

C.R.A. EXPLORATION PTY. LIMITED

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E.L. 19/72 DIAL RANGE NORTH WEST TASMANIA
PROGRESS REPORT NO. 2
TO DECEMBER 8TH, 1974.

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Date : 6th February, 1975

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Copy to : Department of Mines,
 : Tasmania

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1. SUMMARY AND CONCLUSIONS

Investigations within E.L. 19/72 during the twelve month period to December 8th 1974 has been concentrated in the Nietta area which embraces massive acid volcanics of the Cambrian Nietta Group.

Geological mapping at a scale of 1:5000 has led to the subdivision of the Nietta Group in this area into a lower highly altered and pyritic suite of lavas, pyroclastics and lesser sediments and an upper barren and unaltered dominantly pyroclastic suite.

The Lower Nietta Group volcanics are rhyodacitic to rhyolitic in composition and comprise lavas, coarse ash-flow tuffs and fine waterlain vitric airfall tuffs. A few thin mudstone to fine tuffaceous sandstone bands occur within the sequence in the southern portions of the mapped area where the lavas are best developed. These sediment bands thicken rapidly to the north as the lavas thin.

A geochemical soil sampling programme carried out over the area mapped in detail has delineated a number of lead-zinc anomalies. These were returned by samples collected over the main sedimentary unit of the Lower Nietta Group in the northern portion of the area under investigation.

Future work will involve closer scale soil sampling of these anomalies and the Crosby Creek anomalies which were outlined in the previous period. An airborne E.M. survey of the area is also planned.

2. INTRODUCTION

E.L. 19/72 of 626 km² was initially pegged on October 18th 1972 and granted for a six month period from December 8th. This area was renewed 'in toto' on June 8th 1973, but on December 8th 1973 was reduced to 245 km² and renewed for a further six months period. The reduced area included the former E.L. 10/73 of 16.3 km² which was relinquished on the same date. On June 8th 1974 the area was reduced to 231 km² and renewed until December 8th 1974 when it was again renewed 'in toto' until June 8th 1975.

This tenement was taken out primarily to explore for stratiform copper-lead-zinc mineralisation.

Geological mapping at a scale of 1:31 680 accompanied by detailed geochemical drainage sampling was undertaken in the period to December 8th 1973. This work has been outlined in a previous progress report (see Porter 12th February 1974).

The programme described above resulted in the Nietta Prospect being delineated as the area most favourable for stratabound copper-lead-zinc occurrence. Consequently work during the period December 8th 1973 to December 8th 1974 has been concentrated in this area. This included geological mapping at a scale of 1:5000 and concurrent geochemical soil sampling at 20 metre intervals along lines with a 400 metre spacing over an area of approximately 15 km². The grid was controlled by a theodolite survey of the area of interest.

All analyses were carried out by The Zinc Corporation at Broken Hill.

Field work during 1974 was carried out by P.J. Ashton with some assistance from T.M. Porter.

3. GEOLOGICAL SETTING

3.1 General

The concurrent E.L. 19/72 embraces Cambro-Ordovician sediments and volcanics of portion of the Fossey Mountain Trough. These lithologies unconformably overlie slates and quartzites of the Upper Adelaidean Rocky Cape Group to the north-west and the north-east where they comprise the Rocky Cape Block and portion of the Ulverstone Nucleus respectively. To the south and in part the north-east they overlie 'older' (probably Lower Adelaidean or Carpentarian) metamorphics which respectively comprise the Tyennan Block and Ulverstone Nucleus.

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Cambrian sedimentation within the Fossey Mountain Trough falls into three main stratigraphic groups, namely the Lower to Middle Cambrian Nietta and Cateena Groups and the Upper Cambrian Radfords Creek Group. The Cateena and Radfords Creek Groups were first mapped by Burns (1964) while the Nietta Group has been introduced during this programme.

The Cateena Group which comprises alternating volcanics and greywackes to mudstones, is considered to be a basinal equivalent of the shallow water to subaerial Nietta Group massive volcanics which have only minor intercalated sediments.

Deposition of the Cateena and Nietta Groups was terminated by the Hardstaff Movement resulting in an unconformity of up to at least 15 degrees with the overlying units. To the north of E.L. 19/72 a spilite/chert unit is found immediately above the Hardstaff Unconformity followed disconformably by the Radfords Creek Group. This Group is represented within E.L. 19/72 by a sequence of greywackes, greywacke conglomerates, mudstones and intermediate volcanics.

The Radfords Creek Group is transgressively (or disconformably) overlain by the molassic Ordovician Roland Conglomerate and Moina Sandstone which are in turn overlain by the Gordon Limestone. Portions of the mapped Roland Conglomerate, particularly in the Nietta area, differ from the regional unit and may in fact be basal Moina Sandstone.

Within E.L. 19/72 these lithologies are overlain by Tertiary basalts.

With the exception of the Nietta Group the above-mentioned geology has been outlined in detail in the previous progress reports (Porter 1974).

3.2 Nietta Area

Within the Nietta area the Cambrian is represented by the Nietta Group which is overlain by the Ordovician Roland Conglomerate and Moina Sandstone. These are in turn capped by Tertiary basalt (see Plan No. T.883).

3.2.1. Nietta Group

This group can be divided into an Upper and a Lower subdivision. The Lower Nietta Group is composed of rhyodacitic to rhyolitic lavas and pyroclastics and is characterised by intense pervasive alteration (in the Nietta Prospect area) with associated pyrite both as disseminations and as massive veins up to 0.4m in thickness. The Upper Nietta Group in contrast has little associated sulphides or alteration and comprises rhyodacitic lavas and pyroclastics.

3.2.1.1 Lower Nietta Group

This unit is composed of rhyolitic to rhyodacitic lavas and pyroclastics, and sediments. The paucity of clastic sediments in the central portion of the mapped area (Plan Nos. T884 and T885) has precluded the establishment of an exact stratigraphic succession for the Lower Nietta Group, if in fact such a concept is valid in this environment. Three distinct lava types have been mapped although two or all may be equivalent.

Lava 1: This is a distinctive quartz and feldspar porphyritic rhyolite. It is characterised by large corroded quartz phenocrysts and sericitised plagioclase phenocrysts.

Lava 2: This rock type has been highly altered and all exposures are strongly weathered. Consequently all textures have been obliterated making its volcanic nature difficult to determine. However, it does contain what appear to be vesicles which tend to indicate a lava rather than a pyroclastic. It is rhyolitic in composition.

Lava 3: This lava is also highly altered and well weathered. It is very vesicular, although all other textural features have been destroyed. Again it is rhyolitic in composition.

Two distinct pyroclastic types have been encountered, one being a coarse grained ashflow tuff, the other an extremely fine grained vitric tuff probably of airfall origin. The two types interfinger and appear to be laterally equivalent.

Ashflow Tuffs: These are generally composed of pumice fragments and glass shards with varying proportions of exotic rock fragments and primary crystals of quartz and feldspar. Intense alteration has affected these rocks also. Pumice fragments are completely replaced by sericite as are feldspars. Shards are now composed of fine grained quartz and sericite.

Vitric Tuffs: These occur in the field as fine to very fine grained siliceous rocks which were in some cases at first mistaken for cherts. In some specimens primary structures have been sufficiently preserved to be recognised under the microscope. These show the rock to be composed almost entirely of small glass shards. Hence they have been termed vitric tuffs. These tuffs grade vertically and laterally into clastic sediments and are well banded in parts with fine sediment intercalations indicating subaqueous deposition.

Sedimentary Units: Clastic sediments within the sequence are often difficult to differentiate from vitric tuffs and tuffaceous sediments due to poor exposure. They range from a fine silty, well laminated mudstone to a fine to medium grained sandstone which may or may not be micaceous. Dips range from 55 degrees to vertical.

In the central portions of the mapped area, in particular where the lavas are best developed, clastic sediments occur only as thin beds or lenses.

To the north and east these bands thicken appreciably and appear to 'replace' portion of the pyroclastic sequence with which they interfinger.

It appears likely that the central portion of the mapped area corresponding to the best development of pyroclastics and lavas represents an original eruptive volcanic centre. This probably formed a positive feature with respect to sedimentation, with sediments lapping onto its margins to the north-east. The same appears to apply to the south-west just outside of the mapped area.

3.2.1.2 Upper Nietta Group

The Upper Nietta Group is composed of similar rock types to the lower subdivision with the exception of the sedimentary units and the lack of intense alteration. Minor amounts of a pink or green to blue spherulitic lava have been encountered.

Two distinct pyroclastic types are recognisable :

Vitric Crystal Tuff: This is a coarse grained unit composed of pumice fragments, glass shards and crystals of feldspar and quartz. Blebs of pyrite are found scattered through the rock in some areas. No definite evidence could be found to class this either as an ashflow or airfall deposit.

Fine Vitric Tuff: A very fine grained tuff which appears to be composed almost entirely of glass shards occurs adjacent to the coarse vitric crystal tuff described above. This tuff may have been deposited in a subaqueous environment.

3.2.1.3 Rhyodacitic Intrusives

On the eastern margin of the mapped area a characteristic pink rhyodacite outcrops extensively. It is essentially a fine grained rock with small phenocrysts of plagioclase and patches of chlorite. Due to its outcrop configuration and strong resemblance to similar intrusives to the south of the Yolande River (north of Queenstown) it is suggested that this rock type is intrusive. However, some specimens from this body resemble lavas or pyroclastics and its origin is by no means certain.

3.2.2 Radfords Creek Group

Although this group occurs to the north and west of the prospect area at Nietta it is not certain whether it is actually represented within the mapped area. Some of the sediments on the northern margin of Plan No. T.884 may belong to the Radfords Creek Group.

3.2.3 Ordovician

Both Roland Conglomerate and Moina Sandstone were encountered in the prospect area. The Roland Conglomerate which is found in the northern portion of the mapped area, consists predominantly of quartzite pebbles and cobbles set in a fine siliceous matrix. A relatively thin, fine to medium grained ferruginous sandstone unit occurs at the base of the sequence. Moina Sandstone is represented in the south-west of the prospect area by a white siliceous sandstone with an accompanying thin pinkish pebble conglomerate in its basal sections. In this area the Moina Sandstone appears to rest directly on Lower Nietta Group volcanics suggesting that this area still constituted a positive feature during the early Ordovician.

3.2.4 Tertiary Basalt

Remnants of the widespread Tertiary basalt flows cap the Cambrian sequence and drape around the Ordovician outcrops.

3.2.5 Quaternary Talus

Talus which is usually composed of Ordovician rock types or to a lesser extent Tertiary basalt covers many of the slopes and hill bases in the area. It ranges from clay size material to large boulders.

4. GEOCHEMISTRY

A geochemical soil sampling programme covering the altered Lower Nietta Group acid volcanics and associated sediments was undertaken in conjunction with the 1:5000 scale mapping. Samples were collected at 20 metre intervals along lines spaced at 400 metres. Twelve lines with a total length of 20 km were cut, mapped and sampled. Samples were taken from the weathered bedrock horizon although this was not always possible due to the occurrence of a rocky scree cover over much of the area. Profile samples indicated however, that the B horizon yielded comparable, and in some cases higher, values than the weathered bedrock samples.

Samples collected over the Lower Nietta Group altered lavas and pyroclastics yielded very low levels (see Plan Nos. T.885 and T.886).

Background ranges for these lithologies are as follows :

Lead: Less than 1 to 30 ppm with a few values up to 50 ppm but usually less than 15 ppm and commonly less than 1 ppm over considerable intervals.

Zinc: Less than 1 to 30 ppm with a few values up to 50 ppm but usually less than 20 ppm and commonly less than 5 ppm.

Copper: Less than 1 to 20 ppm with a few scattered values up to 50 ppm but usually less than 5 ppm and commonly less than 1 ppm over considerable intervals.

Elevated lead levels commonly accompanied by above background zinc values were found to coincide with sediment lenses within the altered volcanics. Such lead values range from 50 to 150 ppm with one level of 250 ppm while zinc varied from 20 to 50 ppm with a single value of 220 ppm being obtained. One anomalous lead level of 5100 ppm accompanied by a zinc value of 144 ppm was returned by a sample on line 117. (See Plan No. T.886). Other anomalous levels of 100 and 160 ppm lead were obtained on lines 113 and 120 respectively a half a kilometre along strike on either side of the above. Another anomalous level of 460 ppm Pb was encountered lower in the sequence on line 117 and reflected along strike on line 113. These values were returned by samples from the northern margin of the prospect area taken over the major sediment band on the flank of the main eruptive volcanic centre.

A number of anomalous copper levels of up to 200 ppm were obtained above altered lavas and pyroclastics near the centre of the prospect area. (See Plan Nos. T.886 and T.887). These were found to coincide with zones of strong pyrite development where good exposures are available.

A small piece of gossanous float from line 98 near co-ordinate 11000E (see Plan No. T.887) assayed 2100 ppm Pb, 488 ppm Zn and 200 ppm Cu. Soil samples in this area returned levels of between 100 and 170 ppm Pb, 10 to 40 ppm Zn and 5 to 25 ppm Cu.

5. RECOMMENDATIONS

Further work within E.L. 19/72 should, in the immediate future, include both geophysical and geochemical investigation.

5.1 Geochemistry

Follow up geochemical soil sampling should be concentrated in two main areas namely, the soil anomalies on lines 113 to 120 as outlined in the previous section (the "Castra Anomalies") and the "Crosby Creek Anomalies" (described in the previous interim report dated 12th February 1974).

5.1.1 The Castra Anomalies (See Plan No. T.883)

The stratigraphic interval between and on either side of the two anomalous horizons defined on lines 113 and 117 should be tested by soil sampling on lines with a 100 metre spacing between 11100N and 12500N with a sample spacing of 20 metres. This work should more closely define the zone of interest and determine whether further more intensive investigation is warranted.

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5.1.2 The Crosby Creek Anomalies (See Plan T.883)

Re-appraisal of the sequence yielding anomalous lead-zinc and copper geochemical soil levels to the west of the township of Nietta indicates that it may in fact belong to the Lower Nietta Group. As such these anomalies would be similar although more extensive than the Castra Anomalies. Consequently a similar course of action is recommended.

5.2 Geophysics

An airborne E.M. survey to cover the Nietta Prospect area and the Crosby Creek Anomalies is planned to provide further data to aid interpretation of geochemical information.

T.M. Porter

TMP/LM

ATTACHMENTS Geochemical Soil Sample Ledger Sheets.REFERENCES

- Porter, T.M. Feb. 12th, 1974. E.L. 19/72 Dial Range North-West Tasmania Progress Report. CRAE Rep.7572
- Porter, T.M. Feb. 12th 1974. E.L. 10/73 Loyetea North West Tasmania Final Report. CRAE Rep. 7469

KEYWORDS

Copper, lead, zinc, rhyolite, Cambrian, Ordovician, geochem.-soil, geol. mapping-detailed, geophys.-EM.

Location: Burnie SK 55-3 1:250 000 map sheet.

LIST OF PLANS

		<u>Scale</u>
T.883	E.L. 19/72, Dial Range, North West Tasmania. Geological Plan.	1:50 000
T.884	Nietta Prospect, E.L. 19/72, Dial Range, North West Tasmania. Geological Plan, Sheet 1.	1:5000
T.885	Nietta Prospect, E.L. 19/72, Dial Range, North West Tasmania. Geological Plan, Sheet 2.	1:5000
T.886	Nietta Prospect, E.L. 19/72, Dial Range, North West Tasmania. Geochemical Soil Sample Plan, Sheet 1.	1:5000
T.887	Nietta Prospect, E.L. 19/72, Dial Range, North West Tasmania. Geochemical Soil Sample Plan, Sheet 2.	1:5000

NOTE: Transparencies held.

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C. R. A. E. 31.

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GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16946

AREA NIETTA

SAMPLE Nos. 208416 - 208447

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE NIETTA PROSPECT E.L. 19/12 DIAL RANGE NW. T.S. GEOCHEM. SOIL SAMPLE PLAN. SHEET 2.

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth C.M.	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N 8200																											
E 11030	208416	/	-	/	/	-	B	70	gray	-	-	/	110	10	17	2							1				Bed rock fine green tuff
E 11010	208417	/	-	/	/	-	WB	100	brown	-	-	/	120	10	22	3							1				
E 10990	208418	/	-	/	/	-	"	100	"	-	-	/	120	15	30	7							1				fine green tuff - pyritic in part.
E 10970	208419	/	-	/	/	-	"	100	gray	-	-	/		2	5	4							1				R. Creek sediments.
E 10950	208420	-	-	/	/	-	"	100	"	-	-	/		5	3	2							<1				as above.
E 10930	208421	-	-	/	/	-	"	100	"	-	-	/		5	3	2							<1				"
E 10910	208422	/	-	/	/	-	B	100	"	-	-	/	130	2	12	3							1				fine green tuff?
E 10890	208423	/	-	/	/	-	B	90	"	-	-	/	130	10	26	3							<1				as above
E 10870	208424	/	-	/	/	-	WB	90	yellow	-	-	/	120	13	22	4							1				"
E 10850	208425	/	-	/	/	-	"	80	"	-	-	/	120	13	23	4							1				"
E 10830	208426	/	-	/	/	-	"	80	"	-	-	/	120	10	22	5							2				"
E 10810	208427	-	-	/	/	/	"	80	yellow green	-	-	/	120	7	20	2							1				coarser granular tuff
E 10790	208428	/	-	/	/	-	WB	75	brown	-	-	/	100	21	46	4							1				Ashflow tuff to a breccia, very unorthodox
E 10770	208429	/	-	/	/	-	WB	70	"	-	-	/	100	47	120	9							1				as above, pyritic
E 10750	208430	/	-	/	/	-	"	110	"	-	-	/	120	67	156	16							1				Tuff has visible rock frags, qtz, feldspar grains
E 10730	208431	-	-	/	/	/	"	80	yellow	-	-	/	120	18	18	49							1				
E 10710	208432	/	-	/	/	-	B/WB	70	gray yellow	-	-	/	120	10	11	37							<1				fine green short like tuff
E 10690	208433	/	-	/	/	-	WB	70	brown	-	-	/	120	13	15	24							1				Green tuff? feldspar phenocrysts
E 10670	208434	/	-	/	/	-	B/WB	60	gray	-	-	/	100	5	11	9							<1				Granular tuff
E 10650	208435	/	-	/	/	-	B/WB	70	"	-	-	/	110	5	9	7							<1				"
E 10630	208436	/	-	/	/	-	WB	70	yellow	-	-	/	110	15	16	71							<1				
E 10610	208437	/	-	/	/	-	WB/B	70	brown	-	-	/	110	7	13	2							<1				
E 10590	208438	/	-	/	/	-	B/WB	100	"	-	-	/	110+	10	16	5							1				
E 10570	208439	+/-	-	/	/	/	WB	80	brown	-	-	/	110	13	19	10							<1				Siliceous rock with // aligned flattened vesicles.
E 10550	208440	/	-	/	/	-	WB	50	"	-	-	/	110	10	19	19							1				Green tuff. (DR 31/32 lock)
E 10530	208441	/	-	/	/	-	"	60	"	-	-	/	110	10	16	5							1				
E 10510	208442	/	-	/	/	-	"	60	"	-	-	/	110	13	16	38							1				Green ash flow tuff
E 10490	208443	/	-	/	/	-	B/WB	60	"	-	-	/	110	12	19	2							2				as above
E 10470	208444	/	-	/	/	-	B	80	gray	-	-	/	110	2	7	4							1				" finer
E 10450	208445	/	-	/	/	-	B/WB	70	gray brown	-	-	/	110	8	12	1							1				as above
E 10430	208446	/	-	/	/	-	WB/B	70	brown	-	-	/	110	8	12	<1							2				Fine siliceous vesicular rock (Pink)
E 10410	208447	-	-	/	/	-	"	70	"	-	-	/		2	5	<1							1				as above

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C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16946

AREA NIETTA

SAMPLE Nos. 208448 - 208456

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE A ~~map~~ p. 1.

