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EL 2067

MOREENIA

ANNUAL AND FINAL REPORTS TO LICENCE SURRENDER FOR THE PERIOD 6/3/95 TO 7/4/97

Submitted by
CRA Exploration Pty Ltd
1997

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PRIMARY INDUSTRIES AND RESOURCES SA

CRA EXPLORATION PTY. LIMITED

ANNUAL REPORT FOR THE PERIOD ENDING 5TH MARCH, 1996

FOR EXPLORATION LICENCE 2067 MOREENIA, SOUTH AUSTRALIA

Lincoln SI5311, South Australia
Kimba SI5307, South Australia

AUTHOR: T.C. MOODY

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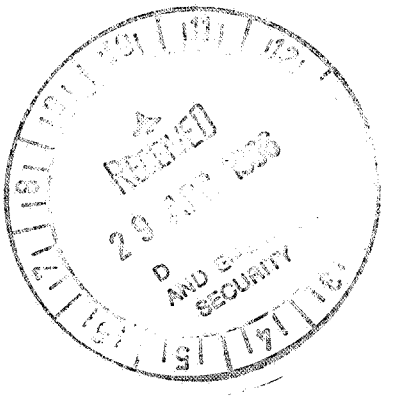
ET&I BOX HILL
CRAE ADELAIDE

DATE: APRIL, 1996

SUBMITTED BY:

ACCEPTED BY:



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1. SUMMARY

Exploration Licence (EL) 2067 Moreenia was granted on 6th March, 1995 for a period of one year.

A total of 47 ferruginous lag samples and 358 -80# stream sediment samples were collected during the first year of tenure within EL 2067. An airborne magnetic and radiometric survey was also completed over the entire tenement. Compilation and review of previous exploration data commenced.

Several areas of anomalous base and precious metal geochemistry have been identified in the south of the tenement. Further exploration is warranted in these areas. Interpretation of the aeromagnetic and radiometric data is also required.

2. INTRODUCTION

Exploration Licence (EL) 2067 Moreenia, was granted on 6th March, 1995 for a period of one year over an area of 1318 km^2 in the southern Eyre Peninsula, South Australia. This report describes all work carried out by CRA Exploration within EL 2067 during the first year of tenure.

EL 2067 is located approximately 70 km north of Port Lincoln (plan SAa 6351). Licence application was made to assess the base and precious metal potential of the strongly deformed Early Proterozoic lithologies adjacent to the south eastern margin of the Gawler Block, South Australia. The area is also regarded as prospective for diamonds.

The Moreenia tenement covers possible granitic Archaean-Early Proterozoic rocks of the Sleaford Complex in the west, Early Proterozoic Hutchison Group graphitic metasediments, carbonates, ironstone, gneiss and minor amphibolite adjacent to the Kalinjala Mylonite Zone in the south east of the tenement, and dominantly granitic rocks of the Lincoln Complex east of the Kalinjala Mylonite Zone. Numerous mafic dykes occur in the area and minor ultramafic rocks are reported to the south of EL 2067 (eg. Flint, 1976). The area is regionally metamorphosed to upper amphibolite-granulite facies and intensely deformed/locally migmatitic approaching the Kalinjala Mylonite Zone. Deformation and intrusive igneous activity in the area is associated with the Archaean-Early Proterozoic Sleafordian Orogeny, Early Proterozoic Kimbian Orogeny and possibly younger events. Ferruginous laterites are well developed in the east of the tenement and extensive aeolian sand cover much of the western and northern part of the tenement. Further discussion of the geology of the area is provided by Parker (1993) and Daly and Fanning (1993).

A review of previous exploration suggests the tenement area has not been systematically explored for Ni, PGE and Au mineralisation. Minor exploration has been conducted with in the tenement area primarily for Cu, Pb, Zn and diamonds. Geological knowledge of the area is also poor. No significant mineralisation has been identified previously in the tenement area.

Exploration during the reporting period included:

- Review of previous exploration
- Lag sampling
- Stream sediment sampling
- Airborne magnetic and radiometric survey

3. CONCLUSIONS

Several areas of elevated geochemistry have been identified in the south of the tenement area. Extensive sand cover has inhibited effective stream sediment and lag sample geochemical exploration in the tenement.

Infill sampling and geological mapping is required to assess the significance of stream sediment/lag sample geochemical anomalies. Interpretation of airborne magnetic and radiometric data over the tenement is also required.

4. LAG SAMPLING

A total of 47 ferruginous lag samples were collected from EL 2067 during the first year of tenure. Lag was swept from within an area of several square metres and sieved on site to separate the iron rich fraction. Approximately 2 kg of -10mm+2mm ferruginous lag were forwarded to Analabs in Adelaide for analysis. Several samples were hand picked. Each sample was dried and pulverised to -200# and analysed by a combination of ICP-OES, ICP-MS and Fire Assay techniques for a large multi-element suite. Sample descriptions and assay results are provided in Appendices I and II. Sample locations are provided on plan SAa 6613).

5. STREAM SEDIMENT SAMPLING

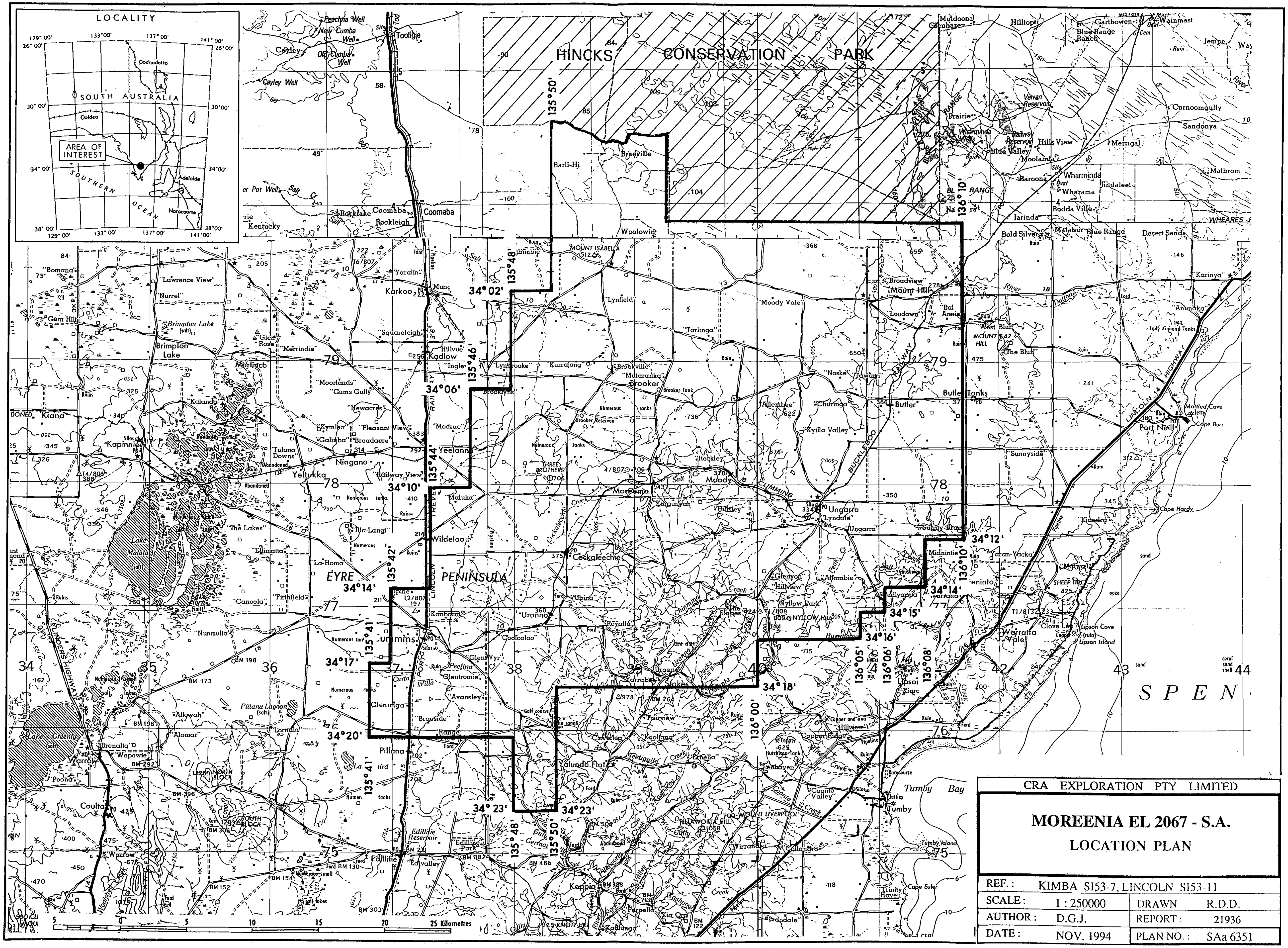
A total of 358 -80# stream sediment samples were collected from EL 2067. Each sample was sieved on site and forwarded to AMDEL in Adelaide for geochemical analysis. Samples were dried, pulverised to -200# (-75µ) and analysed by method IC3M for Ag, Bi, Mo, Th and U, method IC3E for As, Co, Cr, Cu, Fe, Mn, Ni, P, Pb, Sb, Sn and Zn and method FA3M for Au, Pt and Pd. Sample descriptions and assay results are provided in Appendices III and IV. Sample locations are provided on plan SAa 6614.

