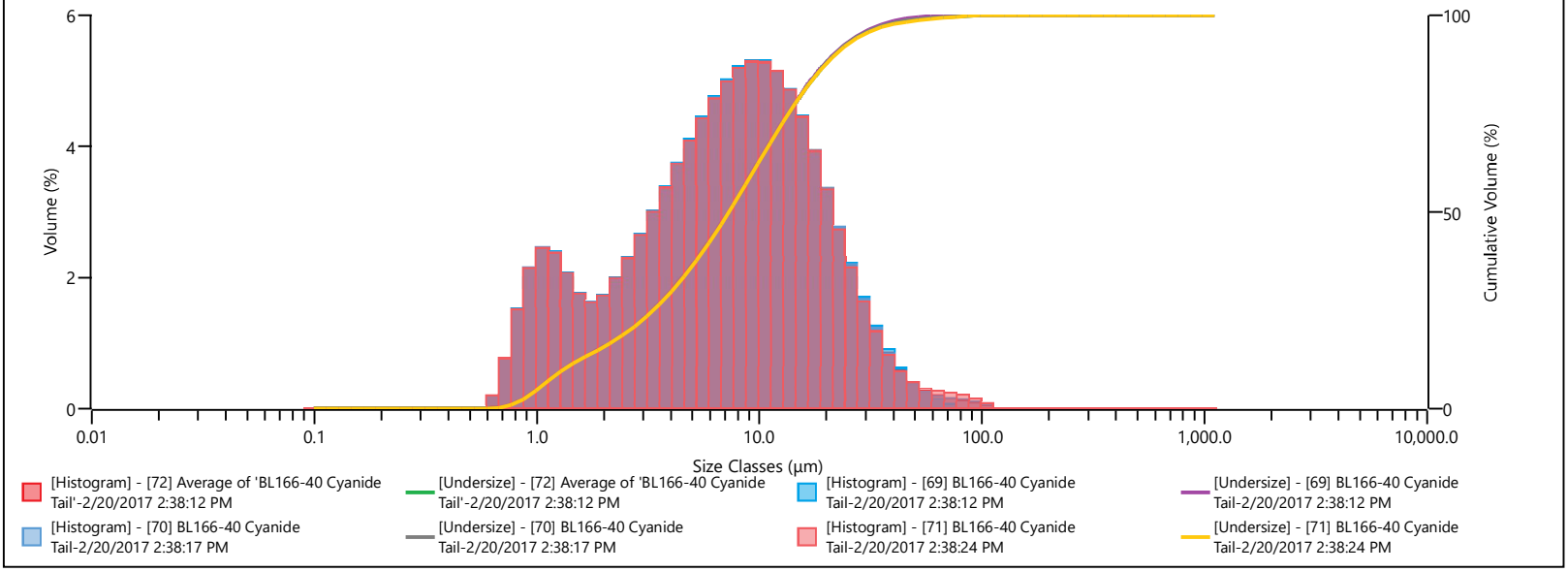
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.20 %
Laser Obscuration 12.54 %

Result

Dv (50) 7.27 µm
Dv (10) 1.32 µm
Dv (80) 15.4 µm
Dv (90) 21.8 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	16.64	9.86	62.44	45.6	98.72	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	18.62	11.2	67.72	51.8	99.11	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	20.92	12.7	72.86	58.9	99.38	272	100.00		
0.146	0.00	0.675	0.20	3.12	23.57	14.5	77.71	66.9	99.59	310	100.00		
0.166	0.00	0.767	0.97	3.55	26.58	16.4	82.16	76.0	99.75	352	100.00		
0.188	0.00	0.872	2.48	4.03	29.95	18.7	86.09	86.4	99.86	400	100.00		
0.214	0.00	0.991	4.63	4.58	33.69	21.2	89.45	98.1	99.95	454	100.00		
0.243	0.00	1.13	7.08	5.21	37.78	24.1	92.20	111	100.00	516	100.00		
0.276	0.00	1.28	9.46	5.92	42.21	27.4	94.39	127	100.00	586	100.00		
0.314	0.00	1.45	11.52	6.72	46.95	31.1	96.06	144	100.00	666	100.00		
0.357	0.00	1.65	13.28	7.64	51.95	35.3	97.28	163	100.00	756	100.00		
0.405	0.00	1.88	14.91	8.68	57.15	40.1	98.14	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-41 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 2:43:31 PM
Measurement Date Time 2/20/2017 2:43:31 PM
Result Source Averaged

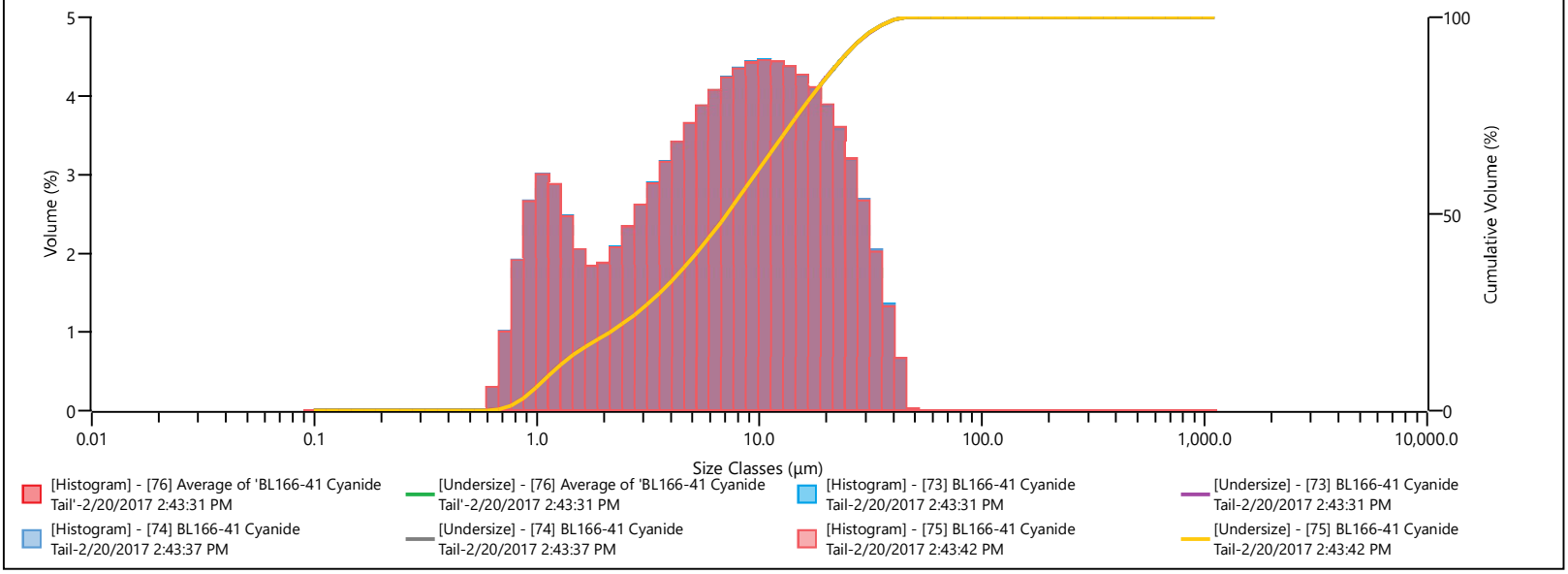
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.49 %
Laser Obscuration 12.96 %

