

# **ZZ EXPLORATION** Pty Ltd

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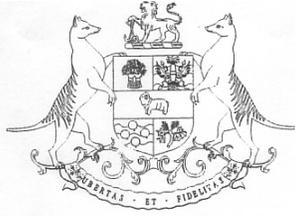
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**Zeehan Mineral Field  
Exploration Licence 20-2002  
Annual Report For Period Ending  
January 2005**

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Prepared by  
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Senior Geologist

March 2005



*Oaths Act 2001*  
**Statutory Declaration**

**I,**

.....

.....

*(name, address and occupation)*

do solemnly and sincerely declare that .....

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*(facts)*

I make this solemn declaration under the *Oaths Act 2001*.

Declared at.....

*(place)*

on .....

*(date)*

.....

*(signature)*

Before me

.....

*(Justice, Commissioner for Declarations  
or authorised person)*

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**Summary**

Potential exists for the discovery of new economic metallic deposits within EL20/2002 plus the opportunity to extract and process minerals from existing deposits with known resources. ZZ Exploration has focused on finding small (<0.5Mt) to large-scale (>100Mt) economic resources based on testing of previously identified and potential anomalies.

Exploration completed on EL20/2002 during the period January 2004 to January 2005 include a) Economic business plan feasibility study to assess the direction and projections for Zeehan Zinc Limited that comprise wholly owned subsidiaries Oceania Tasmania Pty Ltd and ZZ Exploration Pty Ltd, b) collation and review of pre-existing datasets to review resources to JORC specifications, specifically, the Oceana Deposit within EL20/2002, b) submission of a Relinquishment Area Application to Mineral Resources Tasmania; areas of interest to ZZ Exploration are the Oceana and Mariposa Deposits c) repair and upgrade of track to the Oceana deposit, and d) application of a work program with the completion of a several costeans within the Oceana deposit. Several drill holes have been included within this application and are proposed for March 2005.

ZZ Exploration aim to be one of the leading mineral explorers in the Zeehan area and explore EL20/2002 for Category 1 mineral resources for future minerals for its Zeehan Zinc Gravity Separation Plant.

### **Introduction**

Exploration Licence 20/2002 (EL 20/2002) covers 71 square kilometres and is located one kilometre southeast from Zeehan, western Tasmania (Figure 1). ZZ Exploration Pty Ltd (ZZ Exploration) is a wholly owned subsidiary of Zeehan Zinc Limited, and holds the exploration rights to EL 20/2002.

