

Annual Exploration Review on E.L. 31/2002
McDermott Marshall Joint Venture
Compiled by K. McDermott

Comprising

1. E.L annual review shee
2. Annual Exploration Report
- 3.Explanatory notes on Sampling and assay of Sweenys Prospect.
4. Expenses pertaining to items in this report.
5. Test work Report By Burnie Research Lab.
6. Email from Amdel attesting to loss of Testwork report on Sweenys ore by Amdel
7. Flora and Fauna Report on Area of E.L. 31/2002

Mineral Resources Tasmania

ABN 36 388 980 563

Form No. E7

Mineral Resources Development Act 1995 (Section 28)

EXPLORATION LICENCE ANNUAL REVIEW

(Note: This form and the annual report is due 30 days before the annual anniversary of the licence)

DETAILS OF LICENCE AS AT ANNIVERSARY DATE	Exploration Licence No.: <u>31/2002</u> Area: <u>6</u> km ² Location: <u>COMBEE LAGOON DAM</u> Anniversary Date: <u>18/2/2005</u> Licensee: <u>L W MARSHALL 30% H-O'NEILL MINING 70%</u>
ARE YOU REDUCING THE LICENCE AREA ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes please attach a plan clearly showing area(s) held and area(s) to be relinquished.
SUMMARY OF EXPLORATION COMPLETED	
<i>Office Use</i>	
Brief outline of work undertaken and major results during the current year:	
<u>SEE ATTACHED SHEETS</u>	
PROPOSED EXPLORATION	
Summary of proposed exploration for next year (including expenditure details where appropriate):	
<u>SEE ATTACHED SHEETS</u>	
<i>If space insufficient please attach separate sheet.</i>	

<u>Office Use Only</u>	
Satisfactory Performance:	
-Assessing Geologist:	Yes <input type="checkbox"/> No <input type="checkbox"/>
Signature:	Date:
- Senior Geologist:	Yes <input type="checkbox"/> No <input type="checkbox"/>
Signature:	Date:
- Managing Geologist:	Yes <input type="checkbox"/> No <input type="checkbox"/>
Signature:	Date:

ENVIRONMENTAL IMPACT ACTIVITIES	Office Use Only
Describe activities which caused disturbance detailing type and location:	
<i>SEE ATTACHED SHEETS</i>	
REHABILITATION	
Describe environmental rehabilitation during current year:	
<i>SEE ATTACHED SHEETS</i>	
<i>If space insufficient please attach separate sheet.</i>	
Satisfactory Environmental Performance:	
- Environmental Field Officer:	Yes <input type="checkbox"/> No <input type="checkbox"/>
Signature:	Date:

Proposed expenditure for next year: <i>SEE ATTACHED SHEET</i> \$ <i> </i>	
Signed:	
Position:	<i>MANAGING DIRECTOR HYDERMOT HASKELL / JOINT VENTURE</i>
Date:	<i>27/12/05</i>

Office Use Only	
EXPENDITURE COMMITMENTS	<u>Comments</u>
Actual Expend. Yr..... \$.....	
(-) Yr..... Comm. \$.....	
(=) Surplus / Shortfall** \$.....	
Yr..... Comm. \$.....	
(+) **Shortfall \$.....	
(=) Total Comm. Yr..... \$.....	
REPORTING	
Annual	
-Received / /	
-TCR No.:	
Relinquishment	
-Received / /	
-TCR No.:	

Annual Exploration Report on E.L 31/2002

Compiled for McDermott /Marshall J/V

by Kim McDermott.

Exploration on EL 31/2002 for the period 18/12/04-18/12/05 has been adjusted significantly due to negotiations between McDermott Mining P/L and Luke Marshall, to secure a Joint Venture application for the whole of EL31/2002.

Negotiations were completed during the latter half of 2005 and an application is at present before the minister for a 70% (McDermott) and 30% (L.Marshall) Joint Venture. It is anticipated McDermott Mining and/or its other J/V partners will apply for 100% ownership of EL31/2002 prior to 30th June, 2006.

In addition, McDermott Mining have signed a heads of agreement to enter into a \$4.6 million cash and share deal with Olympia Resources, which will include further exploration and evaluation of the potential tin ore reserves on EL 31/2002.

Due to confidentiality clauses, I enclose only a portion of the unsigned agreement which has now been signed.

As a result of these evolving developments and technical difficulties with contracted laboratories, metallurgical test work being carried out on EL31/2002 was postponed, although preliminary work on Sweenys Birthday ore was completed.

McDermott Mining is at present trying to obtain a further copy of this report which was lost due to computer failure.

The report was carried out by AMDEL and gave promising results, particularly with the concentration of a zinc concentrate as well as a tin concentrate The report will be forwarded to MRT as soon as can be arranged.

Sampling and assaying continued to be carried out, with testwork on same to begin in February 2006 on recommissioning of McDermott Mining mill upgrade at twelve mile creek mill.

A second report on a mixture of Sweenys Birthday and Granville Mine concentrate which had been concentrated at McDermott Mining's twelve mile creek mill, was compiled by Burnie Research Laboratories and is enclosed.

A copy of a flora and fauna review compiled for Marshall Resources is also enclosed.

A copy of expenditure for sampling and assaying is also enclosed.

Due to ownership developments and a much larger capital expenditure budget being available as a result of same, the original works program has been discarded and a further works and exploration program is currently under compilation for submission during March, 2006.

All details of expenditure and works including rehab, environmental etc. will be included in this submission.

Annual Report on Exploration Licence 31/2002 Expenditure. Sampling and Assaying

A total of seven days were spent sampling the main drive at Sweenys Birthday prospect as well as the accessible open pit faces.

The main adit at Sweenys Birthday is still quite accessible and easily sampled. Samples were taken in 10-15kg lots and placed in clean urea bags for transport.

The bulk of the samples were taken from the known tin bearing areas identified in earlier sampling and assaying.

These were the area between samples 11west and 11east (RGC. EL 11/76) and 18west and 18east (RGC).

In addition to the above, smaller samples were taken from area 21east and 21west (RGC EL 11/76)

Due to inaccessibility by vehicles, all samples had to be carried along the track to the top of the steep open gradient once used as an exploration road and manhandled 150m to the bottom before being carried some further hundred metres or so to the transport vehicle.