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock		Metal content, p. p. m.										Geological observations				
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth (m)	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo		As			
N 8200																											
E 10390	208448	1	-	1	1	1	WB/B	70	brown	-	-	1	120	13	19	2						<1					fine grain siliceous rock
E 10370	208449	1	-	1	1	1	WB/B	70	"	-	-	1	120	10	16	1						<1					as above
E 10350	208450	-	-	1	1	-		70	white	-	-	1		<1	4	<1						<1					creek sediments.
E 10330	208451	1	-	1	1	-		80	grey	-	-	1		2	5	<1						<1					Qt.
E 10310	208452	1	-	1	1	1		80	"	-	-	1	*	<1	3	<1						<1					Qt.
E 10290	208453	-	-	1	1	-		70	"	-	-	1		4	3	<1						<1					Qt.
E 10270	208454	-	-	1	1	-		80	"	-	-	1		<1	3	<1						<1					Qt.
E 10250	208455	1	-	1	1	-		80	"	-	-	1		<1	4	<1						1					Qt.
E 10230	208456	1	-	1	1	-		70	"	-	-	1		<1	4	1						<1					Qt.

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C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

540016

D.P.O. 16948 to 208973
D.P.O. 16950 from 246529

AREA NIETTA

SAMPLE Nos. 208949 - 208973

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE

A A 1.2

246529 - 246535

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (metres)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N8600																											
E 9930	208949	-	-	1	1	-	-	90	gray	-	✓	-	-	4	2	41							<1				Qt
E 9950	208950	-	-	1	1	-	-	70	"	-	✓	-	-	21	21	41							<1				"
E 9970	208951	-	-	1	1	-	-	70	"	-	✓	-	-	2	2	41							<1				"
E 9990	208952	-	-	1	1	-	-	80	"	-	✓	-	-	4	2	41							<1				" ?
E 10010	208953	1	-	1	1	-	B	90	"	-	-	120	3	2	41							<1				DR31/32	
E 10030	208954	1	-	1	1	-	B	80	brn	-	-	120	11	7	1							<1				"	
E 10050	208955	1	-	1	1	-	B/WB	70	yellow brn	-	-	120	8	4	41							<1				"	
E 10070	208956	1	-	1	1	-	"	70	"	-	-	120	2	4	41							<1				"	
E 10090	208957	1	-	1	1	-	"	70	orange light brn	-	-	120	11	10	1							<1				"	
E 10110	208958	1	-	1	1	-	"	80	light brn	-	✓	100	11	14	1							<1				"	
E 10130	208959	1	-	1	1	-	B	60	brn	-	✓	100	5	7	41							<1				"	
E 10150	208960	1	-	1	1	-	B/WB	60	"	-	✓	80	8	14	1							<1				"	
E 10170	208961	1	-	1	1	-	"	70	"	-	-	100	13	10	1							<1				Micaceous s/s?	
E 10190	208962	1	-	1	1	-	B	60	black brn	-	-	100	4	4	41							<1				fine green tuff	
E 10210	208963	1	-	1	1	-	B	60	gray	-	-	100	3	4	41							<1				"	
E 10230	208964	1	-	1	1	-	B	70	"	-	-	100	5	7	2							<1				"	
E 10250	208965	1	-	1	1	-	B/WB	50	"	-	-	100	3	2	41							<1				"	
E 10270	208966 208967	1	-	1	1	-	B	70	"	-	-	100	8	10	1							<1				" ?	
E 10290	208967	1	-	1	1	-	WB	90	yellow	-	-	110	11	10	1							<1				" / ashflow tuff?	
E 10310	208968	1	-	1	1	-	B	70	brn gray	-	-	110	11	10	41							<1				"	
E 10330	208969	1	-	1	1	-	WB	60	yellow	-	-	100	16	35	1							<1				fine ashflow	
E 10350	208970	1	-	1	1	-	B	80	brn	-	✓	100	11	35	1							<1				pink/green tuff. (Na)	
E 10370	208971	1	-	1	1	-	B	70	"	-	✓	100	5	12	41							<1				"	
E 10390	208972	1	-	1	1	-	B	60	"	-	-	100	6	14	1							<1				"	
E 10410	208973	1	-	1	1	-	WB	70	"	-	-	100	5	10	41							<1				"	
E 10430	246529	1	+	1	1	✓	"	70	"	-	✓	80	10	15	2							<1				" (looks like Rhyolites - DR9)	
E 10450	246530	1	-	1	1	✓	"	60	cream	-	-	90	16	38	4							<1				"	
E 10470	246531	-	-	-	1	✓	"	70	"	-	-	90	10	30	3							<1				"	
E 10490	246532	1	-	1	1	✓	"	70	"	-	-	90	10	35	2							<1				"	
E 10510	246533	+	-	+	-	✓	"	60	"	-	-	90	10	25	2							<1				"	
E 10530	246534	1	-	1	1	✓	"	80	"	-	-	100	10	17	2							<1				"	
E 10550	246535	1	-	1	1	✓	"	80	"	-	-	100	10	20	2							<1				"	

016

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

540017
D.P.O. 16950

AREA NIETTA

SAMPLE Nos. 246536 - 246567

COLLECTED BY P.T.A.

MAP OR PHOTO REFERENCE

A 1 3

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth %	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N 8600																											
E 10570	246536	/	-	/	/	/	WB	70	cream	-	-	/	100	5	12	<1							<1				Green tuff - white feldspar phenos.
E 10590	246537	/	-	/	/	/	"	80	"	-	-	/	100	8	22	2							<1				
E 10610	246538	/	-	/	/	/	"	70	green grey	-	-	/	100	8	17	4							<1				Green/pink granular tuff.
E 10630	246539	/	-	/	/	/	"	70	"	-	-	/	100	10	17	4							<1				as above.
E 10650	246540	/	-	/	/	/	"	80	"	-	-	/	100	8	20	4							<1				"
E 10670	246541	/	-	/	/	/	"	80	"	-	-	/	100	8	10	4							<1				"
E 10690	246542	/	-	/	/	/	"	70	"	-	-	/	100	8	5	5							<1				Granular green tuff as at 10570m, Ch.
E 10710	246543	/	-	/	/	/	"	70	cream	-	-	/	100	10	12	3							<1				As above - white feldspar phenos.
E 10730	246544	/	-	/	/	/	"	60	brown	-	-	/	100	10	15	4							<1				"
E 10750	246545	/	-	/	/	/	"	70	"	-	-	/	100	8	10	3							<1				"
E 10770	246546	/	-	/	/	/	"	60	"	-	-	/	100	8	5	3							<1				"
E 10790	246547	/	-	/	/	/	"	60	grey	-	-	/	100	5	8	2							<1				"
E 10810	246548	/	-	/	/	/	"	65	cream	-	-	/	100	3	5	2							<1				"
E 10830	246549	/	-	/	/	/	"	65	"	-	-	/	100	5	5	2							<1				"
E 10850	246550	/	-	/	/	/	"	60	grey	-	-	/	100	5	5	4							<1				"
E 10870	246551	/	-	/	/	/	"	80	cream	-	-	/	100	3	3	3							<1				"
E 10890	246552	/	-	/	/	/	"	70	"	-	-	/	100	5	8	10							<1				"
E 10910	246553	/	-	/	/	/	"	70	brown	-	-	/	100	13	20	18							<1				"
E 10930	246554	/	-	/	/	/	"	70	"	-	-	/	100	13	17	8							<1				"
E 10950	246555	/	-	/	/	/	"	70	"	-	-	/	100	16	20	8							<1				"
E 10970	246556	/	-	/	/	/	"	60	"	-	-	/	100	10	12	3							<1				"
E 10990	246557	/	-	/	/	/	"	65	"	-	-	/	100	10	12	2							<1				"
E 11010	246558	/	-	/	/	/	"	70	"	-	-	/	100	8	8	<1							<1				"
E 11030	246559	-	-	/	/	/	"	80	"	-	-	/	100	13	17	3							<1				"
E 11050	246560	/	-	/	/	/	"	70	"	-	-	/	100	13	17	4							<1				"
E 11070	246561	/	-	/	/	/	"	80	"	-	-	/	100	10	10	<1							<1				Coarse fragmental, odd rock frags, feldspar and quartz phenocrysts.
E 11090	246562	/	-	/	/	/	"	70	"	-	-	/	100	10	17	<1							<1				as above.
E 11110	246563	/	-	/	/	/	"	70	"	-	-	/	100	10	12	2							<1				"
E 11130	246564	/	-	/	/	/	B	60	"	-	-	/	100	10	12	2							<1				"
E 11150	246565	/	-	/	/	/	WB	60	"	-	-	/	100	10	15	2							<1				"
E 11170	246566	/	-	/	/	/	B	50	"	-	-	/	100	5	5	<1							<1				"
E 11190	246567	/	-	/	/	/	"	60	"	-	-	/	100	5	5	2							<1				"

017

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

540018
D.P.O. 16950 5

AREA NIETTA

SAMPLE Nos. 246568 - 246583

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE

As A pA.

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations				
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As					
N8600																												
E11210	246568	/	-	/	/	/	WB	80	brown	-	-	/	100	10	8	2							<1					? pyroclastic ?
E11230	246569	/	-	/	/	/	"	70	"	-	-	/	100	10	17	3							1					"
E11250	246570	/	-	/	/	/	"	65	"	-	?	/	80	16	17	3							1					Black, siliceous fine tuff/sand.
E11270	246571	/	-	/	/	/	B	60	"	-	?	/	80	13	15	3							<1					(cream coloured when weathered)
E11290	246572	/	-	/	/	/	B	65	"	-	-	/	80	10	12	2							<1					as above.
E11310	246573	/	-	/	/	-	B	60	"	-	?	/	80	8	12	2							<1					"
E11330	246574	/	-	/	/	/	B	60	"	-	-	/	80	10	15	3							<1					"
E11350	246575	/	-	/	/	/	WB	70	"	-	-	/	90	10	22	5							<1					"
E11370	246576	/	-	/	/	/	"	70	"	-	-	/	90	9	17	2							<1					"
E11390	246577	/	-	/	/	/	"	80	"	-	-	/	100	10	25	4							<1					"
E11410	246578	/	-	/	/	/	B	90	"	-	-	/	110	8	12	1							<1					"
E11430	246579	/	-	/	/	/	B	50	gray	-	-	/	110	5	22	1							<1					"
E11450	246580	/	-	/	/	/	B	60	"	-	-	/	110	5	8	3							<1					"
E11470	246581	/	-	/	/	-	B	60	"	-	?	/	80	5	8	1							<1					" very silty
E11490	246582	/	-	/	/	/	B	60	"	-	?	/	80	10	8	4							<1					"
E11510	246583	/	-	/	/	-	B	70	"	-	?	/	80	3	8	2							<1					"

018

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

540019
D.P.O. 16946

AREA NIETTA

SAMPLE Nos. 208457 - 208500 / 208572

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE

As for ps

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		C.M. Depth (cm)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth (m)	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N8800																											
E 9850	208457	1	-	1	1	-	WB/B	80	cream	-	-	120	18	19	4							1					-
E 9830	208458	-	-	1	1	-	WB	80	"	-	-	120	10	8	1							1					-
E 9810	208459	-	-	1	1	1	B	90	brown	-	-	1	18	12	6							1					Qt / creek soils / Qt wash
E 9790	208460	-	-	1	1	-	B	90	gray	-	-	1	38	11	4							<1					"
E 9770	208461	-	-	1	1	-	B	80	brown	-	-	1	29	15	9							<1					"
E 9750	208462	-	-	1	1	-	-	70	gray	-	-	1	13	7	1							<1					"
E 9730	208463	-	-	1	1	-	-	90	"	-	-	1	13	7	2							<1					"
E 9710	208464	-	-	1	1	1	B	80	brown	-	-	120	13	11	4							<1					Mudstone
E 9690	208465	-	-	1	1	-	-	80	gray	-	-	1	10	5	1							<1					Qt / creek soils / Qt wash
E 9670	208466	-	-	1	1	-	-	80	"	-	-	1	<1	5	<1							<1					"
E 9650	208467	-	-	1	1	-	-	80	"	-	-	1	5	22	<1							<1					"
E 9630	208468	-	-	1	1	-	-	70	"	-	-	1	5	5	<1							<1					"
E 9610	208469	1	-	1	1	-	-	80	"	-	-	1	2	3	<1							<1					-
E 9590	208470	1	-	1	1	-	B	70	"	-	✓	✓	120	2	7	<1						<1					fine tuff.
E 9570	208471	1	-	1	1	-	B	70	brown	-	1	1	100	10	14	2						<1					as above
E 9550	208472	1	-	1	1	-	B	65	gray	-	1	1	100	2	4	<1						<1					"
E 9530	208473	1	-	1	1	-	B	80	"	-	-	1	110	2	3	<1						<1					"
E 9510	208474	1	-	1	1	-	A	50	black	-	1	1	80	<1	4	<1						<1					"
E 9490	208475	1	-	1	1	-	B	60	"	-	-	1	90	<1	5	<1						<1					"
E 9470	208476	-	-	-	1	1	"	70	gray	-	-	1	100	2	3	<1						<1					-
E 9450	208477	-	-	1	1	-	"	60	"	-	1	1	90	<1	3	<1						<1					fine green tuff.
E 9430	208478	-	-	1	1	1	"	65	"	-	-	1	110	5	10	2						<1					-
E 9410	208479	-	-	1	1	1	R/WB	80	brown	-	-	1	110	13	26	11						<1					-
E 9390	208480	-	-	1	1	1	B	90	"	-	-	1	* 46 110	42	27 26	18 18						<1					-
E 9370	208481	-	-	1	1	1	"	100	gray	-	-	1	120	18	13	5						<1					-
E 9350	208482	-	-	1	1	1	"	90	"	-	-	1	120	15	16	2						<1					-
E 9330	208483	-	-	1	1	1	"	90	"	-	-	1	120	18	21	4						<1					-
E 9310	208484	-	-	1	1	1	"	80	"	-	-	1	120	15	23	7						<1					-
E 9290	208485	-	-	1	1	1	"	80	"	-	-	1	120	13	15	3						<1					-
E 9270	208486	-	-	1	1	-	-	80	"	-	-	1	13	16	4							<1					Qt / creek soils / Qt wash
E 9250	208487	-	-	-	-	1	B	70	brown	-	-	1	18	41	33							1					-
E 9230	208488	-	-	1	1	-	-	80	gray	-	-	1	15	44	22							<1					Qt wash

010

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

540020

D.P.O. 16946 to 2085007
D.P.O. 16947 208572

AREA NIETTA

SAMPLE Nos. 208489 - 208500 / 208572

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE

A for 6

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample				Bedrock			Metal content, p. p. m.										Geological observations					
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As							
M 8800																														
E 9210	208489	-	-	1	1	-	B	80	grey	-	-	/	-	15	16	10								<1						Qt wash / DR 16 gtz grain residuals
E 9190	208490	-	-	1	1	-	B	80	"	-	-	/	-	15	14	6								<1						as above
E 9170	208491	-	-	1	1	-		80	gy	-	-	/	-	13	12	4								<1						"
E 9150	208492	-	-	1	1	-	B/WB	80	brwn	-	-	/	1204	21	42	11								<1						-
E 9130	208493	-	-	1	1	1	"	80	"	-	-	/	1204	18	26	7								1						-
E 9110	208494	-	-	1	1	1	"	80	"	-	-	/	-	18	32	14								<1						-
E 9090	208495	-	-	-	1	1	WB	90	"	-	-	/	-	10	65	12								1						Tb on surface
E 9070	208496	-	-	1	1	1	B	70	"	-	-	/	-	8	15	6								<1						-
E 9050	208497	-	-	1	1	1	WB	70	"	-	-	/	-	8	46	16								<1						-
E 9030	208498	-	-	1	1	1		80	gy	-	-	/	-	8	54	14								<1						Qt wash
E 9010	208499	-	-	1	1	1	B	70	brwn	-	-	/	*	13 15	54 61	14 55								1 1						-
E 8990	208500	-	-	1	1	1	WB	90	"	-	-	/	-	13	57	55								1						-
E 8970	208572	-	-	1	1	1	WB	80	"	-	-	/	-	13	51	74								<1						Tb.
E 8950																														Tb.

021

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

540022
D.P.O. 16946 to 208565.
D.P.O. 16950 from 246584. 9

AREA NIETTA

SAMPLE Nos. 208558 - 208565
246584 - 246606

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE

A A 18

ANALYSED BY ZINC Corp. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N 9000																											
E10520	208558	✓	-	1	1	-	B/WB	90	grey	-	-	✓	120	3	12	1							1				Ashflow tuff.
E10540	208559	✓	-	1	1	-	B	80	brn	-	-	✓	120	9	16	2							2				"
E10560	208560	✓	-	1	1	-	B/WB	70	"	-	-	✓	120	6	12	2							1				" ?
E10580	208561	✓	-	1	1	-	WB/B	70	yellow	-	-	✓	120	4	16	1							4				"
E10600	208562	✓	-	1	1	-	B	60	yellow	-	-	✓	120	3	11	1							1				"
E10620	208563	✓	-	1	1	-	B	70	grey	-	-	✓	120	4	5	4							4				"
E10640	208564	✓	-	1	1	-	WB/B	70	yellow	-	-	✓	120	3	4	1							1				"
E10660	208565	✓	-	1	1	-	WB	80	orange	-	-	✓	120	8	7	4							1				"
E10680	246584	-	-	1	1	1	"	70	yellow	-	-	✓	100	8	12	4							4				-
E10700	246585	✓	-	1	1	1	"	60	"	-	-	✓	100	5	8	2							4				fine black mudstone?
E10720	246586	✓	-	1	1	-	B	50	grey	-	-	✓	100	3	3	4							4				-
E10740	246587	✓	-	1	1	1	WB	65	orange	-	-	✓	100	12	22	4							4				Rhyodacite
E10760	246588	✓	-	1	1	1	"	70	"	-	-	✓	100	10	19	2							4				-
E10780	246589	✓	-	1	1	1	"	65	yellow	-	-	✓	100	8	17	2							4				Rhyodacite - green siliceous with
E10800	246590	✓	-	1	1	1	B	50	brn	-	-	✓	100	5	10	2							4				as above (parallel flattened spherulite
E10820	246591	✓	-	1	1	1	WB	65	yellow	-	-	✓	100	5	10	1							4				as above
E10840	246592	✓	-	1	1	1	B	60	brn	-	✓	✓	100	5	10	1							4				"
E10860	246593	✓	-	1	1	-	B	60	grey	-	✓	✓	100	8	10	2							4				"
E10880	246594	✓	-	1	1	-	WB	60	brn	-	✓	✓	100	5	12	2							4				"
E10900	246595	✓	-	1	1	-	WB	60	"	-	-	✓	100	8	15	4							4				"
E10920	246596	✓	-	1	1	-	WB	60	"	-	-	✓	100	10	10	4							4				-
E10940	246597	✓	-	1	1	-	B	65	grey	-	-	✓	110	3	6	4							4				"
E10960	246598	✓	-	1	1	1	B	70	"	-	-	✓	120	5	8	1							4				" ?
E10980	246599	-	-	✓	✓	✓	WB	70	pale cream	-	-	✓	120	8	12	2							4				" ?
E11000	246600	✓	-	1	1	1	"	60	cream	-	-	✓	100	7	12	2							4				" ?
E11020	246601	✓	-	1	1	1	"	65	yellow	-	-	✓		8	12	1							4				Creek - alluvial plain
E11040	246602	✓	-	1	1	1	B	80	brn	-	-	✓		5	10	1							4				as above
E11060	246603	-	-	✓	✓	✓	WB/B	80	cream	-	-	✓		5	10	4							4				"
E11080	246604	-	-	✓	✓	✓	"	70	brn	-	-	✓		5	10	4							4				"
E11100	246605	-	-	✓	✓	✓	WB	70	yellow	-	-	✓		10	15	2							4				"
E11120	246606	✓	-	1	1	-	"	70	"	-	-	✓		8	10	2							4				"

024

540025

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16946

12.

