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GOLD FIELDS EXPLORATION PTY. LIMITED

METALLURGICAL INVESTIGATIONS

OF BEACONSFIELD GOLD DEPOSIT, TASMANIA

REPORT NO. 1

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INTRODUCTION

Exploration drilling by Gold Fields Exploration Pty Limited (GFEL), on the site of the old Beaconsfield gold mine, has intersected a gold reef. Preliminary assaying and mineralogy on drill core number B11 has been undertaken, and as a result of the findings three wedges from this hole were drilled through the reef. Two of them, B11A and B11C, were made available for the metallurgical testwork included in this report.

The preliminary testwork was designed to investigate the maximisation of gold recovery from the processes of flotation, roasting and cyanidation. A sample from wedge B11C was sent to Warman International for comparative grindability testwork, to determine the work index, and for a free gold determination.

The testwork was conducted at Mt. Lyell, and all assays were performed by the analytical laboratory at Mt. Lyell, except for the arsenic assays and the XRF scan which were carried out by Renison Limited.

SAMPLE MINERALISATION AND IDENTIFICATION

The drill core log sheets supplied by GFEL describe the mineralogy as comprising sulphides, which are primarily pyrite, chalcopyrite and arsenopyrite, in a quartz and carbonate framework. Native gold was observed in only one half metre section of B11A. Detailed mineralogy and gold occurrence observations are available only for hole B11.

The B11A wedge interval was from 691.7 metres to 700.8 metres and for B11C the interval was from 689.3 metres to 699 metres. The gold assays for the bulk samples were 9.3 gm/t for B11A and 11.9 gm/t for B11C, and the assays of other elements are shown in Tables 1 to 3.

TESTWORK PROCEDURES

Wedge B11A was the first received and was in the form of a somewhat broken and porous, but continuous, uncrushed core length. Although the wedge represented only nine metres it was decided to divide it into ten roughly equal samples to investigate variations within the reef. The samples were numbered from the top to the bottom of the wedge, and assay results are listed in Table 1. They highlight a wide variability in the distribution of the elements and to widen the scope of the testwork this characteristic was taken into consideration in planning the test programme.

The ten samples were combined into four sections for flotation tests, as shown in Table 2. Section 1 was high in all relevant elements except copper. Section 2 was the lowest in copper and gold and high only in iron. Section 3 had the highest copper assay and was higher also in iron and gold. Section 4 was low in all of the elements.

The samples were combined into the above sections after crushing to minus 10 mesh. After flotation tests on each of the sections a bulk sample of B11A was reconstituted according to the weight percentages of each of the samples. Tests were then conducted on this bulk sample.

Wedge B11C was also divided into ten samples which were crushed to minus 10 mesh and assayed. The results are shown in Table 3. However all of these samples were then recombined and tests were conducted on only the bulk sample.

Flotation tests were performed on all of the B11A sections, some of which were repeated, and on B11A and B11C bulk samples. The results of the tests are shown in Tables 5 to 18 and Tables 32 to 45. The majority of the tests were conducted with 2 kg feed sample, however two of the bulk tests were performed using a 10kg feed sample. The tests on section 3 feed and the B11A bulk feed recovered both a copper and a pyrite concentrate because of the relatively high copper feed assays. All of the other tests produced only a bulk sulphide concentrate.

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The wet grinding time for most of the samples was 30 minutes. Lime was added to the ball mill prior to copper flotation (except for Test 3 where it was added to the flotation cell) and the pH was reduced with sulphuric acid prior to pyrite flotation. Lime was not added in the bulk sulphide concentrate flotation tests which were performed at a natural pH. Cleaning tests were not performed on the rougher concentrates. The results shown for Test 14 are the results from two 2 kg tests, the concentrates and tailings of which were combined for assay, sizing and further testwork.

A summary of flotation procedure and reagent dosage is listed in Table 4. The major reagents used were SF323 (isopropyl ethyl thionocarbamate) for copper flotation and KAX (potassium amyl xanthate) for pyrite and bulk sulphide flotation. All of the products were assayed for copper, sulphur, iron, gold, silver and arsenic. The flotation tailings were also sized and assayed.

Cyanidation leaching of all of the flotation concentrates (prior to roasting) was performed and some of the flotation tailings were also cyanided. The results of all of the tests are contained in Tables 20 to 31. Varying feed weights, usually between 50 grams and 200 grams, were added to 500 mls of a 0.2% solution of sodium cyanide, the solution pH being adjusted to about 11.0, and the slurry was agitated on rolls. The cyanide concentration and the pH were measured after 1, 3, 6 and 24 (48) hours and adjusted back to 0.2% and 11.0 after 1, 3 and 6 (24) hours. Most of the samples were leached for 24 hours, but two were leached for 48 hours, and residue was washed and assayed.

An investigation of the effects of roasting prior to cyanide leaching was also conducted. Selected concentrates were roasted in a standard muffle furnace at temperatures between 400°C and 900°C for a total of four hours and were then weighed, washed and cyanided. Since there was insufficient sample for assaying after roasting the cyanidation feed grades were calculated from the flotation concentrates grades. Since the furnace used did not permit the circulation of air the samples were roasted for 2 hours, cooled and stirred, then roasted

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for a further 2 hours. A variation in the colour of some samples was often observed after only 2 hours roasting indicating that at this stage the reactions were incomplete. Most of the samples were roasted at the same temperature for the full 4 hours, but three were roasted at differing temperatures. The pyrite sample roasted at 900°C showed signs of sintering, and all subsequent tests were carried out at temperatures not exceeding 800°C. A bulk sulphide concentrate roasted at 900°C showed no sign of sintering. Some of the samples were also pulverized prior to roasting and cyanidation. The results of the roasting and cyanidation testwork is shown in Tables 23 to 36.

Two samples, one of each of the B11A and B11C bulk samples, were wet ground for sixty minutes, and without any prior concentration were cyanide leached and sized. The results are shown in Tables 19 and 20.

RESULTS

Overall the results show a high flotation recovery of gold and copper into the bulk sulphide or combined copper/pyrite concentrates, and high gold recoveries into cyanide solution when preceded by roasting of the pyritic flotation concentrates. The silver recoveries from flotation were almost as high as the gold recoveries, but silver recoveries from cyanidation were generally 30% to 50% lower than for gold. The results from both of the bulk 10 kg tests indicate overall gold and silver recoveries from flotation and roasting/cyanidation greater than 85% and 50% respectively.

The recovery of gold and silver to the flotation concentrates in all tests was higher than 89.2% and 73% respectively. In test 3, where lime was only added to the flotation cell after grinding, the gold and silver recoveries to the copper concentrate were 44.7% and 72.5% respectively. However in tests 7, 8 and 9, where lime was added to the ball mill, the average gold and silver recoveries to the copper concentrate were only 26% and 47.8% respectively. The gold and silver recoveries to the pyrite concentrate for test 3 were 52.8% and 24.3%

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respectively and the averages for tests 7, 8 and 9 were 68% and 45%. It is obvious that if both copper and pyrite concentrates are to be produced by flotation exhaustive investigations of gold recovery from pyrite will be essential.

The recovery of copper varied from 77.5% (samples with the lowest head grade had the lowest recovery) to 98.2% based upon a combined recovery into copper and pyrite concentrates. Copper recovery into copper concentrate was greater than 91% in three of the tests.

The samples in tests 10, 11 and 12 were ground in a laboratory ball mill for 25, 30 and 35 minutes respectively and all were floated under similar conditions. An increase of less than 2% in the gold recovery, from 92.9% to 94.6%, was obtained as the grind time was increased, and the percentage of minus 75 micron particles in tailings increased from 46.8% to 57.1%.

The 24 hour cyanidation of unroasted sulphide concentrates recovered 42.7% to 59.4% of the gold from B11A samples and 68.2% to 75.7% for B11C samples. When these samples were roasted at temperatures between 600°C and 900°C the recoveries increased to between 85.1% and 95%. The cyanide consumption of the unroasted samples was 2.3 kg/t to 6.3 kg/t, and after roasting it increased to between 3.2 kg/t and 11.2 kg/t.

The gold recoveries from the four copper concentrates which were cyanided varied from 87.1% to 92.5%, and this indicated a high free gold content. Cyanidation of the four unroasted pyrite concentrates produced by differential flotation recovered 28.6% to 50.6% of the gold with cyanide consumptions between 3.7 kg/t and 8.6 kg/t. Pyrite concentrates from three of the tests were roasted at 600°C, and the gold recovery increased to between 88.7% and 93.4%, with the cyanide consumptions increasing to between 7.7 kg/t and 24.6 kg/t.

The pyrite concentrate from test 9 was roasted at 600°C, 800°C and 900°C. As the temperature increased the recovery decreased from 91% to 82.4% to 74%. The cyanide consumption also decreased from 10.3 kg/t to 4.3 kg/t. The pyrite roasted at 900°C appeared to have sintered.

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The bulk sulphide concentrate from test 13 was roasted at 600°C and 800°C, and the gold recovery increased with increasing temperature from 94.1% to 95% with the cyanide consumption decreasing from 12.0 kg/t to 5 kg/t. The bulk sulphide concentrate from test 14 was roasted at temperatures of 600°C, 750°C and 900°C, and the gold recovery increased, with increasing temperature, from 88.3% to 90.8% to 92.8%. The cyanide consumption decreased from 8.4 kg/t to 5.5 kg/t to 3.2 kg/t.

The results of these three tests indicate that to maximise gold recovery a pyrite concentrate should be roasted at around 600°C and a bulk sulphide concentrate can be roasted at temperatures up to 900°C. However final conclusions cannot be drawn at this stage.

