

Appendix 5

**Farrell, J. N, 2002
Sampling Report for SY005 and SY009.
Unpublished.**

SAMPLING REPORT FOR SY005 AND SY009

ZEEHANZINC

ACN 089 093 943

ZEEHAN ZINC LIMITED

PREPARED BY: JAMES FARRELL B.SC. (HONS.)

DATE: 28 JUNE 2002

QUALIFICATIONS & DISCLAIMER

The author (James Farrell) of the following report is currently employed by Oceania Tasmania Pty. Ltd. as an Exploration Geologist for the Comstock Mine. The author has a B.Sc. (Hons) in Economic Geology from the School of Earth Sciences/CODES SRC (University of Tasmania), which was completed at the end of 2001.

The information contained in this report was drawn from both the author's drill core observations and geochemical results. All samples mentioned were collected by the author and analysed by Analabs Pty. Ltd. The author accepts no responsibility or liability for any third party relying on the whole or any part of its contents, nor for damage howsoever caused, arising out of the use thereof by any such third party.

TABLE OF CONTENTS

QUALIFICATIONS & DISCLAIMER	1
1. INTRODUCTION	3
1.1. SUMMARY	3
1.2. ANOMALY C1	3
1.3. TARGET CONCEPTS FOR Ni-SULFIDE	3
2. METHODS	9
2.1. SAMPLING PROCEDURE	9
2.2. ANALYTICAL TECHNIQUES	9
3. RESULTS	9
4. DISCUSSION	13
4.1. RECOMMENDATIONS	14
5. REFERENCES	15

LIST OF FIGURES

Figure 1: Geology of the Comstock area	4
Figure 2: Total Magnetic Intensity for the Comstock area	5
Figure 3: Gravity for the Comstock area	6
Figure 4: Electromagnetics (385 Hz, WNW lines) for the Comstock area	7
Figure 5: Soil geochemistry summary for the Comstock area	8
Figure 6: Diagrammatic representation of the sampled zones	11
Figure 7: Relationships between B, Ni, Ti and Cr from the sampled zone depicted in Figure 6a	12
Figure 8: Relationships between B, Ni, Ti and Cr from the sampled zone depicted in Figure 6b	12
Figure 9: Relationships between B, Ni, Ti and Cr from the sampled zone depicted in Figure 6c	12

LIST OF TABLES

Table 1: Assay results for sampling conducted 16 th May 2002	10
Table 2: Previous sampling conducted by RGC Exploration Pty. Ltd	13

1. INTRODUCTION

1.1. SUMMARY

Sampling of massive pyrrhotite and magnetite-serpentine skarn was undertaken to follow-up an anomaly (C1) identified in the western portion of ML 123M/47. Samples were taken from NQ diamond drill core (SY005 and SY009, Figure 1) at Mineral Resources Tasmania core shed and analysed by Analabs Pty. Ltd. Elements analysed included B, Mg, Si, Ni, Ti, Pt, Pd and Cr. The results show Ni (of principle interest) values range from below detection limits (<50 ppm) to 92.949 ppm. These values are considerably lower (factor of ten) than the author anticipated. A correlation between massive pyrrhotite and Ni values was interpreted.

1.2. ANOMALY C1

The anomaly tested was defined by the author and Aaron Radonich (Exploration Geologist with Zeehan Zinc Ltd.) based on the following criteria:

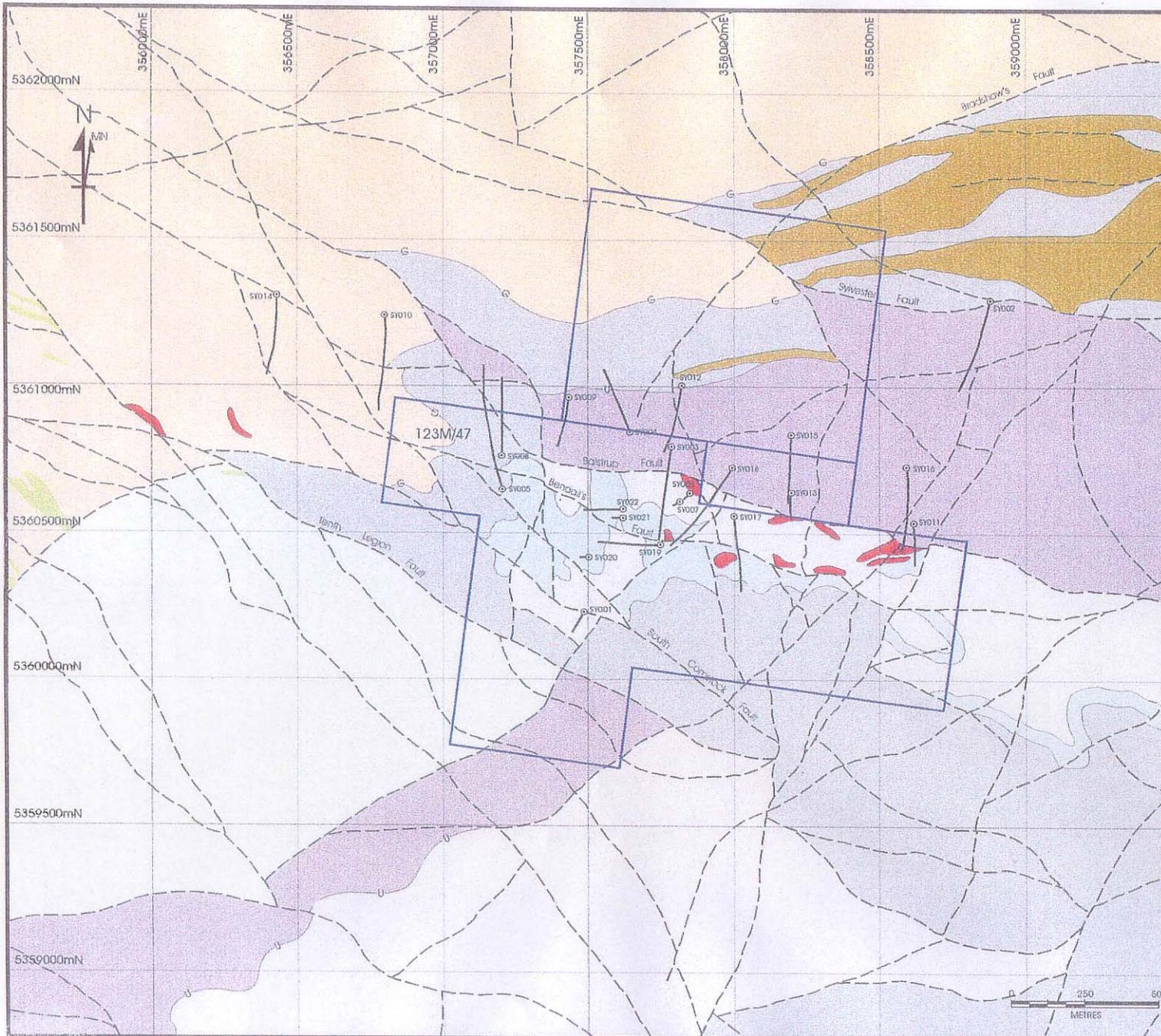
- ❑ Total Magnetic Intensity high (Figure 2) and Gravity low (Figure 3), typical of Rension Bell style mineralisation.
- ❑ EM low (Figure 4).
- ❑ Surface Cr anomaly and granitic signature defined from soil geochemistry (Figure 5).
- ❑ Elevated mafic-ultramafic type minerals (170 ppm Ni and 2.42% Mg) in clays developed above Cambrian volcanics (Crimson Creek Formation) adjacent to the Balstrup Fault.
- ❑ Elevated Au (110ppm) in nearby SY003 (232.3-232.6m), hosted by magnetite-calcite skarn and associated with minor sphalerite, galena and pyrite.

