

**PRELIMINARY ASSESSMENT OF TWO ADDITIONAL
METALLURGICAL COMPOSITES FROM
THE BAM EAST GOLD DEPOSIT**

KM5448

September 29, 2017

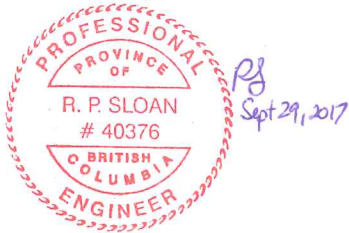
Work Performed on Behalf of Landore Resources Inc.

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KM5448

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1.0 Introduction

The BAM East Gold deposit is located in Landore's Junior Lake property in northwestern Ontario. Twenty-six segments of half drill core were provided for analysis in this test program weighing a total of 78 kilograms.

The preliminary assessment was designed to assess the metallurgical response of two additional* mineralized samples from the BAM East Gold deposit, and to provide a determination of the gold feed grade. Two composites were formed with instructions from the client: Composite 3 and Composite 4. The test program included an assessment for gold recovery through combined gravity concentration and cyanidation leaching. The two composites were assessed for the following:

- Chemical characteristics of the feed.
- Potential for gravity recovery of gold from Composite 3 at a nominal feed sizing of $75\mu\text{m K}_{80}$, and Composite 4 over a range of primary grind sizings between 82 and $164\mu\text{m K}_{80}$.
- Cyanidation leach response of the gravity tails for the two composites.

The metallurgical test program commenced in early September 2017 and was completed by mid-September 2017. The following report summarizes the key technical points of the metallurgical test program. Individual test results, along with supporting data, can be found in any one of the following appendices:

Appendix I – Sample Origin

Appendix II – Metallurgical Test Data

Appendix III – Particle Sizing Data

Appendix IV – Special Data

* See "KM5238 – Preliminary Assessment of Two Metallurgical Composites from the BAM East Gold Deposit" was completed on Composites 1 and 2 in December 2016.

2.0 Chemical Content of the Composites

The two composites, Composite 3 and Composite 4, were assessed for gold content through duplicate screened metallic gold assays. Duplicate total organic carbon assays were also completed on each composite. Table 1 displays a summary of these head assays. Complete head assay details can be located in Appendix IV.

TABLE 1
HEAD ASSAY SUMMARY

Composite	Assay - percent or g/tonne	
	Au _{SM}	TOC
Composite 3	0.52	0.01
Composite 4	1.02	0.01

Notes: a) Au_{SM} – Screened metallic gold assay; TOC – Total Organic Carbon.
 b) Gold assays are displayed in g/tonne, TOC assays are displayed in percent.
 c) Displayed assays are averages of duplicate assays. Duplicate assays results are displayed in Appendix IV.

The screened metallic assays measured about 0.5 and 1.0 g/tonne gold in Composites 3 and 4, respectively. The screened metallic assay involved pulverizing a head cut of approximately 250 grams and screening the material coarser than 106µm; coarser gold would typically report to this fraction. The coarse fraction was assayed to extinction while the fine material was assayed in duplicate. This method is intended to provide a more accurate gold assay than a simple 30 gram fire assay when coarser gold is present.

Some variability in the gold content between individual screened metallic assays was recorded, especially for Composite 4. Coarse gold grains are suspected.

The total organic carbon content measured very low at about 0.01 percent in each composite.

3.0 Metallurgical Test Program

Gravity separation tests were completed using a Knelson gravity concentration unit and hand panning of the Knelson concentrate. At the client's request, large feed masses were tested through the gravity concentration stage due to the variability of the gold content of the feed. Repeat cyanidation bottle roll leach tests were completed on each gravity tailing. Figure 1 displays a summary of the results of the testing.

Composite 3 was tested at a nominal primary grind sizing of $75\mu\text{m}^* K_{80}$ while Composite 4 was tested at primary grind sizings ranging from 82 to $164\mu\text{m} K_{80}$. The cyanidation bottle roll leach tests were completed over 48 hours using 1000 ppm sodium cyanide (NaCN), at 33 percent solids, and at pH 11.

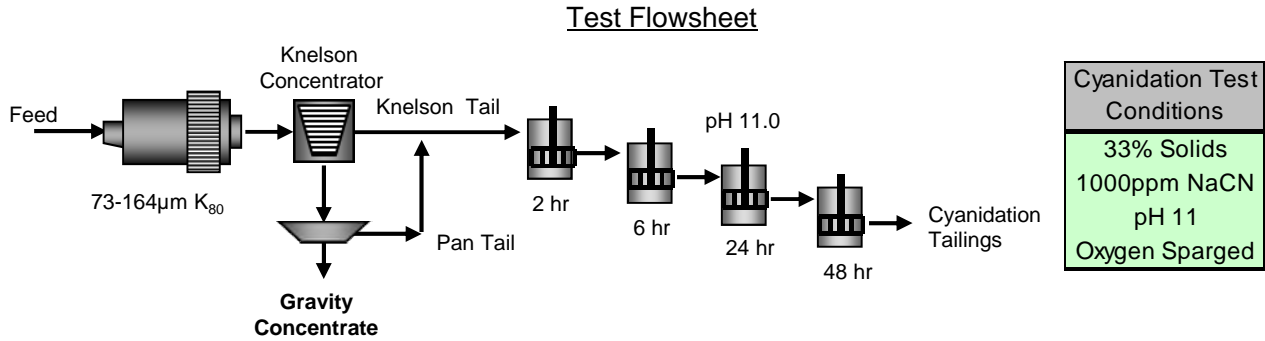
Gravity recovery for Composite 3 at $73\mu\text{m} K_{80}$ measured about 27 percent, with recovery of about 0.03 percent of the 34 kilogram feed mass. At $84\mu\text{m} K_{80}$ primary grind sizing with a 4 kilogram feed mass, the gravity gold recorded a much higher value of about 67 percent, but with a gravity recovery of about 0.15 percent of the feed mass. Cyanidation of the gravity tailings recorded high gold extractions between 96 to 97 percent of the remaining gold. Overall extraction/recovery of gold measured an average between 97 and 99 percent.

About one half of the feed gold was recovered from Composite 4 over the range of grind sizings tested, with a slight reduction in gravity recovery measured with coarser grind sizings. Cyanidation of gravity tailings recovered on average between 96 and 98 percent of remaining gold for overall gravity/cyanidation gold recoveries of between 98 to 99 percent.

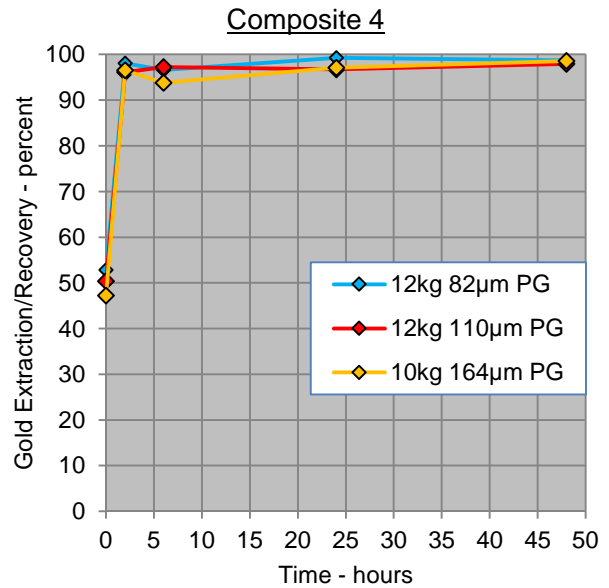
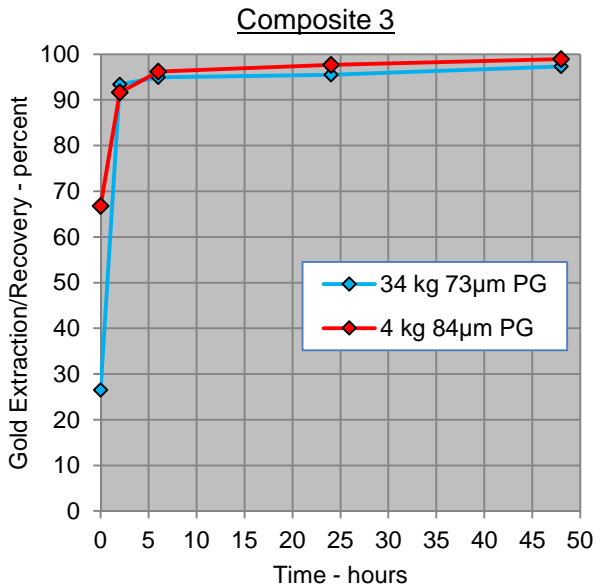
Leach kinetics were rapid with most of the gold extraction completed within 2 to 6 hours. Both composites recorded very low reagent consumptions: sodium cyanide consumptions were less than 0.1 kg/tonne feed, and lime consumptions were about 0.3 kg/tonne feed.

