



**METALLURGICAL TESTING ON
SAMPLES FROM THE WRIGLEY
DEPOSIT –
NORTHWEST TERRITORIES**

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1 SUMMARY

Inspectorate Exploration & Mining Services Ltd. (Inspectorate) – Metallurgical Division has carried out a preliminary metallurgical testing program on samples originating from Devonian Metals Inc.'s Wrigley Zinc project.

As was originally requested, the study covered the following major topics: head sample characterization, sulfuric acid and ammonium carbonate leaching of oxide samples and flotation evaluation of sulfide samples.

Head assays of the five Wrigley samples showed wide variation in metals' content. The composite samples assayed 11.5-14% Zn including 10.8-11.8% oxide Zn. The two oxide samples and the sulfide sample used for this metallurgical study assayed a moderate zinc content of 7.2-8.2%, with 6.5-7.2% oxide zinc in the oxide samples, and only 1% oxide Zn in the sulfide sample. Bond ball mill work index determination indicated that the Wrigley samples tested had 7-8 kWh/t work index, which can be characterized as soft. Heavy liquid separation at media SG's of 2.6 to 2.96 showed poor rejection of gangue minerals.

Different process routes, including sulfuric acid and ammonium leaching of oxide ore and flotation of sulphide ore, were tested on the Wrigley samples.

Sulfuric acid leaching of the oxide ore achieved an encouraging Zn extraction of >90% on 200 mesh (74 μm) milled feed.

Ammonia based leaching of the oxide ore indicated that

- The Wrigley oxide ore was not amendable to ammonium carbonate leach under atmosphere leach conditions, and satisfactory zinc extractions could be achieved only by heating leach pulps to above 40°C. At the same leach temperature, the finer the feed size, the better the zinc recovery. Approximately 86% and 91% Zn recoveries were achieved from 200 mesh ground Bourne Oxide and 12-Oxide, respectively.

- The Bourne oxide sample was not sensitive to pulp temperature ranging from 40 to 80°C, and over 83% zinc extractions were achieved from all three pulp temperatures tested. However, the 12-Oxide sample responded to the leach pulp temperature differently. Higher pulp temperature resulted in better zinc extraction. About 62% Zn was extracted into solution at 40 °C, while 91% at 80°C.

Further laboratory investigation is required to provide more detail to the selected leach conditions, and more confidence to the current metallurgical data to bring it up to prefeasibility standards.

Sequential flotation of the sulphide sample showed that the Wrigley sulphide ore's metallurgical response can be described as simple. The sample responded well to the separation of base metal values by differential flotation. Rougher flotation recoveries of >84% for lead and zinc resulted at the relatively coarse grind of P80~150 µm. Upgrading of rougher products yielded concentrates grading 71% Pb for Pb cleaner concentrate and 62% Zn for Zn cleaner concentrate. The recoveries into their respective products were ~72% Pb and ~79% Zn. Silver recoveries into Pb Cleaner Concentrate were 48% and 31% into Zn Cleaner Concentrate. Further locked cycle flotation is required to evaluate the circuit configuration and the effect of recycle streams in locked cycle mode.

2 INTRODUCTION

Inspectorate – Metallurgical Division was retained by Mr. Ron McIntyre, on behalf of Devonian Metals Inc., to perform metallurgical testing on samples originating from the Wrigley project, which is located on the south-west side of the Mackenzie River, across the river from the village of Wrigley, NWT.

The objective of this test program was to pursue viable treatment options for the samples provided. The test work consisted of sample preparation, head sample characterization including head assays and comminution test, heavy media separation, sulfuric acid leaching and ammonia leaching of oxide samples as well as flotation evaluation of the sulphide sample.

This report summarizes the laboratory test procedures and results of the scoping study.

3 PROCEDURES

Based on a detailed proposal (proposal #1105207), specific formats in the overall approach and methods to be used were agreed upon between Inspectorate and the client's representative.

3.1 SAMPLE PREPARATION AND CHARACTERIZATION

Five ¼" crushed samples, including two composite samples, two oxide samples and one sulphide sample were received on June 30th, 2011. Details of the sample identification are presented in Table 1 below.

Table 1. Sample List

Count	Sample Label	Container Type	Sample Type (C, R, P, Sl, S)	Wet /Dry	Top Size	Weight (kg)
1	Composite RB-07-1	Rice Bag	R	Dry	1/4"	47.3
	71.93-99.37m					
	#7274-7282					
2	Composite RB-07-4	Rice Bag	R	Dry	1/4"	52.5
	44.50-74.98m					
	#7334-7343					
3	Bourne Oxide 1/2	Rice Bag	R	Dry	1/4"	49.4
4	12-Oxide	Rice Bag	R	Dry	1/4"	69.8
5	12 Sulfide 1/2	Rice Bag	R	Dry	1/4"	69.2
Note :						288.2
Core, Rock, Pulp, Slurry, Solution						

The five samples were prepared and assayed individually. Each sample was riffle blended three times prior to splitting into halves. One half was reserved, whilst the other half was stage crushed to 100% passing 6-Tyler mesh, and then rotary split into 2kg test charges for the metallurgical test program. Meanwhile, about

300g aliquots from each sample were pulverized and assayed for Ag, Pb, Zn, Pb(ox), Zn(ox), Fe, S, S(-2), ICP and whole rock.

The two composite samples were archived after initial assays. The metallurgical testwork was carried out on the two oxide samples and the sulfide sample only.

3.2 ASSAY PROCEDURE

As the principal elements of interest for this project, zinc (Zn) and lead (Pb) were determined by atomic absorption spectroscopy (AAS) or by wet titration following total digestion in a standard suit of strong mineral acids.

A multi-element ICP (Inductively Coupled Plasma) scan using standard multi-acid digestion procedure was also employed on the head samples and selected test products. Carbon and sulfur speciation used microbalance measurements and gas detections in a Leco furnace, while As and Hg were determined by standard wet assays.

3.3 GRINDING AND SCREENING

Wet grinding was performed in a dedicated stainless steel laboratory rod mill on 2 kg charges, at a 65% solids pulp density. Test grinds determined the time required to achieve reliable target grind size distributions.

Particle size analysis was performed using a Rotap™, equipped with 20 cm (8") diameter test sieves, and stacked in ascending mesh sizes. The sample was initially wet screened at 37 µm (400 Tyler™ mesh). The +37 µm fraction was then dry screened through stacked sieves. Each sieved fraction was collected and weighed for calculating the individual and cumulative percent retained.

3.4 BOND BALL MILL WORK INDEX DETERMINATION

The Bond ball-mill work index was measured in a Bico-Braun® laboratory mill, with a standard ball charge medium. The feed size was 100% passing 6-mesh, and the desired closing screen or “target size” as specified for the product. The

bulk density was determined and the feed size distribution was measured to yield undersize, at a specified number of mill revolutions. The product was discharged to sift out the media and perform a screen analysis. The oversize was retained for the next cycle, replacing the weight of the undersize with an equivalent weight of the original feed. The undersize weight minus the feed undersize amount yielded the net product weight. The procedures were repeated for each cycle until a constant circulating load was achieved.

3.5 HEAVY LIQUID SEPARATION

Heavy Liquid Separation (HLS) test was done on the oxides and sulfide sample to determine whether the samples were amenable to upgrading using heavy media separation. Prior to the HLS test, the sample was wet screened at 20-Tyler mesh (0.84mm) to remove fines, and the minus 20 mesh fraction was assayed directly. The plus 20 mesh material was then air dried and subjected to HLS testing using Tetra-bromo-ethane (TBE) as media, at three liquid densities of 2.6 g/cm³, 2.8 g/cm³ and 2.96 g/cm³. The lower liquid densities were attained by diluting the TBE with acetone.

All resulting sink and float products as well as the minus 10 mesh material were assayed for Ag, Pb, Zn, Cd and S for metallurgical balance. A detailed metallurgical balance was prepared for each test, as provided in the Appendix II.

3.6 SULFURIC ACID LEACH

Scoping sulfuric acid leach tests were conducted on the two oxide samples to evaluate the oxide samples' amenability to acid leach process. The tests were carried out in an overhead agitated tank for 24 hours, at atmosphere conditions, on 6-Tyler mesh crushed material and on ground whole ore, at two different pulp densities. The pulp pH was monitored and maintained during the tests, and intermediate solution samples were removed and assayed for leach kinetics. Solutions and well washed leach residues were analyzed for Zn and ICP for metallurgical balance.

A detailed test report including a metallurgical balance and the test procedure was prepared for each test, as provided in the Appendix III.

3.7 AMMONIUM CARBONATE LEACH

As an alternative process route for the oxide samples, an ammonia based leach process was tested on the Wrigley oxide samples.

Twelve scoping ammonia leach tests were performed on each oxide sample in ammonium carbonate solution to define the optimum leach conditions.

The ammonia leaching tests were carried out at 20 and 30% pulp density in 2.5mol ammonia carbonate $[(\text{NH}_4)_2\text{CO}_3]$ solution, at different temperatures, and on different sample sizes. Prior to adding ammonium carbonate, the alkalinity was adjusted with Ammonium Hydroxide (NH_4OH) to pH 9 and maintained at this level. The pulp pH and temperature were monitored for the period of the leach tests, and intermediate solution samples were removed and assayed for leach kinetics.

Baseline leach tests (AL1-AL6) were carried out at ambient temperature, on 6-Tyler mesh crushed material and 200 mesh ground sample, at 20% and 30% pulp densities to evaluate the effect of leach feed size and pulp density on zinc extraction at atmosphere leach conditions. During the baseline tests, intermediate solution samples were removed to determine zinc dissolution at 10-, 15-, 30-, 45-, 60- and 90-minutes of retention time. These tests were terminated after 2 hours with filtration of pregnant leachate solution (PLS). The solid residues were displacement-washed with hot water followed by two hot water rinses. The PLS and the final residue were analyzed for zinc and ICP, and sulfide sulfur was also followed on some leach residue to track the residual zinc sulfide minerals.

Following the baseline leach conditions, nine leach tests were performed on each oxide sample to improve zinc extraction at different leach pulp temperatures. The

leach retention and pulp density remained the same as the baseline tests; whilst pulp temperature was raised to 40°C, 60°C and 80°C, to assess the effect of pulp temperature on zinc extraction.

A detailed test report including a metallurgical balance and the test procedure was prepared for each test, and provided in the Appendix IV.

3.8 FLOTATION ON SULFIDE SAMPLES

Sequential flotation procedure following standard lead and zinc flotation regimes was tested on ground sulfide sample to produce separate lead and zinc concentrate and to define metals' recoveries.

The flotation tests were carried out at various grinds in a Denver D12 laboratory flotation machine, with appropriately selected cell sizes to yield a typical pulp density of ~35% solids by weight. The solids were prepared with Richmond municipal water at an ambient temperature of ~18°C. Appropriate impeller sizes and agitation speed were selected at standard levels, while the airflow was controlled manually to maintain the froth level. In the lead circuit, the flotation was performed at pH 9 with hydrated lime as pH modifier, zinc sulphate ($ZnSO_4$) as modifying agent to depress zinc minerals. Potassium Ethyl Xanthate (PEX) and Aerofloat 241 were used as collectors, and Methyl Isobutyl carbinol (MIBC) was used as the frother. In the zinc circuit, the flotation was performed at pH 10, copper sulphate ($CuSO_4$) was used as Zinc activator, and Sodium Isopropyl Xanthate (SIPX) was used as collector. After slurry pH was stabilized at desired level, collectors were added before aerating with timed conditioning and froth collecting periods. All the test products from each test were combined and low temperature oven dried, weighed and homogenized prior to assay. Metallurgical balances and test procedures that apply to each test are provided in the Appendix V.

4 RESULTS AND DISCUSSION

Various sub-topics were to be addressed, as organized in the following sections. Details of the individual test results are presented in the Appendices, and major findings only are highlighted in the text.

4.1 SAMPLE CHARACTERIZATION

Preparation procedure for the five Wrigley samples was presented above. Chemical analysis and hardness are discussed below.

4.1.1 CHEMICAL ANALYSIS

All the five samples received were assayed for silver (Ag), lead (Pb), oxide lead (Pb(ox)), zinc (Zn), Pb(ox), oxide zinc (Zn(ox)), total sulphur S, sulfide sulphur (S(-2)), iron (Fe), 30-element ICP and whole rock analysis.

Partial assays for the five Wrigley samples received are presented in Table 2. The detailed Multi-element ICP and whole rock results are provided in the Head Assay Report in Appendix I.

Table 2. Main Assays on the Wrigley Samples

Items	Units	Sample ID				
		Comp. RB-07-1	Comp. RB-07-4	Bourne Oxide	12-Oxide	12-Sulphide
Pb	%	0.36	1.22	2.13	5.85	2.98
Pb(Ox)	%	0.31	1.05	1.45	5.41	1.19
Zn	%	14.05	11.55	7.44	8.17	7.24
Zn(Ox)	%	11.79	10.78	6.54	7.23	1.08
S(T)	%	0.04	0.11	0.3	1.74	5.07
Sulfide	%	0.04	0.07	0.28	0.39	4.57
Ag	ppm	6.2	10.8	11.1	30.1	16.8

The head assays of the individual samples are shown to vary widely with regards to metals' content. The highest zinc grade of 11.5-14% was detected in the two composite samples. The two oxide samples and the sulfide sample assayed a

moderate zinc content of 7.2-8.2%, with 6.5-7.2% oxide zinc in the oxide sample, and only 1% oxide Zn in the sulfide sample. Sample 12-oxide had elevated silver and lead content. As expected, the sulfide sample contained higher S compared to other samples.

4.1.2 HARDNESS TEST

Standard Bond ball mill work index test was conducted on the two oxide samples and the sulfide sample at a closing screen size of 150-Tyler mesh (105 μm). Results are presented in Table 3 below, and test reports are provided in Appendix I. As can be seen, the two oxide samples displayed identical grindability values, with a hardness of ~ 7.5 kWh/tonne. The Bond Work Index value obtained for the sulfide sample was ~ 8 kWh/tonne.

Table 3. Bond Ball Mill Work Index Data

Sample ID	Bond Ball Mill WI, W (kWh/tonne)	Bulk Density*, g/cm ³
Bourne Oxide	7.44	1.97
12 Oxide	7.50	1.82
12 Sulfide	8.01	2.02

* at the nominal 6-mesh crush size

The 7-8 kWh/t Bond ball mill work index indicated that the three Wrigley samples tested had a soft hardness character. Bulk density varied from 1.82 to 2.02 g/cm³ at the nominal 6-mesh crush size.

4.2 HEAVY LIQUID SEPARATION

The metallurgical balances of sequential separations of -1/4" +20-mesh particles at SG 2.96, 2.8 and 2.6 are summarized in Tables 4, 5 and 6. The as-received samples tested were finely crushed and produced 35-45% minus 20 mesh fines. The -20 mesh fines generally enriched with Ag, Pb and Zn, but to a modest extent only. The lower weight rejection of coarse gangue at SG 2.6 in this -1/4"

+20-mesh size range indicating that a lower SG media should be selected on coarser particles to achieve better separation.

Table 4. HMS Test Results – Bourne Oxide

Products	Weight		Assay					Distribution (%)				
	(g)	(%)	Ag (g/t)	Pb (%)	Zn (%)	Cd (ppm)	S (%)	Ag (%)	Pb (%)	Zn (%)	Cd (%)	S (%)
2.96 Sink	571.8	11.7	42.5	10.83	24.49	696.6	1.31	40.2	52.2	40.6	41.6	65.1
2.96 Float-2.8 Sink	829.1	16.9	2.3	0.56	3.79	119.8	0.16	3.2	3.9	9.1	10.4	11.5
2.8 Sink	1400.9	28.6	18.7	4.75	12.24	355.2	0.63	43.3	56.1	49.7	52.0	76.7
2.8 Float-2.6 Sink	1585.4	32.4	5.1	0.23	1.49	47.8	0.12	13.4	3.1	6.8	7.9	16.5
2.6 Sink	2986.3	61.0	11.5	2.35	6.53	192.0	0.36	56.7	59.2	56.5	60.0	93.2
2.6 Float	161.6	3.3	4.5	0.47	1.32	34.3	0.16	1.2	0.6	0.6	0.6	2.2
+20 mesh fraction	3148.0	64.3	11.1	2.25	6.27	183.9	0.35	57.9	59.8	57.1	60.5	95.5
-20mesh fraction	1744.2	35.7	14.6	2.73	8.49	216.4	0.03	42.1	40.2	42.9	39.5	4.5
Calculated Head	4892.2	100.0	12.4	2.42	7.06	195.5	0.24	100.0	100.0	100.0	100.0	100.0
Measured Head			11.1	2.13	7.44	174.3	0.30					

Table 5. HMS Test Results – 12 Oxide

Products	Weight		Assay					Distribution (%)				
	(g)	(%)	Ag (g/t)	Pb (%)	Zn (%)	Cd (ppm)	S (%)	Ag (%)	Pb (%)	Zn (%)	Cd (%)	S (%)
2.96 Sink	721.6	14.7	84.8	18.82	19.85	509.8	3.29	46.7	50.0	39.1	36.5	31.3
2.96 Float-2.8 Sink	115.2	2.4	12.6	1.08	10.85	312.8	1.94	1.1	0.5	3.4	3.6	2.9
2.8 Sink	836.8	17.1	74.9	16.38	18.61	482.7	3.10	47.8	50.4	42.5	40.1	34.2
2.8 Float-2.6 Sink	1273.7	26.0	3.0	0.22	1.23	74.7	0.39	2.9	1.0	4.3	9.5	6.5
2.6 Sink	2110.5	43.1	31.5	6.63	8.12	236.5	1.47	50.8	51.5	46.8	49.6	40.8
2.6 Float	574.0	11.7	6.3	0.38	1.66	48.7	1.50	2.8	0.8	2.6	2.8	11.4
+20 mesh fraction	2684.5	54.8	26.1	5.29	6.74	196.3	1.47	53.5	52.3	49.4	52.4	52.2
-20mesh fraction	2212.9	45.2	27.5	5.86	8.37	216.7	1.64	46.5	47.7	50.6	47.6	47.8
Calculated Head	4897.4	100.0	26.7	5.55	7.48	205.5	1.55	100.0	100.0	100.0	100.0	100.0
Measured Head			30.1	5.85	8.17	191.3	1.74					

Table 6. HMS Test Results – 12 Sulphide

Products	Weight		Assay					Distribution (%)				
	(g)	(%)	Ag (g/t)	Pb (%)	Zn (%)	Cd (ppm)	S (%)	Ag (%)	Pb (%)	Zn (%)	Cd (%)	S (%)
2.96 Sink	532.9	10.8	61.5	13.38	25.51	729.2	14.30	33.2	34.5	36.8	39.0	32.3
2.96 Float-2.8 Sink	610.3	12.3	4.1	0.50	4.60	122.5	2.69	2.5	1.5	7.6	7.5	7.0
2.8 Sink	1143.2	23.1	30.9	6.50	14.35	405.3	8.10	35.7	36.0	44.4	46.5	39.3
2.8 Float-2.6 Sink	1529.3	30.9	2.0	0.22	1.34	45.7	1.06	3.1	1.6	5.5	7.0	6.9
2.6 Sink	2672.5	54.1	14.3	2.91	6.90	199.5	4.07	38.8	37.6	50.0	53.5	46.2
2.6 Float	76.7	1.6	1.3	0.24	1.48	47.5	3.07	0.1	0.1	0.3	0.4	1.0
+20 mesh fraction	2749.2	55.6	14.0	2.83	6.75	195.3	4.04	38.9	37.7	50.3	53.8	47.2
-20mesh fraction	2195.2	44.4	27.5	5.86	8.37	209.6	5.67	61.1	62.3	49.7	46.2	52.8
Calculated Head	4944.4	100.0	20.0	4.18	7.47	201.6	4.77	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	5.07					

4.3 SULFURIC ACID LEACH RESULTS

Ambient sulfuric acid leaching tests were performed on each oxide sample on 6 mesh crushed ore as well as on 200 mesh ground ore to evaluate the oxide samples' response to conventional sulfuric acid leach process. The tests were

carried out at two different pulp densities for 24 hours with pulp pH maintained below 2.5 with concentrate sulfuric acid during the tests. Intermediate leach solutions were removed and assayed for zinc leach kinetics. Table 7 summarizes the leaching test results. The Zn leach profile is plotted in Figure 1. Detailed test reports are provided in Appendix III.

Table 7. Acid Leach Summary

Test No	Sample	Size		Pulp Density	Temperature	Duration	Final PLS	Extraction	H2SO4 Addition
	id	Tyler mesh	µm	% solids	°C	Hours	Zn, g/L	Zn, %	kg/t
L1	Bourne Oxide	6	3,360	20	Room Temp.	24	4.1	30.3	227
L2	Bourne Oxide	6	3,360	30	Room Temp.	24	5.1	26.0	227
L5	Bourne Oxide	200	74	20	Room Temp.	24	12.7	93.9	751
L3	12-Oxide	6	3360	20	Room Temp.	24	3.4	27.6	256
L4	12-Oxide	6	3360	30	Room Temp.	24	5.3	25.7	256
L6	12-Oxide	200	74	20	Room Temp.	24	15.0	90.4	598

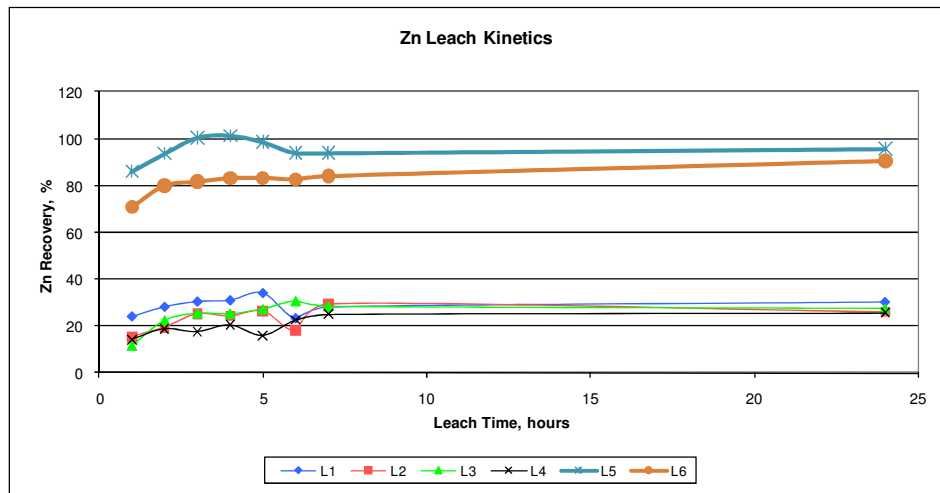


Figure 1. Zinc Leach Profile In Sulfuric Acid Media

Results showed that Zn extractions of >90% were achieved on 200 mesh (74 µm) ground samples. Leach curves almost flatten out after 4 hours, indicating that four hours leach retention might be adequate for the oxide samples. The acid leach conditions were not optimized as acid leach was not the client’s preferred process route at this time.

In general, the average longer-term field extractions should be >90% for further consideration of such an option, preferably on ground oxide ores.

4.4 AMMONIUM CARBONATE LEACH RESULTS

As a comparison to sulfuric acid leach, a set of 12 tests using ammonium carbonate as leach media were conducted on each of the two oxide samples, at different sizes, at different pulp temperatures, to investigate the response of the samples to ammonia based leach process.

4.4.1 BASELINE TESTS AT ATMOSPHERE CONDITIONS

The baseline 2-hour leach tests (AL1 to AL4) were conducted at atmosphere conditions on 6 mesh material at two pulp densities. Another two tests (AL5-AL6) were further performed on 200 mesh ground samples with leach retention extended to 4 hours. The test results are summarized in Table 8, while Zn leach profiles are plotted in Figure 2.

Table 8. Baseline Leach at Atmosphere Conditions

Test No	Sample	Size		Pulp Density % solids	Duration Hours	Final PLS Zn, g/L	Extraction Zn, %	(NH ₄) ₂ CO ₃ Addition kg/t
		Tyler mesh	µm					
AL1	Bourne Oxide	6	3,360	20	2	1.1	6.2	960.9
AL2	Bourne Oxide	6	3,360	30	2	0.8	2.8	560.2
AL5	Bourne Oxide	200	74	20	2	4.4	33.6	960.9
AL3	12-Oxide	6	3360	20	2	1.4	7.1	960.9
AL4	12-Oxide	6	3360	30	2	1.1	3.1	560.2
AL6	12-Oxide	200	74	20	2	5.0	34.5	960.9

As noted, poor zinc extractions resulted from the 6 mesh material. Compared to the test results on 6 mesh coarse feed, the zinc extractions from the P80 - 74 µm milled ores improved to ~34%. The low zinc extractions from the milled ore indicated that ammonia leach at atmosphere conditions will unlikely give desired zinc recoveries.

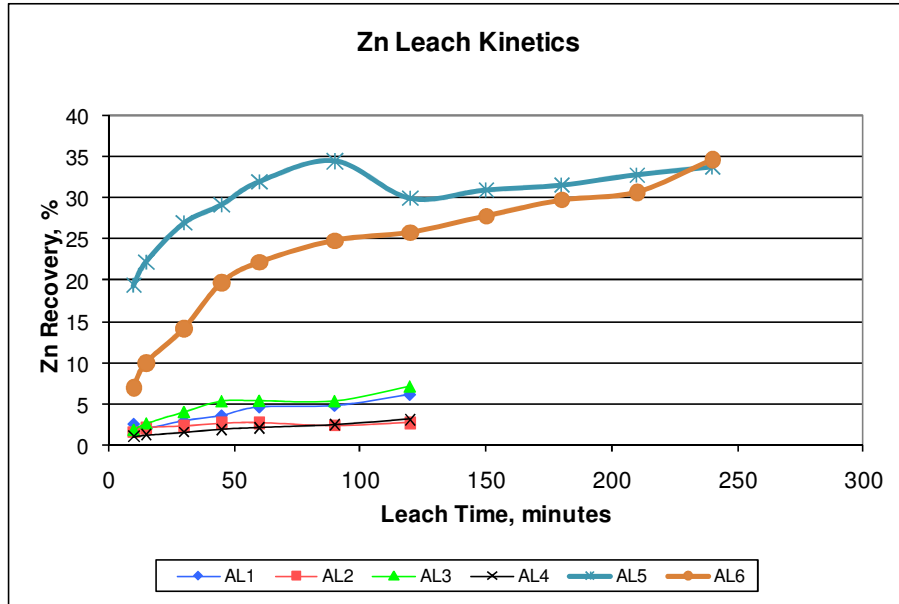


Figure 2. Zinc Extraction Kinetics at Room Temperature

4.4.2 HIGH TEMPERATURE LEACH ON GROUND FEED

Due to the poor recovery results in the atmosphere leach, more ammonium carbonate leach tests were carried out on 200 mesh ground feed at three different pulp temperatures. Results are presented in Table 9 with leach kinetics provided in Figure 3.

Table 9. Summary of Leach Test at High Temperature

Test No	Sample	Size		Pulp Density % solids	Temperature °C	Duration Hours	Final PLS Zn, g/L	Extraction Zn, %	(NH4)2CO3 Addition kg/t
		Tyler mesh	µm						
AL7	Bourne Oxide	200	74	20	40	2	7.9	84.9	960.9
AL8	Bourne Oxide	200	74	20	60	2	10.6	83.6	960.9
AL11	Bourne Oxide	200	74	20	80	2	7.3	86.4	960.9
AL9	12-Oxide	200	74	20	40	2	7.4	62.9	960.9
AL10	12-Oxide	200	74	20	60	2	7.5	73.2	960.9
AL12	12-Oxide	200	74	20	80	2	7.3	91.6	960.9

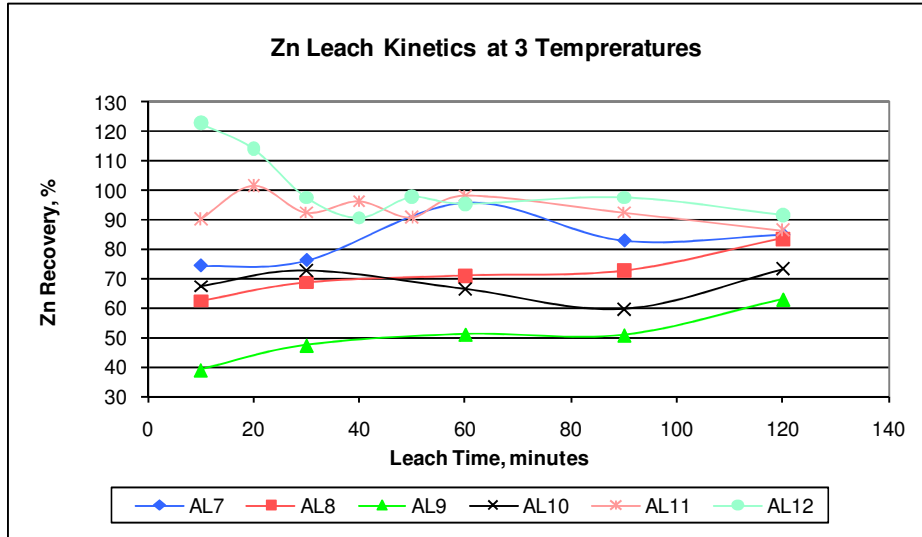


Figure 3. Zinc Extraction Kinetics at High Temperatures

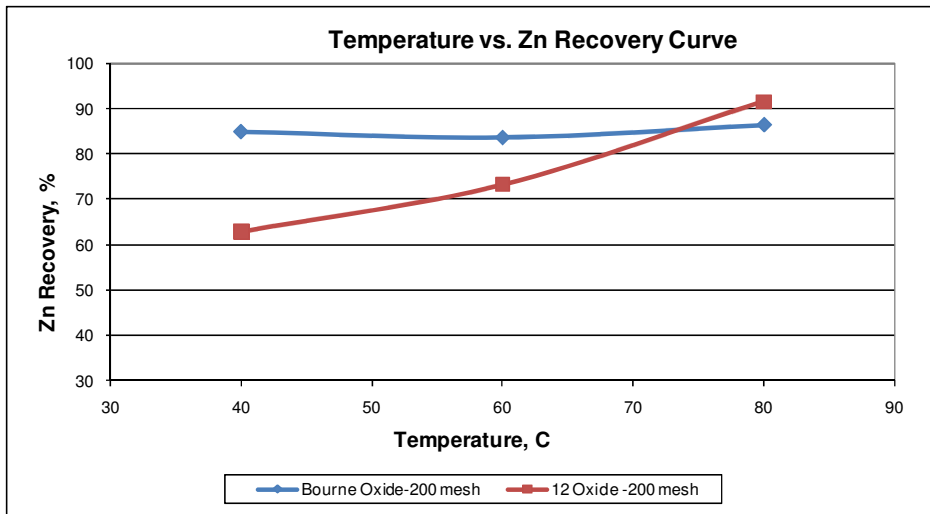


Figure 4. Effect of Pulp Temperature on Zinc Extraction

As can be seen, by heating the leach pulps to above 40°C, Zinc extractions from both oxide samples were improved significantly to over 86%, which was close to completion taking into account the amount of un-leachable zinc sulphide (sphalerite) content in the samples. Leach profiles showed that zinc can be leached out rapidly.

On the 200 mesh ground Bourne oxide feed, over 83% zinc extraction were achieved from all three pulp temperatures tested, indicating that the Bourne oxide sample was not temperature sensitive in the range of 40-80°C (see Figure 4). However, the 12-Oxide sample responded to the leach pulp temperature differently. Higher pulp temperature resulted in better zinc recovery, and over 90% Zn recovery was achieved at 80°C.