AREA NIETTA

SAMPLE Nos. 208515 - 208526

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE A for p 11

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth C.M.	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N 9130																											
E 8370	208515	/	-	/	/	-	B	60	grey	-	/	/	80	<1	7	<1							<1				DR. 16 - rhyolite lava.
E 8350	208516	/	-	/	/	-	B	70	"	-	/	/	100	<1	5	<1							<1				as above
E 8330	208517	-	-	/	/	/	B	70	"	-	/	/	100	<1	7	1							1				"
E 8310	208518	/	-	/	/	-	B	80	"	-	/	/	100	8	12	6							1				"
E 8290	208519	/	-	/	/	-	B	70	"	-	/	/	100	8	13	3							<1				"
E 8270	208520	-	-	/	/	/	B	80	"	-	/	/	120	<1	5	1							<1				"
E 8250	208521	/	-	/	/	-	B	60	"	-	/	/	120	<1	5	1							<1				"
E 8230	208522	-	-	/	/	/	WB	70	brown	-	/	/	120+	10	40	37							1				Tb.
E 8210	208523	-	-	/	/	/	WB	70	"	-	/	/	120+	16	50	68							1				Tb.
E 8190	208524	-	-	/	/	/	"	70	"	-	/	/	120+	10	90	62							1				Tb.
E 8170	208525	-	-	/	/	/	"	60	"	-	/	/	120+	16	53	64							1				Tb.
E 8150	208526	-	-	/	/	/	"	80	"	-	/	/	120+	16	45	86							1				Tb.

025

SOS 7/70
C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

540026
D.P.O. 16941
13.

AREA NIETTA

SAMPLE Nos. 245210 - 245240, 245241

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE A p 12

ANALYSED BY Zinc Corp LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations		
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth CM	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As			
N 9400																										
E 8780	245210	-	-	✓	✓	✓	WB	120	brown	-	✓	140	9	37	16							<1			Tb / DR16 scree.	
E 8800	245211	✓	-	/	/	/	"	100	very brown	-	✓	130	8	15	8							<1			" " , BR DR16.	
E 8820	245212	-	-	✓	/	/	"	100	brown	-	✓	130	4	5	2							<1			Bedrock DR16	
E 8840	245213	✓	-	/	/	/	"	100	"	-	✓	130	7	30	10							<1			"	
E 8860	245214	-	-	/	/	/	B/WB	60	"	-	✓	130	9	22	9							<1			"	
E 8880	245215	✓	-	✓	/	-	B/H	30	black	-	✓	130	7	13	4							1			"	
E 8900	245216	/	-	/	/	-	WB/B	90	brown	-	✓	130	14	13	7							1			"	
E 8920	245217	-	-	/	✓	✓	WB	100	"	-	✓	130	12	56	30							2			"	
E 8940	245218	-	-	/	/	✓	"	100	"	-	✓	130	13	67	37							1			"	
E 8960	245219	/	-	/	/	/	WB/B	90	"	-	✓	130	12	82	26							1			"	
E 8980	245220	✓	-	/	/	/	WB	115	"	-	✓	130	12	59	30							1			"	
E 9000	245221	/	-	/	/	/	"	80	"	-	✓	130	14	53	28							1			"	
E 9020	245222	-	-	/	/	/	"	80	"	-	✓	130	7	16	10							<1			"	
E 9040	245223	/	-	/	/	/	WB/B	110	black brown	-	✓	150	11	32	21							<1			?	
E 9060	245224	-	-	/	/	/	WB	110	brown	-	✓	150	14	30	36							1			fine airfall tuff?	
E 9080	245225	-	-	/	/	/	"	110	"	-	✓	150	22	37	24							4			"	
E 9100	245226	/	-	/	/	-	"	100	"	-	✓	140	18	40	15							<1			Scree airfall tuff and ashflow tuff.	
E 9120	245227	/	-	/	/	/	B/WB	100	gray brown	-	✓	140	17	19	8							<1			Scree ashflow tuff, bedrock m/s?	
E 9140	245228	/	-	/	/	-	WB	60	brown dark gray	-	✓	110	5	4	2							<1			Scree and bedrock ashflow tuff.	
E 9160	245229	✓	-	/	/	/	B	60	gray	-	✓	110	9	12	7							<1			As above	
E 9180	245230	✓	-	/	/	/	WB/B	80	brown gray brown	-	✓	110	47	40	27							2			As above - also m/s scree.	
E 9200	245231	/	-	/	/	/	WB	70	brown	-	✓	110	27	4	9							1			As above also airfall tuff scree	
E 9220	245232	/	-	/	/	✓	B/WB	60	brown	-	✓	110	36	11	8							1			Scree and bedrock airfall tuff.	
E 9240	245233	/	-	/	/	✓	WB	75	"	-	✓	110	20	18	8							<1			Bedrock Ashflow tuff.	
E 9260	245234	/	-	/	/	✓	B	60	gray	-	✓	110	13	8	9							<1			As above.	
E 9280	245235	/	-	/	/	✓	WB/B	100	brown	-	✓	130	20	27	29							<1			"	
E 9300	245236	/	-	/	/	✓	B/WB	110	"	-	✓	130	18	27	18							<1			" ?	
E 9320	245237	/	-	/	✓	-	WB	100	yellow brown	-	✓	130	17	13	16							<1			Bedrock airfall tuff.	
E 9340	245238	-	-	/	/	-	WB/B	90	"	-	✓	130	22	27	17							<1			Bedrock m/s black ?	
E 9360	245239	/	-	/	/	-	"	50	"	-	✓	130	9	11	10							<1			Bedrock airfall tuff.	
E 9380	245240	/	-	/	/	-	"	60	brown	-	✓	130	23	27	15							<1			Bedrock airfall tuff.	
E 9400	245241	✓	-	/	/	✓	WB	70	"	-	✓	130	17	32	12							<1			As above	

027

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

540028
D.P.O. 16944 to 244898 15
D.P.O. 16945 from 244998
D.P.O. 16948 244999

AREA NIETTA

SAMPLE Nos. 244882 - 244898

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE *A A #14*

244985 - 244999

ANALYSED BY Zinc Corp. Ltd.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock		Metal content, p. p. m.										Geological observations				
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo		As			
E 9940	244882	✓	-	✓	✓	-	WB	90	brn	-	✓	✓	110	8	2	2											DR 31/32
E 9960	244883	-	-	✓	✓	-	WB	80	yellow	-	✓	✓	110	9	2	1											
E 9980	244884	✓	-	✓	✓	-	B	100	brn	-	-	✓	130	15	8	6											green airfall tuff?
E 10000	244885	✓	-	✓	-	-	WB/B	70	brn	-	-	✓	120	5	4	2											
E 10020	244886	✓	-	✓	✓	-	WB	100	"	-	-	✓	120	4	2	1											green airfall tuff?
E 10040	244887	✓	-	✓	✓	✓	"	110	"	-	-	✓	120	4	2	1											
E 10060	244888	✓	-	✓	✓	-	B/WB	70	gray	-	-	✓	120	7	2	1											green airfall tuff
E 10080	244889	✓	-	✓	✓	-	WB	110	gray	-	✓	✓	125	15	2	1											fine ashflow to airfall tuff
E 10100	244890	-	-	-	-	-	B	60	-	-	-	-	-	2	5	1											as above
E 10120	244891	✓	-	✓	✓	-	B	70	gray	-	-	✓	120	4	2	4											fine airfall tuff
E 10140	244892	✓	-	✓	✓	-	B	100	"	-	-	✓	130	3	2	1											Ashflow tuff
E 10160	244893	✓	-	✓	✓	-	B	80	"	-	-	✓	130	4	2	1											" / DR 31/32 look
E 10180	244894	✓	-	✓	✓	-	B	60	"	-	-	✓	130	2	2	4											as above
E 10200	244895	✓	-	✓	✓	-	B	60	"	-	-	✓	130	3	2	1											" ?
E 10220	244896	✓	-	✓	✓	-	B	70	"	-	-	✓	120	9	3	1											"
E 10240	244897	✓	-	✓	✓	-	B/WB	70	yellow	-	-	✓	120	19	9	2											" ?
E 10260	244898	-	-	✓	✓	-	B/WB	80	"	-	-	-	120	15	4	1											?
E 10280	244985	-	-	✓	✓	✓	WB/B	100	crn	-	-	-	120	5	4	4											?
E 10300	244986	✓	-	✓	✓	-	B	60	gray	-	-	-	120	2	5	4											green airfall tuff
E 10320	244987	-	-	✓	✓	✓	WB	90	yellow	-	-	✓	120	7	5	4											
E 10340	244988	-	-	✓	✓	-	"	90	gray	-	✓	✓	100	10	13	5											DR 44
E 10360	244989	✓	-	✓	✓	-	"	80	"	-	✓	✓	100	10	6	7											"
E 10380	244990	✓	-	✓	✓	-	"	110	"	-	✓	✓	120	5	5	4											"
E 10400	244991	✓	-	✓	✓	-	"	90	brn	-	-	✓	120	7	5	2											"
E 10420	244992	✓	-	✓	✓	-	"	120	"	-	✓	✓	130	7	4	2											"
E 10440	244993	✓	-	✓	✓	-	"	100	crn	-	-	✓	130	5	6	2											"
E 10460	244994	✓	-	✓	✓	-	B/WB	100	brn	-	-	✓	130	7	9	2											" ?
E 10480	244995	✓	-	✓	✓	-	WB	80	"	-	-	✓	130	10	10	2											" ?
E 10500	244996	✓	-	✓	✓	-	WB/B	90	"	-	-	✓	130	13	10	4											fine airfall tuff ?
E 10520	244997	-	-	✓	✓	✓	WB	110	yellow	-	-	✓	130	7	7	3											as above
E 10540	244998	✓	-	✓	✓	-	WB	90	"	-	-	✓	130	21	7	5											"
E 10560	244999	✓	-	✓	✓	-	"	90	"	-	-	✓	130	240	43	14											" , finely laminated

028

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

540029
 D.P.O. 16945 - 245000. 16
 D.P.O. 16946 15 208415.
 D.P.O. 16950 from 246629.

AREA NIETTA

SAMPLE Nos. 245000; 208413-415

COLLECTED BY P. J. A.

MAP OR PHOTO REFERENCE

A A P 15

246629-246655

ANALYSED BY ZINC Corp Ltd.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth (m)	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N 9400																											
E 10580	245000	/	-	/	/	-	NB	70	yellow	-	-	/	120	57	15	8						4					fine rainfall tuff
E 10600	208413	-	-	/	/	-	NB	120	"	-	-	/	140	57	13	14						1					
E 10620	208414	/	-	/	/	-	NB	120	"	-	-	/	140	38	28	15						1					
E 10640	208415	/	-	/	/	-	NB	100	brown	-	-	/	110	21	21	5						<1					Rhyolite - (Na)
E 10660	246629	/	-	/	/	-	"	70	"	-	-	/	80	10	8	1						<1					as above
E 10680	246630	/	-	/	/	-	"	70	"	-	-	/	80	33	8	4						<1					"
E 10700	246631	/	-	/	/	-	"	70	"	-	-	/	80	18	8	1						<1					"
E 10720	246632	/	-	/	/	-	"	60	"	-	-	/	80	10	12	1						<1					"
E 10740	246633	/	-	/	/	-	NB/B	70	"	-	-	/	80	13	12	2						<1					"
E 10760	246634	/	-	/	/	-	B	60	"	-	-	/	80	10	8	1						<1					"
E 10780	246635	/	-	/	/	-	B	70	"	-	-	/	80	8	8	1						<1					"
E 10800	246636	/	-	/	/	-	B	60	"	-	-	/	100	8	10	1						<1					"
E 10820	246637	-	-	/	/	-	NB	80	"	-	-	/	100	13	3	2						<1					"
E 10840	246638	/	-	/	/	-	NB	70	"	-	-	/	90	8	3	1						<1					"
E 10860	246639	-	-	/	/	-	"	70	"	-	-	/	80	13	12	2						<1					"
E 10880	246640	-	-					60						10	12	2						<1					on road
E 10900	246641	-	-	/	/	-	NB	80	"	-	-	/	100	8	3	1						<1					"
E 10920	246642	/	-	/	/	-	B	70	"	-	-	/	100	8	3	2						<1					"
E 10940	246643	-	-	/	/	-	NB	60	"	-	-	/	100	5	12	1						<1					"
E 10960	246644	-	-					60						3	3	<1						<1					"
E 10980	246645	/	-	/	/	-	NB	60	red	-	-	/	90	8	10	2						<1					"
E 11000	246646	/	-	/	/	-	B	60	brown	-	-	/	90	8	10	2						<1					"
E 11020	246647	/	-	/	/	-	NB	65	red	-	-	/	90	13	17	3						<1					"
E 11040	246648	-	-	/	/	-	"	70	"	-	-	/	90	5	3	<1						<1					"
E 11060	246649	/	-	/	/	-	"	70	"	-	-	/	100	13	17	4						<1					"
E 11080	246650	-	-					90						10	12	3						<1					on road
E 11100	246651	/	-	/	/	-	B	60	brown	-	-	/	100	8	10	4						<1					"
E 11120	246652	-	-				NB	65	"	-	-	/	100	16	27	7						<1					Coarse tuff.
E 11140	246653	/	-	/	/	-	B	60	"	-	-	/	100	5	3	2						<1					Very fine siliceous sediment
E 11160	246654	-	-					60						5	10	4						<1					as above - on road
E 11180	246655	/	-	/	/	-	B	70	brown	-	-	/	100	5	8	2						<1					on road

029

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16950 540030 17

AREA NIETTA

SAMPLE Nos. 246656 - 246678

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE A for P16

ANALYSED BY ZINC CORP LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (C.M.)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N 9400'																											
E 11 200	246656	/	-	/	/	-	B	70	brown	-	-	/	110	8	10	3							<1				Fine soil? as above.
E 11 220	246657							80						8	12	3							<1				Too near road
E 11 240	246658							70						5	8	3							<1				Too near road
E 11 260	246659							70						5	8	3							<1				Fine green tuff-like rock - road
E 11 280	246660	/	-	/	/	/	B	90	brown	-	-	/	120	10	12	6							<1				
E 11 300	246661	/	-	/	/	/	B	70	"	-	-	/	100	10	12	4							<1				Fine green tuff?
E 11 320	246662	/	-	/	/	/	B	60	"	-	-	/	100	8	8	3							<1				as above
E 11 340	246663	/	-	/	/	-	WB	60	"	-	-	/	100	16	12	4							<1				"
E 11 360	246664	/	-	/	/	/	"	50	"	-	-	/	80	8	8	3							<1				"
E 11 380	246665	/	-	/	/	/	B	40	"	-	-	/	60	3	3	3							<1				Banded, siliceous fine tuff? rhyolite?
E 11 400	246666	/	-	/	/	/	B	60	"	-	-	/	80	10	10	4							<1				as above
E 11 420	246667	/	-	/	/	/	WB	60	red	-	-	/	100	10	12	3							<1				Rhyolite - Na.
E 11 440	246668							60						10	12	4							<1				Too near road
E 11 460	246669	-	-	/	/	/	WB	70	red	-	-	/	100	13	22	5							<1				Rhyolite - Na.
E 11 480	246670	/	-	/	/	/	"	70	"	-	-	/	100	10	8	6							<1				as above
E 11 500	246671	/	-	/	/	/	"	70	pink	-	-	/	100	8	8	4							<1				"
E 11 520	246672	/	-	/	/	/	B	60	red	-	-	/	100	8	15	2							<1				"
E 11 540	246673	/	-	/	/	/	B	60	brown	-	-	/	100	10	10	4							<1				"
E 11 560	246674	/	-	/	/	-	WB	60	"	-	-	/	100	8	17	4							<1				"
E 11 580	246675	/	-	/	/	/	"	60	"	-	-	/	100	10	15	4							<1				"
E 11 600	246676	/	-	/	/	/	B	60	"	-	-	/	100	10	12	3							<1				"
E 11 620	246677	/	-	/	/	/	WB	60	"	-	-	/	100	8	10	2							<1				"
E 11 640	246678	-	-	/	/	/	B	90	"	-	-	/	100	8	8	<1							<1				"

032

SOS 7/70
C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

540033
D.P.O. 16940 20

AREA NIETTA

SAMPLE Nos. 245250 - 245281

COLLECTED BY P. J. A.