Result

Dv (50) 7.13 µm
Dv (10) 1.18 µm
Dv (80) 17.2 µm
Dv (90) 24.0 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	19.99	9.86	61.05	45.6	99.99	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	22.06	11.2	65.49	51.8	100.00	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	24.40	12.7	69.92	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.30	3.12	27.01	14.5	74.29	66.9	100.00	310	100.00		
0.166	0.00	0.767	1.31	3.55	29.90	16.4	78.54	76.0	100.00	352	100.00		
0.188	0.00	0.872	3.22	4.03	33.05	18.7	82.63	86.4	100.00	400	100.00		
0.214	0.00	0.991	5.89	4.58	36.46	21.2	86.51	98.1	100.00	454	100.00		
0.243	0.00	1.13	8.89	5.21	40.12	24.1	90.10	111	100.00	516	100.00		
0.276	0.00	1.28	11.77	5.92	43.99	27.4	93.29	127	100.00	586	100.00		
0.314	0.00	1.45	14.24	6.72	48.05	31.1	95.97	144	100.00	666	100.00		
0.357	0.00	1.65	16.29	7.64	52.28	35.3	98.00	163	100.00	756	100.00		
0.405	0.00	1.88	18.12	8.68	56.62	40.1	99.34	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-42 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 2:47:47 PM
Measurement Date Time 2/20/2017 2:47:47 PM
Result Source Averaged

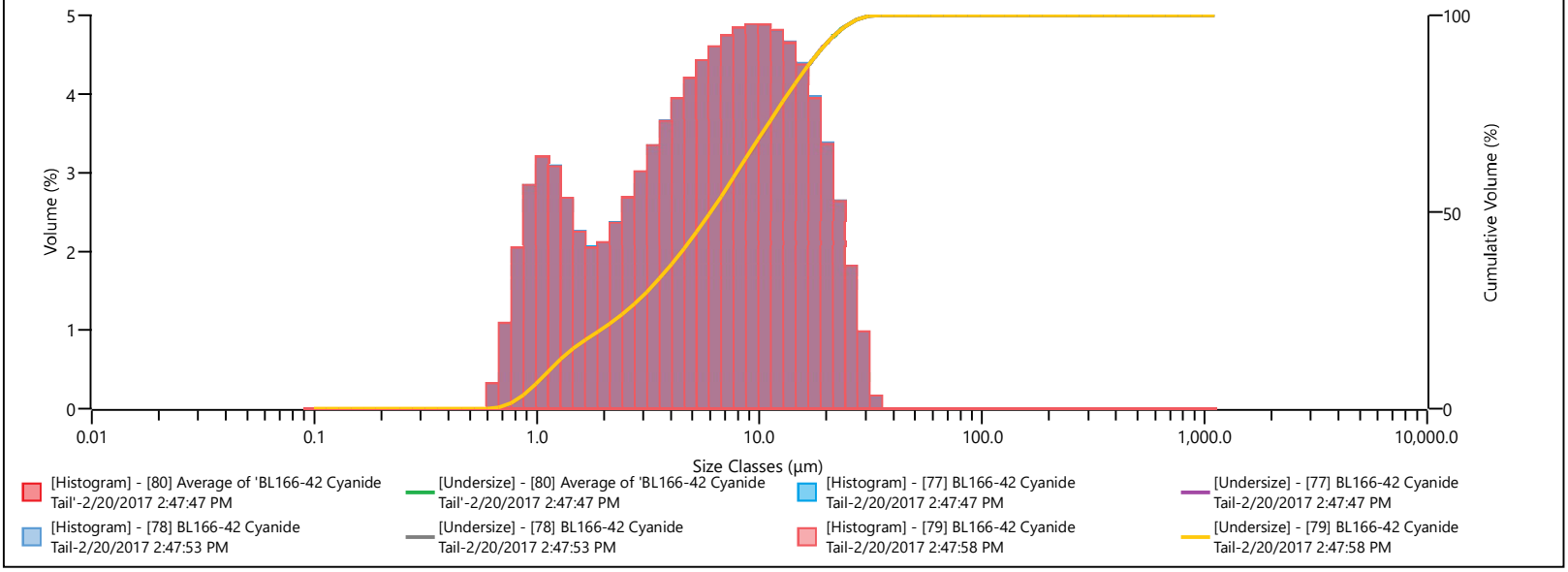
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.87 %
Laser Obscuration 13.97 %

Result

Dv (50) 6.03 µm
Dv (10) 1.15 µm
Dv (80) 13.4 µm
Dv (90) 18.1 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	21.69	9.86	68.36	45.6	100.00	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	24.05	11.2	73.24	51.8	100.00	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	26.74	12.7	78.05	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.32	3.12	29.76	14.5	82.70	66.9	100.00	310	100.00		
0.166	0.00	0.767	1.41	3.55	33.10	16.4	87.08	76.0	100.00	352	100.00		
0.188	0.00	0.872	3.46	4.03	36.76	18.7	91.03	86.4	100.00	400	100.00		
0.214	0.00	0.991	6.30	4.58	40.71	21.2	94.41	98.1	100.00	454	100.00		
0.243	0.00	1.13	9.50	5.21	44.91	24.1	97.04	111	100.00	516	100.00		
0.276	0.00	1.28	12.59	5.92	49.33	27.4	98.86	127	100.00	586	100.00		
0.314	0.00	1.45	15.26	6.72	53.92	31.1	99.84	144	100.00	666	100.00		
0.357	0.00	1.65	17.51	7.64	58.66	35.3	100.00	163	100.00	756	100.00		
0.405	0.00	1.88	19.57	8.68	63.49	40.1	100.00	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-43 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 2:52:00 PM
Measurement Date Time 2/20/2017 2:52:00 PM
Result Source Averaged

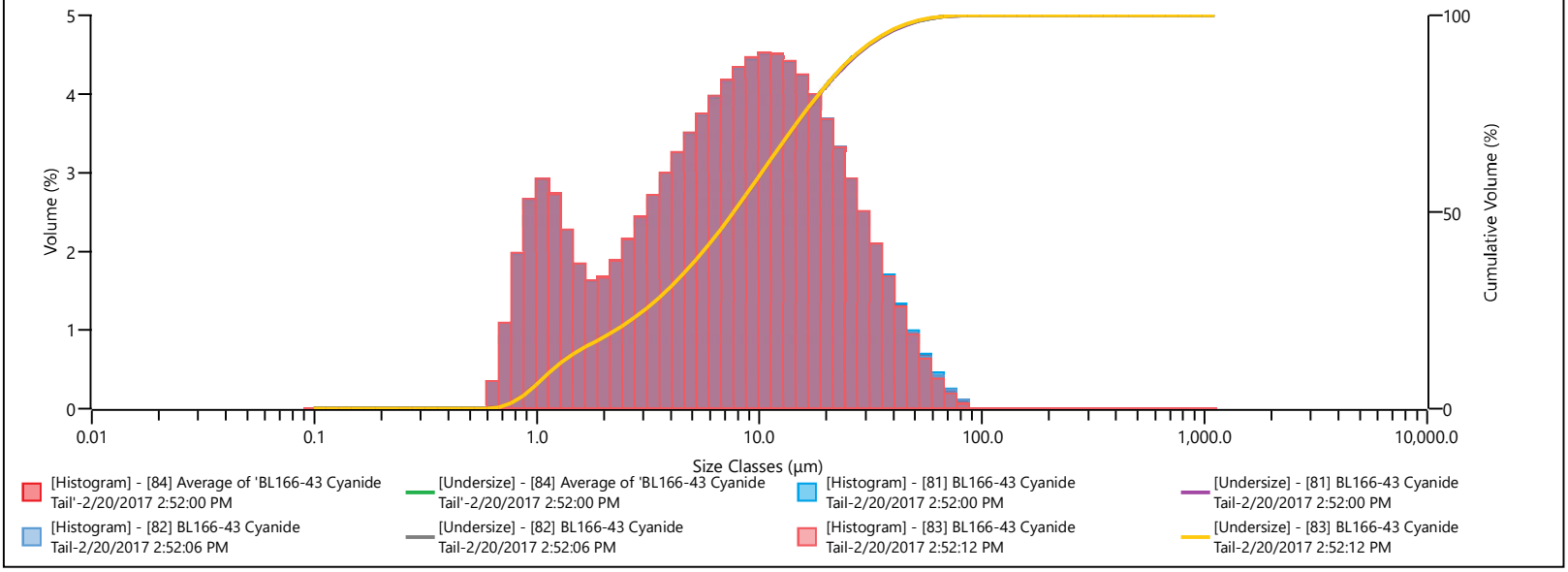
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.23 %
Laser Obscuration 13.57 %