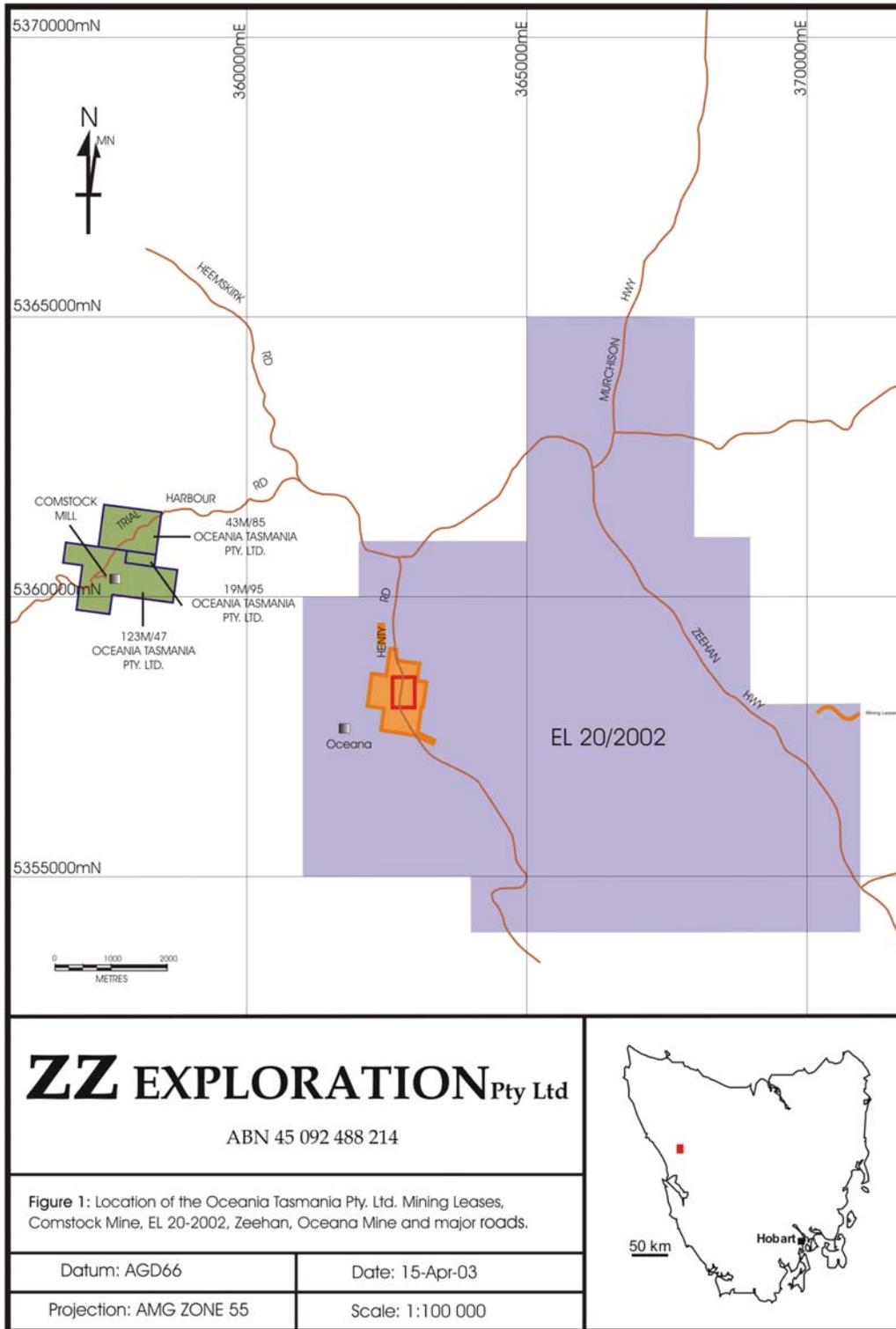
This report covers the period from January 2004 to January 2005. Work completed during this period include:

- 1) Part-relinquishment report application over the Zeehan Mineral Field for ZZ Exploration's EL20-2002.
- 2) Review of resources and their classification of EL20/2002. Specifically, ZZ Exploration requested Cotlco Pty Ltd to review the overall resource at the Oceana Deposit. An investigation into to open-cut resource is also currently underway.
- 3) Proposed work program application for several costeans/testpits.
- 4) Notes for a drainage tunnel for dewatering the Oceana Deposit.
- 5) Water samples from Austral Creek.
- 6) Oceana Deposit – Costeans, SGS lab results, photos.
- 7) Oceana Track upgrade photos.
- 8) Zeehan Zinc Business Plan
- 9) 5-year summary of Zinc-Lead-Silver Prices

The Murchison Hwy, Zeehan Hwy and Henty Rd provide access to EL 20/2002. The Emu Bay Railway and the Murchison Hwy connect Zeehan with the Port of Burnie, located 140 kilometres to the north.

Vegetation cover is sparse over EL 20/2002, dominated by button grass and banksias on the ridges and button grass and gorse in the marshy valley. Dense tea tree and eucalypt scrub occur along the creeks.