4.4.3 LEACH FEED SIZE EVALUATION

Following the leaching tests conducted at higher temperatures, more leach tests were further carried out on the oxide samples at various feed sizes ranging from 6 mesh (3.36 mm) to 200 mesh (74 µm), at two different pulp temperatures, to further investigate the impact of leach feed size and pulp temperature on zinc recoveries. Results are summarized in Table 10, and feed size vs. zinc recovery curves are presented in Figure 5.

As noted, at the same leach pulp temperature, finer feed size resulted in better Zn extraction. For the Bourne Oxide sample, as the leach feed size increased from 74 µm to 3.36 mm, Zn extractions decreased from 83.6% to 46.6% at 40°C, and from 86.4% to 60.8% at 80°C. The 12-Oxide sample had similar response to leach feed size as the Bourne Oxide sample.

It can be concluded that the Wrigley oxide samples require milling prior to leaching.

Table 10. Summary of Leach Test at High Temperature

Sample	Test No	Size		Pulp Density % solids	Temp. °C	Duration Hours	Final PLS Zn, g/L	Extraction Zn, %	Residue Zn, %	(NH4)2CO3 Addition kg/t
		Tyler mesh	µm							
Bourne Oxide	AL7	200	74	20	40	2	7.9	84.9	1.16	960.9
	AL13	6	3,360	20	60	2	7.7	46.6	2.00	960.9
	AL15	20-30	595	20	60	2	10.8	63.0	1.91	970.3
	AL17	100	149	20	60	2	7.8	63.0	1.63	960.9
	AL8	200	74	20	60	2	10.6	83.6	1.29	960.9
	AL14	6	3,360	20	80	2	8.8	60.8	1.98	960.1
	AL16	20-30	595	20	80	2	10.2	68.0	1.18	968.6
	AL18	100	149	20	80	2	8.0	63.3	2.09	960.9
	AL11	200	74	20	80	2	7.3	86.4	0.97	960.9
12-Oxide	AL9	200	74	20	40	2	7.4	62.9	2.81	960.9
	AL19	6	3,360	20	60	2	9.9	56.1	2.06	960.5
	AL21	20-30	595	20	60	2	9.7	75.7	1.68	959.7
	AL23	100	149	20	60	2	9.9	85.4	1.18	960.9
	AL10	200	74	20	60	2	7.5	73.2	2.02	960.9
	AL20	6	3,360	20	80	2	10.1	62.2	1.45	959.0
	AL22	20-30	595	20	80	2	10.6	77.4	1.06	988.6
	AL24	100	149	20	80	2	9.5	84.7	1.20	960.9
	AL12	200	74	20	80	2	7.3	91.6	0.76	960.9

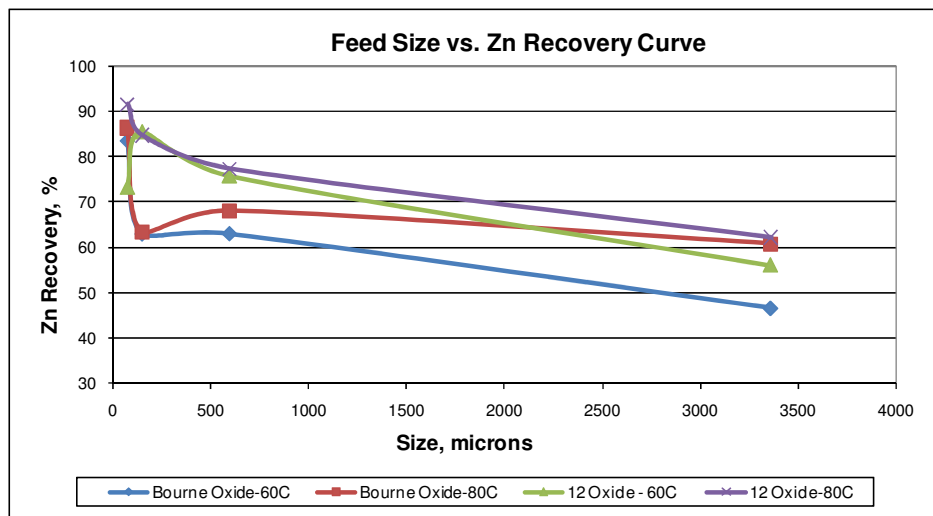


Figure 5. Zinc Extractions at Different Feed Sizes

4.5 FLOTATION OF SULPHIDE SAMPLE

4.5.1 ROUGHER KINETIC FLOTATION OF ORE

Three baseline sequential flotation tests (F1-F3) were first conducted on the sulphide ore sample at three different grinds, targeting P80-150 μm , 105 μm and 74 μm respectively, to investigate the affect of primary grind on metals' recoveries.

Following the baseline flotation, more flotation tests were performed at a coarser grind, at natural pH in Pb circuit, with sulphidizing reagent to maximize flotation rougher recoveries. Flotation condition and results were summarized in Table 11.

Table 11. Rougher Flotation Summary

Test No.	Test Conditions	Grind	Recovery (%)											
		P ₈₀ (μm)	Pb Rougher Conc.				Zn Rougher Conc.				Flotation Rougher Conc.			
			Ag	Pb	Zn	Cd	Ag	Pb	Zn	Cd	Ag	Pb	Zn	Cd
F1	Pb: PEX, A241 as collector	140	53.7	78.0	1.8	1.8	40.2	10.8	81.6	79.0	93.9	88.9	83.4	80.8
	ZnSO ₄ as depressant, float at pH 9.5													
	Zn: SIPX as collector													
	CuSO ₄ as activator, float at pH 10													
F2	Similar to F1 but at finer grind	98	31.1	41.4	1.7	1.5	66.3	48.9	83.1	80.0	97.4	90.2	84.8	81.4
F3	Similar to F1 but at much finer grind	70	56.2	77.0	1.3	1.4	41.2	11.9	82.9	79.4	97.4	88.9	84.2	80.8
F4	Similar to F1, but with 500g/t Na ₂ S	138	14.6	23.3	1.0	0.8	74.1	62.0	84.0	85.4	88.7	85.3	85.0	86.2
F5	Similar to F1 but at courses size	192	16.7	23.1	1.0	0.8	58.8	42.8	84.3	86.0	75.5	65.9	85.2	86.8
F6	Similar to F1, but float Pb at nature pH	140	46.4	62.8	1.8	1.6	44.7	14.0	82.7	85.3	91.1	76.8	84.5	86.8
F7	Similar to F1, but with 50g/t Na ₂ S in Pb circuit	130	49.2	72.0	1.7	1.5	39.0	12.4	82.3	83.6	88.2	84.5	84.0	85.1

Results showed that:

- The Wrigley sulphide sample tested was not grind sensitive in the size ranging from 150 μm to 74 μm . About 88% Pb and 84% Zn recoveries were achieved, which were close to the maximum recoveries of sulphide Pb and sulphide Zn in the sample. The Pb and Zn lost into

flotation tailing might be related to the oxide Pb and oxide Zn contained in the sample.

- The Ag recoveries were >94%, with ~54% Ag reported to the Pb circuit and ~40% reported to the Zn circuit.
- The Cd mainly followed the Zn minerals with over 80% reported to the zinc concentrate.
- Sulfidizing of the ore did not improve the metals' recoveries.

4.5.2 ROUGHER KINETIC FLOTATION OF AMMONIA LEACH RESIDUE

Following the baseline flotation procedure, sequential rougher kinetic flotation was conducted on two ammonia leach residues to recover the residual Pb and Zn minerals. Results showed that there was no significant metals' concentration. Detailed results are presented in Appendix V.

4.5.3 CLEANER FLOTATION OF ORE

Based on the rougher kinetic test results, the 150 µm primary grind was selected for concentrate upgrading tests, with and without regrinding of rougher concentrates. Results are presented in Table 12 and 13 below. Concentrate grade vs. recovery curves are plotted in Figure 6.

Table 12. Cleaner Results w/o Regrinding

Product	Assay					Distribution				
	Ag	Pb	Zn	Cd	Fe	Ag	Pb	Zn	Cd	Fe
	g/t	%	%	ppm	%	%	%	%	%	%
3rd Pb Cleaner Concentrate	262.8	71.64	1.57	10.6	1.21	48.2	71.8	0.6	0.2	3.8
3rd Pb Cleaner Tails	99.5	24.14	5.41	120.9	5.52	2.3	3.1	0.3	0.2	2.2
2nd Pb Cleaner Concentrate	244.5	66.31	2.00	23.0	1.69	50.6	74.9	0.9	0.4	6.0
2nd Pb Cleaner Tails	55.4	14.71	5.94	134.8	5.39	2.1	3.0	0.5	0.4	3.5
1st Pb Cleaner Concentrate	215.2	58.31	2.61	40.3	2.27	52.7	78.0	1.4	0.8	9.5
1st Pb Cleaner tails	33.5	6.42	5.25	129.8	5.31	1.6	1.7	0.6	0.5	4.4
Total Pb Rougher Concentrate	185.4	49.82	3.04	55.0	2.76	54.3	79.6	2.0	1.2	13.9
3rd Zn Cleaner Concentrate	54.7	0.64	62.80	1808.8	0.73	31.1	2.0	78.9	80.0	7.1
3rd Zn Cleaner Tails	50.3	7.44	20.90	553.8	5.59	3.1	2.5	2.9	2.7	6.0
2nd Zn Cleaner Concentrate	54.3	1.31	58.66	1684.9	1.21	34.3	4.5	81.7	82.7	13.1
2nd Zn Cleaner Tails	26.4	4.21	7.81	208.7	4.10	2.0	1.7	1.3	1.2	5.2
1st Zn Cleaner Concentrate	51.3	1.62	53.29	1528.8	1.52	36.2	6.2	83.0	83.9	18.3
1st Zn Cleaner tails	9.3	2.26	2.20	58.7	2.09	1.9	2.6	1.0	0.9	7.4
Total Zn Rougher Concentrate	41.8	1.76	41.69	1195.2	1.65	38.2	8.8	84.0	84.8	25.7
Total Flotation Concentrates	76.6	13.42	32.32	918.5	1.92	92.4	88.4	86.0	86.1	39.6
Final Tails	1.5	0.42	1.26	35.6	0.70	7.6	11.6	14.0	13.9	60.4
Calculated Head	16.0	2.93	7.26	206.1	0.94	100.0	100.0	100.0	100.0	100.0
Measured Head	16.8	2.98	7.24	186.8	0.95					

Table 13. Cleaner Results with Re grinding

Product	Assay					Distribution				
	Ag	Pb	Zn	Cd	Fe	Ag	Pb	Zn	Cd	Fe
	g/t	%	%	ppm	%	%	%	%	%	%
3rd Pb Cleaner Concentrate	240.1	65.52	1.20	29.8	2.22	21.4	30.8	0.2	0.2	3.2
3rd Pb Cleaner Tails	211.8	56.64	2.41	53.9	3.06	8.0	11.3	0.2	0.2	1.9
2nd Pb Cleaner Concentrate	231.7	62.88	1.56	37.0	2.47	29.3	42.1	0.4	0.4	5.1
2nd Pb Cleaner Tails	162.8	42.01	3.64	82.6	3.36	6.3	8.5	0.3	0.3	2.1
1st Pb Cleaner Concentrate	215.6	58.02	2.04	47.6	2.68	35.6	50.7	0.8	0.7	7.2
1st Pb Cleaner tails	142.7	39.98	4.35	105.9	2.74	19.1	28.3	1.3	1.3	6.0
Total Pb Rougher Concentrate	183.0	49.94	3.08	73.7	2.71	54.6	78.9	2.0	2.0	13.2
3rd Zn Cleaner Concentrate	58.3	0.74	66.74	1746.0	0.14	20.7	1.4	52.8	56.0	0.8
3rd Zn Cleaner Tails	60.4	1.69	62.67	1263.8	0.47	2.2	0.3	5.0	4.1	0.3
2nd Zn Cleaner Concentrate	58.5	0.83	66.37	1701.9	0.17	22.9	1.7	57.8	60.1	1.1
2nd Zn Cleaner Tails	53.6	2.33	41.24	506.8	1.69	6.5	1.5	11.1	5.5	3.3
1st Zn Cleaner Concentrate	57.3	1.18	60.44	1419.7	0.53	29.3	3.2	68.9	65.6	4.4
1st Zn Cleaner tails	25.3	2.88	15.10	422.2	4.92	10.2	6.2	13.6	15.4	32.5
Total Zn Rougher Concentrate	43.2	1.93	40.42	979.4	2.47	39.6	9.4	82.5	81.0	36.9
Total Flotation Concentrates	77.6	13.74	31.24	756.7	2.53	94.2	88.3	84.5	83.0	50.1
Final Tails	1.1	0.42	1.32	35.8	0.58	5.8	11.7	15.5	17.0	49.9
Calculated Head	15.4	2.92	6.93	171.0	0.94	100.0	100.0	100.0	100.0	100.0
Measured Head	16.8	2.98	7.24	186.8	0.95					

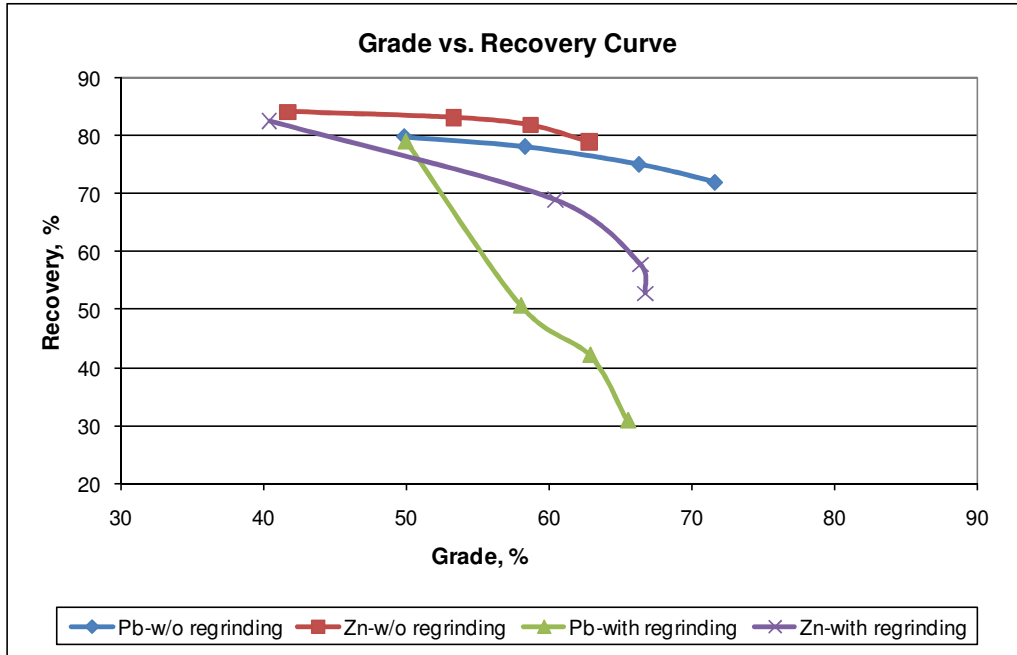


Figure 6. Concentrate Grade vs. Recovery

Excellent Pb and Zn concentrate grades and recoveries were achieved from both cleaner tests. The test (test F8) without regrinding of rougher products resulted in better concentrate grades and recoveries, and the metal recoveries of 71.8% Pb and 78.9% Zn were achieved into their respective 3rd cleaner concentrates, assaying 71.6% Pb and 62.8% Zn, respectively. Silver recoveries into Pb Cleaner Concentrate were 48% and 31% into Zn Cleaner Concentrate

5 CONCLUSIONS AND RECOMMENDATIONS

The Wrigley oxide ore and sulphide ore require different process routes. Acid or ammonia based leach process is best suited for the oxides, whilst flotation process works better for the sulphide ore.

The Wrigley oxide samples tested are amendable to both acid and ammonium carbonate leaching with zinc recoveries close to 90%. Further study is required to develop a refine process and a reagent recycle plan once the desired process option has been identified in the next phase.

The Wrigley sulphide responds well to conventional differential flotation with encouraging metals' grades and recoveries. It is strongly recommended that a locked cycle test be pursued to evaluate the circuit configuration and the effect of recycle streams in locked cycle mode. Leach of flotation tails may be required for complete metal beneficiation.

APPENDIX I
HEAD CHARACTERIZATION

HEAD ASSAY REPORT

Client: Devonian Metals
Sample: as specified samples from Wrigley project

Date: 27-Jul-11
Project: 1103306
Page: 1 of 2

Items	Units	Sample ID					Analytical Method
		Comp RB-07-1	Comp RB-07-4	Bourne Oxide	12-Oxide	12-Sulphide	
Pb	%	0.36	1.22	2.13	5.85	2.98	Pb-4A-OR-ICP
Pb(Ox)	%	0.31	1.05	1.45	5.41	1.19	Pb-OX-01
Zn	%	14.05	11.55	7.44	8.17	7.24	Zn-4A-OR-ICP
Zn(Ox)	%	11.79	10.78	6.54	7.23	1.08	Zn-OX-01
S(T)	%	0.04	0.11	0.3	1.74	5.07	S-LECO
Sulfide	%	0.04	0.07	0.28	0.39	4.57	S-SD-OR
Ag	ppm	6.2	10.8	11.1	30.1	16.8	Ag-4A-OR
Fe	%	0.7	1.62	1.36	3.76	0.95	Fe-4A-OR-ICP
Al	%	0.43	1.13	0.54	2.34	0.69	30-4A-TR
Ag	ppm	5	10.9	11.3	31.8	18.3	30-4A-TR
As	ppm	142	89	122	249	101	30-4A-TR
Ba	ppm	68	169	127	1289	371	30-4A-TR
Bi	ppm	<2	<2	<2	<2	<2	30-4A-TR
Ca	%	6.25	8.27	12.8	14.08	16.87	30-4A-TR
Cd	ppm	330.5	316.2	174.3	191.3	186.8	30-4A-TR
Co	ppm	10	6	6	16	3	30-4A-TR
Cr	ppm	74	70	43	44	44	30-4A-TR
Cu	ppm	126	251	137	285	162	30-4A-TR
Fe	%	0.69	1.62	1.38	3.79	0.93	30-4A-TR
K	%	0.2	0.53	0.23	0.75	0.37	30-4A-TR
La	ppm	<10	<10	<10	<10	<10	30-4A-TR
Mg	%	2.88	1.82	5.31	0.85	4.94	30-4A-TR
Mn	ppm	633	257	695	297	615	30-4A-TR
Mo	ppm	9	22	5	218	32	30-4A-TR
Na	%	0.01	0.02	0.02	0.04	0.03	30-4A-TR
Ni	ppm	69	60	56	266	32	30-4A-TR
P	ppm	17	118	82	583	229	30-4A-TR
Pb	ppm	3765	>10000	>10000	>10000	>10000	30-4A-TR
Sb	ppm	45	58	61	114	106	30-4A-TR
Sc	ppm	<1	2	<1	5	1	30-4A-TR
Sr	ppm	75	149	137	360	2325	30-4A-TR
Ti	%	0.02	0.04	0.01	0.04	0.02	30-4A-TR
Tl	ppm	<10	13	29	35	25	30-4A-TR
V	ppm	8	14	9	43	20	30-4A-TR
W	ppm	1675	1369	844	957	843	30-4A-TR
Zn	ppm	>10000	>10000	>10000	>10000	>10000	30-4A-TR
Zr	ppm	13	15	7	13	7	30-4A-TR

HEAD ASSAY REPORT - WHOLE ROCK

Client: Devonian Metals
Sample: as specified samples from Wrigley project

Date: 27-Jul-11
Project: 1103306
Page: 2 of 2

Items	Units	Sample ID					Analytical Method
		Comp RB-07-1	Comp RB-07-4	Bourne Oxide	12-Oxide	12-Sulphide	
Al ₂ O ₃	%	0.82	2.1	1.04	4.26	1.29	WR-FS-ICP
BaO	%	<0.01	0.02	0.02	0.24	0.05	WR-FS-ICP
CaO	%	8.16	10.07	15.75	17.06	25.91	WR-FS-ICP
Cr ₂ O ₃	%	0.01	0.01	<0.01	<0.01	0.01	WR-FS-ICP
LOI	%	20.87	20.15	28.76	25.15	20.44	WR-FS-ICP
Fe ₂ O ₃	%	0.92	2.13	1.77	4.82	1.37	WR-FS-ICP
K ₂ O	%	0.19	0.48	0.18	0.6	0.31	WR-FS-ICP
MgO	%	4.95	3.08	9.96	1.43	9.45	WR-FS-ICP
MnO	%	0.08	0.03	0.09	0.04	0.08	WR-FS-ICP
Na ₂ O	%	0.01	0.03	0.04	0.05	0.02	WR-FS-ICP
P ₂ O ₅	%	<0.01	<0.01	<0.01	0.05	0.01	WR-FS-ICP
SiO ₂	%	41.4	40.43	26.45	20.59	23.74	WR-FS-ICP
TiO ₂	%	0.07	0.11	0.05	0.11	0.06	WR-FS-ICP
Total	%	77.5	78.65	84.1	74.41	82.75	WR-FS-ICP

BOND MILL GRINDABILITY TEST REPORT

Client: Devonian Metals
Test: WI-1
Sample: Bourne Oxide

Date: 10-Aug-11
Project: 1103306

TEST CONDITIONS

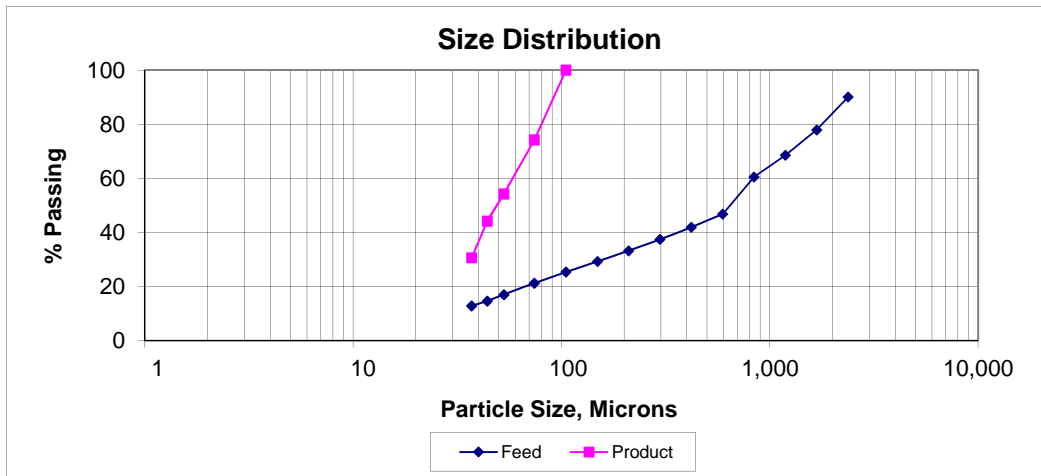
Cycle	Oversize Wt. grams	Product Wt. grams	Feed Undersize grams	Net Product grams	Product per Rev. grams/rev.	Required Rev. rev.
1	723.3	656.4	350.8	305.6	3.06	100
2	970.7	409.0	166.9	242.1	3.27	74
3	1001.9	377.8	104.0	273.8	3.08	89
4	981.9	397.8	96.1	301.7	3.11	97
5	989.1	390.6	101.1	289.5	3.08	94
6	973.9	405.8	99.3	306.4	3.19	96
7	980.8	398.9	103.2	295.7	3.24	91

SIZE ANALYSIS

Sieve Size		% Passing	
Tyler mesh	µm	Feed	Product
8	2,380	90.0	
10	1,680	77.9	
14	1,190	68.6	
20	841	60.5	
28	595	46.8	
35	420	42.0	
48	297	37.5	
65	210	33.2	
100	149	29.3	
150	105	25.4	100.0
200	74	21.3	74.2
270	53	17.0	54.3
325	44	14.7	44.3
400	37	12.9	30.6

TEST RESULTS

Material Charge Wt.-700 mL(g) = 1,379.7
 Test Screen (µm) = 105
 Undersize in Feed (%) = 25.43
 Circulating Load (%) = 2.46
 Gbp (ave.) = 3.17
 Product P₈₀ (µm) = 81
 Feed F₈₀ (µm) = 1,793
W (kWh/ton) = 6.76
W (kWh/tonne) = 7.44



BOND MILL GRINDABILITY TEST REPORT

Client: Devonian Metals
 Test: WI-2
 Sample: 12 Oxide

Date: 25-Aug-11
 Project: 1103306

TEST CONDITIONS

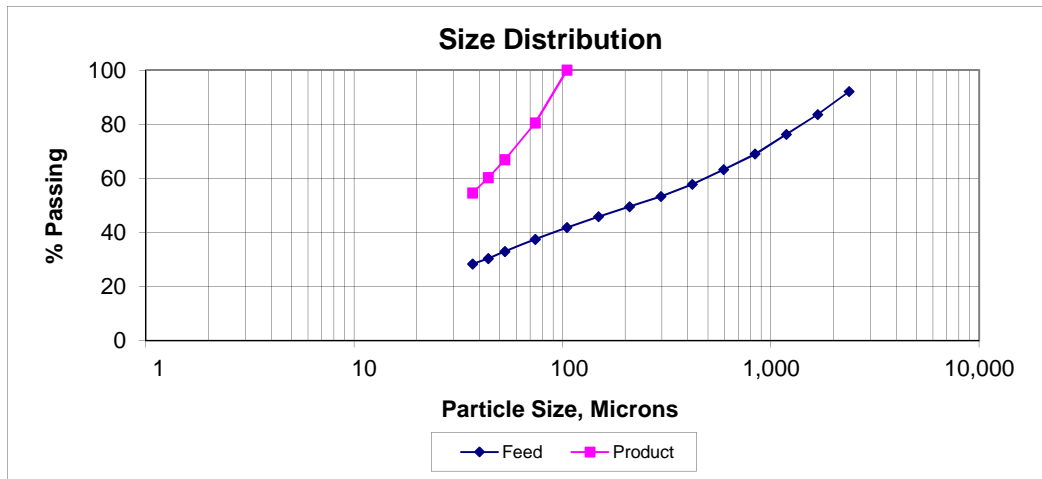
Cycle	Oversize Wt. grams	Product Wt. grams	Feed Undersize grams	Net Product grams	Product per Rev. grams/rev.	Required Rev. rev.
1	749.3	522.9				0
2	873.3	398.9	218.6	180.2	3.60	50
3	923.9	348.3	166.8	181.5	3.30	55
4	914.1	358.1	145.6	212.4	3.22	66
5	922.0	350.2	149.7	200.5	3.04	66
6	910.6	361.6	146.4	215.2	3.03	71
7	911.4	360.8	151.2	209.6	2.99	70

SIZE ANALYSIS

Sieve Size		% Passing	
Tyler mesh	µm	Feed	Product
8	2,380	92.1	
10	1,680	83.5	
14	1,190	76.3	
20	841	69.0	
28	595	63.3	
35	420	57.8	
48	297	53.3	
65	210	49.5	
100	149	45.9	
150	105	41.8	100.0
200	74	37.5	80.5
270	53	33.0	66.9
325	44	30.4	60.2
400	37	28.3	54.6

TEST RESULTS

Material Charge Wt.-700 mL(g) = 1,272.2
 Test Screen (µm) = 105
 Undersize in Feed (%) = 41.81
 Circulating Load (%) = 2.53
 Gbp (ave.) = 3.02
 Product P₈₀ (µm) = 73
 Feed F₈₀ (µm) = 1,426
W (kWh/ton) = 6.81
W (kWh/tonne) = 7.50



BOND MILL GRINDABILITY TEST REPORT

Client: Devonian Metals
Test: WI-3
Sample: 12 Sulfide

Date: 11-Aug-11
Project: 1103306

TEST CONDITIONS

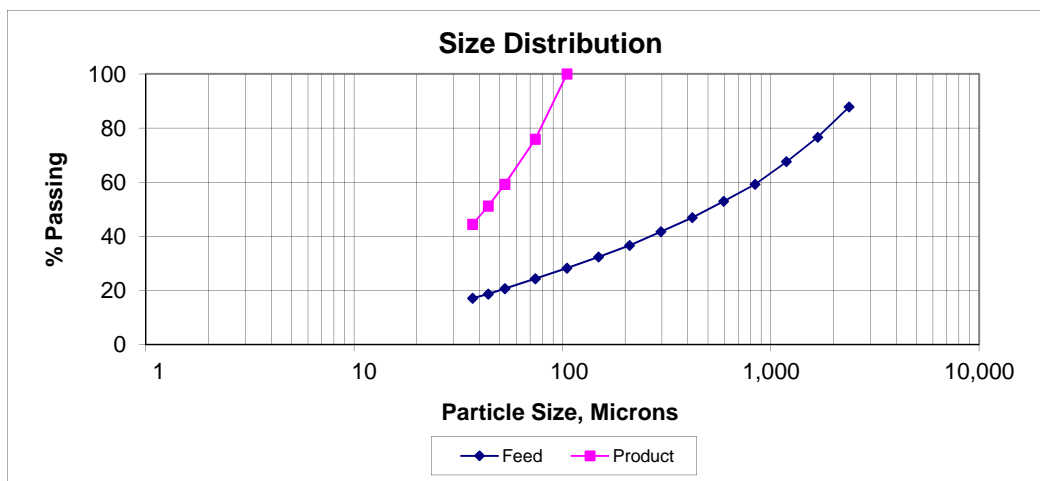
Cycle	Oversize Wt. grams	Product Wt. grams	Feed Undersize grams	Net Product grams	Product per Rev. grams/rev.	Required Rev. rev.
1	819.5	594.8	399.2	195.6	1.96	100
2	932.4	481.9	167.9	314.0	2.60	121
3	994.8	419.5	136.0	283.4	2.75	103
4	1001.4	412.9	118.4	294.4	2.83	104
5	1009.2	405.1	116.5	288.6	2.83	102
6	1010.3	404.0	114.4	289.6	2.83	102

SIZE ANALYSIS

Sieve Size		% Passing	
Tyler mesh	µm	Feed	Product
8	2,380	87.8	
10	1,680	76.6	
14	1,190	67.5	
20	841	59.2	
28	595	52.9	
35	420	46.9	
48	297	41.7	
65	210	36.7	
100	149	32.4	
150	105	28.2	100.0
200	74	24.3	75.9
270	53	20.6	59.3
325	44	18.6	51.2
400	37	17.1	44.5

TEST RESULTS

Material Charge Wt.-700 mL(g) = 1,414.3
 Test Screen (µm) = 105
 Undersize in Feed (%) = 28.23
 Circulating Load (%) = 2.50
 Gbp (ave.) = 2.83
 Product P₈₀ (µm) = 79
 Feed F₈₀ (µm) = 1,876
W (kWh/ton) = 7.28
W (kWh/tonne) = 8.01