Result

Dv (50) 7.69 µm
Dv (10) 1.18 µm
Dv (80) 18.6 µm
Dv (90) 27.3 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	19.07	9.86	58.55	45.6	97.64	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	20.94	11.2	63.06	51.8	98.60	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	23.09	12.7	67.55	58.9	99.27	272	100.00		
0.146	0.00	0.675	0.35	3.12	25.52	14.5	71.96	66.9	99.68	310	100.00		
0.166	0.00	0.767	1.43	3.55	28.23	16.4	76.19	76.0	99.91	352	100.00		
0.188	0.00	0.872	3.40	4.03	31.21	18.7	80.18	86.4	100.00	400	100.00		
0.214	0.00	0.991	6.05	4.58	34.46	21.2	83.85	98.1	100.00	454	100.00		
0.243	0.00	1.13	8.95	5.21	37.95	24.1	87.15	111	100.00	516	100.00		
0.276	0.00	1.28	11.67	5.92	41.68	27.4	90.07	127	100.00	586	100.00		
0.314	0.00	1.45	13.94	6.72	45.63	31.1	92.58	144	100.00	666	100.00		
0.357	0.00	1.65	15.78	7.64	49.79	35.3	94.66	163	100.00	756	100.00		
0.405	0.00	1.88	17.40	8.68	54.11	40.1	96.34	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-44 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 2:59:18 PM
Measurement Date Time 2/20/2017 2:59:18 PM
Result Source Averaged

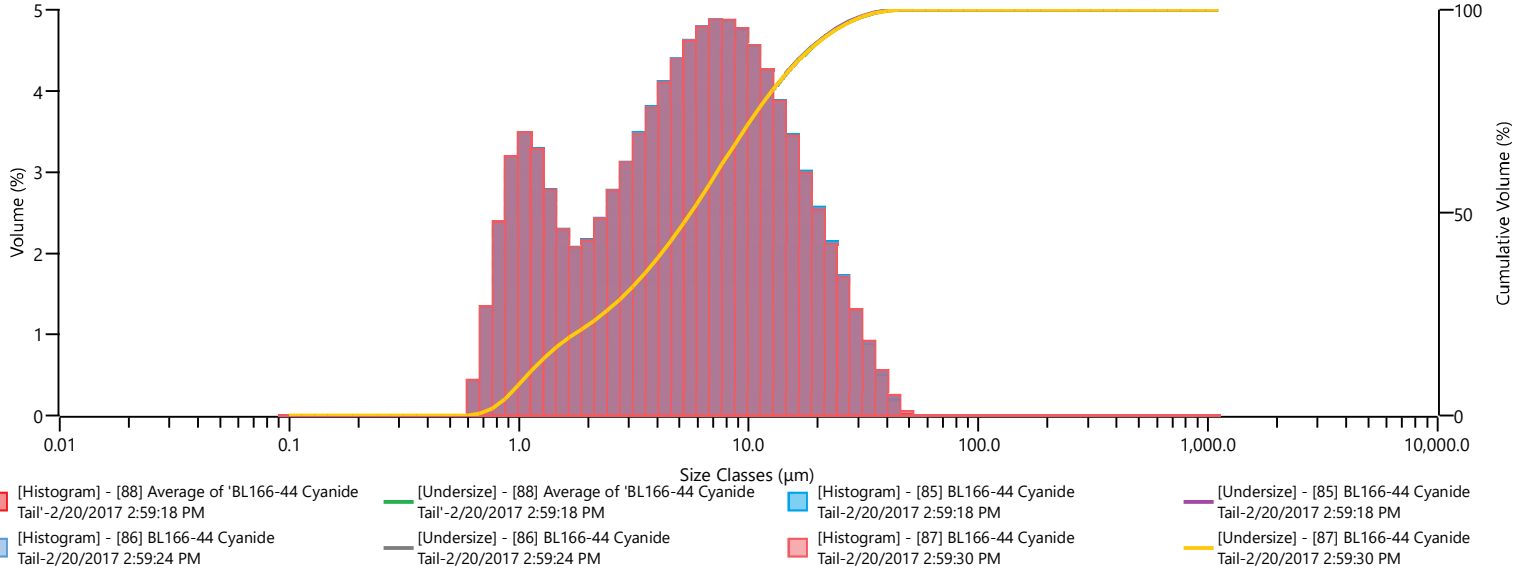
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.76 %
Laser Obscuration 15.34 %

Result

Dv (50) 5.57 µm
Dv (10) 1.09 µm
Dv (80) 12.6 µm
Dv (90) 18.2 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	23.45	9.86	71.47	45.6	99.98	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	25.88	11.2	76.03	51.8	100.00	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	28.65	12.7	80.28	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.45	3.12	31.78	14.5	84.16	66.9	100.00	310	100.00		
0.166	0.00	0.767	1.79	3.55	35.25	16.4	87.60	76.0	100.00	352	100.00		
0.188	0.00	0.872	4.18	4.03	39.05	18.7	90.60	86.4	100.00	400	100.00		
0.214	0.00	0.991	7.37	4.58	43.16	21.2	93.15	98.1	100.00	454	100.00		
0.243	0.00	1.13	10.86	5.21	47.55	24.1	95.28	111	100.00	516	100.00		
0.276	0.00	1.28	14.14	5.92	52.17	27.4	96.99	127	100.00	586	100.00		
0.314	0.00	1.45	16.91	6.72	56.96	31.1	98.31	144	100.00	666	100.00		
0.357	0.00	1.65	19.21	7.64	61.83	35.3	99.22	163	100.00	756	100.00		
0.405	0.00	1.88	21.29	8.68	66.71	40.1	99.75	186	100.00	859	100.00		