* A second gravity concentrate test was completed with Composite 3 at $84\mu\text{m} K_{80}$ using two grind calibration samples. Gravity concentration tests with Composite 4 utilized 10-12 kilograms of feed.

FIGURE 1
METALLURGICAL TEST RESULT SUMMARY



Average Cyanidation Leach Kinetics



Note: Zero hour extraction indicates gravity recovery.

Overall Test Result Summary

Composite	Primary Grind µm K ₈₀	Feed Mass kg	Gravity Gold Recovery percent	Gravity Mass Recovery percent	Cyanidation Leach 48 Hour Gold Performance				Calculated Au Feed Grade - g/t	Overall Au Extraction/Gravity Recovery - percent
					Leach Test No.	Extraction percent	Reagent Cons. - g/tonne			
							NaCN	Lime		
Composite 3	73	33.8	29.7	0.03	5	95.5	0.06	0.27	0.90	96.8
					6	95.7	0.06	0.30		97.0
					7	97.2	0.07	0.28		98.0
					8	97.0	0.06	0.28		97.9
	84	3.9	67.1	0.15	16	96.6	0.01	0.28	0.93	98.9
					17	96.8	0.01	0.26		98.9
Composite 4	82	11.8	54.2	0.06	9	96.1	0.07	0.30	1.22	98.2
					10	98.3	0.06	0.29		99.2
	110	12	47.4	0.11	11	98.4	0.06	0.30	1.15	99.2
					12	93.2	0.06	0.28		96.4
	164	9.8	50.4	0.11	13	98.1	0.04	0.28	1.08	99.0
					14	96.4	0.04	0.27		98.2

Notes: a) Recalculated gold head grades from cyanidation leach tests were used to calculate Gravity Gold Recovery values.

b) Reagent Cons. – indicates reagent consumptions recorded in tests.

c) Complete test conditions and results can be located in Appendix II.

4.0 Conclusions and Recommendations

Two composites from Landore's BAM East Gold deposit were tested using gravity and cyanidation leach techniques. The composites were formed from half drill core segments and were designated Composite 3 and 4.

Measurement of the gold feed content was completed using duplicate screened metallic assays. Composites 3 and 4 measured about 0.5 and 1.0 g/tonne gold respectively.

Metallurgical performance was excellent for both tested composites. Composite 4 was tested at primary grind sizings between 82 and 164 μm K_{80} . Combined gravity gold recovery and cyanidation leach gold extractions for Composite 4 also measured about 97 to 99 percent of feed gold. A coarser primary grind sizing of 162 μm K_{80} did not appear to have negative effects on overall gold extraction/recovery.

Combined gravity gold recovery and cyanidation leach gold extractions for Composite 3 was also very high, and measured between 97 to 99 percent of feed gold. Initial gravity separation testing with 34 kilograms recorded a recovery of the feed gold to a pan concentrate of about 30 percent, lower than that recorded for Composite 4 and Composites 1 and 2 in previous test work. A repeat gravity concentration test with 4 kilograms resulted in a gold gravity recovery of 67 percent, but at a mass recovery 5 times higher than the initial test. Gravity gold recovery appeared to be quite susceptible to mass recovery to the pan concentrate for this composite. Calculated gold feed grades were about 0.9 and 1.2 g/tonne for Composites 3 and 4, respectively, and would be considered a more representative feed grades than the screen metallic assays due to the much larger mass utilized.

Reagent consumptions recorded in the cyanidation leach tests were very low for both composites; sodium cyanide consumptions were below 0.1 kg/tonne, and lime consumptions averaged about 0.3 kg/tonne.

Results indicate that a combination of gravity concentration followed by cyanidation leaching of the gravity tails would be an effective flowsheet for the composites tested. A gravity recoverable gold (GRG) test performed iteratively over grind sizings between 750 - 250 - 75 μ m K₈₀, with assaying for gold by size fraction at each stage, should be considered to better establish gravity gold recovery for the flowsheet.

As results were exceptional over the range of primary grind sizings tested, testing using coarser feed sizings are recommended in future test programs. Future testing should also consider column leach testing with crushed feed to investigate gold extraction through heap leaching. Test results would provide information that could be used for trade-off studies comparing overall gold recovery at reduced comminution capital and operating expenses.

APPENDIX I - KM5448

SAMPLE ORIGIN

1.0 Sample Origin

Samples for use in this testing program were received at ALS Metallurgy Kamloops on August 28, 2017. The sample consisted of 26 segments of half drill core weighing about 78 kilograms total. Details of this shipment can be located in Table I-1.

The samples were designated to be formed into two composites for testing, Composite 3 and Composite 4. The details of the drill core segments that went into the construction of these two composites can be located in Tables I-2A and I-2B.

TABLE I-1
SAMPLES RECEIVED AUGUST 28, 2017

Sample ID	Weight kg
V927062	3.1
V927063	3.2
V927064	3.0
V927065	2.8
V927066	3.2
V927067	2.3
V927068	2.7
V927069	2.3
V927070	3.1
V927073	3.0
V927074	3.3
V927075	3.3
V927076	2.5
V927077	2.6
V927087	2.5
V927088	3.4
V927089	3.1
V927090	2.9
V927091	3.7
V927092	3.0
V927095	3.0
V927096	3.3
V927097	3.2
V927098	2.6
V927099	3.4
V927100	3.5

TABLE I-2A
COMPOSITE 3 CONSTRUCTION

Sample ID	Weight kg
V927062	3.1
V927063	3.2
V927064	3.0
V927065	2.8
V927066	3.2
V927067	2.3
V927068	2.7
V927069	2.3
V927070	3.1
V927073	3.0
V927074	3.3
V927075	3.3
V927076	2.5
V927077	2.6

TABLE I-2B
COMPOSITE 4 CONSTRUCTION

Sample ID	Weight kg
V927087	2.5
V927088	3.4
V927089	3.1
V927090	2.9
V927091	3.7
V927092	3.0
V927095	3.0
V927096	3.3
V927097	3.2
V927098	2.6
V927099	3.4
V927100	3.5

APPENDIX II - KM5448

METALLURGICAL TEST DATA

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DATE: September 5, 2017

PROJECT NO: KM5448-01

PURPOSE: Preliminary Gravity Test.

PROCEDURE: Perform a standard Knelson and Panning Procedure Using the 100g cone. The cone was emptied every 12 kg feed.

FEED: 33.8 kg of Composite 3 ground to a nominal 73 μ m K₈₀.

Stage	Inlet Pressure	Outlet Pressures		Time Minutes
		Start	Finish	
Grind				18
KN Separation 1	65	1.2	1.6	80

KM5448-01 Composite 3
Overall Metallurgical Balance

Product	Weight		Assay - g/tonne	Distribution - percent
	%	grams	Au	Au
Pan Con	0.03	9.0	1004	26.5
Knelson Tail	100.0	33813.7	0.74	73.5
Feed	100	33822.7	1.01	100

DATE: September 7, 2017

PROJECT NO: KM5448-02

PURPOSE: Preliminary Gravity Test.

PROCEDURE: Perform a standard Knelson and Panning Procedure Using the 100g cone.

FEED: 12 kg of Composite 4 ground to a nominal 82 μ m K₈₀.

Stage	Inlet Pressure	Outlet Pressures		Time Minutes
		Start	Finish	
Grind				15
KN Separation 1	65	1.2	1.6	30

KM5448-02 Composite 4
Overall Metallurgical Balance

Product	Weight		Assay - g/tonne	Distribution - percent
	%	grams	Au	Au
Pan Con	0.06	6.6	1179	52.8
Knelson Tail	99.9	11783.6	0.59	47.2
Feed	100	11790.2	1.25	100

DATE: September 7, 2017

PROJECT NO: KM5448-03

PURPOSE: Preliminary Gravity Test.

PROCEDURE: To Repeat Test 02 at a Coarser Primary Grind.
the 100g cone.

FEED: 12 kg of Composite 4 ground to a nominal 110 μ m K₈₀.