The recovery of silver from cyanidation prior to roasting ranged from 43.4% to 72.3% for all concentrates (except from two copper concentrates where the recoveries were 0% and 16.7%). After roasting at 600°C the recoveries decreased to between 36% and 68%. Six of the eleven samples roasted at 600°C showed an increase in silver recovery. The pyrite concentrate from test 9, which was roasted at 600°C, 800°C and 900°C, showed a reduced recovery with increasing temperature from 55.9% to 36.8% to 11.6%, i.e. a much greater reduction than for gold. The sulphide concentrate from test 1 was roasted at 600°C and 800°C and the silver recovery decreased with increasing temperature from 68% to 47.8%. The silver recovery from sulphide concentrates from test 14 also decreased from 56.8% to 36.6% to 52.1% as the roasting temperature was increased from 600°C to 750°C to 900°C. This is not an unusual phenomenon when roasting silver bearing concentrates.

The recovery of copper to solution prior to roasting varied from 0% to 25%. This was increased by roasting at 600°C to between 12% and 42%, which undoubtedly contributed to the higher cyanide consumptions associated with roasting.

Samples of several of the flotation tailings were cyanided, producing a wide variation in results. The gold recoveries varied between 1.7% and 83.4% (averaging 40% to 50%) and the silver recoveries were between 10% and 80%. However since the flotation recoveries were so high it should be possible to discard the tailings.

Sulphide concentrates from tests 1 and 5 were cyanided for both 24 and 48 hours. In both cases the cyanide consumptions increased and the silver recoveries increased, by 6% and 2% respectively. However for test 1 the gold recovery increased by 5% and decreased by 3% in test 5.

The bulk samples which were ground for 60 minutes and cyanided resulted in gold recoveries which were low compared with other results. For sample B11A the average gold and silver recoveries were 64.9% and 56.2% and for B11C were 72.3% and 63.4% respectively.

WARMAN INTERNATIONAL RESULTS

Five kilograms of the B11C bulk samples were sent to Warman International for comparative grindability tests and a free gold content determination.

A work index of 10.8 kWh per tonne was reported using a method devised by the Anaconda Research Centre using a laboratory ball mill with a known calibration factor. An accuracy of $\pm 5\%$ is claimed. Warman noted in their report that much of the ore was calcite which has a work index of about 11 kWh per tonne.

The free gold content of an ore sample which had been ground to 49.4% passing 75 microns was 22.9%.

SIGNIFICANT CONCLUSIONS

Analysis of the results from the test programme shows that acceptable gold, silver and copper recoveries can be obtained by adoption of the following metallurgical philosophy:-

1. Crushing and grinding.
2. Production of a gold/silver rich gravity concentrate, followed by amalgamation, retorting and smelting to bullion.
3. Differential flotation of gravity tailings for the production of a saleable copper concentrate and a pyrite concentrate.
4. Roasting of the pyrite concentrate, followed by cyanidation of the calcine and recovery of the gold and silver as bullion.

The indicated metallurgical balance is as follows:-

	<u>"As produced"</u>			<u>Roasted</u>		
	<u>pyrite concentrate</u>			<u>pyrite concentrate</u>		
	<u>% Cu</u>	<u>% Au</u>	<u>% Ag</u>	<u>% Cu</u>	<u>% Au</u>	<u>% Ag</u>
	<u>rec.</u>	<u>rec.</u>	<u>rec.</u>	<u>rec.</u>	<u>rec.</u>	<u>rec.</u>
Gravity concentrate	-	20.0	20.0	-	20.0	20.0
Copper concentrate	85	15.0	40.0	85	15.0	40.0
Pyrite concentrate	-	30.0	17.5	-	55.8	19.2
Tailings	15	35.0	22.5	15	9.2	20.8

Approximate reagent consumptions would be as below:-

- Lime for flotation : 1.0 kgm/tonne of ore
- Flotation collector : 0.05 kgm/tonne of ore
- Flotation frother : 0.05 kgm/tonne of ore
- Lime for cyanidation : 1.5 kgm/tonne of calcine
- Sodium cyanide : 8.5 kgm/tonne of calcine
- Power consumption : 75 kWh/tonne of ore

TABLE 1 : ANALYSES OF WEDGE B11A

SAMPLE	Wt %	% Cu	COPPER DIST.	% S	SULPHUR DIST.	% Fe	IRON DIST.	% Pb
1	11.0	0.07	4.1	11.2	39.6	19.31	17.8	0.01
2	9.5	0.035	1.7	3.9	11.9	14.81	11.8	0.01
3	10.0	0.022	1.1	2.0	6.4	9.76	8.1	0.05
4	12.8	0.009	0.6	3.0	12.3	13.48	14.4	< 0.01
5	10.8	0.004	0.2	0.6	2.1	12.47	11.3	< 0.01
6	7.8	0.019	0.8	0.4	1.0	12.40	8.1	< 0.01
7	9.9	0.49	25.7	0.9	2.9	12.58	10.4	0.01
8	11.2	1.00	59.3	4.4	15.8	13.96	13.1	0.03
9	8.1	0.025	1.1	0.9	2.3	1.88	1.3	< 0.01
10	8.9	0.114	5.4	2.0	5.7	4.96	3.7	0.01
TOTAL	100.0	0.19	100.0	3.1	100.0	11.95	100.0	

TABLE 1 (cont.) : ANALYSES OF WEDGE B11A

SAMPLE	Au (g/t)	GOLD DIST.	Ag (g/t)	SILVER DIST.	% As	ARSENIC DIST.	% Zn	ZINC DIST.
1	37.5	44.5	4.7	20.8	0.21	18.7	0.12	24.9
2	5.4	5.5	3.5	13.4	0.093	7.1	0.02	3.6
3	7.8	8.4	2.0	8.0	0.112	9.0	0.11	20.8
4	2.1	2.9	2.5	12.9	0.096	9.9	0.04	9.7
5	1.3	1.5	2.0	8.7	0.068	5.9	0.01	2.0
6	1.1	0.9	2.0	6.3	0.082	5.2	0.01	1.5
7	3.1	3.3	1.7	6.7	0.084	6.7	0.03	5.6
8	21.7	26.2	4.0	18.0	0.309	27.9	0.12	25.4
9	3.3	2.9	0.5	1.6	0.02	1.3	0.02	3.1
10	4.0	3.9	1.0	3.6	0.116	8.3	0.02	3.4
TOTAL	9.3	100.0	2.5	100.0	0.12	100.0	0.05	100.0

TABLE 2 : WEDGE B11A COMBINATIONS FOR TESTWORK

SECTION	SAMPLES	% Cu	COPPER DIST.	% S	SULPHUR DIST.	% Fe	IRON DIST.
1	1	0.07	4.1	11.2	39.6	19.3	17.8
2	2,3,4,5,6	0.017	4.4	2.06	33.7	12.6	53.7
3	7, 8	0.76	85.0	2.76	18.7	13.3	23.5
4	9, 10	0.07	6.5	1.5	8.0	3.5	5.0

TABLE 2 (continued)

SECTION	Au (g/t)	GOLD DIST.	Ag (g/t)	SILVER DIST.	% As	ARSENIC DIST.
1	37.5	44.5	4.7	20.8	0.21	18.7
2	3.5	19.2	2.4	49.3	0.09	37.1
3	13.0	29.5	2.9	24.7	0.20	34.6
4	3.7	6.8	0.76	5.2	0.07	9.6

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TABLE 3 : ANALYSES OF WEDGE B11C

SAMPLE	Wt %	% Cu	COPPER DIST.	% S	SULPHUR DIST.	% Fe	IRON DIST.	% Pb
1	9.60	0.011	1.5	3.3	11.8	4.8	4.8	0.01
2	9.12	0.013	1.7	3.9	13.2	6.0	5.8	< 0.01
3	9.35	0.016	2.1	8.0	27.9	14.3	14.1	0.02
4	9.56	0.012	1.6	2.8	10.0	11.8	11.9	0.02
5	9.80	0.008	1.1	1.5	5.5	7.0	7.2	< 0.01
6	9.85	0.033	4.6	1.4	5.1	10.0	10.4	0.02
7	9.38	0.015	2.0	1.6	5.6	12.3	12.1	< 0.01
8	9.70	0.027	3.7	1.2	4.3	12.3	12.6	< 0.01
9	10.11	0.480	68.5	2.0	7.5	11.3	12.0	< 0.01
10	13.53	0.069	13.2	1.8	9.1	6.4	9.1	< 0.01
TOTAL	100.0	0.071	100.0	2.7	100.0	9.5	100.0	

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TABLE 3 (cont.) : ANALYSES OF WEDGE B11C

SAMPLE	Au (g/t)	GOLD DIST.	Ag (g/t)	SILVER DIST.	% As	ARSENIC DIST.	% Zn	ZINC DIST.
1	7.6	6.1	1.4	7.4	1.1	27.2	0.21	24.3
2	8.8	6.7	1.4	7.0	0.9	21.2	0.25	27.5
3	42.0	33.0	5.7	29.3	0.2	4.8	0.11	12.4
4	18.0	14.5	2.9	15.2	0.1	2.5	0.12	13.8
5	7.2	5.9	1.0	5.4	0.1	2.5	0.03	3.5
6	3.9	3.2	0.6	3.3	0.2	5.1	0.02	2.4
7	2.6	2.1	0.4	2.1	0.2	4.8	0.02	2.3
8	2.6	2.1	0.4	2.1	0.3	7.5	<0.01	1.2
9	11.0	9.3	3.2	17.8	0.4	10.4	0.05	6.1
10	15.0	17.1	1.4	10.4	0.4	14.0	0.04	6.5
TOTAL	11.9	100.0	1.82	100.0	0.39	100.0	0.08	100.0

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TABLE 4 : PROCEDURES FOR FLOTATION TESTS

Test No.	1	2	3	4	5	6	7
Wedge	B11A						
Section No.	1	2	3	4	2	4	3
Feed Wt. (kg)	2	2	2	2	2	2	2
Lime add. (kg/t)	0.0	0.0	N.M.	0.0	0.0	0.0	2
Grind Time (min)	30	30	30	30	30	30	30
Flot. pH	8.1	8.8	11.2	8.5	8.8	8.75	12.2
<u>Concentrate</u>							
Copper			✓				✓
Pyrite			✓				✓
Bulk Sulphide	✓	✓		✓	✓	✓	
<u>Reagents</u>							
SF 323 (kg/t)	-	-	0.025	-	-	-	0.025
MIBC (kg/t)	-	-	0.017	-	-	-	0.024
H ₂ SO ₄ (kg/t)	-	-	N.M.	-	-	-	1.1
pH	-	-	5.5	-	-	-	9.2
KAX (kg/t)	0.05	0.05	0.10	0.05	0.05	0.05	0.05
MIBC (kg/t)	0.017	0.017	-	0.017	0.017	0.017	-
AF65 (kg/t)	-	-	0.042	-	-	-	0.021
404 (kg/t)	0.017	0.017	-	0.017	0.017	0.017	-

N.M.: Addition rate was not measured.