6. AIRBORNE MAGNETIC & RADIOMETRIC SURVEY

A total of 7660 line kilometres of airborne magnetics and radiometrics were flown by Tesla-10 in November 1995. Survey details are provided in a contractors report in Appendix V. Flight path locations and contoured total magnetic intensity and total count radiometrics results are provided on plans SAa 6610, 6611 and 6612.

T.C. MOODY

TCM/dt Reports#Moreenia ANNRPT03/96



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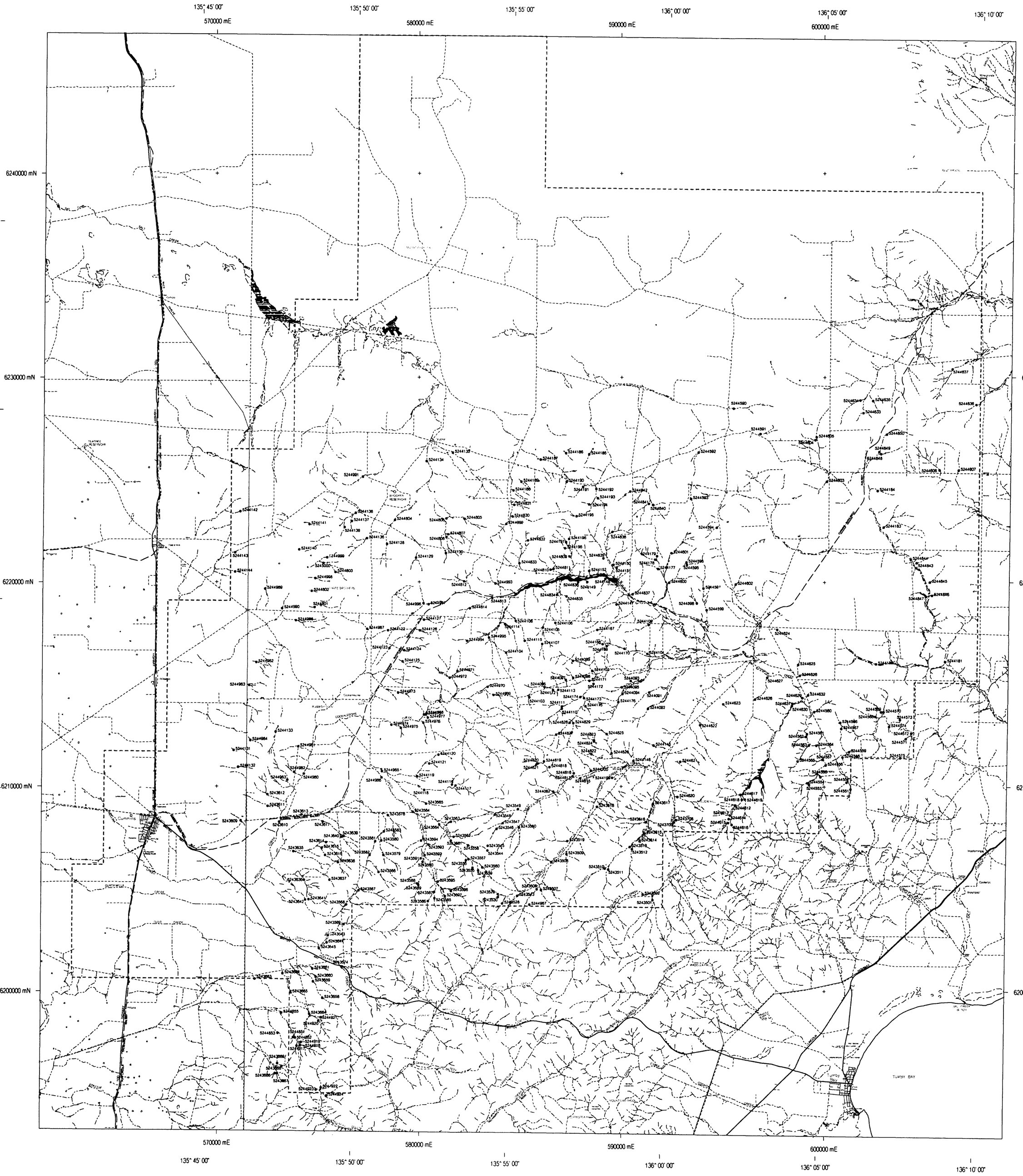
MOREENIA EL 2067 - S.A.

LOCATION PLAN

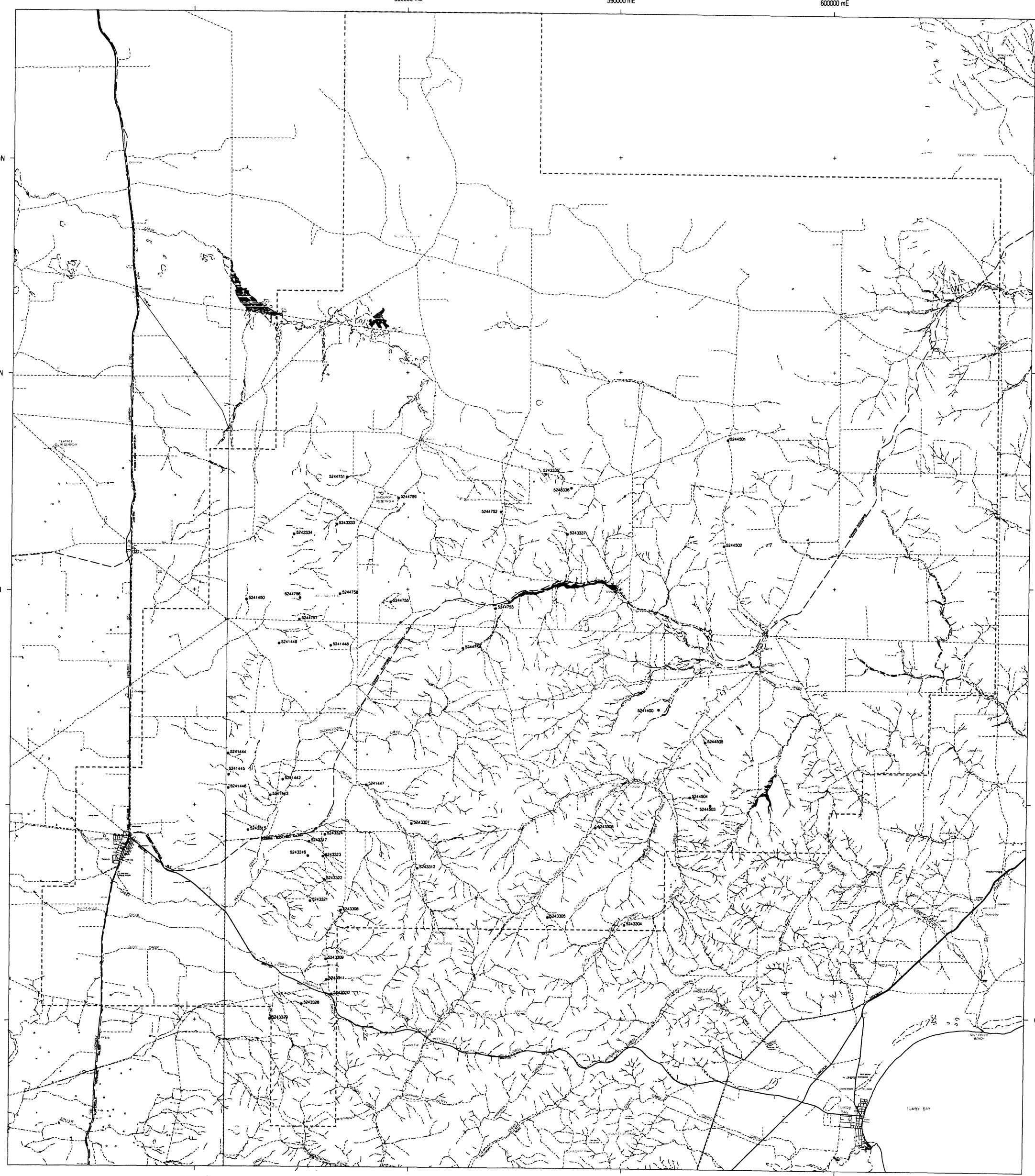
REF.:	KIMBA SI53-7, LINCOLN SI53-11		
SCALE:	1 : 250000	DRAWN	R.D.D.
AUTHOR:	D.G.J.	REPORT:	21936
DATE:	NOV. 1994	PLAN NO.:	SAa 6351