Stage	Inlet Pressure	Outlet Pressures		Time Minutes
		Start	Finish	
Grind				12
KN Separation 1	65	1.2	1.6	30

KM5448-03 Composite 4
Overall Metallurgical Balance

Product	Weight		Assay - g/tonne	Distribution - percent
	%	grams	Au	Au
Pan Con	0.11	12.9	508	50.4
Knelson Tail	99.9	11956.0	0.54	49.6
Feed	100	11968.9	1.09	100

DATE: September 8, 2017

PROJECT NO: KM5448-04

PURPOSE: To Repat Test 03 at a Coarser Primary Grind.

PROCEDURE: Perform a standard Knelson and Panning Procedure Using the 100g cone.

FEED: 10 kg of Composite 4 ground to a nominal 164 μ m K₈₀.

Stage	Inlet Pressure	Outlet Pressures		Time Minutes
		Start	Finish	
Grind				9
KN Separation 1	65	1.2	1.6	25

KM5448-04 Composite 4
Overall Metallurgical Balance

Product	Weight		Assay - g/tonne	Distribution - percent
	%	grams	Au	Au
Pan Con	0.11	10.5	509	47.2
Knelson Tail	99.9	9796.8	0.61	52.8
Feed	100	9807.3	1.15	100

DATE: September 12, 2017

PROJECT NO: KM5448-05

PURPOSE: Preliminary Cyanide Leach Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 01 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.0	8.3
Leach 1	0	4.01	0.53	-	-	11.0	8.3
Leach 2	2	0.00	0.00	4.00	0.01	11.1	14.9
Leach 3	6	0.00	0.00	4.00	0.00	11.1	15.7
Leach 4	24	0.00	0.00	4.00	0.00	11.2	15.2
Leach 5	48	-	-	3.88	0.12	-	-
Total	48	4.01	0.53	3.88	0.13	-	-

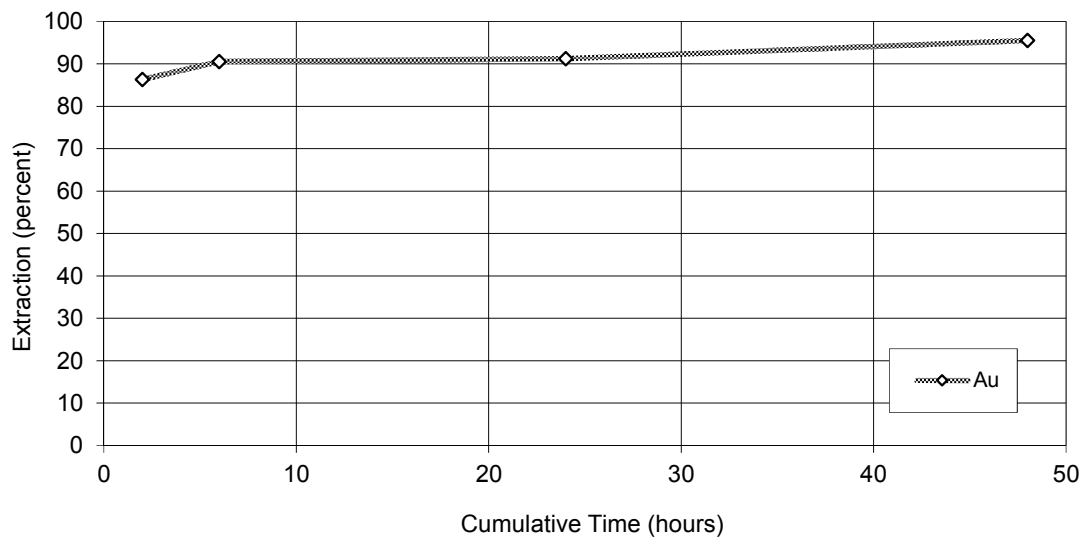
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.1 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-05 Test 01 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.24	86.3
Cyanide Liquor (6 hr)	6	4000	mL	0.25	90.6
Cyanide Liquor (24 hr)	24	4000	mL	0.25	91.2
Cyanide Liquor (48 hr)	48	4000	mL	0.26	95.5
Cyanidation Tails	-	1998	g	0.03	4.5
Calculated Feed		1998	g	0.56	100.0

Cyanide Leach Kinetic Curves



DATE: September 12, 2017

PROJECT NO: KM5448-06

PURPOSE: Duplicate Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 01 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.1	8.4
Leach 1	0	4.00	0.59	-	-	11.0	8.4
Leach 2	2	0.00	0.00	4.00	0.00	11.2	16.7
Leach 3	6	0.00	0.00	4.00	0.00	11.2	22.5
Leach 4	24	0.00	0.00	4.00	0.00	11.3	17.2
Leach 5	48	-	-	3.88	0.12	-	-
Total	48	4.00	0.59	3.88	0.12	-	-

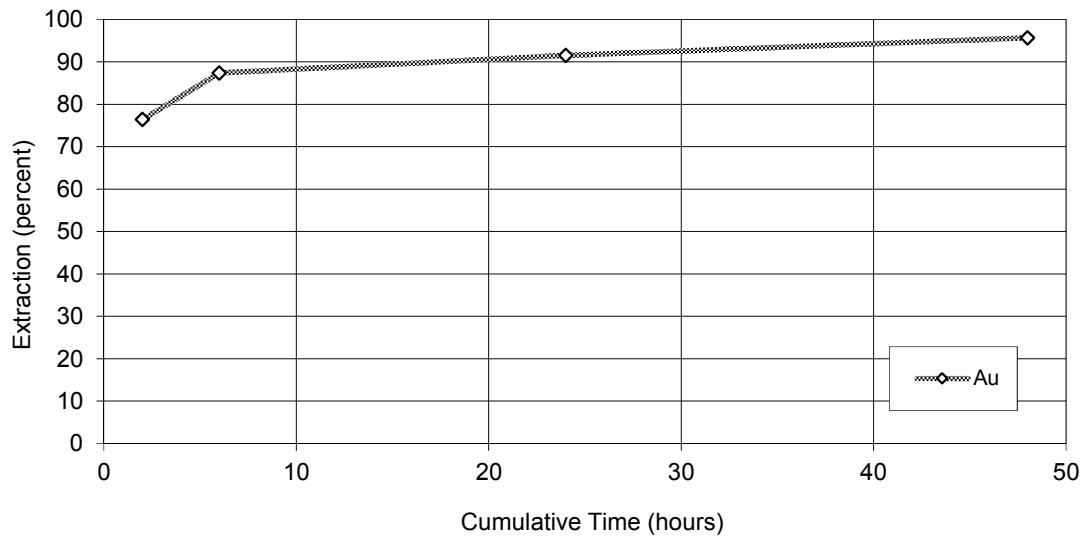
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.1 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-06 Test 01 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.22	76.4
Cyanide Liquor (6 hr)	6	4000	mL	0.25	87.4
Cyanide Liquor (24 hr)	24	4000	mL	0.26	91.5
Cyanide Liquor (48 hr)	48	4000	mL	0.27	95.7
Cyanidation Tails	-	1997	g	0.03	4.3
Calculated Feed		1997	g	0.58	100.0

Cyanide Leach Kinetic Curves



DATE: September 12, 2017

PROJECT NO: KM5448-07

PURPOSE: Duplicate Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 01 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.2	8.4
Leach 1	0	4.02	0.55	-	-	11.0	8.4
Leach 2	2	0.00	0.00	4.00	0.02	11.2	17.6
Leach 3	6	0.00	0.00	4.00	0.00	11.2	18.2
Leach 4	24	0.00	0.00	4.00	0.00	11.2	18.1
Leach 5	48	-	-	3.88	0.12	-	-
Total	48	4.02	0.55	3.88	0.14	-	-