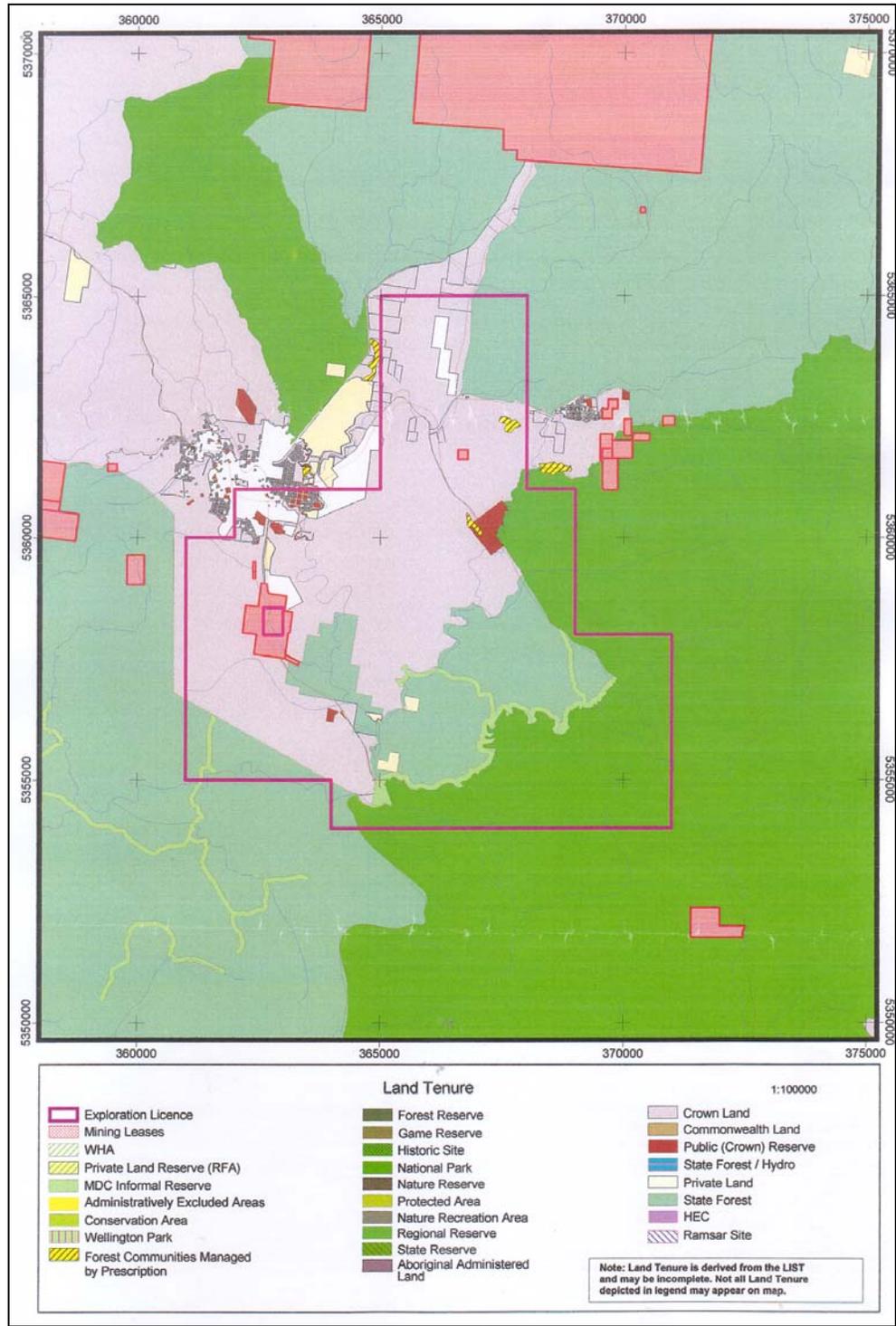
Location



**Figure 1.** Location of ZZ Exploration Pty Ltd EL20/2002

Tenure

EL 20/2002 was granted to ZZ Exploration on 7 February 2003 for a period of five years and applies to all Category 1 minerals. The licence covers 71 square kilometres (Figure 1 and 2). Excluded areas include a) RL3/1996, b) any land owned or leased by the Commonwealth of Australia, c) mining leases and d) Crown reservations. Refer to Appendix 1 for EL 20/2002 Schedule.