CRA EXPLORATION PTY. LIMITED	
MOREENIA EL 2067 - S.A.	
-80# STREAM SEDIMENT SAMPLE LOCATIONS	
Author : T.C.M.	Ref . Lincoln SI5311 / Kimba SI5307
Drawn : F.R.	File Name :
Date : APRIL 96	Report No : 21936
Scale :1:100 000	Plan No : SAa 6614

135° 45' 00"
570000 mE
135° 50' 00"
580000 mE
135° 55' 00"
590000 mE
136° 00' 00"
600000 mE
136° 05' 00"
136° 10' 00"

6240000 mN — 34° 00' 00"
6230000 mN — 34° 05' 00"
6220000 mN — 34° 10' 00"
6210000 mN — 34° 15' 00"
6200000 mN — 34° 20' 00"



570000 mE
580000 mE
590000 mE
600000 mE
135° 45' 00"
135° 50' 00"
135° 55' 00"
136° 00' 00"
136° 05' 00"
136° 10' 00"

2 0 2 4 6 8 km

SCALE 1 : 100 000

CRA EXPLORATION PTY. LIMITED

MOREENIA EL 2067 - S.A.

LAG SAMPLE LOCATIONS

Author .T.C.M.	Ref : Lincoln SI5311 / Kimba SI5307
Drawn : F.R.	File Name :
Date : APRIL 96	Report No : 21936
Scale :1:100 000	Plan No : SAa 6613

135 40 00 | 135 50 00 | 136 00 00 | 136 10 00

560000E | 622000E

6240000N | 34 00 00

6230000N

6220000N | 34 10 00

6210000N

6200000N | 34 20 00

560000E | 570000E | 580000E | 590000E | 600000E | 610000E | 620000E | 622000E

ACQUISITION BY:

TESLA AIRBORNE GEOSCIENCE

JOB No. j2247

AIRBORNE SURVEY EQUIPMENT

Aircraft	Cessna 210N VH-JBH
Magnetometer	Geometrics Cesium Vapour Model GB22a
Sensitivity	Resolution 0.001 nT
Recording Interval	0.1 seconds (~ 7 metres)
Compensation	RMS Automatic Aeromagnetic Digital Compensator operating in real time
System Bandwidth	0 - 2 Hz
Spectrometer	Exploranium GR-820
Crystal Size	33.6 Litres
Recording Interval	1.0 seconds (~ 70 metres)

AIRBORNE SURVEY SPECIFICATIONS

Flight Line Direction	270 - 090 deg
Flight Line Separation	200 metres
Tie Line Direction	000 - 180 deg
Tie line Separation	2000 metres
Terrain Clearance	approx. 70 metres
Navigation	Novatel real time GPS Differentially Post Processed
Recording Interval	1.0 seconds
Survey Flown	November 1995

LEGEND

Flight Path tick: 50 fiducals

Flight Path tick annotation : 500 fiducals

GRID NORTH

0 2 4 6 8 10km

Scale 1: 100000

AUSTRALIAN MAP GRID ZONE 53
AUSTRALIAN GEODETIC DATUM 1984

PROCESSING BY:

TESLA-10

JOB No. TA2247

CRA EXPLORATION PTY LIMITED

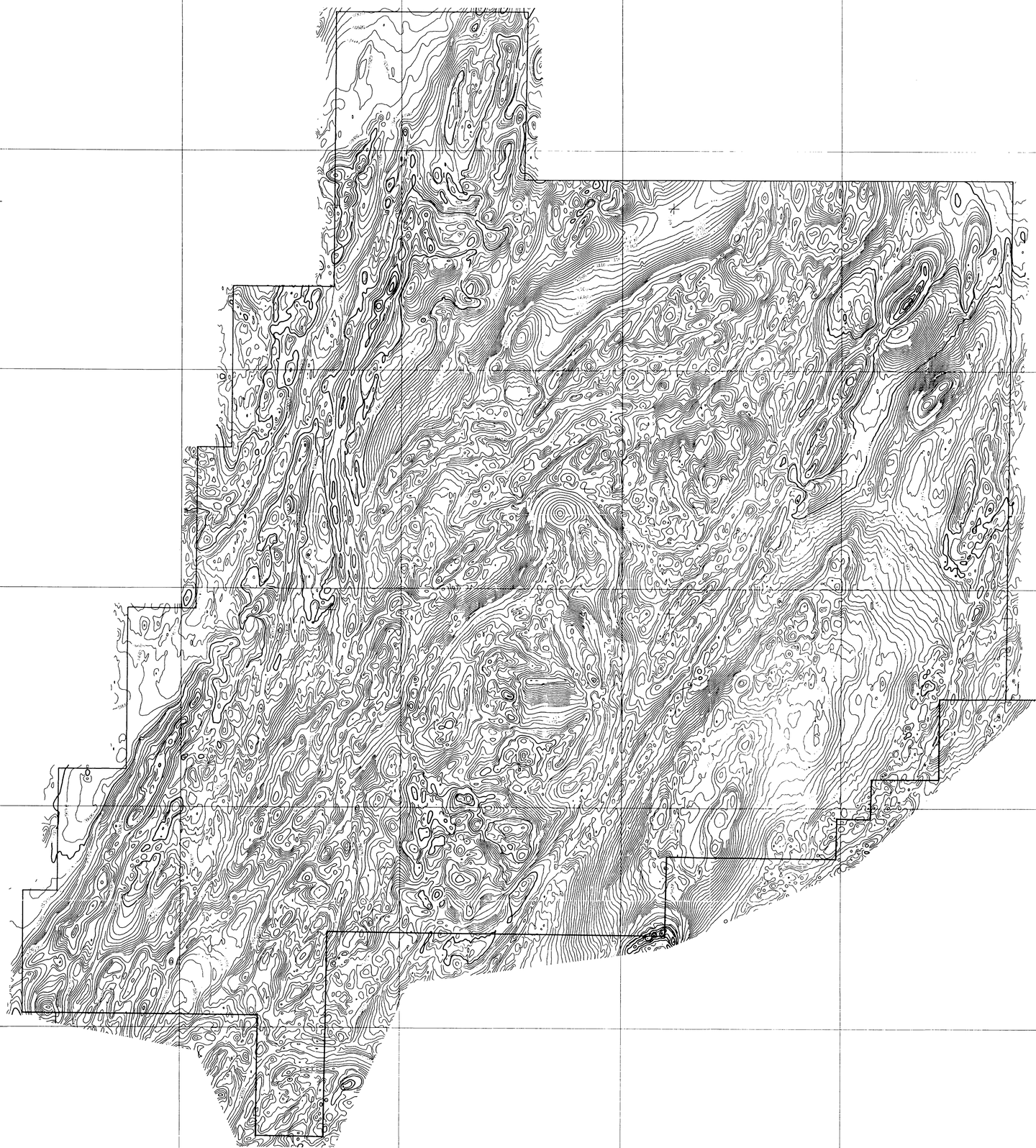
MOREENIA EL 2067 - S.A.

AIRBORNE SURVEY

FLIGHT PATH LOCATIONS

REF. :	KIMBA SI53-07 LINCOLN SI53-11		
SCALE :	1 : 100000	DRAWN	
AUTHOR :	TCM	REPORT :	21936
DATE :	APRIL 1996	PLAN NO. :	SAa 6610

135 40 00
135 50 00
136 00 00
136 10 00
560000E
622000E
6240000N
6230000N
6220000N
6210000N
6200000N
34 00 00
34 10 00
34 20 00
560000E
570000E
580000E
590000E
600000E
610000E
620000E
622000E



GRID NORTH

0 2 4 6 8 10km

Scale 1: 100000

AUSTRALIAN MAP GRID ZONE 53
AUSTRALIAN GEODETIC DATUM 1984

LEGEND

Contour Interval 1000 nT
500 nT
100 nT
5 nT

PROCESSING DETAILS

System parallax removed 3.8 fiducials (approx 25m)

Diurnal corrections have been applied
59970 nT base level returned to data

IGRF model 1990 (extrapolated to Oct 1995) applied to data: inclination -66.9 deg, declination 6.9 deg
Base level 59400 nT

Data has been tie-line levelled, then microlevelled

Grid Cell Size 40m x 40m

CRA EXPLORATION PTY LIMITED

MOREENIA EL 2067 - S.A.