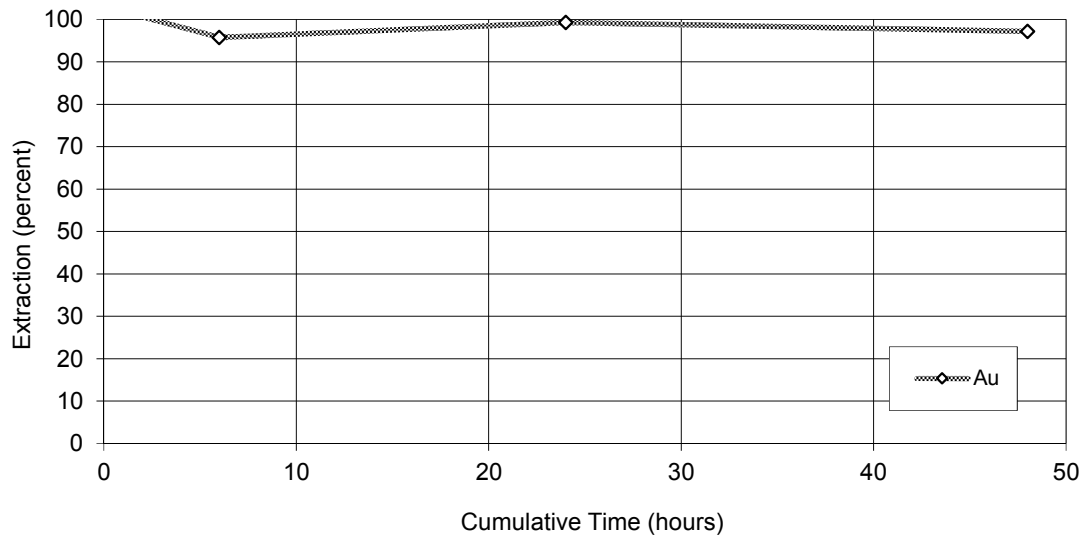
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.1 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-07 Test 01 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.36	100.6
Cyanide Liquor (6 hr)	6	4000	mL	0.34	95.8
Cyanide Liquor (24 hr)	24	4000	mL	0.35	99.3
Cyanide Liquor (48 hr)	48	4000	mL	0.34	97.2
Cyanidation Tails	-	1999	g	0.02	2.8
Calculated Feed		1999	g	0.72	100.0

Cyanide Leach Kinetic Curves



DATE: September 12, 2017

PROJECT NO: KM5448-08

PURPOSE: Duplicate Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 01 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.2	8.4
Leach 1	0	4.01	0.56	-	-	11.0	8.4
Leach 2	2	0.00	0.00	4.00	0.01	11.2	17.3
Leach 3	6	0.00	0.00	4.00	0.00	11.2	18.9
Leach 4	24	0.00	0.00	4.00	0.00	11.2	20.7
Leach 5	48	-	-	3.88	0.12	-	-
Total	48	4.01	0.56	3.88	0.13	-	-

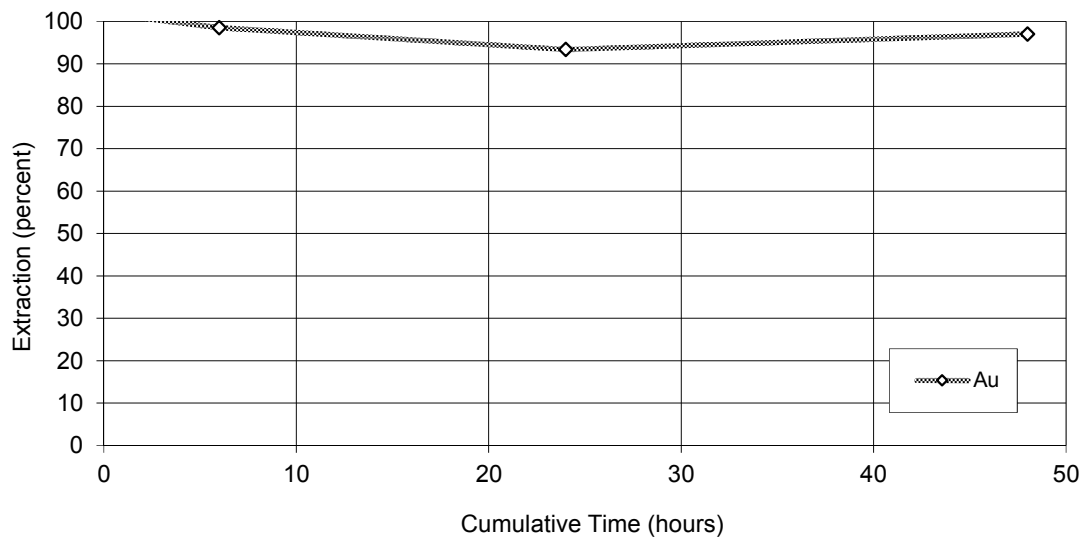
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.1 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-08 Test 01 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.34	100.8
Cyanide Liquor (6 hr)	6	4000	mL	0.33	98.6
Cyanide Liquor (24 hr)	24	4000	mL	0.31	93.4
Cyanide Liquor (48 hr)	48	4000	mL	0.32	97.0
Cyanidation Tails	-	1998	g	0.02	3.0
Calculated Feed		1998	g	0.68	100.0

Cyanide Leach Kinetic Curves



DATE: September 13, 2017

PROJECT NO: KM5448-09

PURPOSE: Preliminary Cyanide Leach Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 02 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.5	8.3
Leach 1	0	4.02	0.59	-	-	11.0	8.3
Leach 2	2	0.00	0.00	4.00	0.02	11.4	16.5
Leach 3	6	0.00	0.00	3.92	0.08	11.3	16.6
Leach 4	24	0.00	0.00	3.92	0.00	11.2	16.3
Leach 5	48	-	-	3.88	0.04	-	-
Total	48	4.02	0.59	3.88	0.14	-	-

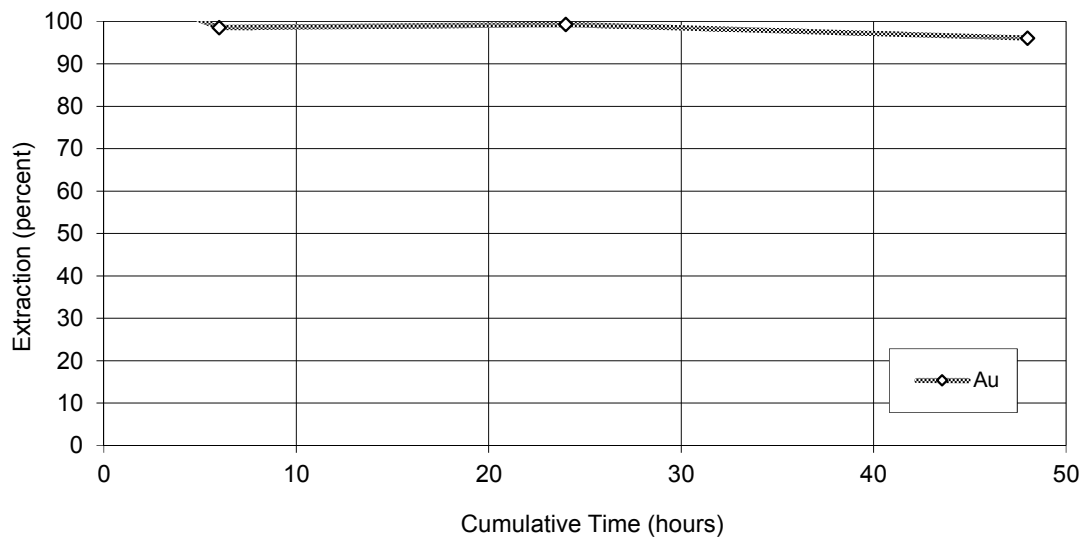
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.1 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-09 Test 02 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.27	105.6
Cyanide Liquor (6 hr)	6	4000	mL	0.25	98.5
Cyanide Liquor (24 hr)	24	4000	mL	0.25	99.3
Cyanide Liquor (48 hr)	48	4000	mL	0.24	96.1
Cyanidation Tails	-	2000	g	0.02	3.9
Calculated Feed		2000	g	0.51	100.0

Cyanide Leach Kinetic Curves



DATE: September 13, 2017

PROJECT NO: KM5448-10

PURPOSE: Duplicate Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 02 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.5	8.3
Leach 1	0	4.00	0.57	-	-	11.0	8.3
Leach 2	2	0.00	0.00	4.00	0.00	11.4	17.1
Leach 3	6	0.00	0.00	3.92	0.08	11.3	19.5
Leach 4	24	0.00	0.00	3.92	0.00	11.2	18.4
Leach 5	48	-	-	3.88	0.04	-	-
Total	48	4.00	0.57	3.88	0.12	-	-

