



Comstock Mine Environmental Monitoring Report



16 February 2006

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Contents

1.0 INTRODUCTION.....	5
2.0 WATER MONITORING.....	5
W1 – COMSTOCK CREEK UPSTREAM	5
W2 – MAIN ADIT INLET	5
W3 – MAIN ADIT OUTLET	6
W4 – BASE OF SWANSEA DUMP.....	6
3.0 RESULTS	6
4.0 DISCUSSION	20
APPENDIX A	24
LABORATORY ANALYSIS OF WATER SAMPLES	24
APPENDIX B	63
WATER SAMPLING DATA COLLECTION.....	63
APPENDIX C	72
ENVIRONMENTAL MANAGEMENT & REHABILITATION OF THE COMSTOCK MINE – ACID MINE DRAINAGE TRIALS	72
APPENDIX D.....	73
AMD STATUS OF CENTRAL MINE WASTE ROCK DUMP AT OCEANIA COMSTOCK MINE.....	73
APPENDIX E	74
ACID MINE DRAINAGE STATUS OF THE COMSTOCK WASTE ROCKS & SWANSEA TRAMWAY WASTE ROCK DUMP	74
APPENDIX F	75
REHABILITATION AERIAL PHOTO.....	75
APPENDIX G.....	78
NAPP AND NAG LABORATORY ANALYSIS	78
APPENDIX H.....	79
SUMMARY OF MINING & EXPLORATION OPERATIONS	79
1 JULY 2004 TO 30 JUNE 2005	79
FIGURE 1. LOCATION MAP OF THE COMSTOCK MINE SHOWING WATER MONITORING LOCATIONS: <i>W1</i> (UPSTREAM OF ALL MINING ACTIVITY – COMSTOCK CREEK), <i>W2</i> (OUTLET OF SEDIMENT TRAP BASE OF DECLINE, ADJACENT TO DRAINAGE ADIT), <i>W3</i> (DRAINAGE ADIT ADJACENT TO COMSTOCK CREEK), AND <i>W4</i> (DISCHARGE FROM THE SECOND COLLECTION DAM WEST OF SWANSEA DUMP).	5
FIGURE 2 – pH VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO JANUARY 2006.	6
FIGURE 3 – CONDUCTIVITY (mS/cm) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO JANUARY 2006.	7
FIGURE 4 – TOTAL SUSPENDED SOLIDS (mg/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	7

FIGURE 5 – ALKALINITY TOTAL (MG CaCO_3/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	8
FIGURE 6 – ACIDITY (MG CaCO_3/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	8
FIGURE 7 – AL (DISSOLVED MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	9
FIGURE 8 – AL (TOTAL MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	9
FIGURE 9 – AS (DISSOLVED MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	10
FIGURE 10 – AS (TOTAL MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	10
FIGURE 11 – Cd (DISSOLVED MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	11
FIGURE 12 – Cd (TOTAL MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	11
FIGURE 13 – Co (DISSOLVED MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	12
FIGURE 14 – Co (TOTAL MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	12
FIGURE 15 – Cr (DISSOLVED MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	13
FIGURE 16 – Cr (TOTAL MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	13
FIGURE 17 – Cu (DISSOLVED MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	14
FIGURE 18 – Cu (TOTAL MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	14
FIGURE 19 – Fe (DISSOLVED M/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	15
FIGURE 20 – Fe (TOTAL M/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	15
FIGURE 21 – Mn (DISSOLVED MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	16
FIGURE 22 – Mn (TOTAL MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	16
FIGURE 23 – Ni (DISSOLVED MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	17
FIGURE 24 – Ni (TOTAL MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	17
FIGURE 25 – Pb (DISSOLVED MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	18
FIGURE 26 – Pb (TOTAL MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	18
FIGURE 27 – Zn (DISSOLVED MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	19
FIGURE 28 – Zn (TOTAL MG/L) VALUES FROM SAMPLE LOCATIONS W1, W2, W3 AND W4 TAKEN DURING MAY 2001 TO DECEMBER 2005.	19
FIGURE 29 - SURVEY SHOWING CURRENT MINE PLAN ALONG ALLISON’S PIT AND THE CWRD THAT HAS RECENTLY BEEN CLAY CAPPED AS PART OF THE PERMIT CONDITIONS. 100% OF THE DUMP HAS BEEN CAPPED.	22

TABLE 1. UPSTREAM COMSTOCK CREEK COMPARED WITH SITE W1	20
TABLE 2. NAPP, NAG, NAG pH, ANC AND %S RESULTS FROM 30 AUGUST 2002 TO 15 FEBRUARY 2006.	21
FIGURE 29 - SURVEY SHOWING CURRENT MINE PLAN ALONG ALLISON’S PIT AND THE CWRD THAT HAS RECENTLY BEEN CLAY CAPPED AS PART OF THE PERMIT CONDITIONS. 100% OF THE DUMP HAS BEEN CAPPED.	22
TABLE 3. SAMPLING VALUES FROM SITE W1	64
TABLE 4. SAMPLING VALUES FROM SITE W1	65
TABLE 5. SAMPLING VALUES FROM SITE W2	66
TABLE 7. SAMPLING VALUES FROM SITE W3	68
TABLE 8. SAMPLING VALUES FROM SITE W3	69
TABLE 9. SAMPLING VALUES FROM SITE W4	70
TABLE 10. SAMPLING VALUES FROM SITE W4	71

1.0 Introduction

Oceania Tasmania Pty Ltd (Oceania) is a wholly owned subsidiary of Zeehan Zinc Limited (Zeehan Zinc), and holds Comstock Mining Leases, 43M/85, 19M/1995, 123M/47 and 9M/2002. No extraction of Zn-Pb-Ag ore has occurred on site since September 2000 with major works concentrated on a Gravity Plant Development, Power connection and clay capping of the Central Waste Rock Dump (CWRD).

Section 37 of the Level 2 Mining Activity Environmental Permit (DPIWE, 6 July 2001) states it is a requirement for Oceania to carry out routine water quality tests every 3 months. This report summarises the required monitoring schedule including data from October 1997 to February 2006. The report also includes short summaries on NAPP and NAG results, the clay reserve and rehabilitation at the Comstock Mine.

2.0 Water Monitoring

Water samples at monitoring sites W1, W2, W3, and W4 (Figure 1) were collected on 22 December 2005 and analysed at 'Analytical Services Tasmania' for pH, conductivity, total suspended solids (Al, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Zn), total alkalinity and acidity. Laboratory results from sites W1, W2, W3 and W4 are attached as Appendix A for the last five years.

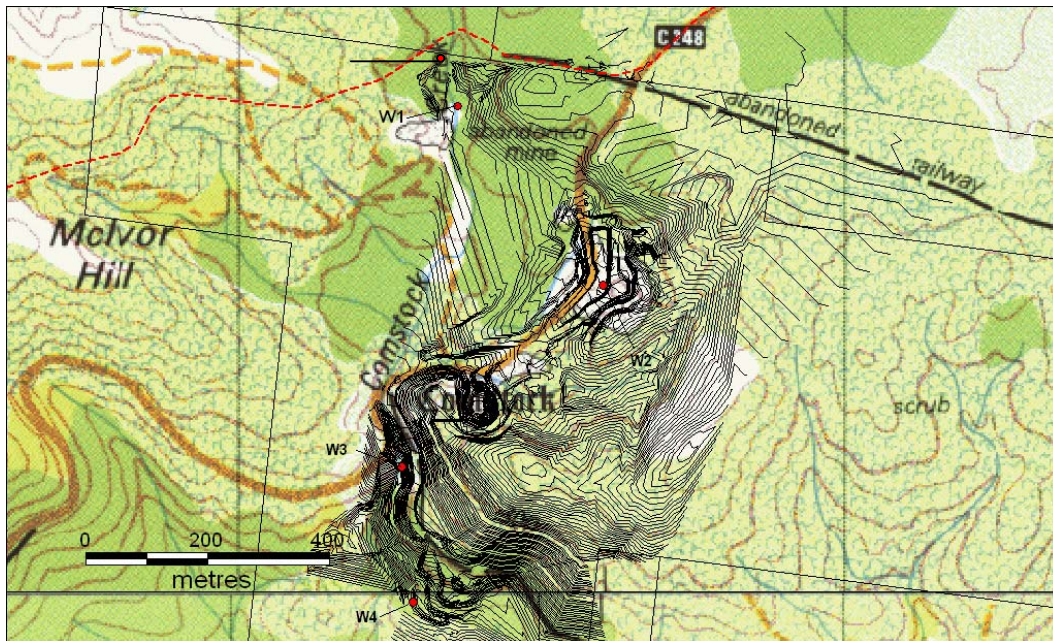


Figure 1. Location Map of the Comstock mine showing water monitoring locations: **W1** (upstream of all mining activity – Comstock Creek), **W2** (outlet of sediment trap base of decline, adjacent to drainage adit), **W3** (drainage adit adjacent to Comstock Creek), and **W4** (discharge from the second collection dam west of Swansea dump).

W1 – Comstock Creek Upstream

W1 is situated upstream of the mine site in Comstock Creek adjacent to historical workings.

W2 – Main Adit Inlet

W2 is situated in the collection areas beside the main adit inlet at the base of Allison's decline. These areas contain a sediment screen to reduce sediment flow off site, and limestone to reduce the acidity of the run off.

W3 – Main Adit Outlet

W3 is situated at the main adit outlet.

W4 – Base of Swansea Dump

Location W4 is situated in a small pool at the base of the Swansea Tramway Waste Rock Dump.

3.0 Results

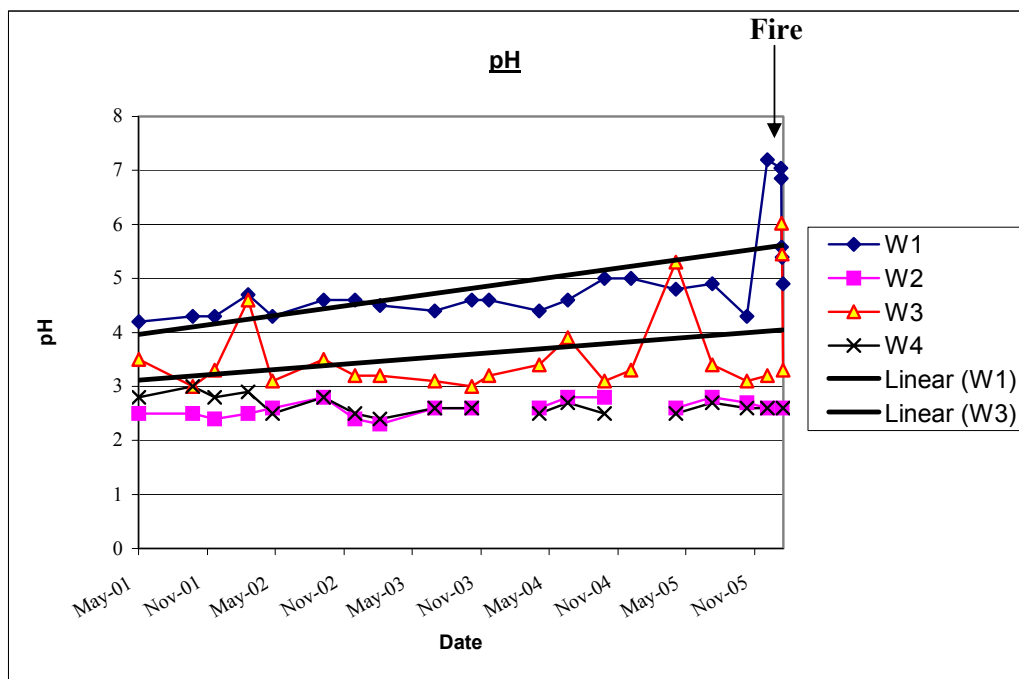


Figure 2 – pH values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

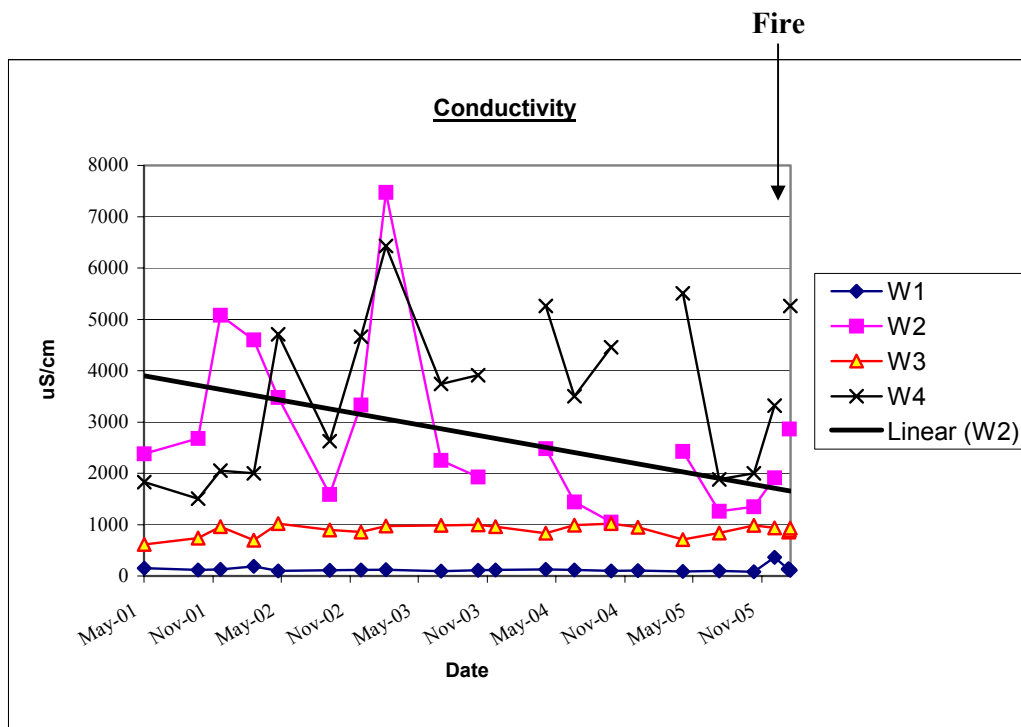


Figure 3 – Conductivity ($\mu\text{S}/\text{cm}$) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

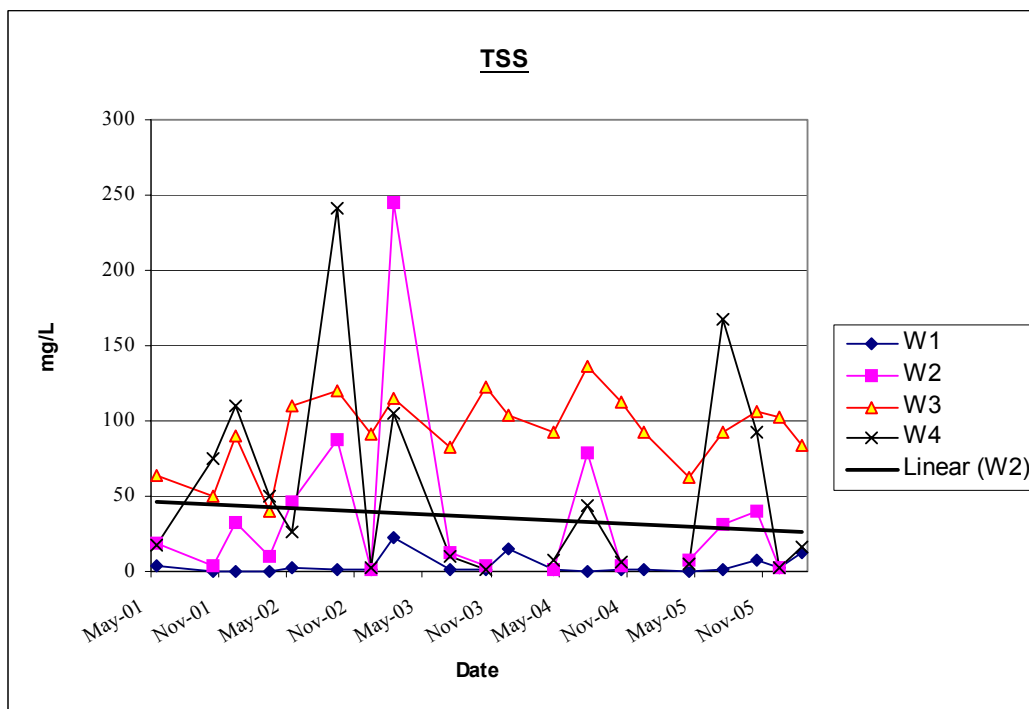


Figure 4 – Total Suspended Solids (mg/L) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

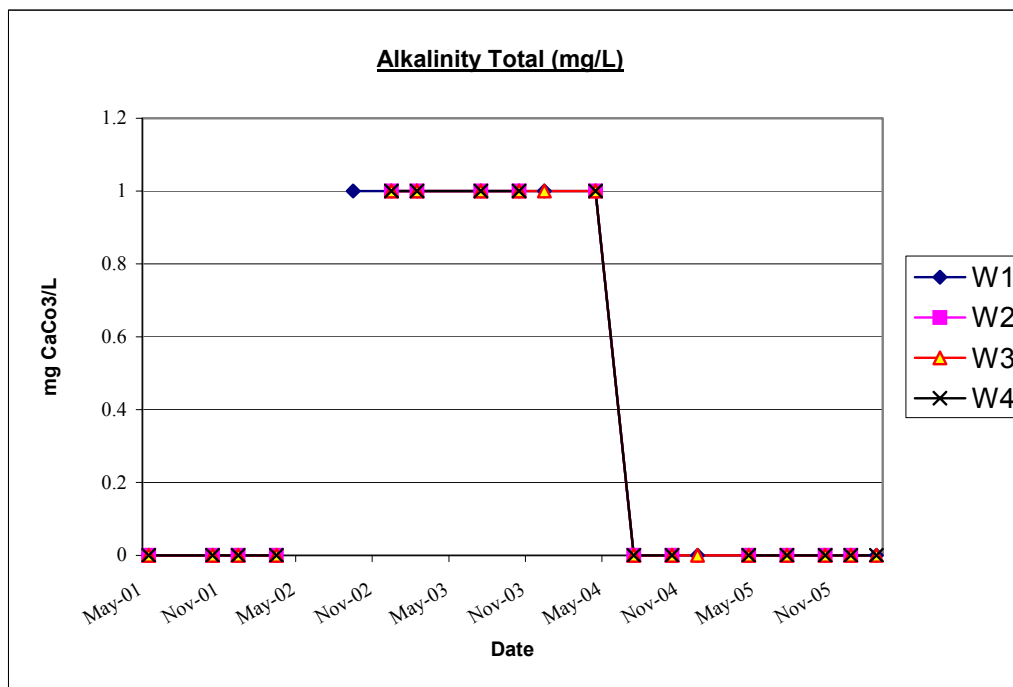


Figure 5 – Alkalinity Total (mg CaCO₃/L) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

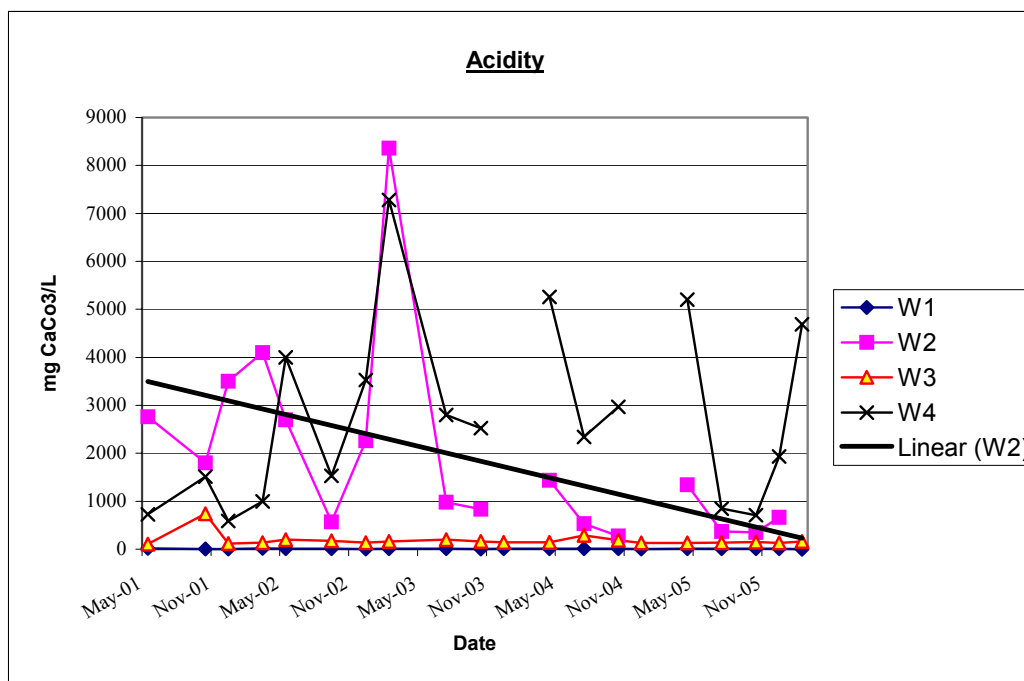


Figure 6 – Acidity (mg CaCO₃/L) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