APPENDIX II
HEAVY MEDIA SEPERATION TEST RESULTS

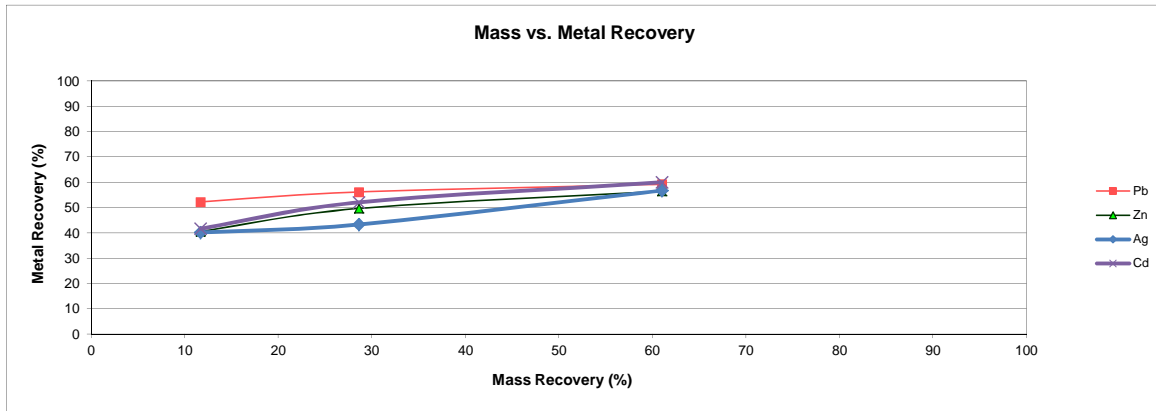
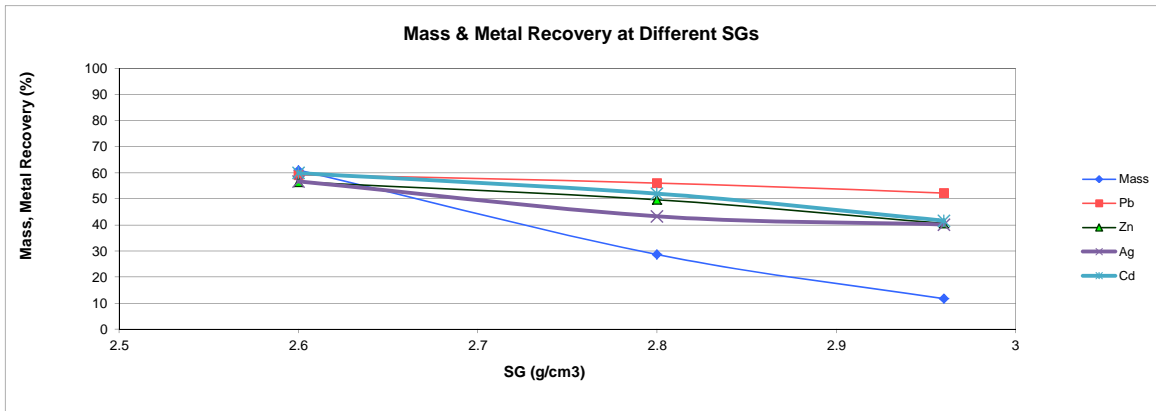
HEAVY LIQUID SEPARATION TEST REPORT (With fines)

Client: Devonian Metals
 Test: HMS-1
 Sample: Bourne Oxide

Date: 13-Sep-11
 Project: 1103306

Objective: to separate metals at three different heavy media SG's on 1/4 inch crushed material after screening at 20-Tyler mesh

Products	Weight		Assay					Distribution (%)				
	(g)	(%)	Ag (g/t)	Pb (%)	Zn (%)	Cd (ppm)	S (%)	Ag (%)	Pb (%)	Zn (%)	Cd (%)	S (%)
2.96 Sink	571.8	11.7	42.5	10.83	24.49	696.6	1.31	40.2	52.2	40.6	41.6	65.1
2.96 Float-2.8 Sink	829.1	16.9	2.3	0.56	3.79	119.8	0.16	3.2	3.9	9.1	10.4	11.5
2.8 Sink	1400.9	28.6	18.7	4.75	12.24	355.2	0.63	43.3	56.1	49.7	52.0	76.7
2.8 Float-2.6 Sink	1585.4	32.4	5.1	0.23	1.49	47.8	0.12	13.4	3.1	6.8	7.9	16.5
2.6 Sink	2986.3	61.0	11.5	2.35	6.53	192.0	0.36	56.7	59.2	56.5	60.0	93.2
2.6 Float	161.6	3.3	4.5	0.47	1.32	34.3	0.16	1.2	0.6	0.6	0.6	2.2
+20 mesh fraction	3148.0	64.3	11.1	2.25	6.27	183.9	0.35	57.9	59.8	57.1	60.5	95.5
-20mesh fraction	1744.2	35.7	14.6	2.73	8.49	216.4	0.03	42.1	40.2	42.9	39.5	4.5
Calculated Head	4892.2	100.0	12.4	2.42	7.06	195.5	0.24	100.0	100.0	100.0	100.0	100.0
Measured Head			11.1	2.13	7.44	174.3	0.30					



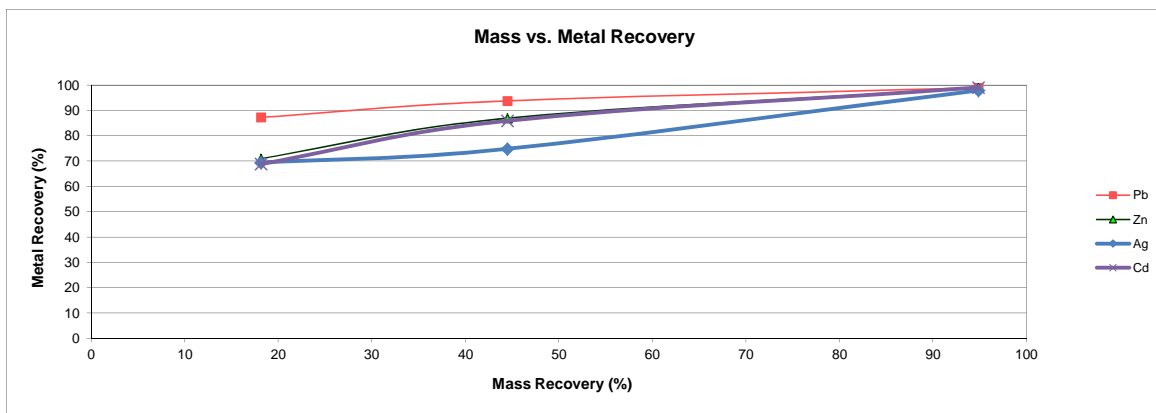
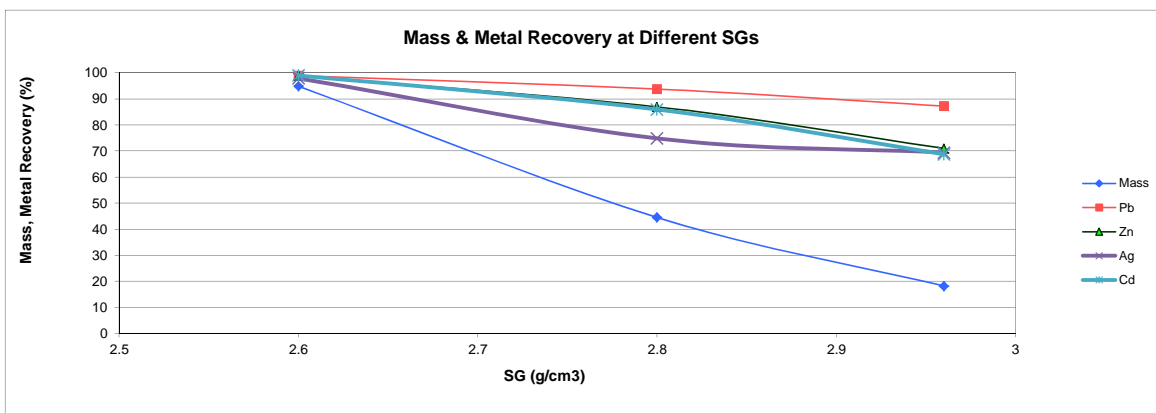
HEAVY LIQUID SEPARATION TEST REPORT (Without fines)

Client: Devonian Metals
 Test: HMS-1
 Sample: Bourne Oxide

Date: 13-Sep-11
 Project: 1103306

Objective: to separate metals at three different heavy media SG's on -1/4 inch + 20mesh screen fraction

Products	Weight		Assay					Distribution (%)				
	(g)	(%)	Ag (g/t)	Pb (%)	Zn (%)	Cd (ppm)	S (%)	Ag (%)	Pb (%)	Zn (%)	Cd (%)	S (%)
2.96 Sink	571.8	18.2	42.5	10.83	24.49	696.6	1.31	69.4	87.3	71.0	68.8	68.2
2.96 Float-2.8 Sink	829.1	26.3	2.3	0.56	3.79	119.8	0.16	5.4	6.5	15.9	17.2	12.1
2.8 Sink	1400.9	44.5	18.7	4.75	12.24	355.2	0.63	74.8	93.8	86.9	86.0	80.3
2.8 Float-2.6 Sink	1585.4	50.4	5.1	0.23	1.49	47.8	0.12	23.1	5.1	12.0	13.1	17.3
2.6 Sink	2986.3	94.9	11.5	2.35	6.53	192.0	0.36	97.9	98.9	98.9	99.0	97.6
2.6 Float	161.6	5.1	4.5	0.47	1.32	34.3	0.16	2.1	1.1	1.1	1.0	2.4
Calculated +20 mesh fraction	3148.0	100.0	11.1	2.25	6.27	183.9	0.35	100.0	100.0	100.0	100.0	100.0
Measured Head			n/a	n/a	n/a	n/a	n/a					



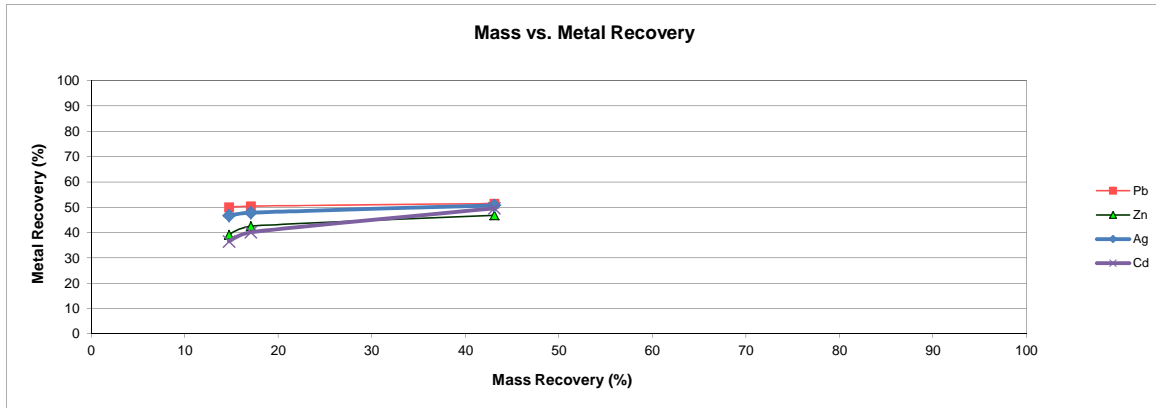
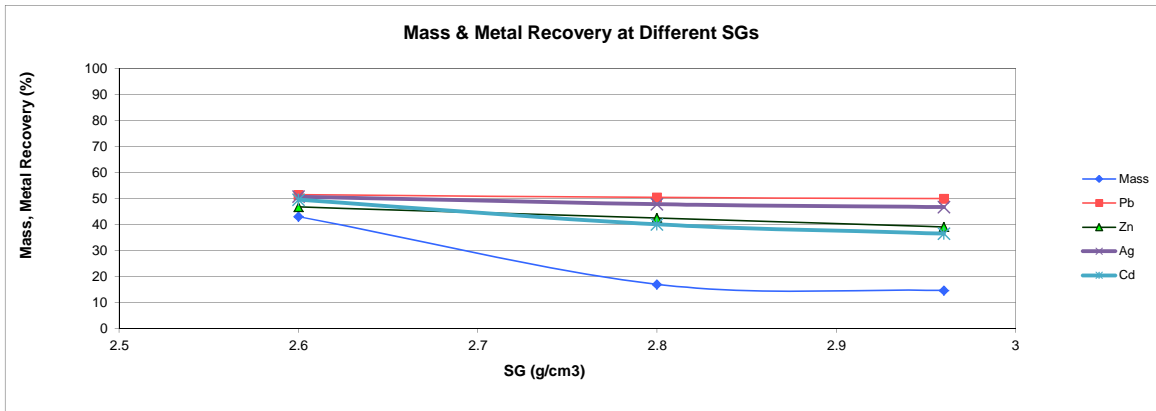
HEAVY LIQUID SEPARATION TEST REPORT (With fines)

Client: Devonian Metals
 Test: HMS-2
 Sample: 12-Oxide

Date: 13-Sep-11
 Project: 1103306

Objective: to separate metals at three different heavy media SG's on 1/4 inch crushed material after screening at 20-Tyler mesh

Products	Weight		Assay					Distribution (%)				
	(g)	(%)	Ag (g/t)	Pb (%)	Zn (%)	Cd (ppm)	S (%)	Ag (%)	Pb (%)	Zn (%)	Cd (%)	S (%)
2.96 Sink	721.6	14.7	84.8	18.82	19.85	509.8	3.29	46.7	50.0	39.1	36.5	31.3
2.96 Float-2.8 Sink	115.2	2.4	12.6	1.08	10.85	312.8	1.94	1.1	0.5	3.4	3.6	2.9
2.8 Sink	836.8	17.1	74.9	16.38	18.61	482.7	3.10	47.8	50.4	42.5	40.1	34.2
2.8 Float-2.6 Sink	1273.7	26.0	3.0	0.22	1.23	74.7	0.39	2.9	1.0	4.3	9.5	6.5
2.6 Sink	2110.5	43.1	31.5	6.63	8.12	236.5	1.47	50.8	51.5	46.8	49.6	40.8
2.6 Float	574.0	11.7	6.3	0.38	1.66	48.7	1.50	2.8	0.8	2.6	2.8	11.4
+20 mesh fraction	2684.5	54.8	26.1	5.29	6.74	196.3	1.47	53.5	52.3	49.4	52.4	52.2
-20mesh fraction	2212.9	45.2	27.5	5.86	8.37	216.7	1.64	46.5	47.7	50.6	47.6	47.8
Calculated Head	4897.4	100.0	26.7	5.55	7.48	205.5	1.55	100.0	100.0	100.0	100.0	100.0
Measured Head			30.1	5.85	8.17	191.3	1.74					



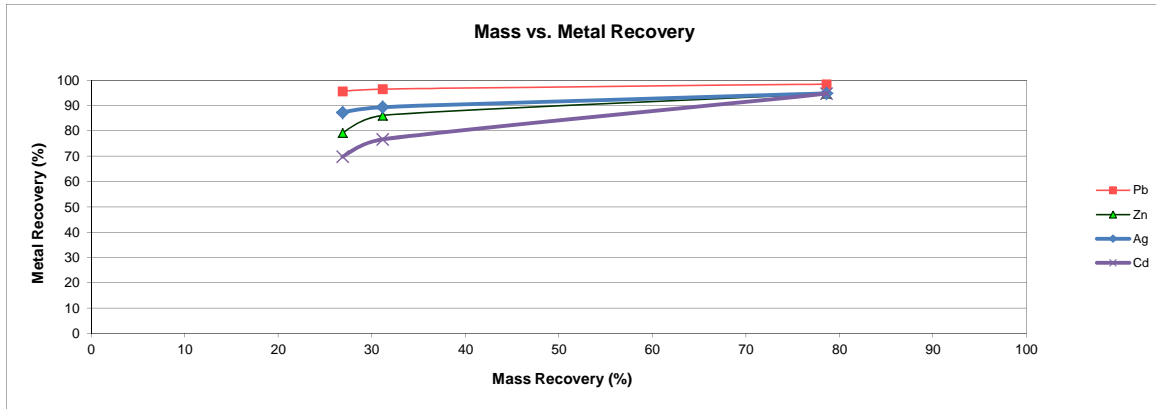
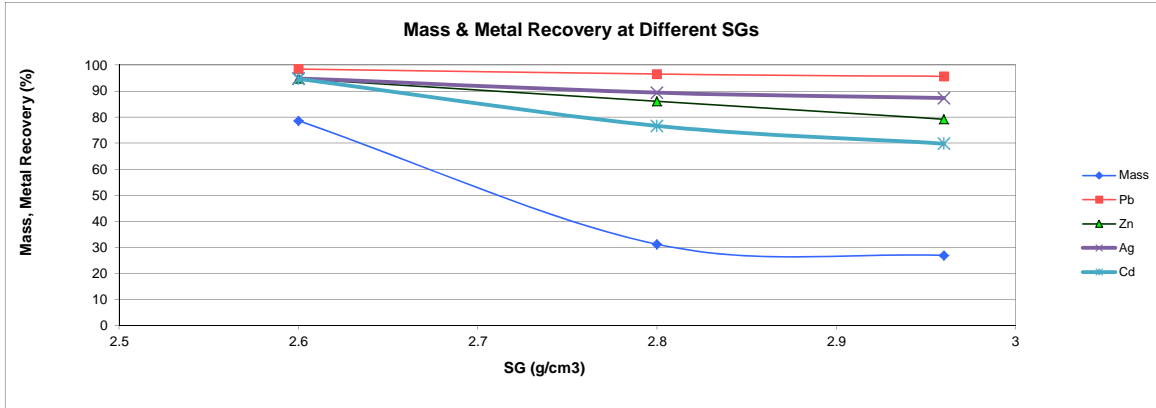
HEAVY LIQUID SEPARATION TEST REPORT (Without fines)

Client: Devonian Metals
 Test: HMS-2
 Sample: 12-Oxide

Date: 13-Sep-11
 Project: 1103306

Objective: to separate metals at three different heavy media SG's on -1/4 inch + 20mesh screen fraction

Products	Weight		Assay					Distribution (%)				
	(g)	(%)	Ag (g/t)	Pb (%)	Zn (%)	Cd (ppm)	S (%)	Ag (%)	Pb (%)	Zn (%)	Cd (%)	S (%)
2.96 Sink	721.6	26.9	84.8	18.82	19.85	509.8	3.29	87.3	95.6	79.2	69.8	60.0
2.96 Float-2.8 Sink	115.2	4.3	12.6	1.08	10.85	312.8	1.94	2.1	0.9	6.9	6.8	5.7
2.8 Sink	836.8	31.2	74.9	16.38	18.61	482.7	3.10	89.4	96.5	86.1	76.6	65.7
2.8 Float-2.6 Sink	1273.7	47.4	3.0	0.22	1.23	74.7	0.39	5.5	2.0	8.7	18.1	12.6
2.6 Sink	2110.5	78.6	31.5	6.63	8.12	236.5	1.47	94.8	98.5	94.7	94.7	78.2
2.6 Float	574.0	21.4	6.3	0.38	1.66	48.7	1.50	5.2	1.5	5.3	5.3	21.8
Calculated +20 mesh fraction	2684.5	100.0	26.1	5.29	6.74	196.3	1.47	100.0	100.0	100.0	100.0	100.0
Measured Head			n/a	n/a	n/a	n/a	n/a					



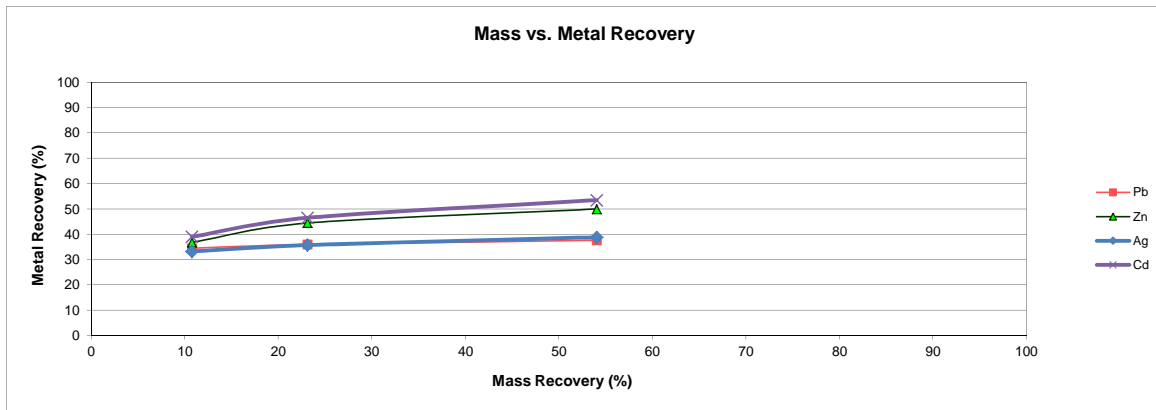
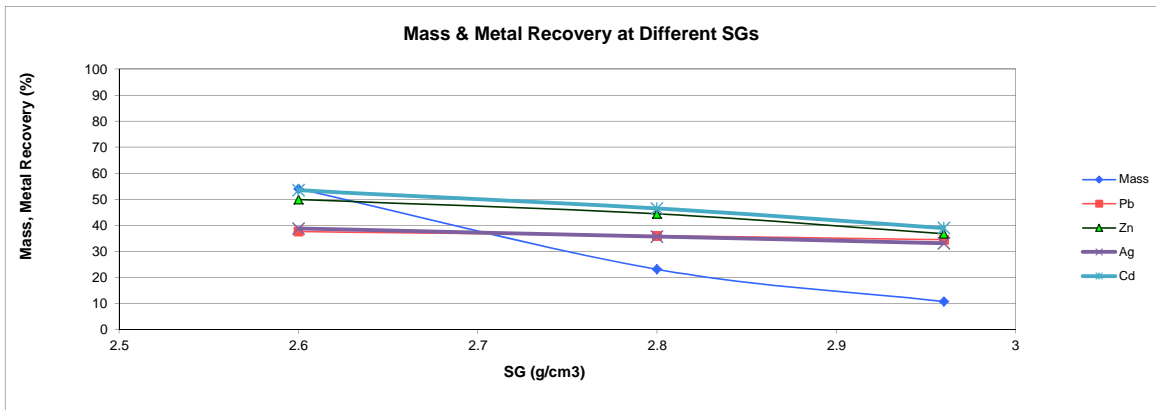
HEAVY LIQUID SEPARATION TEST REPORT (With fines)

Client: Devonian Metals
Test: HMS-3
Sample: 12-Sulphide

Date: 13-Sep-11
Project: 1103306

Objective: to separate metals at three different heavy media SG's on 1/4 inch crushed material after screening at 20-Tyler mesh

Products	Weight		Assay					Distribution (%)				
	(g)	(%)	Ag (g/t)	Pb (%)	Zn (%)	Cd (ppm)	S (%)	Ag (%)	Pb (%)	Zn (%)	Cd (%)	S (%)
2.96 Sink	532.9	10.8	61.5	13.38	25.51	729.2	14.30	33.2	34.5	36.8	39.0	32.3
2.96 Float-2.8 Sink	610.3	12.3	4.1	0.50	4.60	122.5	2.69	2.5	1.5	7.6	7.5	7.0
2.8 Sink	1143.2	23.1	30.9	6.50	14.35	405.3	8.10	35.7	36.0	44.4	46.5	39.3
2.8 Float-2.6 Sink	1529.3	30.9	2.0	0.22	1.34	45.7	1.06	3.1	1.6	5.5	7.0	6.9
2.6 Sink	2672.5	54.1	14.3	2.91	6.90	199.5	4.07	38.8	37.6	50.0	53.5	46.2
2.6 Float	76.7	1.6	1.3	0.24	1.48	47.5	3.07	0.1	0.1	0.3	0.4	1.0
+20 mesh fraction	2749.2	55.6	14.0	2.83	6.75	195.3	4.04	38.9	37.7	50.3	53.8	47.2
-20mesh fraction	2195.2	44.4	27.5	5.86	8.37	209.6	5.67	61.1	62.3	49.7	46.2	52.8
Calculated Head	4944.4	100.0	20.0	4.18	7.47	201.6	4.77	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	5.07					



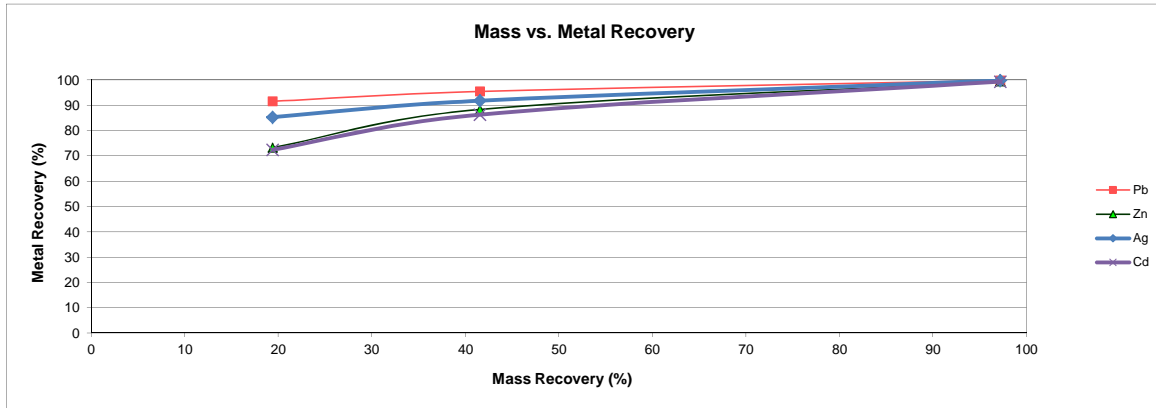
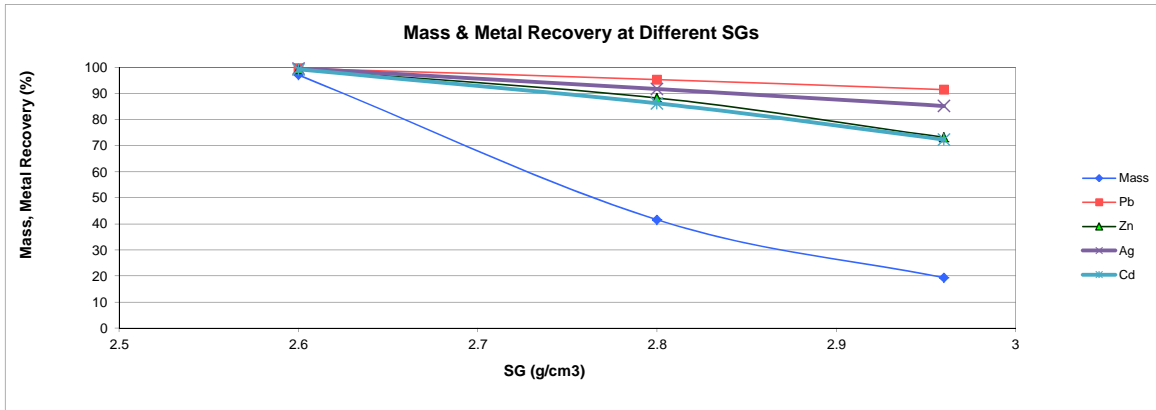
HEAVY LIQUID SEPARATION TEST REPORT (Without fines)

Client: Devonian Metals
Test: HMS-3
Sample: 12-Sulphide

Date: 13-Sep-11
Project: 1103306

Objective: to separate metals at three different heavy media SG's on -1/4 inch + 20mesh screen fraction

Products	Weight		Assay					Distribution (%)				
	(g)	(%)	Ag (g/t)	Pb (%)	Zn (%)	Cd (ppm)	S (%)	Ag (%)	Pb (%)	Zn (%)	Cd (%)	S (%)
2.96 Sink	532.9	19.4	61.5	13.38	25.51	729.2	14.30	85.3	91.5	73.2	72.4	68.5
2.96 Float-2.8 Sink	610.3	22.2	4.1	0.50	4.60	122.5	2.69	6.5	3.9	15.1	13.9	14.8
2.8 Sink	1143.2	41.6	30.9	6.50	14.35	405.3	8.10	91.8	95.4	88.3	86.3	83.3
2.8 Float-2.6 Sink	1529.3	55.6	2.0	0.22	1.34	45.7	1.06	8.0	4.3	11.0	13.0	14.6
2.6 Sink	2672.5	97.2	14.3	2.91	6.90	199.5	4.07	99.7	99.8	99.4	99.3	97.9
2.6 Float	76.7	2.8	1.3	0.24	1.48	47.5	3.07	0.3	0.2	0.6	0.7	2.1
Calculated +20 mesh fraction	2749.2	100.0	14.0	2.83	6.75	195.3	4.04	100.0	100.0	100.0	100.0	100.0
Measured Head			n/a	n/a	n/a	n/a	n/a					



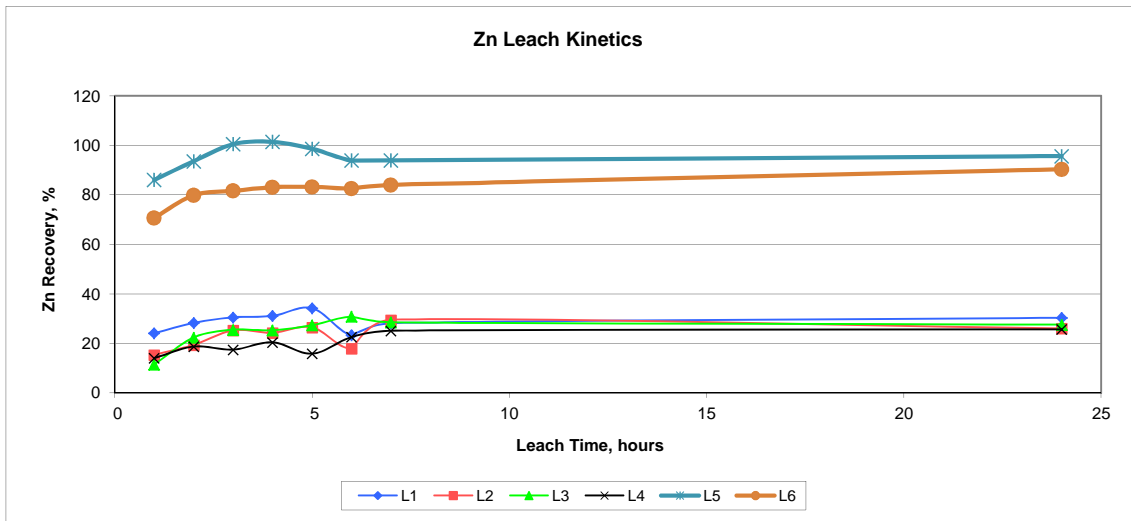
APPENDIX III
ACID LEACH RESULTS

ACID LEACH TEST SUMMARY

Client: Devonian Metals
Test: as specified
Sample: as specified

Date: 12-Sep-11
Project: 1103306

Test No	Sample id	Size		Pulp Density % solids	Temperature °C	Duration Hours	Final PLS Zn, g/L	Extraction Zn, %	H2SO4 Addition kg/t
		Tyler mesh	µm						
L1	Bourne Oxide	6	3,360	20	Room Temp.	24	4.1	30.3	227
L2	Bourne Oxide	6	3,360	30	Room Temp.	24	5.1	26.0	227
L5	Bourne Oxide	200	74	20	Room Temp.	24	12.7	93.9	751
L3	12-Oxide	6	3360	20	Room Temp.	24	3.4	27.6	256
L4	12-Oxide	6	3360	30	Room Temp.	24	5.3	25.7	256
L6	12-Oxide	200	74	20	Room Temp.	24	15.0	90.4	598