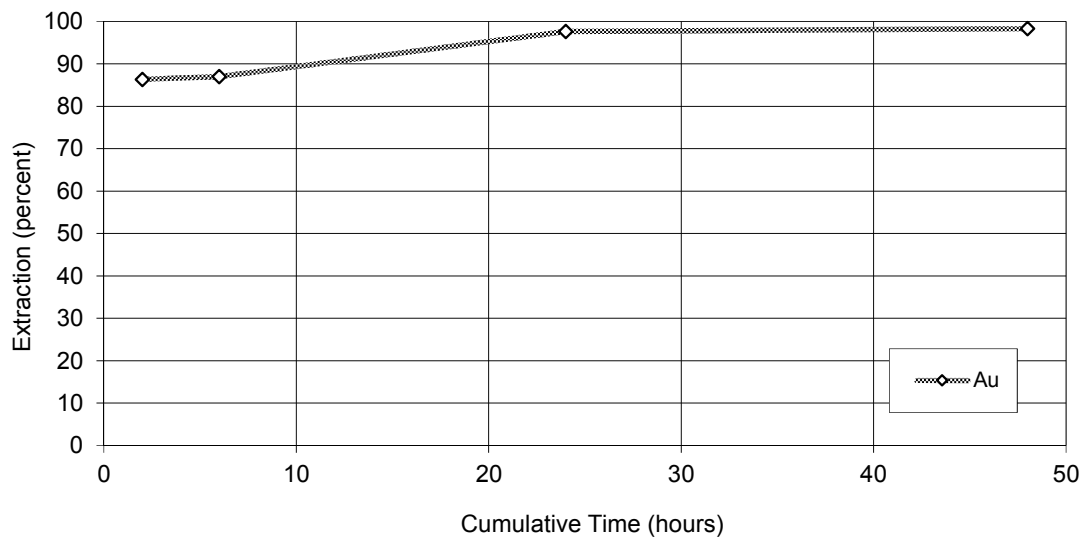
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.1 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-10 Test 02 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.26	86.4
Cyanide Liquor (6 hr)	6	4000	mL	0.26	87.0
Cyanide Liquor (24 hr)	24	4000	mL	0.29	97.6
Cyanide Liquor (48 hr)	48	4000	mL	0.29	98.3
Cyanidation Tails	-	2000	g	0.01	1.7
Calculated Feed		2000	g	0.60	100.0

Cyanide Leach Kinetic Curves



DATE: September 13, 2017

PROJECT NO: KM5448-11

PURPOSE: Preliminary Cyanide Leach Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 03 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.5	8.2
Leach 1	0	4.01	0.60	-	-	11.0	8.2
Leach 2	2	0.00	0.00	4.00	0.01	11.5	16.2
Leach 3	6	0.00	0.00	4.00	0.00	11.4	18.5
Leach 4	24	0.00	0.00	3.96	0.04	11.3	20.0
Leach 5	48	-	-	3.88	0.08	-	-
Total	48	4.01	0.60	3.88	0.13	-	-

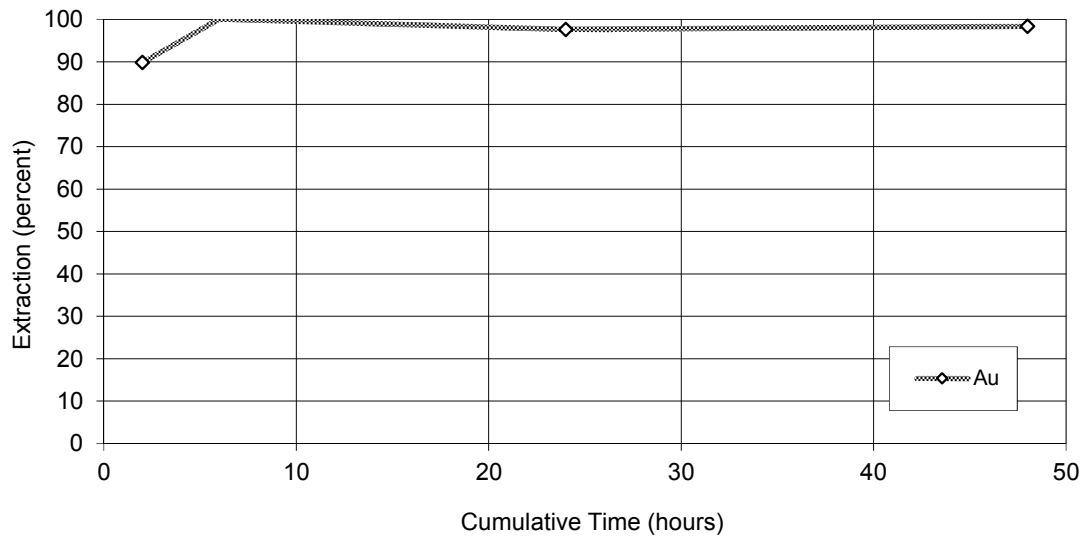
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.1 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-11 Test 03 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.28	89.8
Cyanide Liquor (6 hr)	6	4000	mL	0.31	100.1
Cyanide Liquor (24 hr)	24	4000	mL	0.30	97.7
Cyanide Liquor (48 hr)	48	4000	mL	0.30	98.4
Cyanidation Tails	-	2000	g	0.01	1.6
Calculated Feed		2000	g	0.62	100.0

Cyanide Leach Kinetic Curves



DATE: September 13, 2017

PROJECT NO: KM5448-12

PURPOSE: Duplicate Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 03 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.6	8.3
Leach 1	0	4.04	0.55	-	-	11.0	8.3
Leach 2	2	0.00	0.00	4.00	0.04	11.4	15.6
Leach 3	6	0.00	0.00	4.00	0.00	11.3	18.6
Leach 4	24	0.00	0.00	4.00	0.00	11.3	19.5
Leach 5	48	-	-	3.92	0.08	-	-
Total	48	4.04	0.55	3.92	0.12	-	-

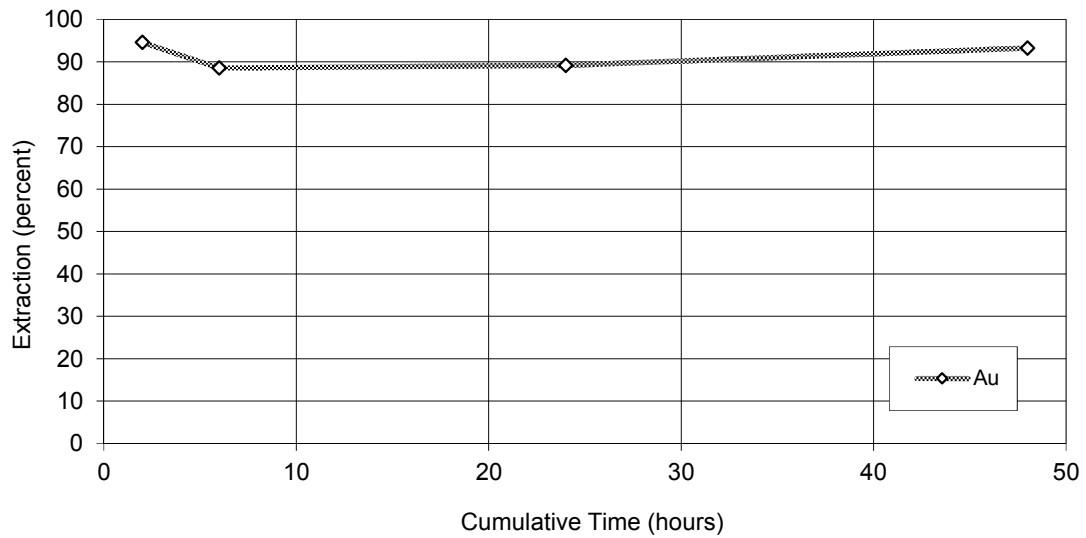
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.1 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-12 Test 03 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.28	94.6
Cyanide Liquor (6 hr)	6	4000	mL	0.26	88.5
Cyanide Liquor (24 hr)	24	4000	mL	0.26	89.2
Cyanide Liquor (48 hr)	48	4000	mL	0.27	93.2
Cyanidation Tails	-	2000	g	0.04	6.8
Calculated Feed		2000	g	0.59	100.0

Cyanide Leach Kinetic Curves



DATE: September 13, 2017

PROJECT NO: KM5448-13

PURPOSE: Preliminary Cyanide Leach Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 04 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.6	8.3
Leach 1	0	4.01	0.55	-	-	11.0	8.3
Leach 2	2	0.00	0.00	4.00	0.01	11.4	15.5
Leach 3	6	0.00	0.00	4.00	0.00	11.4	18.8
Leach 4	24	0.00	0.00	3.96	0.04	11.3	18.7
Leach 5	48	-	-	3.92	0.04	-	-
Total	48	4.01	0.55	3.92	0.09	-	-