Samples were then transported to McDermott Mining's twelve mile creek mill near Granville and crushed and washed by hand. (Obvious losses were incurred in this process, but as the exercise was to obtain a concentrate for determination of recovery through a mill circuit only, it was not considered important)

Noticeable sphalerite concentrations were observed in some samples and these were placed to one side and excluded from the concentration test to avoid contamination of the circuit.

Earlier testing by AMDEL (commissioned by McDermott Mining) in their south Australian lab, has determined a saleable sphalerite concentrate or pre-con can be recovered quite easily. (Further test work is required to determine what cassiterite losses are attributable to cassiterite reporting to sphalerite cons.)

A mixed sample of concentrate from both Sweenys Birthday and Granville were then sent to Burnie Research Laboratories for gravity and flotation test work. (The results are attached to this report.)

Assays results were comparable to those obtained by RGC but seemed to identify lenses of richer (>1%) ore running diagonally across the zone and possibly reaching the full height and width of the known pipe (40m approx)

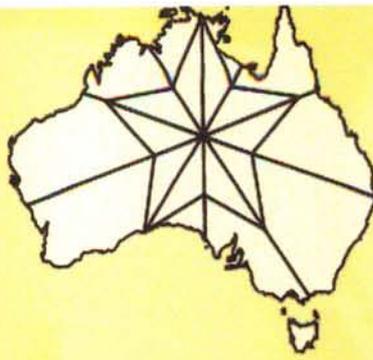
These results are indicative only and certainly not conclusive but the payable ore that most certainly exists within the zone presents a strong argument for further, more intensive, exploration and metallurgical testing.

Since the closure of the Renison metallurgical laboratory, tin assay and test work in Tasmania has been severely affected and has slowed McDermott Mining's exploration on EL31/2002 considerably. To compensate for this, McDermott Mining are currently establishing a floatation circuit and fine crushing facility at their twelve mile creek mill to be able to continue proving a reserve of tin/zinc/copper that can be extracted and treated profitably from Sweenys Birthday mine as well as further exploration on the Federation workings.

As the mill infrastructure to test the above ores is incorporated in the twelve mile creek mill, no cost has been applied to EL31/2002 for this although the expense has been, and will continue to be, considerable.

Sampling expenses pertaining to this report

7 days four men	1750.00
Vehicle expenses	950.00
Assay cost Bluestone /	480.00
Aminya	270.00
SGS	520.00
Total expenditure@1/12.05	3940.00



Burnie RESEARCH LABORATORY

FLOTATION TESTING
OF
TIN CONCENTRATE
FOR
KIM MCDERMOTT ALLUVIALS

A Division of AMMTEC Ltd ABN: 40 396 637 856

Hydrometallurgy Consultants & Flotation Technology Specialists

39 River Road, Wivenhoe, TAS 7320

PO Box 952, Burnie, TAS 7320

Tel: 61 3 6431 6333 Fax: 61 3 6431 6896

1. SUMMARY

A high grade coarse tin concentrate was received for evaluation of flotation for the removal of contaminating arsenopyrite.

The concentrate was prepared for head analyses and ball milling prior to flotation with xanthate for the removal of arsenopyrite

Head analyses indicate an as-received concentrate of 57% tin and 4.6% arsenic grades.

Size analyses indicate a p80 of some 800um (0.80mm), a very coarse product size. Arsenic is even coarser with a p80 of 890um while tin is finer at a p80 of 750um.

Grind data indicates the material to be relatively soft, with short grinds rapidly reducing the p80. Sulphide floats were performed at 220 and 140um p80.

A simple sulphide / non-sulphide rougher float at 220um was performed using amyl xanthate and IF56 frother at natural ph. The float recovered 62% of arsenic with a low tin loss to concentrate. Settling of coarser sand in the float cell, even at high agitation rate, was quite evident. Low arsenic recovery may be mainly due to poor suspension of the high sg sands.

A second rougher was performed using sodium isobutyl xanthate and IF56 frother, both easily obtained flotation reagents, and a finer grind size of 140um. This test was more successful, recovering some 81% of arsenic at a low tin loss to concentrate and with only minor suspension problems.

A final concentrate of 67.7% Sn and 1.0% As was produced in Test 2 using a simple grind and sulphide float routine. Plotting of flotation results indicate a finer grind would be required to reduce arsenic in concentrate to much less than 1%.

2. SAMPLE PREPARATION

A single 19kg sample of coarse dry tin concentrate, packed in four calico bags, was received for testwork.

3. METHODS

Material received was a high grade alluvial tin concentrate containing penalty levels of arsenopyrite. Testing was requested to determine the feasibility of removing arsenopyrite by flotation. Diagram 1 outlines the testwork performed.

PREPARATION AND SIZING

Samples received were combined then rotary riffled to 1000gm lots for further testing:

- Heads were riffle split from one lot for head analysis and sizing.
- Sizings were performed by wet and dry screening to 38µm.
- Fractions and head sample were submitted for Sn and As analysis by pressed powder XRF.

ROUGHER FLOTATION

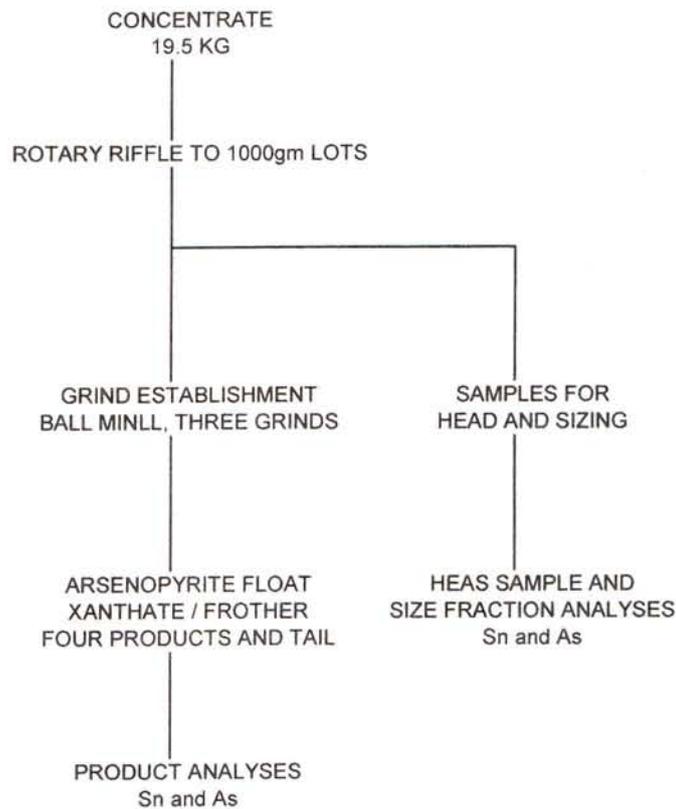
Rougher flotation routines were performed under the following conditions:

- Grind at 66% solids in an open mild steel mill and charge at natural PH.
- Flotation tests were performed in a 2.6 litre Agitaire style laboratory cell.
- Dilute reagents were added and conditioned for two minutes prior to flotation.
- Wet concentrate, air rate and time were recorded for each concentrate.
- Products were filtered and dried for weight determination and analysis.