AIRBORNE SURVEY

TOTAL MAGNETIC INTENSITY CONTOURS

REF.:	KIMBA SI53-07 LINCOLN SI53-11		
SCALE:	1 : 100000	DRAWN	
AUTHOR:	TCM	REPORT:	21936
DATE:	APRIL 1996	PLAN NO.:	SAa 6611

135 40 00
135 50 00
136 00 00
136 10 00
560000E
622000E
6240000N
6230000N
6220000N
6210000N
6200000N
34 00 00
34 10 00
34 20 00
560000E
570000E
580000E
590000E
600000E
610000E
620000E
622000E

LEGEND

Contour Interval 5000 cps
1000 cps
250 cps
50 cps

PROCESSING DETAILS

System parallax removed 0.3 fiducials (approx 25m)

Data corrected for pressure, temperature, altitude, both cosmic and Radon contributions and background.

Data has been tie-line levelled, then microlevelled

Grid Cell Size 40m x 40m

GRID NORTH

0 2 4 6 8 10km

Scale 1: 100000

AUSTRALIAN MAP GRID ZONE 53
AUSTRALIAN GEODETIC DATUM 1984

CRA EXPLORATION PTY LIMITED

MOREENIA EL 2067 - S.A.

AIRBORNE SURVEY

TOTAL COUNT (RADIOMETRICS)

REF. :	KIMBA SI53-07	LINCOLN SI53-11	
SCALE :	1 : 100000	DRAWN	
AUTHOR :	TCM	REPORT :	21936
DATE :	APRIL 1996	PLAN NO. :	SAa 6612

REFERENCES

Daly, S.J. and Fanning, C.M., 1993. *in* The Geology of South Australia, Volume 1, The Precambrian. (ed. J.F. Drexel, W.V. Preiss and A.J. Parker). *South Australian Geological Survey. Bulletin, 54.* p33-50.

Flint, D.J., 1976. Geological Investigations of a Nickel Occurrence in Basic to Ultrabasic Rocks West of Tumby Bay. *Department of Mines, South Australia.* Rept.Bk. No. 76/9.

Parker, A.J., 1993. *in* The Geology of South Australia, Volume 1, The Precambrian. (ed. J.F. Drexel, W.V. Preiss and A.J. Parker). *South Australian Geological Survey. Bulletin, 54.* p50-105

LOCATION

Lincoln	SI53-11	1:250 000 sheet
Kimba	SI53-7	1:250 000 sheet

KEYWORDS

Copper, Nickel, Gold, -80# Stream Sediment Sampling, -2mm BLEG sampling, Lag Sampling, Rock Sampling, Airborne Magnetics, Airborne Radiometrics, Archaean, Proterozoic, Hutchison Group, Lincoln Complex, Sleaford Complex, Gawler Craton, Kalinjala Mylonite Zone.

APPENDIX I

LAG SAMPLE DESCRIPTION LEDGER

EYRE PENINSULA FERRUGINOUS LAG SAMPLE SURVEY							
AREA	SAMPNO	TENEMENT_NO	EAST	NORTH	MATERIAL	DPO	COMMENTS
MOREENIA	5241400	EL2067	591765	6214347	-10+2mmLAG	81599	50% round dk brown pisolites; 40% angular laterite fragments; 10% lithics
MOREENIA	5241442	EL2067	574118	6211164	-10+2mmLAG	81599	dark brown to black pisoliths and mottles, no cutan coating, sample site within ploughed field, however nearby creeks show in situ development horizons through creek banks
MOREENIA	5241443	EL2067	573535	6210435	-10+2mmLAG	81599	mottle lag, deep maroon to black, in situ formation, 20% with cutan
MOREENIA	5241444	EL2067	571565	6212369	-10+2mmLAG	81599	abundant lag on yellow ferruginous clay horizon, mottles only, with in situ formation likely
MOREENIA	5241445	EL2067	571587	6211395	-10+2mmLAG	81599	abundant lag, mottles and large duricrust fragments, in situ formation above orange ferr silt/clay horizons, 70% with some remnant cutan coating
MOREENIA	5241446	EL2067	571571	6210778	-10+2mmLAG	81599	abundant lag, mostly maroon to brown mottles, in situ formation
MOREENIA	5241447	EL2067	578045	6210904	-10+2mmLAG	81599	pisoliths and mottles on orange ferr clay horizon, 60% with cutan, in situ formation
MOREENIA	5241448	EL2067	576371	6217378	-10+2mmLAG	81599	in situ formation, mostly dark brown to maroon mottles
MOREENIA	5241449	EL2067	573949	6217485	-10+2mmLAG	81599	brown and maroon pisolithic and mottle lag, local transport only is likely, no cutan coating
MOREENIA	5241450	EL2067	572421	6219547	-10+2mmLAG	81599	deep brown to black and maroon pisolithic lag, 40% with cutan, in situ formation likely
MOREENIA	5243304	EL2067	590147	6204365	-10+2mmLAG	81595	mostly well to sub-rounded pisolites, 20% of sample displays mustard yellow cutan, 20% mottle fraction, minor large mottle fraction, little likely transport
MOREENIA	5243305	EL2067	586561	6204723	-10+2mmLAG	81595	90% mottles, 30% with yellow cutan, generally brown/maroon in colour
MOREENIA	5243306	EL2067	588813	6208891	-10+2mmLAG	81595	80% rounded pisolites, 20% with yellow cutan coating, minor mottle fraction, considerable large mottle fraction (too large to be sampled) ?minor component of transport
MOREENIA	5243307	EL2067	580170	6209103	-10+2mmLAG	81595	40% pisolites, 60% mottles, 20% of all pisolites have cutan coating, as do a significant number of the mottled fragments - unlikely to be formed in situ
MOREENIA	5243308	EL2067	576837	6205058	-10+2mmLAG	81595	pisolithic to subpisolithic plus an additional mottle fragment, 60% of all material has cutan coating, pisolites and mottles lie on a weathered yellow/orange mottled saprolite clay horizon - top lag site

AREA	SAMPNO	TENEMENT_NO	EAST	NORTH	MATERIAL	DPO	COMMENTS
MOREENIA	5243309	EL2067	576143	6202808	-10+2mmLAG	81595	pisolites, half with cutan coating, associated with ferruginous clay - in situ formation likely
MOREENIA	5243310	EL2067	576412	6201171	-10+2mmLAG	81595	80-90% mottle fragments, 20-40% of which may be pieces of collapse duricrust breccia, all material is very angular and transport is likely, ferruginous saprolite also present
MOREENIA	5243311	EL2067	576181	6201854	-10+2mmLAG	81595	wide variety of grain size with transport is likely. An adjacent profile displays pisolithic, cutan pisolithic and mottled layers of the weathering sequence, all sections sampled with 20% cutan pisoliths, 40% pisoliths and 40% mottles
MOREENIA	5243312	EL2067	580438	6207030	-10+2mmLAG	81595	excellent lag site, 20% pisoliths, 80% mottles; pisoliths are well to subrounded , lag sits on a well developed yellow/red/white mottled saprolite horizon, large duricrust fragments also present but unable to be sampled
MOREENIA	5243315	EL2067	572499	6208825	-10+2mmLAG	81595	pisolithic lag + small proportion of mottles, occassional pisolite has cutan coating, classic lag site
MOREENIA	5243316	EL2067	575298	6207620	-10+2mmLAG	81595	dark (chocolate brown) to black, well to subrounded pisolithic lag, none with cutan coating, taken within wheat field
MOREENIA	5243317	EL2067	575346	6208285	-10+2mmLAG	81595	80% pisolithic, 20% with cutan coating, black to brown
MOREENIA	5243321	EL2067	575404	6205506	-10+2mmLAG	81595	mostly pisoliths and small mottles, very few with cutan coating, good lag site
MOREENIA	5243322	EL2067	576071	6206510	-10+2mmLAG	81595	mostly pisoliths, well to subrounded, 20-30% with cutan coating, brown to maroon
MOREENIA	5243323	EL2067	576010	6207595	-10+2mmLAG	81595	stunning lag site - abundant pisolithic lag on yellow saprolite clay horizon, 60% with cutan coating, in situ formation confirmed by presence of fragments of pisolithic duricrust
MOREENIA	5243324	EL2067	576100	6208603	-10+2mmLAG	81595	both mottles and pisoliths on saprolite clay base, few with cutan coating
MOREENIA	5243328	EL2067	574996	6200716	-10+2mmLAG	81595	pisoliths sub rounded, brown to maroon, in situ pisolite horizon on yellow saprolite clays
MOREENIA	5243329	EL2067	573514	6200021	-10+2mmLAG	81595	pisolithic lag, well rounded brown to black, 15% with cutan coating, some transport likely
MOREENIA	5243333	EL2067	576650	6223000	-10+2mmLAG	54323	in situ lag, abundant within fields, mostly mottles although some pisoliths, 30% of all with cutan, on brown/red ferr sands
MOREENIA	5243334	EL2067	574650	6222550	-10+2mmLAG	54323	abundant black lag, in situ formation likely, both mottles and pisoliths, 40% with cutan