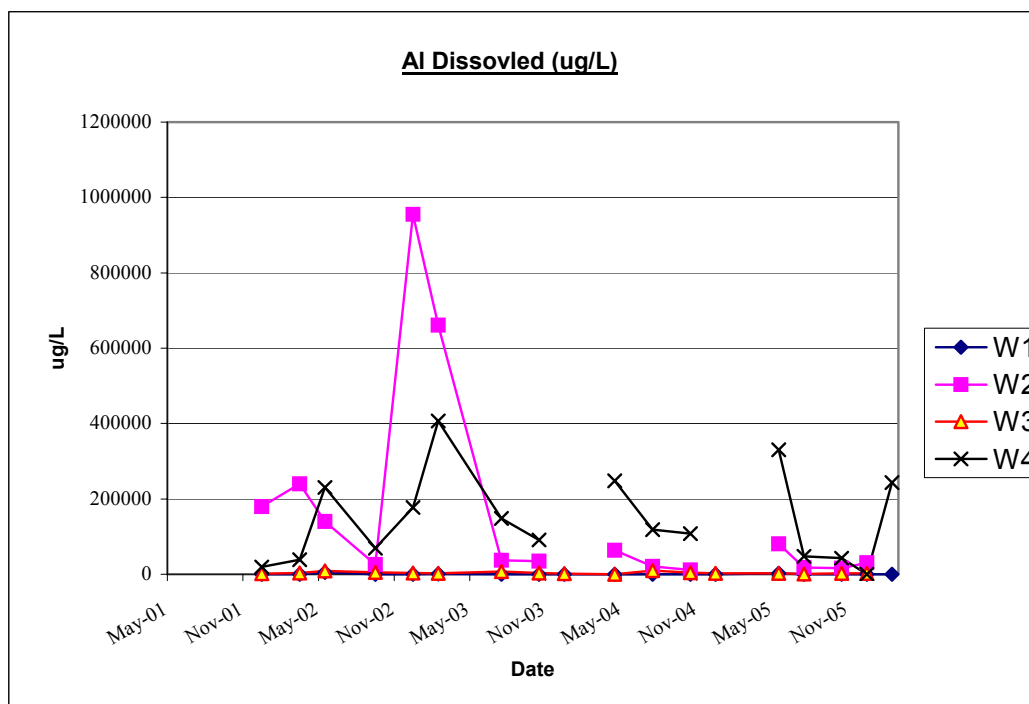


Figure 7 – Al (dissolved $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

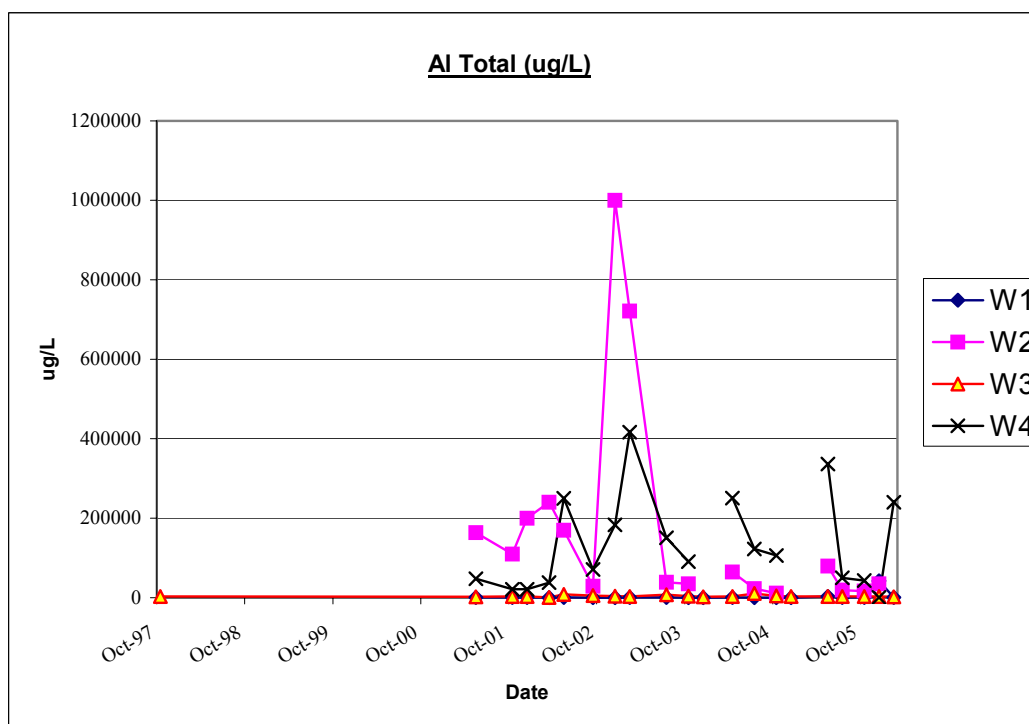


Figure 8 – Al (total $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during October 1997 to February 2006.

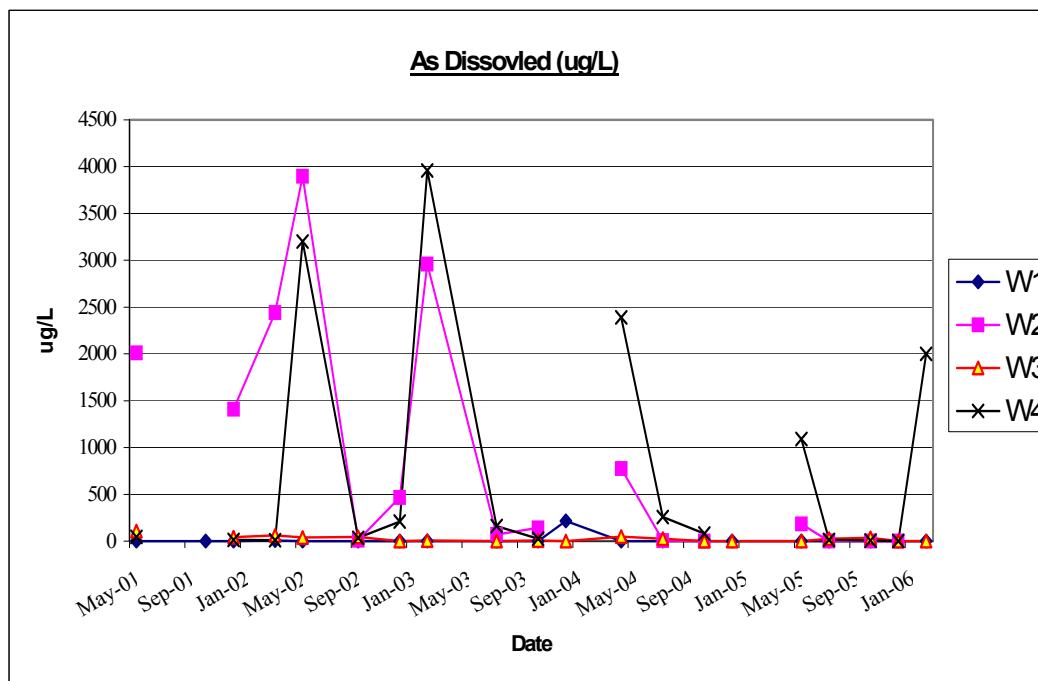


Figure 9 – As (dissolved $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

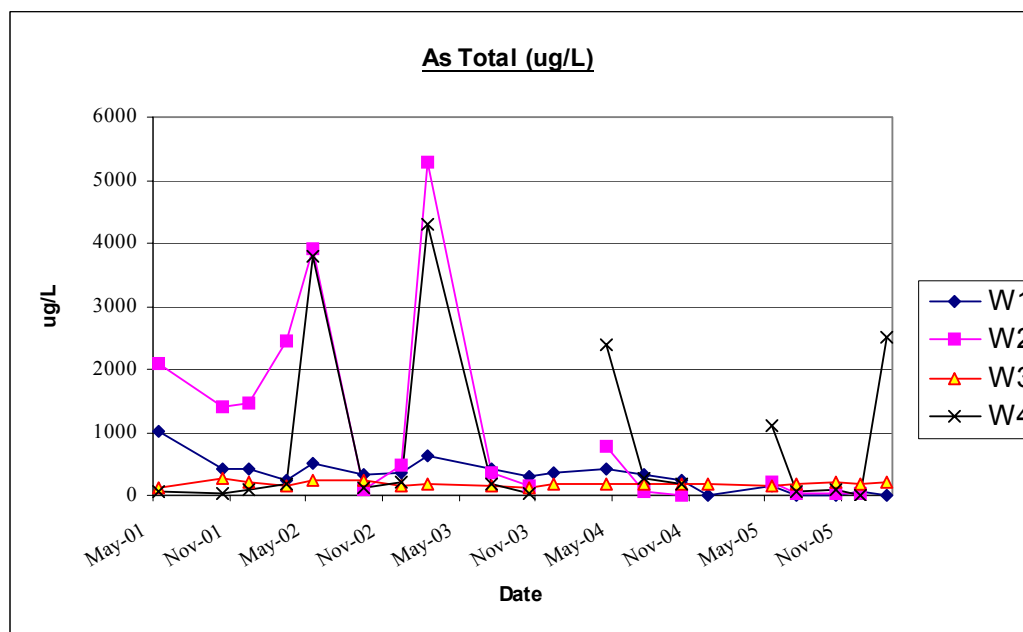


Figure 10 – As (total $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

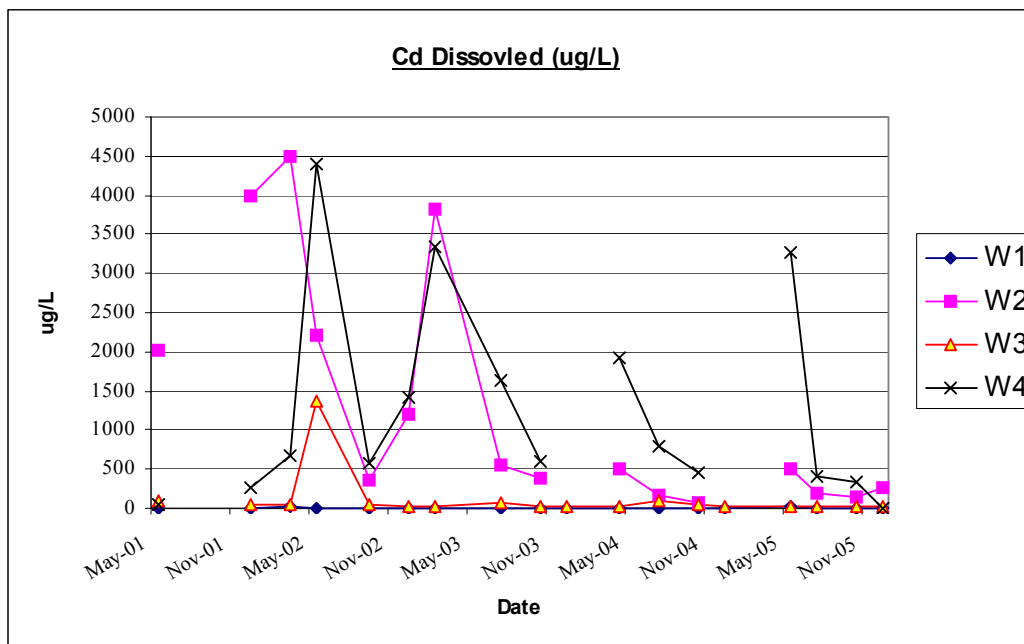


Figure 11 – Cd (dissolved $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

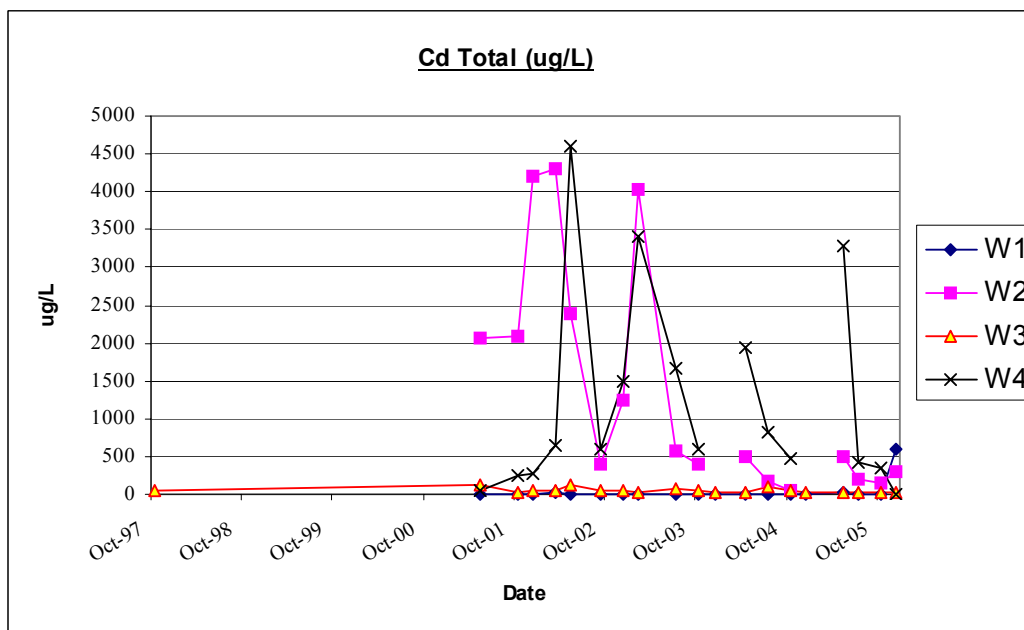


Figure 12 – Cd (total $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during October 1997 to February 2006.

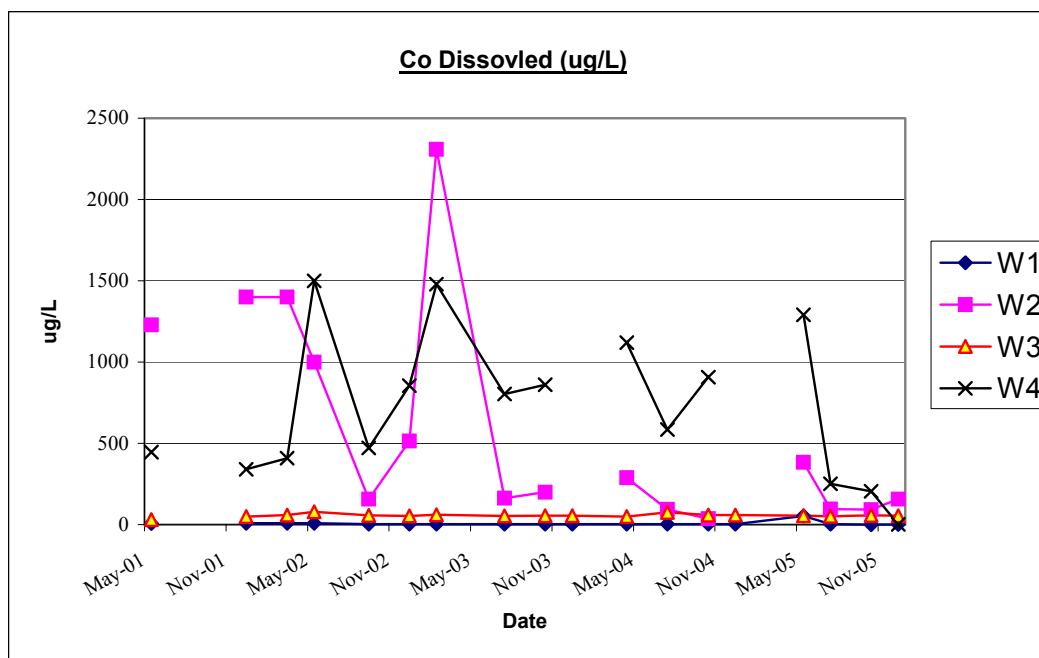


Figure 13 – Co (dissolved $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

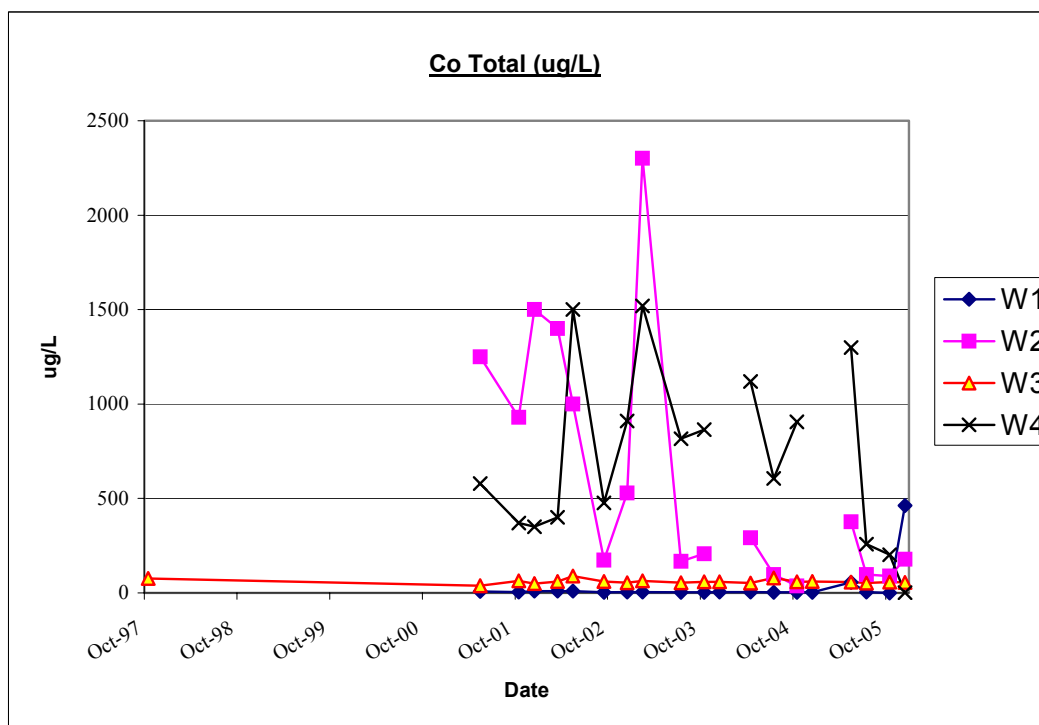


Figure 14 – Co (total $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during October 1997 to February 2006.