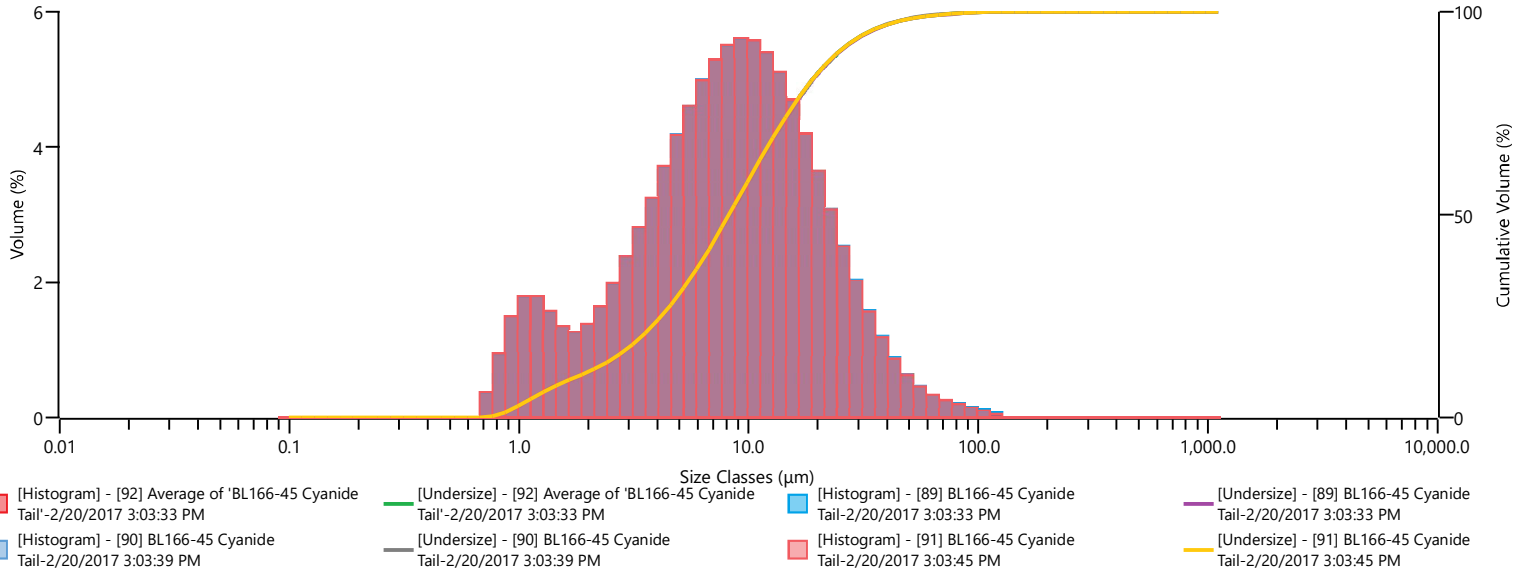
Measurement Details	
Operator Name	basemetlabs
Sample Name	Average of 'BL166-45 Cyanide Tail'
SOP File Name	HydroEV.cfg

Measurement Details	
Analysis Date Time	2/20/2017 3:03:33 PM
Measurement Date Time	2/20/2017 3:03:33 PM
Result Source	Averaged

Analysis	
Particle Name	Silica (RI 1.45, AI 0.1)
Particle Refractive Index	1.450
Particle Absorption Index	0.100
Dispersant Name	Water
Dispersant Refractive Index	1.330
Scattering Model	Mie
Analysis Model	General Purpose
Weighted Residual	1.14 %
Laser Obscuration	15.37 %

Result	
Dv (50)	8.23 µm
Dv (10)	1.77 µm
Dv (80)	17.1 µm
Dv (90)	24.6 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	11.99	9.86	57.89	45.6	97.78	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	13.63	11.2	63.45	51.8	98.42	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	15.62	12.7	68.85	58.9	98.88	272	100.00		
0.146	0.00	0.675	0.00	3.12	18.00	14.5	73.95	66.9	99.23	310	100.00		
0.166	0.00	0.767	0.38	3.55	20.80	16.4	78.63	76.0	99.49	352	100.00		
0.188	0.00	0.872	1.33	4.03	24.05	18.7	82.82	86.4	99.69	400	100.00		
0.214	0.00	0.991	2.82	4.58	27.76	21.2	86.47	98.1	99.85	454	100.00		
0.243	0.00	1.13	4.61	5.21	31.93	24.1	89.55	111	99.95	516	100.00		
0.276	0.00	1.28	6.40	5.92	36.54	27.4	92.09	127	100.00	586	100.00		
0.314	0.00	1.45	7.98	6.72	41.52	31.1	94.12	144	100.00	666	100.00		
0.357	0.00	1.65	9.33	7.64	46.81	35.3	95.70	163	100.00	756	100.00		
0.405	0.00	1.88	10.60	8.68	52.30	40.1	96.90	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-46 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 3:08:01 PM
Measurement Date Time 2/20/2017 3:08:01 PM
Result Source Averaged

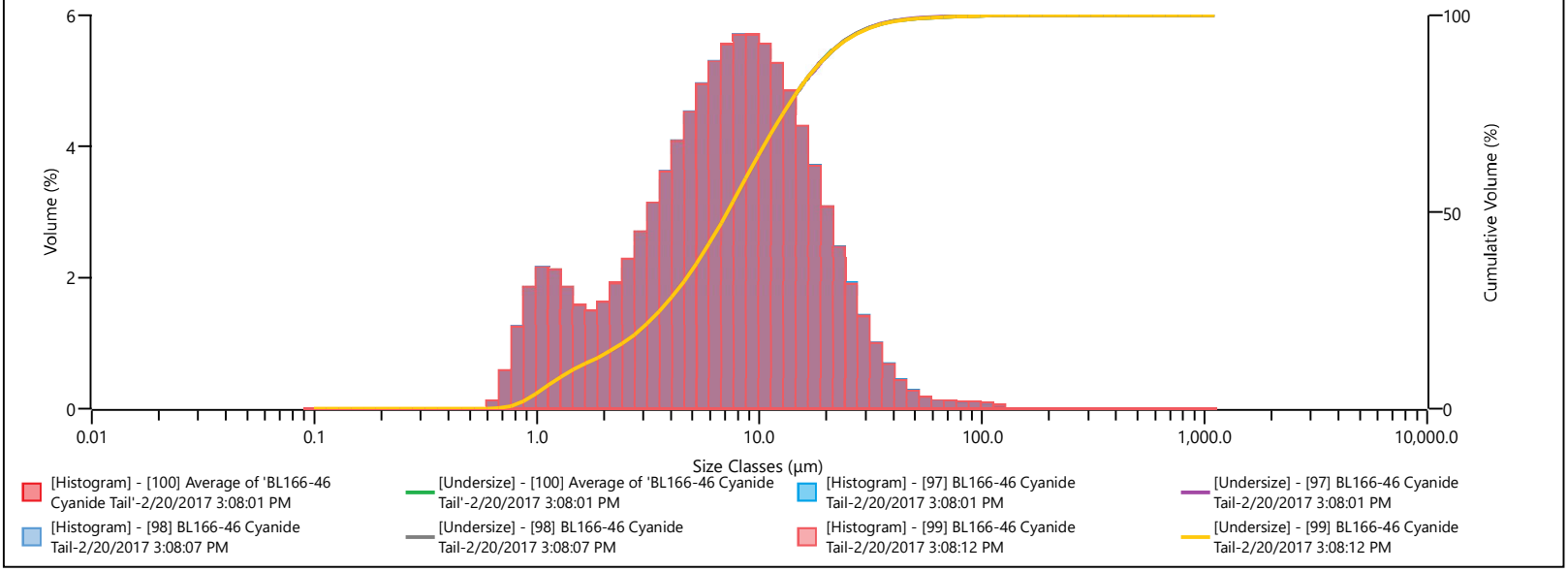
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.18 %
Laser Obscuration 21.07 %