TABLE 4 (continued) : PROCEDURES FOR FLOTATION TESTS

Test No.	8	9	10	11	12	13	14
Wedge	B11A	B11A	B11C	B11C	B11C	B11C	B11A
Section No.	Bulk	Bulk	Bulk	Bulk	Bulk	Bulk	2
Feed Wt. (kg)	2	10	2	2	2	10	2 x 2
Lime add. (kg/t)	2	2	0.0	0.0	0.0	0.0	0.0
Grind Time (min)	30	30	25	30	35	30	30
Flot. pH	12.2	12.2	8.8	8.8	8.8	8.6	8.7
<u>Concentrate</u>							
Copper	✓	✓					
Pyrite	✓	✓					
Bulk Sulphide			✓	✓	✓	✓	✓
<u>Reagents</u>							
SF 323 (kg/t)	0.025	0.025	-	-	-	-	-
MIBC (kg/t)	0.024	0.024	-	-	-	-	-
H ₂ SO ₄ (kg/t)	1.3	N.M.	-	-	-	-	-
pH	8.7	9.0	-	-	-	-	-
KAX (kg/t)	0.05	0.05	0.05	0.05	0.05	0.05	0.05
MIBC (kg/t)	-	-	0.017	0.017	0.017	0.012	0.017
AF65 (kg/t)	0.021	0.021	-	-	-	-	-
404 (kg/t)	-	-	0.017	0.017	0.017	0.017	0.017

N.M.: Addition rate was not measured.

TABLE 5 : SECTION 1 TEST 1 FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Conc.	10	27.0	0.28	90.4	40.7	90.9	40.0	53.6	14.5	95.5	18	91.7	1.1	80.3
Tail		73.0	0.011	9.6	1.5	9.1	12.8	46.4	2.5	4.5	0.6	8.3	0.1	19.7
Calc. Head		100.0	0.08	100.0	12.1	100.0	20.1	100.0	41.0	100.0	5.3	100.0	0.37	100.0
Assay Head			0.07		11.2		19.3		37.5		4.7		0.21	

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TABLE 6 : SECTION 2 TEST 2 FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Conc.	12	10.3	0.12	77.5	18.8	91.5	23.4	18.8	44	91.0	7.3	80.7	1.28	71.0
Tail		89.7	0.004	22.5	0.2	8.5	11.6	81.2	0.5	9.0	0.2	19.3	0.06	29.0
Calc. Head		100.0	0.016	100.0	2.16	100.0	12.8	100.0	5.0	100.0	0.9	100.0	0.19	100.0
Assay Head			0.017		2.06		12.6		3.5		2.4		0.09	

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TABLE 7 : SECTION 3 TEST 3 FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Copper Conc.	6	10.3	5.88	92.4	10.3	31.3	22.1	15.6	58	44.7	18	72.5	0.7	17.6
Pyrite Conc.	4	7.5	0.47	5.4	27.7	61.4	31.0	15.9	94	52.8	8.3	24.3	3.4	62.3
Tail		82.2	0.018	2.2	0.3	7.3	12.2	68.5	0.4	2.5	0.1	3.2	0.1	20.1
Calc. Head		100.0	0.66	100.0	3.4	100.0	14.6	100.0	13.4	100.0	2.6	100.0	0.41	100.0
Assay			0.76		2.76		13.3		13.0		2.9		0.20	

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TABLE 8 : SECTION 4 TEST 4 FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Conc.	12	7.3	1.04	94.2	21.9	94.5	21.1	37.2	76	90.9	8.6	77.2	1.46	79.3
Tail		92.7	0.005	5.8	<0.1	5.5	2.8	62.8	0.6	9.1	0.2	22.8	0.03	20.7
Calc. Head		100.0	0.08	100.0	1.7	100.0	4.1	100.0	6.1	100.0	0.81	100.0	0.13	100.0
Assay			0.07		1.5		3.5		3.7		0.76		0.07	

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TABLE 9 : SECTION 2 TEST 5 FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Conc.	12	13.0	0.115	81.1	15.1	88.3	21.1	22.3	34	94.4	4.8	87.8	1.02	93.8
Tail		87.0	0.004	18.9	0.3	11.7	11.0	77.7	0.3	5.6	0.1	12.2	< 0.01	6.2
Calc. Head		100.0	0.018	100.0	2.2	100.0	12.3	100.0	4.7	100.0	0.7	100.0	0.14	100.0
Assay			0.017		2.06		12.6		3.5		2.4		0.09	

TABLE 10 : SECTION 4 TEST 6 FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Conc.	12	9.4	0.92	95.0	16.6	85.2	17.0	42.4	56	89.2	5.4	73.7	1.06	91.7
Tail		90.6	0.005	5.0	0.3	14.8	2.4	57.6	0.7	10.8	0.2	26.3	< 0.01	8.3
Calc. Head		100.0	0.09	100.0	1.8	100.0	3.8	100.0	5.9	100.0	0.7	100.0	0.11	100.0
Assay			0.07		1.5		3.5		3.7		0.76		0.07	

TABLE 11 : SECTION 3 TEST 7 FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Copper Conc.	6	5.7	10.87	85.4	15.2	26.8	20.0	9.0	55	25.4	20	51.4	0.75	11.0
Pyrite Conc.	4	6.6	1.23	11.2	33.2	67.8	32.7	17.0	130	69.6	15	44.6	3.90	66.4
Tail		87.7	0.028	3.4	0.2	5.4	10.7	74.0	0.7	5.0	0.1	4.0	0.10	22.6
Calc. Head		100.0	0.725	100.0	3.23	100.0	12.7	100.0	12.3	100.0	2.2	100.0	0.39	100.0
Assay			0.76		2.76		13.3		13.0		2.9		0.20	

TABLE 12 : TEST 8 B11A BULK (Reconstituted) FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Copper Conc.	7	6.8	2.36	91.0	5.8	10.9	13.0	7.5	39	26.6	9.7	44.7	0.38	11.6
Pyrite Conc.	5	8.3	0.12	5.6	35.6	82.0	32.8	23.2	76	63.2	7.8	43.8	1.76	65.5
Tail		84.9	0.007	3.4	0.3	7.1	9.6	69.3	1.2	10.2	0.2	11.5	0.06	22.9
Calc. Head			0.176		3.6		11.76		10.0		1.5		0.22	
Assay			0.19		3.1		11.95		9.3		2.5		0.12	

TABLE 13 : TEST 9 B11A BULK (Reconstituted) FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Copper Conc.	16	5.33	3.18	91.2	6.0	9.4	13.2	6.1	45	26.1	15	47.3	0.28	8.1
Pyrite Conc.	7	8.38	0.155	7.0	33.8	83.0	32.1	23.2	78	71.1	9.6	47.6	1.93	87.3
Tail		86.29	0.004	1.8	0.3	7.6	9.5	70.7	0.3	2.8	0.1	5.1	<0.01	4.6
Calc. Head		100.0	0.186	100.0	3.4	100.0	11.6	100.0	9.2	100.0	1.7	100.0	0.185	100.0
Assay			0.19		3.1		11.95		9.3		2.5		0.12	

025

TABLE 14 : TEST 10 B11C FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Conc.	8	10.8	0.48	89.3	24.1	90.7	24.2	25.9	119.0	92.9	16.0	90.6	2.40	64.5
Tail		89.2	0.007	10.7	0.3	9.3	8.4	74.1	1.1	7.1	0.2	9.4	0.16	35.5
Calc. Head		100.0	0.058	100.0	2.87	100.0	10.1	100.0	13.8	100.0	1.9	10.0	0.40	100.0
Assay			0.071		2.7		9.5		11.9		1.8		0.39	

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TABLE 15 : TEST 11 B11C FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Conc.	8	11.2	0.44	86.0	22.5	90.4	23.0	26.1	105	93.6	14	89.8	2.10	63.8
Tail		88.8	0.009	14.0	0.3	9.6	8.2	73.9	0.9	6.4	0.2	10.2	0.15	36.2
Calc. Head		100.0	0.057	100.0	2.79	100.0	9.86	100.0	12.6	100.0	1.7	100.0	0.37	100.0
Assay			0.071		2.7		9.5		11.9		1.8		0.39	

027

TABLE 16 : TEST 12 B11C FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Conc.	8	11.8	0.44	88.0	21.9	88.0	23.1	27.4	117	94.6	17.0	91.9	1.90	64.5
Tail		88.2	0.008	12.0	0.4	12.0	8.2	72.6	0.9	5.4	0.2	8.1	0.14	35.5
Calc. Head		100.0	0.059	100.0	2.9	100.0	10.0	100.0	14.6	100.0	2.2	100.0	0.35	100.0
Assay			0.071		2.7		9.5		11.9		1.8		0.39	

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TABLE 17 : TEST 13 B11C FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Conc.	16	12.5	0.55	95.2	19.8	87.6	22.2	27.7	89	93.4	14	95.2	1.86	93.0
Tail		87.5	0.004	4.8	0.4	12.4	8.3	72.3	0.9	6.6	0.1	4.8	0.02	7.0
Calc. Head		100.0	0.072	100.0	2.8	100.0	10.0	100.0	11.9	100.0	1.8	100.0	0.25	100.0
Assay			0.071		2.7		9.5		11.9		1.8		0.39	