MAP OR PHOTO REFERENCE CASERA 40 chm Street

ANALYSED BY Zinc Corp. Ltd.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock		Metal content, p. p. m.										Geological observations		
		Rock %	Lignite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth (m)	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo		As	Ag
N 9800																									
E 9920	245250	30	-	30	10	30	WB	60	creamy brown	-	-	✓	90	29	21	13								1	Bedrock airfall tuff? fine, green
E 9940	245251	5	-	30	10	55	WB	70	creamy yellow	-	-	✓	90	64	25	41								1	Bedrock mudstone?
E 9960	245252	30	-	20	10	40	WB	70	creamy brown	-	-	✓	100	37	16	16								1	Bedrock black mudstone.
E 9980	245253	10	-	50	10	30	WB	80	"	-	-	✓	100	18	17	5								1	Bedrock airfall tuff? fine, green.
E 10,100	245254	35	-	35	15	15	B	80	grey brown	-	-	✓	150	11	12	3								1	Scree airfall tuff.
E 10,120	245255	5	-	75	15	5	WB	90	yellow	-	-	✓	120	13	9	3								4	Bedrock granular coarser airfall tuff.
E 10,140	245256	25	-	50	15	10	B	70	grey	-	-	✓	120	9	10	1								4	Scree fine airfall tuff?
E 10,160	245257	70	-	15	10	5	B	50	"	-	-	✓	120	1	8	1								4	" " " "
E 10,180	245258	30	-	50	10	10	B/WB	55	yellow brown	-	-	✓	110	6	5	1								1	Bedrock coarser airfall tuff.
E 10,200	245259	85	-	5	5	5	B	80	grey	-	-	✓	110	6	11	1								4	Bedrock fine airfall tuff.
E 10,220	245260	35	-	45	10	10	WB	60	yellow brown	-	-	✓	100	13	23	2								1	Bedrock fine airfall tuff?
E 10,240	245261	55	-	20	10	15	B	60	grey	-	-	✓	120	4	13	1								4	Bedrock coarser airfall tuff.
E 10,260	245262	5	-	75	10	10	WB	70	creamy brown	-	-	✓	100	6	9	2								4	Bedrock possibly ashflow tuff (DR31/32T)
E 10,280	245263	20	-	65	5	10	B/WB	60	brown	-	-	✓	110	6	14	2								4	As Above.
E 10,300	245264	10	-	70	10	10	B/WB	75	"	-	-	✓	110	6	7	1								1	As Above.
E 10,320	245265	20	-	65	10	5	WB/B	60	"	-	-	✓	110	6	4	1								4	As Above.
E 10,340	245266	30	-	50	10	10	WB/B	70	"	-	-	✓	110	9	16	4								1	Scree tuff - bedrock probably also
E 10,360	245267	30	-	55	10	5	WB	80	creamy brown	-	-	✓	100	11	15	2								1	Scree ashfall tuff, bedrock ashflow tuff.
E 10,380	245268	30	-	60	10	-	WB	70	"	-	-	✓	100	9	29	3								1	Bedrock ashflow tuff?
E 10,400	245269	35	-	45	15	5	WB	80	"	-	-	✓	100	11	11	2								4	As above
E 10,420	245270	25	-	65	5	5	WB	75	"	-	-	✓	100	9	15	3								1	Bedrock type airfall tuff - fine?
E 10,440	245271	30	-	60	5	5	B/WB	80	brown	-	-	✓	120	11	15	3								1	Bedrock type ash flow tuff.
E 10,460	245272	35	-	45	10	10	WB/B	60	"	-	-	✓	120	9	40	5								1	Bedrock type possibly airfall tuff. Scree.
E 10,480	245273	20	-	60	15	5	WB	60	"	-	-	✓	100	27	57	15								1	Scree possibly black mudstone (or fine tuff) as BR
E 10,500	245274	20	-	60	15	5	WB	60	"	-	-	✓	100	19	21	7								1	As above
E 10,520	245275	35	-	50	10	5	WB	60	"	-	-	✓	100	16	14	4								1	Bedrock DR31/32T. ?
E 10,540	245276	45	-	45	5	5	WB/B	60	brown yellow	-	-	✓	100	16	17	6								1	As above - some black muddy clays? Sed?
E 10,560	245277	20	-	60	15	5	WB	80	creamy brown	-	-	✓	110	9	9	2								4	Bedrock possibly airfall tuff.
E 10,580	245278	-	-	-	-	100	WB	90	orange green	-	-	✓	150	30	38	18								4	Sample in swampy gully depth to BR?
E 10,600	245279	5	-	70	15	10	B/WB	90	grey.	-	-	✓	120	6	9	11								4	?
E 10,620	245280	35	-	45	10	10	B/WB	45	brown	-	-	✓	100	14	21	4								4	Bedrock fine green silicic rock - rhyolite tuff?
E 10,640	245281	40	-	40	10	10	WB/B	40	brown	-	-	✓	100	16	19	4								1	As above.

033

SOS 7/70
C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

540034
D.P.O. 16944 to 244943 21
D.P.O. 16945 from 244944

AREA NIETTA

SAMPLE Nos. 244931 - 244962

COLLECTED BY P. J. A.

MAP OR PHOTO REFERENCE

A6 for 120

ANALYSED BY ZINC CORP LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock	Metal content, p. p. m.										Geological observations		
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell Chart No.)	pH		Outcrop	Concealed	Est. Depth (m)	Pb	Zn	Cu	Ni	Co	Cr	Mn		Ag	Mo
N 9800																								
E 9240	244931	-	-	✓	-	✓	WB	90	orange brown	-	-	✓	120	9	8	9								Bedrock Qtz Porphyry Rhyolite lava (CRK)
E 9220	244932	✓	-	✓	✓	✓	B/WB	110	gray	-	-	✓	130	4	2	4							As above	
E 9200	244933	-	-	✓	✓	✓	"	100	gray	-	-	✓	130	6	2	4							"	
E 9180	244934	-	-	✓	✓	✓	WB	100	yellow	-	✓	✓	120	5	4	4							"	
E 9160	244935	✓	-	✓	✓	✓	"	90	"	-	✓	✓	120	5	4	4							"	
E 9140	244936	✓	-	✓	✓	✓	B	60	gray brown	-	-	✓	120	7	2	4							"	
E 9120	244937	✓	-	✓	✓	✓	B	60	"	-	-	✓	120	3	4	4							"	
E 9100	244938	-	-	✓	✓	✓	B	80	brown	-	-	✓	120	6	4	4							"	
E 9080	244939	✓	-	✓	✓	✓	B	70	gray	-	-	✓	120	4	2	4							"	
E 9060	244940	✓	-	✓	✓	✓	B	70	brown gray	-	-	✓	120	4	2	4							"	
E 9040	244941	✓	-	✓	✓	✓	B	80	"	-	-	✓	140	8	4	1							"	
E 9020	244942	✓	-	✓	✓	-	WB/B	90	yellow brown	-	-	✓	120	12	12	5							fine airfall tuff	
E 9000	244943	✓	-	✓	✓	-	WB	90	"	-	-	✓	120	14	10	4							as above	
E 8980	244944	✓	-	✓	✓	✓	WB/B	80	brown	-	-	✓	120	13	14	2							Ashflow tuff.	
E 8960	244945	✓	-	✓	✓	✓	B	60	gray	-	-	✓	120	5	4	1							Airfall tuff.	
E 8940	244946	✓	-	✓	✓	✓	B	50	"	-	✓	✓	100	2	5	1							"	
E 8920	244947	✓	-	✓	✓	✓	WB/B	70	green gray	-	-	✓	100	10	7	4							"	
E 8900	244948	✓	-	✓	✓	✓	B	60	gray	-	-	✓	100	2	7	4							"	
E 8880	244949	✓	-	✓	✓	✓	WB/B	70	brown gray	-	-	✓	100	15	19	2							"	
E 8860	244950	✓	-	✓	✓	✓	B	60	gray brown	-	-	✓	100	5	7	1							Airfall tuff, but possibly sediment.	
E 8840	244951	✓	-	✓	✓	✓	B/WB	80	gray	-	✓	✓	100	8	4	2							As above.	
E 8820	244952	✓	-	✓	✓	✓	WB/B	70	"	-	-	✓	100	5	5	1							?	
E 8800	244953	-	-	✓	✓	✓	WB	120	brown	-	-	✓	100	10	33	6							?	
E 8880	244954	-	-	✓	✓	-	B	120	black	-	-	✓		7	19	5							?	
E 8760	244955	✓	-	✓	✓	✓	WB/B	120	brown gray	-	✓	✓	120	5	6	1							fine green airfall tuff.	
E 8740	244956	✓	-	✓	✓	✓	B	90	brown	-	-	✓	120	7	10	2							Qt on surface - B.K. as above.	
E 8720	244957	✓	-	✓	✓	-	B	80	gray	-	-	✓		10	5	1							Qt.	
E 8700	244958	✓	-	✓	✓	✓	B	85	gray purple	-	-	✓		5	7	1							Qt.	
E 8680	244959	✓	-	✓	✓	✓	B	90	"	-	-	✓		5	9	1							Qt.	
E 8660	244960	✓	-	✓	✓	✓	B	85	cream gray	-	-	✓	120	5	7	1							Ashflow tuff.	
E 8640	244961	✓	-	✓	✓	✓	B/WB	70	brown yellow	-	-	✓		7	19	2							Qt	
E 8620	244962	-	-	✓	✓	✓	"	90	gray	-	-	✓	120	5	8	1							Qt / airfall tuff?	

034

SOS 7/70
C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16945 540035 22

AREA NIETTA

SAMPLE Nos. 244963 - 244984

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE A for p 21

ANALYSED BY ZINC CORP LTD

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock		Metal content, p. p. m.										Geological observations		
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth (m)	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo		As	
N 9800																									
E 8600	244963	✓	-	✓	✓	✓	B/WB	70	gray yellow	-	✓	✓	100	7	5	2							2		Ok fine airfall, black m/s in chips. Ashflow tuff. Qt. Ashflow tuff. Airfall tuff. " Qt. Qt. Qt. Qt. Qt. Qt. Qt. Qt. Purple Sand Stone. Qt. Roland Conglomerate as above " "
E 8580	244964	✓	-	✓	✓	✓	WB/B	70	"	-	-	✓	100	25	7	4							1		
E 8560	244965	✓	-	✓	✓	✓	B	90	brwn	-	-	-	13	7	4							4			
E 8540	244966	✓	-	✓	✓	✓	WB/B	95	gray	-	-	✓	110	10	5	4							1		
E 8520	244967	-	-	✓	✓	✓	B/WB	75	"	-	-	✓	110	21	4	8							1		
E 8500	244968	-	-	✓	✓	✓	B	75	"	-	-	✓	110	5	4	2							1		
E 8480	244969	-	-	✓	✓	✓	B	85	"	-	-	-	13	7	3							4			
E 8460	244970	✓	-	✓	✓	✓	B	90	"	-	-	-	13	9	5							2			
E 8440	244971	-	-	✓	✓	✓	B	90	"	-	-	-	10	19	6							1			
E 8420	244972	✓	-	✓	✓	✓	B	80	"	-	-	-	13	16	6							4			
E 8400	244973	✓	-	✓	✓	✓	B	90	"	-	-	-	10	17	5							4			
E 8380	244974	✓	-	✓	✓	✓	B	90	"	-	-	-	10	12	3							4			
E 8360	244975	✓	-	✓	✓	✓	B	100	"	-	-	-	13	11	3							4			
E 8340	244976	✓	-	✓	✓	✓	B	60	"	-	-	-	7	12	4							1			
E 8320	244977	✓	-	✓	✓	✓	B	90	yellow gray purple	-	-	-	15	5	4							1			
E 8300	244978	✓	-	✓	✓	✓	B	60	gray purple	-	✓	✓	13	13	4							1			
E 8280	244979	✓	-	✓	✓	✓	B	90	"	-	-	-	13	13	3							1			
E 8260	244980	✓	-	✓	✓	✓	B	90	gray	-	✓	✓	10	14	2							1			
E 8240	244981	✓	-	✓	✓	✓	B	90	"	-	✓	-	10	7	4							4			
E 8220	244982	✓	-	✓	✓	✓	B	90	"	-	✓	-	7	4	4							1			
E 8200	244983	✓	-	✓	✓	✓	B	70	"	-	✓	-	4	9	4							1			
E 8180	244984	✓	-	✓	✓	✓	B	40	"	-	✓	-	4	14	2							4			
E	244985																								
	244986																								

035

540036

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16948 to 208900. 23
 D.P.O. 16949 from 246501

AREA NIETTA

SAMPLE Nos. 208974 - 208900 / 246501 - 246505, COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE

A f p 22

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations					
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth C.M.	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As						
N 9800																													
E 12105	208974	/	-	/	/	-	W/B	70	brown	-	-	/	120	13	10	2								1					Bedrock fine green tuff.
E 12085	208975	/	-	/	/	-	B	70	gray	-	-	/	120	6	7	3								<1					as above
E 12065	208976	/	-	/	/	-	B/W	60	brown	-	-	/	120	11	7	3								<1					"
E 12045	208977	/	-	/	/	-	B	80	gray	-	-	/	120	3	2	1								<1					"
E 12025	208978	/	-	/	/	/	B/W	80	brown	-	-	/	120	11	7	4								<1					"
E 12005	208979	/	-	/	/	/	B	60	gray	-	-	/	120	11	20	4								<1					"
E 11985	208980	/	-	/	/	-	W/B	70	brown	-	-	/	100	18	10	3								1					"
E 11965	208981	/	-	/	/	-	A	60	black	-	-	/	65	6	10	1								<1					"
E 11945	208982	/	-	/	/	-	B	60	gray	-	-	/	70	3	12	<1								<1					"
E 11925	208983	/	-	/	/	-	A	70	black	-	-	/	70	3	7	4								<1					"
E 11905	208984	/	-	/	/	-	A/B	60	"	-	-	/	70	3	10	4								<1					"
E 11885	208985	/	-	/	/	-	A	60	"	-	-	/	70	2	4	<1								<1					"
E 11865	208986	/	-	/	/	-	A	60	"	-	-	/	70	3	2	<1								<1					"
E 11845	208987	/	-	/	/	-	A	60	"	-	-	/	70	4	14	<1								<1					"
E 11825	208988	/	-	/	/	-	A	70	"	-	-	/	80	3	7	<1								<1					"
E 11805	208989	/	-	/	/	-	B	80	brown	-	-	/	100	6	4	4								<1					"
E 11785	208990	/	-	/	/	-	B	80	brown	-	-	/	100	15	10	2								1					"
E 11765	208991	/	-	/	/	-	A	80	black	-	-	/	120	5	20	<1								<1					Ashflow tuff scree / BR?
E 11745	208992	/	-	/	/	-	A/B	70	gray	-	-	/	120	7	7	2								<1					as above
E 11725	208993	/	-	/	/	/	B	80	brown	-	-	/		8	12	3								<1					Creek
E 11705	208994	/	-	/	/	-	A	25	black	-	-	/	30	11	55	2								<1					fine green siliceous tuff.
E 11685	208995	/	-	/	/	-	A	40	"	-	-	/	45	7	35	2								<1					as above
E 11665	208996	/	-	/	/	-	A	30	"	-	-	/	40	8	17	2								<1					"
E 11645	208997	/	-	/	/	-	A	30	"	-	-	/	40	5	7	4								<1					"
E 11625	208998	/	-	/	/	-	A	40	"	-	-	/	40	5	12	<1								<1					"
E 11605	208999	/	-	/	/	-	A	40	"	-	-	/	40	5	17	<1								<1					"
E 11585	209000	/	-	/	/	-	A	40	"	-	-	/	60	3	12	<1								<1					"
E 11565	246501	/	-	/	/	-	A	50	"	-	-	/	60	5	11	1								<1					"
E 11545	246502	/	-	/	/	-	A	60	"	-	-	/	70	2	3	1								<1					"
E 11525	246503	/	-	/	/	-	A	30	"	-	-	/	60	2	4	1								<1					"
E 11505	246504	/	-	/	/	-	B	50	"	-	-	/	60	2	3	2								<1					"
E 11485	246505	/	-	/	/	-	A/B	50	"	-	-	/	60	4	4	1								<1					"

036

540037

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C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16949 to 246507
D.P.O. 17751 from 246708

AREA NIETTA

SAMPLE Nos. 246506 - 246527
246708 - 246717

COLLECTED BY P.J.H.

MAP OR PHOTO REFERENCE

A for p 23

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Lignite %	Sand %	Silt %	Clay %		Depth	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N 9800																											
E 11465	246506	/	-	/	/	-	A	60	black	-	-	/	100	2	4	1							<1				fine green tuff
E 11445	246507	/	-	/	/	-	B	90	"	-	-	/	120	22	7	2							<1				as above
E 11425	246508	/	-	/	/	-	A	80	"	-	-	/	120	2	4	3							<1				"
E 11405	246509	/	-	/	/	-	A	60	"	-	-	/	120	2	5	3							<1				"
E 11385	246510	/	-	/	/	-	A	80	"	-	-	/	120	5	1	1							<1				"
E 11365	246511	/	-	/	/	-	A	70	"	-	-	/	120	2	4	2							<1				"
E 11345	246512	/	-	/	/	-	A	70	"	-	-	/	120	2	5	2							<1				"
E 11325	246513	/	-	/	/	-	B	80	"	-	-	/	120	5	5	3							<1				"
E 11305	246514	/	-	/	/	/	B	70	gray	-	-	/	120	2	5	4							<1				"
E 11285	246515	/	-	/	/	/	B	70	"	-	-	/	120	7	5	6							<1				"
E 11265	246516	/	-	/	/	/	B	80	"	-	-	/	120	54	18	12							<1				"
E 11245	246517	/	-	/	/	-	B	60	brown	-	-	/	100	19	21	12							<1				"
E 11225	246518	/	-	/	/	-	B	60	gray	-	-	/	60	5	13	5							<1				"
E 11205	246519	/	-	/	/	-	B	30	gray	-	-	/	40	11	12	3							<1				"
E 11185	246520	/	-	/	/	-	B	70	brown	-	-	/	100	16	13	5							<1				"
E 11165	246521	/	-	/	/	-	B	70	"	-	-	/	100	22	14	7							<1				"
E 11145	246522	/	-	/	/	-	B	70	"	-	-	/	120	19	8	3							<1				"
E 11125	246523	/	-	/	/	-	B	60	"	-	-	/	120	31	4	1							<1				" (/ fractured ^{black} rocks)
E 11105	246524	/	-	/	/	-	B	60	gray	-	-	/	120	5	4	3							<1				"
E 11085	246525	/	-	/	/	-	B	60	black	-	-	/	120	7	5	4							<1				"
E 11065	246526	/	-	/	/	-	B	60	brown	-	-	/	120	16	40	10							<1				" } Tls in scree.
E 11045	246527	/	-	/	/	-	WB/B	80	"	-	-	/	120	19	26	13							<1				"
E 11025	246708	/	-	/	/	-	WB	90	"	-	-	/	120	17	21	20							<1				"
E 11005	246709	/	-	/	/	-	"	90	"	-	-	/	120	15	33	17							<1				" some ashflow tuff also.
E 10985	246710	/	-	/	/	-	"	90	"	-	-	/	120	20	110	27							<1				Blue siliceous tuff (fine) and ashflow ²⁴⁶⁷¹⁰
E 10965	246711	/	-	/	/	/	B	70	gray	-	-	/	120	7	6	11							<1				"
E 10945	246712	/	-	/	/	/	B	100	black	-	-	/		17	6	20							<1				"
E 10925	246713	/	-	/	/	-	WB	100	orange	-	-	/	100	17	9	52							<1				Rock fractured / porous, slightly gassy tuff
E 10905	246714	/	-	/	/	-	WB/B	120	"	-	-	/	120	40	8	52							<1				Gassy tuff / sed.
E 10895	246715	/	-	/	/	/	B	90	gray	-	-	/	100	15	9	22							<1				Gassy altered sediment - bedding observed
E 10865	246716	/	-	/	/	-	A	60	black	-	-	/	60	9	19	5							<1				as above.
E 10845	246717	/	-	/	/	-	A	30	"	-	-	/	30	7	14	8							<1				Green siliceous tuff