AREA	SAMPNO	TENEMENT_NO	EAST	NORTH	MATERIAL	DPO	COMMENTS
MOREENIA	5243335	EL2067	586475	6225300	-10+2mmLAG	54323	mostly black to deep brown pisoliths with some mottles, likely in situ formation, 40% with cutan, material on yellow ferruginous clay base
MOREENIA	5243336	EL2067	587675	6224650	-10+2mmLAG	54323	dark, mainly pisolithic lag likely in situ, with only localized transport possible, lag horizon above sand layers
MOREENIA	5243337	EL2067	587500	6222525	-10+2mmLAG	54323	abundant lag, large mottle and saprolite fragments, most lag maroon to brown, most larger fragments with limonitic portion, mostly mottles, in situ formation however few with cutan
MOREENIA	5244501	EL2067	595004	6226872	-10+2mmLAG	81599	30%weath subangular hem pis, 30% angular calcrete, 20% weath subangular hem/goeth pis, 10%angular qtz, 10%limonite. Fe-rich weath schist outcrop. Qtz float
MOREENIA	5244502	EL2067	594823	6221967	-10+2mmLAG	81599	50%weath subangular to rounded hem pis, 40%weath subangular hem/goeth pis, 10%limonite
MOREENIA	5244503	EL2067	594191	6209923	-10+2mmLAG	81599	50%angular qtz, 40%angular hem fragments, 10%ironstone
MOREENIA	5244504	EL2067	593228	6210305	-10+2mmLAG	81599	50%subangular to rounded hem pis, 40%qtz, 10%calcrete
MOREENIA	5244505	EL2067	593949	6212832	-10+2mmLAG	81599	35%rounded hem pis, 35%rounded hem/goeth pis, 30%angular qtz. Site on creek banks - appears not to be stream sediment due to lack of lag sample in creek bed and presence of goethitic cutäns on 35% of pisolites.
MOREENIA	5244751	EL2067	577145	6225181	-10+2mmLAG	81599	in situ mottle and pisolithic lag, dark brown in colour, 10% with cutan coating
MOREENIA	5244752	EL2067	584363	6223562	-10+2mmLAG	81599	in situ mostly mottle lag, all with cutan coating, material lies on yellow/orange clay base
MOREENIA	5244753	EL2067	584118	6219105	-10+2mmLAG	81599	both mottles and pisoliths, 80% with cutan, in situ formation likely, both mottled and pallid saprolite also present
MOREENIA	5244754	EL2067	582582	6217244	-10+2mmLAG	81599	both mottles and pisoliths 80% with cutan on yellow/orange ferruginous clay base; small duricrust fragments also present
MOREENIA	5244755	EL2067	579193	6219418	-10+2mmLAG	81599	mostly pisoliths, all with cutan indicating in situ formation, in situ mottled saprolite after sandstone; excellent lag site below Quaternary sand cover
MOREENIA	5244756	EL2067	574927	6219612	-10+2mmLAG	81599	black and deep brown pisoliths, may be locally transported from nearby hills, some with remnant cutan only
MOREENIA	5244757	EL2067	574904	6218607	-10+2mmLAG	81599	in situ black to deep brown lag with local transport only, material above brown ferruginous clay horizon, 70% mottles, 20% of all material with cutan
MOREENIA	5244758	EL2067	576808	6219801	-10+2mmLAG	81599	abundant lag, ferruginous saprolite and duricrust in the locality, mostly mottles, all with some remnant cutan, orange/red brown in colour

AREA	SAMPNO	TENEMENT_NO	EAST	NORTH	MATERIAL	DPO	COMMENTS
MOREENIA	5244759	EL2067	579553	6224207	-10+2mmLAG	81599	transport possible from adjacent paddocks, mostly dark brown to black pisoliths, 30% with cutan