DIAGRAM 1: TESTWORK FLOWSHEET

Burnie RESEARCH LABORATORY
TESTWORK FLOWSHEET

CLIENT	KIM MCDERMOTT, ALLUVIAL TIN CONCENTRATE
STATUS	PROJECT T0054



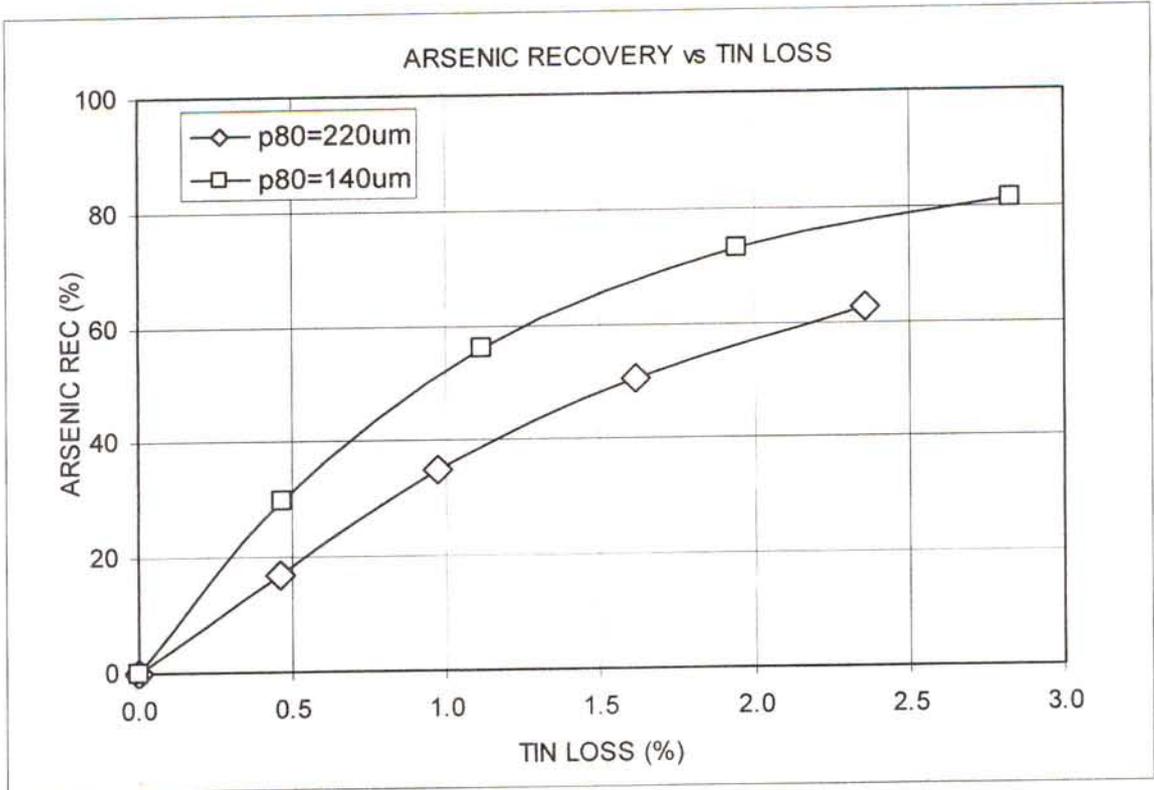
4. RESULTS

Results are summarised in Table 1 and Graphs 1 and 2 below. Size analyses and full flotation data are appended.