TABLE 18 : TEST 14 B11A SECTION 2 FLOTATION RESULTS

	Time (Mins)	Wt. %	% Cu	Cu Dist.	% S	S Dist.	% Fe	Fe Dist.	Au (g/t)	Au Dist.	Ag (g/t)	Ag Dist.	% As	As Dist.
Conc.	10	11.7	0.12	79.9	16.6	88.0	20.5	19.9	45	95.2	7.0	93.0	0.94	92.6
Tail		88.3	0.004	20.1	0.3	12.0	10.9	80.1	0.3	4.8	0.07	7.0	<0.01	7.4
Calc. Head		100.0	0.017	100.0	2.2	100.0	12.0	100.0	5.5	100.0	0.88	100.0	0.12	100.0
Assay			0.017		2.06		12.6		3.5		2.4		0.09	

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TABLE 19 : Size Distributions for a 60 minute grind
for samples B11A Bulk (Reconstituted) and
B11C Bulk

Sample	B11A		B11C	
	Wt % retained	Cumulative Wt % passing	Wt % retained	Cumulative Wt % passing
212	0.1	99.9	0.2	99.8
150	1.5	98.4	1.8	98.0
106	8.1	90.3	8.9	89.1
75	13.8	76.5	14.3	74.8
53	15.1	61.4	15.3	59.5
38	14.2	47.2	13.4	46.1
0	47.2	0.0	46.1	0.0

TABLE 20 : Results of Cyanide Leaching of Bulk Samples following a 60 minute grind

Wedge No.	B11A	B11A	B11C	B11C
Initial wt solids (gms)	200	200	200	200
Cyanide volume (mls)	500	500	500	500
Initial pH	10.9	11.0	11.1	11.0
Wt loss (%)	0.7	0.65	0.6	0.45
% Cyanide : 0 hrs	0.2	0.2	0.2	0.2
: 1 hr	0.178	0.18	0.18	0.186
: 3 hrs	0.188	0.19	0.19	0.196
: 6 hrs	0.186	0.19	0.192	0.194
: 24 hrs	0.154	0.15	0.168	0.168
NaCN consumption (kg/t)	2.1	2.0	1.4	1.1
Lime consumption (kg/t)	0.7	0.7	0.7	0.8
% Au leached	62.9	66.9	71.0	73.5
% Ag leached	53.3	59.1	63.4	63.3
% Cu leached	8.5	7.5	7.4	10.0
% As leached	0.0	>94.2	0.0	0.0

TABLE 21 : Results of Cyanide Leaching of Sulphide Concentrates
from wedge B11A

Section No.	1	1	1	1	2	4
Test No.	1	1	1	1	2	4
Roasted Temperature °C	No	No	Yes 600	No	No	No
Initial wt solids (gms)	200	39.3	39.3	141.7	100	100*
Cyanide volume (mls)	500	500	500	500	500	500
Initial pH	11.2	11.1	11.1	11.1	11.0	11.1
Wt loss (%)	<1	1.8	5.1	1.3	2.9	1.3
% Cyanide : 0 hrs	0.2	0.2	0.2	0.2	0.2	0.2
: 1 hr	0.18	0.196	0.156	0.178	0.168	0.178
: 3 hrs	0.176	0.18	0.188	0.168	0.18	0.186
: 6 hrs	0.186	0.196	0.194	0.186	0.172	0.186
: 24 hrs	0.162	0.18	0.18	0.168	0.146	0.144
: 48 hrs	-	-	-	0.164	-	-
NaCN consumption (kg/t)	2.3	5.4	9.1	3.8	6.3	5.6
Lime consumption (kg/t)	2.1	2.6	2.6	1.9	2.0	1.0
% Au leached	55.4	56	95	60.5	47	57
% Ag leached	65	66.2	65.5	71.5	53.5	54.1
% Cu leached	23.6	24.9	42	23.1	21.5	0.0
% As leached	11.8	9.8	40.7T	14.7	6.7	8.1

* Note that this feed was pulverised.

T Due to the combined effect of roasting and leaching.

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TABLE 21 (continued) : Results of Cyanide Leaching of Sulphide Concentrates from wedge B11A

Section No. Test No. Roasted Temperature °C	2 5 No	2 5 Yes 600	2 5 No	4 6 No	4 6 Yes 600
Initial wt solids (gms)	47.2	47.2	98	48.9	48.9
Cyanide volume (mls)	500	500	500	500	500
Initial pH	10.9	11.0	11.0	11.0	11.1
Wt loss (%)	2.5	11.7	2.7	1.8	1.2
% Cyanide : 0 hrs	0.2	0.2	0.2	0.2	0.2
: 1 hr	0.192	0.166	0.196	0.192	0.174
: 3 hrs	0.19	0.192	0.176	0.198	0.186
: 6 hrs	0.194	0.194	0.194	0.192	0.182
: 24 hrs	0.18	0.184	0.168	0.172	0.15
: 48 hrs	-	-	0.154	-	-
NaCN consumption (kg/t)	3.8	5.4	4.7	4.8	11.2
Lime consumption (kg/t)	2.2	2.9	2.1	1.8	1.2
% Au leached	42.7	85.1	39.9	59.4	90.1
% Ag leached	41.1	52.2	43.2	48.8	36.0
% Cu leached	21.2	24.4	19.6	21.6	37.8
% As leached	0.0	18.2*	0.7	5.9	24.5*

* Due to the combined effect of roasting and leaching.

TABLE 21 (continued) : Results of Cyanide Leaching of Sulphide Concentrates from wedge B11A

Section No. Test No. Concentrate Roasted Temperature °C	3 3 Copper No	3 7 Copper No	3 3 Pyrite No	3 7 Pyrite No	3 7 Pyrite Yes 600
Initial wt solids (gms)	100	73.4	100	33.2	33.2
Cyanide volume (mls)	500	500	500	500	500
Initial pH	11.1	11.1	11.9	11.2	11.2
Wt loss (%)	<1	2.7	<1	4.1	8.1
% Cyanide : 0 hrs	0.2	0.2	0.2	0.2	0.2
: 1 hr	0.166	0.162	0.192	0.196	0.1
: 3 hrs	0.162	0.162	0.194	0.194	0.17
: 6 hrs	0.154	0.154	0.18	0.19	0.186
: 24 hrs	0.06	0.082	0.162	0.164	0.174
NaCN consumption (kg/t)	12.7	16.3	3.7	8.6	24.6
Lime consumption (kg/t)	1.4	0.7	3.0	1.0	1.1
% Au leached	87.1	88.5	43.6	50.6	93.4
% Ag leached	16.7	0.0	43.4	57.1	55.3
% Cu leached	0.0	0.0	5.7	11.1	34.7
% As leached	12.9	0.13	0.0	11.4	77.3*

* Due to the combined effect of roasting and cyanidation.

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TABLE 22 : Results of Cyanide Leaching of Flotation Tailings from wedge B11A

Section No. Test No.	1 1	2 2	3 3	4 4
Initial wt solids (gms)	200	200	200	200
Cyanide volume (mls)	500	500	500	500
Initial pH	11.0	11.4	11.0	11.2
Wt loss (%)	<1	<1	<1	<1
% Cyanide : 0 hrs	0.2	0.2	0.2	0.2
: 1 hr	0.184	0.194	0.192	0.194
: 3 hrs	0.198	0.198	0.198	0.196
: 6 hrs	0.196	0.196	0.198	0.192
: 24 hrs	0.172	0.17	0.184	0.17
NaCN consumption (kg/t)	1.1	1.1	0.7	1.0
Lime consumption (kg/t)	0.8	0.5	0.8	0.4
% Au leached	36	40	50	66.7
% Ag leached	50	55	10	80
% Cu leached	27.3	0.0	27.8	0.0

036

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TABLE 23 : Results of Cyanidation of Test 8 Flotation Products from reconstituted wedge B11A

Concentrate Roasted Temperature	Copper No	Pyrite No	Pyrite Yes 600	Tailings No
Initial wt solids (gms)	88.3	42.7	42.7	200
Cyanide volume (mls)	500	500	500	500
Initial pH	10.9	11.1	11.0	11.0
Wt loss (%)	3.6	3.0	6.3	0.6
% Cyanide : 0 hrs	0.2	0.2	0.2	0.2
: 1 hr	0.172	0.194	0.152	0.19
: 3 hrs	0.178	0.196	0.184	0.2
: 6 hrs	0.162	0.196	0.194	0.196
: 24 hrs	0.114	0.178	0.196	0.174
NaCN consumption (kg/t)	9.3	4.3	7.7	0.98
Lime consumption (kg/t)	1.7	2.0	2.6	0.4
% Au leached	88.1	28.6	88.7	83.4
% Ag leached	44.4	44.1	45.7	80.1
% Cu leached	2.8	11.1	27.1	0.6
% As leached	11.2	0.0	58.7*	N.A.

* Due to the combined effect of roasting and cyanidation
N.A. Sample was not assayed for As.