1.3. TARGET CONCEPTS FOR Ni-SULFIDE

1. Granite-related magnetite-pentlandite enrichment associated with lithological/faulted contacts between Mafic-Ultramafic Complexes and Oonah Formation carbonates, carbonaceous shale, siltstones and sandstone.
2. Pyrrhotite-pentlandite deposits hosted by Oonah Formation sediments proximal to Mafic-Ultramafic Complexes.
3. Massive pyrrhotite-pentlandite deposits proximal to Mafic-Ultramafic Complexes and associated with magnetite-serpentine skarn localised (at depth) along major structures.

ZEEHAN ZINC

ACN 089 093 943



- LOWER OONAH FORMATION
Massive sandstone and quartzite
- UPPER OONAH FORMATION
Interbedded shale, siltstone and sandstone
- UPPER OONAH FORMATION
Carbonaceous shale and minor siltstone
- UPPER OONAH FORMATION
Carbonates interbedded with minor siltstone
- UPPER OONAH FORMATION
Meta-mafic volcanics
- CRIMSON CREEK FORMATION
Greywacke, siltstone, mudstone and mafic volcanics
- McIVOR HILL COMPLEX
Basalt, gabbro, serpentinite and dunitite
- DUNDAS GROUP
Siltstone, sandstone, quartzite grit, conglomerate and mafic volcanics
- Gossan
- Magnetite-serpentine skam (at surface)
- Geological contact
- Gradational geological contact
- Unconformable geological contact
- Fault (approximate position)
- Oceania Tasmania Pty. Ltd. Mining Lease boundary
- Diamond drill hole

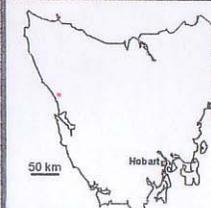
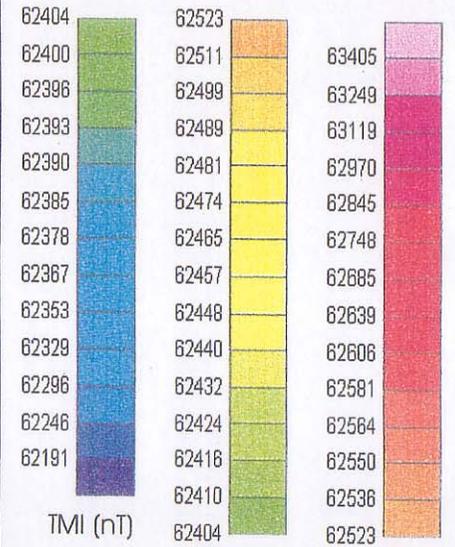
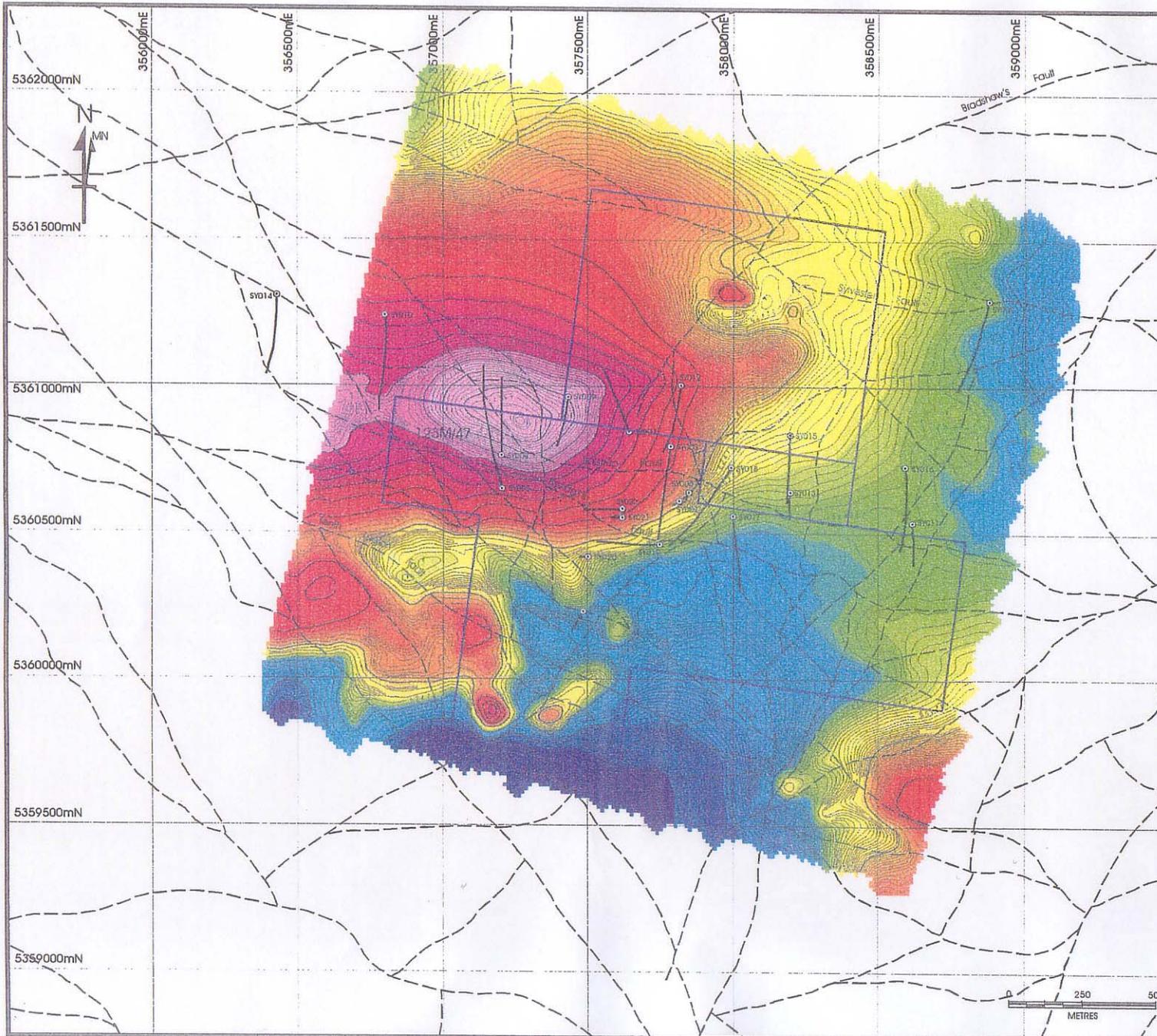