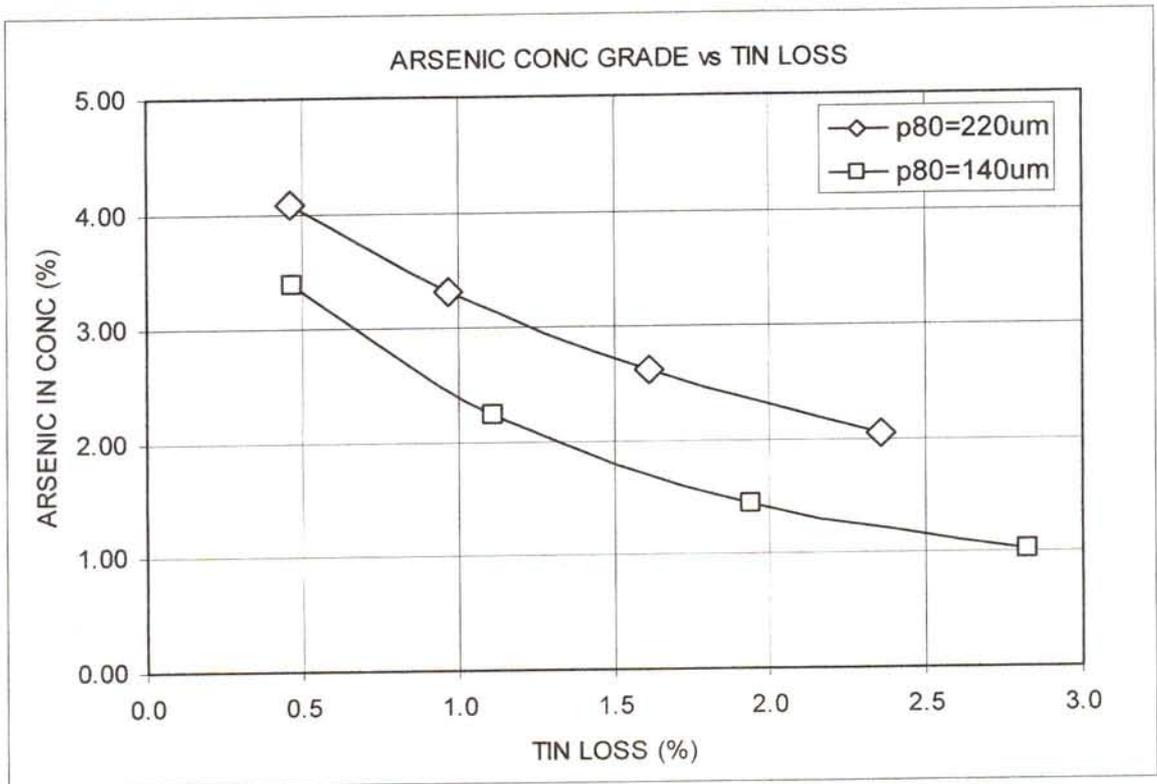
TABLE 1: SIZING AND ANALYSES

SIZE um	WT %	Sn			As			Calc Gangue		
		%	dist	pass	%	dist	pass	%	dist	pass
1180	6.18	39.50	4.4	95.6	5.48	7.4	92.6	38.1	12.0	88.0
850	10.20	49.80	9.1	86.5	6.38	14.1	78.5	23.1	12.0	76.0
600	17.03	52.10	16.0	70.5	6.12	22.7	55.8	20.7	18.0	58.0
425	17.86	56.40	18.1	52.4	5.21	20.2	35.6	17.3	15.7	42.3
300	18.25	57.80	19.0	33.4	4.12	16.3	19.3	17.9	16.6	25.6
212	14.97	62.00	16.7	16.7	3.31	10.8	8.5	14.3	10.9	14.7
<212	15.51	60.00	16.7	0.0	2.52	8.5	0.0	18.6	14.7	0.0
calc	100.00	55.60	100.0		4.60	100.0		19.6	100.0	
assay		56.70			4.60			18.2	(calc)	

GRAPH 1: ARSENIC REMOVAL



GRAPH 2: ARSENIC GRADE IN TAIL



5. DISCUSSION

Head analyses indicate an as-received concentrate of 57% tin and 4.6% arsenic grades, this equates to 71% cassiterite and 10% arsenopyrite.

Size assay analyses indicate a weight p80 of some 800um (0.80mm), a very coarse product size. Arsenic distribution is coarser with a p80 of 890um while tin is finer at a p80 of 750um. The coarsest fraction (+1180um) contains a high proportion of gangue.

Grind data indicates the material to be relatively soft, with short grinds rapidly reducing the p80 and increasing the amount of fines. (A 10 minute grind increased the <100um fines from around 4% to 50% of weight.) Floats were performed at 220 and 140um p80.

A rougher float at 220um was performed using amyl xanthate and IF56 frother at natural Ph, a simple sulphide / non-sulphide separation. The float captured some 62% of arsenic with a low tin loss to concentrate. Settling of coarser sand in the float cell, even at high agitation rate, was quite evident. Low arsenic recovery may simply be due to poor suspension of the high sg sands.

A second rougher was performed using sibx (sodium isobutyl xanthate) and IF56 frother, both easily obtained flotation reagents, and a finer grind size of 140um. This test was more successful, recovering some 81% of arsenic at a low tin loss (2.8%) to concentrate and with only minor suspension problems.

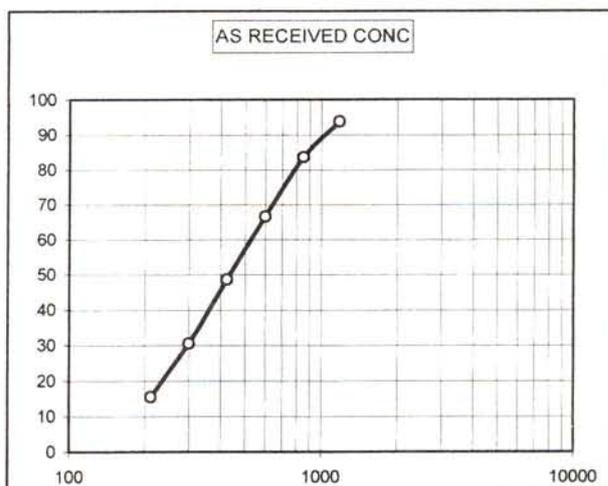
A final concentrate (flotation tails) of 67.7% Sn and 1.0% As was produced using a simple grind and sulphide float routine. Plotting of flotation results indicate a finer grind would be required to reduce arsenic in concentrate to less than 1%.

Burnie RESEARCH LABORATORY
SIZING AND SIZE ANALYSIS REPORT SHEET

PROJECT	T0054
TEST NO	CONC SIZING
DATE	15/03/2005
TECHNICIAN	ANB

SIZING

SAMPLE SIZED	SIZE um	WEIGHTS			
		gm	(%)	(%)PASS	
AS RECEIVED CONCENTRATE		0.00	0.00	100.0	
		0.00	0.00	100.0	
		0.00	0.00	100.0	
		0.00	0.00	100.0	
	797	1180	17.43	6.18	93.8
		850	28.77	10.20	83.6
		600	48.04	17.03	66.6
		425	50.40	17.86	48.7
	300	51.50	18.25	30.5	
	212	42.23	14.97	15.5	
CYSIZER	CS1	0.00	0.00	15.5	
FLOW	CS2	0.00	0.00	15.5	
TEMP	CS3	0.00	0.00	15.5	
SG	CS4	0.00	0.00	15.5	
MINS	CS5	0.00	0.00	15.5	
CENTRIFUGE		0.00	0.00	15.5	
SUB		212	43.77	15.51	0.0
TOTAL			282.14	100.00	



ANALYSES

SIZE um	WT %	Sn			As		
		%	dist	pass	%	dist	pass
1180	6.18	39.50	4.4	95.6	5.48	7.4	92.6
850	10.20	49.80	9.1	86.5	6.38	14.1	78.5
600	17.03	52.10	16.0	70.5	6.12	22.7	55.8
425	17.86	56.40	18.1	52.4	5.21	20.2	35.6
300	18.25	57.80	19.0	33.4	4.12	16.3	19.3
212	14.97	62.00	16.7	16.7	3.31	10.8	8.5
<212	15.51	60.00	16.7	0.0	2.52	8.5	0.0
calc	100.00	55.60	100.0		4.60	100.0	
assay		56.70			4.60		