ACID LEACH TEST REPORT

Client: Devonian Metals
Test: L1
Sample: Bourne Oxide

Date: 30-Aug-11
Project: 1103306

Objective: Acid Leach at a pulp density of 20% solids with H2SO4 at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Wt.% Solid: 20 %
 H2SO4: 227 kg/t
 Test Duration: 24 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
 - added conc. H2SO4 in stages and maintain pH<2.5 with conc. H2SO4
 - sampled solution at 1, 2, 3, 4, 5, 6 and 7 hours
 - test ended after 24 hours
 - filtered and displacement washed with tap water
 - all solutions assayed for Zn and ICP
 - dried leach residue assayed for Zn and ICP

HEAD GRADE

Zn %
 Calculated : 5.97 %
 Measured: 7.44 %

LEACH TEST DATA

Time (h)	Temperature °C	Conc. H2SO4 Addition kg/t	pH		Slurry Weight (g)	Solution				Distribution Zn (%)
			Initial	Final		Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)	Zn (g)	
0	19	50.0	8.2	2.2	1,250	1,000				
		44.2		2.2						
		29.4								
1		14.7	4.5	<2.5			10	3.45	3.59	24.1
2		7.4	4.5	<2.5			10	4.04	4.21	28.2
3		14.7	5.3	<2.5			10	4.36	4.55	30.5
4		7.4	5.5	<2.5			10	4.44	4.64	31.1
5		14.7	5.6	<2.5			10	4.89	5.10	34.2
6		14.7	4.9	<2.5			10	3.34	3.48	23.4
7		14.7	5.0	<2.5			10	4.02	4.19	28.1
24		14.7	5.9	<2.5	1,290	1,043		4.06	4.52	30.3
Total in solution								4.52	30.3	
Residue					226.9			4.6	10.39	69.7
Total		227								100.0

ACID LEACH TEST REPORT

Client: Devonian Metals
 Test: L2
 Sample: Bourne Oxide

Date: 30-Aug-11
 Project: 1103306

Objective: Acid Leach at a pulp density of 30% solids with H2SO4 at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 583 g
 Wt.% Solid: 30 %
 H2SO4: 227 kg/t
 Test Duration: 24 hours

TEST DESCRIPTION

- repulped to 30% solids with tap water
 - added conc. H2SO4 in stages and maintain pH<2.5 with conc. H2SO4
 - sampled solution at 1, 2, 3, 4, 5, 6 and 7 hours
 - test ended after 24 hours
 - filtered and displacement washed with tap water
 - all solutions assayed for Zn and ICP
 - dried leach residue assayed for Zn and ICP

HEAD GRADE

Zn %
 Calculated : 6.54 %
 Measured: 7.44 %

LEACH TEST DATA

Time (h)	Temperature °C	Conc. H2SO4 Addition kg/t	pH		Slurry Weight (g)	Solution				Distribution Zn (%)		
			Initial	Final		Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)	
0	19	50.0 44.2 29.4	8.2	2.1 2.1	833	583						
1		14.7	4.3	<2.5			10	3.24	2.51	15.4		
2		7.4	4.7	<2.5			10	4.09	3.17	19.4		
3		14.7	4.9	<2.5			10	5.33	4.13	25.3		
4		7.4	5.5	<2.5			10	5.12	3.97	24.3		
5		14.7	5.6	<2.5			10	5.59	4.33	26.5		
6		14.7	4.9	<2.5			10	3.79	2.94	18.0		
7		14.7	4.9	<2.5			10	6.22	4.82	29.5		
24		14.7	5.8	<2.5	1,040	775		5.06	4.26	26.0		
Total in solution										4.26	26.0	
Residue					237.6			5.1	12.09		74.0	
Total		227										100.0

ACID LEACH TEST REPORT

Client: Devonian Metals
Test: L3
Sample: 12-Oxide

Date: 30-Aug-11
Project: 1103306

Objective: Acid Leach at a pulp density of 20% solids with H2SO4 at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Wt.% Solid: 20 %
 H2SO4: 256 kg/t
 Test Duration: 24 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
 - added conc. H2SO4 in stages and maintain pH<2.5 with conc. H2SO4
 - sampled solution at 1, 2, 3, 4, 5, 6 and 7 hours
 - test ended after 24 hours
 - filtered and displacement washed with tap water
 - all solutions assayed for Zn and ICP
 - dried leach residue assayed for Zn and ICP

HEAD GRADE

Zn %
 Calculated : 6.24 %
 Measured: 8.17 %

LEACH TEST DATA

Time (h)	Temperature °C	Conc. H2SO4 Addition kg/t	pH		Slurry Weight (g)	Solution				Distribution Zn (%)	
			Initial	Final		Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)			
0	19	50.0	7.2	5.2	1,250	1,000					
		88.3									
1		22.1	4.0	<2.5			10	1.48	1.78	11.4	
2		7.4	4.8	<2.5			10	2.90	3.49	22.4	
3		14.7	5.2	<2.5			10	3.31	3.98	25.5	
4		7.4	5.6	<2.5			10	3.28	3.95	25.3	
5		14.7	5.3	<2.5			10	3.55	4.27	27.4	
6		14.7	4.6	<2.5			10	3.99	4.80	30.8	
7		14.7	4.7	<2.5			10	3.70	4.45	28.5	
24		22.1	6.2	<2.5	1,465	1,203		3.39	4.30	27.6	
Total in solution										4.30	27.6
Residue					250.0			4.5	11.30	72.4	
Total		256									100.0

ACID LEACH TEST REPORT

Client: Devonian Metals
 Test: L4
 Sample: 12-Oxide

Date: 30-Aug-11
 Project: 1103306

Objective: Acid Leach at a pulp density of 30% solids with H2SO4 at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 583 g
 Wt.% Solid: 30 %
 H2SO4: 256 kg/t
 Test Duration: 24 hours

TEST DESCRIPTION

- repulped to 30% solids with tap water
 - added conc. H2SO4 in stages and maintain pH<2.5 with conc. H2SO4
 - sampled solution at 1, 2, 3, 4, 5, 6 and 7 hours
 - test ended after 24 hours
 - filtered and displacement washed with tap water
 - all solutions assayed for Zn and ICP
 - dried leach residue assayed for Zn and ICP

HEAD GRADE

Calculated : Zn % 6.97 %
 Measured: Zn % 8.17 %

LEACH TEST DATA

Time (h)	Temperature °C	Conc. H2SO4 Addition kg/t	pH		Slurry Weight (g)	Solution			Distribution Zn (%)	
			Initial	Final		Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)		
0	19	50.0	7.2	5.1	833	583				
		88.3								
1		22.1	4.4	<2.5			10	3.12 2.45	14.0	
2		7.4	4.8	<2.5			10	4.16 3.26	18.7	
3		14.7	4.7	<2.5			10	3.88 3.04	17.5	
4		14.7	5.4	<2.5			10	4.54 3.56	20.4	
5		14.7	5.3	<2.5			10	3.51 2.75	15.8	
6		14.7	4.6	<2.5			10	5.01 3.93	22.6	
7		14.7	4.7	<2.5			10	5.57 4.37	25.1	
24		14.7	5.4	<2.5	1,045	784		5.33 4.48	25.7	
Total in solution								4.48	25.7	
Residue					247.4			5.2 12.94	74.3	
Total		256								100.0

ACID LEACH TEST REPORT

Client: Devonian Metals
 Test: L6
 Sample: 12-Oxide

Date: 6-Sep-11
 Project: 1103306

Objective: Acid Leach at a pulp density of 20% solids with H2SO4 at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Wt.% Solid: 20 %
 H2SO4: 598 kg/t
 Test Duration: 24 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
 - added conc. H2SO4 in stages and maintain pH<2.5 with conc. H2SO4
 - sampled solution at 1, 2, 3, 4, 5, 6 and 7 hours
 - test ended after 24 hours
 - filtered and displacement washed with tap water
 - all solutions assayed for Zn and final solution also for ICP
 - dried leach residue assayed for Zn and ICP

HEAD GRADE

Zn

Calculated : 7.85
 Measured: 8.17

LEACH TEST DATA

Time (h)	Temperature °C	Conc. H2SO4 Addition kg/t	PH		Slurry Weight (g)	Solution			Distribution Zn (%)
			Initial	Final		Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)	
0	18	294.4	7.1	2.4	1,250	1,000			
1		220.8		2.2			20	13.3 13.9	70.7
2		44.2		2.0			20	15.0 15.7	79.8
3		5.9		2.4			20	15.4 16.0	81.6
4		14.7		2.1			20	15.7 16.3	83.1
5		2.9		2.2			20	15.7 16.3	83.2
6		3.7		2.3			20	15.6 16.2	82.6
7		7.4		2.2			20	15.8 16.5	84.0
24		3.7	3.6	2.2	1,313	1,041		15.0 17.7	90.4
Total in solution								17.7	90.4
Residue					225.1			0.84 1.89	9.6
Total		598							100.0

ACID LEACH TEST SOLUTION ANALYSIS

Client: Devonian Metals
Test: L1
Sample: as specified timed leach solution

Date: 30-Aug-11
Project: 1103306

Elements	Unit	Sample ID								Analytical Method
		1h PLS	2h PLS	3h PLS	4h PLS	5h PLS	6h PLS	7h PLS	24h PLS	
Zn	mg/L	3445	4038	4363	4443	4892	3340	4020	4060	Zn-SOL-AA
Ag	mg/L	<0.02	<0.02	<0.02	0.02	<0.02	0.03	<0.02	0.02	H2O-ICP
Al	mg/L	4.1	16.4	23.7	6.9	31.5	30.4	39.2	12.8	H2O-ICP
As	mg/L	<0.2	<0.2	<0.2	<0.2	0.2	0.3	0.4	<0.2	H2O-ICP
Ba	mg/L	0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.11	0.02	H2O-ICP
Bi	mg/L	<0.1	0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	H2O-ICP
Ca	mg/L	597.5	588.5	569.5	521	457.2	454.1	615	413.4	H2O-ICP
Cd	mg/L	13.24	15.12	15.77	16	16.44	16.35	13.37	12.77	H2O-ICP
Co	mg/L	0.85	0.92	0.98	0.93	0.95	0.91	0.81	0.78	H2O-ICP
Cr	mg/L	<0.1	<0.1	0.1	<0.1	0.2	0.2	0.2	<0.1	H2O-ICP
Cu	mg/L	2.23	3.26	3.97	2.77	5.91	6.24	6.58	2.9	H2O-ICP
Fe	mg/L	12.36	16.74	19.53	16.06	22.12	24.8	36.38	9.59	H2O-ICP
Hg	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	H2O-ICP
K	mg/L	7	7	7	7	8	8	10	8	H2O-ICP
La	mg/L	0.24	0.26	0.27	0.27	0.28	0.31	0.26	0.27	H2O-ICP
Mg	mg/L	1482	1741.5	1905	1951	2026.5	2159	2394	2579	H2O-ICP
Mn	mg/L	33.91	38.81	40.56	41.99	43.78	45.35	42.13	43.55	H2O-ICP
Mo	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	H2O-ICP
Na	mg/L	13	15	13	13	14	14	14	15	H2O-ICP
Ni	mg/L	3.9	4.65	4.58	4.64	4.63	4.54	3.96	4.15	H2O-ICP
P	mg/L	<0.1	<0.1	<0.1	<0.1	0.3	0.4	0.9	<0.1	H2O-ICP
Pb	mg/L	5.66	5.21	5.62	3.91	6.42	6.56	16.32	3.62	H2O-ICP
Sb	mg/L	0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.2	0.2	H2O-ICP
Sc	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	H2O-ICP
Sr	mg/L	0.75	0.78	0.75	0.76	0.72	0.67	0.72	0.44	H2O-ICP
Ti	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	H2O-ICP
Tl	mg/L	0.81	1.13	0.27	0.49	0.98	0.84	0.66	1.28	H2O-ICP
V	mg/L	3.51	4.22	4.64	4.93	5.55	6.03	7.25	7.72	H2O-ICP
W	mg/L	51.3	60.8	65.2	57.5	56.1	58.7	63.7	65.6	H2O-ICP
Zn	mg/L	3896	4551.5	4890.5	4628.5	4602.5	4828	5165	5295	H2O-ICP
Zr	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.01	H2O-ICP

ACID LEACH TEST SOLUTION ANALYSIS

Client: Devonian Metals
Test: L2
Sample: as specified timed leach solution

Date: 30-Aug-11
Project: 1103306

Elements	Unit	Sample ID								Analytical Method
		1h PLS	2h PLS	3h PLS	4h PLS	5h PLS	6h PLS	7h PLS	24h PLS	
Zn	mg/L	3240	4090	5330	5120	5590	3790	6220	5060	Zn-SOL-AA
Ag	mg/L	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	H2O-ICP
Al	mg/L	25.2	52.1	65.8	19.8	62.5	30.5	63.8	0.6	H2O-ICP
As	mg/L	<0.2	<0.2	<0.2	<0.2	0.7	<0.2	0.4	<0.2	H2O-ICP
Ba	mg/L	0.04	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	H2O-ICP
Bi	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Ca	mg/L	424.4	429.9	431.7	420.5	427.7	420.6	430.2	411.5	H2O-ICP
Cd	mg/L	13.55	15.7	16.43	16.03	17.26	12.79	17.48	14.62	H2O-ICP
Co	mg/L	0.97	1.17	1.14	1.15	1.18	0.81	1.12	1.09	H2O-ICP
Cr	mg/L	<0.1	<0.1	0.2	<0.1	0.2	0.1	0.2	<0.1	H2O-ICP
Cu	mg/L	5.08	6.76	9.4	4.87	8.92	6.12	9.49	0.89	H2O-ICP
Fe	mg/L	21.67	20.07	26.81	20.3	38.45	21.2	46.78	0.77	H2O-ICP
Hg	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	H2O-ICP
K	mg/L	9	8	8	7	8	7	7	8	H2O-ICP
La	mg/L	0.31	0.36	0.37	0.36	0.39	0.25	0.39	0.4	H2O-ICP
Mg	mg/L	2864	3251	3408	3341.5	3610	2256	3936	4158.5	H2O-ICP
Mn	mg/L	49.85	59.7	61.15	60.95	64.85	40	66.1	78.7	H2O-ICP
Mo	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	H2O-ICP
Na	mg/L	19	20	19	19	20	14	19	21	H2O-ICP
Ni	mg/L	4.31	4.94	5.09	5.06	5.18	3.87	5.31	5.13	H2O-ICP
P	mg/L	<0.1	<0.1	0.1	<0.1	1.7	0.2	1.4	<0.1	H2O-ICP
Pb	mg/L	8.96	3.72	4.82	3.68	4.77	5.4	4.06	2.5	H2O-ICP
Sb	mg/L	<0.1	<0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	H2O-ICP
Sc	mg/L	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	0.05	<0.05	H2O-ICP
Sr	mg/L	0.81	0.89	0.82	0.82	0.74	0.66	0.64	0.72	H2O-ICP
Ti	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Tl	mg/L	1.21	0.81	0.94	1.28	1.05	0.75	1.22	1.7	H2O-ICP
V	mg/L	8.54	9.7	10.15	10	10.79	6.68	11.75	11.69	H2O-ICP
W	mg/L	63.2	73.7	78.5	78	83.6	61.5	114.3	108.2	H2O-ICP
Zn	mg/L	5120	5945	6230	6225	6610	5020	7930	7535	H2O-ICP
Zr	mg/L	<0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	H2O-ICP

ACID LEACH TEST SOLUTION ANALYSIS

Client: Devonian Metals
Test: L3
Sample: as specified timed leach solution

Date: 30-Aug-11
Project: 1103306

Elements	Unit	Sample ID								Analytical Method
		1h PLS	2h PLS	3h PLS	4h PLS	5h PLS	6h PLS	7h PLS	24h PLS	
Zn	mg/L	1483	2903	3306	3281	3548	3994	3700	3390	Zn-SOL-AA
Ag	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	H2O-ICP
Al	mg/L	2.1	22.5	43.8	26.4	71.5	109.1	144.1	93	H2O-ICP
As	mg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	H2O-ICP
Ba	mg/L	0.06	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	H2O-ICP
Bi	mg/L	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.1	<0.1	H2O-ICP
Ca	mg/L	471.5	444.4	595.5	504.5	456.6	459.2	476.4	425.2	H2O-ICP
Cd	mg/L	6.26	9.15	14.65	14.42	14.83	15.7	14.64	14.52	H2O-ICP
Co	mg/L	0.75	0.97	1.32	1.33	1.36	1.31	1.34	1.33	H2O-ICP
Cr	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	H2O-ICP
Cu	mg/L	0.35	1.65	2.13	1.58	2.58	4.41	5.28	2.66	H2O-ICP
Fe	mg/L	9.62	23.73	32.04	29.56	30.85	45.66	73.8	15.97	H2O-ICP
Hg	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	H2O-ICP
K	mg/L	10	10	10	9	9	9	9	9	H2O-ICP
La	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.06	0.07	H2O-ICP
Mg	mg/L	205.7	270.7	290.9	247.4	286.5	329.6	379.5	446.8	H2O-ICP
Mn	mg/L	13.51	16.64	20.76	20.34	21.01	21.42	22.75	22.24	H2O-ICP
Mo	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	0.52	<0.02	H2O-ICP
Na	mg/L	6	6	6	5	6	6	5	6	H2O-ICP
Ni	mg/L	4.53	6.18	8.84	8.89	8.98	9.37	9.64	10.25	H2O-ICP
P	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	2.7	<0.1	H2O-ICP
Pb	mg/L	2.66	2.99	4.45	4.09	4.35	6.9	3.73	2.87	H2O-ICP
Sb	mg/L	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	0.1	<0.1	H2O-ICP
Sc	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	0.15	<0.05	H2O-ICP
Sr	mg/L	0.88	0.85	0.98	0.94	1.02	0.94	0.76	0.59	H2O-ICP
Ti	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Tl	mg/L	0.26	0.24	0.4	0.22	0.56	0.33	0.69	0.24	H2O-ICP
V	mg/L	0.53	0.75	0.72	0.65	0.8	0.99	1.24	1.33	H2O-ICP
W	mg/L	21.7	37.1	51.9	44.2	42.9	47.1	55.9	65.2	H2O-ICP
Zn	mg/L	2191	3587.5	3893.5	3601	3578	3912.5	4595	5265	H2O-ICP
Zr	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.01	H2O-ICP

ACID LEACH TEST SOLUTION ANALYSIS

Client: Devonian Metals
Test: L4
Sample: as specified timed leach solution

Date: 30-Aug-11
Project: 1103306

Elements	Unit	Sample ID								Analytical Method
		1h PLS	2h PLS	3h PLS	4h PLS	5h PLS	6h PLS	7h PLS	24h PLS	
Zn	mg/L	3120	4160	3880	4540	3510	5010	5570	5330	Zn-SOL-AA
Ag	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	H2O-ICP
Al	mg/L	85.6	267.1	267.2	196.5	154	242	279.9	106.8	H2O-ICP
As	mg/L	<0.2	<0.2	<0.2	<0.2	0.3	0.8	0.5	<0.2	H2O-ICP
Ba	mg/L	0.12	0.02	0.07	0.02	0.08	0.06	<0.01	<0.01	H2O-ICP
Bi	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	H2O-ICP
Ca	mg/L	453.4	481	430.6	453.2	474.4	473.3	478.8	440.3	H2O-ICP
Cd	mg/L	14.05	16.81	16.55	16.46	14.37	23.62	27.48	27.9	H2O-ICP
Co	mg/L	1.55	1.79	1.66	1.66	1.48	2.05	2.28	2.47	H2O-ICP
Cr	mg/L	<0.1	0.2	0.2	<0.1	<0.1	0.2	0.2	<0.1	H2O-ICP
Cu	mg/L	3.51	6.83	6.55	5.15	5.47	7.26	8.04	3.05	H2O-ICP
Fe	mg/L	56.55	73.7	77.8	70.15	71.2	120.95	153.55	40.38	H2O-ICP
Hg	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	H2O-ICP
K	mg/L	16	14	13	12	12	13	13	12	H2O-ICP
La	mg/L	0.06	0.08	0.07	0.05	0.06	0.09	0.09	0.12	H2O-ICP
Mg	mg/L	381	506	509	501	437.7	526.5	625	703.5	H2O-ICP
Mn	mg/L	23.05	26.83	26.06	26.63	23.31	30.85	35	37.49	H2O-ICP
Mo	mg/L	0.04	0.03	<0.02	<0.02	0.09	0.29	0.6	<0.02	H2O-ICP
Na	mg/L	10	8	8	8	7	7	7	8	H2O-ICP
Ni	mg/L	10.46	12.34	12.12	12.06	10.5	15.53	18.21	19.08	H2O-ICP
P	mg/L	0.2	0.2	0.3	0.2	1.4	4.1	4.8	<0.1	H2O-ICP
Pb	mg/L	6.11	3.79	4.79	3.64	7.3	7.31	4.82	4.25	H2O-ICP
Sb	mg/L	0.1	<0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	H2O-ICP
Sc	mg/L	<0.05	0.07	0.07	<0.05	0.11	0.19	0.22	<0.05	H2O-ICP
Sr	mg/L	0.89	1.09	1.09	1.02	0.88	0.83	0.76	0.83	H2O-ICP
Ti	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Tl	mg/L	0.53	0.53	0.61	<0.2	0.28	0.9	1.22	1.24	H2O-ICP
V	mg/L	1.18	1.6	1.62	1.55	1.43	1.62	1.92	1.89	H2O-ICP
W	mg/L	58.5	73.9	73.8	72	63.2	75.2	87.5	92.6	H2O-ICP
Zn	mg/L	4816	5950	5925	5795	5150	6005	6850	7225	H2O-ICP
Zr	mg/L	0.02	0.02	0.01	<0.01	0.02	0.02	0.02	<0.01	H2O-ICP

ACID LEACH TEST SOLUTION ANALYSIS

Client: Devonian Metals

Date: 6-Sep-11

Test: L5 & L6

Project: 1103306

Sample: as specified final leach solution

Elements	Unit	Sample ID		Analytical Method
		L5 Final PLS	L6 Final PLS	
Zn	mg/L	12749.94	14989.98	Zn-SOL-AA
Ag	mg/L	0.04	0.05	H2O-ICP
Al	mg/L	64	438.8	H2O-ICP
As	mg/L	0.5	<0.2	H2O-ICP
Ba	mg/L	<0.01	<0.01	H2O-ICP
Bi	mg/L	<0.1	<0.1	H2O-ICP
Ca	mg/L	464.8	452.4	H2O-ICP
Cd	mg/L	28.69	34.58	H2O-ICP
Co	mg/L	1.19	2.93	H2O-ICP
Cr	mg/L	0.4	0.3	H2O-ICP
Cu	mg/L	15.02	10.16	H2O-ICP
Fe	mg/L	105.4	390.6	H2O-ICP
Hg	mg/L	<0.05	<0.05	H2O-ICP
K	mg/L	5	8	H2O-ICP
La	mg/L	0.43	<0.05	H2O-ICP
Mg	mg/L	10920	1808	H2O-ICP
Mn	mg/L	145.7	57.8	H2O-ICP
Mo	mg/L	<0.02	0.02	H2O-ICP
Na	mg/L	23	10	H2O-ICP
Ni	mg/L	8.32	32.31	H2O-ICP
P	mg/L	0.5	0.2	H2O-ICP
Pb	mg/L	6.75	4.46	H2O-ICP
Sb	mg/L	0.2	<0.1	H2O-ICP
Sc	mg/L	0.07	0.16	H2O-ICP
Sr	mg/L	1.13	0.69	H2O-ICP
Ti	mg/L	<0.1	<0.1	H2O-ICP
Tl	mg/L	1.81	0.32	H2O-ICP
V	mg/L	31.05	5.44	H2O-ICP
W	mg/L	171.7	201.5	H2O-ICP
Zn	mg/L	13060	15220	H2O-ICP
Zr	mg/L	<0.01	0.02	H2O-ICP

ACID LEACH TEST SOLUTION ANALYSIS

Client: Devonian Metals
Test: as specified
Sample: as specified leach Residue

Date: 30-Aug-11
Project: 1103306

Elements	Unit	Sample ID						Analytical Method
		L1 Residue	L2 Residue	L3 Residue	L4 Residue	L5 Residue	L6 Residue	
Zn	%	4.58	5.09	4.52	5.23	0.34	0.84	Zn-4A-OR-AA
Ag	ppm	12.2	13.3	29.1	28.1	12.2	31.2	30-4A-TR
Al	%	0.6	0.67	2.42	2.59	0.63	2.4	30-4A-TR
As	ppm	117	128	229	223	131	215	30-4A-TR
Ba	ppm	90	99	931	389	155	227	30-4A-TR
Bi	ppm	<2	<2	<2	<2	6	<2	30-4A-TR
Ca	%	11.72	12.68	11.93	12.72	14.34	14.52	30-4A-TR
Cd	ppm	104.3	116.3	94.9	103.3	8.4	16.9	30-4A-TR
Co	ppm	4	4	8	7	2	4	30-4A-TR
Cr	ppm	125	94	53	49	225	108	30-4A-TR
Cu	ppm	73	86	178	189	89	261	30-4A-TR
Fe	%	1.48	1.47	3.59	3.7	1.7	3.45	30-4A-TR
K	%	0.23	0.26	0.75	0.77	0.26	0.82	30-4A-TR
La	ppm	<10	<10	<10	<10	<10	<10	30-4A-TR
Mg	%	4.35	4.52	0.59	0.59	0.05	0.09	30-4A-TR
Mn	ppm	483	503	143	155	28	40	30-4A-TR
Mo	ppm	12	14	181	179	8	187	30-4A-TR
Na	%	0.02	0.02	0.03	0.03	<0.01	0.04	30-4A-TR
Ni	ppm	51	58	191	185	96	167	30-4A-TR
P	ppm	<10	<10	159	93	208	435	30-4A-TR
Pb	ppm	21220	22853	50376	48551	24805	57474	30-4A-TR
Sb	ppm	45	41	78	86	36	89	30-4A-TR
Sc	ppm	<1	1	4	4	<1	4	30-4A-TR
Sr	ppm	126	135	285	296	146	345	30-4A-TR
Ti	%	0.01	0.02	0.05	0.05	0.02	0.05	30-4A-TR
Tl	ppm	<10	<10	<10	<10	<10	<10	30-4A-TR
V	ppm	7	9	37	37	10	43	30-4A-TR
W	ppm	623	687	628	664	41	151	30-4A-TR
Zn	ppm	>10000	>10000	>10000	>10000	3131	7679	30-4A-TR
Zr	ppm	10	10	16	16	8	15	30-4A-TR

APPENDIX IV
AMMONIA CARBONATE LEACH RESULTS

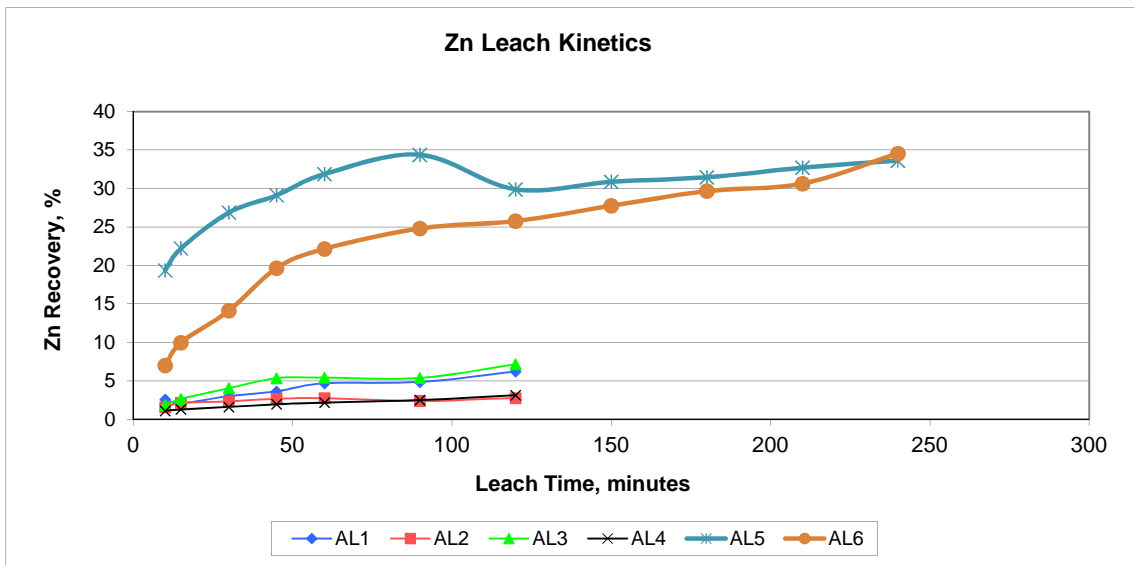
AMMONIUM CARBONATE LEACH TEST SUMMARY

Client: Devonian Metals
Test: as specified
Sample: as specified

Date: 31-Aug-11
Project: 1103306

Objective: to recover zinc in ammonium carbonate solution at different conditions

Test No	Sample	Size		Pulp Density % solids	Temperature °C	Duration Hours	Final PLS Zn, g/L	Extraction Zn, %	(NH ₄) ₂ CO ₃ Addition kg/t
		Tyler mesh	µm						
AL1	Bourne Oxide	6	3,360	20	Room Temp	2	1.1	6.2	960.9
AL2	Bourne Oxide	6	3,360	30	Room Temp	2	0.8	2.8	560.2
AL5	Bourne Oxide	200	74	20	Room Temp	2	4.4	33.6	960.9
AL3	12-Oxide	6	3360	20	Room Temp	2	1.4	7.1	960.9
AL4	12-Oxide	6	3360	30	Room Temp	2	1.1	3.1	560.2
AL6	12-Oxide	200	74	20	Room Temp	2	5.0	34.5	960.9



AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL1
Sample: Bourne Oxide

Date: 31-Aug-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃ solution
- adjusted and maintain pH 9-10 with NH₄OH
- sampled solution at 10,15,30,45,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- all solutions and residue assayed for Zn and ICP

HEAD GRADE

Zn %
 Calculated : 7.05 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution			Distribution Zn (%)	
	Initial	Final			Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)		
0	8.6		18	1,250	1,000				
10	8.9					15	0.49	0.46	
15	8.8		7			15	0.39	0.36	
30	8.9		6			15	0.56	0.53	
45	8.9		5			15	0.68	0.64	
60	8.9					15	0.87	0.82	
90	8.9		6			15	0.91	0.85	
120	9.0			1,255	942		1.10	1.09	
Total in solution								1.09	6.2
Residue				243.7			6.8	16.5	93.8
Total									100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL2
Sample: Bourne Oxide

Date: 31-Aug-11
Project: 1103306

Objective: to recover Zn at a pulp density of 30% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 583 g
 Solid %: 30 %
 (NH₄)₂CO₃: 560.2 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 30% solids with tap water
 - added 2.5mol of (NH₄)₂CO₃ solution
 - adjusted and maintain pH 9-10 with NH₄OH
 - sampled solution at 10,15,30,45,60 and 90minutes
 - test ended after 2 hours
 - filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
 - all solutions and residue assayed for Zn and ICP

HEAD GRADE

Zn %
 Calculated : 7.40 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution			Distribution Zn (%)			
	Initial	Final			Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)				
0	8.9		20	833	583						
10	8.8					15	0.51	0.30	1.6		
15	8.8					15	0.68	0.39	2.1		
30	8.9					15	0.74	0.43	2.3		
45	8.9					15	0.85	0.49	2.7		
60	8.9					15	0.88	0.51	2.7		
90	8.9					15	0.76	0.44	2.4		
120	9.0										
Total in solution									0.51	2.8	
Residue						247.0			7.3	18.0	97.2
Total								100.0			

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
 Test: AL3
 Sample: 12-Oxide