037

SOS 7/70
C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

540038
A.P.O. 16949 208357 25
D.P.O. 16945 208351-356, 358-392
COLLECTED BY P.J.A.

AREA NIETTA

SAMPLE Nos. 208351 - 208382

MAP OR PHOTO REFERENCE NIETTA PROSPECT E 19/72 DIAL RANGE N.W. T.A.S. GEOCHEM. SOIL SAMPLE PLAN. ANALYSED BY ZINC CORP LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock		Metal content, p. p. m.										Geological observations				
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth (m)	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo		As			
N10200																											
E10400	208351	✓	-	✓	✓	-	WB	120	brown	-	✓	✓	140	10	12	29											Ofc Rhyodacite lava (Na)
E10380	208352	✓	-	✓	/	-	WB/B	120	"	-	✓	✓	140	13	13	22										Ofc Ashflow tuff.	
E10360	208353	✓	-	/	/	-	B	80	"	-	-	✓	140	7	9	4										Bedrock Ashflow tuff.	
E10340	208354	✓	-	/	/	-	B	70	"	-	-	✓	140	2	6	6										As above.	
E10320	208355	✓	-	/	/	-	B/WB	70	yellow	-	-	✓	120	5	5	6										"	
E10300	208356	✓	-	/	-	-	B	60	brown	-	-	✓	120	8	12	10										"	
E10280	208357	✓	-	/	-	-	B	60	"	-	-	✓	120	7	4	27										fine ashflow tuff.	
E10260	208358	✓	-	/	-	-	B	60	"	-	-	✓	120	18	5	13										Ashflow tuff.	
E10240	208359	✓	-	/	/	-	B	60	black	-	-	✓	120	13	13	14										"	
E10220	208360	✓	-	/	/	-	B	60	brown	-	-	✓	120	13	10	250										"	
E10200	208361	✓	-	/	-	-	B	70	grey	-	-	✓	120	10	9	51										"	
E10180	208362	✓	-	/	/	-	B	90	brown	-	-	✓	120	8	11	4										fine ashflow tuff?	
E10160	208363	✓	-	/	/	-	B	80	black	-	-	✓	120	15	9	6										Ashflow tuff.	
E10140	208364	✓	-	/	/	-	B	90	brown	-	-	✓	130	10	7	9										"	
E10120	208365	✓	-	/	/	-	B	80	black	-	-	✓	130	4	9	4										"	
E10100	208366	✓	-	/	/	-	B	90	grey	-	-	✓	130	10	8	4										"	
E10080	208367	✓	-	/	/	-	B	90	brown	-	-	✓	130	10	12	24										"	
E10060	208368	✓	-	/	/	-	B	90	grey	-	-	✓	130	8	8	4										" ?	
E10040	208369	✓	-	/	/	-	B	80	"	-	-	✓	130	5	5	76										"	
E10020	208370	✓	-	/	/	-	B	100	"	-	-	✓	140	4	3	6										"	
E10000	208371	✓	-	/	/	-	B	80	"	-	-	✓	130	4	5	1										"	
E9980	208372	✓	-	/	/	-	B	60	"	-	-	✓	130	2	3	4										"	
E9960	208373	✓	-	/	/	-	B	70	"	-	-	✓	130	2	5	4										"	
E9940	208374	✓	-	/	/	-	B	80	"	-	-	✓	140	2	3	1										Airfall tuff ??	
E9920	208375	✓	-	/	/	-	B	80	"	-	-	✓	130	2	6	1										"	
E9900	208376	✓	-	/	/	-	B	90	"	-	-	✓	130	5	6	2										Ashflow tuff.	
E9880	208377	-	-	/	/	-	B	70	"	-	-	✓	130	8	8	6										"	
E9860	208378	-	-	/	/	-	B	90	"	-	-	✓	130	10	9	12										"	
E9840	208379	-	-	/	/	-	B	90	"	-	-	✓	140	10	11	6										"	
E9820	208380	-	-	/	/	-	B	100	"	-	-	✓	140	10	12	6										"	
E9800	208381	-	-	/	/	-	B	90	"	-	-	✓	140	5	9	2										"	
E9780	208382	-	-	✓	/	-	B/WB	90	yellow grey	-	-	✓	140	2	5	<1										Ashflow tuff ??	

039

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

DAO 16945

540040

27

AREA NIETTA.

SAMPLE Nos. 208315 - 208330

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE As per p 26

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.									Geological observations		
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo		As	
N 10200																									
E 9120	208315	-	-	✓	/	/	B	90	gray	-	-	✓	120	13	34	6						<1			?
E 9100	208316	✓	-	/	/	-	B	70	brown	-	-	✓	110	8	19	2						<1			Bedrock - ashflow - pumice streaks
E 9080	208317	✓	-	/	/	-	B	60	"	-	-	✓	110	8	14	4						<1			As above
E 9060	208318	/	-	/	/	-	B	80	gray	-	-	✓	110	8	16	4						<1			"
E 9040	208319	/	-	/	/	-	WB/B	60	brown	-	-	✓	100	8	15	2						<1			" , vesicles -> lava?
E 9020	208320	✓	-	/	/	-	WB	60	"	-	-	✓	100	10	16	2						<1			Ashflow tuff.
E 9000	208321	/	-	/	/	-	B	60	gray	-	-	✓	100	10	14	4						<1			"
E 8980	208322	-	-	/	/	/	B	90	brown	-	-	✓	130	10	17	2						<1			-
E 8960	208323	-	-	/	/	-	B	80	"	-	-	✓	130	10	9	2						1			-
E 8940	208324	-	-	/	/	/	B	70	"	-	✓	✓	110	13	18	2						<1			Rock with stretched streaky lenses, A flow?
E 8920	208325	✓	-	/	/	-	B/WB	70	yellow brown	-	-	✓	110	8	12	2						<1			as above.
E 8900	208326	✓	-	/	/	/	B	60	gray	-	✓	-	-	2	3	<1						<1			Qt
E 8880	208327	/	-	/	/	/	B	70	"	-	✓	-	-	1	5	<1						<1			"
E 8860	208328	/	-	/	/	/	B	70	"	-	✓	-	-	2	3	<1						<1			"
E 8840	208329	/	-	/	/	/	B	60	"	-	✓	-	-	* <1	3	<1						<1			"
E 8820	208330	/	-	/	/	/	B	60	"	-	✓	-	-	8	6	<1						<1			"

0.40

540041

D.T.O. 1470
D.P.O. 16948 from 208846. 28

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

AREA NIETTA

SAMPLE Nos. 208831 - 208862

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE A p 27

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock		Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth (m)	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo		As		
N10200																										
E10420	208831	✓	-	✓	✓	✓	WB	300	yellow	-	✓	✓	300	11	4	70							<1			Na Rhyodacite bedrock. Gt in scree.
E10440	208832	-	-	✓	-	✓	"	250	yellow brown	-	✓	✓	250	19	24	33							<1			Mudstone
E10460	208833	✓	-	✓	-	✓	B	30	black	-	✓	✓	70	14	12	10							<1			Mudstone, Sandstone
E10480	208834	-	-	✓	✓	-	B/WB	100	brown	-	✓	✓	110	34	26	130							<1			as above
E10500	208835	✓	-	✓	✓	✓	WB/B	30	"	-	✓	✓	50	47	24	99							✓			"
E10520	208836	✓	-	✓	✓	✓	"	120	"	-	✓	✓	130	36	26	200							✓			Mudstone
E10540	208837	✓	-	✓	✓	✓	"	200	yellow gray	-	✓	✓	210	16	13	24							<1			Pyritic mudstone
E10560	208838	✓	-	✓	✓	✓	B	100	gray	-	✓	✓	100	1	2	2							<1			Pyritic mudstone / ashflow tuff
E10580	208839	✓	-	✓	✓	✓	B	100	"	-	✓	✓	100	2	2	1							<1			as above
E10600	208840	✓	-	✓	✓	✓	B	100	"	-	✓	✓	100	1	2	1							<1			o/c Ashflow tuff
E10620	208841	✓	-	✓	✓	✓	B	100	"	-	✓	✓	100	4	2	4							<1			as above
E10640	208842	✓	-	-	-	✓	WB	300	"	-	✓	✓	300	4	4	4							<1			"
E10660	208843	✓	-	✓	✓	✓	WB/B	100	"	-	✓	✓	100	2	3	4							<1			" Vitric tuff
E10680	208844	✓	-	✓	✓	✓	B	90	gray black	-	✓	✓	100	4	5	4							<1			"
E10700	208845	✓	-	✓	✓	✓	WB	200	gray orange	-	✓	✓	220	16	6	<1							✓			"
E10720	208846	✓	-	✓	-	✓	B	80	gray	-	✓	✓	100	2	3	<1							<1			"
E10740	208847	✓	-	✓	-	✓	B	80	"	-	✓	✓	100	1	1	<1							<1			"
E10760	208848	-	-	✓	-	✓	WB/B	80	"	-	✓	✓	100	<1	1	<1							<1			"
E10780	208849	✓	-	✓	-	✓	B/WB	60	yellow brown	-	-	✓	100	8	7	<1							<1			" ?
E10800	208850	-	-	✓	-	✓	WB	80	yellow brown	-	-	✓	100	1	1	4							<1			"
E10820	208851	-	-	✓	-	✓	WB	80	yellow brown	-	-	✓	100	4	1	4							<1			" Vitric/crystal tuff
E10840	208852	✓	-	✓	✓	-	WB/B	80	"	-	-	✓	100	6	5	2							<1			"
E10860	208853	-	-	✓	✓	-	B	80	gray	-	-	✓	120	8	4	<1							<1			"
E10880	208854	-	-	✓	✓	✓	WB/B	90	gray yellow	-	-	✓	120	4	3	4							<1			"
E10900	208855	-	-	✓	-	✓	WB	100	cream yellow	-	-	✓	120	4	1	<1							<1			-
E10920	208856	-	-	-	-	✓	"	110	"	-	✓	✓	130	9	1	1							<1			fine green tuff
E10940	208857	✓	-	✓	✓	-	WB/B	90	gray	-	-	✓	130	2	1	<1							<1			as above
E10960	208858	-	-	✓	✓	-	WB	120	cream yellow	-	-	✓	140	8	2	2							<1			?
E10980	208859	-	-	✓	✓	-	WB	120	yellow orange	-	-	✓	130	8	1	2							<1			Vitric/crystal tuff
E11000	208860	-	-	✓	✓	-	WB/B	110	gray yellow	-	✓	✓	130	2	1	2							<1			as above
E11020	208861	-	-	✓	✓	-	WB	120	yellow brown	-	-	✓	130	8	2	5							<1			"
E11040	208862	-	-	✓	✓	✓	"	120	"	-	✓	✓	130	12	14	7							<1			"

043

540044

SOS 7/70
C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16941 to 245350. 31
D.P.O. 16941 from 245151.

AREA NIETTA

SAMPLE Nos. 245340 - 245350; 245151 - 245168 COLLECTED BY

P.J.A.

MAP OR PHOTO REFERENCE A 30

ANALYSED BY ZINC Corp Ltd.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock		Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo		As		
N 10, 600																										
E 9825	245340	✓	-	✓	✓	-	WB/B	90	gray	-	-	✓	110	<1	1	<1							<1		DR43 Type	
E 9845	245341	✓	-	✓	✓	-	WB	90	brown	-	-	✓	110	1	1	<1							<1		DR43	
E 9865	245342	✓	-	✓	✓	-	B	60	black gray	-	-	✓	110	<1	3	<1							<1		"	
E 9885	245343	✓	-	✓	✓	✓	B	90	dk gray	-	-	✓	110	1	1	<1							<1		"	
E 7805	245344	✓	-	✓	✓	-	WB	110	brown	-	-	✓	125	1	1	<1							1		"	
E 9925	245345	✓	-	✓	✓	-	B/WB	60	gray	-	-	✓	110	<1	2	<1							<1		finer ashfall tuff	
E 9945	245346	✓	-	✓	✓	-	B/WB	60	"	-	-	✓	110	<1	<1	<1							<1		"	
E 9965	245347	✓	-	✓	✓	-	WB/B	80	yellow gray	-	-	✓	110	<1	<1	<1							<1		"	
E 9985	245348	✓	-	✓	✓	-	B/WB	60	gray	-	-	✓	110	<1	<1	<1							1		"	
E 10005	245349	✓	-	✓	✓	-	B	110	gray	-	-	✓	130	<1	<1	<1							<1		" , coarse ashflow in scree	
E 10025	245350	✓	-	✓	✓	-	B/WB	110	gray	-	-	✓	130	<1	<1	<1							<1		"	
E 10045	245151	-	-	✓	✓	✓	B/WB	100	gray	-	-	✓	130	<1	1	<1							<1		BR ?	
E 10065	245152	✓	-	✓	✓	-	WB/B	30	gray	-	-	✓	100	<1	1	<1							<1		Rotund Conglomerate scree	
E 10405	245168	✓	-	✓	✓	-	B	40	brown	-	-	✓	100	<1	2	<1							<1		Or. scree, Bedrock Rotund Congl.	
E 10425	245167	✓	-	✓	✓	-	B/WB	60	"	-	-	✓	100	5	4	<1							4		o/c Qt; BR. 026 / OR.	
E 10445	245166	-	-	✓	✓	-	WB/B	70	"	-	-	✓	110	3	3	<1							<1		BR ?	
E 10465	245165	-	-	✓	✓	-	"	70	"	-	-	✓	110	7	11	<1							<1		o/c Qt. BR ?	
E 10485	245164	-	-	✓	✓	✓	WB	150	yellow brown	-	-	✓	180	6	6	<1							1		BR DR 26 ?	
E 10505	245163	✓	-	✓	✓	-	B	50	brown	-	-	✓	110	1	4	<1							<1		"	
E 10525	245162	✓	-	✓	✓	-	B	80	"	-	-	✓	110	1	3	<1							<1		"	
E 10545	245161	✓	-	✓	✓	-	WB	130	cream brown	-	-	✓	150	4	6	<1							1		"	
E 10565	245160	✓	-	✓	✓	✓	WB	70	brown	-	-	✓	130	7	9	<1							<1		" ?	
E 10585	245159	✓	-	✓	✓	-	"	60	"	-	-	✓	100	1	3	<1							<1		"	
E 10605	245158	-	-	✓	✓	✓	"	90	"	-	-	✓	120	4	6	<1							<1		" ?	
E 10625	245157	-	-	-	-	✓	B/WB	90	yellow gray	-	-	✓	?	<1	2	<1							<1		" ?	
E 10645	245156	✓	-	✓	✓	-	WB/B	60	brown	-	-	✓	110	<1	1	<1							<1		DR 26	
E 10665	245155	✓	-	✓	✓	-	B	60	gray white	-	-	✓	140	<1	1	<1							<1		Qt	
E 10685	245154	✓	-	✓	✓	-	B	60	"	-	-	✓	140	<1	3	<1							<1		"	
E 10705	245153	✓	-	✓	✓	-	B	60	"	-	-	✓	140	<1	<1	<1							<1		"	

044

SOS 7/70
C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

540045

D.P.O. 16941 to 245175 32
D.P.O. 16941 from 245176.

AREA NIETTA

SAMPLE Nos. 245169 - 245200

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE A p 31

ANALYSED BY ZINC Corp Ltd.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock		Metal content, p. p. m.										Geological observations		
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth cm	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo		As	
N 10 600																									
E 10 725	245169	✓	-	✓	✓	✓	B	80	grey	-	-	✓	130	<1	1	<1							4	Qt.	
E 10, 745	245170	✓	-	✓	✓	✓	B	50	"	-	-	✓	130	<1	1	<1							1	?	
E 10, 765	245171	✓	-	✓	✓	✓	WB	70	cream yellow	-	-	✓	110	<1	6	<1							4	DR67	
E 10, 785	245172	✓	-	✓	✓	-	WB	80	"	-	-	✓	110	<1	1	<1							4	"	
E 10, 805	245173	✓	-	✓	✓	✓	WB/B	100	yellow gray	-	-	✓	120	1	1	4							<1	"	
E 10, 825	245174	✓	-	✓	✓	✓	"	120	"	-	-	✓	140	<1	1	<1							<1	"	
E 10, 845	245175	-	-	✓	✓	✓	"	120	orange	-	-	✓	140	4	2	7							4	fine airfall tuff?	
E 10, 865	245176	✓	-	✓	✓	-	WB	60	"	-	-	✓	100	4	2	4							2	"	
E 10, 885	245177	-	-	-	-	✓	WB/B	60	"	-	-	✓	110	4	4	1							<1	"	
E 10, 905	245178	-	-	✓	-	✓	"	100	yellow	-	-	✓	120	8	5	2							<1	"?	
E 10, 925	245179	-	-	✓	-	✓	"	110	yellow brown gray green	-	-	✓	130	26	3	1							<1	" / sieve same.	
E 10, 945	245180	✓	-	✓	✓	-	WB/B	60	gray green	-	-	✓	110	1	2	4							<1	" / " "	
E 10, 965	245181	✓	-	✓	✓	-	WB/B	40	gray	-	-	✓	100	4	2	1							<1	" / " "	
E 10, 985	245182	✓	-	✓	✓	-	"	60	"	-	-	✓	100	4	4	<1							<1	" / " "	
E 11, 005	245183	✓	-	✓	✓	✓	"	100	yellow gray	-	-	✓	140	4	4	1							<1	coarser airfall tuff	
E 11, 025	245184	✓	-	✓	✓	✓	"	90	"	-	-	✓	140	1	4	1							<1	as above	
E 11, 045	245185	✓	-	✓	✓	✓	"	60	brown	-	-	✓	130	9	13	2							<1	Ash flow tuff?	
E 11, 065	245186	-	-	✓	✓	✓	WB	80	"	-	-	✓	130	10	14	3							<1	as above.	
E 11, 085	245187	✓	-	✓	✓	✓	"	90	"	-	-	✓	110	9	15	5							<1	as above.	
E 11, 105	245188	✓	-	✓	✓	✓	WB/B	100	"	-	-	✓	110	14	30	10							<1	"	
E 11, 125	245189	✓	-	✓	✓	✓	B	60	brown gray	-	-	✓	116	4	6	1							<1	"	
E 11, 155	245190	✓	-	✓	✓	-	WB/B	90	brown	-	-	✓	120	39	9	9							<1	fine tuff to possibly sediment.	
E 11, 175	245191	✓	-	✓	✓	-	B	70	black	-	-	✓	100	5	6	3							<1	as above	
E 11, 195	245192	✓	-	✓	✓	-	B	70	gray	-	-	✓	100	1	2	<1							<1	as above	
E 11, 215	245193	✓	-	✓	✓	-	B	70	"	-	-	✓	130	3	2	1							<1	"	
E 11, 235	245194	✓	-	✓	✓	-	B	60	"	-	-	✓	130	4	4	<1							<1	fine airfall T. and Qt. mix.	
E 11, 255	245195	✓	-	✓	✓	-	B	90	"	-	-	✓	130	1	2	1							<1	fine airfall tuff.	
E 11, 275	245196	✓	-	✓	✓	-	B	100	"	-	-	✓	130	1	1	1							<1	O/C Qt. (Ordovician or)	
E 11, 295	245197	✓	-	✓	✓	-	B	80	"	-	-	✓	130	1	2	1							<1	O/C Qt / fine airfall tuff.	
E 11, 315	245198	✓	-	✓	✓	-	B	60	"	-	-	✓	130	1	4	1							<1	O/C Qt / fine airfall tuff.	
E 11, 325	245199	✓	-	✓	✓	-	WB/B	90	yellow gray	-	-	✓	130	4	1	1							1	O/C Qt / fine airfall?	
E 11, 355	245200	✓	-	✓	✓	-	B	70	gray	-	-	✓	130	1	2	1							<1	O/C Qt / fine airfall tuff.	