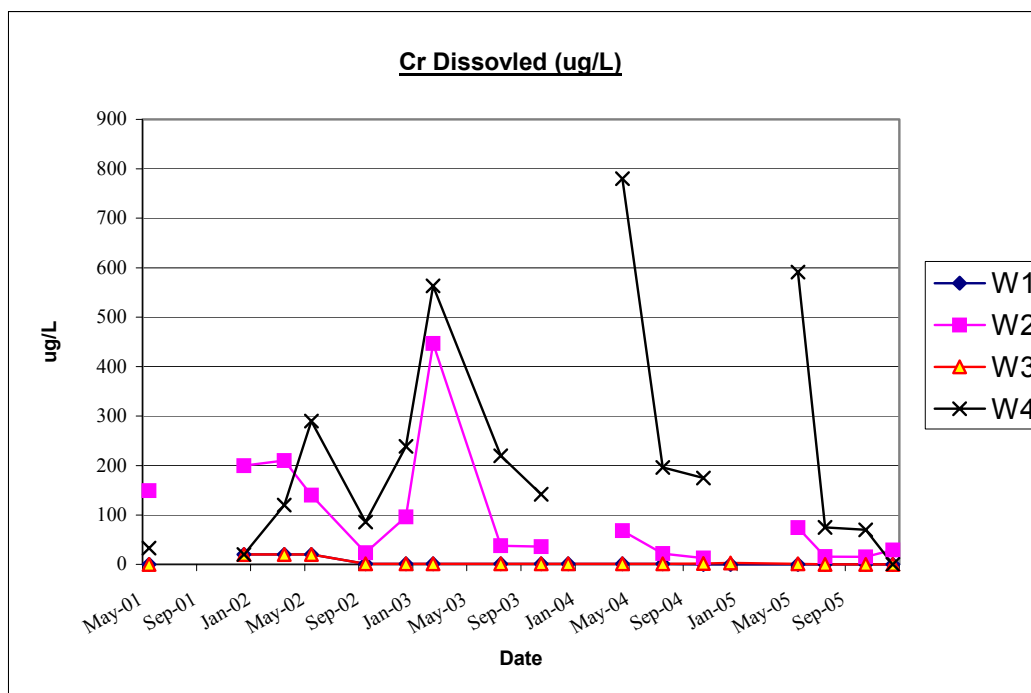


Figure 15 – Cr (dissolved $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

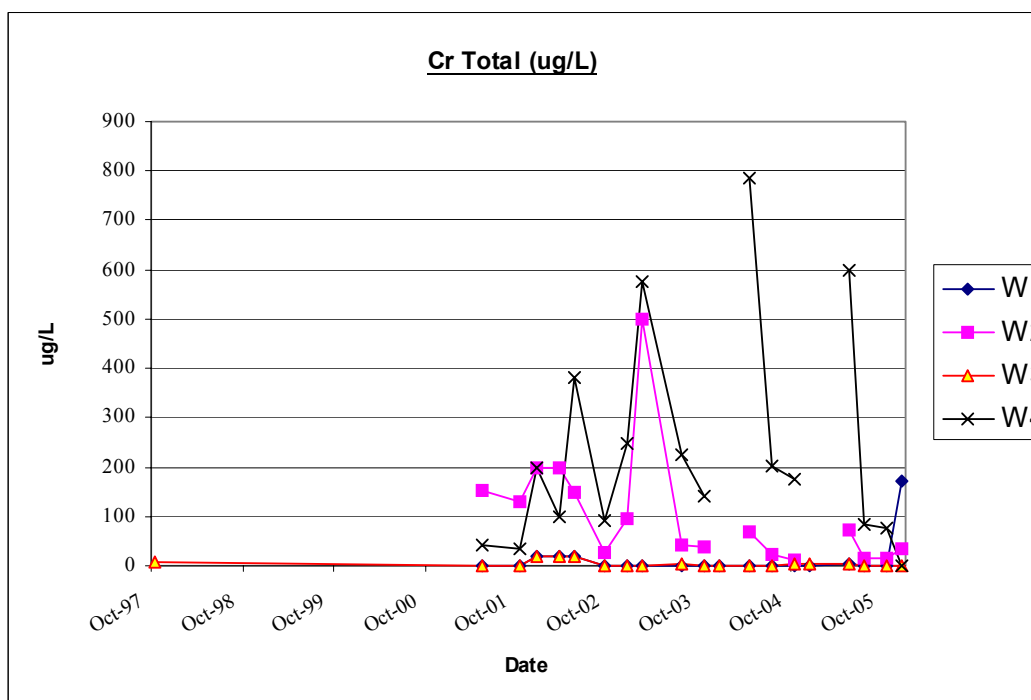


Figure 16 – Cr (total $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during October 1997 to February 2006.

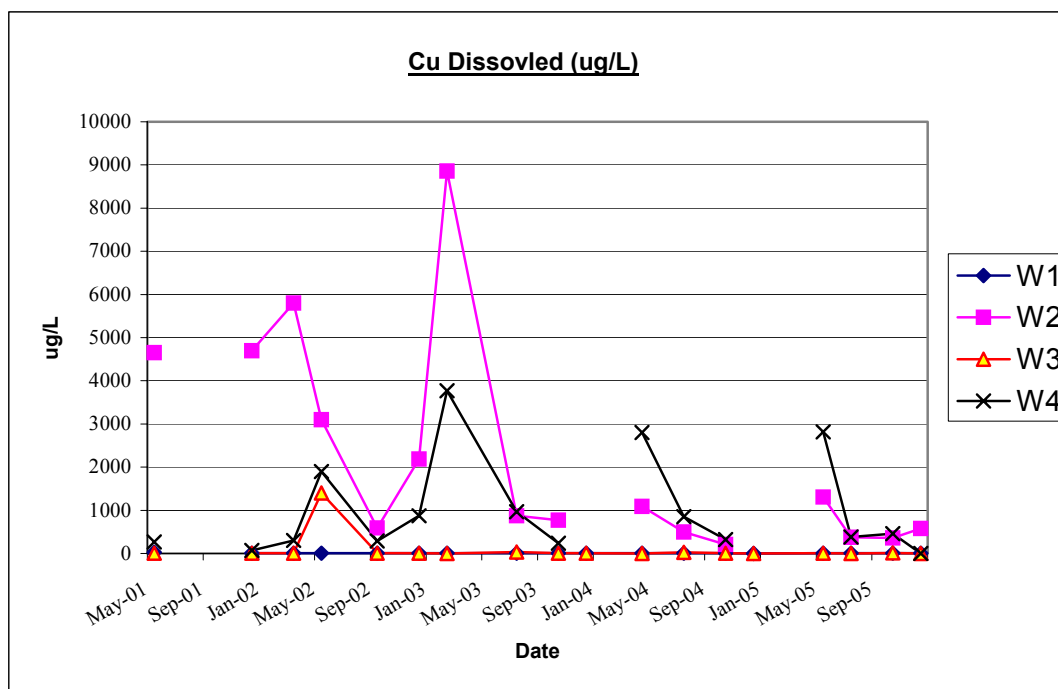


Figure 17 – Cu (dissolved $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

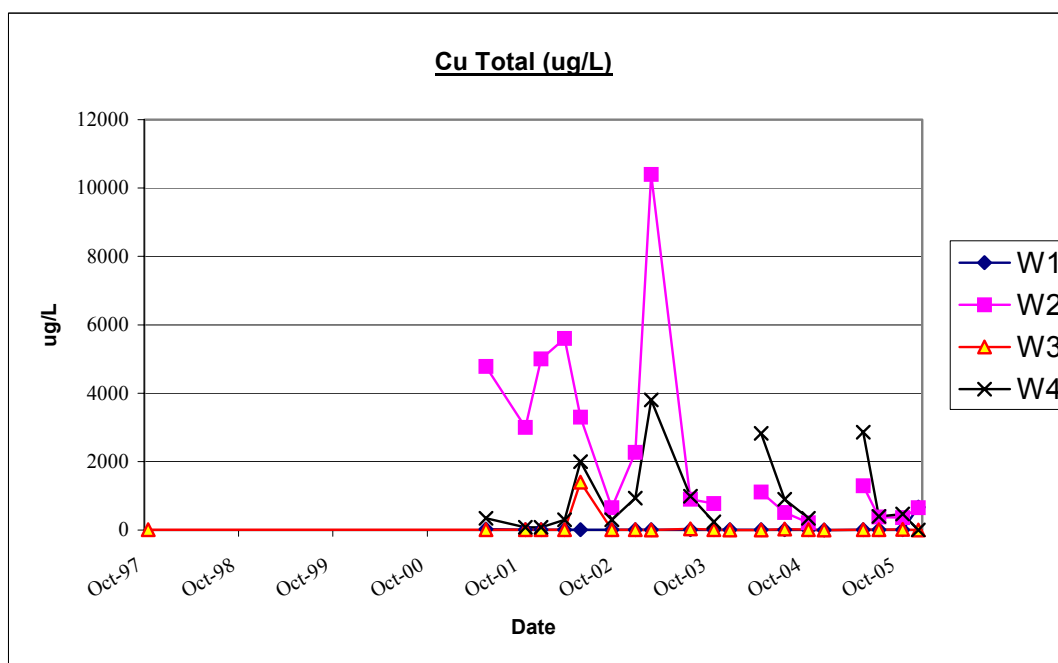


Figure 18 – Cu (total $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during October 1997 to February 2006.

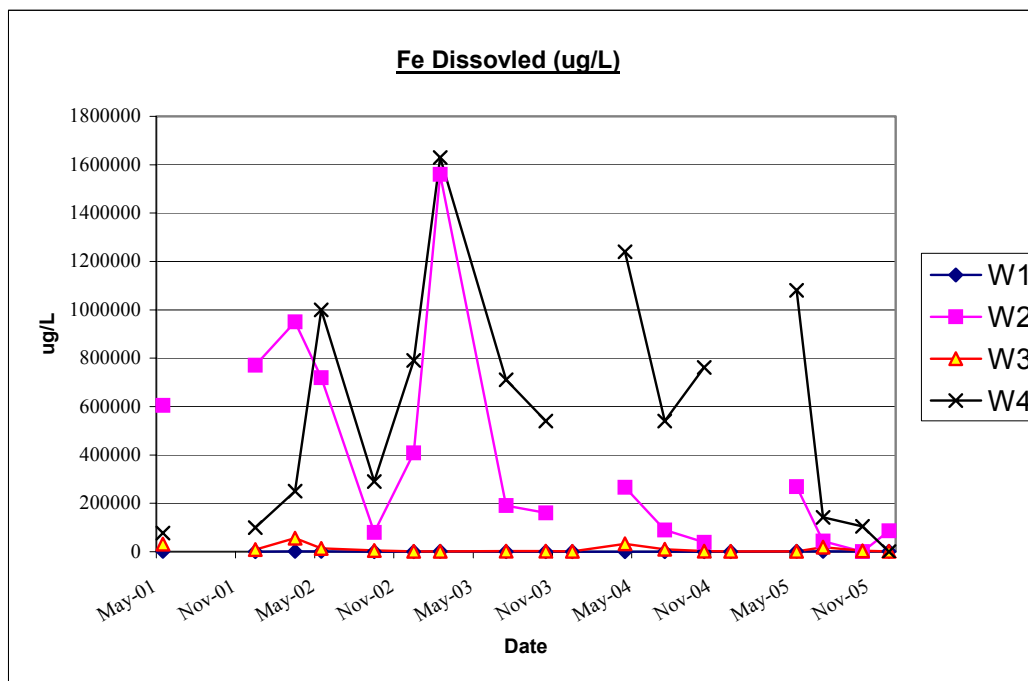


Figure 19 – Fe (dissolved μL) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

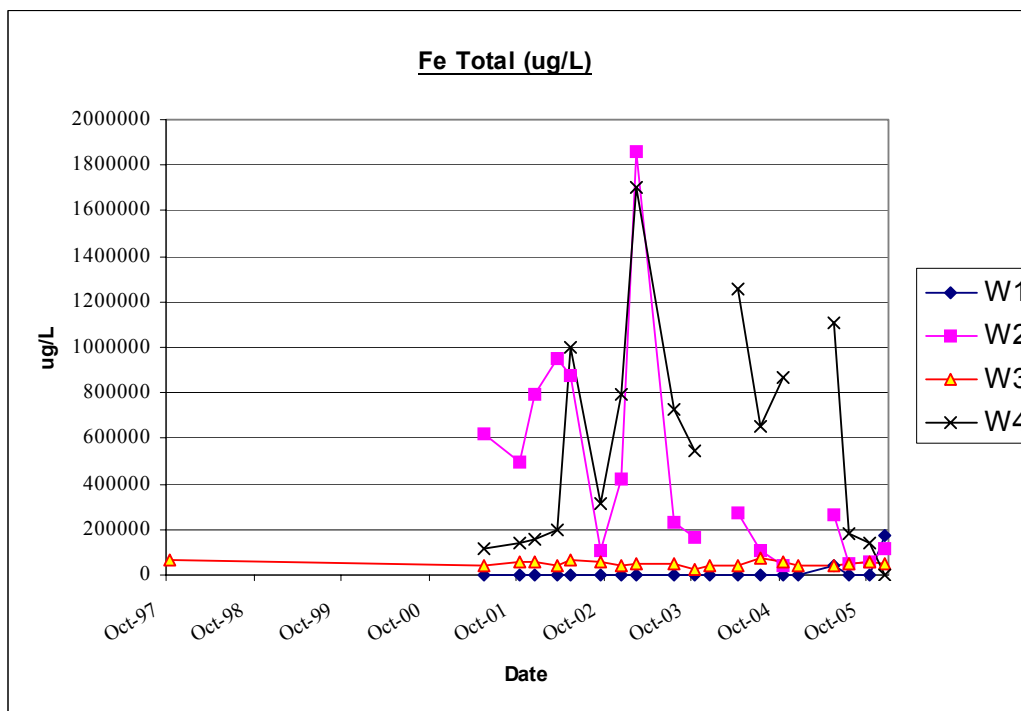


Figure 20 – Fe (total μL) values from sample locations W1, W2, W3 and W4 taken during October 1997 to February 2006.

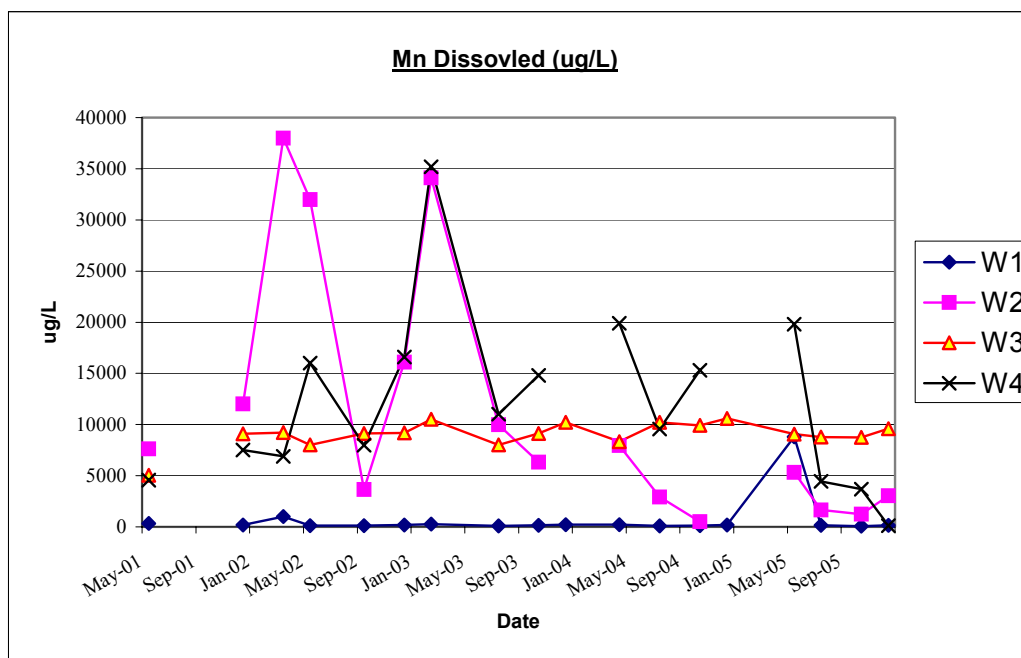


Figure 21 – Mn (dissolved µg/L) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

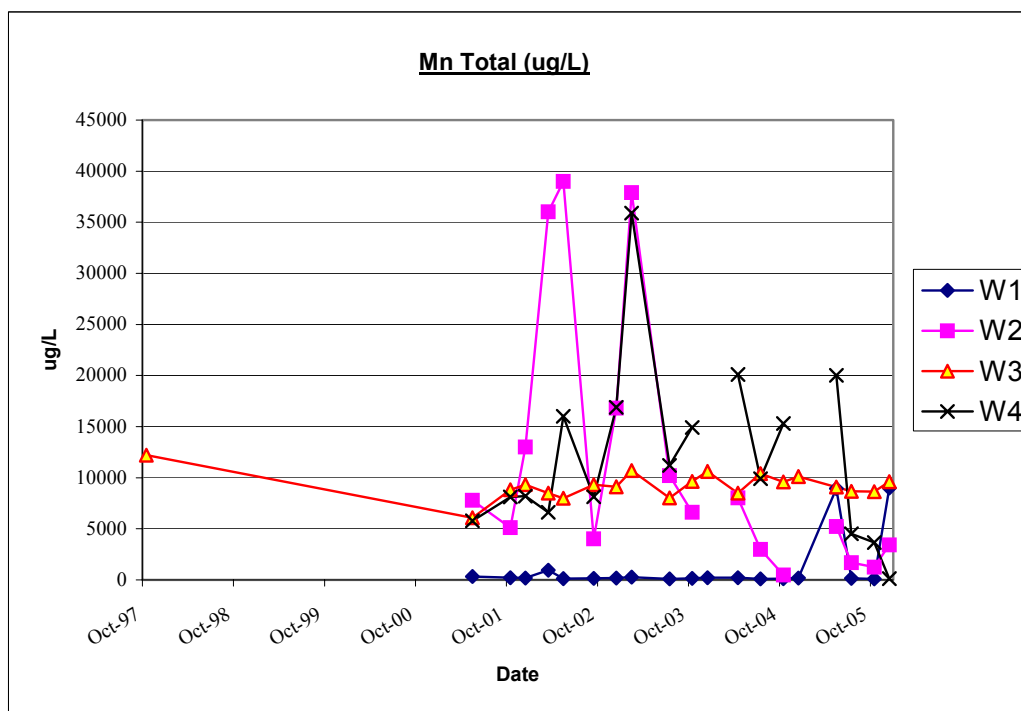


Figure 22 – Mn (total µg/L) values from sample locations W1, W2, W3 and W4 taken during October 1997 to February 2006.

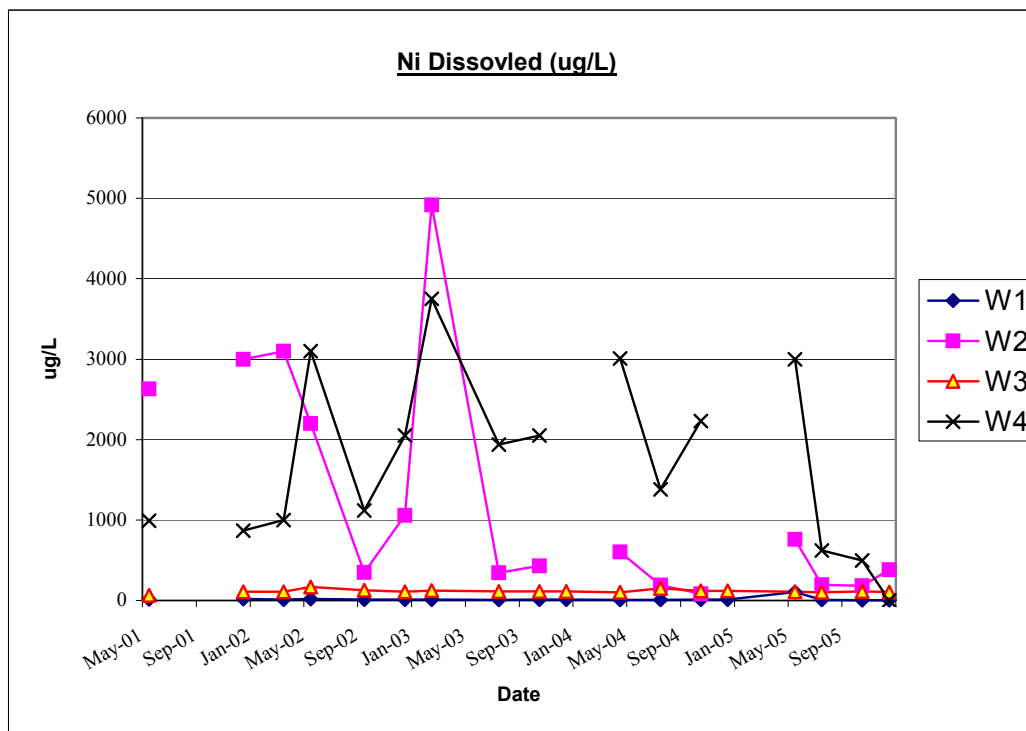


Figure 23 – Ni (dissolved µg/L) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

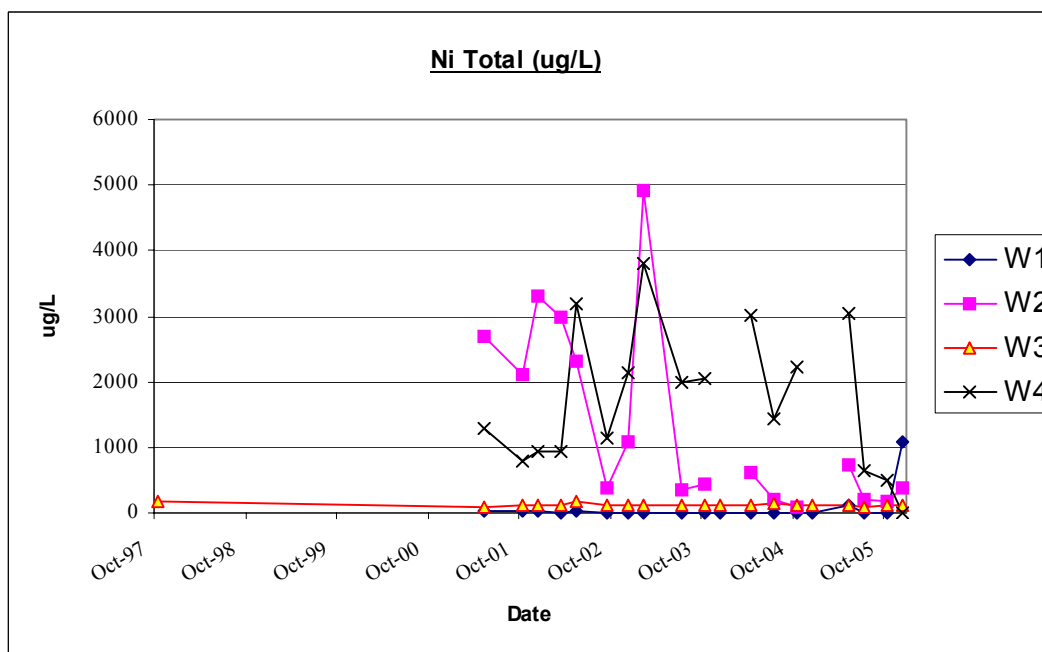


Figure 24 – Ni (total µg/L) values from sample locations W1, W2, W3 and W4 taken during October 1997 to February 2006.