FIGURE 1: Geology of the Comstock area. Also shown are the drill holes, gossans, magnetite-serpentine skam and Mining Leases.

Datum: AGD 66
Projection: AMG ZONE 55
Date: 28-June-02
Scale: 1:20,000

ZEEHAN ZINC

ACN 089 093 943



- Fault (approximate position)
- Oceania Tasmania Pty. Ltd. Mining Lease boundary
- Diamond drill hole

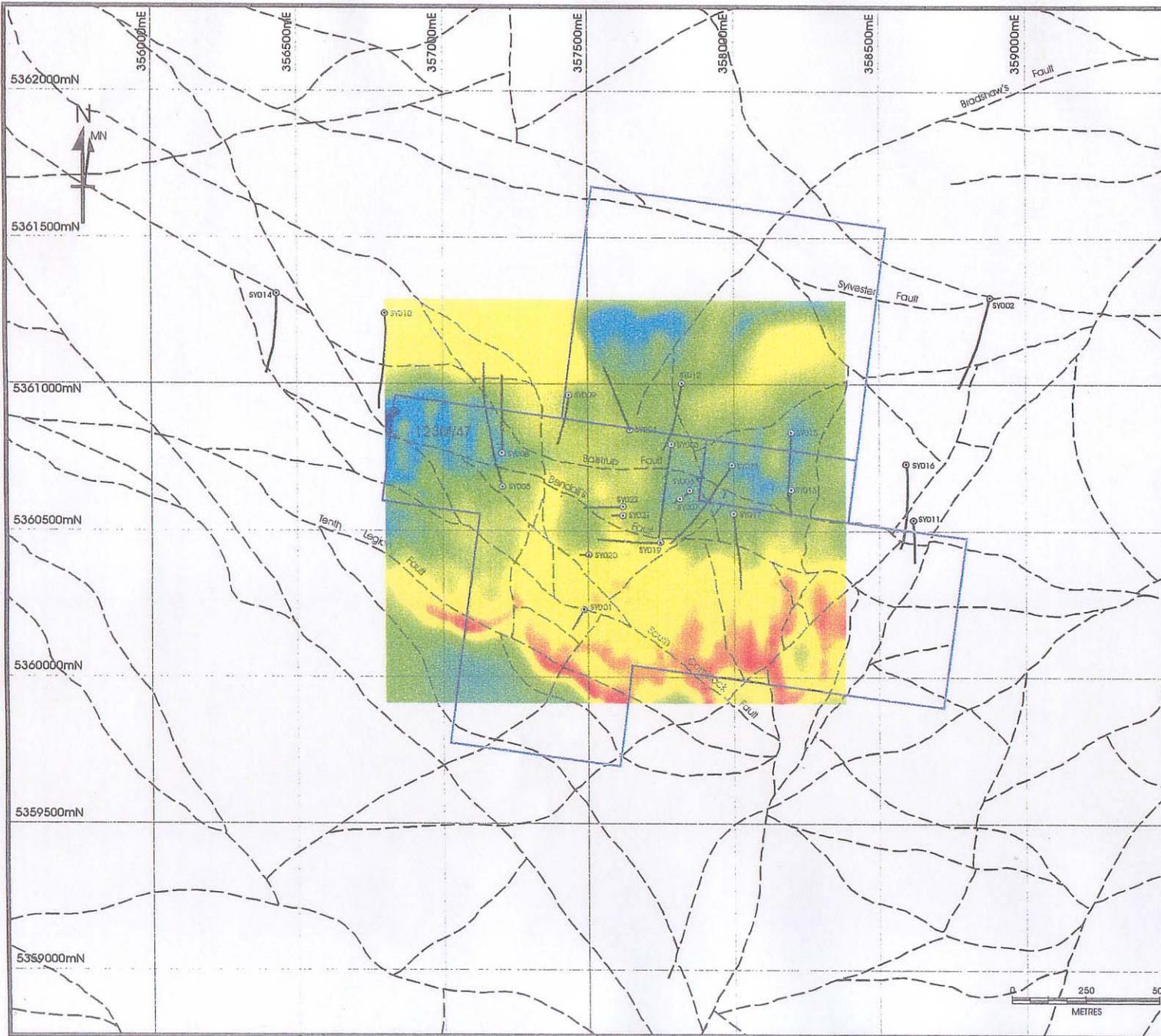


FIGURE 2: Total Magnetic Intensity for the Comstock area. Also shown are the drill holes, faults and Mining Leases.