037

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TABLE 24 : Results of Cyanide Leaching of Test 9
Flotation Products from reconstituted wedge B11A

Concentrate Pulverized	Copper No	Copper Yes	Pyrite No	Pyrite Yes	Tailings No
Initial wt solids (gms)	100.5	100.5	53	50	200
Cyanide volume (mls)	500	500	500	500	500
Initial pH	11.2	11.0	11.1	11.1	11.3
Wt loss (%)	3.6	2.6	1.1	1.8	1.7
% Cyanide : 0 hrs	0.2	0.2	0.2	0.2	0.2
: 1 hr	0.15	0.116	0.182	0.18	0.186
: 3 hrs	0.172	0.14	0.198	0.186	0.194
: 6 hrs	0.17	0.146	0.196	0.192	0.196
: 24 hrs	0.08	0.056	0.172	0.162	0.16
NaCN consumption (kg/t)	11.4	16.7	4.3	7.7	1.6
Lime consumption (kg/t)	0.3	0.9	1.9	2.5	0.0
% Au leached	92.1	93.1	32.8	45.9	1.7
% Ag leached	47.9	49.3	52.6	67.3	41.0
% Cu leached	10.3	9.3	5.6	43.6	0.0
% As leached	10.5	9.5	4.7	6.9	0.0

TABLE 25 : Results of Cyanide Leaching of Test 9 Pyrite Concentrate from reconstituted wedge B11A

Pulverized Roasted Temperature °C	No	Yes	No	Yes	No
	Yes 600	Yes 600	Yes 800	Yes 800	Yes 900
Initial wt solids (gms)	53	49.5	53.5	50.6	53.7
Cyanide volume (mls)	500	500	500	500	500
Initial pH	10.95	11.0	11.1	11.0	11.1
Wt loss (%)	5.8	3.4	4.9	4.3	5.0
% Cyanide : 0 hrs	0.2	0.2	0.2	0.2	0.2
: 1 hr	0.136	0.166	0.184	0.188	0.188
: 3 hrs	0.19	0.186	0.192	0.2	0.19
: 6 hrs	0.19	0.194	0.194	0.198	0.196
: 24 hrs	0.164	0.154	0.178	0.184	0.174
NaCN consumption (kg/t)	10.3	9.7	4.9	3.1	4.3
Lime consumption (kg/t)	1.9	1.7	0.0	1.0	1.3
% Au leached	91.0	85.7	82.4	83.9	74.0
% Ag leached	55.9	41.4	36.8	21.4	11.6
% Cu leached	32.7	11.5	12.9	2.7	13.9
% As leached	67.9*	37.4*	64.5*	32.3*	67.9*

* Due to the combined effect of roasting and cyanidation.

039

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TABLE 26 : Results of Cyanide Leaching of Test 10
Flotation Products from wedge B11C

Flotation Product Roasted Temperature °C	S. Conc.	S. Conc.	Tailings No
	No	Yes 400°C/2hrs 600°C/2hrs	
Initial wt solids (gms)	50.2	50.2	200
Cyanide volume (mls)	500	500	500
Initial pH	11.0	11.0	11.0
Wt loss (%)	1.8	6.4	0.6
% Cyanide : 0 hrs	0.2	0.2	0.2
: 1 hr	0.186	0.132	0.19
: 3 hrs	0.196	0.164	0.196
: 6 hrs	0.19	0.18	0.198
: 24 hrs	0.17	0.16	0.176
NaCN consumption (kg/t)	5.5	13.8	1.0
Lime consumption (kg/t)	1.4	3.0	0.5
% Au leached	71.1	93.9	54.8
% Ag leached	63.2	58.4	55.2
% Cu leached	0.0	12.0	14.8
% As leached	0.0	51.8*	N.A.

* Due to the combined effect of roasting and cyanidation.
N.A. The residue was not assayed for arsenic.

040

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TABLE 27 : Results of Cyanide Leaching of Test 11
Flotation Products from wedge B11C

Flotation Product Roasted Temperature °C	S. Conc. No	S. Conc. Yes 500°C/2hrs 600°C/2hrs	Tailings No
Initial wt solids (gms)	55.3	55.3	200
Cyanide volume (mls)	500	500	500
Initial pH	10.95	10.95	10.9
Wt loss (%)	1.8	4.2	0.65
% Cyanide : 0 hrs	0.2	0.2	0.2
: 1 hr	0.19	0.144	1.88
: 3 hrs	0.196	0.166	0.194
: 6 hrs	0.196	0.176	0.198
: 24 hrs	0.164	0.156	0.176
NaCN consumption (kg/t)	4.5	14.2	1.0
Lime consumption (kg/t)	2.2	0.9	0.6
% Au leached	71.0	92.5	44.8
% Ag leached	61.4	48.7	50.3
% Cu leached	1.8	28.2	33.8
% As leached	0.0	40.8*	N.A.

* Due to the combined effect of roasting and cyanidation.
N.A. The residue was not assayed for arsenic.

TABLE 28 : Results of Cyanide Leaching of Test 12
Flotation Products from wedge B11C

Flotation Product Roasted Temperature °C	S. Conc. No	S. Conc. Yes 600°C/2hrs 600°C/2hrs	Tailings No
Initial wt solids (gms)	54.7	54.7	200
Cyanide volume (mls)	500	500	500
Initial pH	11.0	11.1	11.0
Wt loss (%)	1.8	7.5	0.6
% Cyanide : 0 hrs	0.2	0.2	0.2
: 1 hr	0.19	0.174	0.19
: 3 hrs	0.194	0.176	0.194
: 6 hrs	0.194	0.198	0.192
: 24 hrs	0.17	0.156	0.176
NaCN consumption (kg/t)	4.3	8.0	0.96
Lime consumption (kg/t)	1.9	2.7	0.7
% Au leached	75.7	94.4	55.8
% Ag leached	72.3	67.1	60.2
% Cu leached	0.0	22.9	25.5
% As leached	0.0	37.2*	N.A.

* Due to the combined effect of roasting and cyanidation.
N.A. The residue was not assayed for arsenic.

TABLE 29 : Results of Cyanide Leaching of T13
Flotation Products from wedge B11C

Flotation Product Pulverised	S. Conc. No	S. Conc. Yes	Tailings No
Initial wt solids (gms)	55	50.4	200
Cyanide volume (mls)	500	500	500
Initial pH	10.95	10.95	11.4
Wt loss (%)	2.4	2.4	0.75
% Cyanide : 0 hrs	0.2	0.2	0.2
: 1 hr	0.188	0.176	0.192
: 3 hrs	0.194	0.188	0.192
: 6 hrs	0.194	0.184	0.192
: 24 hrs	0.164	0.142	0.164
NaCN consumption (kg/t)	5.1	10.7	1.5
Lime consumption (kg/t)	2.0	1.6	0.0
% Au leached	68.2	71.5	44.9
% Ag leached	67.9	72.8	10.7
% Cu leached	16.6	27.2	0.0
% As leached	3.4	3.4	N.A.

N.A. The residue was not assayed for arsenic.

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TABLE 30 : Results of Cyanide Leaching of T13 Sulphide Concentrate from wedge B11C

Pulverized Roasted Temperature (°C)	No Yes 600	Yes Yes 600	No Yes 800	Yes Yes 800
Initial wt solids (gms)	55	52.3	54.9	50.4
Cyanide volume (mls)	500	500	500	500
Initial pH	10.9	11.0	11.0	11.2
Wt loss (%)	9.6	8.6	8.9	7.5
% Cyanide : 0 hrs	0.2	0.2	0.2	0.2
: 1 hr	0.134	0.162	0.178	0.184
: 3 hrs	0.172	0.186	0.188	0.196
: 6 hrs	0.18	0.186	0.196	0.196
: 24 hrs	0.156	0.158	0.18	0.172
NaCN consumption (kg/t)	12.0	9.6	5.0	5.2
Lime consumption (kg/t)	3.1	2.6	1.7	1.1
% Au leached	94.1	93.9	95.0	95.2
% Ag leached	68.0	61.8	47.8	40.2
% Cu leached	37.7	17.0	26.2	11.1
% As leached	39.0*	29.2*	39.6*	16.9*

* Due to the combined effect of roasting and leaching

TABLE 31 : Results of Cyanide Leaching of Sulphide Concentrates from wedge B11A (Section 2)

Roasted Temperature °C	No	Yes 600	No	Yes 750	No	Yes 900
Initial wt solids (gms)	53.8	53.8	57	57	56.8	56.8
Cyanide volume (mls)	500	500	500	500	500	500
Initial pH	11.0	11.0	11.1	10.95	11.0	11.0
Wt loss (%)	1.5	8.7	3.9	8.6	2.5	6.3
% Cyanide : 0 hrs	0.2	0.2	0.2	0.2	0.2	0.2
: 1 hr	0.19	0.152	0.192	0.148	0.19	0.182
: 3 hrs	0.196	0.18	0.19	0.178	0.196	0.188
: 6 hrs	0.194	0.19	0.194	0.198	0.2	0.196
: 24 hrs	0.174	0.164	0.172	0.198	0.176	0.186
NaCN consumption (kg/t)	3.3	8.4	4.4	5.5	3.0	3.2
Lime consumption (kg/t)	2.8	3.8	1.8	3.0	2.1	2.7
% Au leached	51.8	88.3	53.0	90.8	50.1	92.8
% Ag leached	49.3	56.8	49.2	36.6	47.1	52.1
% Cu leached	19.5	24.5	18.3	0.0	15.5	0.0
% As leached	0.0	4.9*	0.0	0.0	0.0	0.0

* Due to the combined effect of roasting and leaching.