APPENDIX II

LAG SAMPLE GEOCHEMICAL LEDGER

EL2067 MOREENIA LAG SAMPLE GEOCHEMICAL LEDGER

AREA	SAMPNO	TENEMENT	EAST	NORTH	MATERIAL	DPO	Ag	As	Ba	Bi	Ca	Cd	Ce	Cr	Co	Cu	Eu	Fe	K	Mg	Mn	Mo	Na	Ni	P
						METHOD	GS201	GI201	GI201	GS201	GI201	GS201	GS201	GI201	GS201	GI201	GS201	GI201	GI201	GI201	GI201	GS201	GI201	GI201	GI201
						DL	0.1	20	5	0.1	50	0.1	0.05	10	0.2	5	0.05	100	500	20	15	0.1	50	10	100
						UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MOREENIA	5241400	EL2067	591765	6214347	LAG	81599	<0.1	40	70	0.9	1100	<0.1	29.1	240	7.6	15	0.45	280000	2600	580	120	4	300	40	220
MOREENIA	5241442	EL2067	574118	6211164	LAG	81599	<0.1	30	105	1.8	900	<0.1	43	310	5.2	10	0.5	367000	3500	760	160	7.6	300	30	390
MOREENIA	5241443	EL2067	573535	6210435	LAG	81599	<0.1	30	135	2.8	1050	<0.1	49.9	330	4	15	0.65	343000	7900	860	140	6.8	1000	20	250
MOREENIA	5241444	EL2067	571565	6212369	LAG	81599	<0.1	50	80	4.2	1800	0.1	37.9	380	4.6	10	0.5	440000	2100	820	120	8.3	300	20	230
MOREENIA	5241445	EL2067	571587	6211395	LAG	81599	<0.1	30	40	3.3	1450	<0.1	21.9	270	3	10	0.35	416000	700	660	120	6.8	150	10	180
MOREENIA	5241446	EL2067	571571	6210778	LAG	81599	<0.1	20	40	1.2	1450	<0.1	32.4	170	3.8	10	0.45	391000	1000	840	140	2.8	250	20	230
MOREENIA	5241447	EL2067	578045	6210904	LAG	81599	<0.1	50	90	1.1	700	<0.1	31.3	280	5	10	0.45	342000	2900	600	100	8.2	300	30	200
MOREENIA	5241448	EL2067	576371	6217378	LAG	81599	0.1	40	90	6	1100	0.1	38.6	370	5.2	15	0.5	405000	2800	900	160	7.2	400	30	340
MOREENIA	5241449	EL2067	573949	6217485	LAG	81599	<0.1	40	65	5.5	1500	0.1	32.8	510	4.6	10	0.6	531000	1800	900	80	10.6	350	30	300
MOREENIA	5241450	EL2067	572421	6219547	LAG	81599	<0.1	50	80	1.6	1250	0.2	38.6	260	4.6	25	0.6	309000	2500	680	120	7.5	300	30	330
MOREENIA	5243304	EL2067	590147	6204365	LAG	81595	<0.1	40	75	1.4	1050	<0.1	25	290	5.4	10	0.45	341000	3200	760	260	4.6	600	30	200
MOREENIA	5243305	EL2067	586561	6204723	LAG	81595	0.1	20	50	1.6	950	<0.1	22.3	250	3	5	0.35	274000	2000	720	60	3.4	300	10	200
MOREENIA	5243306	EL2067	588813	6208891	LAG	81595	0.1	40	50	2.4	650	<0.1	17.7	310	3.4	5	0.25	369000	2500	680	120	6.3	350	30	400
MOREENIA	5243307	EL2067	580170	6209103	LAG	81595	<0.1	40	325	0.7	2750	0.1	47.9	190	5	<5	0.75	266000	9000	720	100	7.6	1700	20	200
MOREENIA	5243308	EL2067	576837	6205058	LAG	81595	0.1	60	20	2.4	400	<0.1	16.5	400	3.4	5	0.35	427000	500	500	20	15.7	150	10	100
MOREENIA	5243309	EL2067	576143	6202808	LAG	81595	<0.1	40	50	0.8	700	0.1	24.1	170	7.6	<5	0.5	213000	1800	760	60	8.6	300	30	200
MOREENIA	5243310	EL2067	576412	6201171	LAG	81595	<0.1	<20	25	0.2	500	<0.1	13	70	3	<5	0.25	65500	700	460	40	6.5	250	10	<100
MOREENIA	5243311	EL2067	576181	6201854	LAG	81595	<0.1	20	65	0.6	750	<0.1	21.4	140	2.4	<5	0.25	166000	2300	440	60	8.2	350	10	100
MOREENIA	5243312	EL2067	580438	6207030	LAG	81595	<0.1	40	35	1	550	<0.1	23.8	220	3.8	5	0.35	379000	1200	680	120	10.5	250	20	200
MOREENIA	5243315	EL2067	572499	6208825	LAG	81595	<0.1	40	105	1.4	2100	<0.1	37.4	260	3.6	<5	0.5	303000	3500	680	140	9.4	350	30	300
MOREENIA	5243316	EL2067	575298	6207620	LAG	81595	<0.1	40	85	1.1	1300	0.2	29.2	210	4	<5	0.45	279000	2500	600	100	8.8	350	30	400
MOREENIA	5243317	EL2067	575346	6208285	LAG	81595	<0.1	40	100	1.1	5850	0.2	37.1	240	5.8	5	0.6	295000	3100	920	120	10	400	30	500
MOREENIA	5243321	EL2067	575404	6205506	LAG	81595	<0.1	40	50	1.4	1050	0.1	27.8	410	4	5	0.4	456000	1700	820	100	11.2	300	30	400
MOREENIA	5243322	EL2067	576071	6206510	LAG	81595	<0.1	60	40	0.9	1150	0.1	22.7	260	3.8	<5	0.3	297000	1600	660	80	8.5	250	20	300
MOREENIA	5243323	EL2067	576010	6207595	LAG	81595	0.1	40	90	1	1100	0.1	39.8	280	7.2	<5	0.75	261000	3300	900	60	9.1	450	30	200
MOREENIA	5243324	EL2067	576100	6208603	LAG	81595	0.1	60	40	1	850	<0.1	36.6	510	4.4	5	0.45	370000	1700	840	80	8.2	350	30	200
MOREENIA	5243328	EL2067	574996	6200716	LAG	81595	<0.1	40	40	0.8	700	0.1	29.3	220	5.4	<5	0.85	311000	1600	760	60	8.4	400	20	100
MOREENIA	5243329	EL2067	573514	6200021	LAG	81595	<0.1	40	100	1.1	800	0.2	32.8	220	3.6	5	0.35	324000	4200	560	140	12	350	20	400
MOREENIA	5243333	EL2067	576650	6223000	LAG	54323	<0.1	25	52	2.6	831	<0.1	na	296	2.8	17	0.37	344000	2000	1190	121	5.2	319	23	290
MOREENIA	5243334	EL2067	574650	6222550	LAG	54323	<0.1	38	68	2.8	993	<0.1	na	360	3.7	9	0.62	439000	2900	1128	148	7	485	29	312
MOREENIA	5243335	EL2067	586475	6225300	LAG	54323	<0.1	34	55	0.9	707	<0.1	na	189	3.1	8	0.35	236000	1600	652	124	6.1	193	17	143
MOREENIA	5243336	EL2067	587675	6224650	LAG	54323	<0.1	34	67	1.1	592	<0.1	na	187	3.3	9	0.39	247000	2000	699	120	6	187	19	256
MOREENIA	5243337	EL2067	587500	6222525	LAG	54323	<0.1	25	52	0.5	1272	<0.1	na	183	3	10	0.4	418000	1200	1186	151	8.8	222	22	237
MOREENIA	5244501	EL2067	595004	6226872	LAG	81599	<0.1	30	95	0.8	30800	<0.1	29.5	150	4.8	10	0.5	130000	2500	2380	100	5.8	400	20	110
MOREENIA	5244502	EL2067	594823	6221967	LAG	81599	<0.1	50	50	2.3	1450	<0.1	18.1	270	5.6	10	0.4	387000	1400	1100	100	6.1	300	30	150
MOREENIA	5244503	EL2067	594191	6209923	LAG	81599	0.1	40	25	0.8	600	<0.1	17.6	100	5.2	10	0.3	130000	1900	420	40	5.1	150	10	160
MOREENIA	5244504	EL2067	593228	6210305	LAG	81599	<0.1	30	70	1	1250	0.1	24.8	180	3.2	10	0.35	206000	2000	540	100	5.1	300	20	320
MOREENIA	5244505	EL2067	593949	6212832	LAG	81599	<0.1	20	55	0.5	850	<0.1	25.4	100	3	5	0.35	120000	2200	400	80	4.4	350	10	100
MOREENIA	5244751	EL2067	577145	6225181	LAG	81599	<0.1	40	75	5.5	1400	0.1	43.3	310	5	10	0.5	372000	2300	900	160	6.8	300	30	310
MOREENIA	5244752	EL2067	584363	6223562	LAG	81599	<0.1	30	30	0.5	450	<0.1	15.5	110	4.8	<5	0.45	133000	1300	500	40	4.3	200	20	60
MOREENIA	5244753	EL2067	584118	6219105	LAG	81599	<0.1	30	125	0.5	550	<0.1	74.1	140	4.2	5	0.55	170000	3400	540	140	4.8	450	20	140
MOREENIA	5244754	EL2067	582582	6217244	LAG	81599	<0.1	40	80	0.7	600	<0.1	30.7	190	4.4	5	0.35	260000	1900	580	80	5.8	200	20	160
MOREENIA	5244755	EL2067	579193	6219418	LAG	81599	0.1	50	40	0.8	450	<0.1	22.7	220	6	5	0.45	178000	1400	680	40	6	350	30	70
MOREENIA	5244756	EL2067	574927	6219612	LAG	81599	0.2	40	60	4	1000	0.1	48.3	420	5	15	0.55	455000	2400	1020	180	6.6	250	40	310
MOREENIA	5244757	EL2067	574904	6218607	LAG	81599	<0.1	30	115	3.8	5850	<0.1	71.4	350	6.2	15	0.7	438000	2100	1380	1000	4.8	250	30	300
MOREENIA	5244758	EL2067	576808	6219801	LAG	81599	<0.1	20	40	0.4	700	<0.1	17.8	260	3.4	20	0.3	332000	1100	480	80	2.9	150	20	180
MOREENIA	5244759	EL2067	579553	6224207	LAG	81599	<0.1	50	90	1	900	<0.1	34.5	220	4.8	10	0.5	338000	3400	620	140	7.4	350	30	320