Result

Dv (50) 7.16 µm
Dv (10) 1.46 µm
Dv (80) 14.5 µm
Dv (90) 20.4 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	14.68	9.86	64.21	45.6	98.94	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	16.60	11.2	69.76	51.8	99.22	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	18.89	12.7	75.03	58.9	99.40	272	100.00		
0.146	0.00	0.675	0.13	3.12	21.60	14.5	79.88	66.9	99.53	310	100.00		
0.166	0.00	0.767	0.71	3.55	24.75	16.4	84.19	76.0	99.65	352	100.00		
0.188	0.00	0.872	1.97	4.03	28.37	18.7	87.90	86.4	99.76	400	100.00		
0.214	0.00	0.991	3.83	4.58	32.45	21.2	90.99	98.1	99.86	454	100.00		
0.243	0.00	1.13	5.99	5.21	36.99	24.1	93.46	111	99.95	516	100.00		
0.276	0.00	1.28	8.11	5.92	41.94	27.4	95.37	127	100.00	586	100.00		
0.314	0.00	1.45	9.97	6.72	47.25	31.1	96.80	144	100.00	666	100.00		
0.357	0.00	1.65	11.56	7.64	52.81	35.3	97.81	163	100.00	756	100.00		
0.405	0.00	1.88	13.05	8.68	58.51	40.1	98.50	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-47 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 3:12:38 PM
Measurement Date Time 2/20/2017 3:12:38 PM
Result Source Averaged

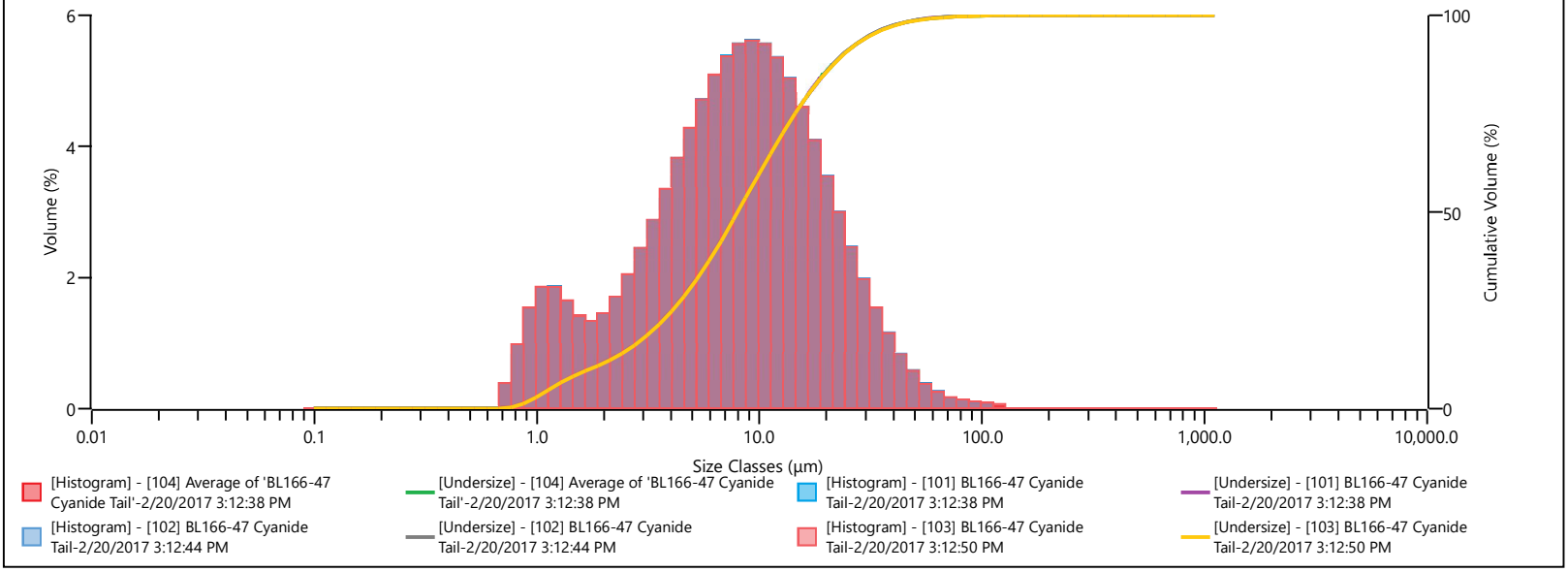
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.14 %
Laser Obscuration 20.75 %

Result

Dv (50) 7.99 µm
Dv (10) 1.71 µm
Dv (80) 16.6 µm
Dv (90) 23.8 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	12.41	9.86	59.19	45.6	98.28	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	14.11	11.2	64.73	51.8	98.85	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	16.16	12.7	70.08	58.9	99.24	272	100.00		
0.146	0.00	0.675	0.00	3.12	18.60	14.5	75.10	66.9	99.49	310	100.00		
0.166	0.00	0.767	0.40	3.55	21.48	16.4	79.70	76.0	99.67	352	100.00		
0.188	0.00	0.872	1.37	4.03	24.81	18.7	83.78	86.4	99.80	400	100.00		
0.214	0.00	0.991	2.90	4.58	28.62	21.2	87.32	98.1	99.90	454	100.00		
0.243	0.00	1.13	4.75	5.21	32.89	24.1	90.31	111	99.98	516	100.00		
0.276	0.00	1.28	6.60	5.92	37.60	27.4	92.78	127	100.00	586	100.00		
0.314	0.00	1.45	8.24	6.72	42.67	31.1	94.75	144	100.00	666	100.00		
0.357	0.00	1.65	9.65	7.64	48.03	35.3	96.29	163	100.00	756	100.00		
0.405	0.00	1.88	10.97	8.68	53.58	40.1	97.44	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-48 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 3:16:58 PM
Measurement Date Time 2/20/2017 3:16:58 PM
Result Source Averaged