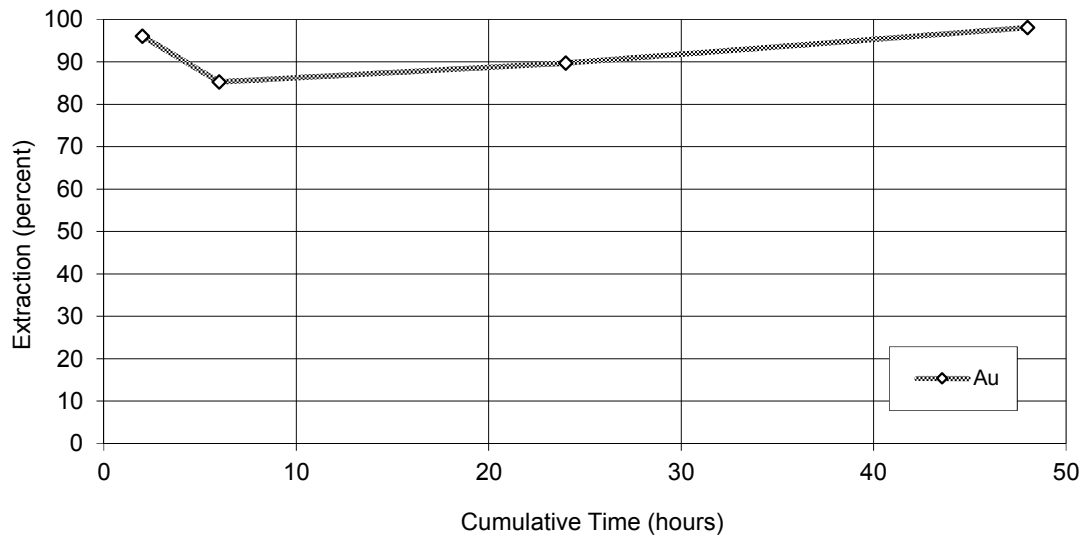
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.0 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-13 Test 04 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.25	96.1
Cyanide Liquor (6 hr)	6	4000	mL	0.22	85.3
Cyanide Liquor (24 hr)	24	4000	mL	0.23	89.7
Cyanide Liquor (48 hr)	48	4000	mL	0.25	98.1
Cyanidation Tails	-	2000	g	0.01	1.9
Calculated Feed		2000	g	0.52	100.0

Cyanide Leach Kinetic Curves



DATE: September 13, 2017

PROJECT NO: KM5448-14

PURPOSE: Duplicate Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 04 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.5	8.3
Leach 1	0	4.01	0.54	-	-	11.0	8.3
Leach 2	2	0.00	0.00	4.00	0.01	11.4	15.7
Leach 3	6	0.00	0.00	4.00	0.00	11.3	19.1
Leach 4	24	0.00	0.00	3.96	0.04	11.2	18.3
Leach 5	48	-	-	3.92	0.04	-	-
Total	48	4.01	0.54	3.92	0.09	-	-

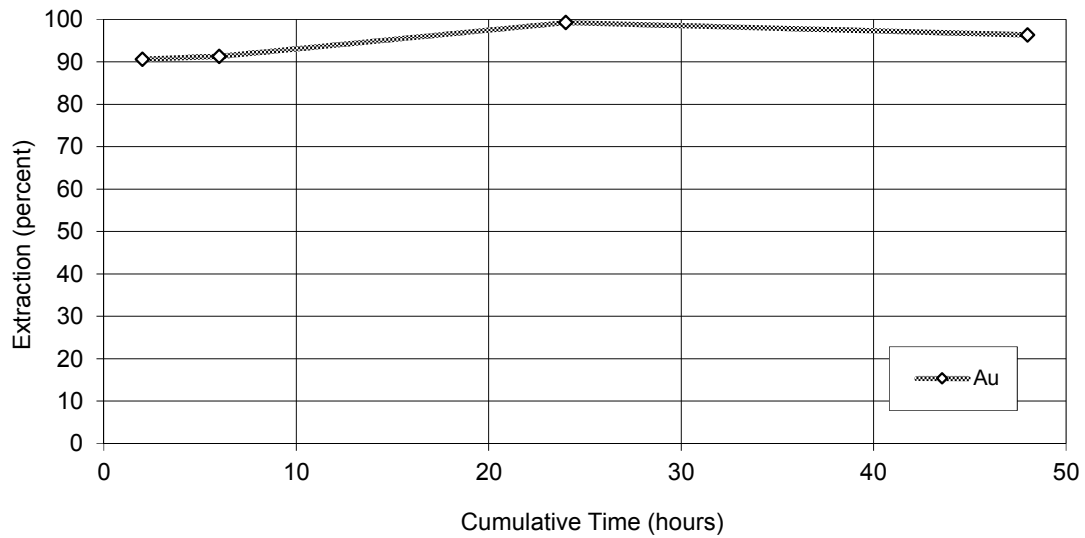
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.0 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-14 Test 04 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.25	90.7
Cyanide Liquor (6 hr)	6	4000	mL	0.25	91.3
Cyanide Liquor (24 hr)	24	4000	mL	0.27	99.3
Cyanide Liquor (48 hr)	48	4000	mL	0.26	96.4
Cyanidation Tails	-	2000	g	0.02	3.6
Calculated Feed		2000	g	0.55	100.0

Cyanide Leach Kinetic Curves



DATE: September 12, 2017

PROJECT NO: KM5448-15

PURPOSE: To Perform a Gravity Separation on Grind Calibration Rejects.

PROCEDURE: Perform a standard Knelson and Panning Procedure Using the 100g cone.

FEED: 4 kg of Composite 3 ground to a nominal 84 μ m K₈₀.

Stage	Inlet Pressure	Outlet Pressures		Time Minutes
		Start	Finish	
Grind				N/A
KN Separation 1	65	1.2	1.6	10

KM5448-15 Composite 3
Overall Metallurgical Balance

Product	Weight		Assay - g/tonne	Distribution - percent
	%	grams	Au	Au
Pan Con	0.15	5.7	428	57.6
Combined Grav Tail	99.9	3904.8	0.46	42.4
Feed	100	3910.5	1.08	100

DATE: September 18, 2017

PROJECT NO: KM5448-16

PURPOSE: Preliminary Cyanide Leach.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 15 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.4	8.7
Leach 1	0	4.02	0.55	-	-	11.0	8.7
Leach 2	2	0.00	0.00	4.00	0.02	11.2	14.9
Leach 3	6	0.00	0.00	4.00	0.00	11.1	14.7
Leach 4	24	0.00	0.00	4.00	0.00	11.2	14.9
Leach 5	48	-	-	4.00	0.00	-	-
Total	48	4.02	0.55	4.00	0.02	-	-

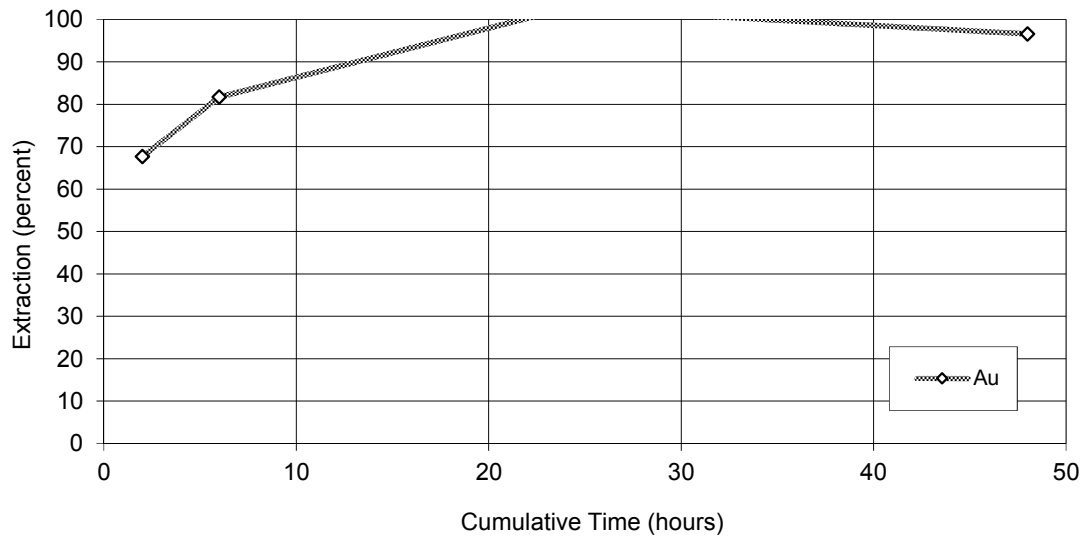
Mass of Sample	2000
Volume of Water	4000
Pulp Density	33

NaCN Consumption	0.0 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-16 Test 15 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	4000	mL	0.10	67.7
Cyanide Liquor (6 hr)	6	4000	mL	0.12	81.7
Cyanide Liquor (24 hr)	24	4000	mL	0.15	102.6
Cyanide Liquor (48 hr)	48	4000	mL	0.14	96.6
Cyanidation Tails	-	1998	g	0.01	3.4
Calculated Feed		1998	g	0.30	100.0

Cyanide Leach Kinetic Curves



DATE: September 18, 2017

PROJECT NO: KM5448-17

PURPOSE: Duplicate Test.