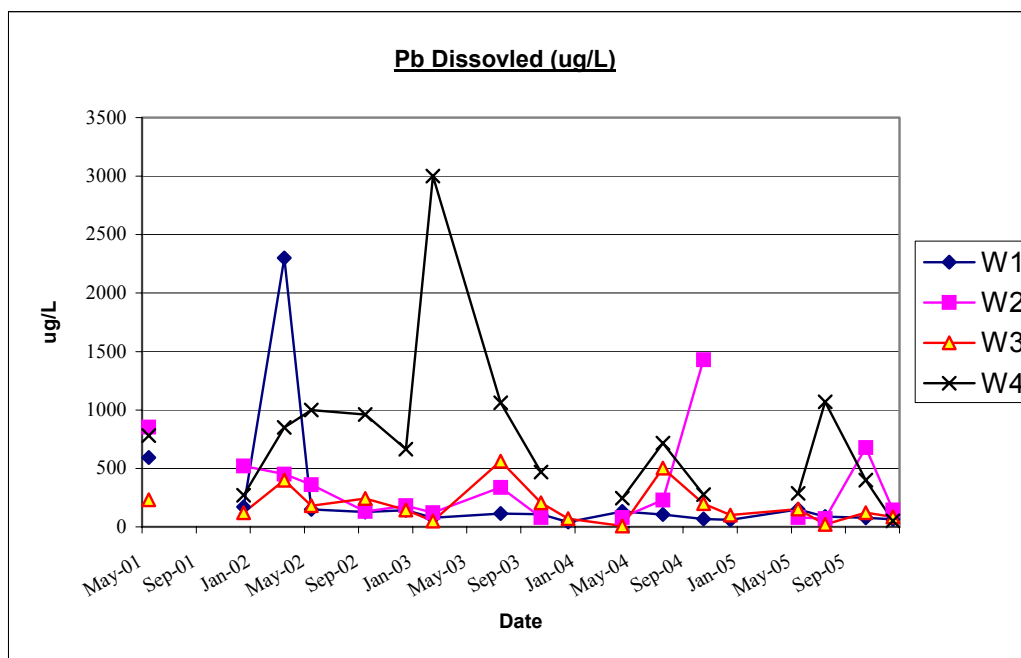


Figure 25 – Pb (dissolved $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

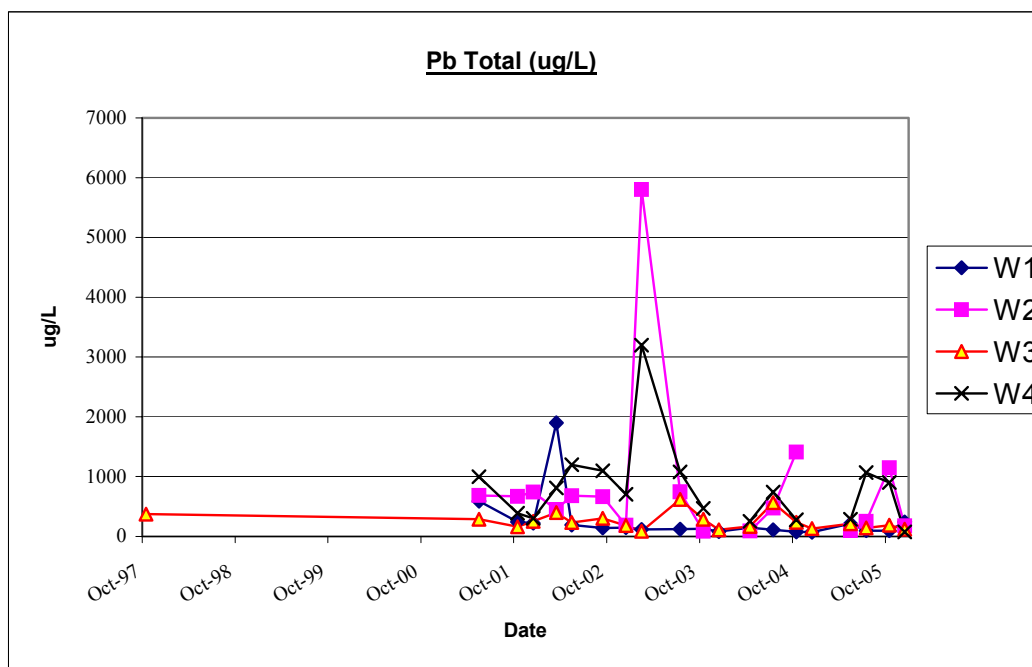


Figure 26 – Pb (total $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during October 1997 to February 2006.

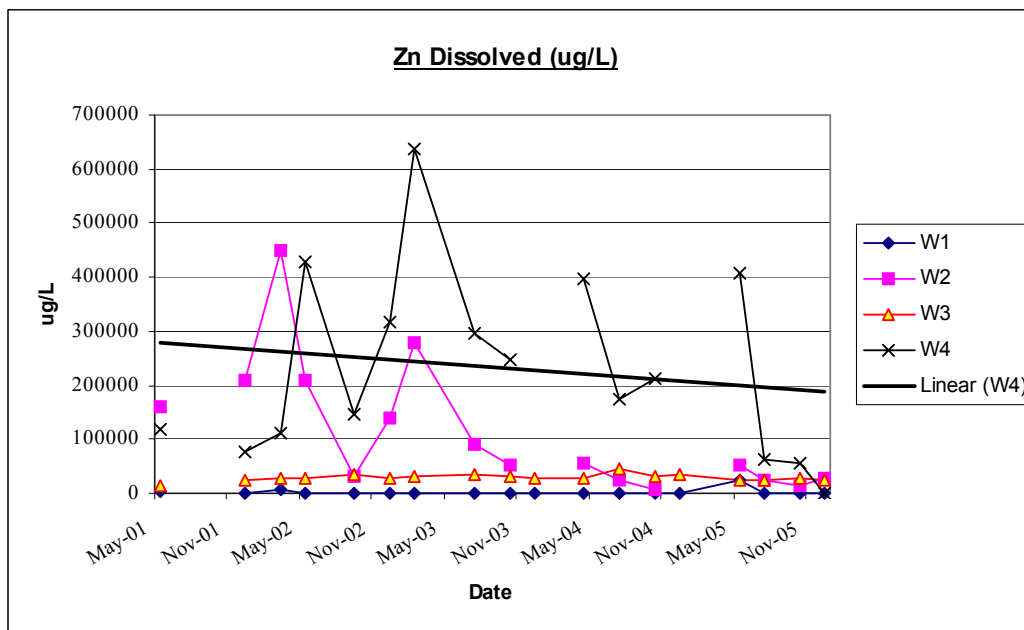


Figure 27 – Zn (dissolved $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during May 2001 to February 2006.

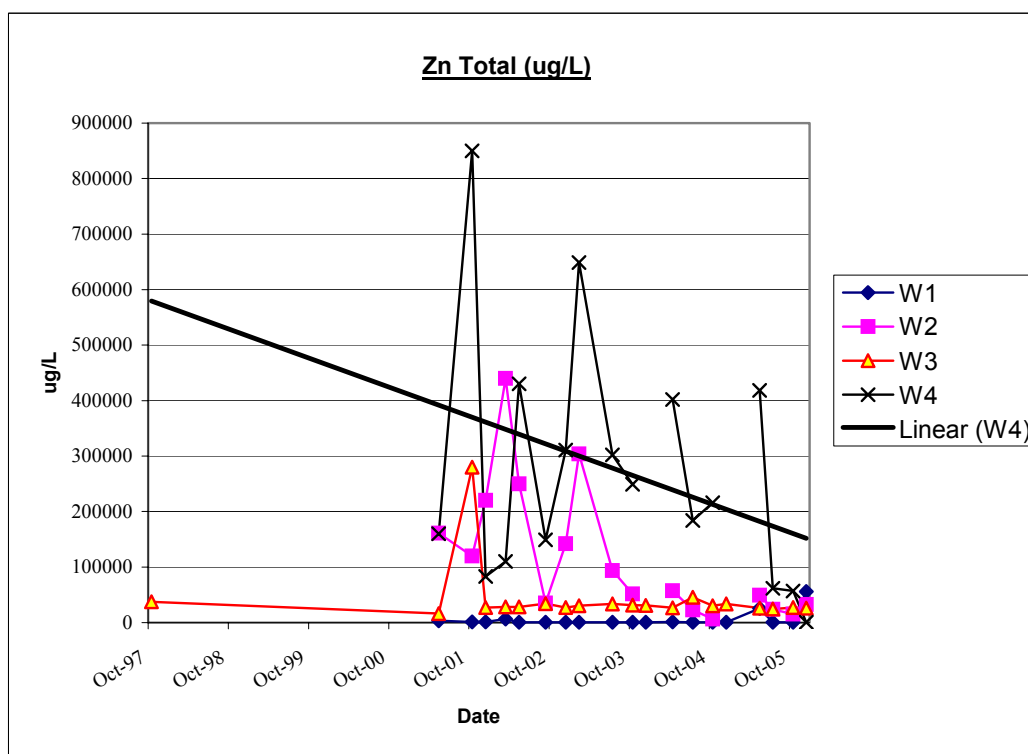


Figure 28 – Zn (total $\mu\text{g/L}$) values from sample locations W1, W2, W3 and W4 taken during October 1997 to February 2006.

Flow Rates

Flow rate at the upstream Comstock creek site was calculated on the 29 January 2006. Three tests were conducted and an average was calculated to be 1.11 L/s. Flow rates at site W1 could not be calculated because of lack of flowing water.

Flow rates at other sites were also calculated (Appendix C). Site W3 had flow rates collected between 27 to 29 January 2006. Site W3 had a flow rate peaking at 8.37 L/s on the 29 January when, as previously stated, W1 was not flowing enough to be tested and site W2 recorded an average flow rate of 0.033 L/s on the same day. This then raises the question of where the water flowing out of the drainage adit (W3) is coming from. This could be a result of other underground water systems flowing into the adit. This could also then explain the higher pH readings at this site (Figure 2).

NAPP and NAG

Below is a summary table of all NAPP and NAG Analysis completed by Oceania Tasmania Pty Ltd. (Appendix G).

Table 2. NAPP, NAG, NAG pH, ANC and %S results from 30 August 2002 to 15 February 2006.

Sample	NAPP	NAG	NAG pH	ANC	%S	Reference
<i>6 October 2000</i>						Appendix G
CWRD (CMD1)	63	50	2.5	11	2.6	
CWRD (CMD2)	56	47	2.6	8.2	2.3	
SWD 1	66	59	2.4	0.6	2.4	
SWD 2	94	81	2.3	1.4	3.3	
<i>30 August 2002</i>						Appendix E
WR01-02	-1.78	1.96	6.1	0.4	0.10	
WR02-02	-0.97	2.69	3.3	0.3	0.29	
WR03-02	-1.08	1.47	6.3	0.4	0.09	
WR04-02	-0.20	1.23	4.9	0.3	0.15	
WR05-02	-6.03	5.64	3.7	0.1	0.13	
WR06-02	0.50	2.2	6.2	0.2	0.03	
WR07-02	-0.37	0.74	6.6	0.2	0.03	
WR08-02	-0.37	0.74	6.7	0.1	0.03	
WR09-02	-4.98	3.18	3.8	0.1	0.08	
WR10-02	-2.15	1.96	5.5	0.1	0.03	
WR11-02	-0.78	3.43	5.8	0.1	0.05	
WR12-02	4.61	102.9	2.4	0.1	4.35	
SYO21 (2-3M)	-88.52	<0.5	8.2	11.6	1.44	
SYO21 (8-11M)	10.48	88.2	2.4	0.4	4.28	
SYO22 (1.3-6.2M)	-2.27	1.47	4.1	0.2	0.12	
SYO22 (6.2-10.8M)	-4.87	<0.5	9.3	1.3	0.03	
SYO22 (13-14M)	13.18	98.98	2.3	0.3	4.04	
<i>30 September 2003</i>						Appendix E
STWRD 1	4.1	33.31	2.1	0.1	2.98	
STWRD 2	1.6	31.29	2.3	0.1	1.11	
Main Lode Comstock Creek (R1)	3.3	2.52	6.7	0.4	0.02	
Main Lode Comstock Creek (R2)	-213.3	<0.5	9.8	42.9	0.08	

Sample	NAPP	NAG	NAG pH	ANC	%S	Reference
<i>20 May 2004</i>						Appendix G
STWRD	7.6	24	2.8		0.95	
<i>2 August 2005</i>						Appendix G
STWRD 1		<0	3.6			
STWRD 2		29.4	2.4			
<i>15 February 2006</i>						Appendix G
SYO33 0-1 (W)	0.19	5.88	3.45	0.14	1250 ppM	
SYO33 3-4 (W)	0.63	6.86	3.30	0.13	2680 ppM	
SYO33 28-29 (W)	-47.1	<0.5	7.81	14.3	2.84	
SYO34 1-2 (W)	-1.09	2.94	3.64	0.16	1770 ppM	
SYO34 12-13 (W)	0.78	<0.5	9.36	5.59	3490 ppM	
SYO41 1-2 (W)	0.53	2.45	3.82	0.18	1680 ppM	
SYO41 2-3 (W)	-0.93	3.43	3.93	0.28	1630 ppM	
STWRD - UPPER	-14.0	3.92	3.63	0.06		
STWRD - LOWER	-4.08	15.7	2.9	0.06		

The analysis was undertaken by SGS, Analabs Pty Ltd and Burnie Research Laboratories.

A classification scheme proposed by Miller (1998) for assessing a rock's propensity to generate ARD (Acid Rock Drainage) was used to analyse the 30 August 2002 samples in the report titled 'Acid Mine Drainage Status of the Comstock Waste Rocks & Swansea Tramway Waste Rock Dump' by Paul Heath (Appendix E). A report titled 'AMD Status of Central Mine Waste Rock Dump at Oceania Comstock Mine' by L.Koehnken was also compiled (Appendix D) to discuss acid mine drainage at the Comstock Mine.

Clay reserve

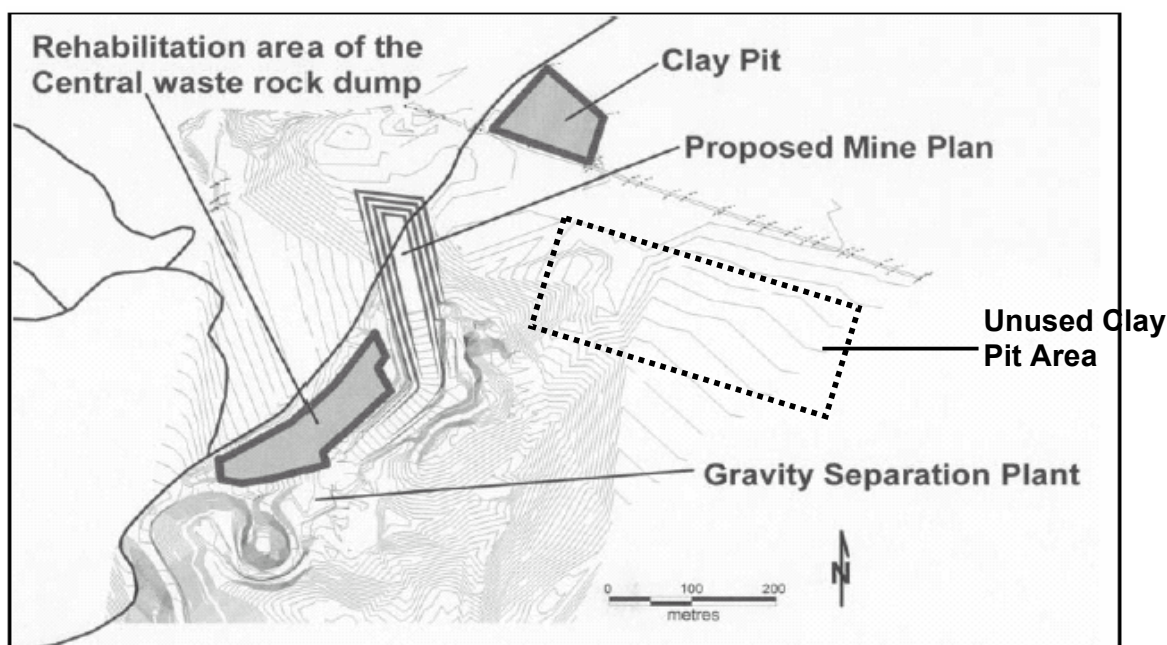


Figure 29 - Survey showing current mine plan along Allison's Pit and the CWRD that has recently been clay capped as part of the permit conditions. 100% of the dump has been capped.

Approximately 55, 800m³ of clay have been moved from a clay pit, which was 10 metres deep, to the Central Waste Rock Dump. This 55, 800m³ of clay was taken from the one clay pit leaving a large area of unused clay (Figure 29) that is of the same depth. The clay reserve at Comstock mine has previously been estimated at being a minimum reserve of between 240, 000m³ and 360, 000m³ as stated in the report ‘Clay Reserve (Permeability and Homogeneity)’ by Mine Geologist Paul Heath. This then shows that there is a large volume of clay in reserve to cap the Swansea Waste Dump (Figure 29).

Rehabilitation

A large amount of rehabilitation has taken place at the Comstock Mine (Appendix F).

- Rehabilitation of the Central Waste Rock Dump (CWRD) has been essentially completed, with some minor top soiling work and ongoing maintenance currently in progress.
- The rehabilitation of the clay borrow area has been completed.
- South Comstock Pit has been backfilled with approximately 20, 000 cubic metres (Appendix H) of compacted talc and gravel and is now free draining at the surface.
- All disturbed topsoil has been carefully stockpiled for future use, and this will continue to be the case in future operations.
- Creation and rehabilitation of dam.

There has been a significant effort expended on rehabilitating over five hectares of disturbed ground between 2000 and 2005, which has been commended by a number of people on the high standard on work. There is little additional rehabilitation work that can be carried out at present without the risk of undoing it when mining operations recommence.