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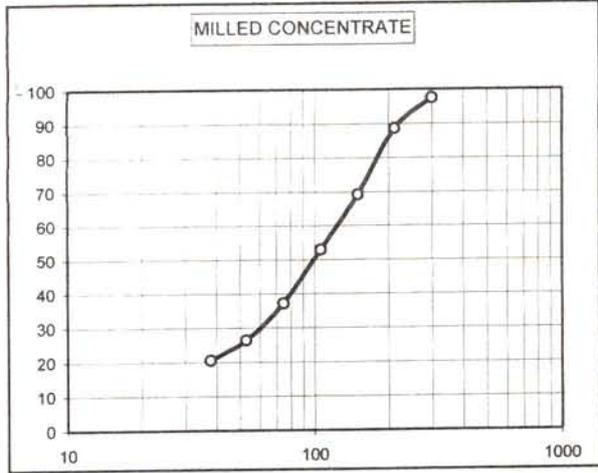
SIZING AND SIZE ANALYSIS REPORT SHEET

BALL MILLING:

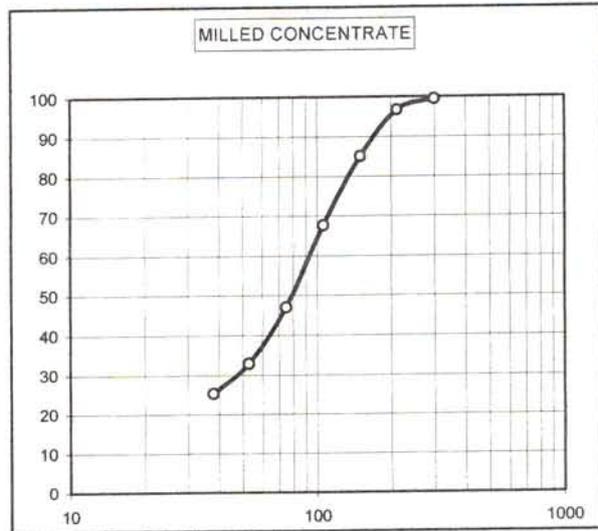
Lab ball mill, 6kg balls, 750gm solids at 66% solids
 Ball milled for 10.5, 13.0 and 18 minutes, d/c sized
 mill natural pH=6.0

PROJECT	T0054
TEST NO	CONC SIZING
DATE	15/03/2005
TECHNICIAN	ANB

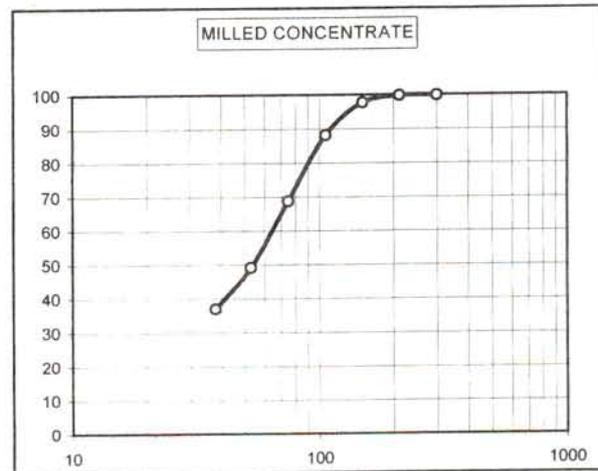
SAMPLE SIZED	SIZE um	WEIGHTS		
		gm	(%)	(%)PASS
MILLED		0.00	0.00	100.0
CONCENTRATE		0.00	0.00	100.0
10.5 MIN		0.00	0.00	100.0
185	300	4.42	2.43	97.6
	212	16.28	8.95	88.6
	150	35.40	19.45	69.2
	106	29.56	16.24	52.9
	75	28.82	15.84	37.1
	53	19.56	10.75	26.4
	38	10.71	5.88	20.5
CYSIZER	CS1	0.00	0.00	20.5
FLOW	CS2	0.00	0.00	20.5
TEMP	CS3	0.00	0.00	20.5
SG	CS4	0.00	0.00	20.5
MINS	CS5	0.00	0.00	20.5
CENTRIFUGE		0.00	0.00	20.5
SUB	38	37.25	20.47	0.0
TOTAL		182.00	100.00	



SAMPLE SIZED	SIZE um	WEIGHTS		
		gm	(%)	(%)PASS
MILLED		0.00	0.00	100.0
CONCENTRATE		0.00	0.00	100.0
13.0 MIN		0.00	0.00	100.0
137	300	0.92	0.50	99.5
	212	5.01	2.73	96.8
	150	21.66	11.78	85.0
	106	31.83	17.31	67.7
	75	38.02	20.68	47.0
	53	26.01	14.15	32.8
	38	14.00	7.62	25.2
CYSIZER	CS1	0.00	0.00	25.2
FLOW	CS2	0.00	0.00	25.2
TEMP	CS3	0.00	0.00	25.2
SG	CS4	0.00	0.00	25.2
MINS	CS5	0.00	0.00	25.2
CENTRIFUGE		0.00	0.00	25.2
SUB	38	46.38	25.23	0.0
TOTAL		183.83	100.00	



SAMPLE SIZED	SIZE um	WEIGHTS		
		gm	(%)	(%)PASS
MILLED		0.00	0.00	100.0
CONCENTRATE		0.00	0.00	100.0
18.0 MIN		0.00	0.00	100.0
93	300	0.26	0.14	99.9
	212	0.33	0.18	99.7
	150	3.76	2.01	97.7
	106	17.77	9.49	88.2
	75	36.38	19.44	68.7
	53	36.61	19.56	49.2
	38	22.74	12.15	37.0
CYSIZER	CS1	0.00	0.00	37.0
FLOW	CS2	0.00	0.00	37.0
TEMP	CS3	0.00	0.00	37.0
SG	CS4	0.00	0.00	37.0
MINS	CS5	0.00	0.00	37.0
CENTRIFUGE		0.00	0.00	37.0
SUB	38	69.31	37.03	0.0
TOTAL		187.16	100.00	



Burnie RESEARCH LABORATORY
ROUGHER FLOTATION REPORT SHEET

MILLING			PRODUCT FLOATED
MILL	type	BALL	tin concentrate
CHARGE	kg	6.0	NOTES settling in flot cell
SOLIDS	gm	750	
WATER	gm	375	
TIME	min	9	
SPEED	rpm	50	
HYD LIME	gm	0.0	
END pH	pH	5.3	
END p80	um	220	