PROCEDURE: Standard bottle roll procedure. Agitate on rolls using cyanide and lime.
1000ppm cyanide, pH11, oxygen sparged.

SAMPLE: Test 15 Gravity Tails.

Parameter	Time Cum	Added (g)		Residual (g)	Consumed (g)	pH	Dissolved O ₂ (mg/L)
		NaCN	Lime	NaCN	NaCN		
Natural	-	-	-	-	-	8.4	8.7
Leach 1	0	4.02	0.45	-	-	11.0	8.7
Leach 2	2	0.00	0.00	4.01	0.01	11.2	19.0
Leach 3	6	0.00	0.00	4.01	0.00	11.1	18.2
Leach 4	24	0.00	0.00	4.00	0.01	11.2	16.7
Leach 5	48	-	-	4.00	0.00	-	-
Total	48	4.02	0.45	4.00	0.02	-	-

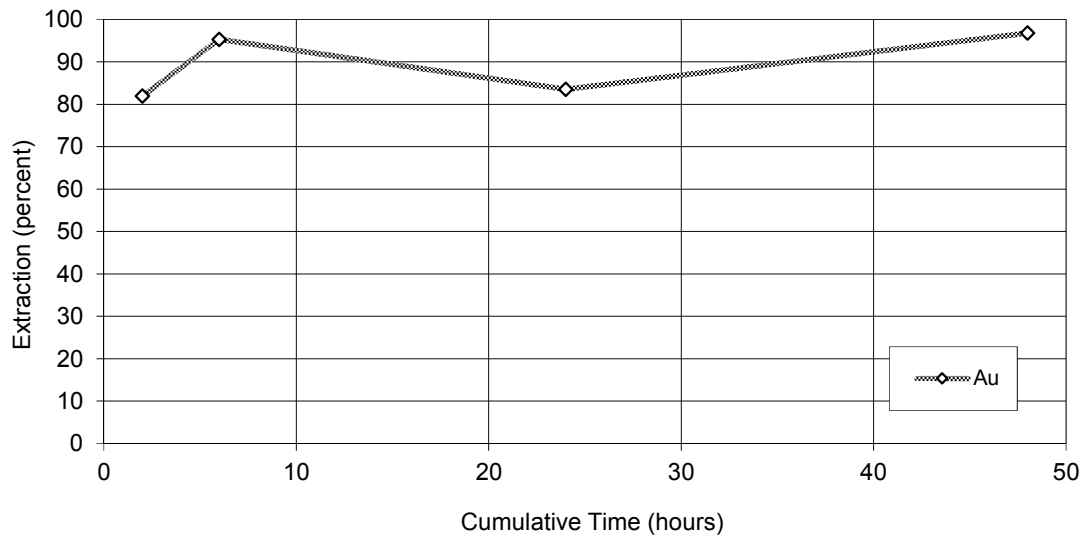
Mass of Sample	1700
Volume of Water	3400
Pulp Density	33

NaCN Consumption	0.0 kg/tonne
Lime Consumption	0.3 kg/tonne

KM5448-17 Test 15 Gravity Tails
Cumulative Metallurgical Balance

Product	Cumulative Time - Hrs	Volume or Mass	Units	Assay - g/tonne	Distribution - percent
				Au	Au
Cyanide Liquor (2 hr)	2	3400	mL	0.13	81.9
Cyanide Liquor (6 hr)	6	3400	mL	0.15	95.3
Cyanide Liquor (24 hr)	24	3400	mL	0.13	83.5
Cyanide Liquor (48 hr)	48	3400	mL	0.15	96.8
Cyanidation Tails	-	1712	g	0.01	3.2
Calculated Feed		1712	g	0.32	100.0

Cyanide Leach Kinetic Curves



APPENDIX III - KM5448

PARTICLE SIZING DATA

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<u>TABLE</u>		<u>μm K₈₀</u>	<u>PAGE</u>
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III-2	KM5448 Composite 3 - 18 Minute Grind	73	2
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III-5	KM5448 Composite 4 - 15 Minute Grind	82	5

TABLE III-1
SCREEN ANALYSIS
KM5448 Composite 3 - 15 Minute Grind Calibration

Product	Particle Size µm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	0.20	99.8
100 Mesh	150	4.10	95.7
150 Mesh	106	11.00	84.7
200 Mesh	75	14.00	70.7
270 Mesh	53	11.20	59.5
400 Mesh	38	11.50	48.0
TOTAL		100.00	**

K80= 95µm

Note: 15 min. grind calibration using 2 kg. Ore, 1000 ml water and
20 kg. of Mild Steel rods in Mill: M5

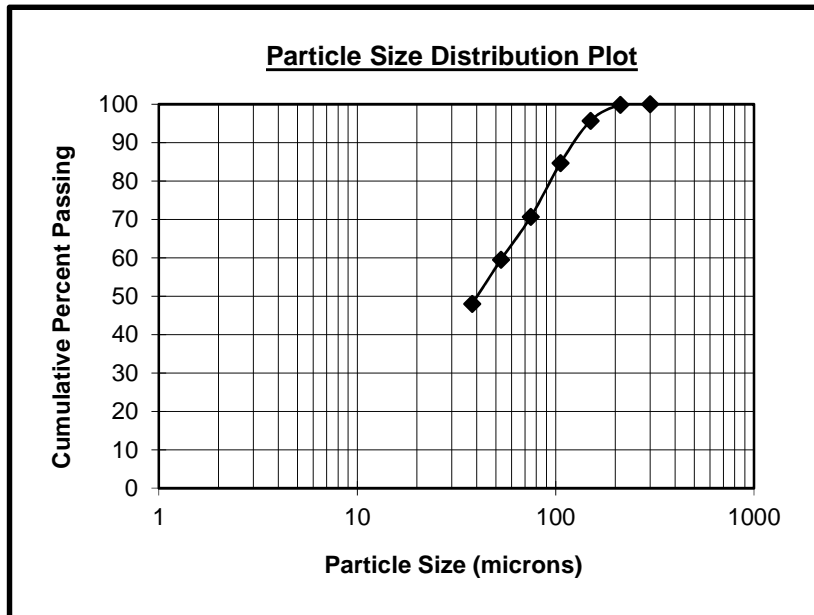


TABLE III-2
SCREEN ANALYSIS
KM5448 Composite 3 - 18 Minute Grind Calibration

Product	Particle Size μm	Weight % Retained	Cumulative % Passing
65 Mesh	212	0.00	100.0
100 Mesh	150	0.70	99.3
150 Mesh	106	6.50	92.8
200 Mesh	75	11.90	80.9
270 Mesh	53	12.30	68.6
400 Mesh	38	13.80	54.8
TOTAL		100.00	**

K80= 73 μm

Note: 18 min. grind calibration using 2 kg. Ore, 1500 ml water and
 20 kg. of Mild Steel rods in Mill: M5

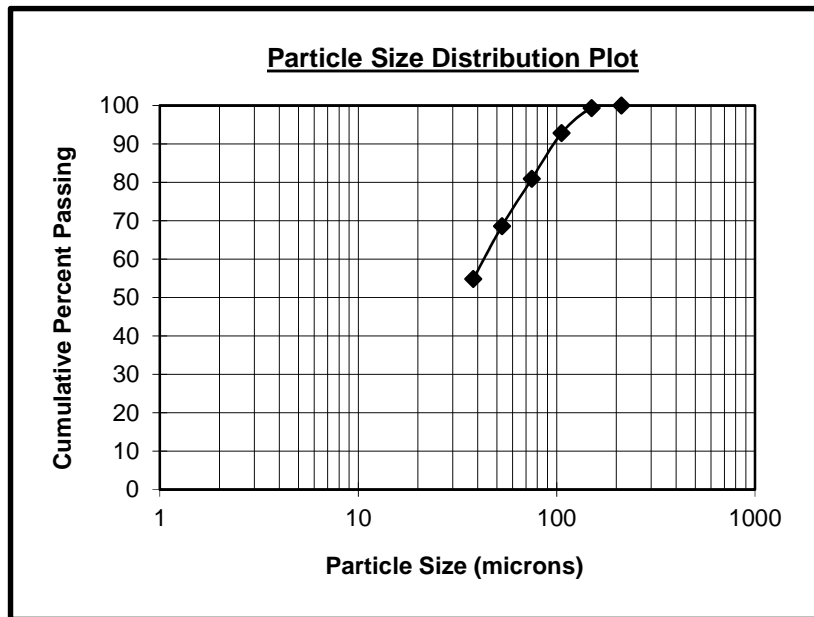


TABLE III-3
SCREEN ANALYSIS
KM5448 Composite 4 - 9 Minute Grind Calibration

Product	Particle Size μm	Weight % Retained	Cumulative % Passing
35 Mesh	425	0.00	100.0
48 Mesh	300	0.90	99.1
65 Mesh	212	10.00	89.1
100 Mesh	150	12.10	77.0
150 Mesh	106	12.40	64.6
200 Mesh	75	10.30	54.3
270 Mesh	53	8.40	45.9
400 Mesh	38	9.10	36.8
TOTAL		100.00	**