Appendix A

Laboratory Analysis of Water Samples

22 December 2005



ANALYTICAL SERVICES TASMANIA

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Email: ast.sandybay@dpiwe.tas.gov.au

Laboratory Report

Report No: 27327 **Issue No:** 2 **Report Date:** 03-Feb-2006 12:49

Status: Full Report with Changes/Corrections

Site Description: Comstock Mine

Received: 22-Dec-05

Submitted to: Sandy Bay Laboratory

Submitted By: P. Heath

Client Order No:

Report To: P. Heath

Client: Oceania Tasmania

Address: 3/65 Murray Street Hobart TAS 7001

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Page 1 of 3

ANALYTICAL SERVICES TASMANIA

Report No: 27327 Issue No: 2 Report Date: 03-Feb-2006 12:49

		Lab.No.:	84723	84724	84725	84726
		Sample Id.:	W1	W2	W3	W4
Method	Analyte	Units / Sampled On :	21/12/05 11:15	21/12/05 11:35	21/12/05 11:50	21/12/05 12:00
1001-Water	pH		7.2	2.6	3.2	2.5
1002-Water	Conductivity	µS/cm	366	1910	940	3320
1004-Water	TDS	mg/L	74	1480	645	3910
1005-Water	TSS	mg/L	3	3	103	3
1009-Water	Turbidity	NTU	3.5	2.2	230	2.6
1101-Water	Alkalinity Total	mg CaCO3/L	<2	<2	<2	<2
1102-Water	Acidity	mg CaCO3/L	11	663	131	1930
1301-Water	Al Dissolved	µg/L	285	30900	2510	270
	Al Total	µg/L	42700	34900	2840	388
	As Dissolved	µg/L	<5	<5	<5	<5
	As Total	µg/L	68	38	174	<5
	Cd Dissolved	µg/L	<1	257	24	<1
	Cd Total	µg/L	604	288	25	<1
	Co Dissolved	µg/L	2	157	56	2
	Co Total	µg/L	463	178	56	2
	Cr Dissolved	µg/L	<1	29	<1	<1
	Cr Total	µg/L	171	33	<1	<1
	Cu Dissolved	µg/L	4	577	2	2
	Cu Total	µg/L	670	653	3	4
	Fe Dissolved	µg/L	869	86000	849	423
	Fe Total	µg/L	176000	117000	49600	1490
	Mn Dissolved	µg/L	133	3020	9610	132
	Mn Total	µg/L	8990	3420	9410	130
	Ni Dissolved	µg/L	4	382	105	<2
	Ni Total	µg/L	1080	368	106	6
	Pb Dissolved	µg/L	64	145	85	52
	Pb Total	µg/L	243	176	120	74
	Zn Dissolved	µg/L	384	28300	25700	376
	Zn Total	µg/L	56100	32600	25800	368

Results in BOLD are those that have changed or been added since the report was last issued

27 October 2005



ANALYTICAL SERVICES TASMANIA

Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania

Sandy Bay Tasmania 7005

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Laboratory Report

Report No: 26694

Issue No: 1

Report Date: 15-Nov-2005 17:21

Status: Full Report

Site Description: Comstock Mine

Received: 28-Oct-05

Submitted to: Sandy Bay Laboratory

Submitted By: P. Heath

Client Order No: 568

Report To: P. Heath

Client: Oceania Tasmania

Address: 3/65 Murray Street Hobart TAS 7001

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Page 1 of 3

ANALYTICAL SERVICES TASMANIA

Report No: 26694 **Issue No:** 1 **Report Date:** 15-Nov-2005 17:21

Method	Analyte	Lab.No.: Sample Id.: Units / Sampled On :	81629	81630	81631	81632
			W1	W2	W3	W4
			27/10/05 11:42	27/10/05 11:53	27/10/05 12:25	27/10/05 12:15
1001-Water	pH		4.3	2.7	3.1	2.6
1002-Water	Conductivity	µS/cm	83	1350	988	2000
1004-Water	TDS	mg/L	56	476	549	1220
1005-Water	TSS	mg/L	7	40	106	93
1009-Water	Turbidity	NTU	6.2	48	230	90
1101-Water	Alkalinity Total	mg CaCO ₃ /L	<2	<2	<2	<2
1102-Water	Acidity	mg CaCO ₃ /L	11	349	150	712
1301-Water	Al Dissolved	µg/L	354	16400	2300	42800
	Al Total	µg/L	480	17000	2870	43200
	As Dissolved	µg/L	<5	<5	35	7
	As Total	µg/L	<5	34	217	86
	Cd Dissolved	µg/L	<1	148	28	339
	Cd Total	µg/L	<1	144	27	337
	Co Dissolved	µg/L	1	92	57	205
	Co Total	µg/L	2	89	57	202
	Cr Dissolved	µg/L	<1	15	<1	70
	Cr Total	µg/L	<1	17	1	77
	Cu Dissolved	µg/L	4	364	15	464
	Cu Total	µg/L	7	367	16	466
	Fe Dissolved	µg/L	698	39800	3200	104000
	Fe Total	µg/L	1270	57600	58600	144000
	Mn Dissolved	µg/L	70	1240	8750	3680
	Mn Total	µg/L	74	1240	8630	3650
	Ni Dissolved	µg/L	3	185	111	498
	Ni Total	µg/L	3	186	109	490
	Pb Dissolved	µg/L	77	678	122	399
	Pb Total	µg/L	98	1150	188	903
	Zn Dissolved	µg/L	291	15300	26900	56700
	Zn Total	µg/L	295	15100	27000	56800

27 July 2005



ANALYTICAL SERVICES TASMANIA

Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania

Sandy Bay Tasmania 7005

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Laboratory Report

Report No: 25754

Issue No: 1

Report Date 27-Jul-2005 16:51

Status: Full Report

Site Description: Comstock Mine

Received: 13-Jul-05

Submitted to: Sandy Bay Laboratory

Submitted By: P. Heath

Client Order No:

Report To: P. Heath

Client: Oceania Tasmania

Address: 3/65 Murray Street Hobart TAS 7001

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Page 1 of 3

ANALYTICAL SERVICES TASMANIA

Report No: 25754 **Issue No:** 1 **Report Date:** 27-Jul-2005 16:51

Method	Analyte	Units / Sampled On :	Lab.No.: 76935	76936	76937	76938	76939
			Sample Id.: W1	W2	W3	W4	Clay Pit Dam
			11/07/05 04:15	11/07/05 04:25	11/07/05 04:30	11/07/05 04:40	11/07/05 03:50
1001-Water	pH		4.9	2.8	3.4	2.7	3.6
1002-Water	Conductivity	µS/cm	97	1280	837	1880	349
1004-Water	TDS	mg/L	59	742	529	1500	171
1005-Water	TSS	mg/L	1	31	92	167	<1
1009-Water	Turbidity	NTU	2.4	44	270	220	0.4
1101-Water	Alkalinity Total	mg CaCO ₃ /L	<2	<2	<2	<2	<2
1102-Water	Acidity	mg CaCO ₃ /L	13	371	136	847	62
1301-Water	Al Dissolved	µg/L	368	17900	835	47300	5240
	Al Total	µg/L	437	18600	2710	49900	5370
	As Dissolved	µg/L	<5	<5	26	12	<5
	As Total	µg/L	<5	23	177	70	<5
	Cd Dissolved	µg/L	2	194	21	407	4
	Cd Total	µg/L	2	198	22	414	4
	Co Dissolved	µg/L	3	97	51	252	119
	Co Total	µg/L	4	96	52	258	123
	Cr Dissolved	µg/L	<1	16	<1	75	<1
	Cr Total	µg/L	<1	17	1	83	1
	Cu Dissolved	µg/L	5	374	3	380	41
	Cu Total	µg/L	6	382	5	393	43
	Fe Dissolved	µg/L	731	43600	18500	142000	1570
	Fe Total	µg/L	1050	49300	48800	178000	1570
	Mn Dissolved	µg/L	146	1650	8770	4440	624
	Mn Total	µg/L	150	1670	8660	4520	637
	Ni Dissolved	µg/L	9	196	100	620	271
	Ni Total	µg/L	10	202	98	631	278
	Pb Dissolved	µg/L	88	70	20	524	37
	Pb Total	µg/L	98	250	143	1070	38
	Zn Dissolved	µg/L	637	23400	23800	61300	4400
	Zn Total	µg/L	654	23600	24400	61900	4550

10 May 2005

10/05/2005 4:30 PM FROM: Fax TO: 6231 9338 PAGE: 001 OF 001



ANALYTICAL SERVICES TASMANIA

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c/- Chemistry Department University of Tasmania

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Laboratory Report

Report No: 25001

Issue No: 1

Report Date 10-May-2005 16:26

Status: Full Report

Site Description:

Received: 21-Apr-05

Submitted to: Sandy Bay Laboratory

Submitted By: P. Heath

Client Order No:

Report To: P. Heath

Client: Oceania Tasmania

Address: 3/65 Murray Street Hobart TAS 7001

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Page 1 of 3

Oceania Tasmania Pty Ltd –Environmental Monitoring Report

10/05/2005 4:32 PM FROM: Fax TO: 6231 9338 PAGE: 001 OF 001

ANALYTICAL SERVICES TASMANIA

Report No: 25001 Issue No: 1 Report Date: 10-May-2005 16:26

Method	Analyte	Lab.No.: Sample Id.: Units / Sampled On :	73176	73177	73178	73179
			W1	W2	W3	W4
1001-Water	pH	20/04/05 07:44	4.8	2.6	5.3	2.5
1002-Water	Conductivity	20/04/05 07:52	90	2430	709	5510
1004-Water	TDS	20/04/05 08:07	87	3340	605	12800
1005-Water	TSS	20/04/05 08:15	<1	7	63	5
1009-Water	Turbidity		1.9	17	280	2.2
1101-Water	Alkalinity Total		<2	<2	<2	<2
1102-Water	Acidity		15	1340	132	5200
1301-Water	Al Dissolved		2500	80600	2590	330000
	Al Total		3030	79200	3100	336000
	As Dissolved		<5	183	<5	1090
	As Total		159	211	164	1110
	Cd Dissolved		25	500	25	3270
	Cd Total		26	493	26	3280
	Co Dissolved		54	384	56	1290
	Co Total		56	377	57	1300
	Cr Dissolved		<1	74	1	591
	Cr Total		2	73	2	597
	Cu Dissolved		6	1310	5	2820
	Cu Total		7	1290	7	2860
	Fe Dissolved		639	269000	650	1080000
	Fe Total		39600	267000	41200	1110000
	Mn Dissolved		8810	5320	9080	19800
	Mn Total		8920	5230	9070	20000
	Ni Dissolved		105	759	108	3000
	Ni Total		106	745	108	3030
	Pb Dissolved		149	81	151	278
	Pb Total		209	95	213	285
	Zn Dissolved		24900	50800	25800	409000
	Zn Total		25300	49600	25800	418000

22 December 2004

22-Dec-2004 16:34

No. 2053 P. 2/3



ANALYTICAL SERVICES TASMANIA

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c/- Chemistry Department University of Tasmania

Sandy Bay Tasmania 7005

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NATA Accreditation
Number: 5589

Laboratory Report

Report No: 23958 **Issue No:** 1 **Final Report**
Submitted By: P. Hcath
Client: Oceania Tasmania
Site Description:
Received: 08-Dec-04 **Client Order No:**
Report Date: 22-Dec-2004 15:41
Report To: P. Hcath
Address: 3/65 Murray Street Hobart TAS 7001

Test Method(s) :

Test Date

Chemical Testing

1001-Water:	pH in Water by APHA Method 4500-H	14-Dec-2004
1002-Water:	Conductivity by APHA Method 2510	14-Dec-2004
1004-Water:	Solids, Total Dissolved by APHA Method 2540C	20-Dec-2004
1005-Water:	Solids, Total Suspended by APHA Method 2540D	16-Dec-2004
1101-Water:	Alkalinity by APHA Method 2320/4500-CO2	20-Dec-2004
1102-Water:	Acidity by APHA Method 2310	21-Dec-2004
1301-Water:	Metals in Water by APHA Method 3030/3120	15-Dec-2004



NATA Accreditation
Number: 5589

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Mike Johnson
Chemical Testing

22-Dec-2004 16:34

No. 2053 P. 3/3



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 c/- Chemistry Department University of Tasmania
 Sandy Bay Tasmania 7005




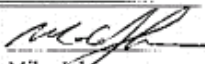


Report No: 23958

Report Date: 22-Dec-2004 15:41

Method	Analyte	Units / Sampled On :	Lab.No.: Sample Id.: 66639 W 1 08-12-04 03:43	66640 W 3 08-12-04 03:27	66641 W 3 AUSTRAL CREEK 08-12-04
1001-Water	pH		5.0	3.3	6.6
1002-Water	Conductivity	µS/cm	108	951	180
1004-Water	TDS	mg/L	65	625	118
1005-Water	TSS	mg/L	1	93	8
1101-Water	Alkalinity Total	mg CaCO3/L	<1	<1	36
1102-Water	Acidity	mg CaCO3/L	9	132	6
1301-Water	Al Dissolved	µg/L	216	2570	76
	Al Total	µg/L	273	3010	123
	As Dissolved	µg/L	<5	<5	<5
	As Total	µg/L	<5	169	8
	Cd Dissolved	µg/L	1	28	4
	Cd Total	µg/L	1	29	4
	Co Dissolved	µg/L	3	59	4
	Co Total	µg/L	3	60	4
	Cr Dissolved	µg/L	<1	3	<1
	Cr Total	µg/L	<1	3	<1
	Cu Dissolved	µg/L	2	3	<1
	Cu Total	µg/L	4	4	1
	Fe Dissolved	µg/L	273	1420	404
	Fe Total	µg/L	878	44200	701
	Mn Dissolved	µg/L	187	10600	791
	Mn Total	µg/L	189	10100	778
	Ni Dissolved	µg/L	10	118	11
	Ni Total	µg/L	10	115	11
	Pb Dissolved	µg/L	59	100	20
	Pb Total	µg/L	72	131	38
	Zn Dissolved	µg/L	506	34700	1850
	Zn Total	µg/L	504	33900	1870

12 October 2005

29-Oct-2004 16:37		No. 0605 P. 2	
			
ANALYTICAL SERVICES TASMANIA Sandy Bay Laboratory c/- Chemistry Department University of Tasmania Sandy Bay Tasmania 7005 Telephone: (03) 6226 7175 Fax: (03) 6226 7825 Email: ast.sandybay@dpiwe.tas.gov.au		NATA Accreditation Number: 5589	
Laboratory Report			
Report No:	23464	Issue No:	1
Submitted By:	P. Heath		
Client:	Oceania Tasmania		
Site Description:			
Received:	13-Oct-04	Client Order No:	765
Report Date:	29-Oct-2004 15:53		
Report To:	P. Heath		
Address:	3/65 Murray Street Hobart TAS 7001		
Test Method(s) :		Test Date	
<u>Chemical Testing</u>			
1001-Water:	pH in Water by APHA Method 4500-H	20-Oct-2004	
1002-Water:	Conductivity by APHA Method 2510	20-Oct-2004	
1005-Water:	Solids, Total Suspended by APHA Method 2540D	25-Oct-2004	
1101-Water:	Alkalinity by APHA Method 2320/4500-CO2	26-Oct-2004	
1102-Water:	Acidity by APHA Method 2310	25-Oct-2004	
1301-Water:	Metals in Water by APHA Method 3030/3120	19-Oct-2004	
		 Mike Johnson Chemical Testing	
NATA Accreditation Number: 5589		The tests, calibrations or measurements covered by this document have been performed in accordance with NATA requirements which include the requirements of ISO/IEC 17025 and are traceable to national standards of measurement. This document shall not be reproduced, except in full. Samples analysed as received.	
Page 1 of 2			

29-Oct-2004 16:37



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ANALYTICAL SERVICES TASMANIA

Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania

Sandy Bay Tasmania 7005

No. 0605 P. 3



NATA Accreditation
Number: 5589

Report No: 23464

Report Date: 29-Oct-2004 15:53

Method	Analyte	Lab.No.: Sample Id.: Units / Sampled On :	64102	64103	64104	64105
			W1	W2	W3	W4
			12/10/04 09:29	12/10/04 10:30	12/10/04 10:18	12/10/04 10:00
1001-Water	pH		5.0	2.8	3.1	2.5
1002-Water	Conductivity	µS/cm	102	1050	1020	4460
1005-Water	TSS	mg/L	1	4	112	6
1101-Water	Alkalinity Total	mg CaCO ₃ /L	<1	<1	<1	<1
1102-Water	Acidity	mg CaCO ₃ /L	10	278	190	2970
1301-Water	Al Dissolved	µg/L	228	11300	3700	108000
	Al Total	µg/L	277	11200	4360	106000
	As Dissolved	µg/L	<5	10	<5	82
	As Total	µg/L	<5	10	192	184
	Cd Dissolved	µg/L	1	63	42	456
	Cd Total	µg/L	2	62	43	486
	Co Dissolved	µg/L	3	37	59	907
	Co Total	µg/L	3	37	59	906
	Cr Dissolved	µg/L	<1	13	2	175
	Cr Total	µg/L	<1	13	3	177
	Cu Dissolved	µg/L	5	213	7	322
	Cu Total	µg/L	5	212	8	343
	Fe Dissolved	µg/L	340	38300	2810	762000
	Fe Total	µg/L	630	37900	61800	884000
	Mn Dissolved	µg/L	127	493	9930	15300
	Mn Total	µg/L	129	484	9590	15300
	Ni Dissolved	µg/L	12	81	119	2230
	Ni Total	µg/L	13	79	116	2230
	Pb Dissolved	µg/L	68	1430	198	275
	Pb Total	µg/L	78	1410	235	277
	Zn Dissolved	µg/L	467	6610	30600	211000
	Zn Total	µg/L	477	6510	30300	216000



6 July 2004

	ANALYTICAL SERVICES TASMANIA Sandy Bay Laboratory c/- Chemistry Department University of Tasmania Sandy Bay Tasmania 7005 Telephone: (03) 6226 7175 Fax: (03) 6226 7825 Email: ast.sandybay@dpiwe.tas.gov.au	 NATA Accreditation Number: 5589
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Laboratory Report

Report No:	22753	Issue No:	1	Final Report
Submitted By:	P. Heath			
Client:	Oceania Tasmania			
Site Description:	Comstock Mine			
Received:	06-Jul-04	Client Order No:		
Report Date:	21-Jul-2004 14:21			
Report To:	Shane Bartel			
Address:	3/65 Murray Street Hobart TAS 7001			

Test Method(s) :		Test Date
Chemical Testing		
1001-Water:	pH in Water by APHA Method 4500-H	07-Jul-2004
1002-Water:	Conductivity by APHA Method 2510	07-Jul-2004
1004-Water:	Solids, Total Dissolved by APHA Method 2540C	12-Jul-2004
1005-Water:	Solids, Total Suspended by APHA Method 2540D	09-Jul-2004
1009-Water:	Turbidity by APHA Method 2130B	18-Jul-2004
1101-Water:	Alkalinity by APHA Method 2320/4500-CO2	12-Jul-2004
1102-Water:	Acidity by APHA Method 2310	14-Jul-2004
1301-Water:	Metals in Water by APHA Method 3030/3120	12-Jul-2004

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Page 1 of 2



ANALYTICAL SERVICES TASMANIA
Sandy Bay Laboratory

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Sandy Bay Tasmania 7005



NATA Accreditation
Number: 5589

Report No: 22753


Report Date: 21-Jul-2004 14:21

		Lab.No.:	60602	60603	60604	60605
		Sample Id.:	W1	W2	W3	W4
1001-Water	pH		4.6	2.8	3.9	2.7
1002-Water	Conductivity	µS/cm	117	1440	990	3500
1004-Water	TDS	mg/L	72	733	751	4200
1005-Water	TSS	mg/L	<1	79	136	44
1009-Water	Turbidity	NTU	1.2	100	350	13
1101-Water	Alkalinity Total	mg CaCO ₃ /L	<1	<1	<1	<1
1102-Water	Acidity	mg CaCO ₃ /L	10	533	288	2340
1301-Water	Al Dissolved	µg/L	304	21200	9600	118000
	Al Total	µg/L	342	22500	10300	123000
	As Dissolved	µg/L	<5	8	26	256
	As Total	µg/L	<5	.67	194	269
	Cd Dissolved	µg/L	2	172	101	800
	Cd Total	µg/L	2	176	104	830
	Co Dissolved	µg/L	3	94	76	585
	Co Total	µg/L	3	97	79	606
	Cr Dissolved	µg/L	<1	22	<1	196
	Cr Total	µg/L	<1	24	1	204
	Cu Dissolved	µg/L	5	500	28	853
	Cu Total	µg/L	5	515	29	894
	Fe Dissolved	µg/L	340	89200	10500	540000
	Fe Total	µg/L	417	109000	71400	657000
	Mn Dissolved	µg/L	80	2920	10200	9570
	Mn Total	µg/L	81	2990	10400	9890
	Ni Dissolved	µg/L	6	192	149	1380
	Ni Total	µg/L	14	198	153	1440
	Pb Dissolved	µg/L	105	229	503	717
	Pb Total	µg/L	109	473	563	741
	Zn Dissolved	µg/L	454	22800	44800	175000
	Zn Total	µg/L	468	23000	45400	184000