Date: 31-Aug-11
 Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃ solution
- adjusted and maintain pH 9-10 with NH₄OH
- sampled solution at 10,15,30,45,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- all solutions and residue assayed for Zn and ICP

HEAD GRADE

Zn %

Calculated : 7.63 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution			Distribution Zn (%)	
	Initial	Final			Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)		
0	8.9		20	1,250	1,000				
10	8.8		10			15	0.38 0.35	1.8	
15	8.9					15	0.54 0.50	2.6	
30	8.9					15	0.82 0.77	4.0	
45	9.0					15	1.09 1.02	5.3	
60	9.0					15	1.10 1.03	5.4	
90	9.0					15	1.09 1.03	5.4	
120	9.0			1,245	938		1.37 1.36	7.1	
Total in solution								1.36	7.1
Residue				237.8			7.5 17.7	92.9	
Total								100.0	

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL4
Sample: 12-Oxide

Date: 31-Aug-11
Project: 1103306

Objective: to recover Zn at a pulp density of 30% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 583 g
 Solid %: 30 %
 (NH₄)₂CO₃: 560.2 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 30% solids with tap water
 - added 2.5mol of (NH₄)₂CO₃ solution
 - adjusted and maintain pH 9-10 with NH₄OH
 - sampled solution at 10,15,30,45,60 and 90minutes
 - test ended after 2 hours
 - filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
 - all solutions and residue assayed for Zn and ICP

HEAD GRADE

Zn %
 Calculated : 7.96 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)
	Initial	Final			Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)		
0	8.7		20	833	583				
10	8.9					15	0.42	0.22	1.1
15	8.9					15	0.49	0.26	1.3
30	8.9		5			15	0.61	0.32	1.6
45	8.9					15	0.75	0.39	2.0
60	8.9					15	0.83	0.43	2.2
90	9.0					15	0.95	0.50	2.5
120	8.9			796	520		1.08	0.62	3.1
Total in solution								0.62	3.1
Residue				239.3			8.1	19.3	96.9
Total									100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL5
Sample: Bourne Oxide

Date: 1-Sep-11
Project: 1103306

Objective: to recover Zn at a pulp density of 30% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 4 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃ solution
- adjusted and maintain pH 9-10 with NH₄OH
- sampled solution at 10,15,30,45,60,90,120,150,180 and 210minutes
- test ended after 4 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- all solutions assayed for Zn, also final solution for ICP
- all residue assayed for Zn and ICP

HEAD GRADE

Zn %

Calculated : 6.96 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)
	Initial	Final			Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)		
0	8.2	9.5	0.6	1,250	1,000				
	9.0	9.1	60.0						
10	9.1					20	3.0	3.4	19.3
15	9.0	9.1	10.0			20	3.4	3.9	22.2
30	9.1					20	4.1	4.7	26.9
45	9.0	9.1	10.0			20	4.4	5.1	29.1
60	9.1					20	4.9	5.5	31.9
90	9.1					20	5.2	6.0	34.4
120	9.1					20	4.6	5.2	29.9
150	9.1					20	4.7	5.4	30.9
180	9.0					20	4.8	5.5	31.5
210	9.0					20	5.0	5.7	32.7
240	9.0			1,450	1,141		4.4	5.9	33.6
Total in solution								5.9	33.6
Residue				236.2			4.9	11.6	66.4
Total									100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
 Test: AL6
 Sample: 12-Oxide

Date: 1-Sep-11
 Project: 1103306

Objective: Caustic Leach at a pulp density of 20% solids with 2.5mol Ammonium carbonate (NH₄)₂CO₃ at room temperature

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 4 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃ solution
- adjusted and maintain pH 9-10 with NH₄OH
- sampled solution at 10,15,30,45,60,90,120,150,180 and 210minutes
- test ended after 4 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- all solutions assayed for Zn, also final solution for ICP
- all residue assayed for Zn and ICP

HEAD GRADE

Zn %

Calculated : 7.88 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)
	Initial	Final			Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)		
0	7.1	10.1	2.6	1,250	1,000				
	9.0	9.1	50.0						
10	9.0	9.1	20.0			20	1.1	1.4	7.0
15	9.1					20	1.6	2.0	10.0
30	9.0	9.2	20.0			20	2.3	2.8	14.1
45	9.1					20	3.2	3.9	19.7
60	9.1					20	3.6	4.4	22.2
90	9.0					20	4.0	4.9	24.8
120	9.0	9.1	10.0			20	4.2	5.1	25.8
150	9.1					20	4.5	5.5	27.7
180	9.0					20	4.8	5.8	29.7
210	9.0	9.1	7.8			20	4.9	6.0	30.6
240	9.1			1,544	1,223		5.0	6.8	34.5
Total in solution								6.8	34.5
Residue				237.4			5.4	12.9	65.5
Total									100.0

LEACH TEST SOLUTION ANALYSIS

Client: Devonian Metals

Test: AL2

Sample: as specified timed leach solution

Date: 31-Aug-11

Project: 1103306

Elements	Unit	Sample ID							Analytical Method
		10min PLS	15min PLS	30min PLS	45min PLS	60min PLS	90min PLS	120min PLS	
Zn	mg/L	512	679	743	849	875	760	770	Zn-SOL-AA
Ag	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	H2O-ICP
Al	mg/L	0.7	0.8	0.8	0.9	0.8	0.8	0.7	H2O-ICP
As	mg/L	0.7	1	0.9	1	1.1	0.9	1.1	H2O-ICP
Ba	mg/L	0.31	0.35	0.36	0.37	0.36	0.32	0.6	H2O-ICP
Bi	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Ca	mg/L	29.7	28.3	29.5	29.7	29.7	27.7	24.6	H2O-ICP
Cd	mg/L	1.03	1.31	1.53	1.59	1.72	1.63	1.65	H2O-ICP
Co	mg/L	0.16	0.2	0.26	0.28	0.32	0.33	0.43	H2O-ICP
Cr	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Cu	mg/L	3.69	4.35	5.03	5.08	5.15	5.19	5.28	H2O-ICP
Fe	mg/L	3.41	3.97	4.25	4.55	4.43	4.27	4.06	H2O-ICP
Hg	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	H2O-ICP
K	mg/L	8	9	10	9	9	8	8	H2O-ICP
La	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	H2O-ICP
Mg	mg/L	17.5	18.4	20.1	19.8	19.8	19.6	19.1	H2O-ICP
Mn	mg/L	0.59	0.62	0.75	0.78	0.84	0.7	0.7	H2O-ICP
Mo	mg/L	0.29	0.35	0.41	0.45	0.48	0.48	0.51	H2O-ICP
Na	mg/L	13	13	14	13	13	13	13	H2O-ICP
Ni	mg/L	0.67	0.85	0.94	1.01	1.05	1.01	1.05	H2O-ICP
P	mg/L	0.1	0.1	0.2	0.2	0.2	0.3	0.3	H2O-ICP
Pb	mg/L	89.2	155.75	168.75	172.1	174.95	159.95	109.35	H2O-ICP
Sb	mg/L	0.1	0.2	0.1	0.1	0.2	0.1	0.2	H2O-ICP
Sc	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	H2O-ICP
Sr	mg/L	0.69	0.69	0.68	0.63	0.58	0.5	0.39	H2O-ICP
Ti	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Tl	mg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	H2O-ICP
V	mg/L	0.07	0.08	0.09	0.09	0.09	0.09	0.09	H2O-ICP
W	mg/L	8.5	11.1	13	13.9	14.7	14.7	15.7	H2O-ICP
Zn	mg/L	798.68	1187.68	1438.68	1526.18	1635.68	1628.68	1433.68	H2O-ICP
Zr	mg/L	0.02	0.02	0.02	0.02	0.02	0.03	0.02	H2O-ICP

LEACH TEST SOLUTION ANALYSIS

Client: Devonian Metals

Date: 6-Sep-11

Test: AL5 & AL6

Project: 1103306

Sample: as specified final leach solution

Elements	Unit	Sample ID		Analytical Method
		AL5 Final PLS	AL6 Final PLS	
Zn	mg/L	4360	5006	Zn-SOL-AA
Ag	mg/L	<0.02	<0.02	H2O-ICP
Al	mg/L	0.5	2.2	H2O-ICP
As	mg/L	1.4	0.7	H2O-ICP
Ba	mg/L	0.23	0.55	H2O-ICP
Bi	mg/L	<0.1	<0.1	H2O-ICP
Ca	mg/L	19.9	20.3	H2O-ICP
Cd	mg/L	10.13	6.69	H2O-ICP
Co	mg/L	0.49	0.86	H2O-ICP
Cr	mg/L	0.1	<0.1	H2O-ICP
Cu	mg/L	9.89	8.05	H2O-ICP
Fe	mg/L	7.94	5.9	H2O-ICP
Hg	mg/L	0.1	<0.05	H2O-ICP
K	mg/L	3	7	H2O-ICP
La	mg/L	<0.05	<0.05	H2O-ICP
Mg	mg/L	20.2	7.8	H2O-ICP
Mn	mg/L	1.2	0.42	H2O-ICP
Mo	mg/L	0.66	21.84	H2O-ICP
Na	mg/L	6	3	H2O-ICP
Ni	mg/L	2.96	9.44	H2O-ICP
P	mg/L	0.2	0.8	H2O-ICP
Pb	mg/L	262.6	88.93	H2O-ICP
Sb	mg/L	<0.1	<0.1	H2O-ICP
Sc	mg/L	<0.05	0.1	H2O-ICP
Sr	mg/L	0.22	0.28	H2O-ICP
Ti	mg/L	<0.1	<0.1	H2O-ICP
Tl	mg/L	<0.2	<0.2	H2O-ICP
V	mg/L	0.11	0.15	H2O-ICP
W	mg/L	68.1	62.7	H2O-ICP
Zn	mg/L	5508	5020	H2O-ICP
Zr	mg/L	<0.01	0.03	H2O-ICP

LEACH RESIDUE ANALYSIS

Client: Devonian Metals
Test: as specified
Sample: as specified leach Residue

Date: 31-Aug-11
Project: 1103306

Elements	Unit	Sample ID						Analytical Method
		AL1 Residue	AL2 Residue	AL3 Residue	AL4 Residue	AL5 Residue	AL6 Residue	
Zn	%	6.78	7.28	7.45	8.06	4.89	5.43	Zn-4A-OR-ICP
Ag	ppm	10.1	11.1	33.3	28.9	14.1	28.6	30-4A-TR
Al	%	0.56	0.57	2.45	2.46	0.58	2.49	30-4A-TR
As	ppm	136	135	255	254	132	236	30-4A-TR
Ba	ppm	133	149	1824	1827	156	1783	30-4A-TR
Bi	ppm	<2	<2	<2	<2	<2	<2	30-4A-TR
Ca	%	13.41	12.46	14.88	15.06	12.85	14.4	30-4A-TR
Cd	ppm	162.8	171.3	182	191	124.4	151.9	30-4A-TR
Co	ppm	7	6	15	15	5	14	30-4A-TR
Cr	ppm	118	100	61	58	233	154	30-4A-TR
Cu	ppm	160	157	263	257	107	241	30-4A-TR
Fe	%	1.37	1.37	3.68	3.61	1.44	4.06	30-4A-TR
K	%	0.23	0.23	0.75	0.75	0.23	0.79	30-4A-TR
La	ppm	<10	<10	<10	<10	<10	<10	30-4A-TR
Mg	%	5.39	5.48	0.82	0.86	5.58	0.83	30-4A-TR
Mn	ppm	714	718	292	298	746	293	30-4A-TR
Mo	ppm	2	4	136	144	2	71	30-4A-TR
Na	%	0.02	0.02	0.04	0.04	0.02	0.03	30-4A-TR
Ni	ppm	75	70	262	262	112	256	30-4A-TR
P	ppm	89	66	418	369	155	438	30-4A-TR
Pb	ppm	18999	20611	56068	56566	24412	56579	30-4A-TR
Sb	ppm	24	37	79	76	37	75	30-4A-TR
Sc	ppm	<1	<1	4	5	<1	4	30-4A-TR
Sr	ppm	133	135	359	357	128	372	30-4A-TR
Ti	%	0.02	0.02	0.06	0.05	0.02	0.05	30-4A-TR
Tl	ppm	<10	<10	<10	<10	<10	<10	30-4A-TR
V	ppm	8	9	43	42	9	43	30-4A-TR
W	ppm	866	909	963	1030	617	672	30-4A-TR
Zn	ppm	>10000	>10000	>10000	>10000	>10000	>10000	30-4A-TR
Zr	ppm	9	9	18	17	9	13	30-4A-TR

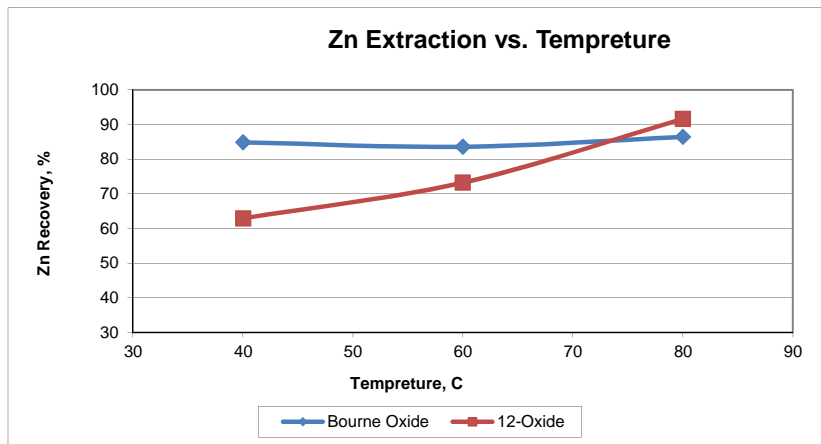
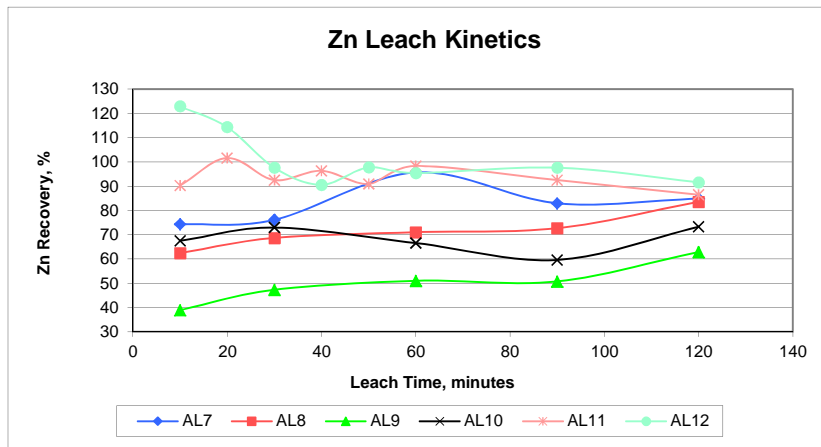
AMMONIUM CARBONATE LEACH TEST SUMMARY

Client: Devonian Metals
Test: as specified
Sample: as specified

Date: 28-Oct-11
Project: 1103306

Objective: to improve zinc recoveries in ammonium carbonate solution at different temperatures

Test No	Sample	Size		Pulp Density % solids	Temperature °C	Duration Hours	Final PLS Zn, g/L	Extraction Zn, %	(NH ₄) ₂ CO ₃ Addition kg/t
		Tyler mesh	µm						
AL7	Bourne Oxide	200	74	20	40	2	7.9	84.9	960.9
AL8	Bourne Oxide	200	74	20	60	2	10.6	83.6	960.9
AL11	Bourne Oxide	200	74	20	80	2	7.3	86.4	960.9
AL9	12-Oxide	200	74	20	40	2	7.4	62.9	960.9
AL10	12-Oxide	200	74	20	60	2	7.5	73.2	960.9
AL12	12-Oxide	200	74	20	80	2	7.3	91.6	960.9



AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL7
Sample: Bourne Oxide

Date: 7-Oct-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 40C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃ solution
- adjusted and maintain pH 9-10 with NH₄OH
- sampled solution at 10,30,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- all solutions and residue assayed for Zn and ICP

HEAD GRADE

Zn %
 Calculated : 6.50 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution			Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)		
0	7.1	10.2	40.0	660	1,857	1,660				
10			42.0				20	7.13	12.1	74.3
30		10.1	42.0				20	7.22	12.4	76.1
60		9.8	45.0				20	9.01	15.5	95.7
90		9.5	44.0				20	7.68	13.5	82.9
120		9.3	41.0		1,992	1,673		7.87	13.8	84.9
Total in solution									13.8	84.9
Residue					212.0			1.2	2.5	15.1
Total										100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
 Test: AL8
 Sample: Bourne Oxide

Date: 9/31/2011
 Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 60C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃ solution
- adjusted and maintain pH 9-10 with NH₄OH
- sampled solution at 10,30,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution
- followed by three times water displacement washes
- all solutions and residue assayed for Zn and ICP

HEAD GRADE

Zn %

Calculated : 6.64 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		Temperature °c	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution			Distribution Zn (%)		
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)			
0	7.1	9.1	58.0	100	1,342	1,100					
10		9.1	60.0	90			20	8.24	10.4	62.5	
30		9.0	60.0	70			20	8.93	11.4	68.7	
60		9.1	64.0	60			20	9.10	11.8	71.0	
90		9.0	59.0	30			20	9.17	12.1	72.7	
120		9.1	62.0		1,514	1,238		10.63	13.9	83.6	
Total in solution										13.9	83.6
Residue					211.6			1.3	2.7	16.4	
Total											100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
 Test: AL9
 Sample: 12 Oxide

Date: 9/31/2011
 Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 40C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃ solution
- adjusted and maintain pH 9-10 with NH₄OH
- sampled solution at 10,30,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution
- followed by three times water displacement washes
- all solutions and residue assayed for Zn and ICP

HEAD GRADE

Zn %

Calculated : 6.69 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		Temperature °c	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution			Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)		
0	7.7	9.2	40.0	80	1,324	1,080				
10		9.2	43.0	80			20	4.74	6.5	38.9
30		9.3	39.0	20			20	5.69	7.9	47.3
60		9.5	40.0	20			20	6.06	8.5	51.0
90		9.2	41.0	30			20	5.94	8.5	50.8
120		9.1	42.0		1,662	1,354		7.44	10.5	62.9
Total in solution									10.5	62.9
Residue					220.9			2.8	6.2	37.1
Total										100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
 Test: AL10
 Sample: 12 Oxide

Date: 9/31/2011
 Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 60C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃ solution
- adjusted and maintain pH 9-10 with NH₄OH
- sampled solution at 10,30,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution
- followed by three times water displacement washes
- all solutions and residue assayed for Zn and ICP

HEAD GRADE

Zn %

Calculated : 6.56 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution			Distribution Zn (%)		
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)		Zn (g)	
0	7.9	9.2	60.0	140	1,379	1,140					
10		9.1	61.0	70			20	7.19	11.1	67.5	
30		9.2	62.0	60			20	7.68	12.0	72.9	
60		9.1	61.0	100			20	6.90	10.9	66.6	
90		9.1	61.0	100			20	6.07	9.8	59.6	
120		9.2	64.0		1,796	1,518		7.54	12.0	73.2	
Total in solution										12.0	73.2
Residue					217.3			2.0	4.4		26.8
Total											100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
 Test: AL11
 Sample: Bourne Oxide

Date: 18-Oct-11
 Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 60C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃ solution
- adjusted and maintain pH 9-10 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- all solutions assayed for Zn and ICP
- Residues assayed for Zn,Pb and ICP

HEAD GRADE

Zn %

Calculated : 5.99 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		Temperature °c	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution			Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)		
0	8.5	8.6	80.0	350	1,572	1,350				
10		8.6	81.0	50			20	7.39	13.5	90.2
20		8.6	81.0	100			20	8.24	15.2	101.6
30		9.0	79.0	200			20	7.41	13.9	92.5
40		9.0	82.0	100			20	7.72	14.4	96.3
50		9.0	79.0	100			20	7.28	13.6	90.9
60		9.0	78.0	75			20	7.63	14.7	98.3
90		9.0	82.0	300			20	7.08	13.9	92.5
120		9.0	81.0	210	2,030	1,809		6.57	12.9	86.4
Total in solution									12.9	86.4
Residue					210.0			1.0	2.0	13.6
Total										100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
 Test: AL12
 Sample: 12-Oxide

Date: 18-Oct-11
 Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 60C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃ solution
- adjusted and maintain pH 9-10 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- all solutions assayed for Zn and ICP
- Residues assayed for Zn,Pb and ICP

HEAD GRADE

Zn %

Calculated : 7.45 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		Temperature °c	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution			Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %) (g)		
0	7.9	9.0	80.0	415	1,632	1,415				
10		9.0	77.0	200			20	10.44	22.9	
20		9.0	78.0	130			20	9.62	21.3	
30		9.0	80.0	200			20	8.12	18.2	
40		9.0	81.0	100			20	7.54	16.9	
50		9.0	82.0	140			20	8.16	18.2	
60		9.0	79.0	200			20	7.71	17.8	
90		9.0	81.0	200			20	7.82	18.2	
120		9.0	82.0	250	2,420	2,173		7.31	17.1	
Total in solution									17.1	91.6
Residue					206.0			0.8	1.6	8.4
Total										100.0

LEACH TEST SOLUTION ANALYSIS

Client: Devonian Metals
Test: AL7-AL10
Sample: as specified timed leach solution

Date: 12-Oct-11
Project: 1103306

Elements	Unit	Sample ID						Analytical Method
		AL7 FINAL PLS	AL8 FINAL PLS	AL9 FINAL PLS	AL10 FINAL PLS	AL11 FINAL PLS	AL12 FINAL PLS	
Zn	mg/L	7870	10630	7440	7540	6570	6100	Zn-SOL-AA
Ag	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	H2O-ICP
Al	mg/L	1.7	2.2	0.5	2.2	3.7	2.8	H2O-ICP
As	mg/L	0.8	1	1.4	1.3	1.3	0.6	H2O-ICP
Ba	mg/L	0.02	0.03	0.02	0.02	<0.01	0.02	H2O-ICP
Bi	mg/L	0.3	<0.1	0.3	0.2	<0.1	<0.1	H2O-ICP
Ca	mg/L	9.1	7.7	14.3	4	2.1	2.4	H2O-ICP
Cd	mg/L	22.03	23.48	19.7	20.49	17.02	16.46	H2O-ICP
Co	mg/L	1.44	1.92	0.66	0.8	0.65	0.9	H2O-ICP
Cr	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Cu	mg/L	12.85	14.83	14.43	7.62	2.03	6.22	H2O-ICP
Fe	mg/L	6.45	6.51	6.84	3.14	0.67	1.25	H2O-ICP
Hg	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	H2O-ICP
K	mg/L	8	12	4	5	5	10	H2O-ICP
La	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	H2O-ICP
Mg	mg/L	8.8	6	27.7	19.4	10.9	0.6	H2O-ICP
Mn	mg/L	1.14	0.7	1.94	2.04	1.26	0.61	H2O-ICP
Mo	mg/L	21.36	26.81	0.64	0.54	0.43	16.71	H2O-ICP
Na	mg/L	24	5	5	5	22	4	H2O-ICP
Ni	mg/L	21.19	28.64	4.41	4.85	4.29	23.36	H2O-ICP
P	mg/L	0.5	1	0.1	<0.1	0.2	0.8	H2O-ICP
Pb	mg/L	8.01	3.67	27.74	20.46	126.82	127.47	H2O-ICP
Sb	mg/L	<0.1	<0.1	<0.1	0.4	0.5	<0.1	H2O-ICP
Sc	mg/L	0.12	0.15	<0.05	<0.05	<0.05	<0.05	H2O-ICP
Sr	mg/L	0.12	0.24	0.09	0.03	<0.01	0.07	H2O-ICP
Ti	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Tl	mg/L	0.43	1.82	1.28	0.73	0.46	<0.2	H2O-ICP
V	mg/L	0.07	0.12	0.09	0.07	0.05	0.04	H2O-ICP
W	mg/L	<0.1	<0.1	<0.1	<0.1	104.6	108.5	H2O-ICP
Zn	mg/L	1220.09	792.82	1350.24	1363.69	3146.26	3442.98	H2O-ICP
Zr	mg/L	0.06	0.07	0.03	0.03	0.02	0.05	H2O-ICP

LEACH RESIDUE ANALYSIS

Client: Devonian Metals
Test: as specified
Sample: as specified leach Residue

Date: 12-Oct-11
Project: 1103306

Elements	Unit	Sample ID						Analytical Method
		AL7 Residue	AL8 Residue	AL9 Residue	AL10 Residue	AL11 Residue	AL12 Residue	
Zn	%	1.16	1.29	2.81	2.02	0.97	0.76	Zn-4A-OR-ICP
Ag	ppm	34.7	33.1	14.4	20.7	11	34.6	30-4A-TR
Al	%	2.8	2.82	0.62	0.66	0.69	2.65	30-4A-TR
As	ppm	303	299	141	152	144	277	30-4A-TR
Ba	ppm	2015	2084	172	171	158	494	30-4A-TR
Bi	ppm	<2	<2	<2	<2	<2	9	30-4A-TR
Ca	%	16.17	15.99	13.45	14.15	13.75	16.95	30-4A-TR
Cd	ppm	56.5	89.7	86.3	67.8	58.7	54	30-4A-TR
Co	ppm	9	9	5	4	4	10	30-4A-TR
Cr	ppm	155	166	201	220	179	112	30-4A-TR
Cu	ppm	272	258	89	126	136	249	30-4A-TR
Fe	%	4.49	4.52	1.61	1.71	1.64	4.11	30-4A-TR
K	%	0.89	0.93	0.26	0.28	0.3	0.86	30-4A-TR
La	ppm	<10	<10	<10	<10	<10	<10	30-4A-TR
Mg	%	0.98	0.97	6.04	6.32	6.04	1.06	30-4A-TR
Mn	ppm	338	340	795	824	779	321	30-4A-TR
Mo	ppm	59	59	4	6	3	48	30-4A-TR
Na	%	0.04	0.04	0.02	0.02	0.02	0.04	30-4A-TR
Ni	ppm	208	202	113	112	107	125	30-4A-TR
P	ppm	435	418	<10	78	91	302	30-4A-TR
Pb	ppm	69736	65344	27610	24776	17800	64400	30-4A-TR
Sb	ppm	90	93	50	41	17	80	30-4A-TR
Sc	ppm	5	5	1	<1	<1	5	30-4A-TR
Sr	ppm	414	426	152	157	131	370	30-4A-TR
Ti	%	0.06	0.06	0.02	0.02	0.02	0.05	30-4A-TR
Tl	ppm	<10	11	17	13	<10	<10	30-4A-TR
V	ppm	49	49	11	10	11	47	30-4A-TR
W	ppm	130	158	326	207	125	102	30-4A-TR
Zn	ppm	11061	12764	25223	16590	>10000	7632	30-4A-TR
Zr	ppm	17	16	8	9	10	16	30-4A-TR

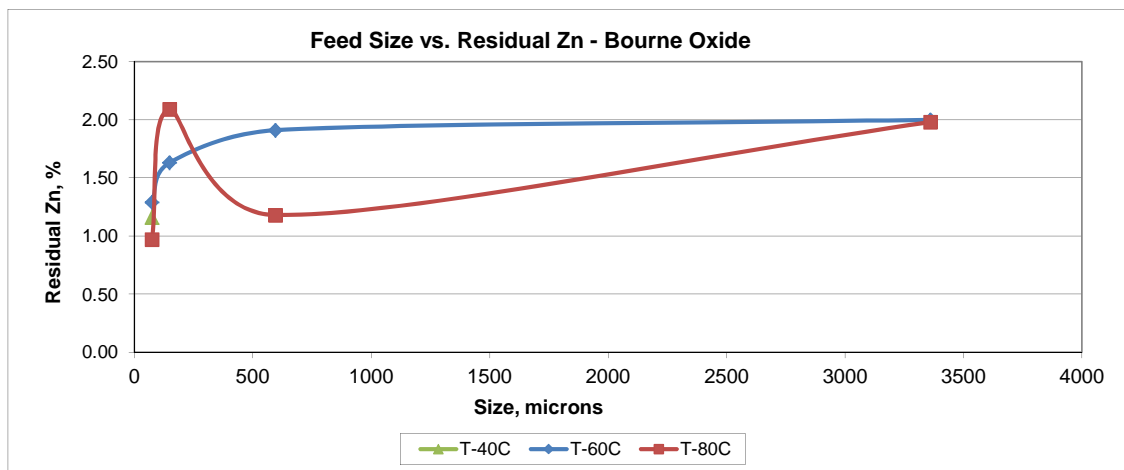
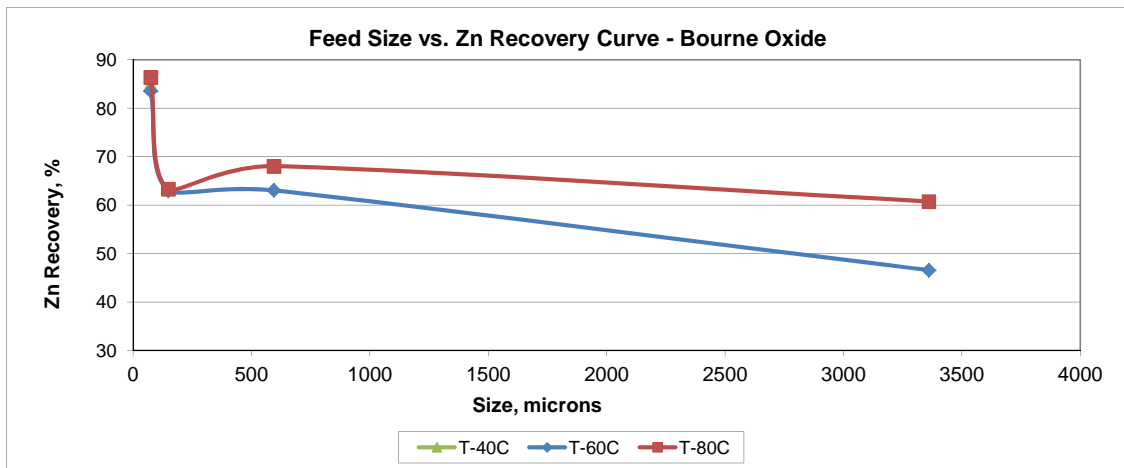
AMMONIUM CARBONATE LEACH TEST SUMMARY - Bourne Oxide

Client: Devonian Metals
 Test: as specified
 Sample: as specified

Date: 22-Dec-11
 Project: 1103306

Objective: to optimize zinc recoveries in ammonium carbonate solution at different temperatures and different sizes

Test No	Sample	Size		Pulp Density % solids	Temperature °C	Duration Hours	Final PLS Zn, g/L	Extraction Zn, %	Residue Zn, %	(NH ₄) ₂ CO ₃ Addition kg/t
		Tyler mesh	µm							
AL7	Bourne Oxide	200	74	20	40	2	7.9	84.9	1.16	960.9
AL13	Bourne Oxide	6	3,360	20	60	2	7.7	46.6	2.00	960.9
AL15	Bourne Oxide	20-30	595	20	60	2	10.8	63.0	1.91	970.3
AL17	Bourne Oxide	100	149	20	60	2	7.8	63.0	1.63	960.9
AL8	Bourne Oxide	200	74	20	60	2	10.6	83.6	1.29	960.9
AL14	Bourne Oxide	6	3,360	20	80	2	8.8	60.8	1.98	960.1
AL16	Bourne Oxide	20-30	595	20	80	2	10.2	68.0	1.18	968.6
AL18	Bourne Oxide	100	149	20	80	2	8.0	63.3	2.09	960.9
AL11	Bourne Oxide	200	74	20	80	2	7.3	86.4	0.97	960.9