**Figure 2.** Land Tenure within and around EL20/2002.

### **Previous Exploration and Mining**

A review of previous mining and exploration is documented in McGilvray (2003). See Appendix 5 in Heath 2004.

### **Geology**

#### Regional Geology

The regional geology of the area has been described in Blissett (1962), Taylor (1983), Jones (1988) and McGilvray (2003).

#### Local Geology & Mineralisation (Oceana area only)

The local geology and mineralisation of the Oceana deposit is described in chapters three and four, respectively, in McGilvray (2003). Refer to Appendix 5 in Heath 2004.

### **Work Completed January 2004 – January 2005**

#### Review

ZZ Exploration has not limited the scope of its exploration program to look only for granite-related or Irish-type deposits and associated metal types. ZZ Exploration has focused on finding small (<0.5Mt) to large scale (>100Mt) economic resources based on the testing of previously identified and potential anomalies. Exploration activities previously undertaken within EL 20/2002 include detailed geological mapping, geophysical surveys, costeaning, rock-chip, soil, stream and bedrock geochemistry, basin analysis studies, extensive aircore and diamond drilling.

#### Regional exploration activities

ZZ Exploration's objective has been to collate and enter geological information from various reports/drill logs into one comprehensive database to enhance the prospectivity of deposits for commercial extraction. This includes reviewing 48 of the known old workings, prospects and deposits that occur within EL 20/2002 (Appendix 2).

Several Costeans and test pits have been completed over the Oceana Deposit during 2004 with proposed drill holes to be completed during March 2005. A JORC review over the Oceana Deposit has been completed and is described in Appendix 4.

#### Prospective-based exploration activities

##### *Assessment and part relinquishment report of EL20-2002*

An investigation of geophysical, image, company and map data has determined a) areas of greater significance for future exploration b) prioritise ground held under EL 20/2002 and c) facilitate decisions regarding future possible relinquishments. The relinquishment report attached as Appendix 3 show areas of greatest significance for ZZ Exploration Pty Ltd future resource development. These areas are: 1) Oceana Deposit and 2) Mariposa Deposit.

#### *Oceana deposit - Introduction*

A detailed drill hole database has been created for the Oceana deposit with the guidance of consulting geologist, Simon Tear (Benmore Exploration Pty. Ltd.). The Oceana database comprises 142 drill holes that include recoveries, assays, lithologies, surveys and collars (Heath 2004). Investigations have found valuable old reports and drill logs not previously recorded within the MRT library database. The drill hole database has assisted ZZ Exploration with their review of the resource status (JORC compliant) for the Oceana deposit (Appendix 4). Previous potential resource calculations have been calculated in Saxon (1995) as 2,285,000 tonnes @ 7.5%Pb, 2.6%Zn and 51 g/t Ag.

However, a recent report by Cordery (1998) shows the potential for shallow (surface to 50m) mineralisation existing within the Oceana deposit (Table 1).

**Table 1.** Estimate of Oceana Pre Resource Mineralisation (Cordery, 1998)

Depth (m)	Volume (cubic m)	Tonnes (SG=2.7)	Pb (%)	Zn (%)	Ag (oz/t)	W:O
50m	50,000	135,000	12	2.8	2.2	10:1
25m	31,000	83,000	12.6	2.5	2.6	5:1

The resource shown in Table 1 is of interest to ZZ Exploration for short-term extraction of minerals for the Zeehan Zinc Gravity Separation Plant located 4 km to the west of the Oceana deposit. ZZ Exploration has assessed the Oceana deposit to confirm the prospectivity for commercial extraction (See below, Oceana deposit – Resources estimation and classification (JORC) & Appendix 4).

*Oceana deposit – Resources estimation and classification (JORC)*

Zeehan Zinc requested Cotlco Pty Ltd during December 2004 to carry out a review of resources estimation and classification over Exploration Licences: 20/2002 and 30/2002, and Mining leases: 43/85, 19M/1995, 123M/47 and 9M2002. Results are tabulated in Appendix 4. An inferred resource has recently been reviewed by Cotlco Pty Ltd at 2.1Mt @ 9.2%Pb, 2.6%Zn, and 88 g/t Ag. A review of the open-cut potential to JORC will be completed during March 2005.