Datum: AGD 66
 Projection: AMG ZONE 55
 Date: 28-June-02
 Scale: 1:20,000

ZEEHAN ZINC

ACN 089 093 943



-  Fault (approximate position)
-  Oceania Tasmania Pty. Ltd. Mining Lease boundary
-  Diamond drill hole

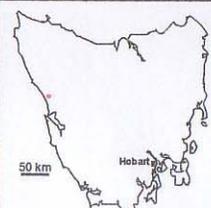
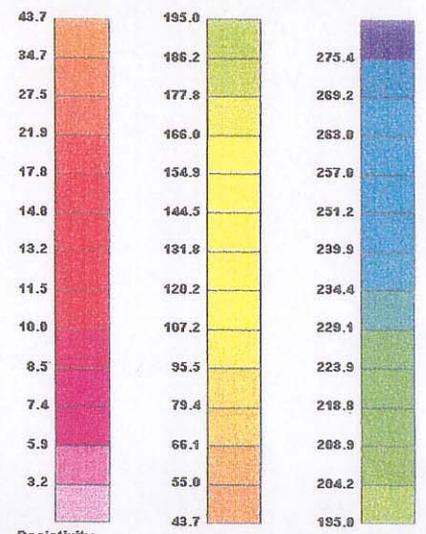
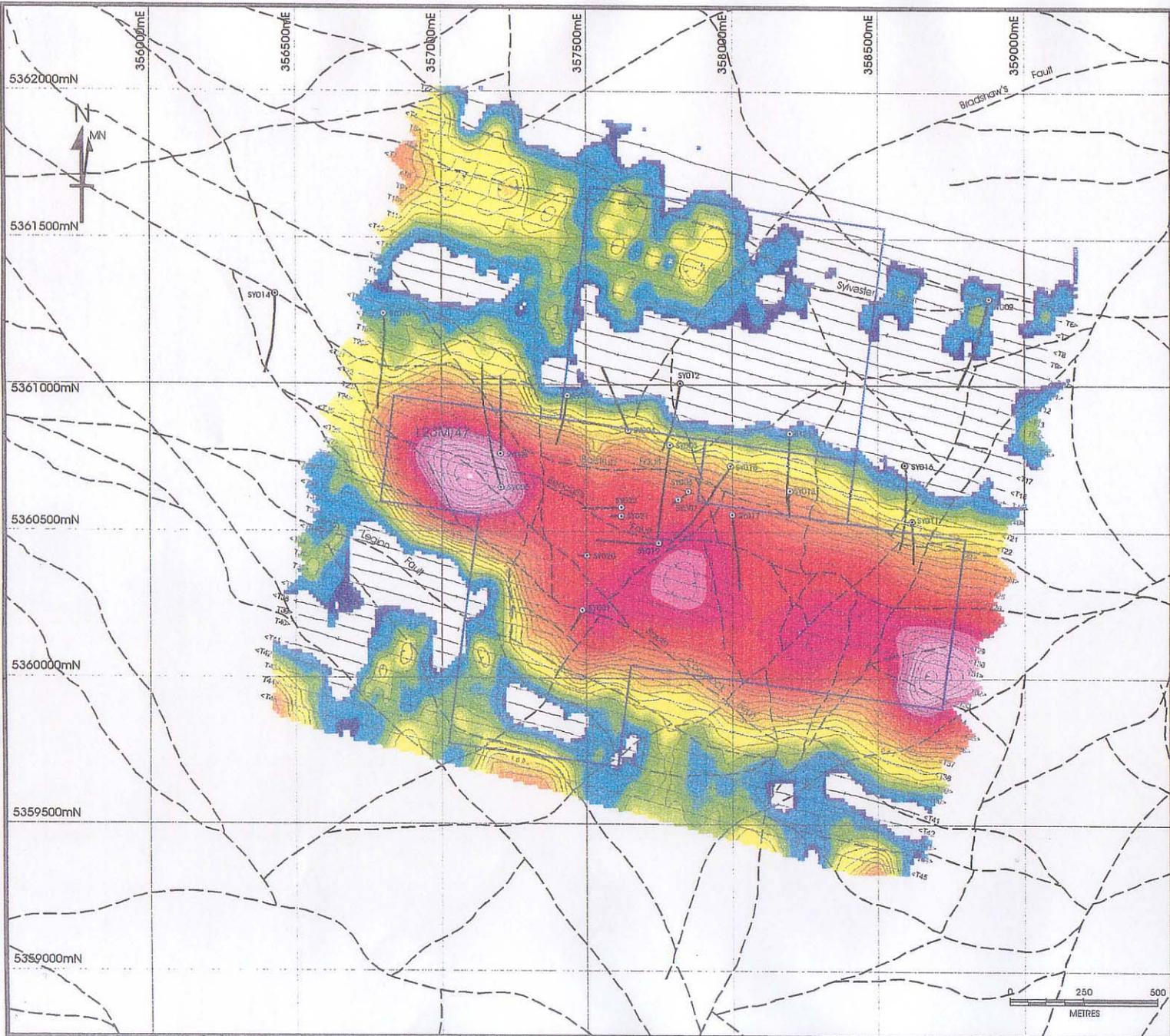


FIGURE 3: Gravity for the Comstock area. Also shown are the drill holes, faults and Mining Leases.