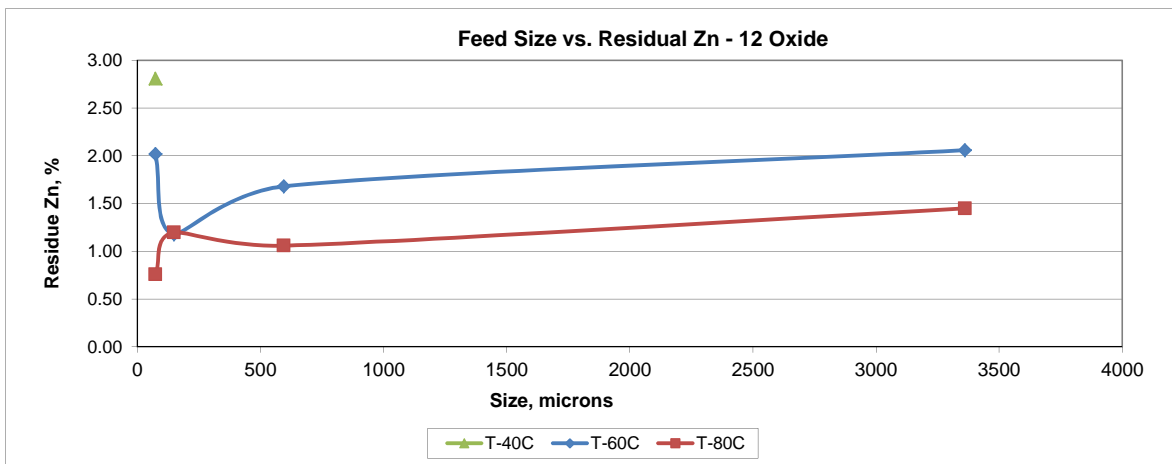
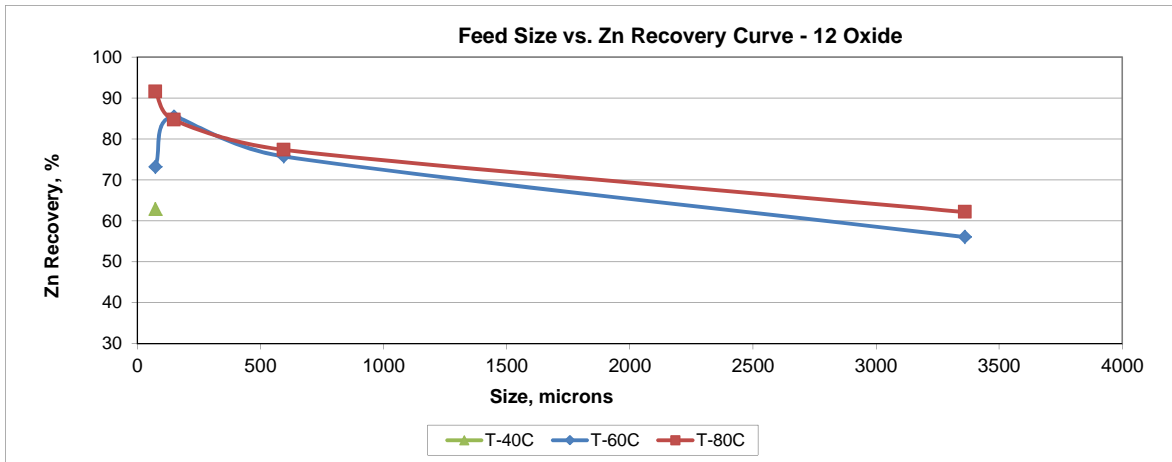
AMMONIUM CARBONATE LEACH TEST SUMMARY - 12 Oxide

Client: Devonian Metals
 Test: as specified
 Sample: as specified

Date: 22-Dec-11
 Project: 1103306

Objective: to optimize zinc recoveries in ammonium carbonate solution at different temperatures and different sizes

Test No	Sample	Size		Pulp Density % solids	Temperature °C	Duration Hours	Final PLS Zn, g/L	Extraction Zn, %	Residue Zn, %	(NH ₄) ₂ CO ₃ Addition kg/t
		Tyler mesh	µm							
AL9	12-Oxide	200	74	20	40	2	7.4	62.9	2.81	960.9
AL19	12- Oxide	6	3,360	20	60	2	9.9	56.1	2.06	960.5
AL21	12- Oxide	20-30	595	20	60	2	9.7	75.7	1.68	959.7
AL23	12- Oxide	100	149	20	60	2	9.9	85.4	1.18	960.9
AL10	12-Oxide	200	74	20	60	2	7.5	73.2	2.02	960.9
AL20	12- Oxide	6	3,360	20	80	2	10.1	62.2	1.45	959.0
AL22	12- Oxide	20-30	595	20	80	2	10.6	77.4	1.06	988.6
AL24	12- Oxide	100	149	20	80	2	9.5	84.7	1.20	960.9
AL12	12-Oxide	200	74	20	80	2	7.3	91.6	0.76	960.9



AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL13
Sample: Bourne Oxide 6 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 60°C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 6.25 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)
0	7.7	9.0	60.0	225	1,457	1,415					
10		9.0	59.0	50			20	5.42	7.3		46.6
20		9.1	58.0	50			20	7.40	10.0		64.3
30		9.1	59.0	-			20	7.85	10.8		69.1
40		9.0	58.0	50			20	8.37	11.5		73.9
50		9.1	60.0	50			20	7.78	10.8		68.9
60		9.1	58.0	50			20	8.36	12.0		76.5
90		9.0	61.0	50			20	8.09	11.8		75.3
120		9.0	60.0	100	1,580	1,322		7.66	11.2		71.7
Total in solution										11.2	71.7
Residue					221.3			2.0	4.4		28.3
Total											100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL14
Sample: Bourne Oxide 6 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 80°C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.1 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 7.40 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)
0	7.7	9.1	80.0	250	1,480	1,415					
10		9.1	78.0	100			20	7.55	11.3		60.8
20		9.1	80.0	150			20	8.14	12.3		66.3
30		9.0	78.0	100			20	8.74	13.3		72.0
40		9.1	78.0	50			20	8.27	12.7		68.4
50		9.0	78.0	50			20	9.71	14.8		80.0
60		9.1	80.0	50			20	9.13	14.5		78.0
90		9.0	78.0	100			20	10.07	16.0		86.6
120		9.1	79.0	100	1,731	1,471		8.80	14.2		76.5
Total in solution										14.2	76.5
Residue					219.6			2.0	4.3		23.5
Total											100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL15
Sample: Bourne Oxide 20-30 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 60°C

TEST CONDITIONS

Solids weight: 248 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 970.3 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 8.16 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)
0	7.7	9.0	60.0	250	1,478	1,415					
10		9.0	59.0				20	9.38	12.7		63.0
20		9.1	59.0	50			20	11.36	15.6		77.3
30		9.1	59.0	50			20	12.26	17.1		84.4
40		9.1	60.0	50			20	10.72	15.0		74.4
50		9.0	59.0				20	11.05	15.5		76.5
60		9.1	60.0	50			20	11.49	16.7		82.6
90		9.1	60.0	100			20	9.62	14.4		71.2
120		9.1	60.0	100	1,596	1,338		10.84	16.0		79.3
Total in solution										16.0	79.3
Residue					219.1			1.9	4.2		20.7
Total											100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL16
Sample: Bourne Oxide 20-30 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 80°C

TEST CONDITIONS

Solids weight: 248 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 968.6 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 8.91 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)		
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)	
0	7.7	9.1	80.0	450	1,662	1,415						
10		9.0	78.0	100			20	8.35	15.0		68.0	
20		9.0	78.0	100			20	9.04	16.4		74.4	
30		9.0	78.0	100			20	11.13	20.4		92.3	
40		9.0	79.0	100			20	13.13	24.0		108.8	
50		9.0	80.0	100			20	10.16	18.8		85.0	
60		9.1	80.0	100			20	10.53	20.0		90.5	
90		9.0	80.0	100			20	8.90	17.3		78.2	
120		9.1	79.0	100	2,049	1,780		10.18	19.5		88.5	
Total in solution											19.5	88.5
Residue					216.3			1.2	2.6		11.5	
Total												100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL17
Sample: Bourne Oxide 100 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 60°C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 6.46 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)		
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			(g)	
0	7.7	9.0	59.0	200	1,434	1,415						
10		9.1	60.0	100			20	6.84	10.2		63.0	
20		9.0	58.0				20	7.78	11.7		72.5	
30		9.1	58.0	50			20	8.77	13.3		82.6	
40		9.0	60.0				20	8.56	13.1		80.9	
50		9.0	59.0	50			20	6.53	10.1		62.3	
60		9.0	59.0	50			20	7.45	11.9		73.4	
90		9.0	60.0	100			20	8.88	14.1		87.5	
120		9.0	60.0	100	1,716	1,467		7.83	12.6		77.9	
Total in solution											12.6	77.9
Residue					218.6			1.6	3.6		22.1	
Total												100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL18
Sample: Bourne Oxide 100 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 80°C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
 - added 2.5mol of (NH₄)₂CO₃
 - adjusted and maintain pH 9 with NH₄OH
 - sampled solution at 10,20,30,40,50,60 and 90minutes
 - test ended after 2 hours
 - filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
 - intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
 - Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 6.43 %
 Measured: 7.44 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)
0	7.7	9.0	78.0	250	1,480	1,415					
10		9.1	78.0	50			20	7.68	10.2		63.3
20		9.0	78.0	100			20	8.30	11.2		69.4
30		9.0	78.0	100			20	8.52	11.6		72.2
40		9.0	79.0	75			20	8.57	11.7		72.7
50		9.0	79.0	75			20	7.44	10.2		63.5
60		9.0	80.0	50			20	7.50	10.8		66.9
90		9.0	80.0	100			20	7.69	11.2		69.4
120		9.0	80.0	50	1,552	1,306		7.96	11.5		71.5
Total in solution										11.5	71.5
Residue					219.1			2.1	4.6		28.5
Total											100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL19
Sample: 12 Oxide 6 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 60°C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.5 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 7.15 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)
0	7.9	9.1	61.0	200	1,434	1,415					
10		9.1	59.0	70			20	7.34	10.0	56.1	
20		9.1	59.0				20	9.78	13.5	75.5	
30		9.1	60.0				20	10.27	14.4	80.4	
40		9.1	60.0	30			20	10.39	14.6	81.6	
50		9.0	58.0				20	10.32	14.5	81.2	
60		9.0	58.0	20			20	10.88	15.8	88.5	
90		9.1	60.0	50			20	10.26	15.2	85.0	
120		9.1	60.0	25	1,610	1,346		9.89	14.7	82.2	
Total in solution										14.7	82.2
Residue					219.3			1.5	3.2	17.8	
Total											100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL20
Sample: 12 Oxide 6 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 80°C

TEST CONDITIONS

Solids weight: 251 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 959.0 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 8.50 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)		
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)	
0	7.9	9.0	81.0	250	1,481	1,415						
10		9.1	80.0	100			20	8.45	13.2		62.2	
20		9.0	80.0	100			20	10.33	16.3		76.8	
30		9.1	79.0	50			20	10.20	16.3		76.8	
40		9.1	80.0	50			20	9.38	15.1		71.0	
50		9.0	78.0	50			20	10.58	17.0		79.7	
60		9.1	78.0	50			20	10.97	18.2		85.3	
90		9.0	80.0	100			20	10.44	17.5		82.5	
120		9.1	79.0	50	1,788	1,546		10.05	16.9		79.6	
Total in solution											16.9	79.6
Residue					210.5			2.1	4.3		20.4	
Total											100.0	

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL21
Sample: 12 Oxide 20-30 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 60°C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 959.7 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 7.38 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)
0	7.9	9.1	60.0	200	1,434	1,415					
10		9.0	60.0	50			20	9.87	14.0		75.7
20		9.1	60.0				20	10.44	15.0		81.2
30		9.0	61.0	50			20	8.98	13.1		71.1
40		9.1	61.0				20	9.80	14.3		77.3
50		9.0	60.0	50			20	9.35	13.6		73.8
60		9.0	60.0				20	9.94	15.1		81.5
90		9.1	61.0	50			20	9.62	14.8		80.1
120		9.0	61.0	100	1,636	1,397		9.71	14.9		80.9
Total in solution										14.9	80.9
Residue					210.4			1.7	3.5		19.1
Total											100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL22
Sample: 12 Oxide 20-30 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 80°C

TEST CONDITIONS

Solids weight: 243 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 988.6 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 7.82 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)
0	7.9	9.1	78.0	250	1,473	1,415					
10		9.1	80.0	50			20	10.00	14.7		77.4
20		9.0	81.0	50			20	11.10	16.5		86.9
30		9.0	80.0	50			20	10.26	15.5		81.6
40		9.0	81.0	50			20	10.86	16.4		86.3
50		9.0	79.0	50			20	11.16	16.8		88.6
60		9.0	79.0	50			20	10.59	16.6		87.5
90		9.1	80.0	100			20	10.21	16.3		85.7
120		9.0	80.0	100	1,682	1,449		10.60	16.8		88.7
Total in solution										16.8	88.7
Residue					203.0			1.1	2.2		11.3
Total											100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL23
Sample: 12 Oxide 100 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 60°C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 7.53 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)
0	7.9	9.1	60.0	200	1,434	1,415					
10		9.1	61.0	50			20	10.46	16.1		85.4
20		9.0	58.0				20	10.53	16.4		87.1
30		9.0	60.0	50			20	9.80	15.5		82.3
40		9.1	61.0				20	10.89	17.1		91.1
50		9.2	58.0	50			20	8.84	14.0		74.4
60		9.1	60.0				20	9.54	15.7		83.3
90		9.2	61.0	100			20	9.10	15.2		80.7
120		9.0	60.0	50	1,755	1,517		9.88	16.4		87.0
Total in solution										16.4	87.0
Residue					207.2			1.2	2.4		13.0
Total											100.0

AMMONIUM CARBONATE LEACH TEST REPORT

Client: Devonian Metals
Test: AL24
Sample: 12 Oxide 100 mesh

Date: 22-Dec-11
Project: 1103306

Objective: to recover Zn at a pulp density of 20% solids in 2.5mol Ammonium carbonate (NH₄)₂CO₃ solution at 80°C

TEST CONDITIONS

Solids weight: 250 g
 Water: 1,000 g
 Solid %: 20 %
 (NH₄)₂CO₃: 960.9 kg/t
 Test Duration: 2 hours

TEST DESCRIPTION

- repulped to 20% solids with tap water
- added 2.5mol of (NH₄)₂CO₃
- adjusted and maintain pH 9 with NH₄OH
- sampled solution at 10,20,30,40,50,60 and 90minutes
- test ended after 2 hours
- filtered and displacement washed with NH₄OH solution followed by three times water displacement washes
- intermediate solutions assayed for Zn, final PLS assay for Zn and ICP
- Residues assayed for Zn, ICP and S-2

HEAD GRADE

Zn %
 Calculated : 7.32 %
 Measured: 8.17 %

LEACH TEST DATA

Time minutes	pH		Temperature °C	NH ₄ OH Addition (ml)	Slurry Weight (g)	Solution				Distribution Zn (%)	
	Initial	Final				Vol. (mL)	Assay Vol. (mL)	Zn (g/L, %)			Zn (g)
0	7.9	9.1	80.0	250	1,480	1,415					
10		9.0	78.0	50			20	10.01	15.5		84.7
20		9.1	79.0	50			20	10.70	16.8		91.6
30		9.1	81.0	50			20	9.34	14.9		81.3
40		9.1	81.0	50			20	9.82	15.6		85.3
50		9.1	80.0	50			20	8.76	13.9		76.2
60		9.0	78.0	50			20	9.05	15.0		81.9
90		9.1	81.0	100			20	8.66	14.6		79.6
120		9.1	80.0	100	1,766	1,527		9.48	15.8		86.4
Total in solution										15.8	86.4
Residue					207.5			1.2	2.5		13.6
Total											100.0

LEACH TEST SOLUTION ANALYSIS

Client: Devonian Metals
Test: AL13-AL24
Sample: as specified timed leach solution

Date: 22-Dec-11
Project: 1103306

Elements	Unit	Sample ID												Analytical Method
		AL13 FINAL PLS	AL14 FINAL PLS	AL15 FINAL PLS	AL16 FINAL PLS	AL17 FINAL PLS	AL18 FINAL PLS	AL19 FINAL PLS	AL20 FINAL PLS	AL21 FINAL PLS	AL22 FINAL PLS	AL23 FINAL PLS	AL24 FINAL PLS	
Zn	mg/L	7.66	8.80	10.84	10.18	7.83	7.96	9.89	10.05	9.71	10.60	9.88	9.48	Zn-SOL-AA
Ag	mg/L	<0.02	7.2	<0.02	<0.02	<0.02	<0.02	<0.02	28.08	<0.02	<0.02	5.75	<0.02	H2O-ICP
Al	mg/L	1.2	3.5	1.1	2.1	0.2	8.6	1.2	8.3	2.4	7.7	2.7	16.9	H2O-ICP
As	mg/L	0.3	0.2	<0.2	0.6	1.8	0.7	<0.2	<0.2	<0.2	0.5	0.4	0.6	H2O-ICP
Ba	mg/L	0.03	0.13	0.1	0.14	0.1	0.03	0.14	0.08	0.2	0.13	0.02	0.25	H2O-ICP
Bi	mg/L	<0.1	<0.1	0.9	0.9	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.5	H2O-ICP
Ca	mg/L	5.7	1.1	4	3.6	2.9	2.5	3.7	1.8	5.3	3.2	4.9	12.6	H2O-ICP
Cd	mg/L	12.5	35.62	16.99	15.04	19.72	14.35	10.08	29.68	20.25	20.37	18.79	18.77	H2O-ICP
Co	mg/L	0.49	1.09	0.68	0.53	0.62	0.76	1.33	1.8	1.3	1.36	1.27	1.41	H2O-ICP
Cr	mg/L	<0.1	<0.1	<0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Cu	mg/L	10	8.18	13.85	10.34	13.19	0.79	10.2	11.22	11.43	12.31	12.14	11.23	H2O-ICP
Fe	mg/L	1.93	0.79	2.15	1.46	2.01	0.26	1.44	0.67	2.44	0.71	3.95	2.18	H2O-ICP
Hg	mg/L	<0.05	6.62	35.84	15.76	2.83	3.52	1.44	<0.05	<0.05	<0.05	5.75	0.67	H2O-ICP
K	mg/L	3	4	5	5	<2	3	12	8	10	10	4	6	H2O-ICP
La	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	22.51	<0.05	<0.05	<0.05	<0.05	H2O-ICP
Mg	mg/L	15.9	9.4	16	15.2	20	4.4	3	1.1	4.3	1.1	2.4	1.3	H2O-ICP
Mn	mg/L	1.02	1.02	1.81	1.88	1.17	0.17	0.38	0.36	0.53	0.3	0.61	0.24	H2O-ICP
Mo	mg/L	<0.02	<0.02	<0.02	<0.02	0.26	0.34	16.52	22.51	18.8	20.76	18.56	20.59	H2O-ICP
Na	mg/L	6	3	9	8	5	6	4	2	6	6	4	5	H2O-ICP
Ni	mg/L	3.35	7.2	5.47	4.33	4.77	4.67	17.16	28.08	20.08	24.69	20.38	23.26	H2O-ICP
P	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	1.9	H2O-ICP
Pb	mg/L	99.16	185.59	143.03	156.75	131.14	33.92	69.14	89.88	82.63	79.5	110.39	77.85	H2O-ICP
Sb	mg/L	0.7	2.4	1.3	1.5	0.1	0.4	0.3	1.2	1.1	0.7	<0.1	1.9	H2O-ICP
Sc	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.05	<0.05	0.08	<0.05	H2O-ICP
Sr	mg/L	<0.01	<0.01	0.02	0.01	0.02	<0.01	0.04	<0.01	0.06	0.02	0.15	0.04	H2O-ICP
Ti	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	H2O-ICP
Tl	mg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	H2O-ICP
V	mg/L	0.05	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	H2O-ICP
W	mg/L	<0.1	24.5	<0.1	<0.1	128.6	131.8	<0.1	19.2	149.8	151.6	<0.1	133.1	H2O-ICP
Zn	mg/L	5425.48	9425.33	8292.67	7287.37	7943.86	8003.6	7893.88	9981.38	9067.52	8890.93	8208.83	8683.32	H2O-ICP
Zr	mg/L	<0.01	<0.01	<0.01	0.01	0.05	0.07	0.05	<0.01	0.07	0.1	0.1	0.03	H2O-ICP

LEACH RESIDUE ANALYSIS

Client: Devonian Metals
 Test: AL13-AL24
 Sample: as specified leach Residue

Date: 22-Dec-11
 Project: 1103306

Elements	Unit	Sample ID												Analytical Method
		AL13 Residue	AL14 Residue	AL15 Residue	AL16 Residue	AL17 Residue	AL18 Residue	AL19 Residue	AL20 Residue	AL21 Residue	AL22 Residue	AL23 Residue	AL24 Residue	
Sulfide	%	0.26	0.25	0.32	0.29	0.23	0.21	0.67	0.67	0.24	0.24	0.82	0.62	S-SD-OR
Zn	%	2.0	1.96	1.91	1.16	1.63	2.09	2.06	1.45	1.68	1.06	1.18	1.2	Zn-4A-OR-AA
Ag	ppm	14.9	15.3	14.6	14.8	14.6	14.7	38.6	37.6	35.1	34.1	33.7	32.5	30-4A-TR
Al	%	0.62	0.6	0.6	0.6	0.62	0.68	2.74	2.82	2.67	2.68	3.03	3.26	30-4A-TR
As	ppm	146	133	146	145	137	147	281	271	273	271	325	320	30-4A-TR
Ba	ppm	147	175	143	152	160	169	2073	2077	1833	1890	2076	2063	30-4A-TR
Bi	ppm	19	5	<2	<2	<2	<2	4	3	6	<2	13	24	30-4A-TR
Ca	%	13.57	13.22	11.75	12.15	13.77	13.76	16.08	15.95	15.33	16.06	17.81	18.52	30-4A-TR
Cd	ppm	75.1	69.7	64.3	48.9	63.2	109.8	85.3	78.3	74.1	67.9	63.7	85	30-4A-TR
Co	ppm	3	6	3	2	4	4	11	10	9	9	6	7	30-4A-TR
Cr	ppm	71	66	69	59	135	120	82	109	88	89	125	136	30-4A-TR
Cu	ppm	78	101	92	88	62	146	270	234	224	211	290	277	30-4A-TR
Fe	%	1.49	1.54	1.52	1.52	1.53	1.63	4.23	4.34	4.11	4.14	4.45	4.53	30-4A-TR
K	%	0.28	0.29	0.22	0.23	0.27	0.3	0.94	0.97	0.92	0.93	1	1.06	30-4A-TR
La	ppm	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	30-4A-TR
Mg	%	6.13	6.07	5.72	6.08	5.9	6.24	0.95	0.97	0.96	0.93	1.02	1.07	30-4A-TR
Mn	ppm	767	762	764	793	759	784	312	324	308	308	338	352	30-4A-TR
Mo	ppm	5	5	<1	<1	<1	1	89	80	80	76	72	69	30-4A-TR
Na	%	0.02	0.02	0.02	0.03	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.04	30-4A-TR
Ni	ppm	37	37	35	29	58	70	181	157	153	123	174	168	30-4A-TR
P	ppm	52	82	47	51	16	43	392	380	313	324	368	398	30-4A-TR
Pb	ppm	24272	23220	22817	23092	24009	25321	65170	66961	44924	59366	52739	56867	30-4A-TR
Sb	ppm	44	53	50	61	42	43	116	113	95	101	94	106	30-4A-TR
Sc	ppm	<1	<1	<1	<1	<1	1	5	5	5	5	5	6	30-4A-TR
Sr	ppm	156	153	148	155	162	157	406	414	412	420	435	459	30-4A-TR
Ti	%	0.02	0.02	0.02	0.02	0.02	0.02	0.06	0.07	0.05	0.06	0.06	0.07	30-4A-TR
Tl	ppm	<10	<10	<10	<10	<10	<10	<10	12	<10	<10	<10	<10	30-4A-TR
V	ppm	11	11	10	10	9	11	49	50	47	47	54	55	30-4A-TR
W	ppm	260	237	235	146	199	266	264	182	195	130	141	149	30-4A-TR
Zn	ppm	21321	17386	17166	10911	14307	19637	19776	13644	14394	9445	9388	9676	30-4A-TR
Zr	ppm	10	12	8	8	8	9	16	18	16	16	17	19	30-4A-TR

APPENDIX V
FLOTATION RESULTS

FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-1
Sample: 12-Sulphide

Date: 23-Aug-11
Project: 1103306

Objective: Scoping flotation test to recover Pb and Zn at a target grind of P80 - 150 microns

STAGE	TIME min	pH	ADDITION		COMMENTS	
			Reagent	g/tonne		
Grind (2kg)	6'	8.4			Target P80 ~ 150 µm 65% solids in mill # 4	
<u>Pb Rougher Flotation</u>						
Condition	3.0	9.5	Lime	440	to pH 9.5	
	3.0		ZnSO4	750		
			PEX	20		
	1.0		A241	10		
Pb Rougher Float 1	5.0	9.2	MIBC	13		
Condition	3.0	9.5	Lime	150		
	3.0		ZnSO4	250		
			PEX	10		
	1.0		A241	5		
Pb Rougher Float 2	4.0	9.2	MIBC			
Condition	3.0	9.5	Lime	40		
	1.0		A241	5		
Pb Rougher Float 3	2.5	9.3	MIBC			
<u>Zn Rougher Flotation</u>						
Condition	3.0	10.0	Lime	400		to pH 10
	3.0		CuSO4	750		
	1.0		SIPX	50		
Zn Rougher Float 1	5.0	9.6	MIBC			
Condition	3.0	10.0	Lime	170		
	3.0		CuSO4	250		
			SIPX	50		
Zn Rougher Float 2	5.0	9.6	MIBC			
Condition	3.0	10.0	Lime			20
	1.0		SIPX			
Zn Rougher Float 3	4.0	9.6	MIBC			

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
 Test: F-1
 Sample: 12-Sulphide

Date: 23-Aug-11
 Project: 1103306

Objective: Scoping flotation test to recover Pb and Zn at a target grind of P80 - 150 microns

Product	Weight		Assay					Distribution				
	g	%	Ag g/t	Pb %	Zn %	Cd ppm	Fe %	Ag %	Pb %	Zn %	Cd %	Fe %
Pb Rougher Concentrate 1	44.8	2.3	177.2	46.83	2.09	65.7	2.73	25.9	37.2	0.8	0.9	7.0
Pb Rougher Concentrate 2	37.7	1.9	202.9	55.75	2.08	58.1	2.16	24.9	37.2	0.7	0.6	4.7
Pb Rougher Concentrate 1+2	82.5	4.2	188.9	50.90	2.09	62.2	2.47	50.7	74.4	1.5	1.5	11.7
Pb Rougher Concentrate 3	8.9	0.5	101.7	22.60	3.86	105.4	3.91	2.9	3.6	0.3	0.3	2.0
Total Pb Rougher Concentrate	91.4	4.7	180.4	48.15	2.26	66.4	2.61	53.7	78.0	1.8	1.8	13.7
Zn Rougher Concentrate 1	207.8	10.6	50.0	1.00	42.94	1258.7	0.74	33.8	3.7	78.5	76.3	8.8
Zn Rougher Concentrate 2	54.7	2.8	29.0	6.13	5.42	140.1	6.41	5.2	5.9	2.6	2.2	20.1
Zn Rougher Concentrate 1+2	262.5	13.4	45.6	2.07	35.12	1025.6	1.92	39.0	9.6	81.1	78.6	28.9
Zn Rougher Concentrate 3	28.4	1.5	12.5	2.40	2.01	54.5	6.52	1.2	1.2	0.5	0.5	10.6
Total Zn Rougher Concentrate	290.9	14.9	42.4	2.10	31.89	930.8	2.37	40.2	10.8	81.6	79.0	39.5
Total Flotation Rougher Concentrates	382.2	19.6	75.4	13.1	24.8	724.2	2.43	93.9	88.9	83.4	80.8	53.2
Final Tails	1571.2	80.4	1.2	0.40	1.20	41.9	0.52	6.1	11.1	16.6	19.2	46.8
Calculated Head	1953.5	100.0	15.7	2.89	5.82	175.4	0.89	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	0.95					

SIZE ANALYSIS REPORT

Client: Devonian Metals

Test: F-1

Sample: 12-Sulphide

Grind: 2kg sample ground @65%solids for 6 minutes in stainless steel Mill #4

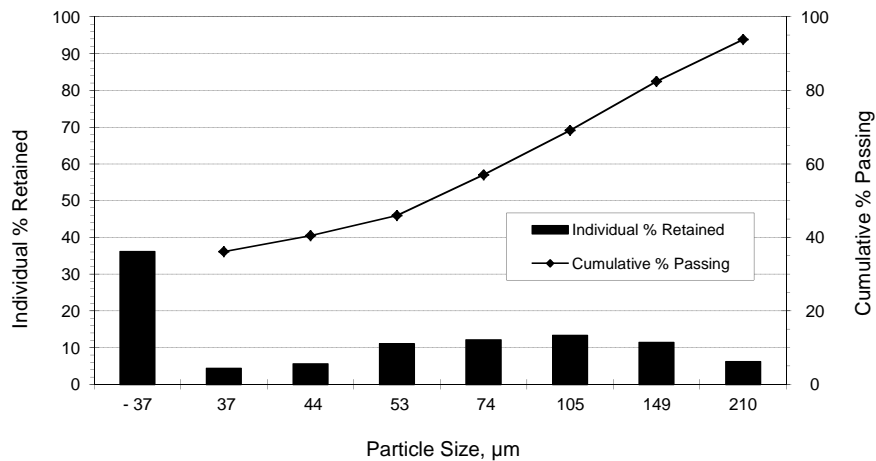
Date: 23-Aug-11

Project: 1007312

Sieve Size		Individual	Cumulative
Tyler Mesh	Micrometers	% Retained	% Passing
65	210	6.2	93.8
100	149	11.4	82.5
150	105	13.3	69.1
200	74	12.1	57.0
270	53	11.0	46.0
325	44	5.5	40.4
400	37	4.3	36.1
Undersize	- 37	36.1	-
TOTAL:		100.0	

80 % Passing Size (μm) = 140

Size Distribution



FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-2
Sample: 12-Sulphide

Date: 23-Aug-11
Project: 1103306

Objective: Scoping flotation test to recover Pb and Zn at a target grind of P80 - 105 microns

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
Grind (2kg)	8'24"	8.2			Target P80 ~ 105 µm 65% solids in mill # 4
<u>Pb Rougher Flotation</u>					
Condition	3.0	9.5	Lime	475	to pH 9.5
	3.0		ZnSO4	750	
			PEX	20	
	1.0		A241	10	
Pb Rougher Float 1	5.0	9.2	MIBC	12	
Condition	3.0	9.5	Lime	150	
	3.0		ZnSO4		No ZnSO4
			PEX	10	
	1.0		A241	5	
Pb Rougher Float 2	4.0	9.3	MIBC	3	
Condition	3.0	9.5	Lime	35	
	1.0		A241	5	
Pb Rougher Float 3	2.5	9.3	MIBC		
<u>Zn Rougher Flotation</u>					
Condition	3.0	10.0	Lime	400	to pH 10
	3.0		CuSO4	750	
	1.0		SIPX	50	
Zn Rougher Float 1	5.0	9.6	MIBC		
Condition	3.0	10.0	Lime	150	
	3.0		CuSO4	250	
			SIPX	50	
Zn Rougher Float 2	5.0	9.6	MIBC	3	
Condition	3.0	10.0	Lime	50	
	1.0		SIPX	20	
Zn Rougher Float 3	4.0	9.5	MIBC		