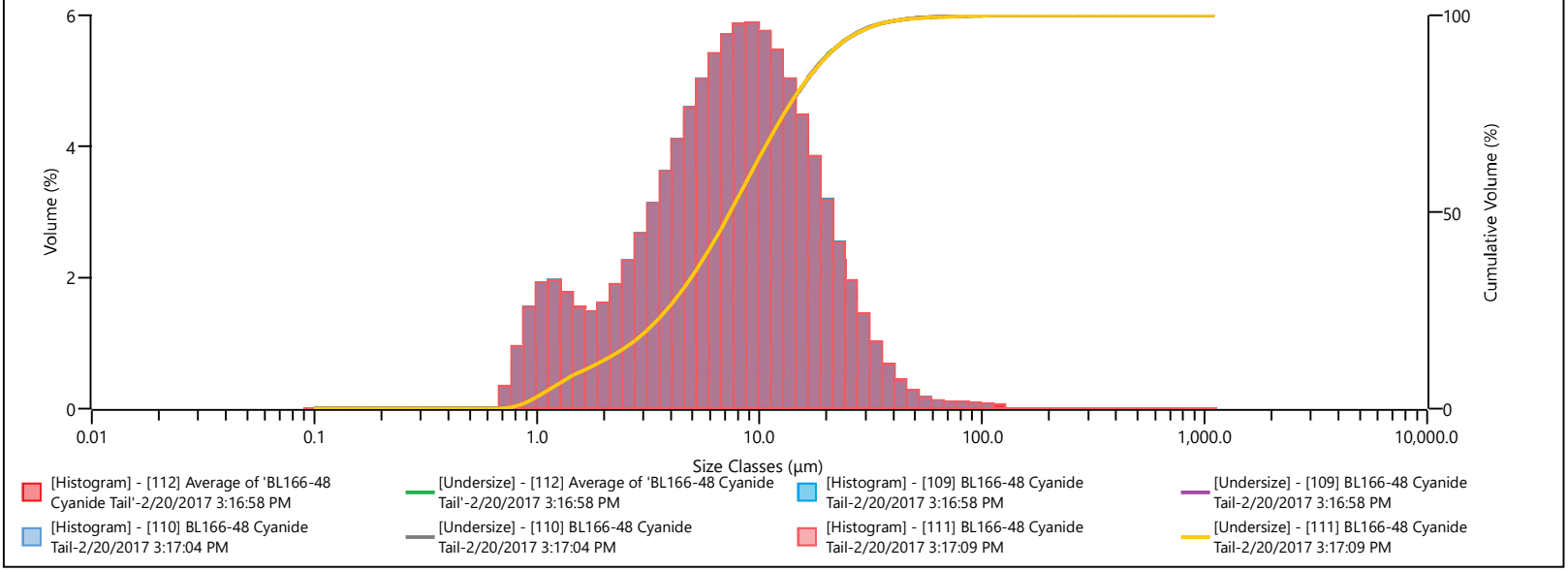
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.23 %
Laser Obscuration 12.95 %

Result

Dv (50) 7.39 µm
Dv (10) 1.65 µm
Dv (80) 14.7 µm
Dv (90) 20.4 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	13.12	9.86	63.22	45.6	99.03	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	15.01	11.2	68.97	51.8	99.31	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	17.27	12.7	74.43	58.9	99.49	272	100.00		
0.146	0.00	0.675	0.00	3.12	19.95	14.5	79.47	66.9	99.61	310	100.00		
0.166	0.00	0.767	0.35	3.55	23.07	16.4	83.94	76.0	99.72	352	100.00		
0.188	0.00	0.872	1.30	4.03	26.68	18.7	87.79	86.4	99.81	400	100.00		
0.214	0.00	0.991	2.85	4.58	30.78	21.2	90.98	98.1	99.90	454	100.00		
0.243	0.00	1.13	4.76	5.21	35.36	24.1	93.52	111	99.98	516	100.00		
0.276	0.00	1.28	6.72	5.92	40.38	27.4	95.47	127	100.00	586	100.00		
0.314	0.00	1.45	8.49	6.72	45.79	31.1	96.90	144	100.00	666	100.00		
0.357	0.00	1.65	10.04	7.64	51.49	35.3	97.91	163	100.00	756	100.00		
0.405	0.00	1.88	11.51	8.68	57.34	40.1	98.59	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-49 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 3:23:26 PM
Measurement Date Time 2/20/2017 3:23:26 PM
Result Source Averaged

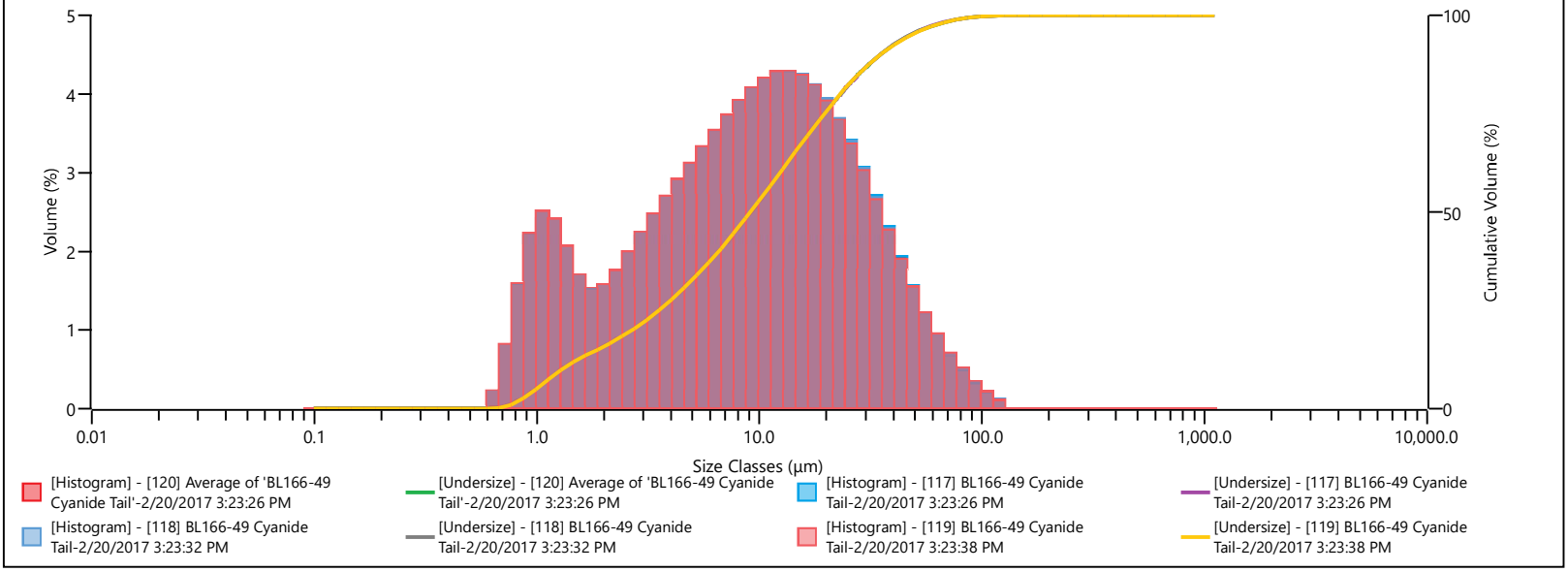
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.21 %
Laser Obscuration 13.87 %

Result

Dv (50) 9.15 µm
Dv (10) 1.30 µm
Dv (80) 23.2 µm
Dv (90) 35.0 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	16.65	9.86	52.39	45.6	94.44	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	18.40	11.2	56.59	51.8	95.99	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	20.39	12.7	60.87	58.9	97.21	272	100.00		
0.146	0.00	0.675	0.23	3.12	22.63	14.5	65.15	66.9	98.14	310	100.00		
0.166	0.00	0.767	1.06	3.55	25.10	16.4	69.39	76.0	98.84	352	100.00		
0.188	0.00	0.872	2.64	4.03	27.80	18.7	73.50	86.4	99.34	400	100.00		
0.214	0.00	0.991	4.86	4.58	30.71	21.2	77.43	98.1	99.68	454	100.00		
0.243	0.00	1.13	7.37	5.21	33.83	24.1	81.11	111	99.89	516	100.00		
0.276	0.00	1.28	9.78	5.92	37.16	27.4	84.49	127	100.00	586	100.00		
0.314	0.00	1.45	11.84	6.72	40.69	31.1	87.55	144	100.00	666	100.00		
0.357	0.00	1.65	13.55	7.64	44.41	35.3	90.23	163	100.00	756	100.00		
0.405	0.00	1.88	15.08	8.68	48.32	40.1	92.52	186	100.00	859	100.00		