21 April 2004

4 May 2004 10:10

No. 6193 P. 2/3

 **Tasmania**


ANALYTICAL SERVICES TASMANIA
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c/- Chemistry Department University of Tasmania
Sandy Bay Tasmania 7005
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Email: ast.sandybay@dpiwe.tas.gov.au

 **NATA**
NATA Accreditation
Number: 5589

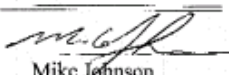
Laboratory Report

Report No: 22182 Issue No: 1 Final Report
Submitted By: G. Johnson
Client: Oceania Tasmania
Site Description:
Received: 21-Apr-04 Client Order No:
Report Date: 03-May-2004 15:36
Report To: Shane Bartel
Address: 3/65 Murray Street Hobart TAS 7001

Test Method(s) :	Test Date
Chemical Testing	
1001-Water: pH in Water by APIA Method 4500-H	26-Apr-2004
1002-Water: Conductivity by APIA Method 2510	26-Apr-2004
1004-Water: Solids, Total Dissolved by APHA Method 2540C	26-Apr-2004
1005-Water: Solids, Total Suspended by APHA Method 2540D	26-Apr-2004
1009-Water: Turbidity by APHA Method 2130B	27-Apr-2004
1101-Water: Alkalinity by APHA Method 2320/4500-CO2	27-Apr-2004
1102-Water: Acidity by APHA Method 2310	03-May-2004
1301-Water: Metals in Water by APHA Method 3030/3120	22-Apr-2004

 **NATA**
NATA Accreditation
Number: 5589

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Chemical Testing

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4 May 2004 10:10

No. 6193 P. 3/3



ANALYTICAL SERVICES TASMANIA
Sandy Bay Laboratory
 c/- Chemistry Department University of Tasmania
 Sandy Bay Tasmania 7005



NATA Accreditation
 Number: 5589

Report No: 22182

Report Date: 03-May-2004 15:36

		Lab.No.:	57564	57565	57566	57567
		Sample Id.:	W1	W2	W3	W4
1001-Water	pH		4.4	2.8	3.4	2.5
1002-Water	Conductivity	µS/cm	126	2480	835	5260
1004-Water	TDS	mg/L	87	2570	581	5680
1005-Water	TSS	mg/L	<1	<1	93	7
1009-Water	Turbidity	NTU	2.7	1.2	230	3.2
1101-Water	Alkalinity Total	mg CaCO ₃ /L	<1	<1	<1	<1
1102-Water	Acidity	mg CaCO ₃ /L	13	1440	146	5260
1301-Water	Al Dissolved	µg/L	387	63500	214	248000
	Al Total	µg/L	425	64300	2820	251000
	As Dissolved	µg/L	<5	776	47	2390
	As Total	µg/L	<5	785	165	2400
	Cd Dissolved	µg/L	3	495	28	1930
	Cd Total	µg/L	3	501	29	1940
	Co Dissolved	µg/L	3	288	60	1120
	Co Total	µg/L	4	291	52	1120
	Cr Dissolved	µg/L	<1	68	<1	780
	Cr Total	µg/L	<1	69	<1	784
	Cu Dissolved	µg/L	5	1090	1	2800
	Cu Total	µg/L	5	1110	4	2830
	Fe Dissolved	µg/L	439	267000	32000	1240000
	Fe Total	µg/L	1070	269000	43500	1280000
	Mn Dissolved	µg/L	196	7940	8340	19900
	Mn Total	µg/L	197	8030	8480	20100
	Ni Dissolved	µg/L	8	603	102	3010
	Ni Total	µg/L	9	613	104	3020
	Pb Dissolved	µg/L	131	79	8	245
	Pb Total	µg/L	144	89	165	252
	Zn Dissolved	µg/L	1050	57000	26300	396000
	Zn Total	µg/L	1060	57600	26700	402000

9 December 2003

19-Jan-2004 9:56

No. 3636 P. 2



ANALYTICAL SERVICES TASMANIA

Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania

Sandy Bay Tasmania 7005

Telephone: (03) 6226 7175 Fax: (03) 6226 7825

Email: ast.sandybay@dpiwe.tas.gov.au



NATA Accreditation
Number: 5589

Laboratory Report

Report No: 21263 *Please quote this number when making enquiries about this report*
Submitted By: Shane Bartel
Client: Oceania Tasmania
Site Description:
Received: 10-Dec-03 **Client Order No:**
Report Date: 19-Jan-2004 9:53
Report To: Shane Bartel
Address: 3/65 Murray Street Hobart TAS 7001

Test Method(s) :

Test Date

Chemical Testing

1001-Water:	pH in Water by APHA Method 4500-H	16-Dec-2003
1002-Water:	Conductivity by APHA Method 2510	16-Dec-2003
1004-Water:	Solids, Total Dissolved by APHA Method 2540C	15-Dec-2003
1005-Water:	Solids, Total Suspended by APHA Method 2540D	17-Dec-2003
1009-Water:	Turbidity by APHA Method 2130B	15-Dec-2003
1101-Water:	Alkalinity by APHA Method 2320/4500-CO2	15-Dec-2003
1102-Water:	Acidity by APHA Method 2310	18-Dec-2003
1301-Water:	Metals in Water by APHA Method 3030/3120	17-Dec-2003



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Mike Johnson
Chemical Testing

19-Jan-2004 9:57

No. 3636 P. 3



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Sandy Bay Laboratory
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 Sandy Bay Tasmania 7005



Report No: 21263

Report Date: 19-Jan-2004 9:53

Method	Analyte	Units / Sampled On :	Lab.No.: 52699	52700
			Sample Id.: W1	W3
			09/12/03 13:38	09/12/03 13:45
1001-Water	pH		4.6	3.2
1002-Water	Conductivity	µS/cm	118	964
1004-Water	TDS	mg/L	100	796
1005-Water	TSS	mg/L	15	104
1009-Water	Turbidity	NTU	3.1	250
1101-Water	Alkalinity Total	mg CaCO ₃ /L	<1	<1
1102-Water	Acidity	mg CaCO ₃ /L	12	144
1301-Water	Al Dissolved	µg/L	215	1960
	Al Total	µg/L	370	2530
	As Dissolved	µg/L	<5	<5
	As Total	µg/L	<5	190
	Cd Dissolved	µg/L	1	25
	Cd Total	µg/L	1	31
	Co Dissolved	µg/L	4	56
	Co Total	µg/L	4	59
	Cr Dissolved	µg/L	<1	<1
	Cr Total	µg/L	1	<1
	Cu Dissolved	µg/L	5	4
	Cu Total	µg/L	8	4
	Fe Dissolved	µg/L	467	1670
	Fe Total	µg/L	2790	44900
	Mn Dissolved	µg/L	211	10200
	Mn Total	µg/L	215	10600
	Ni Dissolved	µg/L	10	113
	Ni Total	µg/L	12	118
	Pb Dissolved	µg/L	42	69
	Pb Total	µg/L	80	109
	Zn Dissolved	µg/L	334	29000
	Zn Total	µg/L	339	30800

3-Nov-2003 11:20

No. 2012 P. 3/3



ANALYTICAL SERVICES TASMANIA
Sandy Bay Laboratory
 c/- Chemistry Department University of Tasmania
 Sandy Bay Tasmania 7005



Report No: 20914

Report Date: 31-Oct-2003 16:42

Method	Analyte	Units / Sampled On :	Lab.No.: 50916	50917	50918	50919
			Sample Id.: w1	w2	w3	w4
1001-Water	pH		16-10-03 20:00	16-10-03 20:00	16-10-03 20:00	16-10-03 20:00
1002-Water	Conductivity	µS/cm	4.8	2.6	3.1	2.6
1004-Water	TDS	mg/L	113	1930	1000	3910
1005-Water	TSS	mg/L	68	1260	572	4640
1009-Water	Turbidity	NTU	<1	4	123	1
1101-Water	Alkalinity Total	mg CaCO3/L	2.8	11	330	4.4
1102-Water	Acidity	mg CaCO3/L	<1	<1	<1	<1
1301-Water	Al Dissolved	µg/L	9	837	161	2520
	Al Total	µg/L	251	34700	3100	91100
	As Dissolved	µg/L	293	35200	3490	91000
	As Total	µg/L	<5	143	7	27
	Cd Dissolved	µg/L	<5	152	127	32
	Cd Total	µg/L	2	391	35	596
	Co Dissolved	µg/L	3	402	38	596
	Co Total	µg/L	3	200	55	862
	Cr Dissolved	µg/L	3	208	59	864
	Cr Total	µg/L	<1	36	<1	142
	Cu Dissolved	µg/L	<1	37	<1	143
	Cu Total	µg/L	5	771	6	240
	Fe Dissolved	µg/L	6	779	6	240
	Fe Total	µg/L	277	161000	2350	540000
	Mn Dissolved	µg/L	654	167000	28200	542000
	Mn Total	µg/L	133	6340	9130	14800
	Ni Dissolved	µg/L	142	6600	9650	14900
	Ni Total	µg/L	10	430	113	2050
	Pb Dissolved	µg/L	12	438	117	2050
	Pb Total	µg/L	109	79	250	468
	Zn Dissolved	µg/L	125	88	288	470
	Zn Total	µg/L	620	50900	30100	249000
			651	51800	31200	249000

17 July 2003

5-Aug-2003 16:44

No.0009 P. 2/3



ANALYTICAL SERVICES TASMANIA

Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania

Sandy Bay Tasmania 7005

Telephone: (03) 6226 7175 Fax: (03) 6226 7825

Email: ast.sandybay@dpiwec.tas.gov.au

Laboratory Report

Report No: 20195 *Please quote this number when making enquiries about this report*
Submitted By: P. Heath
Client: Oceania Tasmania
Site Description: Comstock Mine
Received: 22-Jul-03
Report Date: 05-Aug-2003 14:19
Report To: P. Heath
Address: 3/65 Murray Street Hobart TAS 7001

Client Order No:

Test Method(s) :

Test Date

Chemical Testing

1001-Water:	pH in Water by APHA Method 4500-H	29-Jul-2003
1002-Water:	Conductivity by APHA Method 2510	29-Jul-2003
1004-Water:	Solids, Total Dissolved by APHA Method 2540C	23-Jul-2003
1009-Water:	Turbidity by APHA Method 2130B	04-Aug-2003
1011-Water:	Solids, Total Suspended 0.45µm Filtration	23-Jul-2003
1101-Water:	Alkalinity by APHA Method 2320/4500-CO2	28-Jul-2003
1102-Water:	Acidity by APHA Method 2310	31-Jul-2003
1301-Water:	Metals in Water by APHA Method 3030/3120	25-Jul-2003



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Number: 5589

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Mike Johnson
Chemical Testing

5-Aug-2003 16:45



Tasmania

Report No: 20195

ANALYTICAL SERVICES TASMANIA
Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania
Sandy Bay Tasmania 7005

Report Date: 05-Aug-2003 14:19

No.0009 P. 3/3



NATA Accreditation
Number: 5589

Method	Analyte	Units / Sampled On :	Lab.No.: 47378	47379	47380	47381
			Sample Id.: W1	W2	W3	W4
1001-Water	pH		17-07-03 4.4	17-07-03 2.6	17-07-03 3.1	17-07-03 2.6
1002-Water	Conductivity	µS/cm	95	2250	988	3740
1004-Water	TDS	mg/L	93	2210	667	5920
1009-Water	Turbidity	NTU	3.7	54	250	4.5
1011-Water	TSS	mg/L	<1	13	82	10
1101-Water	Alkalinity Total	mg CaCO ₃ /L	<1	<1	<1	<1
1102-Water	Acidity	mg CaCO ₃ /L	13	979	203	2800
1301-Water	Al Dissolved	µg/L	370	37200	6960	148000
	Al Total	µg/L	412	38300	7250	151000
	As Dissolved	µg/L	<5	70	<5	162
	As Total	µg/L	<5	382	140	169
	Cd Dissolved	µg/L	2	558	76	1640
	Cd Total	µg/L	2	567	78	1670
	Co Dissolved	µg/L	3	163	54	804
	Co Total	µg/L	3	167	54	817
	Cr Dissolved	µg/L	<1	38	1	220
	Cr Total	µg/L	<1	41	2	224
	Cu Dissolved	µg/L	7	877	36	970
	Cu Total	µg/L	7	902	36	985
	Fe Dissolved	µg/L	522	191000	2950	711000
	Fe Total	µg/L	639	232000	47600	729000
	Mn Dissolved	µg/L	89	9970	8020	11000
	Mn Total	µg/L	89	10200	8010	11200
	Ni Dissolved	µg/L	9	346	111	1940
	Ni Total	µg/L	8	354	111	1980
	Pb Dissolved	µg/L	114	337	562	1060
	Pb Total	µg/L	119	744	617	1080
	Zn Dissolved	µg/L	555	91100	33400	297000
	Zn Total	µg/L	559	93800	33600	302000

21 February 2003

07/03 '03 FRI 06:51 FAX 03 6226 7825 AST

002/003



ANALYTICAL SERVICES TASMANIA
Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania
Sandy Bay Tasmania 7005
Telephone: (03) 6226 7175 Fax: (03) 6226 7825
Email: ast.sandybay@dpiwe.tas.gov.au

Laboratory Report

Report No: 19107 *Please quote this number when making enquiries about this report*
Submitted By: Shane Bartel
Client: Oceania Tasmania
Site Description: Comstock Mine
Received: 21-Feb-03 **Client Order No:**
Report Date: 06-Mar-2003 15:28
Report To: Shane Bartel
Address: 3/65 Murray Street Hobart TAS 7001

Test Method(s) :

1001-Water: pH in Water by APHA Method 4500-H
1002-Water: Conductivity by APHA Method 2510
1004-Water: Solids, Total Dissolved by APHA Method 2540C
1005-Water: Solids, Total Suspended by APHA Method 2540D
1101-Water: Alkalinity by APHA Method 2320/4500-CO2
1102-Water: Acidity by APHA Method 2310
1301-Water: Metals in Water by APHA Method 3030/3120

Test Date

03-Mar-2003
03-Mar-2003
03-Mar-2003
03-Mar-2003
06-Mar-2003
24-Feb-2003
25-Feb-2003



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Number: 5589

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Mike Johnson
Manager

Page 1 of 2

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003/003



ANALYTICAL SERVICES TASMANIA
Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania
Sandy Bay Tasmania 7005



NATA Accreditation
Number: 5589

Report No: 19107

Report Date: 06-Mar-2003 15:28

Method	Analyte	Lab.No.: Sample Id.: Units / Sampled On :	41890	41891	41892	41893
			W1	W2	W3	W4
1001-Water	pH		4.5	2.3	3.2	2.4
1002-Water	Conductivity	µS/cm	123	7470	973	6430
1004-Water	TDS	mg/L	453	11600	669	31700
1005-Water	TSS	mg/L	22	245	115	105
1101-Water	Alkalinity Total	mg CaCO ₃ /L	<1	<1	<1	<1
1102-Water	Acidity	mg CaCO ₃ /L	13	6360	165	7280
1301-Water	Al Dissolved	µg/L	433	681000	2510	407000
	Al Total	µg/L	627	721000	3220	417000
	As Dissolved	µg/L	<5	2960	7	3960
	As Total	µg/L	<5	5270	167	4300
	Cd Dissolved	µg/L	<1	3830	26	3350
	Cd Total	µg/L	<1	4040	28	3400
	Co Dissolved	µg/L	4	2310	62	1480
	Co Total	µg/L	4	2300	64	1520
	Cr Dissolved	µg/L	1	447	<1	563
	Cr Total	µg/L	1	498	1	574
	Cu Dissolved	µg/L	7	8860	3	3770
	Cu Total	µg/L	9	10400	3	3800
	Fe Dissolved	µg/L	961	1560000	1760	1630000
	Fe Total	µg/L	3050	1860000	50800	1700000
	Mn Dissolved	µg/L	273	34100	10500	35200
	Mn Total	µg/L	279	37900	10700	35900
	Ni Dissolved	µg/L	11	4920	122	3750
	Ni Total	µg/L	12	4910	128	3800
	Pb Dissolved	µg/L	78	121	50	3000
	Pb Total	µg/L	116	5800	87	3200
	Zn Dissolved	µg/L	342	278000	30000	636000
	Zn Total	µg/L	348	304000	30600	649000

16 December 2002



ANALYTICAL SERVICES TASMANIA

Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania

Sandy Bay Tasmania 7005

Telephone: (03) 6226 7175 Fax: (03) 6226 7825

Email: ast.sandybay@dpiwe.tas.gov.au

Laboratory Report

Report No: 18695 *Please quote this number when making enquiries about this report*
Submitted By: P. Heath
Client: Oceania Tasmania
Site Description: Comstock Mine
Received: 17-Dec-02 Client Order No:
Report Date: 15-Jan-2003 16:25
Report To: Shane Bartel
Address: 3/65 Murray Street Hobart TAS 7001

Test Method(s) :


1001-Water: pH in Water by APHA Method 4500-11
1002-Water: Conductivity by APHA Method 2510
1004-Water: Solids, Total Dissolved by APHA Method 2540C
1005-Water: Solids, Total Suspended by APHA Method 2540D
1009-Water: Turbidity by APHA Method 2130B
1101-Water: Alkalinity by APHA Method 2320/4500-CO2
1102-Water: Acidity by APHA Method 2310
1301-Water: Metals in Water by APHA Method 3030/3120



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Greg Hince
Senior Chemist

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Tasmania

ANALYTICAL SERVICES TASMANIA

Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania

Sandy Bay Tasmania 7005

NATA Accreditation
Number: 5589




Report No: 18695

Report Date: 15-Jan-2003 16:25

		Lab.No.:	39604	39605	39606	39607
		Sample Id.:	W1	W2	W3	W4
Method	Analyte	Units / Sampled On :	16/12/02 18:10	16/12/02 09:15	16/12/02 09:30	16/12/02 09:45
1001-Water	pH		4.6	2.4	3.2	2.5
1002-Water	Conductivity	µS/cm	115	3330	856	4660
1004-Water	TDS	mg/L	73	3680	556	6340
1005-Water	TSS	mg/L	<1	<1	91	3
1009-Water	Turbidity	NTU	2.3	0.8	220	4.4
1101-Water	Alkalinity Total	mg CaCO ₃ /L	<1	<1	<1	<1
1102-Water	Acidity	mg CaCO ₃ /L	9	2260	136	3530
1301-Water	Al Dissolved	µg/L	349	95500	3470	177000
	Al Total	µg/L	366	100000	3660	183000
	As Dissolved	µg/L	<5	486	<5	210
	As Total	µg/L	<5	483	156	215
	Cd Dissolved	µg/L	2	1210	34	1420
	Cd Total	µg/L	2	1240	38	1500
	Co Dissolved	µg/L	4	514	54	856
	Co Total	µg/L	4	529	54	910
	Cr Dissolved	µg/L	<1	93	<1	239
	Cr Total	µg/L	<1	96	1	249
	Cu Dissolved	µg/L	7	2190	5	871
	Cu Total	µg/L	8	2270	5	937
	Fe Dissolved	µg/L	413	408000	837	790000
	Fe Total	µg/L	665	424000	39800	791000
	Mn Dissolved	µg/L	171	16100	9190	16600
	Mn Total	µg/L	168	16800	9120	16800
	Ni Dissolved	µg/L	11	1060	110	2050
	Ni Total	µg/L	11	1090	107	2150
	Pb Dissolved	µg/L	142	181	143	664
	Pb Total	µg/L	146	187	179	705
	Zn Dissolved	µg/L	668	136000	27300	316000
	Zn Total	µg/L	656	142000	27200	311000