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
 Test: F-2
 Sample: 12-Sulphide

Date: 23-Aug-11
 Project: 1103306

Objective: Scoping flotation test to recover Pb and Zn at a target grind of P80 - 105 microns

Product	Weight		Assay					Distribution				
	g	%	Ag g/t	Pb %	Zn %	Cd ppm	Fe %	Ag %	Pb %	Zn %	Cd %	Fe %
Pb Rougher Concentrate 1	44.5	2.3	177.8	46.98	2.16	56.8	2.88	26.7	36.7	0.8	0.7	7.2
Pb Rougher Concentrate 2	14.6	0.7	27.5	3.48	4.11	108.2	3.62	1.3	0.9	0.5	0.5	3.0
Pb Rougher Concentrate 1+2	59.1	3.0	140.7	36.25	2.64	69.5	3.06	28.0	37.6	1.3	1.2	10.2
Pb Rougher Concentrate 3	11.3	0.6	79.9	18.84	3.27	90.3	3.56	3.0	3.7	0.3	0.3	2.3
Total Pb Rougher Concentrate	70.4	3.6	131.0	33.45	2.74	72.8	3.14	31.1	41.4	1.7	1.5	12.4
Zn Rougher Concentrate 1	241.5	12.4	65.6	7.62	38.79	1128.3	0.77	53.4	32.3	81.0	78.0	10.4
Zn Rougher Concentrate 2	59.3	3.0	58.8	14.71	3.10	87.6	5.22	11.8	15.3	1.6	1.5	17.4
Zn Rougher Concentrate 1+2	300.9	15.4	64.3	9.02	31.75	923.0	1.65	65.2	47.7	82.6	79.5	27.8
Zn Rougher Concentrate 3	34.6	1.8	10.0	2.01	1.80	51.7	7.56	1.2	1.2	0.5	0.5	14.7
Total Zn Rougher Concentrate	335.5	17.2	58.7	8.29	28.66	833.1	2.26	66.3	48.9	83.1	80.0	42.6
Total Flotation Rougher Concentrates	405.9	20.8	71.2	12.7	24.2	701.3	2.41	97.4	90.2	84.8	81.4	55.0
Final Tails	1541.7	79.2	0.5	0.36	1.14	42.1	0.52	2.6	9.8	15.2	18.6	45.0
Calculated Head	1947.6	100.0	15.2	2.92	5.94	179.5	0.91	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	0.95					

SIZE ANALYSIS REPORT

Client: Devonian Metals

Test: F-2

Sample: 12-Sulphide

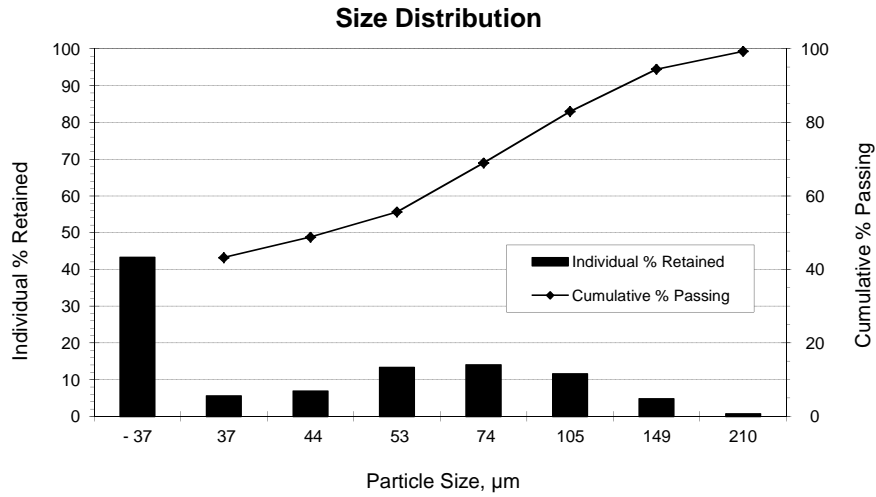
Grind: 2kg sample ground @65%solids for 8.4 minutes in stainless steel Mill #4

Date: 23-Aug-11

Project: 1007312

Sieve Size		Individual	Cumulative
Tyler Mesh	Micrometers	% Retained	% Passing
65	210	0.7	99.3
100	149	4.8	94.5
150	105	11.5	83.0
200	74	14.0	69.0
270	53	13.3	55.6
325	44	6.8	48.8
400	37	5.6	43.2
Undersize	- 37	43.2	-
TOTAL:		100.0	

80 % Passing Size (μm) = 98



FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-3
Sample: 12-Sulphide

Date: 23-Aug-11
Project: 1103306

Objective: Scoping flotation test to recover Pb and Zn at a target grind of P80 - 74 microns

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
Grind (2kg)	11'30"	8.2			Target P80 ~ 74 µm 65% solids in mill # 4
<u>Pb Rougher Flotation</u>					
Condition	3.0	9.5	Lime	500	to pH 9.5
	3.0		ZnSO4	500	
			PEX	20	
	1.0		A241	10	
Pb Rougher Float 1	5.0	9.2	MIBC	12	
Condition	3.0	9.5	Lime	150	
	3.0		ZnSO4	250	
			PEX	10	
	1.0		A241	5	
Pb Rougher Float 2	4.0	9.3	MIBC		
Condition	3.0	9.5	Lime	40	
	1.0		A241	5	
Pb Rougher Float 3	2.5	9.3	MIBC	3	
<u>Zn Rougher Flotation</u>					
Condition	3.0	10.0	Lime	425	to pH 10
	3.0		CuSO4	500	
	1.0		SIPX	50	
Zn Rougher Float 1	5.0	9.6	MIBC		
Condition	3.0	10.0	Lime	160	
	3.0		CuSO4	250	
			SIPX	50	
Zn Rougher Float 2	5.0	9.6	MIBC		
Condition	3.0	10.0	Lime	25	
	1.0		SIPX	20	
Zn Rougher Float 3	4.0	9.5	MIBC		

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
 Test: F-3
 Sample: 12-Sulphide

Date: 23-Aug-11
 Project: 1103306

Objective: Scoping flotation test to recover Pb and Zn at a target grind of P80 - 105 microns

Product	Weight		Assay					Distribution				
	g	%	Ag g/t	Pb %	Zn %	Cd ppm	Fe %	Ag %	Pb %	Zn %	Cd %	Fe %
Pb Rougher Concentrate 1	30.2	1.5	163.0	41.26	2.12	66.4	3.96	16.2	22.3	0.5	0.6	6.5
Pb Rougher Concentrate 2	49.5	2.5	231.0	58.67	1.33	47.6	1.48	37.8	52.1	0.6	0.7	4.0
Pb Rougher Concentrate 1+2	79.7	4.1	205.3	52.08	1.63	54.7	2.42	54.0	74.4	1.1	1.2	10.5
Pb Rougher Concentrate 3	7.3	0.4	91.8	20.56	3.60	107.2	3.86	2.2	2.7	0.2	0.2	1.5
Total Pb Rougher Concentrate	87.0	4.5	195.8	49.45	1.79	59.1	2.54	56.2	77.0	1.3	1.4	12.1
Zn Rougher Concentrate 1	205.5	10.6	53.1	1.71	45.97	1347.7	0.63	36.1	6.3	80.9	77.6	7.1
Zn Rougher Concentrate 2	59.6	3.1	20.0	3.97	2.68	72.3	5.60	3.9	4.2	1.4	1.2	18.3
Zn Rougher Concentrate 1+2	265.2	13.6	45.7	2.22	36.23	1060.9	1.75	40.0	10.5	82.3	78.8	25.3
Zn Rougher Concentrate 3	46.9	2.4	7.9	1.60	1.52	44.0	7.26	1.2	1.3	0.6	0.6	18.6
Total Zn Rougher Concentrate	312.0	16.0	40.0	2.13	31.02	908.2	2.58	41.2	11.9	82.9	79.4	43.9
Total Flotation Rougher Concentrates	399.0	20.5	73.9	12.4	24.7	723.1	2.57	97.4	88.9	84.2	80.8	56.0
Final Tails	1547.2	79.5	0.5	0.40	1.19	44.3	0.52	2.6	11.1	15.8	19.2	44.0
Calculated Head	1946.2	100.0	15.6	2.87	6.00	183.5	0.94	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	0.95					

SIZE ANALYSIS REPORT

Client: Devonian Metals

Test: F-3

Sample: 12-Sulphide

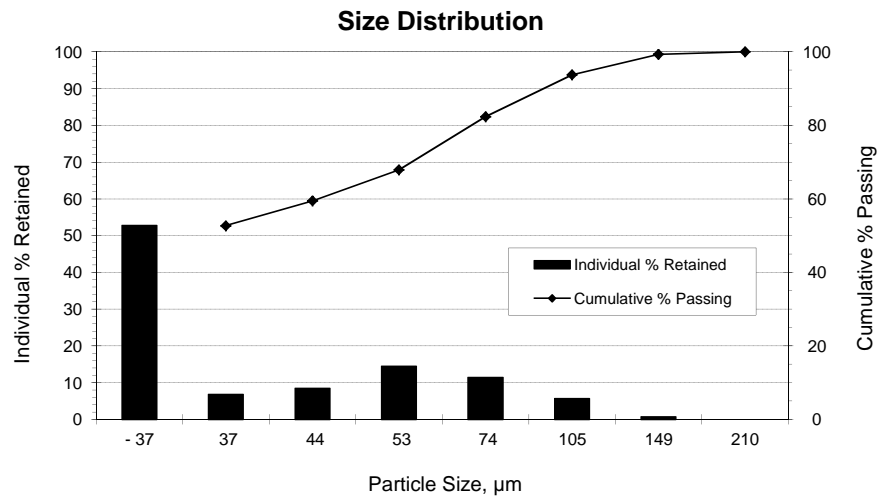
Grind: 2kg sample ground @65%solids for 6 minutes in stainless steel Mill #3

Date: 23-Aug-11

Project: 1007312

Sieve Size		Individual	Cumulative
Tyler Mesh	Micrometers	% Retained	% Passing
65	210	0.0	100.0
100	149	0.7	99.3
150	105	5.6	93.7
200	74	11.4	82.3
270	53	14.5	67.9
325	44	8.4	59.4
400	37	6.7	52.7
Undersize	- 37	52.7	-
TOTAL:		100.0	

80 % Passing Size (μm) = 70



FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-4
Sample: 12-Sulphide

Date: 23-Aug-11
Project: 1103306

Objective: Similar to F1, but with sulphidizing agent

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
Grind (2kg)	6	9.0	Na ₂ S	500	Target P80 ~ 150 µm 65% solids in mill # 4
<u>Pb Rougher Flotation</u>					
Condition	3.0	9.5	Lime	350	to pH 9.5
	3.0		ZnSO ₄	750	
			PEX	20	
	1.0		A241	10	
Pb Rougher Float 1	5.0	9.2	MIBC	17	
Condition	3.0	9.5	Lime	150	
	3.0		ZnSO ₄	250	
			PEX	10	
	1.0		A241	5	
Pb Rougher Float 2	4.0	9.1	MIBC		
Condition	3.0	9.5	Lime	50	
	1.0		A241	5	
Pb Rougher Float 3	2.5	9.3	MIBC		
<u>Zn Rougher Flotation</u>					
Condition	3.0	10.0	Lime	400	to pH 10
	3.0		CuSO ₄	750	
	1.0		SIPX	50	
Zn Rougher Float 1	5.0	9.6	MIBC		
Condition	3.0	10.0	Lime	125	
	3.0		CuSO ₄	250	
			SIPX	50	
Zn Rougher Float 2	5.0	9.6	MIBC		
Condition	3.0	10.0	Lime	50	
	1.0		SIPX	20	
Zn Rougher Float 3	4.0	9.6	MIBC		

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
Test: F-4
Sample: 12-Sulphide

Date: 23-Aug-11
Project: 1103306

Objective: Similar to F1, but with sulphidizing agent

Product	Weight		Assay					Distribution				
			Ag	Pb	Zn	Cd	Fe	Ag	Pb	Zn	Cd	Fe
	g	%	g/t	%	%	ppm	%	%	%	%	%	
Pb Rougher Concentrate 1	20.5	1.0	73.7	13.71	2.49	65.6	6.62	5.1	5.2	0.4	0.4	7.5
Pb Rougher Concentrate 2	21.1	1.1	129.9	33.40	1.99	53.9	3.18	9.2	12.9	0.4	0.3	3.7
Pb Rougher Concentrate 1+2	41.6	2.1	102.2	23.70	2.24	59.7	4.88	14.2	18.1	0.8	0.7	11.2
Pb Rougher Concentrate 3	8.7	0.4	12.3	32.29	2.45	64.0	2.92	0.4	5.2	0.2	0.2	1.4
Total Pb Rougher Concentrate	50.3	2.6	86.6	25.19	2.27	60.4	4.54	14.6	23.3	1.0	0.8	12.6
Zn Rougher Concentrate 1	237.0	12.1	60.2	5.90	38.52	1250.1	0.72	47.8	25.7	79.2	81.0	9.4
Zn Rougher Concentrate 2	86.7	4.4	84.2	21.34	5.47	156.7	2.67	24.4	34.0	4.1	3.7	12.8
Zn Rougher Concentrate 1+2	323.7	16.5	66.6	10.03	29.67	957.3	1.24	72.2	59.7	83.3	84.8	22.2
Zn Rougher Concentrate 3	43.1	2.2	12.6	2.94	1.92	54.5	7.01	1.8	2.3	0.7	0.6	16.7
Total Zn Rougher Concentrate	366.8	18.7	60.2	9.20	26.41	851.1	1.92	74.1	62.0	84.0	85.4	38.9
Total Flotation Rougher Concentrates	417.1	21.3	63.4	11.1	23.5	755.8	2.24	88.7	85.3	85.0	86.2	51.5
Final Tails	1539.3	78.7	2.2	0.52	1.12	32.7	0.57	11.3	14.7	15.0	13.8	48.5
Calculated Head	1956.4	100.0	15.3	2.78	5.89	186.9	0.93	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	0.95					

SIZE ANALYSIS REPORT

Client: Devonian Metals

Test: F-4

Sample: 12-Sulphide

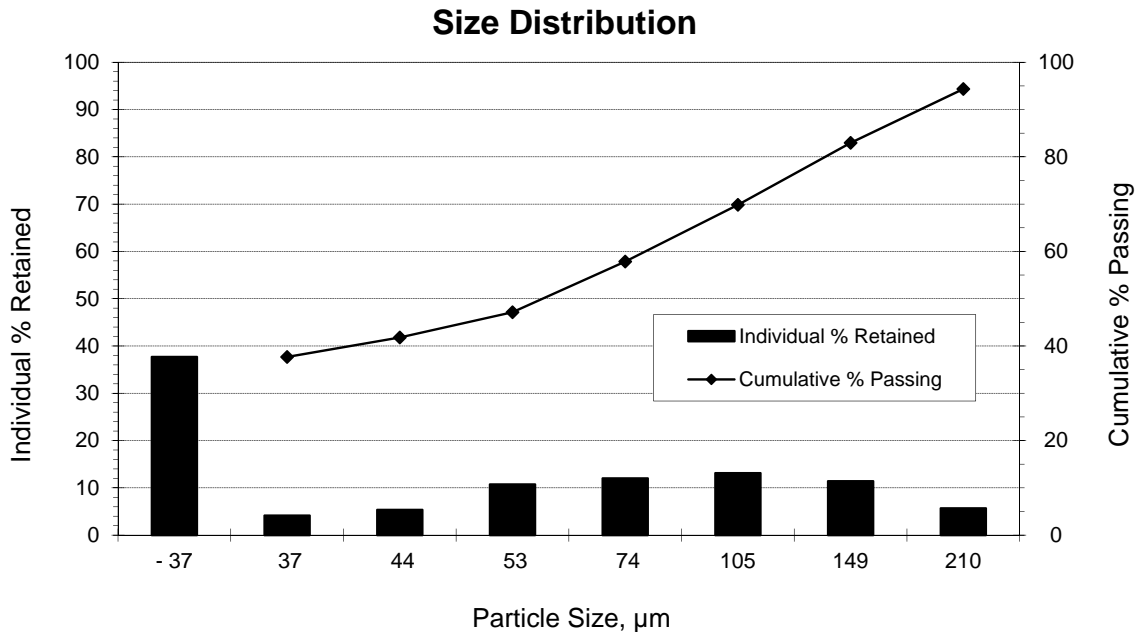
Grind: 2kg sample ground @65%solids for 6 minutes in stainless steel Mill #4

Date: 23-Aug-11

Project: 1103306

Sieve Size		Individual	Cumulative
Tyler Mesh	Micrometers	% Retained	% Passing
65	210	5.7	94.3
100	149	11.4	82.9
150	105	13.1	69.8
200	74	12.0	57.8
270	53	10.7	47.1
325	44	5.3	41.8
400	37	4.1	37.7
Undersize	- 37	37.7	-
TOTAL:		100.0	

80 % Passing Size (μm) = 138



FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-5
Sample: 12-Sulphide

Date: 23-Aug-11
Project: 1103306

Objective: Scoping flotation test to recover Pb and Zn at a target grind of P80 - 200 microns

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
Grind (2kg)	4.6	8.9	Na2S	300	Target P80 ~ 200 µm 65% solids in mill # 4
<u>Pb Rougher Flotation</u>					
Condition	3.0	9.5	Lime	300	to pH 9.5
	3.0		ZnSO4	750	
			PEX	20	
	1.0		A241	10	
Pb Rougher Float 1	5.0	9.0	MIBC	13	
Condition	3.0	9.5	Lime	200	
	3.0		ZnSO4	250	
			PEX	10	
	1.0		A241	5	
Pb Rougher Float 2	4.0	9.3	MIBC		
Condition	3.0	9.5	Lime	25	
	1.0		A241	5	
Pb Rougher Float 3	2.5	9.3	MIBC		
<u>Zn Rougher Flotation</u>					
Condition	3.0	10.0	Lime	450	to pH 10
	3.0		CuSO4	750	
	1.0		SIPX	50	
Zn Rougher Float 1	5.0	9.5	MIBC		
Condition	3.0	10.0	Lime	200	
	3.0		CuSO4	250	
			SIPX	50	
Zn Rougher Float 2	5.0	9.5	MIBC		
Condition	3.0	10.0	Lime	0.8*0.1*500	
	1.0		SIPX	20	
Zn Rougher Float 3	4.0	9.6	MIBC	5	

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
 Test: F-5
 Sample: 12-Sulphide

Date: 23-Aug-11
 Project: 1103306

Objective: Scoping flotation test to recover Pb and Zn at a target grind of P80 - 200 microns

Product	Weight		Assay					Distribution				
	g	%	Ag	Pb	Zn	Cd	Fe	Ag	Pb	Zn	Cd	Fe
			g/t	%	%	ppm	%	%	%	%	%	%
Pb Rougher Concentrate 1	24.9	1.3	106.4	25.40	2.32	64.7	5.22	8.6	11.6	0.5	0.4	7.3
Pb Rougher Concentrate 2	15.3	0.8	124.7	31.78	2.29	60.6	3.66	6.2	8.9	0.3	0.3	3.1
Pb Rougher Concentrate 1+2	40.2	2.1	113.4	27.83	2.31	63.1	4.63	14.8	20.6	0.8	0.7	10.4
Pb Rougher Concentrate 3	6.4	0.3	89.0	21.47	3.01	79.5	3.77	1.8	2.5	0.2	0.1	1.3
Total Pb Rougher Concentrate	46.6	2.4	110.0	26.95	2.40	65.4	4.51	16.7	23.1	1.0	0.8	11.7
Zn Rougher Concentrate 1	227.4	11.7	55.2	4.13	40.39	1315.6	0.73	40.7	17.3	78.3	80.8	9.2
Zn Rougher Concentrate 2	95.9	4.9	50.8	12.58	6.14	166.0	3.59	15.8	22.2	5.0	4.3	19.2
Zn Rougher Concentrate 1+2	323.2	16.6	53.9	6.64	30.23	974.6	1.58	56.5	39.4	83.3	85.1	28.4
Zn Rougher Concentrate 3	59.9	3.1	11.9	3.03	1.90	53.5	4.75	2.3	3.3	1.0	0.9	15.8
Total Zn Rougher Concentrate	383.1	19.6	47.3	6.07	25.80	830.7	2.07	58.8	42.8	84.3	86.0	44.2
Total Flotation Rougher Concentrates	429.7	22.0	54.1	8.3	23.3	747.6	2.34	75.5	65.9	85.2	86.8	56.0
Final Tails	1520.4	78.0	5.0	1.22	1.14	32.1	0.52	24.5	34.1	14.8	13.2	44.0
Calculated Head	1950.1	100.0	15.8	2.79	6.02	189.8	0.92	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	0.95					

SIZE ANALYSIS REPORT

Client: Devonian Metals

Test: F-5

Sample: 12-Sulphide

Grind: 2kg sample ground @65%solids for 6 minutes in stainless steel Mill #4

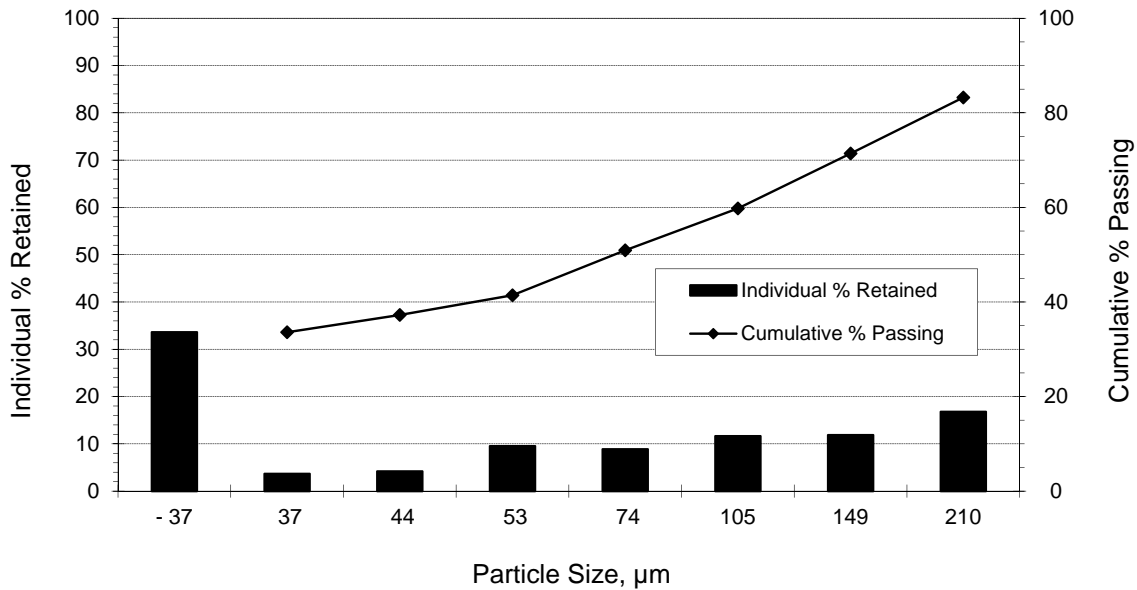
Date: 23-Aug-11

Project: 1103306

Sieve Size		Individual	Cumulative
Tyler Mesh	Micrometers	% Retained	% Passing
65	210	16.8	83.2
100	149	11.8	71.4
150	105	11.6	59.8
200	74	8.8	50.9
270	53	9.5	41.4
325	44	4.2	37.2
400	37	3.7	33.6
Undersize	- 37	33.6	-
TOTAL:		100.0	

80 % Passing Size (µm) = 192

Size Distribution



FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-6
Sample: 12-Sulphide

Date: 28-Sep-11
Project: 1103306

Objective: Similar to F1, but Pb float at natural pH

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
Grind (2kg)	6	8.3			Target P80 ~ 150 µm 65% solids in mill # 4
<u>Pb Rougher Flotation</u>					
Condition	3.0	7.2	ZnSO4	750	natural pH
	1.0		PEX	20	
			A241	10	
Pb Rougher Float 1	7.0	7.5	MIBC	7	less mass pull than F1
Condition	3.0		ZnSO4	250	natural pH
	1.0		PEX	10	
			A241	5	
Pb Rougher Float 2	5.5	7.5	MIBC	5	more Pb float than F1
Condition	1.0		A241	5	natural pH
Pb Rougher Float 3	3.5	7.5	MIBC		not barren
<u>Zn Rougher Flotation</u>					
Condition	3.0	10.0	Lime	550	to pH 10
	3.0		CuSO4	750	
	1.0		SIPX	50	
Zn Rougher Float 1	5.0	9.9	MIBC	3	
Condition	3.0	10.0	Lime	150	to pH 10
	3.0		CuSO4	250	
			SIPX	50	
Zn Rougher Float 2	5.0	10.0	MIBC		
Condition	3.0	10.0	Lime	40	to pH 10
	1.0		SIPX	20	
Zn Rougher Float 3	4.0	10.0	MIBC		

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
Test: F-6
Sample: 12-Sulphide

Date: 28-Sep-11
Project: 1103306

Objective: Similar to F1, but Pb float at natural pH

Product	Weight		Assay					Distribution				
	g	%	Ag	Pb	Zn	Cd	Fe	Ag	Pb	Zn	Cd	Fe
			g/t	%	%	ppm	%	%	%	%	%	%
Pb Rougher Concentrate 1	29.1	1.5	197.7	51.17	2.44	67.3	3.04	20.2	27.9	0.6	0.5	5.2
Pb Rougher Concentrate 2	42.2	2.2	160.7	40.62	2.57	67.9	4.84	23.8	32.2	0.9	0.8	12.1
Pb Rougher Concentrate 1+2	71.2	3.7	175.8	44.92	2.52	67.7	4.11	44.0	60.1	1.5	1.3	17.3
Pb Rougher Concentrate 3	8.4	0.4	81.2	16.64	4.06	108.6	6.54	2.4	2.6	0.3	0.2	3.2
Total Pb Rougher Concentrate	79.6	4.1	165.8	41.95	2.68	72.0	4.36	46.4	62.8	1.8	1.6	20.5
Zn Rougher Concentrate 1	204.8	10.6	51.6	1.37	46.92	1488.4	0.65	37.1	5.3	80.3	83.2	7.9
Zn Rougher Concentrate 2	33.6	1.7	23.4	3.72	7.02	188.5	2.26	2.8	2.4	2.0	1.7	4.5
Zn Rougher Concentrate 1+2	238.4	12.4	47.6	1.70	41.29	1305.1	0.88	39.9	7.6	82.3	84.9	12.4
Zn Rougher Concentrate 3	25.3	1.3	54.9	13.39	1.98	53.7	6.70	4.9	6.4	0.4	0.4	10.0
Total Zn Rougher Concentrate	263.7	13.7	48.3	2.82	37.52	1185.0	1.44	44.7	14.0	82.7	85.3	22.4
Total Flotation Rougher Concentrates	343.4	17.8	75.6	11.9	29.4	926.9	2.11	91.1	76.8	84.5	86.8	42.9
Final Tails	1585.1	82.2	1.6	0.78	1.17	30.4	0.61	8.9	23.2	15.5	13.2	57.1
Calculated Head	1928.5	100.0	14.8	2.76	6.20	190.0	0.88	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	0.95					

SIZE ANALYSIS REPORT

Client: Devonian Metals

Test: F-6

Sample: 12-Sulphide

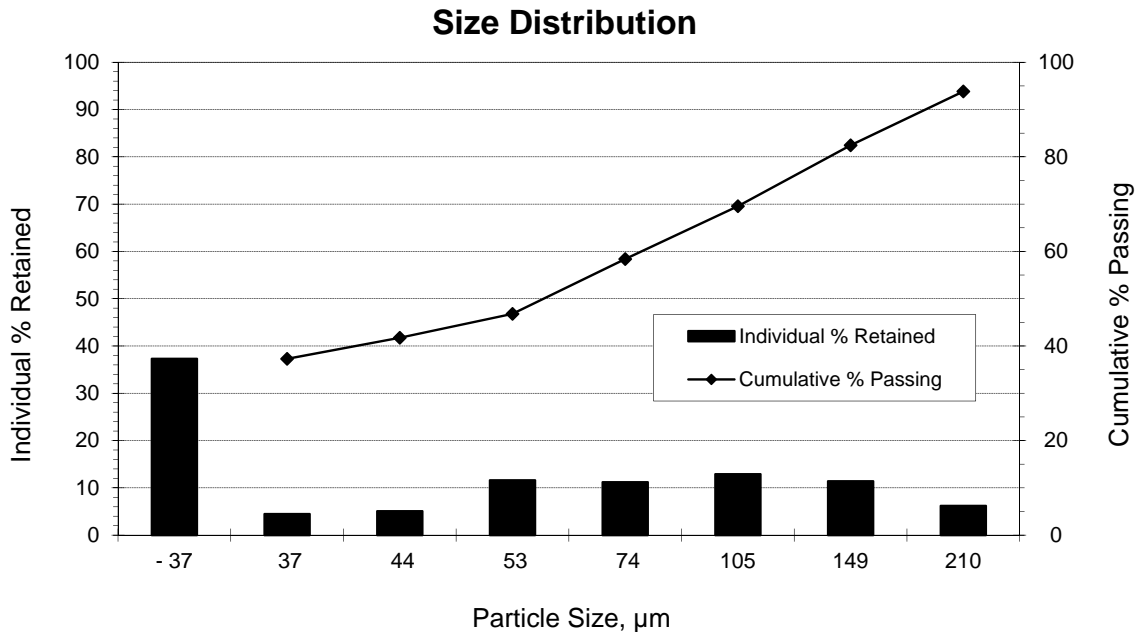
Grind: 2kg sample ground @65%solids for 6 minutes in stainless steel Mill #4

Date: 28-Sep-11

Project: 1103306

Sieve Size		Individual	Cumulative
Tyler Mesh	Micrometers	% Retained	% Passing
65	210	6.2	93.8
100	149	11.4	82.4
150	105	12.9	69.6
200	74	11.2	58.4
270	53	11.6	46.8
325	44	5.1	41.7
400	37	4.5	37.3
Undersize	- 37	37.3	-
TOTAL:		100.0	

80 % Passing Size (μm) = 140



FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-7
Sample: 12-Sulphide

Date: 23-Aug-11
Project: 1103306

Objective: Similar to F1, but add 50g/t Na₂S in Pb scavenger float

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
Grind (2kg)	6	8.3			Target P80 ~ 150 µm 65% solids in mill # 4
<u>Pb Rougher Flotation</u>					
Condition	3.0		Lime	380	to pH 9.5
	3.0		ZnSO ₄	750	
	1.0		PEX	20	
			A241	10	
Pb Rougher Float 1	5.0	9.3	MIBC	7	nice galena
Condition	2.0		Lime	125	to pH 9.5
	3.0		ZnSO ₄	250	
	1.0		PEX	10	
			A241	5	
Pb Rougher Float 2	4.0	9.2	MIBC		
Condition	6.0		Na ₂ S	50	
	3.0		Lime	10	to pH 9.5
	1.0		A241	5	
Pb Rougher Scav. Float	5.0	9.2	MIBC		looks better than F1
<u>Zn Rougher Flotation</u>					
Condition	3.0	10.0	Lime	350	to pH 10
	3.0		CuSO ₄	750	
	1.0		SIPX	50	
Zn Rougher Float 1	5.0	9.7	MIBC	5	
Condition	3.0	10.0	Lime	140	to pH 10
	3.0		CuSO ₄	250	
			SIPX	50	
Zn Rougher Float 2	5.0	9.7	MIBC		
Condition	3.0	10.0	Lime	20	to pH 10
	1.0		SIPX	20	
Zn Rougher Float 3	4.0	9.7	MIBC		