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TABLE 32 : TEST 1 FLOTATION TAILINGS DATA

SIZE (UM)	WTZ RET.	WTZ PASS.	%CU RET.	CUM.%CU PASSING	CU DIST.	CUM.DIST PASSING
212	1.80	98.20	0.000	0.011	0.00	100.00
150	7.80	90.40	0.011	0.010	10.06	89.94
106	15.20	75.20	0.008	0.011	11.58	78.37
75	14.50	60.70	0.007	0.012	9.66	68.70
53	12.30	48.40	0.005	0.014	5.86	62.85
38	10.40	38.00	0.005	0.016	4.95	57.89
0	38.00	0.00	0.016	0.000	57.89	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%Fe RET.	CUM.%Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	1.80	98.20	0.0	12.69	0.00	100.00
150	7.80	90.40	11.6	12.80	8.77	91.23
106	15.20	75.20	11.9	12.99	14.25	76.98
75	14.50	60.70	11.8	13.27	13.48	63.50
53	12.30	48.40	11.9	13.62	11.53	51.96
38	10.40	38.00	11.9	14.10	9.75	42.21
0	38.00	0.00	14.1	0.00	42.21	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
212	1.80	98.20	0.0	1.36	0.00	100.00
150	7.80	90.40	1.1	1.39	7.77	92.23
106	15.20	75.20	0.8	1.51	8.95	83.28
75	14.50	60.70	0.7	1.70	7.47	75.81
53	12.30	48.40	0.4	2.03	3.62	72.19
38	10.40	38.00	0.3	2.50	2.30	69.90
0	38.00	0.00	2.5	0.00	69.90	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	24.80	75.20	2.2	2.40	22.75	77.25
38	37.20	38.00	1.2	3.70	18.62	58.63
0	38.00	0.00	3.7	0.00	58.63	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	24.80	75.20	0.4	0.55	17.95	82.05
38	37.20	38.00	0.3	0.90	20.19	61.87
0	38.00	0.00	0.9	0.00	61.87	0.00

TABLE 33 : TEST 2 FLOTATION TAILINGS DATA

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SIZE (UM)	WT% RET.	WT% PASS.	%CU RET.	CUM. %CU PASSING	CU DIST.	CUM. DIST PASSING
300	1.40	98.60	0.000	0.004	0.00	100.00
212	7.70	90.90	0.005	0.004	10.83	89.17
150	14.10	76.80	0.004	0.004	13.42	75.75
106	16.50	60.30	0.003	0.004	11.78	63.97
75	12.60	47.70	0.003	0.005	9.00	54.97
53	10.00	37.70	0.003	0.005	7.14	47.83
38	8.40	29.30	0.003	0.006	6.00	41.84
0	29.30	0.00	0.006	0.000	41.84	0.00

SIZE (UM)	WT% RET.	WT% PASS.	% Fe RET.	CUM. % Fe PASSING	Fe DIST.	CUM. DIST PASSING
300	1.40	98.60	0.0	11.61	0.00	100.00
212	7.70	90.90	11.1	11.66	8.70	91.30
150	14.10	76.80	11.3	11.72	13.72	77.58
106	16.50	60.30	11.5	11.78	16.34	61.23
75	12.60	47.70	11.6	11.83	12.59	48.64
53	10.00	37.70	11.4	11.95	9.82	38.82
38	8.40	29.30	11.8	12.00	8.54	30.29
0	29.30	0.00	12.0	0.00	30.29	0.00

SIZE (UM)	WT% RET.	WT% PASS.	%S RET.	CUM. %S PASSING	S DIST.	CUM. DIST PASSING
300	1.40	98.60	0.0	0.24	0.00	100.00
212	7.70	90.90	0.4	0.22	15.31	84.69
150	14.10	76.80	0.3	0.21	17.79	66.90
106	16.50	60.30	0.3	0.18	20.82	46.08
75	12.60	47.70	<0.1	0.20	5.30	40.78
53	10.00	37.70	0.3	0.18	12.62	28.17
38	8.40	29.30	<0.1	0.20	3.53	24.64
0	29.30	0.00	0.2	0.00	24.64	0.00

SIZE (UM)	WT% RET.	WT% PASS.	AU (G/T) RET.	CUM. AU PASSING	AU DIST.	CUM. DIST PASSING
106	39.70	60.30	0.9	0.60	59.87	40.13
38	31.00	29.30	0.3	0.50	15.58	24.55
0	29.30	0.00	0.5	0.00	24.55	0.00

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TABLE 34 : TEST 3 FLOTATION TAILINGS DATA

SIZE (UM)	WTZ RET.	WTZ PASS.	%CU RET.	CUM.%CU PASSING	CU DIST.	CUM.DIST PASSING
212	1.30	98.70	0.000	0.019	0.00	100.00
150	7.40	91.30	0.009	0.020	4.04	95.96
106	16.10	75.20	0.007	0.023	5.82	90.14
75	15.70	59.50	0.007	0.028	5.67	84.47
53	14.10	45.40	0.007	0.034	5.09	79.37
38	12.10	33.30	0.006	0.044	3.75	75.63
0	33.30	0.00	0.044	0.000	75.63	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%Fe RET.	CUM.% Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	1.30	98.70	0.0	12.15	0.00	100.00
150	7.40	91.30	11.8	12.18	8.45	91.55
106	16.10	75.20	12.0	12.22	15.90	75.66
75	15.70	59.50	12.2	12.23	15.76	59.90
53	14.10	45.40	11.9	12.34	13.80	46.09
38	12.10	33.30	11.9	12.50	11.85	34.25
0	33.30	0.00	12.5	0.00	34.25	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
212	1.30	98.70	0.0	0.17	0.00	100.00
150	7.40	91.30	<0.1	0.17	5.22	94.78
106	16.10	75.20	<0.1	0.19	9.66	85.11
75	15.70	59.50	<0.1	0.21	9.42	75.69
53	14.10	45.40	<0.1	0.25	8.46	67.23
38	12.10	33.30	<0.1	0.30	7.26	59.96
0	33.30	0.00	0.3	0.00	59.96	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	24.80	75.20	1.7	0.78	54.02	45.98
38	41.90	33.30	0.3	0.70	16.11	29.87
0	33.30	0.00	0.7	0.00	29.87	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	24.80	75.20	0.2	0.15	34.08	65.92
38	41.90	33.30	0.07	0.20	20.15	45.76
0	33.30	0.00	0.2	0.00	45.76	0.00

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TABLE 35 : TEST 4 FLOTATION TAILINGS DATA

SIZE (UM)	WT% RET.	WT% PASS.	%CU RET.	CUM. %CU PASSING	CU DIST.	CUM. DIST PASSING
212	8.30	91.70	0.005	0.006	7.54	92.46
150	15.50	76.20	0.003	0.006	8.45	84.02
106	18.20	58.00	0.003	0.007	9.92	74.10
75	13.50	44.50	0.003	0.008	7.36	66.75
53	10.30	34.20	0.003	0.010	5.61	61.13
38	8.20	26.00	0.003	0.012	4.47	56.67
0	26.00	0.00	0.012	0.000	56.67	0.00

SIZE (UM)	WT% RET.	WT% PASS.	% Fe RET.	CUM. % Fe PASSING	Fe DIST.	CUM. DIST PASSING
212	8.30	91.70	2.2	2.71	6.73	93.27
150	15.50	76.20	2.2	2.87	12.57	80.70
106	18.20	58.00	2.3	3.05	15.43	65.27
75	13.50	44.50	2.5	3.22	12.44	52.83
53	10.30	34.20	2.6	3.40	9.87	42.96
38	8.20	26.00	2.8	3.60	8.46	34.50
0	26.00	0.00	3.6	0.00	34.50	0.00

SIZE (UM)	WT% RET.	WT% PASS.	%S RET.	CUM. %S PASSING	S DIST.	CUM. DIST PASSING
212	8.30	91.70	0.2	0.18	9.18	90.82
150	15.50	76.20	0.1	0.20	8.57	82.26
106	18.20	58.00	<0.1	0.23	10.06	72.19
75	13.50	44.50	<0.1	0.26	7.46	64.73
53	10.30	34.20	0.3	0.25	17.08	47.65
38	8.20	26.00	<0.1	0.30	4.53	43.12
0	26.00	0.00	0.3	0.00	43.12	0.00

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TABLE 36 : TEST 5 FLOTATION TAILINGS DATA

SIZE (UM)	WTZ RET.	WTZ PASS.	%CU RET.	CUM.%CU PASSING	CU DIST.	CUM.DIST PASSING
212	2.80	97.20	0.000	0.006	0.00	100.00
150	9.60	87.60	0.006	0.006	12.09	87.91
106	16.50	71.10	0.005	0.006	13.40	74.51
75	14.90	56.20	0.005	0.007	12.10	62.41
53	12.80	43.40	0.008	0.006	16.63	45.78
38	11.00	32.40	0.005	0.007	8.93	36.84
0	32.40	0.00	0.007	0.000	36.84	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%Fe RET.	CUM.% Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	2.80	97.20	0.0	10.33	0.00	100.00
150	9.60	87.60	10.1	10.36	12.12	87.88
106	16.50	71.10	10.2	10.40	16.28	71.60
75	14.90	56.20	10.1	10.48	14.56	57.04
53	12.80	43.40	10.2	10.57	12.63	44.40
38	11.00	32.40	10.2	10.70	10.86	33.55
0	32.40	0.00	10.7	0.00	33.55	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
212	2.70	97.30	0.0	0.40	0.00	100.00
150	9.70	87.60	<0.4	0.40	12.40	87.60
106	16.50	71.10	<0.4	0.40	16.50	71.10
75	14.90	56.20	<0.4	0.40	14.90	56.20
53	12.80	43.40	<0.4	0.40	12.80	43.40
38	11.00	32.40	<0.4	0.40	11.00	32.40
0	32.40	0.00	<0.4	0.00	32.40	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	28.90	71.10	0.4	0.29	39.83	60.17
38	38.70	32.40	0.2	0.30	26.67	33.49
0	32.40	0.00	0.3	0.00	33.49	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	28.90	71.10	0.09	0.11	24.47	75.53
38	38.70	32.40	0.04	0.20	14.56	60.97
0	32.40	0.00	0.2	0.00	60.97	0.00

TABLE 37 : TEST 6 FLOTATION TAILINGS DATA

SIZE (UM)	WT% RET.	WT% PASS.	%CU RET.	CUM.%CU PASSING	CU DIST.	CUM.DIST PASSING
300	1.40	98.60	0.000	0.006	0.00	100.00
212	8.30	90.30	0.006	0.006	10.30	89.70
150	15.70	74.60	0.004	0.006	11.11	78.59
106	18.20	56.40	0.004	0.007	12.88	65.71
75	13.30	43.10	0.004	0.007	9.41	56.30
53	10.30	32.80	0.004	0.008	7.29	49.01
38	8.50	24.30	0.004	0.010	6.02	42.99
0	24.30	0.00	0.010	0.000	42.99	0.00