PROJECT	T0054
TEST NO	1
DATE	17/03/2005
TECHNICIAN	ANB

TOTAL REAGENTS (gpt)	
PAX	366
IF56	67

STAGE	CONDITION	ROUGH 1		ROUGH 2		ROUGH 3		ROUGH 4		ROUGH 5	
START	pH	5.1						5.0			
AIR	lpm	0									
AIR	min	0									
REAGENTS		ml	gpt								
PAX	0.5	15	100	15	100	15	100	10	67		
minutes		2		2		2		2			
IF56	100	0.03	40	0.02	27						
minutes		1		1							

AIR	lpm	10	11	10	10	
TIME	min	4	4	4	4	
WET WT	gm	200	200	200	200	
CUM TIME	min	4	8	12	16	
CONC	%solids	18.9	14.5	13.9	10.6	

PRODUCTS	WT gm	WT %	Sn %	DIST	As %	DIST
RO C1	37.8	5.0	4.77	0.5	15.40	16.6
RO C2	28.9	3.8	6.89	0.5	22.20	18.3
RO C3	27.8	3.7	9.02	0.6	19.60	15.6
RO C4	21.1	2.8	13.80	0.7	20.10	12.1
RO TAIL	636.2	84.6	60.00	97.6	2.05	37.3
CALC	751.8	100.0	52.00	100.0	4.65	100.0
ASSAY HEAD			54.90		4.48	

CUM PRODUCTS	CUM time	WT %	Sn %	CUM	As %	CUM
RO C1	4.0	5.0	4.77	0.5	15.40	16.6
RO C2	8.0	8.9	5.69	1.0	18.35	35.0
RO C3	12.0	12.6	6.67	1.6	18.72	50.6
RO C4	16.0	15.4	7.97	2.4	18.97	62.7
	0.0					
FEED		100.0	52.00	100.0	4.65	100.0

Burnie RESEARCH LABORATORY

ROUGHER FLOTATION REPORT SHEET

MILLING			PRODUCT FLOATED
MILL	type	BALL	tin concentrate
CHARGE	kg	6.0	
SOLIDS	gm	750	
WATER	gm	375	NOTES
TIME	min	13	settling in flot cell
SPEED	rpm	50	
HYD LIME	gm	0.0	
END pH	pH	6.1	
END p80	um	137	

PROJECT	T0054
TEST NO	2
DATE	17/03/2005
TECHNICIAN	ANB

TOTAL REAGENTS (gpt)	
SIBX	373
IF56	136

STAGE	CONDITION	ROUGH 1	ROUGH 2	ROUGH 3	ROUGH 4	ROUGH 5					
START	pH	6.0			5.0						
AIR	lpm	0									
AIR	min	0									
REAGENTS	ml	gpt	ml	gpt	ml	gpt					
SIBX	0.5		15	102	15	102	15	102	10	68	
minutes			2		2		2		2		
IF56	100		0.08	108	0.02	27					
minutes			1		1						

AIR	lpm	9	9	9	9	
TIME	min	4	4	4	4	
WET WT	gm	200	200	200	200	
CUM TIME	min	4	8	12	16	
CONC	%solids	31.7	20.1	13.9	8.8	

PRODUCTS	WT	WT	Sn	DIST	As	DIST
	gm	%	%		%	
RO C1	63.5	8.6	3.03	0.5	15.10	29.6
RO C2	40.2	5.5	6.58	0.6	21.30	26.5
RO C3	27.8	3.8	12.20	0.8	19.70	16.9
RO C4	17.6	2.4	20.60	0.9	15.50	8.4
RO TAIL	588.5	79.8	67.70	97.2	1.02	18.6
CALC	737.6	100.0	55.59	100.0	4.39	100.0
ASSAY HEAD			54.90		4.48	

CUM PRODUCTS	CUM	WT	Sn	CUM	As	CUM
	time	%	%		%	
RO C1	4.0	8.6	3.03	0.5	15.10	29.6
RO C2	8.0	14.1	4.41	1.1	17.51	56.1
RO C3	12.0	17.8	6.06	1.9	17.97	73.0
RO C4	16.0	20.2	7.77	2.8	17.68	81.4
	0.0					
FEED		100.0	55.59	100.0	4.39	100.0



Burnie RESEARCH LABORATORY

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SENIOR METALLURGIST

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MANAGER

Cumberland Lake Power & Mineral Development
ISSUES PAPER
THREATENED SPECIES AND VEGETATION ASSESSMENT
INCLUDING EXCERPT FROM HISTORICAL HERITAGE STUDY

22 October 2004
For Marshal Resources International

DATA SOURCE: Parks & Wildlife GIS Web Server – GT Spot, Parks & Wildlife GIS Web Server – Values Report, TasVeg Vegetation map, Forest Practices Board threatened species data, Threatened Fauna Handbook, personal communications - Threatened Species Unit, DPIWE.

METHOD: Desktop review of existing data. Species records are searched for a 5km radius from the centre of the study area. Consideration has been made as to the preferred habitat of all threatened flora and fauna species known from the vicinity.

PURPOSE: To provide Marshal Resources International with a clear impression of the potential threatened species and vegetation issues associated with any proposed development.

LIMITATIONS: The data search was undertaken via desktop GTSpot GIS Web Server. No ground truthing was undertaken. Absence of records from any particular place does not mean that specific values are not present.

STUDY AREA: The proposed development sites are located close to near the west coast of Tasmania near to Trial Harbour. Access is via the Trial Harbour road. The proposed developments extend from Cumberland Hill in the north, incorporate Cumberland Lake and the Little Henty River in the south and the Sweeny's Tin deposit.

SITE DESCRIPTION:

The site is mostly on Devonian granite on the north of the site with Cambrian siliceous sediments in the south. This geology produces low fertile thin soils. The Site incorporates highly varying relief from 500m at Cumberland Hill to less than 50m at the Little Henty River.

VEGETATION:

Vegetation mapping shows mainly buttongrass moorland, scrub, and heath associated with the granitic soils, and low forest mainly associated with the siliceous sediments.

Any proposed wind turbines or mineral production and processing facilities would occupy buttongrass moorland, while any transmission lines, pipelines, and roads would cross wet scrub, *Eucalyptus nitida* forest, short rainforest and buttongrass moorland.