Datum: AGD 66
Projection: AMG ZONE 55
Date: 28-June-02
Scale: 1:20,000

ZEEHAN ZINC

ACN 089 093 943



- Fault (approximate position)
- Oceania Tasmania Pty. Ltd. Mining Lease boundary
- Diamond drill hole

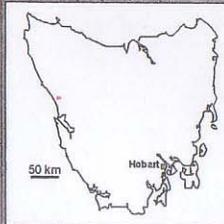
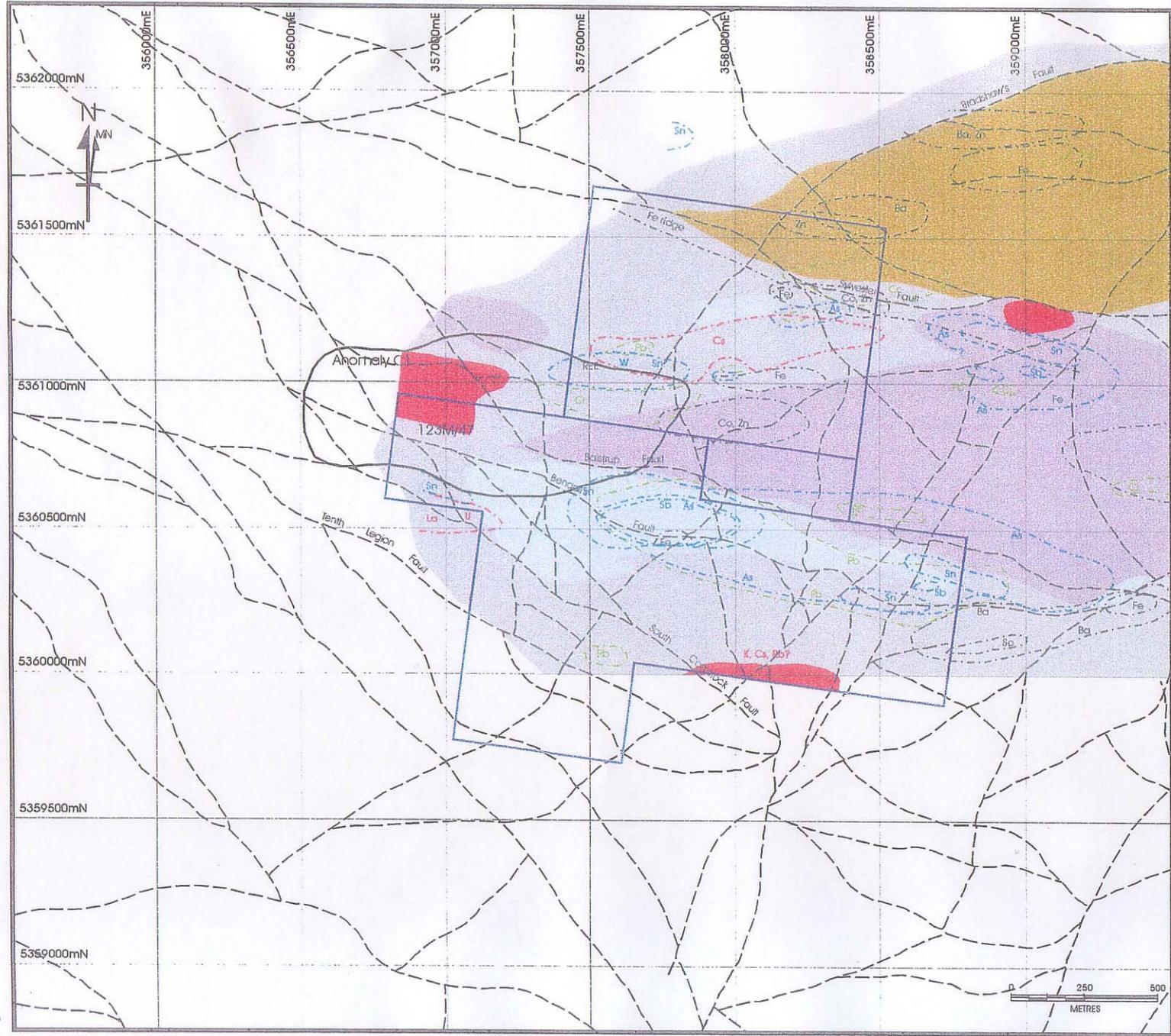


FIGURE 4: Electromagnetics (385 Hz, WNW lines) for the Comstock area. Also shown are the drill holes, faults and Mining Leases.

Datum: AGD 66
 Projection: AMG ZONE 55
 Date: 28-June-02
 Scale: 1:20,000

ZEEHAN ZINC

ACN 089 093 943



- MSED
Crimson Creek Formation
- ASED
Oonah Formation
- CSED
Oonah Formation dolomite
- SPIL & ASED
Oonah Formation mafic volcanics and sediments
- Granitic signature
- Fe, Zn, Co, Ba, Sc
- Pb, Cr
- Sn, W, As, Sb, REE
- U, Cs, La
- Fault (approximate position)
- Oceania Tasmania Pty. Ltd. Mining Lease boundary

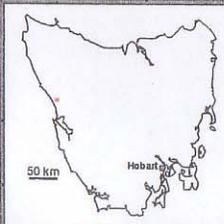


FIGURE 5: Soil geochemistry summary for the Cornstock area. Also shown are the faults, anomaly C1 and Mining Leases.

Datum: AGD 66
 Projection: AMG ZONE 55
 Date: 28-June-02
 Scale: 1:20,000

Target concept 3 was assessed and reported in this document. Additional targeting for the sampled zones included:

- Massive pyrrhotite (\pm pentlandite) associated with late-stage replacement of magnetite-serpentine skarn.
- Ni-sulfide (Pentlandite) or oxide (Ni substituting into magnetite) associated with early magnetite-serpentine skarn.
- Ni-enrichment at early magnetite-serpentine skarn contact with replacing late stage pyrrhotite.