*Oceana deposit – Proposed work program*

ZZ Exploration carried out specific activities during December 2004 to March 2005 as part of a pre-feasibility described in Cordery (1998). These are:

- 1) Track repair & drill site preparation for safe 4WD access to the working areas (Appendix 9).
- 2) Costeaming and test pits with the use of a 30 T excavator to enable definition of resources at surface and to obtain metallurgical samples. (See Figures 1-11, Appendix 8).
- 3) 3 x RC holes have been proposed during February/March 2005 using Tasmanian Drilling Services Pty Ltd holes to enable infill spacing for open cut resource potential at 25m and 50m depth. These holes will also be used for metallurgical testing. Zeehan Zinc is currently completing 6 holes on its Comstock tenements (January/February 2005) and will then drill at Oceana as approved on the 23 December 2004 by MRT.

*Oceana deposit – Drainage tunnel for dewatering proposal (notes)*

ZZ Exploration is investigating the potential to drill a horizontal hole for dewatering the Oceana mine into Austral Creek. The proposed hole would be collared adjacent to Henty Road at SL150 and run horizontal to an existing mine shaft (No. 6), a total length of 550m. See Appendix 6 for a plans, section and geology.

*Oceana deposit – Austral Creek water analysis*

ZZ Exploration has started a background water-monitoring program as part of its horizontal drill hole concept, shown as Appendix 6. Water samples will be taken every quarter (Sample No.1 - Tested December 2004) at sample location Northing: 5358090 Easting: 362700, and will be analysed at Analytical Services Tasmania, Hobart.

Chemical testing methods are listed below. Results for Sample No.1 (Austral Creek) are shown in Appendix 7.

- 1) pH in water by APHA Method 4500-H
- 2) Conductivity by APHA Method 2510
- 3) Solids, Total Dissolved by APHA Method 2540C
- 4) Solids, Total Suspended by APHA Method 2540D
- 5) Alkalinity by APHA Method 2320/4500-CO<sub>2</sub>
- 6) Acidity by APHA Method 2310
- 7) Metals in Water by APHA Method 3030/3120

*Oceana deposit – Track upgrade*

Appendix 9 shows track repair photographs (before and after). The track is located 2 km south of the township of Zeehan (Figure 1, Appendix 5).

*Oceana deposit – Costean/test pits and SGS lab results*

ZZ Exploration has carried out 5 costean/test pits to locate boundaries of previously mapped Pb-Zn-Ag minerals. A total of 36 samples were collected and analysed at SGS labs, Burnie. Results are shown in Table 1 (Appendix 8) with Costean 4 (C4) returning assays of 17m @ 12.56%Pb, 2.99%Zn and 155 g/t Ag.

A duplicate batch of the majority of the samples will be used for metallurgical studies for processing through the Zeehan Zinc Gravity Separation Plant. Figures 1-11 show photos of work completed during sampling at the Oceana deposit. Figure 12 show costean locations (Appendix 8).

*Oceana deposit – Business Plan (Feasibility study)*

The Zeehan Zinc Business Plan sets out the direction and conservative projections for Zeehan Zinc Limited over the next 10 years. This includes focusing on deposits such as Oceana for feed into Zeehan Zinc Gravity Separation Plant. An assessment of potential resources is contained in the Business Plan (Appendix 10); however, these resources have been updated by Cotlco Pty Ltd (Appendix 4).

**Proposed work - Recommendations**

During 2004, ZZ Exploration has focused its effort on reviewing mineral deposits within EL 20/2002 (Appendix 2). Investigations have established priority areas (Appendix 3) and potential deposits, (Oceana & Mariposa deposits) which could contribute resources to the nearby Zeehan Zinc Gravity Separation Plant.