Table 1: TASVEG mapping of study area and vicinity

TASVEG Mapping Unit	State-wide Conservation Priority ¹	Regional Conservation Priority
Buttongrass moorland Bb	Not threatened Adequately reserved	Not threatened, well reserved.
Dry <i>E. nitida</i> forest and Wet <i>E. nitida</i> forest N, Nt	Not threatened Adequately reserved	Not threatened, well reserved.
Short rainforest, Tall Rainforest M-, M+	Not threatened Adequately reserved	Not threatened, well reserved.
Western Wet Scrub, <i>Leptospermum lanigerum</i> scrub Sn, St	Not threatened Adequately reserved	Not threatened, well reserved.

Note: Mapping of vegetation (TASVEG) for Tasmania has been based on modelling and remote aerial interpretation. It is likely that detailed on ground assessment will result in modifications to boundaries and some typification changes. The mapping is not accurate at the scale of the proposal .

FAUNA:

A review of all threatened fauna recorded from the vicinity indicates only one threatened species within the immediate vicinity of the proposed development: the Spotted-tailed quoll. Other species recorded are not relevant to the study with the exception of those listed in Table 2.

Table 2 summarises threatened species known, or thought to have potential, to occur within the vicinity.

Table 2: Significant Fauna species previously recorded in the vicinity (5km)

Species	Conservation Status ²		Observations
	State	National	
BIRDS			
Wedge-tailed eagle <i>Aquila audax fleayi</i>	endangered	endangered	No known nests within vicinity. Limited potential habitat due to scarcity of tall eucalypt forest for nesting. If present a nest would almost certainly have been previously documented, but there remains the potential to occur.
Sea eagle <i>Haliaeetus leucogaster</i>	vulnerable	-	Although more typically a species of the coast Sea eagles are common around lakes where they exploit the ready fish supply available. Nests are typically in the vicinity of these lakes. Limited potential habitat due to scarcity of tall forest for nesting. If present a nest would almost certainly have been previously documented, but there remains the potential to occur.
Orange-bellied parrot <i>Neophema chrysogaster</i>	endangered	endangered	Typically observed within one kilometre of the coast at low altitudes on their bi-annual migrations to and from their breeding grounds in

¹ Conservation Status has been determined state-wide for forest communities for the Regional Forest Agreement (1997) but has been supplemented by more recent analysis that extends to non-forest and includes bioregional analysis (CARSAG 2003). Reservation assessment follows recognised national guidelines for the establishment of a CAR (Comprehensive, Adequate and Representative Reserve System (JANIS criteria) ANZECC 1995

² GTSpot search GIS Web Server DPIWE

Species	Conservation Status ²		Observations
	State	National	
			the southwest. Any proposed sites are elevated and away from the coast. Unlikely that the species travels through the site.
MAMMALS			
Spotted tailed Quoll <i>Dasyurus maculatus</i>	rare	vulnerable	The site most likely supports this species, which prefers dense shrubby and wet forest in the region.

FLORA:

Table 3: Significant Flora species previously recorded in the vicinity (5km)

Species	Conservation Status ²		Observations
	State	National	
<i>Amphibromus neesii</i> swamp wallaby grass	rare	-	A species associated with damp ground around marshes, lagoons, river flats, pools and streams. Possibility of occurrence at the Site.
<i>Baumea gunii</i> slender twig rush	rare	-	Inhabits wet moors, creeks and riverbanks. Possibility of occurrence at the Site.
<i>Deyeuxia minor</i> small bent grass	rare	-	Inhabits open eucalypt forests or the margins of wet sclerophyll forest. Potential to occur in these habitats on the Site.
<i>Lachnagrostis aequata</i> even blown-grass	delisted	-	Occurs in sparse woodland. Unlikely to occur at the Site.
<i>Orthoceras strictum</i> horned orchid	rare	-	Found in buttongrass moorland, sedgy and scrubby heathland, sedgy eucalypt shrubland and open forest. High likelihood of the species occurring at the Site.
<i>Ranunculus acaulis</i> duned buttercup	rare		Occurs in seepage areas on the seaward side of coastal dunes. Unlikely to occur at the Site.
<i>Veronica novaehollandiae</i> New Holland speedwell	vulnerable	-	Endemic to Tasmania. Habitat includes short tussock grasslands established on stabilised calcareous dunes. Unlikely to occur at the Site
<i>Bunodophoron notatum</i> <i>Gintaras's Lichen</i>	(Preliminary recommendation) Endangered	-	Occurs on the bark of <i>Nothofagus</i> on relatively high fertility soils. Low probability of occurrence at the site.

CONSERVATION VALUES:

Fauna

It is highly unlikely that Wedge-tailed eagles or White-bellied sea eagles are nesting within the area. The nearest observed nests of either species is 15km away. Wedge-tailed eagles almost exclusively nest in tall eucalypts because they form strong enough platforms on which to build the eagle's considerable

² GTSpot search GIS Web Server DPIWE

nest. Rainforest species such as myrtle generally do not have large enough branches at nest height. White-bellied sea eagles are more versatile in nest building but have a similar requirement for branch size. This species is mainly a coastal species but will take up territory around lakes if there is a suitable food supply.

An extensive helicopter search for eagle nests was carried out in the area in 2002 by the Wedge-tailed eagle Recovery Officer. No eagle nests were found and no suitable nesting habitat was recorded in the vicinity of the proposed developments (Bill Brown pers comm.).

Orange-bellied parrots migrate each spring from the mainland to their breeding areas in southwest Tasmania, and leave for the mainland again in autumn. Whilst their exact flight paths are not well understood, the species generally migrates along the coast at low altitude. It is unlikely that this species would use the Site.

The spotted-tailed quoll is most abundant in rainforest, wet eucalypt forest. They also inhabit dense scrub and heath. There is high probability that spotted-tailed quolls inhabit the Site.

Apart from disturbance during construction of roads and other infrastructure, as long as their habitat is largely physically undisturbed, quolls should persist in the area after the construction phase.

Not revealed on database search, the grey goshawk (*Accipiter novaehollandiae*), listed as Rare on the TSPA could possibly be a resident of the area, most likely if there are tall blackwoods (*Acacia melanoxylon*) within the wet scrub or forest. A 100m no-disturbance buffer would be required around any observed nest site.

Flora:

Amphibromus neesii swamp wallaby grass is found in damp ground around marshes, lagoons, river flats, pools and streams and could possibly occur on the site. It is well reserved in the State.

Baumea gunnii slender twig rush inhabits wet moors, creeks and riverbanks and possibly occurs on the site. It is well reserved in the State.