EL2067 MOREENIA LAG SAMPLE GEOCHEMICAL LEDGER

AREA	SAMPNO	TENEMENT	EAST	NORTH	MATERIAL	DPO	Pb	Sb	Sn	Ti	Th	U	Zn	Au	Pt	Pd
						METHOD	GS201	GS201	GS201	GI201	GS201	GS201	GI201	GS333	GS333	GS333
						DL	1	0.1	0.5	10	0.05	0.05	5	1	0.5	0.5
						UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppb	ppb
MOREENIA	5241400	EL2067	591765	6214347	LAG	81599	56	1.6	2	2790	45.5	2	10	<1	<0.5	<0.5
MOREENIA	5241442	EL2067	574118	6211164	LAG	81599	100	1.9	3	4480	55.1	1.97	15	<1	<0.5	<0.5
MOREENIA	5241443	EL2067	573535	6210435	LAG	81599	88	1.6	3	3220	74.4	2.06	10	<1	<0.5	0.5
MOREENIA	5241444	EL2067	571565	6212369	LAG	81599	107	2.8	4.5	3050	111	2.02	10	<1	<0.5	0.5
MOREENIA	5241445	EL2067	571587	6211395	LAG	81599	51	1	9	4720	67.6	2.02	5	<1	<0.5	<0.5
MOREENIA	5241446	EL2067	571571	6210778	LAG	81599	54	0.7	2.5	2730	72.6	1.71	15	<1	<0.5	<0.5
MOREENIA	5241447	EL2067	578045	6210904	LAG	81599	73	1.5	2	3590	31.1	1.74	10	<1	<0.5	<0.5
MOREENIA	5241448	EL2067	576371	6217378	LAG	81599	87	2.2	3	3870	124	2.25	15	<1	<0.5	<0.5
MOREENIA	5241449	EL2067	573949	6217485	LAG	81599	91	2.6	7.5	4040	123	2.36	10	<1	<0.5	<0.5
MOREENIA	5241450	EL2067	572421	6219547	LAG	81599	75	2.1	2.5	3850	48.1	1.3	15	<1	<0.5	<0.5
MOREENIA	5243304	EL2067	590147	6204365	LAG	81595	84	1.5	3	4180	37.7	2.1	30	<1	1.5	1
MOREENIA	5243305	EL2067	586561	6204723	LAG	81595	56	1.1	6.5	4730	54.3	2.05	30	<1	<0.5	0.5
MOREENIA	5243306	EL2067	588813	6208891	LAG	81595	67	1.4	4	3200	60.5	1.65	30	<1	<0.5	<0.5
MOREENIA	5243307	EL2067	580170	6209103	LAG	81595	82	1.8	2.5	3200	69.5	1.65	60	<1	<0.5	<0.5
MOREENIA	5243308	EL2067	576837	6205058	LAG	81595	67	2.3	5	3230	151	2.9	20	<1	1	1.5
MOREENIA	5243309	EL2067	576143	6202808	LAG	81595	36	1.4	3	4670	26	1.85	25	<1	<0.5	<0.5
MOREENIA	5243310	EL2067	576412	6201171	LAG	81595	16	0.5	1.5	1730	18.4	1.2	15	<1	<0.5	<0.5
MOREENIA	5243311	EL2067	576181	6201854	LAG	81595	38	0.8	1.5	2660	22.7	1.25	15	<1	<0.5	<0.5
MOREENIA	5243312	EL2067	580438	6207030	LAG	81595	64	1.3	3.5	4500	91.2	2.4	35	<1	0.5	<0.5
MOREENIA	5243315	EL2067	572499	6208825	LAG	81595	94	1.8	2.5	5250	26.2	1.45	20	<1	<0.5	1.5
MOREENIA	5243316	EL2067	575298	6207620	LAG	81595	74	1.9	2.5	4470	27.2	1.3	20	<1	<0.5	<0.5
MOREENIA	5243317	EL2067	575346	6208285	LAG	81595	81	2.2	3.5	4200	46.4	1.4	25	1	<0.5	<0.5
MOREENIA	5243321	EL2067	575404	6205506	LAG	81595	143	2.4	2.5	3510	132	3.05	30	<1	<0.5	<0.5
MOREENIA	5243322	EL2067	576071	6206510	LAG	81595	57	2	3	3250	98.2	1.95	20	<1	<0.5	<0.5
MOREENIA	5243323	EL2067	576010	6207595	LAG	81595	70	1.9	3	4520	53.6	3	25	<1	<0.5	<0.5
MOREENIA	5243324	EL2067	576100	6208603	LAG	81595	99	2.5	3	3190	215	1.95	25	<1	<0.5	<0.5
MOREENIA	5243328	EL2067	574996	6200716	LAG	81595	64	1.8	2.5	3020	72.7	1.9	20	<1	<0.5	<0.5
MOREENIA	5243329	EL2067	573514	6200021	LAG	81595	84	1.7	2.5	4590	32.5	2.15	15	<1	<0.5	<0.5
MOREENIA	5243333	EL2067	576650	6223000	LAG	54323	54	1.5	2.9	4098	na	na	15	<1	<0.5	<0.5
MOREENIA	5243334	EL2067	574650	6222550	LAG	54323	91	2	2.9	3265	na	na	12	<1	<0.5	<0.5
MOREENIA	5243335	EL2067	586475	6225300	LAG	54323	44	1.2	2.8	4550	na	na	8	<1	<0.5	<0.5
MOREENIA	5243336	EL2067	587675	6224650	LAG	54323	70	1.5	2.1	4203	na	na	13	<1	<0.5	<0.5
MOREENIA	5243337	EL2067	587500	6222525	LAG	54323	57	1	2.7	3387	na	na	10	<1	<0.5	<0.5
MOREENIA	5244501	EL2067	595004	6226872	LAG	81599	42	1.1	2	3280	21.3	1.17	10	<1	<0.5	<0.5
MOREENIA	5244502	EL2067	594823	6221967	LAG	81599	55	1.4	4	4250	64.5	1.71	5	<1	1	1
MOREENIA	5244503	EL2067	594191	6209923	LAG	81599	32	1	3.5	1780	33.3	1.42	5	<1	<0.5	<0.5
MOREENIA	5244504	EL2067	593228	6210305	LAG	81599	51	0.9	2	3590	24.5	1.17	10	<1	<0.5	<0.5
MOREENIA	5244505	EL2067	593949	6212832	LAG	81599	36	0.6	1.5	2650	17.5	1.13	<5	<1	<0.5	<0.5
MOREENIA	5244751	EL2067	577145	6225181	LAG	81599	84	1.8	3	3410	79.7	1.91	15	<1	<0.5	<0.5
MOREENIA	5244752	EL2067	584363	6223562	LAG	81599	29	0.8	2	3420	20	1.35	<5	<1	<0.5	<0.5
MOREENIA	5244753	EL2067	584118	6219105	LAG	81599	53	0.9	1.5	2910	32.8	1.58	10	<1	<0.5	<0.5
MOREENIA	5244754	EL2067	582582	6217244	LAG	81599	58	1.2	1.5	3330	33.1	1.54	10	<1	<0.5	<0.5
MOREENIA	5244755	EL2067	579193	6219418	LAG	81599	38	1.3	2.5	4120	31.4	1.45	5	<1	<0.5	<0.5
MOREENIA	5244756	EL2067	574927	6219612	LAG	81599	93	1.9	3	3280	94.7	1.9	10	<1	<0.5	0.5
MOREENIA	5244757	EL2067	574904	6218607	LAG	81599	69	1.3	3	3270	76.5	1.8	15	<1	<0.5	1
MOREENIA	5244758	EL2067	576808	6219801	LAG	81599	35	0.6	5	3660	59.6	1.34	10	<1	1	0.5
MOREENIA	5244759	EL2067	579553	6224207	LAG	81599	84	1.8	1.5	3460	30.2	1.32	10	<1	<0.5	<0.5

APPENDIX III

-80# STREAM SEDIMENT SAMPLE DESCRIPTION LEDGER

EYRE PENINSULA -80# STREAM SEDIMENT SURVEY									
Area	Sampno	Tenement	AMG	AMG	Stream	Bank			
			East	North	Width (m)	Height (m)	Float	Outcrop	Comments
MOREENIA	5243501	EL2067	591536	6204474	> 10	1	fg mica schist + qz, ironstone, heavily weathered material - some banded	-	complex drainage system, possibly more than one creek
MOREENIA	5243502	EL2067	591051	6204756	5	1.5	no significant float	-	sample site a bit sandy, taken from overbank deposits away from MC
MOREENIA	5243506	EL2067	585812	6204998	> 20m	0.5	-	-	well compacted material, well grassed, broad drainage system
MOREENIA	5243507	EL2067	586025	6204965	3	0.5	qz + vfg mu schist, abundant Fe stone	-	MC sample
MOREENIA	5243508	EL2067	586533	6206317	-	1	-	-	poorly defined channel within broad system
MOREENIA	5243509	EL2067	587285	6206705	1.5	1.5	-	-	MC sample, possibly quite sandy, water in nearby dam
MOREENIA	5243510	EL2067	589186	6206008	> 20m	0.8	-	-	very broad drainage system, heavily silted up with little vegetation, strongly influenced by heavy cultivation with evidence of high salt content
MOREENIA	5243511	EL2067	589356	6205954	> 20m	0.8	-	-	broad poorly defined drainage system, affected by intense cultivation, evidence of high salinity
MOREENIA	5243512	EL2067	590528	6206947	1	0.75	-	-	material quite sandy, may be influenced by proximity to cultivated paddocks
MOREENIA	5243513	EL2067	590423	6207061	5	1	-	-	wet sample, within main channel of Ducksnest Creek, well compacted overburden material
MOREENIA	5243514	EL2067	590913	6207330	3	0.3	ferruginous material, some relic after fg to mg conglomerate material, some fragments after pegmatite, minor saprolite, qz	-	well vegetated drainage channel
MOREENIA	5243515	EL2067	591154	6207709	> 20m	0.4	minor float, ?tourmaline bearing pegmatite, qz+ferr saprolite	-	main regional drainage channel, sample taken from overbank silts away from MC, evidence of high salinity and intense cultivation
MOREENIA	5243516	EL2067	591194	6208254	1.5	0.5	abundant Fe stone after mg to cg conglomerate, white saprolite possibly after conglomerate, qz + possible relic pegmetite	-	well compacted material
MOREENIA	5243517	EL2067	591571	6209139	8.5	0.3	-	-	sample taken away from MC
MOREENIA	5243518	EL2067	588800	6209000	1	0.2	ferr lag material as float with a high proportion of cutan covered pisoliths, also qz	-	
MOREENIA	5243519	EL2067	587332	6207337	2	1	-	-	very muddy material taken from well wooded creek
MOREENIA	5243528	EL2067	584116	6204314	1	0.2	-	-	well grassed and wooded drainage channel
MOREENIA	5243529	EL2067	583891	6204769	3	1	isolated pieces of qz	-	well grassed creek, sample taken from well exposed profile section, 2 distinct profile layers, both sampled
MOREENIA	5243530	EL2067	583899	6204628	3.5	2	fragmented duricrust + qz, Fe stone probably locally transport	-	broad valley drainage channel, well vegetated and well compacted material, possibly influenced by proximity to cultivated fields
MOREENIA	5243543	EL2067	584851	6204690	2	1.5	-	-	well vegetated creek