2. METHODS

2.1. SAMPLING PROCEDURE

Samples were collected at Mineral Resources Tasmania core shed on the 16th May 2002 by the author and Aaron Radonich. The samples were taken from NQ size diamond drill core that were drilled by RGC Exploration Pty. Ltd. in November 1990 (SY005) and May 1991 (SY009). Core recovery was not reported for SY005 and SY009; the author assumes it was close to 100% after inspection of the already halved core. Core was quartered using a diamond saw and the samples (quarter core) were sent to Analabs Pty. Ltd. for analysis.

2.2. ANALYTICAL TECHNIQUES

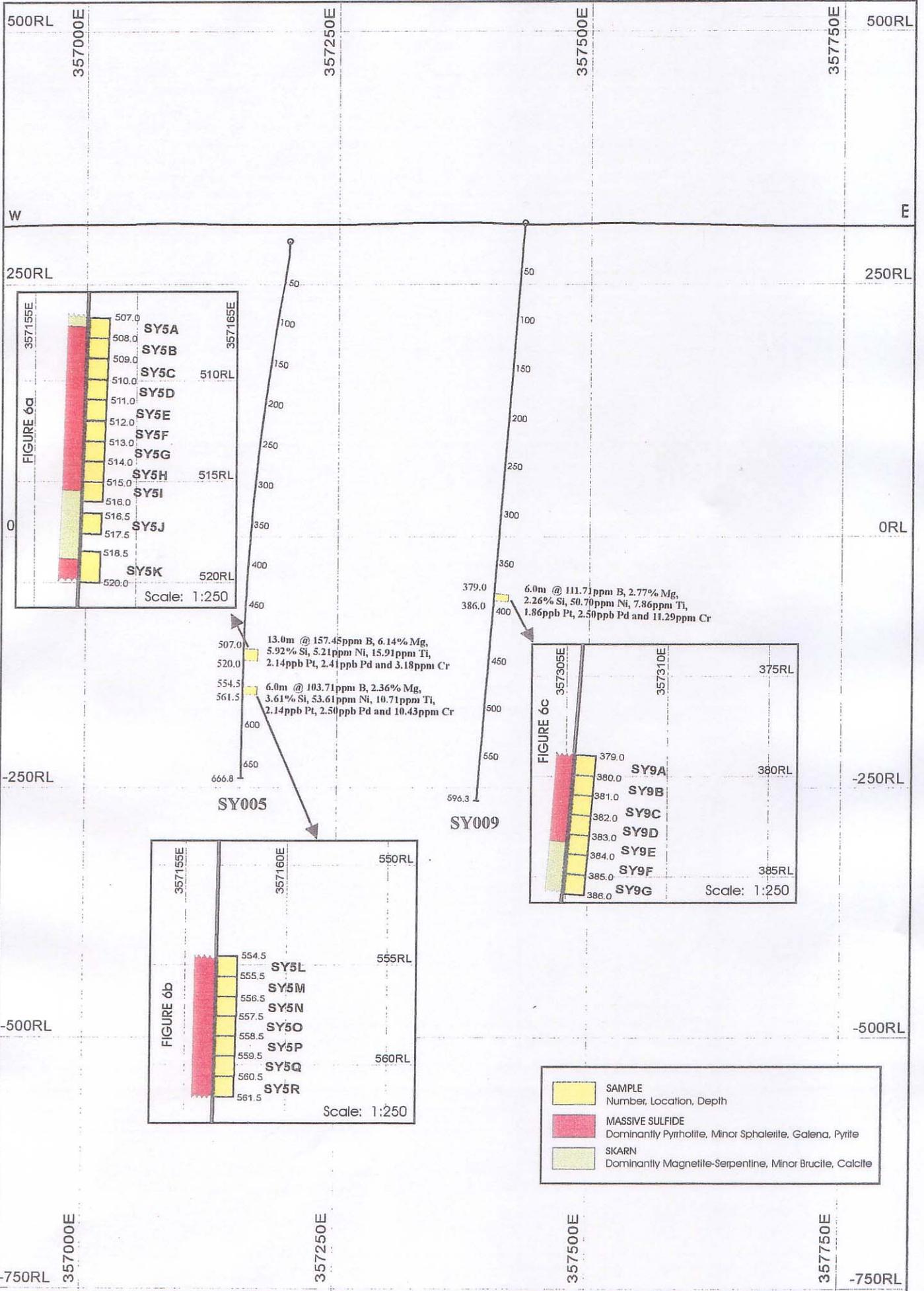
Samples for B, Mg, Si, Ni and Ti were analysed using the ICP-AES (I151) method. Samples were prepared by Sodium Peroxide Fusion (G151) which involves the sample being fused in a zirconium crucible that facilitates maximum silicate breakdown. Pt and Pd were analysed using a fire assay with an ASS finish (F626). Cr was analysed using Trace Element Analysis (X401) which involves samples being powdered and pressed and read on an XRF. All analytical techniques and upper and lower detection limits (for the respective elements) are presented in Table 1.

3. RESULTS

Analytical results for the sampled zones are presented in Table 1 and Figure 6. Previous assay results conducted by RGC Exploration Pty. Ltd. (Crossing, 1992) are presented in Table 2 for the purpose of comparison. Comparisons between B, Ni, Ti and Cr for the three sampled zones depicted in Figure 6 are shown in Figures 7-9.

Table 1: Assay results for sampling conducted 16th May 2002.