046

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

 D.P.O. 16943 to 244857
 D.P.O. 16948 244858

540047

34

AREA NIETTASAMPLE Nos. 244827 - 244858COLLECTED BY P.J.A.MAP OR PHOTO REFERENCE A to B 33ANALYSED BY ZINC CORP LTD

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N 11000																											
E11495	244827	/	-	/	/	-	B	60	brown	-	-	/	120	<1	<1	<1							<1			Ashflow tuff?	
E11475	244828	/	-	/	/	/	WB	80	cream	-	-	/	120	2	<1	<1							<1			Black cherty m/s scree	
E11455	244829	/	-	/	/	-	B	65	grey	-	-	/	120	<1	<1	<1							<1			DR43 type	
E11435	244830	/	-	/	/	-	B	65	grey	-	-	/	120	<1	<1	1							<1			Thick scree DR43	
E11415	244831	/	-	/	/	-	B	85	black	-	-	/	120	<1	<1	4							<1			as above	
E11395	244832	/	-	/	/	-	B	60	"	-	-	/	120	<1	<1	1							<1			"	
E11375	244833	/	-	/	/	-	B	75	"	-	-	/	120	4	2	1							<1			"	
E11355	244834	/	-	/	/	-	B	90	"	-	-	/	120	<1	4	1							<1			Granular cherty looking volcanic (Series)	
E11335	244835	/	-	/	/	-	B	95	"	-	-	/	120	2	2	3							<1			as above	
E11315	244836	/	-	/	/	-	B	60	"	-	-	/	120	<1	<1	1							<1			" , banded	
E11295	244837	/	-	/	/	-	B	70	"	-	-	/	120	<1	<1	2							<1			" , brecciated in part	
E11275	244838	/	-	/	/	-	B	65	brown	-	-	/	120	<1	<1	2							<1			"	
E11255	244839	/	-	/	/	-	B	65	black	-	-	/	120	2	1	2							<1			"	
E11235	244840	/	-	/	/	-	B	60	"	-	-	/	120	15	2	2							<1			" ?	
E11215	244841	/	-	/	/	-	B	50	brown	-	-	/	120	7	6	5							<1			Ashflow - wispy porous DR43 type	
E11195	244842	/	-	/	/	-	B	50	"	-	-	/	120	2	4	7							<1			Screen as above	
E11175	244843	/	-	/	/	-	B	65	black	-	-	/	120	14	5	7							<1			"	
E11155	244844	/	-	/	/	-	B	90	"	-	-	/	120	2	<1	2							<1			"	
E11135	244845	/	-	/	/	-	B	65	"	-	-	/	120	2	1	1							<1			Ashflow tuff.	
E11115	244846	/	-	/	/	-	B	50	"	-	-	/	120	2	4	2							<1			"	
E11095	244847	/	-	/	/	-	B	50	"	-	-	/	120	3	2	3							<1			" (cherty m/s scree?)	
E11075	244848	/	-	/	/	-	B	75	brown	-	-	/	80	3	<1	9							<1			Well banded siliceous cherty tuff.	
E11055	244849	/	-	/	/	-	B	40	black	-	-	/	120	3	4	7							<1			Ashflow tuff scree	
E11035	244850	/	-	/	/	-	B	50	"	-	-	/	100	1	<1	3							<1			DR 67 appearance	
E11015	244851	/	-	/	/	-	B	65	"	-	-	/	100	<1	<1	2							<1			As above - squashed + aligned 'vesicles'?	
E10995	244852	/	-	/	/	-	B	85	"	-	-	/	120	4	4	2							<1			as above	
E10975	244853	/	-	/	/	-	B	50	grey	-	-	/	120	12	2	3							<1			Black sediment ?? (m/s ??)	
E10955	244854	/	-	/	/	-	B	60	"	-	-	/	120	3	1	2							<1			Micaceous sandstone? scree	
E10935	244855	/	-	/	/	-	B	55	"	-	-	/	120	2	2	2							<1			Fine granular tuff.	
E10915	244856	/	-	/	/	-	B	60	"	-	-	/	120	1	<1	2							<1			Cherty m/s scree? BR: fine tuff?	
E10895	244857	/	-	/	/	-	B	65	"	-	-	/	120	7	3	2							<1			Fine green granular tuff.	
E10875	244858	/	-	/	/	-	B	55	"	-	-	/	120	2	4	1							<1			as above.	

048

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

540049
 D.P.O. 16946. to 208412.
 D.P.O. 16941 244 818-821, 823.
 D.P.O. 16943 244822, 824-827

AREA NIETTA

SAMPLE Nos. 208410 - 208412
244818 - 244827.

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE A.A. P.35

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth (m)	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N11000																											
E10215	208410	/	-	/	/	-	B	60	black	-	-	/	120	3	3	4							4				Ashflow tuff.
E10195	208411	/	-	/	/	-	B	75	"	-	-	/	120	18	6	4							4				"
E10175	208412	/	-	/	/	-	B	70	"	-	-	/	120	1	5	4							1				"
E11675	244818	-	-	/	/	-	WB	90	orange	-	-	/	120	4	4	2							4				-
E11655	244819	-	-	/	/	-	"	100	"	-	-	/	120	7	5	10							4				-
E11635	244820	/	-	/	/	-	B/WB	60	yellow grey	-	-	/	120	4	4	4							2				Bedrock - airfall tuff?
E11615	244821	-	-	/	/	-	WB	120	orange	-	-	/	130	28	10	24							3				as above?
E11595	244822	/	-	/	/	-	B/WB	70	yellow grey	-	-	/	130	2	35	4							4				as above?
E11575	244823	-	-	/	/	-	"	90	"	-	-	/	130	4	4	4							4				as above?
E11555	244824													5	7	1							4				?
E11535	244825													2	4	4							4				
E11515	244826													4	4	4							4				
E11495	244827													4	4	4							4				

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

AREA NIETTA

SAMPLE Nos. 246684 - 246698

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE As for p 36

ANALYSED BY ZINC CORP LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth cm	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth m	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N 11000																											
E 10155	246684	/	-	/	/	-	B	80	brown	-	-	/	120	5	3	<1							<1				Ashflow tuff
E 10135	246685	-	-	-	/	/	B	30	black	-	-	/	100	3	3	2							<1				Ashflow tuff
E 10115	246686	/	-	/	/	-	B	50	brown	-	-	/	120	13	5	7							<1				?
E 10095	246687	/	-	/	/	-	B	70	grey	-	-	/	120	27	3	4							<1				Micaceous sandstone / mudstone
E 10075	246688	/	-	-	-	/	B	70	"	-	-	/	120	13	1	3							<1				as above.
E 10055	246689	/	-	/	/	/	B	90	"	-	-	/	120	16	3	4							<1				"
E 10035	246690	/	-	/	/	-	WB/B	120	grey	-	-	/	130	5	1	4							<1				"
E 10015	246691	/	-	/	/	-	B	90	brown grey	-	-	/	120	49	3	8							<1				"
E 9995	246692	/	-	/	/	-	B	110	black	-	-	/	150	27	8	110							1				"
E 9975	246693	/	-	/	/	-	WB/B	110	brown	-	/	/	-	55	5	19							<1				"
E 9955	246694	/	-	/	/	/	B	90	black	-	/	/	-	49	3	10							<1				" 190° 85W
E 9935	246695	/	-	/	/	/	WB	100	yellow cream	-	-	/	120	62	3	6							<1				"
E 9915	246696	/	-	/	/	/	"	90	"	-	-	/	110	49	8	5							1				"
E 9895	246697	/	-	/	/	-	B/B	80	brown	-	-	/	110	8	3	2							<1				"
E 9875	246698	/	-	/	/	-	WB	90	"	-	-	/	110	13	8	2							<1				"
E 9855		-	-	-	-	-																					Ordovician - Roland Conglomer. 320, 20W

050

540051

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 1694/15 208571, 208571, 208571
 D.P.O. 16948 208674

AREA NIETTA

SAMPLE Nos. 208566-208571/208651-208676

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE

As per map

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations				
		Rock %	Laterite %	Sand %	Silt %	Clay %		C.m. Depth	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth %	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As					
N11300																												
E12080	208566	1	-	1	1	-	B	90	brown	-	-	1	120	9	16	16							4					Bedrock fine vitric tuff.
E12060	208567	-	-	1	1	1	B	80	gray	-	-	1	120	6	20	4							4					
E12040	208568	-	-	1	-	1	WB	90	cream	-	-	1	120	2	2	1							<1					as above
E12020	208569	1	-	1	1	-	B	60	gray	-	-	1	120	2	4	1							4					"
E12000	208570	1	-	1	1	-	B	60	"	-	-	1	120	2	4	1							4					"
E11980	208671	1	-	1	1	-	B	90	"	-	-	1	120	3	2	4							4					"
E11960	208651	1	-	1	1	-	B	60	"	-	-	1	120	2	4	4							4					"
E11940	208652	1	-	1	1	-	B	60	"	-	-	1	120	2	2	4							4					"
E11920	208653	1	-	1	1	-	B	60	"	-	-	1	120	4	4	4							4					"
E11900	208654	1	-	1	1	-	B	60	"	-	-	1	120	4	2	2							4					"
E11880	208655	1	-	1	1	-	B	70	"	-	-	1	120	4	4	4							4					"
E11860	208656	1	-	1	1	-	B	70	"	-	-	1	120	2	4	4							4					"
E11840	208657	1	-	1	1	-	B	100	"	-	-	1	120	4	2	1							4					Andesitic purple/gray rock, large pumice frags
E11820	208658	1	-	1	1	1	B	100	"	-	-	1	120	4	4	4							4					as above
E11800	208659	1	-	1	1	-	B	90	"	-	-	1	120	14	7	4							4					" more silicic
E11780	208660	-	-	1	1	1	B	80	"	-	-	1	120	9	7	1							4					Fine gray silicic rock, vitric tuff,
E11760	208661	1	-	1	1	-	B	70	"	-	-	1	120	4	2	4							4					On other side of creek coarse ashflow?
E11740	208662	1	-	1	1	1	WB	70	brown	-	-	1	120	5	7	4							4					as above rock frags.
E11720	208663	-	-	1	1	1	B	60	gray	-	-	1	120	4	4	4							4					fine vitric tuff
E11700	208664	1	-	1	1	1	B	70	white	-	-	1	120	4	4	4							4					as above
E11680	208665	1	-	1	1	1	B	90	"	-	-	1	120	4	4	4							4					"
E11660	208666	1	-	1	1	-	B	70	gray	-	-	1	120	4	2	4							4					-
E11640	208667	1	-	1	1	-	B	60	"	-	-	1	120	4	2	4							4					Fine silicic rock - vitric tuff
E11620	208668	1	-	1	1	-	B	60	"	-	-	1	120	4	2	4							4					as above
E11600	208669	-	-	1	1	-	B	50	"	-	-	1	120	4	2	4							4					"
E11580	208670	1	-	1	1	-	B	70	"	-	-	1	120	4	1	4							4					"
E11560	208571	1	-	1	1	-	B	70	"	-	-	1	120	4	2	4							4					"
E11540	208672	1	-	1	1	-	B	60	"	-	-	1	120	4	1	4							4					" can see fine pumices
E11520	208673	1	-	1	1	-	A/B	70	black	-	-	1	120	4	2	4							4					" green and silicic
E11500	208674	1	-	1	1	-	B	70	gray	-	-	1	120	4	4	1							4					fine vitric tuff
E11480	208675	1	-	1	1	-	B	90	"	-	-	1	120	4	1	4							4					as above
E11460	208676	1	-	1	1	-	B	70	brown	-	-	1	120	13	14	17							1					"

052

540053

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C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16947

AREA NIETTA

SAMPLE Nos 208719-208740/208701-208710.

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE

As for p 39

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations				
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (m)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth (m)	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As					
N11300																												
E10800	208719	/	-	/	/	-	B	95	green	-	-	/	120+	<1	4	<1							<1					?
E10980	208720	/	-	/	/	-	B	75	grey	-	-	/	120	<1	4	<1							<1					fine vitric tuff type
E10760	208721	/	-	/	/	/	B	85	brown	-	-	/	120	<1	4	<1							<1					Porphyritic ash flow in situ
E10740	208722	/	-	/	/	/	B	70	grey	-	-	/	120	23	4	6							<1					as above
E10720	208723	/	-	/	/	-	B	70	"	-	↓	/		6	1	5							<1					highly fractured, grey vitric tuff rock, pumices possibly recrystallized ash flow or vitric tuff.
E10700	208724	/	-	/	/	/	B	70	"	-	-	/	120	7	1	1							<1					
E10680	208725	/	-	/	/	-	B	75	"	-	-	/	120	<1	4	1							<1					fine vitric tuff
E10660	208726	/	-	/	/	/	B	70	"	-	-	/	120	2	1	<1							<1					as above
E10640	208727	/	-	/	/	/	B	80	cream	-	-	/	120	11	4	4							<1					micaceous mudstone and sandstone
E10620	208728	/	-	/	/	/	B	65	brown	-	-	/	120	19	5	8							<1					fine grey/black laminated mudstone, sandstone
E10600	208729	/	-	/	/	-	B	70	cream	-	-	/	120	19	5	10							<1					mudstone
E10580	208730	/	-	/	/	/	B	60	grey	-	-	/	120	6	1	1							<1					fine vitric tuff type
E10560	208731	/	-	/	/	/	A/B	70	black	-	-	/	120	11	7	1							<1					as above
E10540	208710	/	-	/	/	/	B	70	grey	-	-	/	120	9	10	<1							<1					-
E10520	208709	-	-	/	/	/	B	70	"	-	-	/	120	38	11	130							<1					fine banded tuff?
E10500	208708	/	-	/	/	/	B	70	white	-	-	/	120+	<1	1	<1							<1					Volcanic
E10480	208707	/	-	/	/	/	B	70	grey	-	-	/	120	2	1	<1							<1					fine vitric tuff
E10460	208706	/	-	/	/	-	B	80	"	-	-	/	120	41	4	3							<1					banded rock - as above?
E10440	208705	/	-	/	/	/	B	70	light brown	-	-	/	120	63	4	13							<1					Micaceous sandstone, pale green, yellow, well bedded.
E10420	208704	/	-	/	/	/	B	75	"	-	-	/	120	47	7	8							<1					As above
E10400	208703	/	-	/	/	-	B	70	grey brown	-	-	/	120	6	7	3							<1					
E10380	208702	/	-	/	/	/	B	70	cream grey	-	-	/	120	14	4	3							<1					"
E10360	208701	/	-	/	/	-	B	65	grey	-	-	/	120	12	3	1							<1					Vitric tuff, see p.?
E10340	208732	/	-	/	/	-	B	70	"	-	-	/	120	23	5	3							<1					" , granular,
E10320	208733	/	-	/	/	/	B	90	brown	-	-	/	120	23	3	15							<1					grey-green mudstone
E10300	208734	-	-	/	/	/	B	75	yellow	-	-	/	120	48	5	8							<1					-
E10280	208735	/	-	/	/	/	WB	80	orange	-	-	/	110	77	5	10							<1					micaceous red sandstone
E10260	208736	/	-	/	/	/	WB	70	"	-	-	/	110	29	7	9							<1					" cream "
E10240	208737	/	-	/	/	/	B	75	grey	-	-	/	110	15	2	1							<1					as above
E10220	208738	/	-	/	/	-	B	65	"	-	-	/	110	3	2	1							<1					-
E10200	208739	/	-	/	/	/	WB/B	80	yellow brown	-	-	/	110	69	112	50							<1					-
E10180	208740	/	-	/	/	/	WB	70	yellow	-	-	/	110	36	13	6							<1					Micaceous sandstone

053

D.P.O. 16947

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

AREA NIETTA

SAMPLE Nos. 208741 - 208748

COLLECTED BY P. J. A.

MAP OR PHOTO REFERENCE A 4 p 40

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations		
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As			
N11300																										
E10160	208741	/	-	/	/	/	WB	75	red	-	-	/	110	44	21	9							<1		Red mudstone, s/s.	
E10140	208742	/	-	/	/	/	"	70	brn	-	-	/	110	100	32	13							<1		Gray micaceous s/s.	
E10120	208743	-	-	/	/	/	"	70	"	-	-	/	110	47	21	8							<1		fine banded gray/black, micaceous m/s.	
E10100	208744	/	-	/	/	/	WB/B	65	"	-	-	/	110	58	33	8							<1		micaceous s/s.	
E10680	208745	/	-	/	/	/	WB	70	"	-	-	/	110	70	42	6							<1		as above, tuffaceous look.	
E10660	208746	/	-	/	/	/	B	60	"	-	-	/	110	34	30	4							<1		gray micaceous m/s, s/s.	
E10040	208747	/	-	/	/	/	WB	70	"	-	-	/	110	67	36	7							<1		as above	
E10020	208748	/	-	/	/	/	B	70	"	-	-	/	120	22	12	13							<1		"	

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540055

D.P.O. 16947

42

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

AREA NIETTA

SAMPLE Nos. 208750 - 208781

COLLECTED BY P. J. A.