Measurement Details

Operator Name basemetlabs
Sample Name Average of 'BL166-50 Cyanide Tail'
SOP File Name HydroEV.cfg

Measurement Details

Analysis Date Time 2/20/2017 3:27:52 PM
Measurement Date Time 2/20/2017 3:27:52 PM
Result Source Averaged

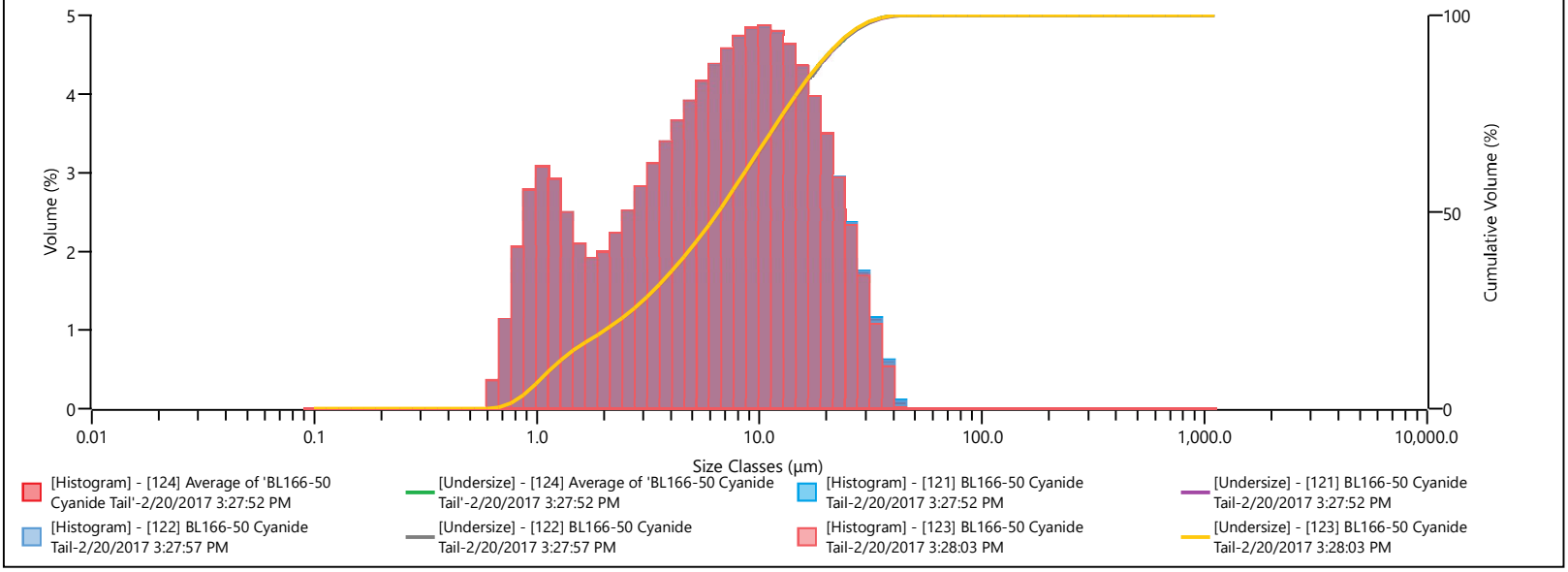
Analysis

Particle Name Silica (RI 1.45, AI 0.1)
Particle Refractive Index 1.450
Particle Absorption Index 0.100
Dispersant Name Water
Dispersant Refractive Index 1.330
Scattering Model Mie
Analysis Model General Purpose
Weighted Residual 1.34 %
Laser Obscuration 18.50 %

Result

Dv (50) 6.54 µm
Dv (10) 1.16 µm
Dv (80) 14.7 µm
Dv (90) 20.3 µm

Histogram and Undersize



Result

Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	% Volume Under	Size (µm)	olume Under
0.0995	0.00	0.461	0.00	2.13	20.81	9.86	65.09	45.6	100.00	211	100.00	976	100.00
0.113	0.00	0.523	0.00	2.42	23.03	11.2	69.95	51.8	100.00	240	100.00	1110	100.00
0.128	0.00	0.594	0.00	2.75	25.56	12.7	74.74	58.9	100.00	272	100.00		
0.146	0.00	0.675	0.37	3.12	28.38	14.5	79.36	66.9	100.00	310	100.00		
0.166	0.00	0.767	1.50	3.55	31.49	16.4	83.71	76.0	100.00	352	100.00		
0.188	0.00	0.872	3.56	4.03	34.88	18.7	87.67	86.4	100.00	400	100.00		
0.214	0.00	0.991	6.34	4.58	38.53	21.2	91.16	98.1	100.00	454	100.00		
0.243	0.00	1.13	9.40	5.21	42.44	24.1	94.10	111	100.00	516	100.00		
0.276	0.00	1.28	12.32	5.92	46.59	27.4	96.46	127	100.00	586	100.00		
0.314	0.00	1.45	14.81	6.72	50.96	31.1	98.19	144	100.00	666	100.00		
0.357	0.00	1.65	16.90	7.64	55.54	35.3	99.32	163	100.00	756	100.00		
0.405	0.00	1.88	18.82	8.68	60.26	40.1	99.92	186	100.00	859	100.00		

APPENDIX F – MINERALOGY

APPENDIX F
MINERALOGY

TABLE F-1A
MINERAL COMPOSITION OF THE VARIABILITY COMPOSITES
ME1700301

Minerals	BL166 DW1	BL166 DW2	BL166 MZ	BL166 NW1	BL166 NW2	BL166 POR1	BL166 POR2	BL166 Z10	BL166 Z20	BL166 Z531
Cu-Sulphides	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1
Galena	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sphalerite	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrite	2.5	3.7	1.4	3.0	2.6	2.1	2.6	6.0	1.0	3.0
Arsenopyrite	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Iron Oxides	2.3	2.1	0.2	0.5	0.8	1.1	1.2	3.4	0.6	2.5
Plagioclase Feldspar	33.9	21.4	33.9	27.3	8.5	44.1	44.1	41.6	45.3	40.5
K-Feldspars	6.7	16.8	3.4	9.0	50.5	22.7	10.3	6.9	35.2	8.0
Quartz	12.9	6.6	29.5	20.1	3.5	10.0	13.0	9.5	6.6	10.0
Muscovite/Illite	4.8	8.6	11.6	17.7	7.1	1.7	2.4	1.1	0.5	4.7
Biotite/Phlogopite	5.6	6.6	<0.1	0.6	1.3	1.0	0.8	5.7	0.1	2.5
Chlorite	8.9	8.9	1.1	0.6	0.1	0.6	1.4	5.6	0.2	4.8
Ankerite/Dolomite	7.2	8.1	14.7	14.1	13.5	10.6	18.5	9.7	8.6	15.9
Calcite	10.9	10.5	2.6	4.7	9.1	3.8	2.5	8.2	0.7	5.8
Rutile/Anatase	1.6	1.5	0.7	0.5	0.5	0.7	1.1	1.0	0.3	1.0
AmphibolePyroxene	1.3	2.8	0.2	0.2	0.1	0.4	0.7	0.6	0.2	0.4
Apatite	0.2	1.0	0.2	1.0	1.4	0.6	0.5	0.2	0.4	0.3
Kaolinite	0.1	0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1
Epidote	0.5	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Barite	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	0.1	<0.1
Zircon/Monazite	<0.1	<0.1	<0.1	0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1
Others	0.5	0.5	0.4	0.5	0.6	0.4	0.7	0.4	0.3	0.4
Total	100	100	100	100	100	100	100	100	100	100