K80= 164 μm

Note: 9 min. grind calibration using 2 kg. Ore, 1500 ml water and
20 kg. of Mild Steel rods in Mill: M5

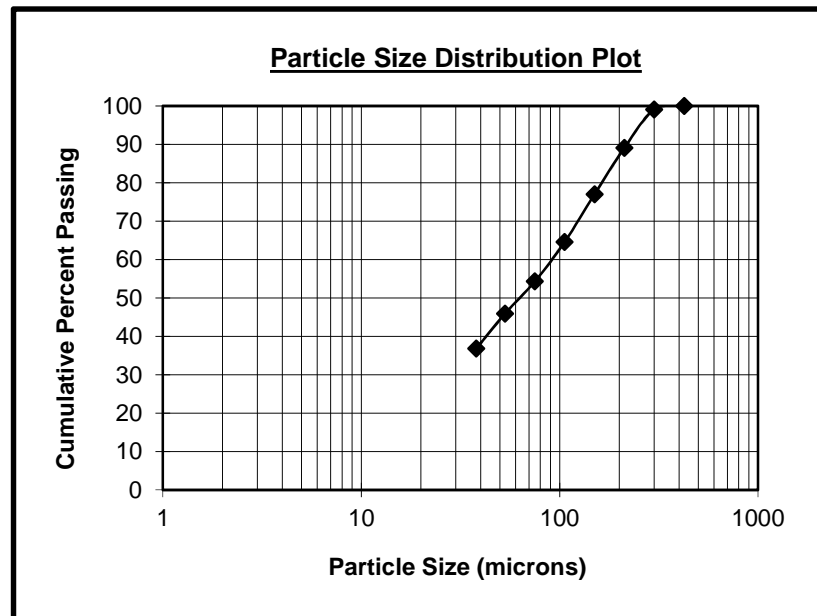


TABLE III-4
SCREEN ANALYSIS
KM5448 Composite 4 - 12 Minute Grind Calibration

Product	Particle Size μm	Weight % Retained	Cumulative % Passing
48 Mesh	300	0.00	100.0
65 Mesh	212	1.50	98.5
100 Mesh	150	8.00	90.5
150 Mesh	106	11.60	78.9
200 Mesh	75	13.20	65.7
270 Mesh	53	12.40	53.3
400 Mesh	38	9.90	43.4
TOTAL		100.00	**

K80= 110 μm

Note: 12 min. grind calibration using 2 kg. Ore, 1500 ml water and
 20 kg. of Mild Steel rods in Mill: M5

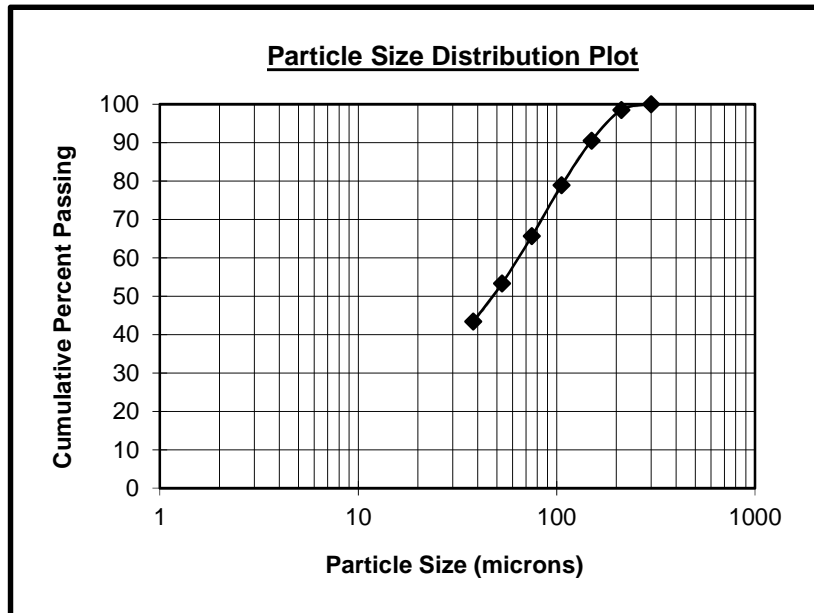
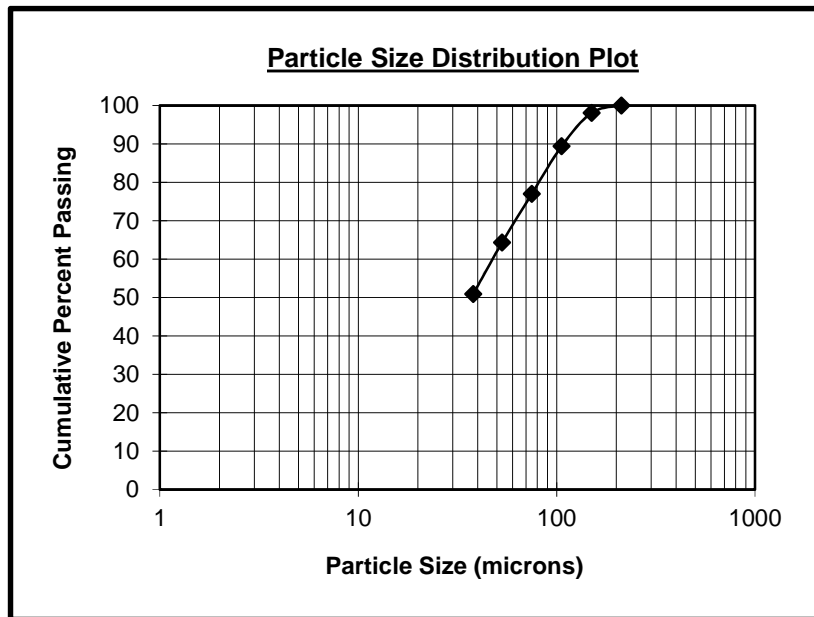


TABLE III-5
SCREEN ANALYSIS
KM5448 Composite 4 - 15 Minute Grind Calibration

Product	Particle Size μm	Weight % Retained	Cumulative % Passing
65 Mesh	212	0.00	100.0
100 Mesh	150	1.90	98.1
150 Mesh	106	8.70	89.4
200 Mesh	75	12.40	77.0
270 Mesh	53	12.70	64.3
400 Mesh	38	13.40	50.9
TOTAL		100.00	**

K80= 82 μm

Note: 15 min. grind calibration using 2 kg. Ore, 1000 ml water and
20 kg. of Mild Steel rods in Mill: M5



APPENDIX IV - KM5448

SPECIAL DATA

TABLE IV-1
REPLICATE HEAD ASSAY DATA

Sample	Assay - percent
	TOC
Comp 3 Hd 1	0.1
Comp 3 Hd 2	0.1
Average	0.1
Comp 4 Hd 1	0.1
Comp 4 Hd 2	0.1
Average	0.1

TABLE IV-2
METALLIC ASSAYS

Sample	Assay - g/tonne
	Au
Comp 3 - Metallic 1 +106	1.11
Cut #1 -106	0.43
Cut #2 -106	0.44
Total	0.49
Comp 3 - Metallic 2 +106	0.88
Cut #1 -106	0.68
Cut #2 -106	0.40
Total	0.56
Comp 4 - Metallic +106	2.90
Cut #1 -106	0.55
Cut #2 -106	0.67
Total	0.84
Comp 4 - Metallic 2 +106	3.57
Cut #1 -106	0.89
Cut #2 -106	1.07
Total	1.23