SAMPLE#	DESCRIPTION	FROM (m)	TO (m)	B (ppm)	Mg (%)	Si (%)	Ni (ppm)	Ti (ppm)	Pt (ppb)	Pd (ppb)	Cr (ppm)
SY5A	mag-serp skarn and contact with massive pyrrhotite	507.0	508.0	420	18.97	13.5	<50	<50	1	2	<5
SY5B		508.0	509.0	100	2.17	3	<50	175	2	3	<5
SY5C		509.0	510.0	72	0.66	1	<50	<50	3	3.5	<5
SY5D		510.0	511.0	66	2.06	4.4	<50	<50	2.5	2.5	10
SY5E		511.0	512.0	80	1.6	3.1	<50	<50	2.5	2.5	7
SY5F	massive sulfide, pyrrhotite dominant	512.0	513.0	60	4.73	8.8	<50	<50	2	2	<5
SY5G		513.0	514.0	72	1.43	2.7	<50	<50	2.5	2	<5
SY5H		514.0	515.0	84	3.14	5	<50	<50	2.5	2	<5
SY5I		515.0	516.0	265	14.03	9.8	<50	<50	2.5	3	<5
SY5J		516.5	517.5	415	16.95	11.8	<50	<50	1	1.5	<5
SY5K	massive pyrrhotite and mag-serp skarn	518.5	520.0	98	1.84	2	57.312	<50	2	2.5	18
SY5L		554.5	555.5	84	1.79	3.4	59	<50	2	2	53
SY5M	massive sulfide, pyrrhotite dominant	555.5	556.5	88	0.56	0.6	64.024	<50	2	2	6
SY5N		556.5	557.5	82	0.93	1.2	61.181	<50	2	2.5	9
SY5O		557.5	558.5	82	1.55	2.1	57.54	<50	2.5	2.5	<5
SY5P		558.5	559.5	68	0.66	4.4	74.324	<50	2.5	3.5	5
SY5Q		559.5	560.5	82	1.58	7.3	59.184	75	2	2.5	<5
SY5R	massive sulfide, pyrrhotite dominant	560.5	561.5	240	9.43	6.3	<50	<50	2	2.5	<5
SY9A		379.0	380.0	90	1.29	2.8	81.897	55	1	2	5
SY9B		380.0	381.0	74	0.76	1.2	62.734	<50	3	4	<5
SY9C		381.0	382.0	74	0.26	0.5	65.401	<50	2	2.5	7
SY9D		382.0	383.0	78	0.36	0.5	92.949	<50	1	2.5	<5
SY9E	massive pyrrhotite and mag-serp skarn	383.0	384.0	86	1.28	1.1	51.907	<50	2.5	2.5	31
SY9F		384.0	385.0	190	4.68	3.4	<50	<50	2	2	30
SY9G		385.0	386.0	190	10.76	6.3	<50	<50	1.5	2	6
		METHOD		1/151	1/151	1/151	1/151	1/151	F626	F626	X401
		LOWER DETECTION		25	0.01	0.25	50	50	0.5	1000	5
		UPPER DETECTION		500000	40	50	500000	100000	1000	1000	10000



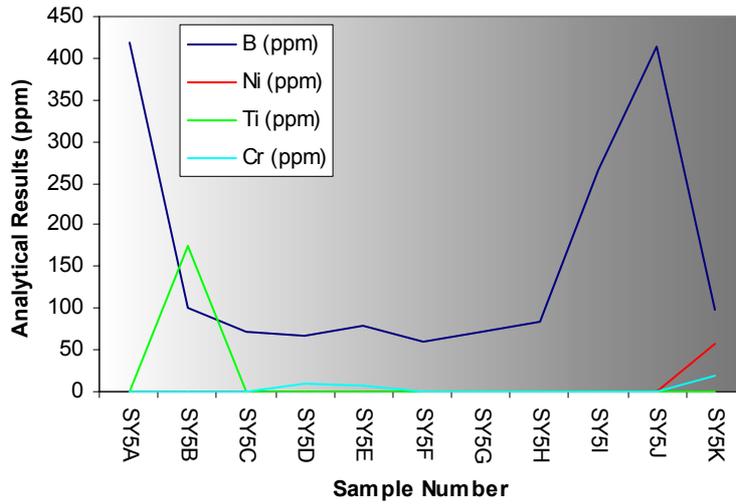


Figure 7: Relationships between B, Ni, Ti and Cr from the sampled zone depicted in Figure 6a.

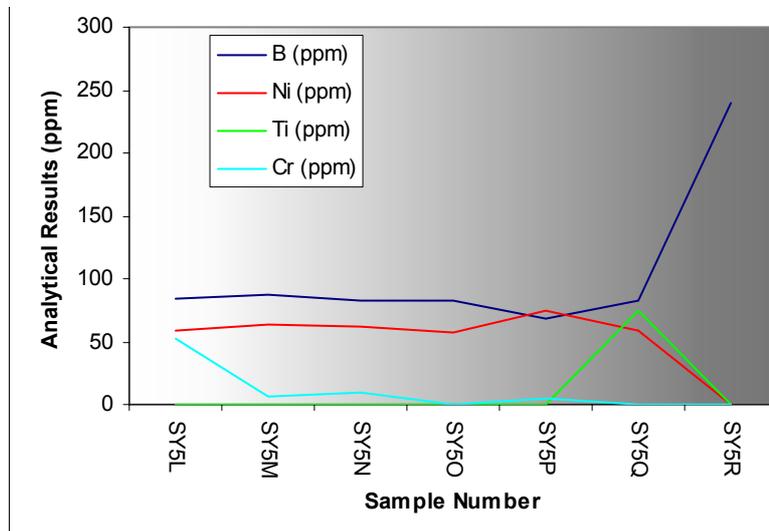


Figure 8: Relationships between B, Ni, Ti and Cr from the sampled zone depicted in Figure 6b.

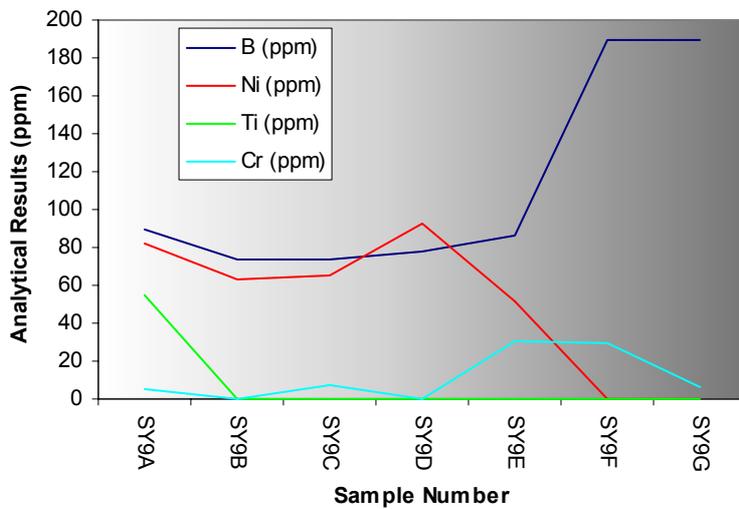


Figure 9: Relationships between B, Ni, Ti and Cr from the sampled zone depicted in Figure 6c.