SIZE (UM)	WT% RET.	WT% PASS.	%Fe RET.	CUM.%Fe PASSING	Fe DIST.	CUM.DIST PASSING
300	1.40	98.60	0.0	2.33	0.00	100.00
212	8.30	90.30	1.8	2.38	7.49	92.51
150	15.70	74.60	1.8	2.51	12.13	80.38
106	18.20	56.40	2.0	2.67	15.62	64.76
75	13.30	43.10	2.0	2.88	11.42	53.34
53	10.30	32.80	2.3	3.06	10.17	43.17
38	8.50	24.30	2.4	3.30	8.76	34.42
0	24.30	0.00	3.3	0.00	34.42	0.00

SIZE (UM)	WT% RET.	WT% PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
300	1.40	98.60	0.0	0.40	0.00	100.00
212	8.30	90.30	<0.4	0.40	9.70	90.30
150	15.70	74.60	<0.4	0.40	15.70	74.60
106	18.20	56.40	<0.4	0.40	18.20	56.40
75	13.30	43.10	<0.4	0.40	13.30	43.10
53	10.30	32.80	<0.4	0.40	10.30	32.80
38	8.50	24.30	<0.4	0.40	8.50	24.30
0	24.30	0.00	<0.4	0.00	24.30	0.00

SIZE (UM)	WT% RET.	WT% PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	43.60	56.40	0.4	0.29	60.72	39.28
38	32.10	24.30	0.2	0.20	22.35	16.92
0	24.30	0.00	0.2	0.00	16.92	0.00

SIZE (UM)	WT% RET.	WT% PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	43.60	56.40	0.08	0.07	47.91	52.09
38	32.10	24.30	0.05	0.09	22.05	30.04
0	24.30	0.00	0.09	0.00	30.04	0.00

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TABLE 38 : TEST 7 FLOTATION TAILINGS DATA

SIZE (UM)	WTZ RET.	WTZ PASS.	%CU RET.	CUM.%CU PASSING	CU DIST.	CUM.DIST PASSING
212	2.00	98.00	0.000	0.020	0.00	100.00
150	7.90	90.10	0.010	0.021	5.07	94.93
106	16.40	73.70	0.010	0.023	8.40	86.53
75	15.60	58.10	0.017	0.025	13.58	72.94
53	13.20	44.90	0.025	0.024	16.90	56.04
38	11.50	33.40	0.008	0.030	4.71	51.33
0	33.40	0.00	0.030	0.000	51.33	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	% Fe RET.	CUM.%Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	2.00	98.00	0.0	10.52	0.00	100.00
150	7.90	90.10	10.4	10.53	9.78	90.22
106	16.40	73.70	10.4	10.56	16.21	74.01
75	15.60	58.10	10.2	10.66	15.12	58.88
53	13.20	44.90	10.3	10.77	12.92	45.96
38	11.50	33.40	10.4	10.90	11.37	34.60
0	33.40	0.00	10.9	0.00	34.60	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
212	2.00	98.00	0.0	0.40	0.00	100.00
150	7.90	90.10	<0.4	0.40	9.90	90.10
106	16.40	73.70	<0.4	0.40	16.40	73.70
75	15.60	58.10	<0.4	0.40	15.60	58.10
53	13.20	44.90	<0.4	0.40	13.20	44.90
38	11.50	33.40	<0.4	0.40	11.50	33.40
0	33.40	0.00	<0.4	0.00	33.40	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	26.30	73.70	0.6	0.55	28.55	71.45
38	40.30	33.40	0.4	0.70	29.16	42.29
0	33.40	0.00	0.7	0.00	42.29	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	26.30	73.70	0.1	0.13	19.72	80.28
38	40.30	33.40	0.1	0.20	30.21	50.07
0	33.40	0.00	0.2	0.00	50.07	0.00

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TABLE 39 : TEST 8 FLOTATION TAILINGS DATA

SIZE (UM)	WTZ RET.	WTZ PASS.	%CU RET.	CUM.%CU PASSING	CU DIST.	CUM.DIST PASSING
212	3.10	96.90	0.000	0.005	0.00	100.00
150	10.30	86.60	0.005	0.005	12.61	87.39
106	17.70	68.90	0.005	0.005	16.66	70.73
75	15.80	53.10	0.004	0.006	11.90	58.83
53	12.80	40.30	0.005	0.006	12.05	46.78
38	11.20	29.10	0.004	0.007	8.43	38.35
0	29.10	0.00	0.007	0.000	38.35	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%Fe RET.	CUM.%Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	3.10	96.90	0.0	9.45	0.00	100.00
150	10.30	86.60	8.8	9.56	12.47	87.53
106	17.70	68.90	9.3	9.62	17.40	70.13
75	15.80	53.10	9.4	9.69	15.70	54.43
53	12.80	40.30	9.4	9.78	12.72	41.71
38	11.20	29.10	9.5	9.90	11.25	30.46
0	29.10	0.00	9.9	0.00	30.46	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
212	3.10	96.90	0.0	0.22	0.00	100.00
150	10.30	86.60	0.3	0.21	18.24	81.76
106	17.70	68.90	0.3	0.18	24.09	57.67
75	15.80	53.10	<0.1	0.21	7.17	50.50
53	12.80	40.30	<0.1	0.24	5.81	44.69
38	11.20	29.10	<0.1	0.30	5.08	39.61
0	29.10	0.00	0.3	0.00	39.61	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	31.10	68.90	0.5	0.45	34.59	65.41
38	39.80	29.10	0.3	0.60	26.56	38.84
0	29.10	0.00	0.6	0.00	38.84	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	31.10	68.90	0.1	0.13	24.86	75.14
38	39.80	29.10	0.09	0.20	28.63	46.52
0	29.10	0.00	0.2	0.00	46.52	0.00

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TABLE 40 : TEST 9 FLOTATION TAILINGS DATA

SIZE (UM)	WTZ RET.	WTZ PASS.	%CU RET.	CUM.%CU PASSING	CU DIST.	CUM.DIST PASSING
212	3.00	97.00	0.000	0.005	0.00	100.00
150	9.90	87.10	0.006	0.005	14.20	85.80
106	16.90	70.20	0.005	0.005	15.50	70.29
75	15.20	55.00	0.005	0.006	13.94	56.35
53	12.40	42.60	0.005	0.006	11.38	44.97
38	10.50	32.10	0.005	0.006	9.63	35.34
0	32.10	0.00	0.006	0.000	35.34	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%Fe RET.	CUM.%Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	3.00	97.00	0.0	9.44	0.00	100.00
150	9.90	87.10	8.6	9.56	11.75	88.25
106	16.90	70.20	9.2	9.65	16.46	71.79
75	15.20	55.00	9.4	9.72	15.13	56.66
53	12.40	42.60	9.3	9.85	12.21	44.44
38	10.50	32.10	9.4	10.00	10.45	33.99
0	32.10	0.00	10.0	0.00	33.99	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
212	3.00	97.00	0.0	0.19	0.00	100.00
150	9.90	87.10	0.1	0.20	6.76	93.24
106	16.90	70.20	0.3	0.18	26.59	66.65
75	15.20	55.00	<0.1	0.20	7.97	58.68
53	12.40	42.60	0.3	0.18	19.51	39.17
38	10.50	32.10	<0.1	0.20	5.51	33.67
0	32.10	0.00	0.2	0.00	33.67	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	29.80	70.20	1.8	0.71	75.03	24.97
38	38.10	32.10	0.3	0.20	15.99	8.98
0	32.10	0.00	0.2	0.00	8.98	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	29.80	70.20	0.3	0.14	64.25	35.75
38	38.10	32.10	0.08	0.06	21.91	13.84
0	32.10	0.00	0.06	0.00	13.84	0.00

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TABLE 41 : TEST 10 FLOTATION TAILINGS DATA

SIZE (UM)	WT% RET.	WT% PASS.	% Cu RET.	CUM.%Cu PASSING	Cu DIST.	CUM.DIST PASSING
212	7.20	92.80	0.0	0.01	0.00	100.00
150	14.10	78.70	0.0	0.01	16.30	83.70
106	17.80	60.90	0.0	0.01	13.62	70.08
75	14.10	46.80	0.0	0.01	8.63	61.45
53	11.00	35.80	0.0	0.01	6.73	54.72
38	9.00	26.80	0.0	0.01	5.51	49.21
0	26.80	0.00	0.0	0.00	49.21	0.00

SIZE (UM)	WT% RET.	WT% PASS.	%Fe RET.	CUM.%Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	7.20	92.80	0.0	8.51	0.00	100.00
150	14.10	78.70	7.9	8.68	19.76	90.24
106	17.80	60.90	8.0	8.88	16.72	63.52
75	14.10	46.80	8.8	8.90	14.57	48.95
53	11.00	35.80	8.2	9.12	10.59	38.36
38	9.00	26.80	8.6	9.30	9.09	29.27
0	26.80	0.00	9.3	0.00	29.27	0.00

SIZE (UM)	WT% RET.	WT% PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
212	7.20	92.80	0.0	0.35	0.00	100.00
150	14.10	78.70	0.3	0.37	18.18	81.82
106	17.80	60.90	0.3	0.38	15.20	66.62
75	14.10	46.80	0.3	0.41	12.04	54.58
53	11.00	35.80	0.2	0.47	6.26	48.32
38	9.00	26.80	<0.1	0.60	2.56	45.76
0	26.80	0.00	0.6	0.00	45.76	0.00

SIZE (UM)	WT% RET.	WT% PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	39.10	60.90	1.6	0.96	65.04	34.96
38	34.10	26.80	0.2	1.00	7.09	27.86
0	26.80	0.00	1.0	0.00	27.86	0.00

SIZE (UM)	WT% RET.	WT% PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	39.10	60.90	0.3	0.21	55.50	44.50
38	34.10	26.80	0.04	0.30	6.45	38.04
0	26.80	0.00	0.3	0.00	38.04	0.00

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TABLE 42 : TEST 11 FLOTATION TAILINGS DATA