Page 2 of 2

24 September 2002

10/10 '02 THU 06:51 FAX 03 6226 7825 AST		002/003
		
ANALYTICAL SERVICES TASMANIA		
Sandy Bay Laboratory		
c/- Chemistry Department University of Tasmania		
Sandy Bay Tasmania 7005		
Telephone: (03) 6226 7175 Fax: (03) 6226 7825		
Email: ast.sandybay@dpiwe.tas.gov.au		
Laboratory Report		
Report No:	18174	<i>Please quote this number when making enquiries about this report</i>
Submitted By:	Shane Bartel	
Client:	Oceania Tasmania	
Site Description:		
Received:	26-Sep-02	Client Order No:
Report Date:	09-Oct-2002 10:49	
Report To:	Shane Bartel	
Address:	3/65 Murray Street Hobart TAS 7001	
Test Method(s) :		
1001-Water:	pH in Water by APHA Method 4500-H	
1002-Water:	Conductivity by APHA Method 2510	
1005-Water:	Solids, Total Suspended by APHA Method 2540D	
1101-Water:	Alkalinity by APHA Method 2320/4500-CO2	
1102-Water:	Acidity by APHA Method 2310	
1103-Water:	Anions by Ion Chromatography APHA Method 4110C	
1301-Water:	Metals in Water by APHA Method 3030/3120	
1302-Water:	Major Cations in Water by APHA Method 3030/3120	
 		
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Mike Johnson Manager		
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Oceania Tasmania Pty Ltd –Environmental Monitoring Report

10/10/02 THU 06:51 FAX 03 6226 7825 AST

003/003

Tasmania

ANALYTICAL SERVICES TASMANIA

Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania

Sandy Bay Tasmania 7005

NATA Accreditation
Number: 5589

Report No: 18174


Report Date: 09-Oct-2002 10:49

		Lab.No.:	36755	36756	36757	36758
		Sample Id.:	W1	W2	W3	W4
Method	Analyte	Units / Sampled On :	21-02-02	23-02-02	23-02-02	23-02-02
1001-Water	pH		4.6	2.8	3.5	2.8
1002-Water	Conductivity	µS/cm	113	1590	896	2630
1005-Water	TSS	mg/L	<1	87	120	241
1101-Water	Alkalinity HCO ₃	mg CaCO ₃ /L	<1			
1102-Water	Acidity	mg CaCO ₃ /L	10	570	175	1530
1103-Water	Chloride	mg/L	20			
	Sulphate	mg/L	12			
1301-Water	Al Dissolved	µg/L	297	25800	4630	69800
	Al Total	µg/L	339	29000	5570	71400
	As Dissolved	µg/L	<5	9	44	36
	As Total	µg/L	<5	77	231	105
	Cd Dissolved	µg/L	3	365	50	588
	Cd Total	µg/L	3	398	53	601
	Co Dissolved	µg/L	3	158	58	473
	Co Total	µg/L	3	174	60	476
	Cr Dissolved	µg/L	<1	24	<1	86
	Cr Total	µg/L	<1	28	1	90
	Cu Dissolved	µg/L	7	592	10	287
	Cu Total	µg/L	7	655	10	295
	Fe Dissolved	µg/L	317	80200	5100	290000
	Fe Total	µg/L	501	107000	54400	315000
	Mn Dissolved	µg/L	128	3650	9120	7980
	Mn Total	µg/L	139	4000	9300	8130
	Ni Dissolved	µg/L	13	349	127	1120
	Ni Total	µg/L	14	379	129	1150
	Pb Dissolved	µg/L	127	131	243	961
	Pb Total	µg/L	140	666	300	1100
	Zn Dissolved	µg/L	628	32200	33200	147000
	Zn Total	µg/L	674	35200	34000	149000
1302-Water	Ca Total	mg/L	1.40			
	Mg Total	mg/L	2.89			
	Na Total	mg/L	9.83			

Page 2 of 2

10 May 2002

447 00 06 11.01 FRA 03 02 34/014 ALLISON LABORATORIES 001



ALLISON LABORATORIES

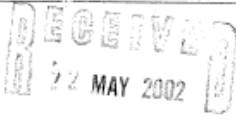
INDUSTRIAL AND AGRICULTURAL ANALYSIS
TANK AND CARGO SURVEYS

4 Warwick Street, Hobart,
Tasmania, 7000

telephone 03 62 347 681
facsimile 03 62 347 574
e-mail allisonlabs@bigpond.com

ABN No. 33 577 977 013

Oceania Tasmania
Level 3
65 Murray St.
Hobart 7001
Attention: Shane Bartel




page 1 of 2

Gm 7825
Greg.

RESULTS OF ANALYSIS

Samples labelled as shown below were delivered to these laboratories. The results of analyses conducted on these are tabulated herewith:

Laboratory Reference	160890	160891	160892	160893
Sample Identification	W 1	W 2	W 3	W 4
pH	4.3	2.6	3.1	2.5
Conductivity µS/cm	100	3,480	1,020	4,710
Total Suspended Solids mg/L	3	46	110	26
Total Dissolved Solids mg/L	84	6,100	740	9,000
Acidity to pH 8.3 mg/L as CaCO₃	11	2,700	200	4,000
Total Aluminium mg/L	0.51	170	8.6	250
Total Arsenic mg/L	0.0009	3.9	0.25	3.8
Total Cadmium mg/L	< 0.01	2.4	0.13	4.6
Total Cobalt mg/L	< 0.01	1.0	0.09	1.5
Total Chromium mg/L	< 0.02	0.15	< 0.02	0.38
Total Copper mg/L	< 0.01	3.3	1.4	2.0
Total Iron mg/L	1.3	880	70	1,000
Total Manganese mg/L	0.11	39	8.0	16
Total Nickel mg/L	≤ 0.02	2.3	0.18	3.2
Total Lead mg/L	0.19	0.68	0.23	1.2
Total Zinc mg/L	0.75	250	28	430



K J Allison B.Sc.
Chemist

Samples received 10.05.02
Analysis completed 21.05.02

Methodology: This sample was analysed essentially in accord with the relevant methods as set out in "Standard Methods for the Examination of Water & Wastewater" 17th Ed. (1989), APHA.

22/00 02 NOV 11:01 FAX 03 62 347574

ALLISON LABORATORIES

002



ALLISON LABORATORIES

INDUSTRIAL AND AGRICULTURAL ANALYSIS
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e-mail allisonlabs@bigpond.com

ABN No. 33 577 977 013

Oceania Tasmania
Level 3
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Hobart 7001
Attention: Shane Bartel

page 2 of 2

RESULTS OF ANALYSIS

Samples labelled as shown below were delivered to these laboratories. The results of analyses conducted on these are tabulated herewith:

Laboratory Reference	160890	160891	160892	160893
Sample Identification	W 1	W 2	W 3	W 4
Dissolved Aluminium mg/L	0.46	140	8.6	230
Dissolved Arsenic mg/L	0.0005	3.9	0.038	3.2
Dissolved Cadmium mg/L	< 0.01	2.2	0.13	4.4
Dissolved Cobalt mg/L	< 0.01	1.0	0.08	1.5
Dissolved Chromium mg/L	< 0.02	0.14	< 0.02	0.29
Dissolved Copper mg/L	< 0.01	3.1	1.4	1.9
Dissolved Iron mg/L	1.1	720	14	1,000
Dissolved Manganese mg/L	0.11	32	8.0	16
Dissolved Nickel mg/L	< 0.02	2.2	0.17	3.1
Dissolved Lead mg/L	0.15	0.36	0.18	1.0
Dissolved Zinc mg/L	0.75	210	28	430


K J Allison B.Sc.
Chemist

Samples received 10.05.02

Analysis completed 21.05.02

Methodology: This sample was analysed essentially in accord with the relevant methods as set out in "Standard Methods for the Examination of Water & Wastewater" 17th Ed. (1989), APHA.

6 March 2002



ALLISON LABORATORIES

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15 MAR 2002

page 1 of 2

RESULTS OF ANALYSIS

Samples labelled as shown below were delivered to these laboratories on 7th of March 2002.
The results of analyses conducted on these are tabulated herewith:

Laboratory Reference	159713	159714	159715	159716
Sample Identification	W 1	W 2	W 3	W 4
pH	4.7	2.5	4.6	2.9
Conductivity µS/cm	190	4,600	700	2,000
Total Suspended Solids mg/L	< 1	10	40	50
Total Dissolved Solids mg/L	120	9,000	600	2,200
Acidity to pH 8.3 mg/L as CaCO₃	18	4,100	140	1,000
Total Aluminium mg/L	0.29	240	2.9	39
Total Arsenic mg/L	0.0095	2.46	0.15	0.17
Total Cadmium mg/L	0.03	4.5	0.06	0.68
Total Cobalt mg/L	< 0.01	1.4	0.06	0.41
Total Chromium mg/L	< 0.02	0.21	< 0.02	0.12
Total Copper mg/L	0.01	5.8	0.01	0.30
Total Iron mg/L	1.2	950	56	250
Total Manganese mg/L	1.0	38	9.2	6.9
Total Nickel mg/L	0.01	3.1	0.11	1.0
Total Lead mg/L	2.3	0.45	0.40	0.85
Total Zinc mg/L	7.2	450	29	110



K J Allison B.Sc.
Chemist

Samples received 07.03.02
Analysis completed 15.03.02

Methodology: This sample was analysed essentially in accord with the relevant methods as set out in "Standard Methods for the Examination of Water & Wastewater" 17th Ed. (1989), APHA.



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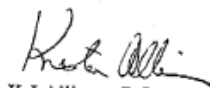
Oceania Tasmania
Level 3
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Hobart 7001
Attention: Shane Bartel

page 2 of 2

RESULTS OF ANALYSIS

Samples labelled as shown below were delivered to these laboratories on 7th of March 2002.
The results of analyses conducted on these are tabulated herewith:

Laboratory Reference	159713	159714	159715	159716
Sample Identification	W 1	W 2	W 3	W 4
Dissolved Aluminium mg/L	0.25	240	0.51	38
Dissolved Arsenic mg/L	0.0060	2.44	0.060	0.011
Dissolved Cadmium mg/L	0.03	4.3	0.06	0.64
Dissolved Cobalt mg/L	< 0.01	1.4	0.06	0.40
Dissolved Chromium mg/L	< 0.02	0.20	< 0.02	0.10
Dissolved Copper mg/L	0.01	5.6	0.01	0.30
Dissolved Iron mg/L	1.2	950	43	200
Dissolved Manganese mg/L	0.93	36	8.5	6.6
Dissolved Nickel mg/L	0.01	3.0	0.11	0.93
Dissolved Lead mg/L	1.9	0.45	0.40	0.81
Dissolved Zinc mg/L	6.4	440	28	110



K J Allison B.Sc.
Chemist

Samples received 07.03.02
Analysis completed 15.03.02

Methodology: This sample was analysed essentially in accord with the relevant methods as set out in "Standard Methods for the Examination of Water & Wastewater" 17th Ed. (1989), APHA.

7 December 2001

01 MON 09:46 FAX 03 62 347574 ALLISON LABORATORIES 002



ALLISON LABORATORIES

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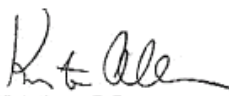
Oceania Tasmania
Level 3
65 Murray St.
Hobart 7001
Attention: Shane Bartel

page 1 of 2

RESULTS OF ANALYSIS

Samples labelled as shown below were delivered to these laboratories on 7th of December 2001. The results of analyses conducted on these are tabulated herewith:

Laboratory Reference	157774	157775	157776	157777
Sample Identification	W 1 7.12.01	W 2 7.12.01	W 3 7.12.01	W 4 7.12.01
pH	4.3	2.4	3.3	2.8
Conductivity µS/cm	130	5080	960	2050
Total Suspended Solids mg/L	< 1	32	90	110
Total Dissolved Solids mg/L	45	5940	540	1300
Acidity to pH 8.3 mg/L as CaCO₃	8	3500	120	590
Total Aluminium mg/L	0.43	200	2.9	21
Total Arsenic mg/L	0.0022	1.47	0.21	0.081
Total Cadmium mg/L	< 0.01	4.2	0.05	0.28
Total Cobalt mg/L	< 0.01	1.5	0.05	0.35
Total Chromium mg/L	< 0.02	0.20	< 0.02	0.02
Total Copper mg/L	< 0.01	5.0	< 0.01	0.077
Total Iron mg/L	0.63	790	54	160
Total Manganese mg/L	0.19	13	9.3	8.2
Total Nickel mg/L	0.02	3.3	0.11	0.93
Total Lead mg/L	0.22	0.74	0.25	0.30
Total Zinc mg/L	0.92	220	27	83



K.J. Allison B.Sc.
Chemist

Samples received 07.12.01
Analysis complete 14.12.01

Methodology: This sample was analysed essentially in accord with the relevant methods as set out in "Standard Methods for the Examination of Water & Wastewater" 17th Ed. (1989), APHA.

12/01 MON 09:47 FAX 03 62 347574

ALLISON LABORATORIES

003

**ALLISON LABORATORIES**4 Warwick Street, Hobart,
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Attention: Shane Bartel

page 2 of 2 pages

RESULTS OF ANALYSIS

Samples labelled as shown below were delivered to these laboratories on 7th of December 2001. The results of analyses conducted on these are tabulated herewith:


Laboratory Reference	157774	157775	157776	157777
Sample Identification	W 1	W 2	W 3	W 4
	7.12.01	7.12.01	7.12.01	7.12.01
Dissolved Aluminium mg/L	0.34	180	1.8	19
Dissolved Arsenic mg/L	0.0004	1.41	0.043	0.014
Dissolved Cadmium mg/L	< 0.01	4.0	0.05	0.26
Dissolved Cobalt mg/L	< 0.01	1.4	0.05	0.34
Dissolved Chromium mg/L	< 0.02	0.20	< 0.02	< 0.02
Dissolved Copper mg/L	< 0.01	4.7	< 0.01	0.075
Dissolved Iron mg/L	0.31	770	9.3	100
Dissolved Manganese mg/L	0.19	12	9.1	7.5
Dissolved Nickel mg/L	0.02	3.0	0.11	0.87
Dissolved Lead mg/L	0.17	0.52	0.12	0.27
Dissolved Zinc mg/L	0.91	210	26	75

K J Allison B.Sc.
ChemistSamples received 07.12.01
Analysis complete 14.12.01

Methodology: This sample was analysed essentially in accord with the relevant methods as set out in "Standard Methods for the Examination of Water & Wastewater" 17th Ed. (1989), APHA.

9 October 2001

17/12 '01 MON 09:46 FAX 03 62 347574 ALLISON LABORATORIES 001



ALLISON LABORATORIES
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Hobart 7001
Attention: Shane Bartel

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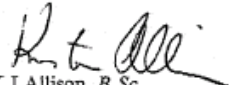
17 DEC 2001

RESULTS OF ANALYSIS
AMMENDED DOCUMENT

Samples labelled as shown below were delivered to these laboratories on 10th of October 2001. The results of analyses conducted on these are tabulated herewith:

Laboratory Reference	156685	156686	156687	156688
Sample Identification	W 1 9.10.01	W 2 9.10.01	W 3 9.10.01	W 4 9.10.01
pH	4.3	2.5	5.4*	3.0
Conductivity $\mu\text{S}/\text{cm}$	120	2680	740	1510
Total Suspended Solids mg/L	< 1	4	50	75
Total Dissolved Solids mg/L	80	3800	640	1370
Acidity to pH 8.3 mg/L as CaCO_3	9	1800	110	560
Total Aluminium mg/L	0.42	110	2.9	21
Total Arsenic mg/L	0.0002	1.4	0.26	0.029
Total Cadmium mg/L	< 0.01	2.1	0.033	0.26
Total Cobalt mg/L	< 0.01	0.93	0.063	0.37
Total Chromium mg/L	< 0.02	0.13	< 0.02	0.035
Total Copper mg/L	0.01	3.0	< 0.01	0.077
Total Iron mg/L	0.67	500	57	140
Total Manganese mg/L	0.21	5.1	8.8	8.1
Total Nickel mg/L	0.02	2.1	0.13	0.80
Total Lead mg/L	0.24	0.67	0.16	0.39
Total Zinc mg/L	1.2	120	28	85

* pH after sitting =3.0



K J Allison B.Sc.
Chemist

Samples received 10.10.01
Analysis complete 17.10.01
Ammended results (Zn) 13.12.01

Methodology: This sample was analysed essentially in accord with the relevant methods as set out in "Standard Methods for the Examination of Water & Wastewater" 17th Ed. (1989), APHA.

18 May 2001

01/06 '01 FRI 16:11 FAX 613 62267825 ANALYTICAL SERVICES TASM

002/004



ANALYTICAL SERVICES TASMANIA
Sandy Bay Laboratory

c/- Chemistry Department University of Tasmania

Sandy Bay Tasmania 7005

Telephone: (03) 6226 7175 Fax: (03) 6226 7825

Email: ast.sandybay@dpiwe.tas.gov.au



NATA Accreditation
Number: 5589

Laboratory Report

Report No: 14986 *Please quote this number when making enquiries about this report*

Submitted By: Shane Bartel

Client: Oceania Tasmania

Site Description:

Received: 18-May-01

Client Order No:

Report Date: 01-Jun-2001 16:03

Report To: Shane Bartel

Address: 3/65 Murray Street Hobart TAS 7001

Test Method(s) :

1001-Water:	pH in Water by APHA Method 4500-H
1002-Water:	Conductivity by APHA Method 2510
1011-Water:	Solids, Total Suspended 0.45µm Filtration
1101-Water:	Alkalinity by APHA Method 2320/4500-CO2
1102-Water:	Acidity by APHA Method 2310
1301-Water:	Metals in Water by APHA Method 3030/3120



NATA Accreditation
Number: 5589

The tests, calibrations or measurements covered by this document have been performed in accordance with NATA requirements which include the verification of ISO/IEC 17025 and are traceable to national standards of measurement.

This document shall not be reproduced, except in full.
Samples analysed as received.