Deyeuxia minor small bent grass inhabits the margins of wet sclerophyll forest and could possibly occur on the site. It is reserved in the Southwest National Park.

Orthoceras strictum horned orchid is found in buttongrass moorland and sedgy scrubby heathland and is highly likely to be found at the site. It is not well reserved outside of Freycinet National Park.

There would appear to be little potential for more highly threatened species or those of national conservation significance.

A detailed survey would be required during appropriate flowering season.

Issues

The development sites cover a range of vegetation types and as such would provide a wide range of habitats for native flora and fauna. However, none of the vegetation communities is listed as threatened and only four listed plant species are recorded from the area, all of which are listed as rare in the State legislation - the lowest level of risk. The horned orchid could most likely be

impacted on by the wind turbine development or mineral processing facilities as this would be mainly on the buttongrass moorland. The other species are more likely to be impacted upon by the development of support infrastructure, ie roads and power/pipelines.

The buttongrass community, scrub and heath communities are susceptible to *Phytophthora cinnamomi* infection, and are vulnerable to weed invasion particularly through new roading and other construction works.

Any vegetation within the Site that supports old growth elements (mature and overmature trees with an abundance of hollows) is of high conservation significance.

The only threatened fauna species likely to occur on the Site is the Spotted-tailed quoll. Impacts on this species would most likely be from the development of support infrastructure as it would go through areas of habitat. Temporary disturbance during the construction phase is most likely, but little impact would be expected long-term if habitat clearance is kept to a minimum.

Wedge-tailed eagles are likely to forage from time to time at the Sites. Collision with wind turbines and transmission lines is a possibility, but the likelihood is much reduced by the Sites not being close to a nest.

Although there are no records of the Grey goshawk (endangered) from the area, the presence of large *Acacia melanoxylon* (blackwood) trees within the scrub could potentially provide nesting habitat and if present would be of conservation significance. The nearest known nest is 15km away.

There would appear to be little potential for more highly threatened species or those of national conservation significance.

REFERENCES:

Bryant, S. & Jackson, J. (1999). *Tasmania's Threatened Fauna Handbook: what, where and how to protect*. Threatened Species Unit, Parks & Wildlife Service, Hobart.

Forest Practices Board, threatened species database.

GTSpot GIS Web Server, Parks & Wildlife Department of Primary Industry Water and Environment.

Pers comms

Bill Brown, Project Officer, Wedge-tailed Eagles, Threatened Species Unit, DPIWE.

A Historic & Heritage Value desk-top review of the area was undertaken by Austral Archeology P/L for Marshall Resources International to aid with the planning of future developments, which is summarised below:

(a) Historical context:

The subject study area is located in what, historically, is referred to as the South Heemskirk Tinfield (1878 –1884). This is reputed to be the earliest underground mining field on the west coast. Its establishment coincided with the adoption of, often treacherous, Trial Harbour as a port facility. The level of service infrastructure and mine plant peaked around 1883. It was at this point that co-operation between the Cumberland and Montagu mine managers resulted in the creation of a dam Pyke's Creek to flood the valley and provide a source of power to both companies. This made the windlass and horse whim redundant and led to increased capitalisation in response to speculation of the increased production that would follow in response to the availability of the source and means to produce motive power. Ultimately, the returns from the field were disappointing and the investors turned their attention elsewhere. Cumberland dam was enlarged during the 1890s to operate a generating plant at the Federation Tin Mine.

Mining activity was not confined to the plateau. William Duffy's map of 1883 shows leases extending as far south as the Little Henty River. These are likely to have been sporadically prospected and/or worked well into the 20th century.

(b) Representation in Databases & Heritage Registers:

Interrogation of authoritative databases and heritage registers revealed the following:

- There are no sites within the subject study area currently entered in the National Heritage List;
- There are no sites within the subject study area currently entered in the Commonwealth Heritage List;
- Cumberland Dam has been flagged for inclusion in the Tasmanian Heritage Register (THR) Data sheet. Entry in the THR brings the *Historic Cultural Heritage Act 1995* into play.
- A number of sites are listed in and around the subject study area in the Tasmanian Historic Places Inventory (THPI) maintained by the Tasmanian Heritage Office. Listing in THPI has no statutory implications nor is the database comprehensive. It is, however, a useful screening tool that provides an indication of the spread and nature of site types present in the locality.

(c) Site Types, Client Awareness & Heritage Issues Profile:

Secondary sources indicates that the subject study area environs are likely to contain evidence of both hard rock and alluvial tin mining activity, dam & vestiges of power generation infrastructure, areas of occupation, a grave site, tramways and pack tracks.

(c) Concluding Comment:

The subject study area is known to contain significant evidence of historic mining activity. However, on the basis of sources consulted in the preparation of this commentary and Luke Marshall's presentation, there appear to be no "show stoppers" (ie, no historic heritage issues that would obviously and outrightly preclude any developments in the area) at this stage. In my opinion, MRIs awareness and understanding of the historical profile of the area and the importance to conserve these values, is likely to have reduced the capacity for historic heritage impacts to occur and any residual (including statutory) heritage issues should be able to be adequately addressed within the scope of the Historic Heritage Impact Assessment proposed by us prior to development planning.

kim mcdermott

From: Graeme Swain <GSwain@Amdel.com>
To: kim mcdermott <kmcdermott@dodo.net.au>
Sent: Thursday, January 05, 2006 7:29 PM
Subject: RE: Lost records

Kim

I've passed your email on the Janine Herzig who is our Min Proc Manager. She'll respond as soon as we can track it down.

Regards,
Graeme

-----Original Message-----

From: kim mcdermott [<mailto:kmcdermott@dodo.net.au>]
Sent: Thursday, January 05, 2006 3:11 PM
To: Graeme Swain
Subject: Lost records

Dear Graeme,
Sometime last year or the year before, Amdel did some work for us, McDermott Mining P/L).on our prospect, Sweenys Birthday (Tin floatation and gravity separation)
The work was carried out in liason with Peter Hayward.
Unfortunately, due to a complete computer loss, all of our records regarding Amdel's work was lost mid stream and it was not until your email could I find any way of contacting you.
If possible could you advise of what work was was done, how much was paid for same, (if any) and if the results of same are still available.
If the above is not possible, then no harm done, and we will probably engage Amdel to carry out further work at a later date.
Kind Regards
Kim McDermott

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