SIZE (UM)	WTZ RET.	WTZ PASS.	ZCU RET.	CUM.ZCU PASSING	CU DIST.	CUM.DIST PASSING
212	3.90	96.10	0.000	0.007	0.00	100.00
150	10.90	85.20	0.005	0.007	10.47	89.53
106	17.30	67.90	0.005	0.008	12.24	77.29
75	14.70	53.20	0.005	0.009	10.40	66.88
53	11.80	41.40	0.004	0.010	6.68	60.20
38	10.20	31.20	0.005	0.012	7.22	52.99
0	31.20	0.00	0.012	0.000	52.99	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%Fe RET.	CUM.%Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	3.90	96.10	0.0	8.49	0.00	100.00
150	10.90	85.20	7.9	8.59	13.77	86.23
106	17.30	67.90	8.2	8.69	16.70	69.53
75	14.70	53.20	8.3	8.80	14.37	55.17
53	11.80	41.40	8.3	8.95	11.53	43.64
38	10.20	31.20	8.5	9.10	10.21	33.43
0	31.20	0.00	9.1	0.00	33.43	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	ZS RET.	CUM.ZS PASSING	S DIST.	CUM.DIST PASSING
212	3.90	96.10	0.0	0.35	0.00	100.00
150	10.90	85.20	0.3	0.36	12.53	87.47
106	17.30	67.90	0.2	0.41	9.77	77.70
75	14.70	53.20	0.3	0.43	12.45	65.26
53	11.80	41.40	0.2	0.50	6.66	58.59
38	10.20	31.20	0.2	0.60	5.76	52.84
0	31.20	0.00	0.6	0.00	52.84	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	32.10	67.90	1.4	1.01	44.37	55.63
38	36.70	31.20	0.6	1.10	21.74	33.89
0	31.20	0.00	1.1	0.00	33.89	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	32.10	67.90	0.3	0.26	36.57	63.43
38	36.70	31.20	0.2	0.30	27.88	35.55
0	31.20	0.00	0.3	0.00	35.55	0.00

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TABLE 43 : TEST 12 FLOTATION TAILINGS DATA

SIZE (UM)	WTZ RET.	WTZ PASS.	%CU RET.	CUM.%CU PASSING	CU DIST.	CUM.DIST PASSING
212	2.00	98.00	0.000	0.006	0.00	100.00
150	8.40	89.60	0.006	0.006	10.19	89.81
106	16.70	72.90	0.005	0.006	13.63	76.18
75	15.80	57.10	0.004	0.007	10.32	65.87
53	13.20	43.90	0.004	0.008	8.62	57.25
38	11.10	32.80	0.005	0.009	9.06	48.19
0	32.80	0.00	0.009	0.000	48.19	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%Fe RET.	CUM. Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	2.00	98.00	0.0	8.35	0.00	100.00
150	8.40	89.60	7.7	8.42	9.59	90.41
106	16.70	72.90	8.1	8.50	16.20	74.22
75	15.80	57.10	8.2	8.58	15.51	58.71
53	13.20	43.90	8.3	8.67	13.12	45.59
38	11.10	32.80	8.3	8.80	11.03	34.56
0	32.80	0.00	8.8	0.00	34.56	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
212	2.00	98.00	0.0	0.46	0.00	100.00
150	8.40	89.60	0.4	0.47	9.08	90.92
106	16.70	72.90	0.4	0.48	14.58	76.35
75	15.80	57.10	0.3	0.53	10.34	66.00
53	13.20	43.90	0.3	0.60	8.64	57.36
38	11.10	32.80	0.3	0.70	7.27	50.10
0	32.80	0.00	0.7	0.00	50.10	0.00

N.B. Some of the gold and silver sizings were lost.

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TABLE 44 : TEST 13 FLOTATION TAILINGS DATA

SIZE (UM)	WTZ RET.	WTZ PASS.	ZCU RET.	CUM.ZCU PASSING	CU DIST.	CUM.DIST PASSING
212	3.80	96.20	0.000	0.006	0.00	100.00
150	11.00	85.20	0.005	0.006	12.79	87.21
106	17.80	67.40	0.004	0.006	12.31	74.90
75	15.20	52.20	0.005	0.007	13.14	61.76
53	12.30	39.90	0.004	0.008	8.50	53.26
38	10.20	29.70	0.004	0.009	7.05	46.21
0	29.70	0.00	0.009	0.000	46.21	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	% Fe RET.	CUM.%Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	3.80	96.20	0.0	8.24	0.00	100.00
150	11.00	85.20	7.4	8.39	13.28	86.72
106	17.80	67.40	7.8	8.55	16.83	69.89
75	15.20	52.20	8.0	8.71	14.74	55.15
53	12.30	39.90	8.2	8.87	12.23	42.92
38	10.20	29.70	8.5	9.00	10.51	32.41
0	29.70	0.00	9.0	0.00	32.41	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
212	3.80	96.20	0.0	0.30	0.00	100.00
150	11.00	85.20	0.4	0.28	19.96	80.04
106	17.80	67.40	0.3	0.27	18.00	62.04
75	15.20	52.20	0.2	0.29	10.25	51.79
53	12.30	39.90	0.2	0.32	8.29	43.49
38	10.20	29.70	<0.1	0.40	3.44	40.05
0	29.70	0.00	0.4	0.00	40.05	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	32.60	67.40	8.7*	3.37	84.23	15.77
38	37.70	29.70	0.7	0.90	7.84	7.94
0	29.70	0.00	0.9	0.00	7.94	0.00

*Obvious contamination

SIZE (UM)	WTZ RET.	WTZ PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	32.60	67.40	0.9	0.39	75.13	24.87
38	37.70	29.70	0.1	0.20	9.65	15.21
0	29.70	0.00	0.2	0.00	15.21	0.00

TABLE 45 : TEST 14 FLOTATION TAILINGS DATA

SIZE (UM)	WTZ RET.	WTZ PASS.	%CU RET.	CUM.%CU PASSING	CU DIST.	CUM.DIST PASSING
212	2.60	97.40	0.000	0.005	0.00	100.00
150	9.20	88.20	0.005	0.005	11.11	88.89
106	16.00	72.20	0.005	0.005	15.06	73.83
75	15.10	57.10	0.005	0.006	14.22	59.61
53	12.60	44.50	0.003	0.006	7.12	52.49
38	10.90	33.60	0.004	0.007	8.21	44.29
0	33.60	0.00	0.007	0.000	44.29	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%Fe RET.	CUM.%Fe PASSING	Fe DIST.	CUM.DIST PASSING
212	2.60	97.40	0.0	10.93	0.00	100.00
150	9.20	88.20	10.5	10.99	11.33	88.67
106	16.00	72.20	10.7	11.06	15.65	73.02
75	15.10	57.10	10.8	11.13	14.91	58.11
53	12.60	44.50	10.7	11.25	12.33	45.78
38	10.90	33.60	10.8	11.40	10.76	35.02
0	33.60	0.00	11.4	0.00	35.02	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	%S RET.	CUM.%S PASSING	S DIST.	CUM.DIST PASSING
212	2.60	97.40	0.0	0.25	0.00	100.00
150	9.20	88.20	0.2	0.26	9.27	90.73
106	16.00	72.20	0.2	0.28	12.57	78.16
75	15.10	57.10	0.2	0.30	11.86	66.30
53	12.60	44.50	0.1	0.35	4.95	61.35
38	10.90	33.60	0.2	0.40	8.56	52.79
0	33.60	0.00	0.4	0.00	52.79	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AU(G/T) RET.	CUM.AU PASSING	AU DIST.	CUM.DIST PASSING
106	27.80	72.20	0.5	0.38	36.18	63.82
38	38.60	33.60	0.2	0.50	20.09	43.73
0	33.60	0.00	0.5	0.00	43.73	0.00

SIZE (UM)	WTZ RET.	WTZ PASS.	AG(G/T) RET.	CUM.AG PASSING	AG DIST.	CUM.DIST PASSING
106	27.80	72.20	0.1	0.08	34.45	65.55
38	38.60	33.60	0.05	0.10	23.92	41.64
0	33.60	0.00	0.1	0.00	41.64	0.00

ANALYTICAL LABORATORY

TABLE 46 : QUALITATIVE/SEMI-QUANTITATIVE XRF SCAN ANALYSIS REPORT NO. 84/01SAMPLE SOURCE: MT. LYELLREQ. NO. -

NO	SAMPLE IDENTIFICATION	TRACE ELEMENTS	MINOR ELEMENTS	MAJOR ELEMENTS
	B11A Sample 1	Sr, Pb, As, Zn, Cu, Mn		Fe
	2	Sn, Sr, Pb, As, Zn, Cu, Mn		Fe
	3	Sn, Pb, As, Zn, Cu, Mn		Fe
	4	Sn, Y, Sr, Pb, As, Zn, Cu, Mn		Fe
	5	Y, Sr, As, Zn, Cu, Mn		Fe
	6	Y, Sr, Pb, As, Zn, Cu, Mn		Fe
	7	Sb, Sn, Y, Sr, Pb, As, Zn, Mn	Cu	Fe
	8	Sb, Sr, Pb, Zn, Mn	As, Cu	Fe
	9	Zr, Sr, Rb, As, Zn, Cu, Mn		Fe
	10	Ba, Zr, Y, Sr, Rb, Pb, As, Zn, Cu, Mn		Fe

SCANNING RANGE: From the Periodic Table of the elements, "K" lines of all elements from atomic number Z = 25 to 58, and "L" lines of all elements from Z = 64 to 98.

CONCENTRATION RANGES: Trace = < 0.2%; Minor = 0.2% to 2%; Major = > 2%

COMMENTS: Detection Limits are typically .001% for "K" lines and .002% for "L" lines.

Nb and Mo are obscured by Mo target tube lines

ANALYST:

D. L. Lane

CHIEF CHEMIST

W. R. P.

DATE

7-2-84.

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