MAP OR PHOTO REFERENCE

As for p 41

ANALYSED BY ZINC CORP. LTD

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth C.M.	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N 11700																											
E 11930	208750	-	-	1	1	-	B	70	gray	-	-	120	4	2	4						4						-
E 11910	208751	-	-	1	1	-	"	70	"	-	-	120	4	1	4						4						-
E 11890	208752	-	-	1	1	-	"	70	"	-	-	120	<1	1	4						4						Green granular tuff
E 11870	208753	1	-	1	1	-	WB	80	brown	-	-	120	4	7	4						4						as above
E 11850	208754	1	-	1	1	-	WB/B	70	"	-	-	120	11	13	1						4						"
E 11830	208755	1	-	1	1	-	"	70	crum	-	-	120	3	4	4						<1						"
E 11810	208756	1	-	1	1	-	B	80	brown	-	1	120	7	9	4						4						Green tuff - ^{white} feldspar phenocrysts
E 11790	208757	-	-	1	1	-	"	80	gray	-	-	120	4	3	4						4						-
E 11770	208758	1	-	1	1	-	WB	80	brown	-	-	120	9	7	1						4						Green tuff as above
E 11750	208759	1	-	1	1	-	B	80	gray	-	-	120	4	4	4						4						"
E 11730	208760	1	-	1	1	-	B	70	bt brown	-	1	120	4	3	4						4						As above - DR 43 look
E 11710	208761	1	-	1	1	-	AB	70	black	-	1	120	4	4	4						4						"
E 11690	208762	1	-	1	1	-	B	80	"	-	1	120	4	2	4						4						Definite ash flow tuff appearance here
E 11670	208763	-	-	1	1	-	"	70	brown	-	-	120	6	33	12						4						-
E 11650	208764	1	-	1	1	-	"	70	gray	-	-	120	34	4	6						4						-
E 11630	208765	1	-	1	1	-	"	70	"	-	-	120	4	3	4						4						Green tuff white feldspar phenocrysts
E 11610	208766	1	-	1	1	-	"	60	"	-	1	120	4	2	4						4						As above - definite ash flow tuff look
E 11590	208767	1	-	1	1	-	AB	70	"	-	1	120	4	2	4						4						"
E 11570	208768	1	-	1	1	-	B	70	"	-	1	120	4	1	4						4						Ash flow tuff - looks like DR 17
E 11550	208769	1	-	1	1	-	"	70	"	-	-	120	4	2	4						4						as above
E 11530	208770	1	-	1	1	-	"	60	brown	-	-	120	4	2	4						4						"
E 11510	208771	1	-	1	1	-	"	80	"	-	1	120	19	5	7						2						"
E 11490	208772	1	-	1	1	-	"	70	gray	-	1	120	4	3	4						4						"
E 11470	208773	1	-	1	1	-	"	80	brown	-	1	120	6	3	4						4						-
E 11450	208774	1	-	1	1	-	A	80	black	-	1	120	4	3	1						4						Ash flow tuff
E 11430	208775	1	-	1	1	-	A	70	"	-	1	120	4	3	1						4						Green (pale) siliceous rock - alkalic pbb
E 11410	208776	1	-	1	1	-	A	70	"	-	1	120	4	3	2						4						as above - DR 43 look
E 11390	208777	1	-	1	1	-	AB	80	"	-	1	120	4	3	1						4						"
E 11370	208778	1	-	1	1	-	"	70	gray	-	1	120	4	3	4						4						"
E 11350	208779	1	-	1	1	-	"	80	black	-	1	120	4	5	4						4						"
E 11330	208780	1	-	1	1	-	B	70	gray	-	-	120	2	5	2						4						"
E 11310	208781	1	-	1	1	-	B	70	"	-	-	120	8	5	12						4						-

055

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

 D.P.O. 16947 to 208809
 D.P.O. 16948 from 208810. 43

540056

AREA NIETTA

SAMPLE Nos. 208782-208813

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE

A to P 42

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations				
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As					
N11700																												
E 11290	208782	/	-	/	/	/	B	80	yellow brown	-	-	/	-	11	31	44							<1					Sample in creek bank - alluvium.
E 11270	208783	-	-	/	/	/	-	70	green	-	-	/	-	8	5	8							<1					-
E 11250	208784	-	-	/	/	-	-	70	grey	-	-	/	-	4	2	4							<1					Creek gravel / sands.
E 11230	208785	-	-	/	/	-	-	80	"	-	-	/	-	1	2	4							<1					"
E 11210	208786	/	-	/	/	/	B	80	brown	-	-	/	-	18	10	61							1					-
E 11190	208787	/	-	/	/	-	-	80	grey	-	-	/	-	17	33	18							4					Creek sediments.
E 11170	208788	/	-	/	/	/	B	80	brown	-	/	/	120	17	12	200							4					Micaceous mudstone / sandstone
E 11150	208789	/	-	/	/	/	B	60	grey	-	/	/	120	2	4	9							<1					as above
E 11130	208790	/	-	/	/	-	A/B	70	black	-	/	/	120	<1	3	10							<1					"
E 11110	208791	/	-	/	/	/	WB	60	brown	-	/	/	120	10	9	110							<1					" (65°NW ; 25°)
E 11090	208792	/	-	/	/	-	B	70	"	-	-	/	-	10	12	22							<1					Creek sediments.
E 11070	208793	/	-	/	/	-	WB	70	"	-	-	/	120	6	6	10							<1					Mudstone / sandstone
E 11050	208794	/	-	/	/	-	WB/A	80	cream	-	-	/	120	6	2	6							<1					micaceous s/s.
E 11030	208795	-	-	/	/	-	WB	80	yellow	-	/	/	120	6	2	2							<1					sandstone / mudstone
E 11010	208796	/	-	/	/	/	"	80	"	-	-	/	120	10	5	8							<1					as above
E 10990	208797	-	-	/	/	/	"	90	"	-	-	/	120	8	5	8							<1					"
E 10970	208798	/	-	/	/	/	"	80	"	-	-	/	120	11	11	14							4					"
E 10950	208799	/	-	/	/	-	B	90	grey	-	-	/	120	2	1	5							<1					sandstone?
E 10930	208800	/	-	/	/	/	WB	90	orange	-	-	/	120	11	6	16							4					Sandstone / mudstone
E 10910	208801	/	-	/	/	/	"	70	"	-	-	/	120	19	9	30							4					as above
E 10890	208802	/	-	/	/	-	B	70	brown	-	-	/	120	460	8	20							4					"
E 10870	208803	-	-	/	/	-	-	80	yellow	-	-	/	-	15	22	51							4					Creek sediments
E 10850	208804	/	-	/	/	/	WB	80	"	-	-	/	120	11	22	27							<1					'Radford's Creek' Sediments / m/s, s/s.
E 10830	208805	/	-	/	/	/	"	80	orange	-	-	/	120	8	16	26							4					as above
E 10810	208806	/	-	/	/	/	"	80	"	-	-	/	120	14	16	44							4					"
E 10790	208807	-	-	/	/	/	"	90	"	-	-	/	120	20	31	33							4					-
E 10770	208808	/	-	/	/	/	"	90	red	-	-	/	110	23	31	50							<1					R.C. mudstone / sandstone
E 10750	208809	/	-	/	/	/	"	90	"	-	-	/	110	14	20	32							<1					as above
E 10730	208810	/	-	/	/	/	"	70	yellow	-	-	/	110	9	14	35							<1					"
E 10710	208811	-	-	/	/	/	"	70	cream	-	-	/	110	10	14	18							<1					"
E 10690	208812	/	-	/	/	/	"	60	yellow	-	-	/	110	11	18	48							4					"
E 10670	208813	/	-	/	/	/	"	70	orange	-	-	/	110	20	33	44							4					"

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D.P.O. 16948

C.R.A.E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

AREA NIETTA

SAMPLE Nos. 208814-208828

COLLECTED BY P. J. A.

MAP OR PHOTO REFERENCE A 4 43

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock	Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (cm)	Colour (Munsell)	Chart No.		pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr		Mn	Ag	Mo
N 11700																									
E10650	208814	/	-	/	/	/	WB	80	orange	-	-	/	110	100	71	65						<1			R.C. mudstone / sandstone
E10630	208815	/	-	/	/	-	"	70	"	-	-	/	110	77	40	73						<1			as above
E10610	208816	/	-	/	/	/	"	70	"	-	-	/	110	57	55	57						<1			"
E10590	208817	/	-	/	/	/	"	80	red	-	-	/	110	59	66	63						<1			"
E10570	208818	/	-	/	/	-	"	60	"	-	-	/	110	5100	144	64						<1			Sandstone to possibly tuffaceous sfs. (coarse)
E10550	208819	/	-	/	/	/	"	60	"	-	-	/	110	71	44	42						<1			mudstone / sandstone
E10530	208820	/	-	/	/	/	"	70	"	-	-	/	110	86	62	65						<1			as above
E10510	208821	/	-	/	/	/	"	70	"	-	-	/	110	82	42	50						<1			"
E10490	208822	/	-	/	/	/	"	70	"	-	-	/	110	44	33	41						<1			"
E10470	208823	/	-	/	/	/	"	60	brown	-	-	/	110	37	55	74						<1			"
E10450	208824	/	-	/	/	-	B	10	"	-	-	/	110	11	66	9						<1			'Deger been over this ground.
E10430	208825	/	-	/	/	-	WB	60	"	-	-	/	110	25	41	28						<1			mudstone / sandstone
E10410	208826	/	-	/	/	/	"	70	red	-	-	/	110	44	46	61						<1			as above
E10390	208827	/	-	/	/	/	"	70	"	-	-	/	110	55	31	62						<1			"
E10370	208828	/	-	/	/	/	"	70	"	-	-	/	110	18	28	52						<1			"

057

540058

D.P.O. 16947

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C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SOIL SAMPLING LEDGER

AREA NIETTA

SAMPLE Nos. 208901 - 208932

COLLECTED BY P.J.A.

MAP OR PHOTO REFERENCE A for p AA

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		C.M. Depth	Colour (Munsell Chart No.)	pH	Outcrop	Concealed	Est. Depth	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
<u>N12000</u>																											
<u>E11400</u>	<u>208901</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>WB</u>	<u>120</u>	<u>yellow</u>	<u>-</u>	<u>/</u>	<u>130</u>	<u>14</u>	<u>7</u>	<u>25</u>							<u><1</u>					<u>Mudstone - Radford CK Group.</u>
<u>E11380</u>	<u>208902</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>"</u>	<u>60</u>	<u>brown</u>	<u>-</u>	<u>/</u>	<u>130</u>	<u>13</u>	<u>17</u>	<u>45</u>							<u><1</u>					<u>"</u>
<u>E11360</u>	<u>208903</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>70</u>	<u>brown</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>13</u>	<u>45</u>	<u>95</u>							<u><1</u>					<u>"</u>
<u>E11340</u>	<u>208904</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>"</u>	<u>60</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>10</u>	<u>33</u>	<u>42</u>							<u><1</u>					<u>"</u>
<u>E11320</u>	<u>208905</u>	<u>-</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>70</u>	<u>light brown</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>11</u>	<u>35</u>	<u>36</u>							<u><1</u>					<u>"</u>
<u>E11300</u>	<u>208906</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>"</u>	<u>60</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>9</u>	<u>21</u>	<u>58</u>							<u><1</u>					<u>" sandstone - micaceous.</u>
<u>E11280</u>	<u>208907</u>	<u>-</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>60</u>	<u>brown</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>11</u>	<u>7</u>	<u>23</u>							<u><1</u>					<u>"</u>
<u>E11260</u>	<u>208908</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>"</u>	<u>80</u>	<u>yellow</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>7</u>	<u>5</u>	<u>18</u>							<u><1</u>					<u>"</u>
<u>E11240</u>	<u>208909</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>"</u>	<u>60</u>	<u>brown</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>14</u>	<u>26</u>	<u>50</u>							<u><1</u>					<u>"</u>
<u>E11220</u>	<u>208910</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>"</u>	<u>60</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>8</u>	<u>36</u>	<u>38</u>							<u><1</u>					<u>"</u>
<u>E11200</u>	<u>208911</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>80</u>	<u>light brown</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>9</u>	<u>32</u>	<u>22</u>							<u><1</u>					<u>"</u>
<u>E11180</u>	<u>208912</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>70</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>15</u>	<u>82</u>	<u>35</u>							<u><1</u>					<u>"</u>
<u>E11160</u>	<u>208913</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>60</u>	<u>red brown</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>33</u>	<u>76</u>	<u>57</u>							<u><1</u>					<u>"</u>
<u>E11140</u>	<u>208914</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>70</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>21</u>	<u>105</u>	<u>46</u>							<u><1</u>					<u>"</u>
<u>E11120</u>	<u>208915</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>60</u>	<u>brown</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>24</u>	<u>148</u>	<u>55</u>							<u><1</u>					<u>"</u>
<u>E11100</u>	<u>208916</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>60</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>27</u>	<u>51</u>	<u>44</u>							<u><1</u>					<u>"</u>
<u>E11080</u>	<u>208917</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>70</u>	<u>red brown</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>17</u>	<u>48</u>	<u>65</u>							<u><1</u>					<u>"</u>
<u>E11060</u>	<u>208918</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>"</u>	<u>60</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>25</u>	<u>39</u>	<u>69</u>							<u><1</u>					<u>"</u>
<u>E11040</u>	<u>208919</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>"</u>	<u>60</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>11</u>	<u>39</u>	<u>61</u>							<u><1</u>					<u>"</u>
<u>E11020</u>	<u>208920</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>WB</u>	<u>70</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>11</u>	<u>22</u>	<u>31</u>							<u><1</u>					<u>"</u>
<u>E11000</u>	<u>208921</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>WB</u>	<u>60</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>14</u>	<u>33</u>	<u>77</u>							<u><1</u>					<u>"</u>
<u>E10980</u>	<u>208922</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>WB</u>	<u>70</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>17</u>	<u>49</u>	<u>59</u>							<u><1</u>					<u>"</u>
<u>E10960</u>	<u>208923</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>"</u>	<u>70</u>	<u>yellow</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>23</u>	<u>46</u>	<u>35</u>							<u><1</u>					<u>"</u>
<u>E10940</u>	<u>208924</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>60</u>	<u>red brown</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>52</u>	<u>84</u>	<u>36</u>							<u><1</u>					<u>"</u>
<u>E10920</u>	<u>208925</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>70</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>71</u>	<u>57</u>	<u>37</u>							<u><1</u>					<u>"</u>
<u>E10900</u>	<u>208926</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>"</u>	<u>70</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>23</u>	<u>79</u>	<u>42</u>							<u><1</u>					<u>"</u>
<u>E10880</u>	<u>208927</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>80</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>100</u>	<u>41</u>	<u>87</u>	<u>56</u>							<u><1</u>					<u>"</u>
<u>E10860</u>	<u>208928</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>80</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>74</u>	<u>156</u>	<u>94</u>							<u><1</u>					<u>"</u>
<u>E10840</u>	<u>208929</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>120</u>	<u>"</u>	<u>-</u>	<u>/</u>	<u>125</u>	<u>160</u>	<u>197</u>	<u>100</u>							<u><1</u>					<u>"</u>
<u>E10820</u>	<u>208930</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>"</u>	<u>80</u>	<u>gray</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>11</u>	<u>55</u>	<u>23</u>							<u><1</u>					<u>Creek sediments. (Recent)</u>
<u>E10800</u>	<u>208931</u>	<u>-</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>-</u>	<u>"</u>	<u>110</u>	<u>gray</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>14</u>	<u>55</u>	<u>18</u>							<u><1</u>					<u>as above.</u>
<u>E10780</u>	<u>208932</u>	<u>/</u>	<u>-</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>WB</u>	<u>70</u>	<u>red brown</u>	<u>-</u>	<u>/</u>	<u>110</u>	<u>38</u>	<u>48</u>	<u>37</u>							<u><1</u>					<u>R.C. mudstone / sandstone.</u>

C. R. A. E. 31.

C.R.A. EXPLORATION PTY. LIMITED
GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16948 to 208940
D.P.O. 16948 208941, 42, 43, 46
208945-48
D.P.O. 17751 208944.
COLLECTED BY P.J.A.

AREA NIETTA

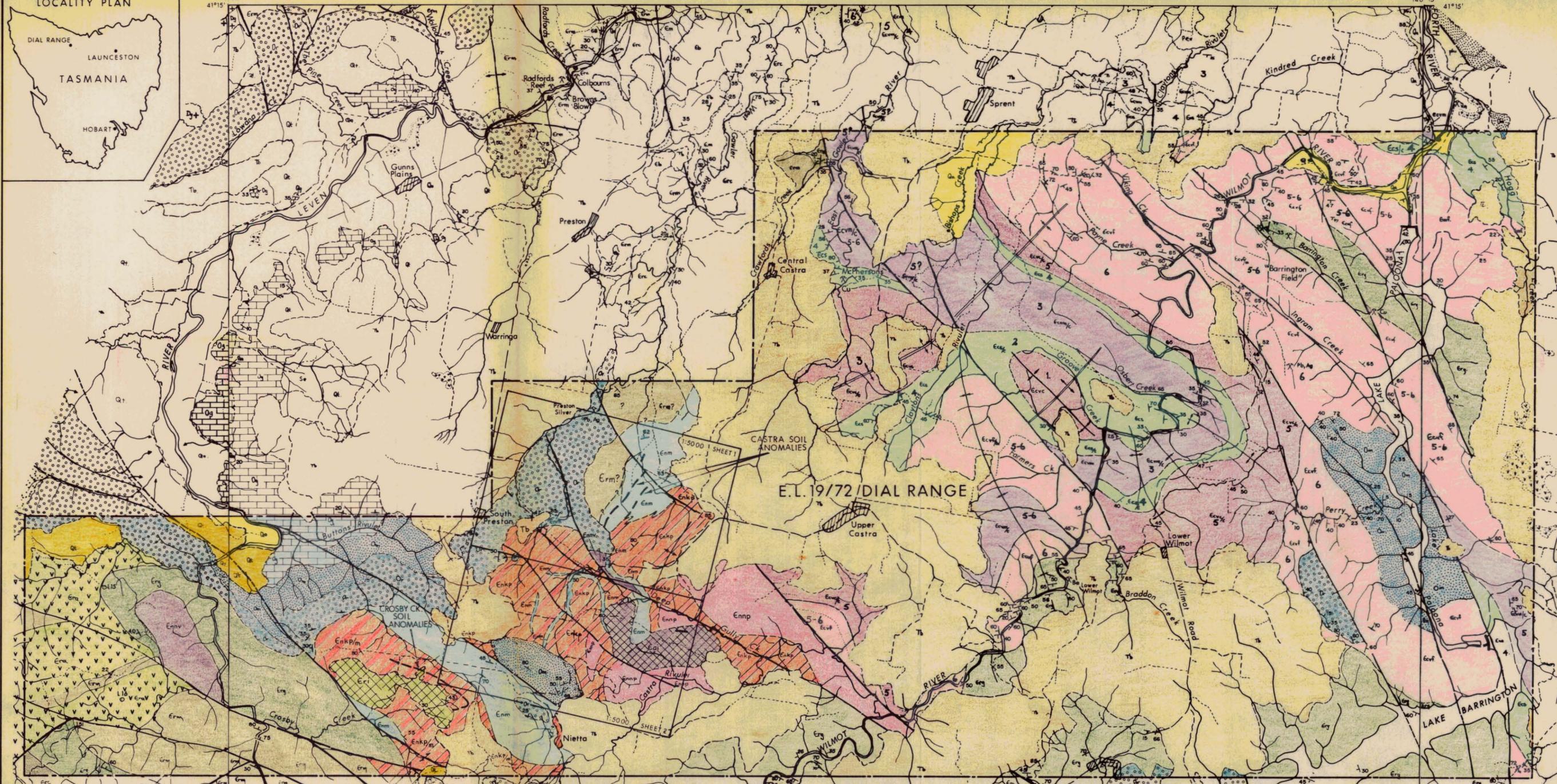
SAMPLE Nos. 208933 - 208948

MAP OR PHOTO REFERENCE

AA 45.

ANALYSED BY ZINC CORP. LTD.