Mike Johnson
Manager

Page 1 of 3

01/06 '01 FRI 16:12 FAX 013 82267825 ANALYTICAL SERVICES TASM

003/004



ANALYTICAL SERVICES TASMANIA
Sandy Bay Laboratory
 c/- Chemistry Department University of Tasmania
 Sandy Bay Tasmania 7005



Report No: 14986

Report Date: 01-Jun-2001 15:50

		Lab.No.:	21052	21053	21054	21055	21056
		Sample Id.:	S1	S2	S4	S5	S6
Method	Analyte	Units / Sampled On :	18/05/01	18/05/01	18/05/01	18/05/01	18/05/01
1001-Water	pH		4.2	5.6	3.5	2.5	3.0
1002-Water	Conductivity	µS/cm	153	141	270	2380	795
1011-Water	TSS	mg/L	4	16	15	19	16
1101-Water	Alkalinity Total	mg/L CaCO ₃	<1	4	<1	<1	<1
1102-Water	Acidity	mg/L CaCO ₃	20	11	63	2760	209
1301-Water	Al (Total)	µg/L	1020	905	4040	164000	13400
	As (Dissolved)	µg/L	<5	15	<5	2010	<5
	As (Total)	µg/L	<5	14	<5	2080	8
	Cd (Unsoluble)	µg/L	15	7	76	2670	41
	Cd (Total)	µg/L	15	7	75	2740	54
	Co (Dissolved)	µg/L	7	4	11	1230	31
	Co (Total)	µg/L	8	5	11	1250	42
	Cr (Dissolved)	µg/L	<1	<1	3	148	2
	Cr (Total)	µg/L	<1	<1	3	153	3
	Cu (Dissolved)	µg/L	27	22	123	4650	55
	Cu (Total)	µg/L	26	23	122	4780	70
	Fe (Dissolved)	µg/L	868	2280	3780	605000	18300
	Fe (Total)	µg/L	850	2430	3810	622000	24400
	Mn (Unsoluble)	µg/L	336	435	269	7620	443
	Mn (Total)	µg/L	335	436	269	7790	567
	Ni (Dissolved)	µg/L	15	8	20	2630	58
	Ni (Total)	µg/L	15	8	22	2680	71
	Pb (Dissolved)	µg/L	593	182	488	852	1520
	Pb (Total)	µg/L	591	198	488	884	2020
	Zn (Dissolved)	µg/L	3180	1180	8180	161000	6840
	Zn (Total)	µg/L	3130	1170	8130	161000	6930

Appendix B

Water Sampling Data Collection

Oceania Tasmania Pty Ltd – Environmental Monitoring Report

Table 3. Sampling values from site W1

Date	Conductivity	TSS mg/L	Alkalinity (total) CaCO3 mg/L	Acidity CaCO3 mg/L	pH	Al (dissolved) ug/L	Al (total) ug/L	As (dissolved) ug/L	As (total) ug/L	Cd (dissolved) ug/L	Cd (total) ug/L	Co (dissolved) ug/L	Co (total) ug/L
27-Jun-00					4.6							10	
22-Sep-00					5.5					40		50	
15-Jan-01		2			4.7	234	452			<1	1	3	3
18-May-01	153	4	<1	20	4.2		1020	<5	<5	<5	<5	7	8
09-Oct-01	120	<1	<1	9	4.3		420	<5	<5		<5		5
07-Dec-01	130	<1	<1	8	4.3	340	430	<5	<5	10	10	10	10
06-Mar-02	190	<1	<1	18	4.7	290	250	6	9.5	30	30	10	10
10-May-02	100	3		11	4.3	4600	510	<5	<5	10	10	10	10
24-Sep-02	113	1	1	10	4.6	297	339	<5	<5	3	3	3	3
16-Dec-02	115	1	1	9	4.6	349	366	<5	<5	2	2	4	4
21-Feb-03	123	22	1	13	4.5	433	627	<5	<5	1	1	4	4
17-Jul-03	95	1	1	13	4.4	370	412	<5	<5	2	2	3	3
24-Oct-03	113	1	1	9	4.6	251	293	<5	<5	2	3	3	3
09-Dec-03	118	15	1	12	4.6	215	370	215	370	1	1	4	4
21-Apr-04	128	1	1	13	4.4	387	425	<5	<5	3	3	3	4
06-Jul-04	117	<1	<1	10	4.6	304	342	<5	<5	2	2	3	3
12-Oct-04	102	1	<1	10	5.0	226	227	<5	<5	1	2	3	3
22-Dec-04	108	1	<1	9	5.0	216	273	<5	<5	1	1	3	3
10-May-05	90	<1	<2	15	4.8	2500	3030	<5	159	25	26	54	56
27-Jul-05	97	1	<2	13	4.9	368	437	<5	<5	2	2	3	4
27-Oct-05	83	7	<2	11	4.3	354	480	<5	<5	<1	<1	1	2
21-Dec-05	366	3	<2	11	7.2	285	42700	<5	68	<1	604	2	463
26-Jan-06	135				7.0								
27-Jan-06	135				6.9								
28-Jan-06	132				5.6								
29-Jan-06	131				5.4								

Oceania Tasmania Pty Ltd – Environmental Monitoring Report

Table 4. Sampling values from site W1

Date	Cr (dissolved) ug/L	Cr (total) ug/L	Cu (dissolved) ug/L	Cu (total) ug/L	Fe (dissolved) ug/L	Fe (total) ug/L	Mn (dissolved) ug/L	Mn (total) ug/L	Ni (dissolved) ug/L	Ni (total) ug/L	Pb (dissolved) ug/L	Pb (total) ug/L	Zn (dissolved) ug/L	Zn (total) ug/L
27-Jun-00			30		470		40		40		80		230	
22-Sep-00	40		10		46040		7560		50		130		24600	
15-Jan-01	<1	1	4	6	636	2360	285	281	9	11	64	142	345	366
18-May-01	<1	<1	27	26	866	850	336	335	15	15	593	591	3180	3130
09-Oct-01		<1		10		670		210		20		240		1200
07-Dec-01	20	20	10	10	310	630	190	190	20	20	170	220	910	920
06-Mar-02	20	20	10	10	1200	1200	1000	930	10	10	2300	1900	7200	6400
10-May-02	20	20	10	10	1100	1300	110	110	20	20	150	190	750	750
24-Sep-02	1	1	7	7	317	501	128	139	13	14	127	140	628	674
16-Dec-02	1	1	7	8	413	665	171	168	11	11	142	146	668	658
21-Feb-03	1	1	7	9	961	3050	273	279	11	12	78	116	342	348
17-Jul-03	1	1	7	7	522	639	89	89	9	8	114	119	555	559
24-Oct-03	1	1	5	6	277	654	133	142	10	12	109	125	620	651
09-Dec-03	1	1	5	8	467	2790	211	215	10	12	42	80	334	339
21-Apr-04	1	1	5	5	439	1070	196	197	8	9	131	144	1050	1060
06-Jul-04	1	1	5	5	340	417	80	81	6	14	105	109	454	468
12-Oct-04	<1	<1	5	5	340	630	127	129	12	13	68	78	467	477
22-Dec-04	<1	<1	2	4	273	878	187	189	10	10	59	72	506	504
10-May-05	<1	2	6	7	639	39600	8810	8920	105	106	149	209	24900	25300
27-Jul-05	<1	<1	5	6	731	1050	146	150	9	10	88	98	637	654
27-Oct-05	<1	<1	4	7	698	1270	70	74	3	3	77	98	291	295
21-Dec-05	<1	171	4	670	869	176000	133	8990	4	1080	64	243	384	56100

Oceania Tasmania Pty Ltd – Environmental Monitoring Report

Table 5. Sampling values from site W2

Date	Conductivity	TSS	Alkalinity (total) CaCO3 mg/L	Acidity CaCO3 mg/L	pH	Al (dissolved) ug/L	Al (total) ug/L	As (dissolved) ug/L	As (total) ug/L	Cd (dissolved) ug/L	Cd (total) ug/L	Co (dissolved) ug/L	Co (total) ug/L
15-Jan-01													
18-May-01	2380	19	<1	2760	2.5		164000	2010	2080	2670	2740	1230	1250
09-Oct-01	2680	4	<1	1800	2.5		110000		1400		2100		930
07-Dec-01	5080	32	<1	3500	2.4	180000	200000	1410	1470	4000	4200	1400	1500
06-Mar-02	4600	10	<1	4100	2.5	240000	240000	2440	2460	4500	4300	1400	1400
10-May-02	3480	46		2700	2.6	140000	170000	3900	3900	2200	2400	1000	1000
24-Sep-02	1590	87		570	2.8	25800	29000	9	77	365	398	158	174
16-Dec-02	3330	1	1	2260	2.4	955000	1000000	466	483	1210	1240	514	529
21-Feb-03	7470	245	1	8360	2.3	661000	721000	2960	5270	3830	4040	2310	2300
17-Jul-03	2250	13	1	979	2.6	37200	38300	70	362	558	567	163	167
24-Oct-03	1930	4	1	837	2.6	34700	35200	143	152	391	402	200	208
09-Dec-03													
21-Apr-04	2480	1	1	1440	2.6	63500	64300	776	785	495	501	288	291
06-Jul-04	1440	79	<1	533	2.8	21200	22500	8	67	172	176	94	97
12-Oct-04	1050	4	<1	278	2.8	11300	11200	<5	10	63	62	37	37
22-Dec-04													
10-May-05	2430	7	<2	1340	2.6	80600	79200	183	211	500	493	384	377
27-Jul-05	1260	31	<2	371	2.8	17900	18600	<5	23	194	198	97	98
27-Oct-05	1350	40	<2	349	2.7	16400	17000	<5	34	148	144	92	89
22-Dec-05	1910	3	<2	663	2.6	30900	34900	<5	38	257	288	157	178
29-Jan-06	2860				2.6								

Oceania Tasmania Pty Ltd – Environmental Monitoring Report

Table 6. Sampling values from site W2

Date	Cr (dissolved) ug/L	Cr (total) ug/L	Cu (dissolved) ug/L	Cu (total) ug/L	Fe (dissolved) ug/L	Fe (total) ug/L	Mn (dissolved) ug/L	Mn (total) ug/L	Ni (dissolved) ug/L	Ni (total) ug/L	Pb (dissolved) ug/L	Pb (total) ug/L	Zn (dissolved) ug/L	Zn (total) ug/L
15-Jan-01														
18-May-01	149	153	4650	4780	605000	622000	7620	7790	2630	2680	852	684	161000	161000
09-Oct-01		130		3000		500000		5100		2100		670		120000
07-Dec-01	200	200	4700	5000	770000	790000	12000	13000	3000	3300	520	740	210000	220000
06-Mar-02	210	200	5800	5600	950000	950000	38000	36000	3100	3000	450	450	450000	440000
10-May-02	140	150	3100	3300	720000	880000	32000	39000	2200	2300	360	680	210000	250000
24-Sep-02	24	28	592	655	80200	107000	3650	4000	349	379	131	666	32200	35200
16-Dec-02	96	96	2190	2270	408000	424000	16100	16800	1060	1090	181	187	138000	142000
21-Feb-03	447	498	8860	10400	1560000	1860000	34100	37900	4920	4910	121	5800	279000	304000
17-Jul-03	38	41	877	902	191000	232000	9970	10200	346	354	337	744	91100	93800
24-Oct-03	36	37	771	779	161000	167000	6340	6600	430	438	79	88	50900	51800
09-Dec-03														
21-Apr-04	68	69	1090	1110	267000	269000	7940	8030	603	613	79	89	57000	57600
06-Jul-04	22	24	500	515	89200	109000	2920	2990	192	198	229	473	22800	23000
12-Oct-04	13	13	213	212	38300	37900	493	484	81	79	1430	1410	6610	6510
22-Dec-04														
10-May-05	74	73	1310	1290	269000	267000	5320	5230	759	745	81	95	50600	49600
27-Jul-05	16	17	374	382	43600	49300	1650	1670	196	202	70	250	23400	23600
27-Oct-05	15	17	364	367	39800	57600	1240	1240	185	186	678	1150	15300	15100
22-Dec-05	29	33	577	653	86000	117000	3020	3420	382	386	145	176	28300	32600

Oceania Tasmania Pty Ltd – Environmental Monitoring Report

Table 7. Sampling values from site W3

Date	Conductivity	TSS	Alkalinity (total) CaCO3 mg/L	Acidity CaCO3 mg/L	pH	Al (dissolved) ug/L	Al (total) ug/L	As (dissolved) ug/L	As (total) ug/L	Cd (dissolved) ug/L	Cd (total) ug/L	Co (dissolved) ug/L	Co (total) ug/L
22-Oct-97							2800				42		76
30-Jun-99		59	<1	61		1780	2190			19	19	23	23
08-Mar-00		57	<1	98		441	1960			12	14	37	40
27-Jun-00					5.0	1150				50		40	
22-Sep-00					6.0	10				20		60	
15-Jan-01		107			3.1	7040	8230			254	254	112	114
18-May-01	613	64	<1	105	3.5		2260	106	129	106	129	32	39
09-Oct-01	740	50	<1	740	3.0		2900		260		33		63
07-Dec-01	960	90	<1	120	3.3	1800	2900	43	210	50	50	50	50
06-Mar-02	700	40	<1	140	4.6	2900	510	60	150	60	60	60	60
10-May-02	1020	110		200	3.1	8600	8600	38	250	1360	130	80	90
24-Sep-02	896	120		175	3.5	4630	5570	44	231	50	53	58	60
16-Dec-02	856	91	1	136	3.2	3470	3860	<5	156	34	38	54	54
21-Feb-03	973	115	1	165	3.2	2510	3220	7	167	26	28	62	64
17-Jul-03	988	82	1	203	3.1	6960	7250	<5	140	76	76	54	54
24-Oct-03	1000	123	1	161	3.0	3100	3490	7	127	35	38	55	59
09-Dec-03	964	104	1	144	3.2	1960	2530	<5	190	25	31	56	59
21-Apr-04	835	93	1	146	3.4	214	2920	47	165	28	29	50	52
06-Jul-04	990	136	<1	288	3.9	9600	10300	26	194	101	104	76	79
12-Oct-04	1020	112	<1	190	3.1	3700	4360	<5	192	42	43	59	59
22-Dec-04	951	93	<1	132	3.3	2570	3010	<5	169	28	29	59	60
10-May-05	709	63	<2	132	5.3	2590	3100	<5	164	25	26	56	57
27-Jul-05	837	92	<2	136	3.4	835	2710	26	177	21	22	51	52
27-Oct-05	988	106	<2	150	3.1	2300	2870	35	217	28	27	57	57
22-Dec-05	940	103	<2	131	3.2	2510	2840	<5	174	24	25	56	56
28-Jan-06	856				6.0								
29-Jan-06	883				5.5								

Oceania Tasmania Pty Ltd – Environmental Monitoring Report

Table 8. Sampling values from site W3

Date	Cr (dissolved) ug/L	Cr (total) ug/L	Cu (dissolved) ug/L	Cu (total) ug/L	Fe (dissolved) ug/L	Fe (total) ug/L	Mn (dissolved) ug/L	Mn (total) ug/L	Ni (dissolved) ug/L	Ni (total) ug/L	Pb (dissolved) ug/L	Pb (total) ug/L	Zn (dissolved) ug/L	Zn (total) ug/L
22-Oct-97		8		6		67700		12200		166		373		37700
30-Jun-99	<1	<1	10	12	351	25100	4290	4270	47	42	81	147	14700	14900
08-Mar-00	<1	<1	2	2	11700	43100	8620	8770	73	75	<5	46	22500	23200
27-Jun-00	50		50		19820		2780		30		170		13590	
22-Sep-00	0		60		8980		6720		10		180		2840	
15-Jan-01	1	3	125	128	1010	49000	8680	8660	250	256	91	122	37200	37100
18-May-01	<1	<1	7	7	31100	38300	5030	6080	62	75	231	287	13500	16500
09-Oct-01		<1		5		57000		8800		130		160		280000
07-Dec-01	20	20	10	10	9300	54000	9100	9300	110	110	120	250	26000	27000
06-Mar-02	20	20	10	10	56000	43000	9200	8500	110	110	400	400	29000	28000
10-May-02	20	20	1400	1400	14000	70000	8000	8000	170	180	180	230	28000	28000
24-Sep-02	1	1	10	10	5100	54400	9120	9300	127	129	243	300	33200	34000
16-Dec-02	1	1	5	5	837	39800	9190	9120	110	107	143	179	27300	27200
21-Feb-03	1	1	3	3	1760	50800	10500	10700	122	126	50	87	30000	30600
17-Jul-03	1	2	36	36	2950	47600	8020	8010	111	111	562	617	33400	33600
24-Oct-03	1	1	6	6	2350	28200	9130	9650	113	117	205	288	30100	31200
09-Dec-03	1	1	4	4	1670	44900	10200	10600	113	118	69	109	29000	30800
21-Apr-04	1	1	1	4	32000	43500	8340	8480	102	104	8	165	26300	26700
06-Jul-04	1	1	28	29	10500	71400	10200	10400	149	153	503	563	44800	45400
12-Oct-04	2	3	7	8	2810	61800	9930	9590	119	116	198	235	30600	30300
22-Dec-04	3	3	3	4	1420	44200	10600	10100	118	115	100	131	34700	33900
10-May-05	1	2	5	7	650	41200	9080	9070	108	108	151	213	25800	25800
27-Jul-05	<1	1	3	5	18500	48800	8770	8660	100	98	20	143	23800	24400
27-Oct-05	<1	1	15	16	3200	58600	8750	8630	111	109	122	188	26900	27000
22-Dec-05	<1	<1	2	3	849	49600	9610	9410	105	106	85	120	25700	25800

Oceania Tasmania Pty Ltd – Environmental Monitoring Report

Table 9. Sampling values from site W4

Date	Conductivity	TSS	Alkalinity (total) CaCO3 mg/L	Acidity CaCO3 mg/L	pH	Al (dissolved) ug/L	Al (total) ug/L	As (dissolved) ug/L	As (total) ug/L	Cd (dissolved) ug/L	Cd (total) ug/L	Co (dissolved) ug/L	Co (total) ug/L
15-Jan-01		132			3.0	78700	86600			514	530	1730	1710
18-May-01	1830	17	<1	729	2.8		47500	46	62	46	62	446	579
09-Oct-01	1510	75	<1	1510	3.0		21000		29		260		370
07-Dec-01	2050	110	<1	590	2.8	19000	21000	14	81	260	280	340	350
06-Mar-02	2000	50	<1	1000	2.9	39000	38000	11	170	680	640	410	400
10-May-02	4710	26		4000	2.5	230000	250000	3200	3800	4400	4600	1500	1500
24-Sep-02	2630	241	<1	1530	2.8	69600	71400	36	105	588	601	473	476
16-Dec-02	4660	3	1	3530	2.5	177000	183000	210	215	1420	1500	856	910
21-Feb-03	6430	105	1	7280	2.4	407000	417000	3960	4300	3350	3400	1480	1520
17-Jul-03	3740	10	1	2800	2.6	148000	151000	162	169	1640	1670	804	817
24-Oct-03	3910	1	1	2520	2.6	91100	91000	27	32	596	596	862	864
09-Dec-03													
21-Apr-04	5260	7	1	5260	2.5	248000	251000	2390	2400	1930	1940	1120	1120
06-Jul-04	3500	44	<1	2340	2.7	118000	123000	256	269	800	830	585	606
12-Oct-04	4460	6	<1	2970	2.5	108000	106000	82	184	456	466	907	906
22-Dec-04													
10-May-05	5510	5	<2	5200	2.5	330000	336000	1090	1110	3270	3280	1290	1300
27-Jul-05	1880	167	<2	847	2.7	47300	49900	12	70	407	414	252	258
27-Oct-05	2000	93	<2	712	2.6	42800	43200	7	86	339	337	205	202
22-Dec-05	3320	3	<2	1930	2.5	270	388	<5	<5	<1	<1	2	2

Oceania Tasmania Pty Ltd – Environmental Monitoring Report

Table 10. Sampling values from site W4

Date	Cr (dissolved) ug/L	Cr (total) ug/L	Cu (dissolved) ug/L	Cu (total) ug/L	Fe (dissolved) ug/L	Fe (total) ug/L	Mn (dissolved) ug/L	Mn (total) ug/L	Ni (dissolved) ug/L	Ni (total) ug/L	Pb (dissolved) ug/L	Pb (total) ug/L	Zn (dissolved) ug/L	Zn (total) ug/L
15-Jan-01	92	186	69	73	139000	390000	13400	13000	5260	5150	3200	11600	258000	257000
18-May-01	33	43	264	341	77600	117000	4560	5770	991	1280	780	998	119000	160000
09-Oct-01		35		77		140000		8100		800		390		850000
07-Dec-01	20	200	75	77	100000	160000	7500	8200	870	930	270	300	75000	83000
06-Mar-02	120	100	300	300	250000	200000	6900	6600	1000	930	850	810	110000	110000
10-May-02	290	380	1900	2000	1000000	1000000	16000	16000	3100	3200	1000	1200	430000	430000
24-Sep-02	86	90	287	295	290000	315000	7980	8130	1120	1150	961	1100	147000	149000
16-Dec-02	239	249	871	937	790000	791000	16600	16900	2050	2150	664	705	318000	311000
21-Feb-03	563	574	3770	3800	1630000	1700000	35200	35900	3750	3800	3000	3200	636000	649000
17-Jul-03	220	224	970	985	711000	729000	11000	11200	1940	1980	1060	1080	297000	302000
24-Oct-03	142	143	240	240	540000	542000	14800	14900	2050	2050	468	470	249000	249000
09-Dec-03														
21-Apr-04	780	784	2800	2830	1240000	1260000	19900	20100	3010	3020	245	252	396000	402000
06-Jul-04	196	204	853	894	540000	657000	9570	9890	1380	1440	717	741	175000	184000
12-Oct-04	175	177	322	343	762000	864000	15300	15300	2230	2230	275	277	211000	216000
22-Dec-04														
10-May-05	591	597	2820	2860	1080000	1110000	19800	20000	3000	3030	278	285	409000	418000
27-Jul-05	75	83	380	393	142000	178000	4440	4520	620	631	524	1070	61300	61900
27-Oct-05	70	77	464	466	104000	144000	3680	3650	498	490	399	903	56700	56800
22-Dec-05	<1	<1	2	4	423	1490	132	130	<2	6	52	74	376	368

Appendix C

Environmental Management & Rehabilitation of the Comstock Mine – Acid Mine Drainage Trials

Appendix D

AMD Status of Central Mine Waste Rock Dump at Oceania Comstock Mine

Appendix E

*Acid Mine Drainage Status of the Comstock Waste Rocks & Swansea Tramway Waste
Rock Dump*


Appendix F

Rehabilitation Aerial Photo



* Aerial photograph taken November 2003

* Note only part of EL 30/2002 shown.

 - REHABILITATED AREAS

Appendix G

NAPP and NAG Laboratory Analysis

Appendix H

Summary of Mining & Exploration Operations - 1 July 2004 to 30 June 2005