Note: 1) Cu-Sulphides include Chalcopyrite, Chalcocite/Covellite and Tetrahedrtite/Tennentite.
2) Iron Oxides includes Magnetite, Hematite, Ilmenite, Ti-Hematite, Steel/Pure Iron, Ilmenite and Goethite.
3) Chlorite includes Epidote and Tourmaline; Calcite includes Mn-calcite.
4) Others includes trace amounts of Scheelite, CeSb-Mineral, Ni-Sulphide, SrAl-Phosphate and unresolved mineral species.

TABLE F-1B
DISTRIBUTION OF SULPHUR BEARING MINERALS
BL166 DW1

Mineral	Assays Wt. %	% Sulphur Bearing Mineral	% Sulphur Bearing Mineral of Total Sulphur
Cu-Sulphides	<0.1	1.4	0.8
Galena	0.0	0.0	0.0
Sphalerite	0.0	0.0	0.0
Pyrite	3.0	97.0	98.8
Barite/Ca-Sulphate	<0.1	1.6	0.4
Total	3.0	100	100

DISTRIBUTION OF SULPHUR BEARING MINERALS
BL166 DW2

Mineral	Assays Wt. %	% Sulphur Bearing Mineral	% Sulphur Bearing Mineral of Total Sulphur
Cu-Sulphides	<0.1	0.4	0.2
Galena	<0.1	0.4	0.2
Sphalerite	<0.1	0.0	0.0
Pyrite	2.6	96.5	98.8
Barite/Ca-Sulphate	0.1	2.7	0.7
Total	2.7	100	100

DISTRIBUTION OF SULPHUR BEARING MINERALS
BL166 MZ

Mineral	Assays Wt. %	% Sulphur Bearing Mineral	% Sulphur Bearing Mineral of Total Sulphur
Cu-Sulphides	<0.1	0.5	0.3
Galena	<0.1	0.0	0.0
Sphalerite	0.0	0.0	0.0
Pyrite	6.0	99.1	99.6
Barite/Ca-Sulphate	<0.1	0.4	0.1
Total	6.0	100	100

TABLE F-1B Continued
DISTRIBUTION OF SULPHUR BEARING MINERALS
BL166 NW1

Mineral	Assays Wt. %	% Sulphur Bearing Mineral	% Sulphur Bearing Mineral of Total Sulphur
Cu-Sulphides	<0.1	0.9	0.6
Galena	0.0	0.0	0.0
Sphalerite	<0.1	1.1	0.7
Pyrite	3.0	96.4	98.3
Barite/Ca-Sulphate	0.1	1.6	0.4
Total	3.0	100	100

DISTRIBUTION OF SULPHUR BEARING MINERALS
BL166 NW2

Mineral	Assays Wt. %	% Sulphur Bearing Mineral	% Sulphur Bearing Mineral of Total Sulphur
Cu-Sulphides	<0.1	1.4	0.9
Galena	0.0	0.0	0.0
Sphalerite	<0.1	0.0	0.0
Pyrite	2.5	97.9	98.9
Barite/Ca-Sulphate	<0.1	0.7	0.2
Total	2.5	100	100

DISTRIBUTION OF SULPHUR BEARING MINERALS
BL166 POR1

Mineral	Assays Wt. %	% Sulphur Bearing Mineral	% Sulphur Bearing Mineral of Total Sulphur
Cu-Sulphides	<0.1	0.6	0.4
Galena	<0.1	0.3	0.1
Sphalerite	<0.1	0.0	0.0
Pyrite	3.7	98.4	99.3
Barite/Ca-Sulphate	<0.1	0.7	0.2
Total	3.7	100	100

TABLE F-1B Continued
DISTRIBUTION OF SULPHUR BEARING MINERALS
BL166 POR2

Mineral	Assays Wt. %	% Sulphur Bearing Mineral	% Sulphur Bearing Mineral of Total Sulphur
Cu-Sulphides	<0.1	0.5	0.3
Galena	<0.1	0.2	0.1
Sphalerite	<0.1	0.5	0.3
Pyrite	1.4	98.7	99.3
Barite/Ca-Sulphate	<0.1	0.1	0.0
Total	1.4	100	100

DISTRIBUTION OF SULPHUR BEARING MINERALS
BL166 Z10

Mineral	Assays Wt. %	% Sulphur Bearing Mineral	% Sulphur Bearing Mineral of Total Sulphur
Cu-Sulphides	<0.1	1.7	1.2
Galena	<0.1	0.0	0.0
Sphalerite	<0.1	0.1	0.1
Pyrite	2.1	94.1	97.6
Barite/Ca-Sulphate	0.1	4.1	1.1
Total	2.2	100	100

DISTRIBUTION OF SULPHUR BEARING MINERALS
BL166 Z20

Mineral	Assays Wt. %	% Sulphur Bearing Mineral	% Sulphur Bearing Mineral of Total Sulphur
Cu-Sulphides	0.1	3.0	2.0
Galena	<0.1	0.1	0.1
Sphalerite	0.0	0.0	0.0
Pyrite	2.6	95.8	97.6
Barite/Ca-Sulphate	<0.1	1.1	0.3
Total	2.7	100	100

TABLE F-1B Continued
DISTRIBUTION OF SULPHUR BEARING MINERALS
BL166 Z531

Mineral	Assays Wt. %	% Sulphur Bearing Mineral	% Sulphur Bearing Mineral of Total Sulphur
Cu-Sulphides	<0.1	1.8	1.2
Galena	<0.1	0.1	0.1
Sphalerite	<0.1	0.2	0.2
Pyrite	1.0	92.9	97.2
Barite/Ca-Sulphate	0.1	4.9	1.3
Total	1.1	100	100

TABLE F-1C
CHEMICAL COMPOSITION OF THE VARIABILITY COMPOSITES
ME1700301

Element	Assay Methods	BL166 DW1	BL166 DW2	BL166 MZ	BL166 NW1	BL166 NW2	BL166 POR1	BL166 POR2	BL166 Z10	BL166 Z20	BL166 Z531
Cu	QEMSCAN	2.14	2.20	2.01	2.20	2.68	1.67	2.45	2.11	1.09	2.56
	Chemical	2.40	2.62	2.10	2.45	3.11	2.12	3.04	2.60	1.45	3.02
Fe	QEMSCAN	5.71	6.50	3.32	4.18	3.94	3.54	5.19	7.19	2.25	6.36
	Chemical	6.17	6.57	3.66	3.59	3.47	3.80	5.25	7.11	2.41	5.26
S	QEMSCAN	1.37	1.97	0.77	1.62	1.42	1.14	1.40	3.24	0.56	1.62
	Chemical	1.56	1.57	1.04	1.17	1.50	1.36	1.55	2.96	0.46	1.67

Assay Reconciliation