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock			Metal content, p. p. m.										Geological observations			
		Rock %	Laterite %	Sand %	Silt %	Clay %		Depth (m)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth to	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo	As				
N12000																											
E10760	208933	-	-	1	1	1	WB	70	red brown	-	-	110	23	55	36							<1					R.C. mudstone / sandstone
E10740	208934	1	-	1	1	1	"	80	brown	-	-	110	29	71	53							<1					as above.
E10720	208935	1	-	1	1	1	"	70	yellow	-	-	110	14	48	7							<1					Recent creek sediments.
E10700	208936	1	-	1	1	1	WB	70	brown	-	-	110	11	30	5							<1					R.C. mudstone / sandstone.
E10680	208937	1	-	1	1	-	WB	70	green	-	-	110	19	35	11							<1					as above.
E10660	208938	-	-	1	1	-	"	70	white	-	-	110	9	7	1							<1					Recent creek sediments.
E10640	208939	1	-	1	1	-	WB	70	yellow brown	-	-	110	18	16	6							<1					as above
E10620	208940	1	-	1	1	-	"	80	gray	-	-	110	4	3	1							<1					"
E10600	208941	1	-	1	1	-	WB	70	"	-	-	110	14	10	2							<1					"
E10580	208942	1	-	1	1	-	WB	70	brown	-	-	110	29	32	16							<1					R.C. mudstone
E10560	208943	1	-	1	1	-	WB	60	gray	-	-	110	8	7	6							<1					as above.
E10540	208944	1	-	1	1	-	WB	120	brown	-	-	120	20	21	23							<1					"
E10520	208945	1	-	1	1	-	WB	70	"	-	-	110	15	24	16							<1					"
E10500	208946	1	-	1	1	-	"	80	yellow orange	-	-	110	18	27	27							<1					"
E10480	208947	1	-	1	1	-	"	80	yellow	-	-	110	19	10	11							<1					"
E10460	208948	1	-	1	1	-	"	60	gray	-	-	110	32	10	6							<1					-



GENERAL LEGEND

QUATERNARY
 Qa Alluvium
 Qt Talus (Qt partially exposed bedrock)

TERTIARY
 Tb Basalt flows
 Ts Gravel sand and clay

UPPER DEVONIAN to LOWER CARBONIFEROUS
 +Dg+ Granite and adamellite intrusives

ORDOVICIAN
 Gordon Limestone
 Moina Sandstone
 Roland Conglomerate

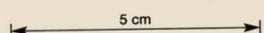
CAMBRIAN
 See "Cambrian Facies" Table

PROTEROZOIC
 pEb Burnie Beds, slates and quartzites

--- Road
 --- Track
 --- Railway
 --- Geological bndy.
 --- Fault

--- Concealed fault
 X Synclinal axis - earlier, later
 X Anticlinal axis - earlier, later
 10 Dip and strike of bedding
 5 Cateena Group Unit number

540060



CAMBRIAN FACIES

RADFORDS CREEK GROUP

- Ecma Porphyritic andesite to diorite intrusive
- Ecmb Beulah intermediates - andesite and dacite
- Ecmm Mudstone and siltstone with lesser feldspathic sandstone plus minor conglomerate
- Ecms Feldspathic sandstone with lesser mudstone and conglomeratic greywacke includes some tuffaceous beds
- Ecmt Conglomeratic greywacke with lesser feldspathic sandstone and mudstone

MOTTON SPILITE
 Ecsp Spillite with some intercalated mudstone and chert

BARRINGTON CHERT
 Ecbs Well bedded black or white chert

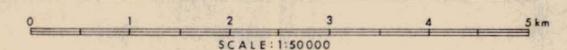
CATEENA GROUP

- Ecsm Mudstone with lesser feldspathic sandstone and minor conglomerate
- Ecsc Feldspathic sandstone with lesser conglomerate and mudstone
- Ecsc Conglomeratic greywacke, conglomeratic greywacke or cobble conglomerate with lesser sandstone and minor mudstone
- Ecvt Fine indurated acid tuffs and tuffaceous siltstones present mainly as cherts
- Ecvm Medium grained rhyolitic to rhyodacitic tuffs with lesser lavas includes mudstones and sandstones in some areas
- Ecvc Coarse rhyolitic to rhyodacitic lavas and tuffs with some interbedded mudstones and sandstones
- Ecvi Rhyolitic porphyry intrusives (and extrusives?)
- Ecmm Mudstone with lesser sandstone includes tuffs

NIETTA GROUP

- Ennb Rhyolitic to rhyodacitic pyroclastics with lesser lavas, unaltered
- Ennr Rhyolitic to rhyodacitic lavas with lesser pyroclastics, unaltered
- Enrv Rhyolitic to rhyodacitic pyroclastics with lesser lavas, altered

SUBSIDIARY CATEENA GROUP		CAMBRIAN FACIES		NIETTA GROUP	
/c	Fine grained tuff or chert	/s	Shale or mudstone	/p	Pyroclastics
/m	Medium grained acid volcanics	/f	Sandstone	/v	Lavas
				/m	Mudstone or sandstone



C.R.A. EXPLORATION PTY. LIMITED
 GEOLOGICAL PLAN
 E.L.19/72 DIAL RANGE
 N.W. TASMANIA

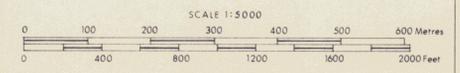
3677

NIETTA PROSPECT - EL 19/72 DIAL RANGE
NORTH WEST TASMANIA
GEOLOGICAL PLAN
SHEET 1

1:250,000 Sheet SK55-3 'BURNIE'
Geologist: T.M. Porter & P.J. Ashton
Scale: 1:5000
Drawn: Report No: 8086
Date: Feb, 1975 Plan No: T884



LOCALITY DIAGRAM



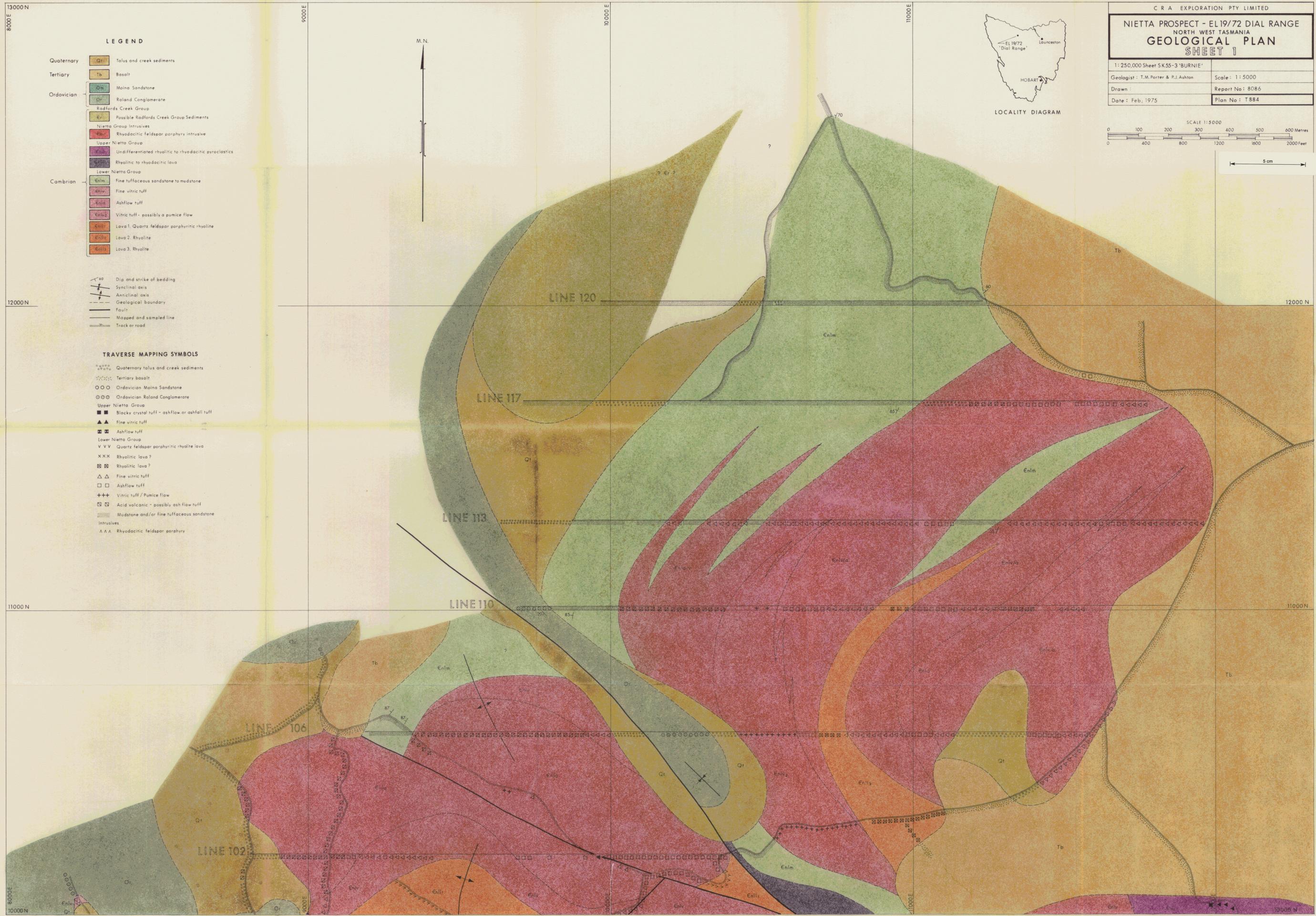
LEGEND

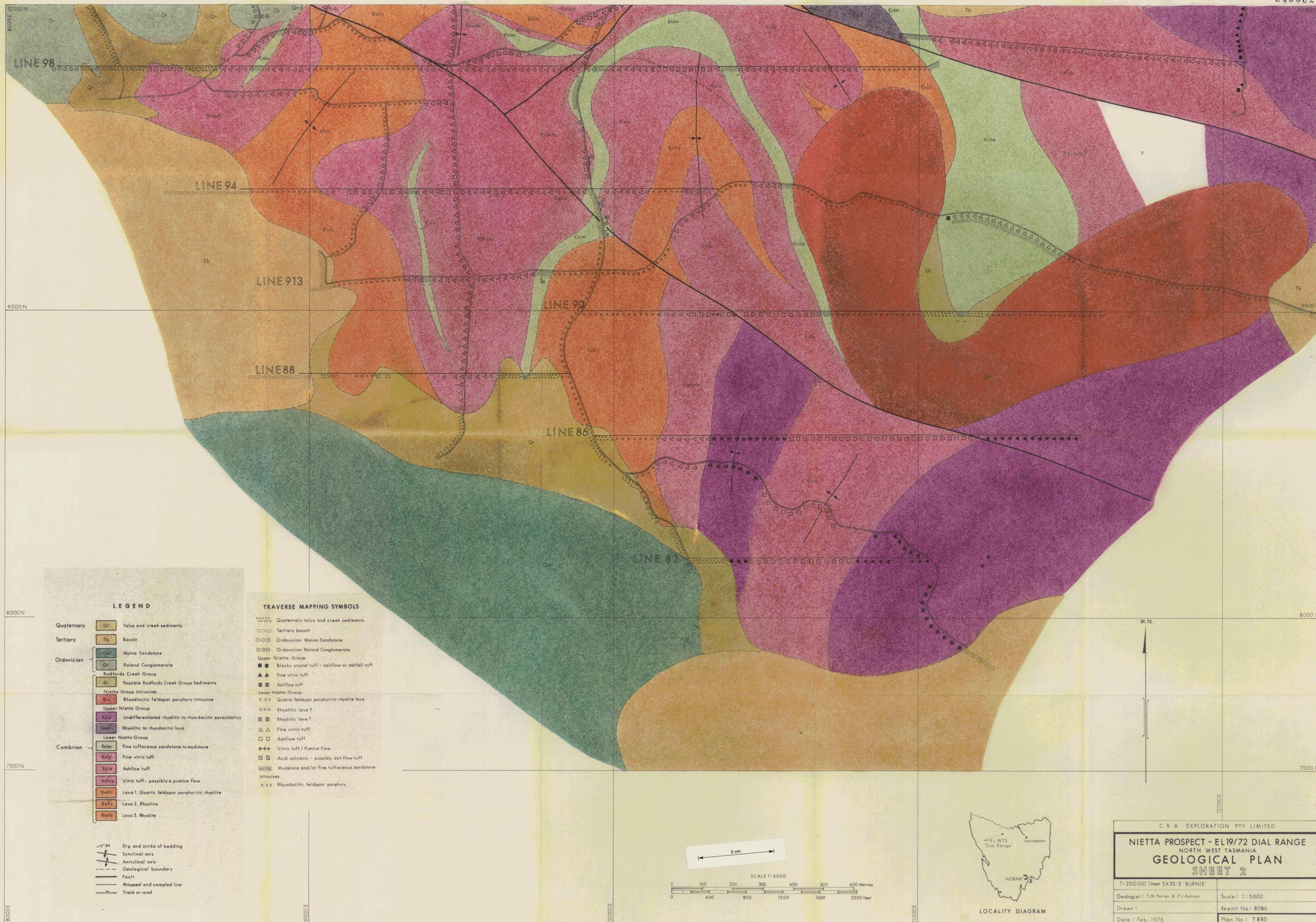
- Quaternary: Qr Talus and creek sediments
- Tertiary: Tb Basalt
- Ordovician:
 - Or Maina Sandstone
 - Or Roland Conglomerate
 - Er Radfords Creek Group
 - Er Possible Radfords Creek Group Sediments
- Nietta Group Intrusives:
 - Eni Rhyodacitic feldspar porphyry intrusive
 - Eniu Upper Nietta Group
 - Eniv Undifferentiated rhyolitic to rhyodacitic pyroclastics
 - Enil Rhyolitic to rhyodacitic lava
- Lower Nietta Group:
 - Enlm Fine tuffaceous sandstone to mudstone
 - Eniw Fine vitric tuff
 - Enia Ashflow tuff
 - Eniv2 Vitric tuff - possibly a pumice flow
- Cambrian:
 - Enl1 Lava 1, Quartz feldspar porphyritic rhyolite
 - Enl2 Lava 2, Rhyolite
 - Enl3 Lava 3, Rhyolite

- Dip and strike of bedding
- Synclinal axis
- Anticlinal axis
- Geological boundary
- Fault
- Mapped and sampled line
- Track or road

TRAVERSE MAPPING SYMBOLS

- Quaternary talus and creek sediments
- Tertiary basalt
- Ordovician Maina Sandstone
- Ordovician Roland Conglomerate
- Upper Nietta Group:
 - Black crystal tuff - ashflow or ashfall tuff
 - Fine vitric tuff
 - Ashflow tuff
- Lower Nietta Group:
 - Quartz feldspar porphyritic rhyolite lava
 - Rhyolitic lava ?
 - Rhyolitic lava ?
- Fine vitric tuff
- Ashflow tuff
- Vitric tuff / Pumice flow
- Acid volcanic - possibly ash flow tuff
- Mudstone and/or fine tuffaceous sandstone
- Intrusives:
 - Rhyodacitic feldspar porphyry





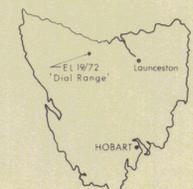
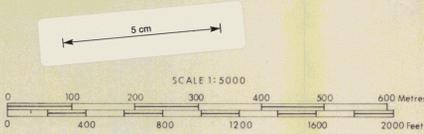
LEGEND

- Quaternary
 - Qr Talus and creek sediments
- Tertiary
 - Tb Basalt
- Ordovician
 - Or Maina Sandstone
 - Or' Roland Conglomerate
- Radfords Creek Group
 - Cr Possible Radfords Creek Group Sediments
- Nietta Group Intrusives
 - Eni Rhyodacitic feldspar porphyry intrusive
- Upper Nietta Group
 - Enu Undifferentiated rhyolitic to rhyodacitic pyroclastics
 - Enlu Rhyolitic to rhyodacitic lava
- Lower Nietta Group
 - Enlm Fine tuffaceous sandstone to mudstone
 - Enlv Fine vitric tuff
 - Enla Ashflow tuff
 - Enlv2 Vitric tuff - possibly a pumice flow
 - Enl1 Lava 1. Quartz feldspar porphyritic rhyolite
 - Enl2 Lava 2. Rhyolite
 - Enl3 Lava 3. Rhyolite
- Cambrian
 - Enlm Fine tuffaceous sandstone to mudstone
 - Enlv Fine vitric tuff
 - Enla Ashflow tuff
 - Enlv2 Vitric tuff - possibly a pumice flow
 - Enl1 Lava 1. Quartz feldspar porphyritic rhyolite
 - Enl2 Lava 2. Rhyolite
 - Enl3 Lava 3. Rhyolite

TRAVERSE MAPPING SYMBOLS

- Quaternary talus and creek sediments
- Tertiary basalt
- Ordovician Maina Sandstone
- Ordovician Roland Conglomerate
- Upper Nietta Group
 - Blacky crystal tuff - ashflow or ashfall tuff
 - Fine vitric tuff
 - Ashflow tuff
- Lower Nietta Group
 - Quartz feldspar porphyritic rhyolite lava
 - Rhyolitic lava ?
 - Rhyolitic lava ?
 - Fine vitric tuff
 - Ashflow tuff
 - Vitric tuff / Pumice flow
 - Acid volcanic - possibly ash flow tuff
 - Mudstone and/or fine tuffaceous sandstone
- Intrusives
 - Rhyodacitic feldspar porphyry

- Dip and strike of bedding
- Synclinal axis
- Anticlinal axis
- Geological boundary
- Fault
- Mapped and sampled line
- Track or road



C R A EXPLORATION PTY LIMITED	
NIETTA PROSPECT - EL19/72 DIAL RANGE	
NORTH WEST TASMANIA	
GEOLOGICAL PLAN	
SHEET 2	
1:250,000 Sheet SK55-3 'BURNIE'	Scale: 1:5000
Geologist: T.M. Parter & P.J. Ashton	Report No: 8086
Drawn:	Plan No: T.885
Date: Feb, 1975	

13000 N
8000 E

9000 E

10000 E

11000 E

54063

GEOLOGICAL LEGEND

- Quaternary
 - Q1 Tulla and creek sediments
 - Ts Basalt
- Tertiary
 - Om Monna Sandstone
 - Or Relined Conglomerate
- Ordovician
 - Kadoford Creek Group
 - E1 Possible Kadoford Creek Group Sediments
 - E2 Niango Group Intrusives
 - E3 Rhysodoric Feldspar porphyry intrusive
 - Upper Niango Group
 - E4 Undifferentiated Anhydrite to hydrotic argillites
 - E5 Rhysodoric to hydrotic basalt
 - Lower Niango Group
 - E6 Fine refractuous sandstone to mudstone
- Cambrian
 - E7 Free vitric tuff
 - E8 Ashflow tuff
 - E9 Vitric tuff - possibly a remite flow
 - E10 Lava 1: Quartz feldspar porphyry rhynolite
 - E11 Lava 2: Rhynolite
 - E12 Lava 3: Rhynolite

- Dip and strike of bedding
- Structural axis
- Anticlinal axis
- Geological boundary
- Fault
- Mapped and sampled line
- Track or road

GEOCHEMICAL LEGEND

208970 Pb/Zn/Cu
Geotechnical Soil Sample
Location and Results in ppm

█ +100 ppm Pb, +100 ppm Zn, +100 ppm Cu.
* Highly anomalous levels



C R A EXPLORATION PTY. LIMITED

NIETTA PROSPECT - EL19/72 DIAL RANGE
NORTH WEST TASMANIA
GEOCHEMICAL SOIL SAMPLE PLAN
SHEET 1

1:250,000 Sheet S455-3-BURNIE
Geologist: T.M. Furer & P. Ashton
Scale: 1:5000
Drawn: D.L.L. & B.S.S. Mar/1975 Report No: 8086
Date: Feb/1975 Plan No: 1886

SCALE 1:5000
0 100 200 300 400 500 600 METRES
0 400 800 1200 1600 2000 FEET