Table 2: Previous sampling conducted by RGC Exploration Pty. Ltd.

HOLE	FROM (m)	TO (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Sn (ppm)	Au (ppm)	Ag (ppm)	W (ppm)
SY005	507.0	508.0	535	23	407	175	<0.01	3.00	<50
SY005	508.0	509.0	2350	31800	39800	240	<0.01	36.00	909
SY005	509.0	510.0	2800	46800	47100	264	<0.01	70.00	1210
SY005	510.0	511.0	3150	40700	41600	150	<0.01	44.00	1090
SY005	511.0	512.0	1800	37800	13100	134	0.02	35.00	314
SY005	512.0	513.0	3700	99400	29200	182	<0.01	78.00	510
SY005	513.0	514.0	4050	18500	66600	80	<0.01	35.00	1350
SY005	514.0	515.0	570	1250	7700	1150	<0.01	8.00	116
SY005	515.0	516.0	110	180	1050	672	<0.01	1.00	<50
SY005	516.0	517.0	35	295	1700	747	<0.01	2.00	<50
SY005	517.0	518.0	65	55	275	530	<0.01	<0.50	<50
SY005	518.0	519.0	2575	3350	80600	139	<0.01	10.00	1640
SY005	519.0	520.0	2650	4500	39300	43	<0.01	10.00	984
SY005	554.0	555.0	845	50	60	<3	<0.01	<0.50	84
SY005	555.0	556.0	1200	15	45	<3	0.04	<0.50	214
SY005	556.0	557.0	1300	75	50	<3	0.20	1.00	<50
SY005	557.0	558.0	1300	275	45	7	0.22	1.00	<50
SY005	558.0	559.0	905	<5	30	<3	0.10	1.00	50
SY005	559.0	560.1	880	25	285	119	0.02	<0.50	101
SY009	379.0	380.0	1028	12	33	11	<0.01	1.10	-
SY009	380.0	381.0	1334	116	688	<3	0.04	2.00	-
SY009	381.0	382.0	1339	1669	1037	30	0.02	4.40	-
SY009	382.0	383.0	1376	1248	3468	17	0.02	3.20	-
SY009	383.0	384.0	1362	7750	9185	170	<0.01	10.20	-
SY009	384.0	384.6	1000	206	744	15	0.01	1.70	-
SY009	384.6	386.0	412	493	1003	74	<0.01	1.00	-

4. DISCUSSION

Taylor (1993) and Radonich (2001) have distinguished two distinct mineral phases at Comstock. The first is a skarn forming phase with the following stages:

- I. Contact metamorphic stage that resulted in hornfelsing of Oonah Formation sandstone and siltstone and recrystallisation of pure carbonates and formation of pure carbonates and formation of tremolite-diopside skarns in impure carbonates.
- II. Early metasomatic stage characterised by fine-grained pyroxene and lesser garnet pyroxene skarn within Upper Oonah Formation carbonates.
- III. Late metasomatic stage characterised by extensive magnetite-serpentine and brucite-serpentine-magnetite skarns within carbonates of the Upper Oonah Formation.

The second mineral phase at Comstock included massive pyrrhotite (with minor sphalerite, galena and pyrite) replacing magnetite-serpentine skarn in the immediate footwall of the Balstrup Fault.

Ni (albeit in minor concentrations) appears to be associated with the second mineralising phase (massive pyrrhotite). This is seen in (Figures 6b, 6c, and Table 1). The upper (507.0-516.0m) massive pyrrhotite zone (Figure 6a) is notably devoid of Ni (Table 1). The author interprets the presence of Ni to be associated with proximity and exposure of the second phase mineralising fluid to the mafic-ultramafic rocks (McIvor Hill Complex) at depth (Figure 1). Figures 7-9 shown an apparent lack of correlation between B, Ni, Ti and Cr. Pt and Pd were not plotted as they are interpreted to exist only as background concentrations.

While the sampling reported here has been unsuccessful, potential exists for a granite-related mafic-ultramafic associated Ni-sulfide deposit within the western corner of ML 123M/47. The search for nickel continues.

4.1. RECOMMENDATIONS

1. Heavy metal crush on “fresh” Cambrian volcanics north of the Balstrup Fault, to test as a possible Ni source in the soil profile.
2. Gridding/wacker sampling on a 25x25 metre grid to further define the soil anomaly.
3. Further fieldwork and possible drilling to help constrain the location of the mafic-ultramafic rocks at depth.
4. Follow-up work on mineral assemblage, fuchsite and tourmaline are typical of Ni-skarns.
5. Reassessment of biotite hornfels. The presence of phlogopite may represent a full boron metasomatic assemblage.
6. Further assessment of the significance of rhodochrosite replacing feldspar phenocrysts on the margins of mafic dykes where in contact with the skarn assemblage and/or carbonate.
7. Future assaying for boron should take into account an association with mineralising phase 1 (skarn).

5. REFERENCES

- CROSSING, D. J. F. 1992. *EL 42/87, incorporating MLs 43M/85 and 123M/47, Zeehan Area, Annual Report for the period October 1991 – September 1992*. Unpublished RGC Exploration Report. Report No. T 92-17.
- RADONICH, A. R. 2001. *Geochemistry of the Comstock Zn-Pb-Ag deposit, Western Tasmania*. Unpublished Honours Thesis, University of Tasmania, 116pp.
- TAYLOR, M. I. 1993. *Skarn and sulfide mineralisation of the Sylvester Prospect*. Unpublished Honours Thesis, University of Tasmania, 121pp.