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
 Test: F-7
 Sample: 12-Sulphide

Date: 28-Sep-11
 Project: 1103306

Objective: Similar to F1, but add 50g/t Na₂S in Pb scavenger float

Product	Weight		Assay					Distribution				
	g	%	Ag	Pb	Zn	Cd	Fe	Ag	Pb	Zn	Cd	Fe
			g/t	%	%	ppm	%	%	%	%	%	%
Pb Rougher Concentrate 1	44.6	2.3	200.9	50.54	1.92	53.3	2.66	28.3	41.6	0.7	0.7	6.9
Pb Rougher Concentrate 2	27.7	1.4	203.6	51.95	2.44	65.1	2.14	17.8	26.6	0.6	0.5	3.4
Pb Rougher Concentrate 1+2	72.3	3.8	201.9	51.08	2.12	57.8	2.46	46.2	68.2	1.3	1.2	10.3
Pb Rougher Scavenger Concentrate	13.6	0.7	69.8	15.23	3.68	96.0	3.65	3.0	3.8	0.4	0.4	2.9
Total Pb Rougher Concentrate	85.9	4.5	181.0	45.40	2.37	63.9	2.65	49.2	72.0	1.7	1.5	13.2
Zn Rougher Concentrate 1	197.2	10.2	50.3	1.03	46.09	1438.1	0.69	31.4	3.8	77.0	78.8	7.9
Zn Rougher Concentrate 2	55.0	2.9	35.3	6.75	10.27	283.4	3.44	6.1	6.9	4.8	4.3	11.0
Zn Rougher Concentrate 1+2	252.1	13.1	47.0	2.28	38.28	1186.4	1.29	37.5	10.6	81.8	83.2	18.9
Zn Rougher Concentrate 3	28.5	1.5	16.6	3.46	2.21	55.9	7.59	1.5	1.8	0.5	0.4	12.6
Total Zn Rougher Concentrate	280.6	14.6	43.9	2.40	34.61	1071.5	1.93	39.0	12.4	82.3	83.6	31.5
Total Flotation Rougher Concentrates	366.5	19.0	76.0	12.5	27.1	835.4	2.10	88.2	84.5	84.0	85.1	44.7
Final Tails	1557.8	81.0	2.4	0.54	1.21	34.3	0.61	11.8	15.5	16.0	14.9	55.3
Calculated Head	1924.3	100.0	16.4	2.81	6.13	186.9	0.89	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	0.95					

SIZE ANALYSIS REPORT

Client: Devonian Metals

Test: F-7

Sample: 12-Sulphide

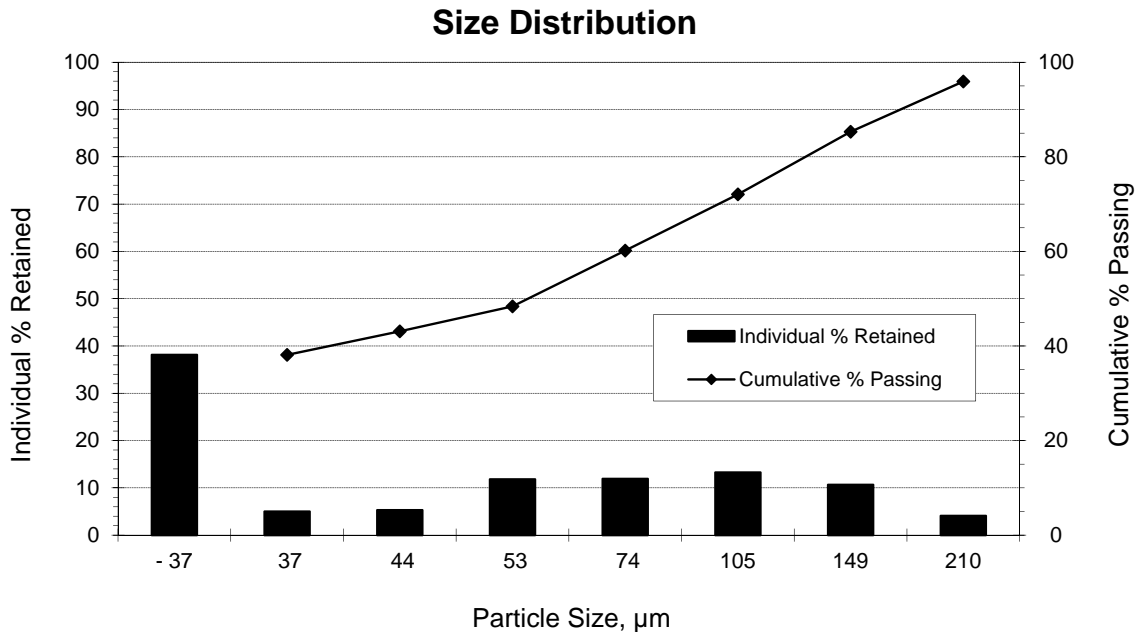
Grind: 2kg sample ground @65%solids for 6 minutes in stainless steel Mill #4

Date: 28-Sep-11

Project: 1103306

Sieve Size		Individual	Cumulative
Tyler Mesh	Micrometers	% Retained	% Passing
65	210	4.1	95.9
100	149	10.6	85.3
150	105	13.2	72.1
200	74	11.9	60.2
270	53	11.8	48.4
325	44	5.3	43.1
400	37	5.0	38.1
Undersize	- 37	38.1	-
TOTAL:		100.0	

80 % Passing Size (μm) = 130



FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-8
Sample: 12-Sulphide

Date: 5-Dec-11
Project: 1103306

Objective: cleaner flotation to upgrade Pb and Zn at a target grind of P80 - 150 microns without regrinding

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
Grind (2kg)	6'	8.4			Target P80 ~ 150 µm 65% solids in mill # 4
<u>Pb Rougher Flotation</u>					Rougher procedure as of test F1 5L cell
Condition	3.0	9.5	Lime	450	to pH 9.5
	3.0		ZnSO4	750	
			PEX	20	
	1.0		A241	10	
Pb Rougher Float 1	5.0	9.3	MIBC	10	
Condition	3.0	9.5	Lime	150	
	3.0		ZnSO4	250	
			PEX	10	
	1.0		A241	5	
Pb Rougher Float 2	4.0	9.2	MIBC		
Condition	3.0	9.5	Lime	50	
	1.0		A241	5	
Pb Rougher Float 3	2.5	9.3	MIBC		
<u>Zn Rougher Flotation</u>					
Condition	3.0	10.0	Lime	400	to pH 10
	3.0		CuSO4	750	
	1.0		SIPX	50	
Zn Rougher Float 1	5.0	9.7	MIBC	5	
Condition	3.0	10.0	Lime	150	
	3.0		CuSO4	250	
			SIPX	50	
Zn Rougher Float 2	5.0	9.7	MIBC		
Condition	3.0	10.0	Lime	50	
	1.0		SIPX	20	
Zn Rougher Float 3	4.0	9.7	MIBC		

FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-8
Sample: 12-Sulphide

Date: 5-Dec-11
Project: 1103306

Objective: cleaner flotation to upgrade Pb and Zn at a target grind of P80 - 150 microns without regrinding

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
<u>Pb Cleaner Flotation</u>					
(Pb Ro. Conc.1-3)	no	8.8			1L cell
Condition	1	10.5	Lime	200	pH 10.5
	3		ZnSO4	300	
			PEX	10	
			A241	5	
Pb Cleaner Float 1	7	10.0	MIBC	3	
Condition	1	10.5	Lime	50	
	3		ZnSO4	50	
			PEX	10	
			A241	3	
Pb Cleaner Float 2	5	9.9	MIBC		
Condition	1	10.5	Lime	20	
Pb Cleaner Float 3	3	10.4	MIBC	3	
<u>Zn Cleaner Flotation</u>					
(Zn Ro. Conc.1-3)		9.3			3L cell
Condition	1	11.0	Lime	130	pH 11
	3		CuSO4	50	
	1		SIPX	10	
Zn Cleaner Float 1	6	10.8	MIBC	7	
Condition	1	11.0	Lime	55	
	1		SIPX	5	
Zn Cleaner Float 2	4	10.7	MIBC	7	
Condition	1	11.0	Lime	20	
Zn Cleaner Float 3	3	10.9	MIBC	7	

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
Test: F-8
Sample: 12-Sulphide

Date: 5-Dec-11
Project: 1103306

Objective: cleaner flotation to upgrade Pb and Zn at a target grind of P80 - 150 microns without regrinding

Product	Weight		Assay					Distribution				
	g	%	Ag g/t	Pb %	Zn %	Cd ppm	Fe %	Ag %	Pb %	Zn %	Cd %	Fe %
3rd Pb Cleaner Concentrate	55.5	2.9	262.8	71.64	1.57	10.6	1.21	48.2	71.8	0.6	0.2	3.8
3rd Pb Cleaner Tails	7.0	0.4	99.5	24.14	5.41	120.9	5.52	2.3	3.1	0.3	0.2	2.2
2nd Pb Cleaner Concentrate	62.5	3.3	244.5	66.31	2.00	23.0	1.69	50.6	74.9	0.9	0.4	6.0
2nd Pb Cleaner Tails	11.5	0.6	55.4	14.71	5.94	134.8	5.39	2.1	3.0	0.5	0.4	3.5
1st Pb Cleaner Concentrate	74.0	3.9	215.2	58.31	2.61	40.3	2.27	52.7	78.0	1.4	0.8	9.5
1st Pb Cleaner tails	14.5	0.8	33.5	6.42	5.25	129.8	5.31	1.6	1.7	0.6	0.5	4.4
Total Pb Rougher Concentrate	88.5	4.7	185.4	49.82	3.04	55.0	2.76	54.3	79.6	2.0	1.2	13.9
3rd Zn Cleaner Concentrate	172.1	9.1	54.7	0.64	62.80	1808.8	0.73	31.1	2.0	78.9	80.0	7.1
3rd Zn Cleaner Tails	18.9	1.0	50.3	7.44	20.90	553.8	5.59	3.1	2.5	2.9	2.7	6.0
2nd Zn Cleaner Concentrate	190.9	10.1	54.3	1.31	58.66	1684.9	1.21	34.3	4.5	81.7	82.7	13.1
2nd Zn Cleaner Tails	22.6	1.2	26.4	4.21	7.81	208.7	4.10	2.0	1.7	1.3	1.2	5.2
1st Zn Cleaner Concentrate	213.5	11.3	51.3	1.62	53.29	1528.8	1.52	36.2	6.2	83.0	83.9	18.3
1st Zn Cleaner tails	62.7	3.3	9.3	2.26	2.20	58.7	2.09	1.9	2.6	1.0	0.9	7.4
Total Zn Rougher Concentrate	276.1	14.6	41.8	1.76	41.69	1195.2	1.65	38.2	8.8	84.0	84.8	25.7
Total Flotation Rougher Concentrates	364.6	19.3	76.6	13.42	32.32	918.5	1.92	92.4	88.4	86.0	86.1	39.6
Final Tails	1523.1	80.7	1.5	0.42	1.26	35.6	0.70	7.6	11.6	14.0	13.9	60.4
Calculated Head	1887.7	100.0	16.0	2.93	7.26	206.1	0.94	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	0.95					

SIZE ANALYSIS REPORT

Client: Devonian Metals

Test: F-8

Sample: 12-Sulphide

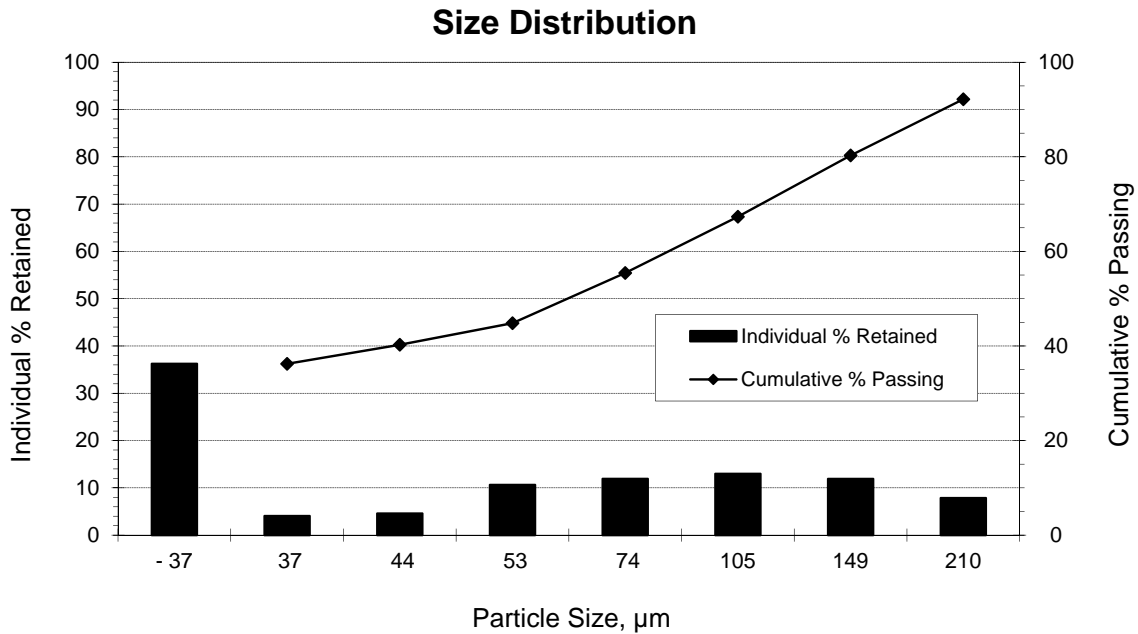
Grind: 2kg sample ground @65%solids for 6 minutes in stainless steel Mill #4

Date: 5-Dec-11

Project: 1103306

Sieve Size		Individual	Cumulative
Tyler Mesh	Micrometers	% Retained	% Passing
65	210	7.8	92.2
100	149	11.9	80.3
150	105	13.0	67.3
200	74	11.9	55.4
270	53	10.6	44.8
325	44	4.6	40.3
400	37	4.0	36.2
Undersize	- 37	36.2	-
TOTAL:		100.0	

80 % Passing Size (µm) = 148



FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-9
Sample: 12-Sulphide

Date: 5-Dec-11
Project: 1103306

Objective: cleaner flotation to upgrade Pb and Zn at a target grind of P80 - 150 microns with regrinding

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
Grind (2kg)	6'	8.4			Target P80 ~ 150 µm 65% solids in mill # 4
<u>Pb Rougher Flotation</u>					
Condition	3.0	9.5	Lime	425	5L cell to pH 9.5
	3.0		ZnSO4	750	
			PEX	20	
	1.0		A241	10	
Pb Rougher Float 1	5.0	9.3	MIBC	11	
Condition	3.0	9.5	Lime	150	
	3.0		ZnSO4	250	
			PEX	10	
	1.0		A241	5	
Pb Rougher Float 2	4.0	9.2	MIBC		
Condition	3.0	9.5	Lime	40	
	1.0		A241	5	
Pb Rougher Float 3	2.5	9.3	MIBC		
<u>Zn Rougher Flotation</u>					
Condition	3.0	10.0	Lime	350	to pH 10
	3.0		CuSO4	750	
	1.0		SIPX	50	
Zn Rougher Float 1	5.0	9.6	MIBC	5	
Condition	3.0	10.0	Lime	150	
	3.0		CuSO4	250	
			SIPX	50	
Zn Rougher Float 2	5.0	9.6	MIBC		
Condition	3.0	10.0	Lime	50	
	1.0		SIPX	20	
Zn Rougher Float 3	4.0	9.5	MIBC		

FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: F-9
Sample: 12-Sulphide

Date: 5-Dec-11
Project: 1103306

Objective: cleaner flotation to upgrade Pb and Zn at a target grind of P80 - 150 microns with regrinding

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
<u>Pb Cleaner Flotation</u> (Pb Ro. Conc.1-3)	10	8.5			Wet wt: 104g 1L cell
Condition	1	10.5	Lime	200	pH 10.5
	3		ZnSO4	300	
			PEX	10	
			A241	5	
Pb Cleaner Float 1	7	10.0	MIBC	7	
Condition	1	10.5	Lime	50	
	3		ZnSO4	50	
			PEX	10	
			A241	3	
Pb Cleaner Float 2	5	10.1	MIBC		
Condition	1	10.5	Lime	20	
Pb Cleaner Float 3	3	10.5	MIBC	3	
<u>Zn Cleaner Flotation</u> (Zn Ro. Conc.1-3)	20	8.6			3L cell
Condition	1	11.0	Lime	170	pH 11
	3		CuSO4	50	
	1		SIPX	10	
Zn Cleaner Float 1	6	10.5	MIBC	13	
Condition	1	11.0	Lime	30	
	1		SIPX	5	
Zn Cleaner Float 2	4	11.1	MIBC	3	
Condition	1	11.0	Lime	20	
Zn Cleaner Float 3	3	11.1	MIBC	3	

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
Test: F-9
Sample: 12-Sulphide

Date: 5-Dec-11
Project: 1103306

Objective: cleaner flotation to upgrade Pb and Zn at a target grind of P80 - 150 microns with regrinding

Product	Weight		Assay					Distribution				
	g	%	Ag	Pb	Zn	Cd	Fe	Ag	Pb	Zn	Cd	Fe
			g/t	%	%	ppm	%	%	%	%	%	%
3rd Pb Cleaner Concentrate	26.4	1.4	240.1	65.52	1.20	29.8	2.22	21.4	30.8	0.2	0.2	3.2
3rd Pb Cleaner Tails	11.2	0.6	211.8	56.64	2.41	53.9	3.06	8.0	11.3	0.2	0.2	1.9
2nd Pb Cleaner Concentrate	37.5	2.0	231.7	62.88	1.56	37.0	2.47	29.3	42.1	0.4	0.4	5.1
2nd Pb Cleaner Tails	11.4	0.6	162.8	42.01	3.64	82.6	3.36	6.3	8.5	0.3	0.3	2.1
1st Pb Cleaner Concentrate	48.9	2.5	215.6	58.02	2.04	47.6	2.68	35.6	50.7	0.8	0.7	7.2
1st Pb Cleaner tails	39.7	2.1	142.7	39.98	4.35	105.9	2.74	19.1	28.3	1.3	1.3	6.0
Total Pb Rougher Concentrate	88.6	4.6	183.0	49.94	3.08	73.7	2.71	54.6	78.9	2.0	2.0	13.2
3rd Zn Cleaner Concentrate	105.3	5.5	58.3	0.74	66.74	1746.0	0.14	20.7	1.4	52.8	56.0	0.8
3rd Zn Cleaner Tails	10.6	0.6	60.4	1.69	62.67	1263.8	0.47	2.2	0.3	5.0	4.1	0.3
2nd Zn Cleaner Concentrate	115.9	6.0	58.5	0.83	66.37	1701.9	0.17	22.9	1.7	57.8	60.1	1.1
2nd Zn Cleaner Tails	35.8	1.9	53.6	2.33	41.24	506.8	1.69	6.5	1.5	11.1	5.5	3.3
1st Zn Cleaner Concentrate	151.8	7.9	57.3	1.18	60.44	1419.7	0.53	29.3	3.2	68.9	65.6	4.4
1st Zn Cleaner tails	120.0	6.2	25.3	2.88	15.10	422.2	4.92	10.2	6.2	13.6	15.4	32.5
Total Zn Rougher Concentrate	271.7	14.1	43.2	1.93	40.42	979.4	2.47	39.6	9.4	82.5	81.0	36.9
Total Flotation Rougher Concentrates	360.3	18.8	77.6	13.74	31.24	756.7	2.53	94.2	88.3	84.5	83.0	50.1
Final Tails	1560.7	81.2	1.1	0.42	1.32	35.8	0.58	5.8	11.7	15.5	17.0	49.9
Calculated Head	1921.0	100.0	15.4	2.92	6.93	171.0	0.94	100.0	100.0	100.0	100.0	100.0
Measured Head			16.8	2.98	7.24	186.8	0.95					

SIZE ANALYSIS REPORT

Client: Devonian Metals

Test: F-9

Sample: 12-Sulphide

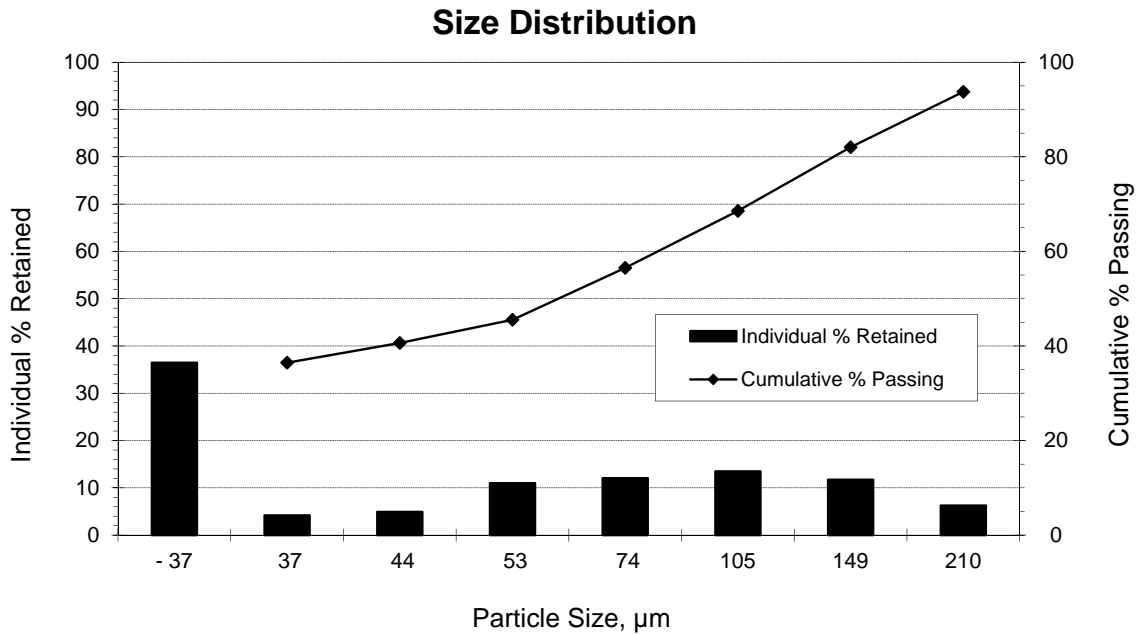
Grind: 2kg sample ground @65%solids for 6 minutes in stainless steel Mill #4

Date: 5-Dec-11

Project: 1103306

Sieve Size		Individual	Cumulative
Tyler Mesh	Micrometers	% Retained	% Passing
65	210	6.2	93.8
100	149	11.7	82.0
150	105	13.5	68.6
200	74	12.0	56.5
270	53	11.0	45.5
325	44	4.9	40.6
400	37	4.2	36.5
Undersize	- 37	36.5	-
TOTAL:		100.0	

80 % Passing Size (µm) = 142



FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: FL-1
Sample: AL11 Leach Residue

Date: 5-Dec-11
Project: 1103306

Objective: to recover Pb and Zn on ammonium carbonate leach tailings

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
Grind	n/a	8.7			
<u>Pb Rougher Flotation</u>					
Condition	3.0	9.5	Lime	750	to pH 9.5
	3.0		ZnSO4	750	
			PEX	20	
			A241	10	
Pb Rougher Float 1	5.0	9.3	MIBC	17	
Condition	2.0	9.5	Lime	500	to pH 9.5
	3.0		ZnSO4	250	
	1.0		PEX	10	
			A241	5	
Pb Rougher Float 2	4.0	9.4	MIBC		
Condition	3.0	9.5	Lime	150	to pH 9.5
	1.0		A241	5	
Pb Rougher Scav. Float	4.0	9.3	MIBC	7	
<u>Zn Rougher Flotation</u>					
Condition	3.0	10.0	Lime	600	to pH 10
	3.0		CuSO4	750	
	1.0		SIPX	50	
Zn Rougher Float 1	4.0	9.8	MIBC	13	
Condition	3.0	10.0	Lime	300	to pH 10
	3.0		CuSO4	250	
			SIPX	50	
Zn Rougher Float 2	4.0	9.5	MIBC		
Condition	3.0	10.0	Lime	100	to pH 10
	1.0		SIPX	20	
Zn Rougher Float 3	3.0	9.6	MIBC	7	

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
Test: FL-1
Sample: AL111 Leach Residue

Date: 5-Dec-11
Project: 1103306

Objective: to recover Pb and Zn on ammonium carbonate leach tailings

Product	Weight		Assay					Distribution				
	g	%	Ag g/t	Pb %	Zn %	Cd ppm	Fe %	Ag %	Pb %	Zn %	Cd %	Fe %
Pb Rougher Concentrate 1	10.3	5.1	100.4	14.41	2.76	112.6	2.61	52.5	31.6	14.3	12.0	8.0
Pb Rougher Concentrate 2	9.3	4.6	25.5	4.04	2.14	98.6	2.98	12.1	8.0	10.0	9.5	8.3
Pb Rougher Concentrate 1+2	19.5	9.6	64.8	9.48	2.47	105.9	2.79	64.6	39.6	24.3	21.5	16.3
Pb Rougher Scavenger Concentrate	10.4	5.1	13.3	2.66	2.02	91.4	2.84	7.1	5.9	10.7	9.9	8.9
Total Pb Rougher Concentrate	30.0	14.8	46.9	7.10	2.31	100.9	2.80	71.7	45.5	35.0	31.4	25.1
Zn Rougher Concentrate 1	10.9	5.4	19.4	3.37	3.57	139.6	2.95	10.8	7.8	19.6	15.8	9.6
Zn Rougher Concentrate 2	8.1	4.0	12.6	2.55	1.92	89.8	2.86	5.2	4.4	7.8	7.5	6.9
Zn Rougher Concentrate 1+2	19.0	9.3	16.5	3.02	2.87	118.4	2.91	16.0	12.2	27.5	23.3	16.5
Zn Rougher Concentrate 3	5.4	2.6	9.3	2.21	1.67	77.8	2.59	2.5	2.5	4.5	4.3	4.2
Total Zn Rougher Concentrate	24.3	12.0	14.9	2.84	2.60	109.4	2.84	18.5	14.8	32.0	27.6	20.7
Total Flotation Rougher Concentrates	54.3	26.8	32.6	5.20	2.44	104.7	2.82	90.1	60.3	67.0	59.0	45.8
Final Tails	148.6	73.2	1.3	1.25	0.44	26.6	1.22	9.9	39.7	33.0	41.0	54.2
Calculated Head	202.9	100.0	9.7	2.31	0.98	47.5	1.65	100.0	100.0	100.0	100.0	100.0
Measured Head			11.0	1.78	0.97	58.7	1.64					

FLOTATION TEST PROCEDURE

Client: Devonian Metals
Test: FL-2
Sample: AL12 Leach Residue

Date: 5-Dec-11
Project: 1103306

Objective: to recover Pb and Zn on ammonium carbonate leach tailings

STAGE	TIME min	pH	ADDITION		COMMENTS
			Reagent	g/tonne	
Grind	n/a	8.9			
<u>Pb Rougher Flotation</u>					
Condition	3.0	9.5	Lime	1000	to pH 9.5
	3.0		ZnSO4	750	
			PEX	20	
			A241	10	
Pb Rougher Float 1	5.0	9.4	MIBC	13	nice galena
Condition	2.0	9.5	Lime	300	to pH 9.5
	3.0		ZnSO4	250	
	1.0		PEX	10	
			A241	5	
Pb Rougher Float 2	4.0	9.4	MIBC		
Condition	3.0	9.5	Lime	200	to pH 9.5
	1.0		A241	5	
Pb Rougher Scav. Float	4.0	9.5	MIBC		
<u>Zn Rougher Flotation</u>					
Condition	3.0	10.0	Lime	700	to pH 10
	3.0		CuSO4	750	
	1.0		SIPX	50	
Zn Rougher Float 1	4.0	9.8	MIBC	10	
Condition	3.0	10.0	Lime	300	to pH 10
	3.0		CuSO4	250	
			SIPX	50	
Zn Rougher Float 2	4.0	9.8	MIBC		
Condition	3.0	10.0	Lime	150	to pH 10
	1.0		SIPX	20	
Zn Rougher Float 3	3.0	9.5	MIBC	7	

assay all test products for Ag, Pb, Zn, Cd and Fe

FLOTATION TEST METALLURGICAL BALANCE

Client: Devonian Metals
Test: FL-2
Sample: AL12 Leach Residue

Date: 5-Dec-11
Project: 1103306

Objective: to recover Pb and Zn on ammonium carbonate leach tailings

Product	Weight		Assay					Distribution				
	g	%	Ag	Pb	Zn	Cd	Fe	Ag	Pb	Zn	Cd	Fe
			g/t	%	%	ppm	%	%	%	%	%	%
Pb Rougher Concentrate 1	102.4	40.1	60.6	6.43	1.59	82.3	3.77	61.0	40.1	61.9	61.0	36.2
Pb Rougher Concentrate 2	20.8	8.1	37.1	5.98	0.77	65.7	4.05	7.6	7.6	6.1	9.9	7.9
Pb Rougher Concentrate 1+2	123.2	48.3	56.6	6.35	1.45	79.5	3.82	68.6	47.6	68.0	70.9	44.1
Pb Rougher Scavenger Concentrate	7.7	3.0	33.0	5.33	0.90	67.2	4.94	2.5	2.5	2.6	3.7	3.6
Total Pb Rougher Concentrate	130.8	51.3	55.2	6.29	1.42	78.8	3.88	71.0	50.1	70.7	74.7	47.7
Zn Rougher Concentrate 1	7.9	3.1	28.0	5.44	1.06	64.3	5.94	2.2	2.6	3.2	3.7	4.4
Zn Rougher Concentrate 2	5.7	2.2	28.4	5.87	1.11	64.0	6.40	1.6	2.0	2.4	2.7	3.4
Zn Rougher Concentrate 1+2	13.6	5.3	28.2	5.62	1.08	64.2	6.13	3.8	4.7	5.6	6.3	7.8
Zn Rougher Concentrate 3	5.4	2.1	24.1	5.53	1.02	49.2	6.06	1.3	1.8	2.1	1.9	3.1
Total Zn Rougher Concentrate	19.0	7.4	27.0	5.60	1.06	59.9	6.11	5.0	6.5	7.7	8.2	10.9
Total Flotation Rougher Concentrates	149.8	58.7	51.7	6.21	1.37	76.4	4.17	76.1	56.6	78.4	82.9	58.6
Final Tails	105.3	41.3	23.1	6.77	0.54	22.4	4.19	23.9	43.4	21.6	17.1	41.4
Calculated Head	255.1	100.0	39.9	6.44	1.03	54.1	4.18	100.0	100.0	100.0	100.0	100.0
Measured Head			34.6	6.44	0.76	54.0	4.11					