ZZ Exploration intends to carry out exploration for all category 1 minerals over EL 20/2002. Several short-term targets have been prioritised which include:

- 1) Continuation into the feasibility of extracting minerals within the Oceana deposit down to 25m and 50m depths. The work program will consist of 3 RC holes beginning March 2005.
- 2) Review of resources estimation and classification (JORC) over the Oceana to 50m depths. Report will be completed mid-March 2005.
- 3) Application of a Mining Lease over the Oceana deposit.

Commodity prices have continued to rise during 2004-05. Appendix 11 shows the 5-year prices for Zinc, Lead and Silver. Currently, Lead is around US\$1000 per tonne that makes deposits such as Oceana a viable project, particularly, with the development of a nearby Zeehan Zinc Gravity Separation Plant.

**Environmental disturbance and rehabilitation**

Exploration over EL20/2002 was environmentally low impact with minor repair work to the Oceana Track (Appendix 9) and 5 costean/test pits. All costeans have been rehabilitated to standards described in the Mineral Exploration Code of Practice. Refer to figures 1-11 (Appendix 8) for photographs of approved works at the Oceana deposit.

ZZ Exploration is confident that the experience of developing the Comstock Mine will greatly assist in exploring EL20/2002, and the potential of any future developments, will be carried out in an environmentally sensitive, responsible and competent manner.

**Conclusions**

Potential exists for the discovery of new economic metallic deposits within EL20/2002. ZZ Exploration believes the opportunity to extract and process minerals from existing deposits such as Oceana will add valuable long-term feed to the Zeehan Zinc Comstock Project.

## Expenditure

**Table 2.** Expenditure - January 2003 to December 2003

<b>Expenditure Statement</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Total</b>
Geology	4,400.00	1,200.00	10,564.27	10,608.27	<b>26,772.54</b>
Geochemistry				200.00	<b>200.00</b>
Geophysics - air					-
Geophysics - ground					-
Feasibility studies		3,549.05			<b>3,549.05</b>
Rehabilitation					-
Drilling (metres)					-
Gridding (line km)					-
Administration	440.00		57.00		<b>497.00</b>
Other		7,740.00		12,776.50	<b>20,516.50</b>
GST Error (1-7-03 to 30-6-04)		-200			
<b>Total</b>	<b>4,840.00</b>	<b>12,289.05</b>	<b>10,621.27</b>	<b>23,584.77</b>	<b>\$ 51,335.09</b>

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**List of Appendices**

- Appendix 1** Schedule from Exploration Licence 20/2002.
- Appendix 2** Location of Deposits within EL20/2002 (MIRLOCH mineral locations).
- Appendix 3** Heath, P. 2004. Zeehan Mineral Field – Exploration Licence 20-2002 (Part relinquishment)
- Appendix 4** Cotlco Pty Ltd., 2005. Resources Estimation and Classification (Mining Leases: 43M/85, 19M/1995, 123M/47, 9M/2002 and Exploration Licences: 20/2002 and 30/2002). Unpublished Report.
- Appendix 5** Proposed Work Program Application – Oceana Deposit. December 2004. Unpublished.
- Appendix 6** Drainage Tunnel for Dewatering Proposal. September 2004. Unpublished Notes.
- Appendix 7** Analytical Services Tasmania (Oceana Deposit – Austral Creek)
- Appendix 8** Oceana Deposit – Costean sample locations, SGS Lab Results, Costean Photos. January 2005.
- Appendix 9** Oceana Deposit – Track Upgrade Photos (Before and After)
- Appendix 10** BDR Consulting Pty Ltd. 2003. Zeehan Zinc Business Plan. Unpublished Report
- Appendix 11** Zinc Prices (London Metal Exchange) – Feb 24, 2000 to Feb 22, 2005.  
Lead Prices (London Metal Exchange) – Feb 24, 2000 to Feb 22, 2005.  
Silver Prices (London Fix) – Feb 25, 2000 to Feb 23, 2005.