Area	Sampno	Tenement	AMG East	AMG North	Stream Width (m)	Bank Height (m)	Float	Outcrop	Comments
MOREENIA	5243544	EL2067	583372	6206887	2	0.2	very fine Fe stone material (2-3mm)	-	poorly defined drainage within the barley paddock, creek drains significant Fe stone outcrops and weathered clay material
MOREENIA	5243545	EL2067	583388	6207116	5	0.2	-	-	this, and sample 5243544 drain large hill containing abundant qz below well developed Fe laterite profile, material is well compacted within barley paddock, broad valley drainage pattern
MOREENIA	5243546	EL2067	583820	6207930	4	0.4	brecciated and weathered qz, fspar rich pegmatite, qz veining with ?some sugary brecciated qz	-	in barley paddock
MOREENIA	5243547	EL2067	584127	6208212	5	0.5	-	-	broad drainage system, well grassed
MOREENIA	5243548	EL2067	583741	6208626	5	0.5	-	-	broad valley drainage, well grassed
MOREENIA	5243549	EL2067	584899	6208883	1.75	2	?qzte, weathered qz, little float in the locality of sample, ?weathered granitic material	-	deep drainage channel bordering cultivated fields
MOREENIA	5243550	EL2067	584939	6207992	3	0.5	minor qz float only, minor mottled clay horizons	-	broad valley drainage system
MOREENIA	5243555	EL2067	582637	6206050	2	0.75	?ferr duricrust material	-	sandy material, silt traps rare
MOREENIA	5243556	EL2067	582306	6206404	5	0.5	duricrust containing fragments of qz	-	valley drainage system, well grassed, sediment material quite sandy
MOREENIA	5243557	EL2067	582439	6206461	8	0.4	-	-	broad multichannel drainage system, well grassed and well vegetated, material slightly sandy
MOREENIA	5243558	EL2067	582422	6207136	4	1	-	-	-
MOREENIA	5243559	EL2067	582919	6205925	2	0.2	-	-	broad valley drainage, well grassed
MOREENIA	5243560	EL2067	583124	6206068	1.5	4	-	-	deep and major drainage channel despite lack of width, sediment quite sandy
MOREENIA	5243561	EL2067	581566	6207361	4	0.8	-	-	major drainage channel despite lack of width
MOREENIA	5243562	EL2067	581696	6207548	1.5	0.5	qz, fragments of ferruginous material, ?some formed in situ via chemical processes	-	-
MOREENIA	5243563	EL2067	581561	6208280	1.5	1.5	ferruginous duricrust	qz breccia, ?after quartzite or pegmatite with all feldspar removed, fragments are highly angular and poorly sorted with likely silica cement	material quite sandy
MOREENIA	5243564	EL2067	580991	6208143	8	3	-	-	well vegetated reed cover, wet sample taken from MC
MOREENIA	5243565	EL2067	580335	6209161	1.5	0.5	large ferruginous duricrust fragments, clay/Fe cemented qz breccia, upper portions of the lag profile also present	-	corresponding lag sample taken (5243307)
MOREENIA	5243566	EL2067	577991	6205835	5	0.2	-	-	very broad poorly defined channel within wheat paddock
MOREENIA	5243567	EL2067	577000	6204950	1	2.5	qzte, clay cemented qz breccia (fg) mottle material and fragments of duricrust, ?clacarenite (recent) deposits	-	quite sandy material, major drainage system although narrow

Area	Sampno	Tenement	AMG East	AMG North	Stream Width (m)	Bank Height (m)	Float	Outcrop	Comments
MOREENIA	5243568	EL2067	576400	6204247	2	1.75	highly ferruginous saprolite both yellow and deep brown,also pallid or mottled saprolite material, unusual highly siliceous material (?interesting, rock sample taken)	-	-
MOREENIA	5243569	EL2067	576269	6203281	1	0.4	-	-	well wooded
MOREENIA	5243574	EL2067	576204	6201182	2	0.5	qz, pallid + mottled saprolite, ?qzte or granitic breccia, fg well foliated mafic material, may appear in conglomerate material, higher layers of the Fe weathering profile	-	-
MOREENIA	5243578	EL2067	578452	6208587	10	0.1	-	-	major valley drainage proximal to cultivated fields
MOREENIA	5243579	EL2067	578226	6206661	4	0.5	minor pisolithic lag	-	broad valley drainage,
MOREENIA	5243580	EL2067	578126	6207364	0.75	0.2	lag material (not sampled)	-	probably diverted by cultivation activity
MOREENIA	5243581	EL2067	577819	6207317	12	0.1	-	-	very broad, well vegetated valley drainage, proximal to recent dam
MOREENIA	5243582	EL2067	577547	6206658	20	0.1	-	-	broad valley drainage, well vegetated and well grassed, proximal to grazing paddocks
MOREENIA	5243583	EL2067	578253	6207802	2	0.4	-	-	drainage channel may be affected by human activities, proximal to grazing paddocks
MOREENIA	5243584	EL2067	579672	6208762	8	2.5	most float likely due to transport due to road buliding activity - mottled saprolite, ?amphibolite, kspar rich granite, qz, minor lag, pallid saprolite	-	channel is likely to have suffered human alteration
MOREENIA	5243585	EL2067	580761	6204571	2.5	0.5	qzte, white to grey, may be Fe stained, qz granite or pegmatite possibly weakly foliated, rare ferr saprolite + vfg mica schist	-	-
MOREENIA	5243586	EL2067	580439	6204425	6	1	quartzofeldspathic vfg bt schist, developing to gneissic or migmatitic in qz/fspar layers	-	broad valley drainage
MOREENIA	5243587	EL2067	580743	6204875	20	1	qz, Fe stone conglomerate	-	major valley drainage although poorly defined, well grassed, OB silt sample
MOREENIA	5243588	EL2067	579895	6205290	4	1	-	-	well grassed, within wheat paddock
MOREENIA	5243589	EL2067	579966	6205216	4	0.7	duricrust fragments, qz, leucogranite, some fragments brecciated	-	major valley drainage channel through well defined creek system
MOREENIA	5243590	EL2067	580169	6206327	2.5	2	-	-	well defined drainage channel
MOREENIA	5243591	EL2067	580073	6206499	3	0.7	-	-	well wooded and grassed shallow valley type drainage
MOREENIA	5243592	EL2067	580268	6206650	3	0.5	qz, duricrust fragments, mottled saprolite	-	variable bank height, well grassed
MOREENIA	5243593	EL2067	580451	6207171	2	0.4	mottled ferruginous saprolite after duricrust, float rare	-	poorly defined well vegetated and well grassed drainage zone
MOREENIA	5243594	EL2067	580087	6207359	1.5	1.5	minor lag fragments (pisoliths and mottles)	-	well compacted material in well grassed and vegetated creek
MOREENIA	5243595	EL2067	580928	6205381	2	0.5	-	-	valley drainage, well grassed and within cropped fields

Area	Sampno	Tenement	AMG East	AMG North	Stream Width (m)	Bank Height (m)	Float	Outcrop	Comments
MOREENIA	5243596	EL2067	581572	6204924	3	2	duricrust, mottled saprolite, + fg holocrystalline qz/fspar rich granite	-	well grassed valley drainage
MOREENIA	5243597	EL2067	581274	6204667	2	1.25	-	-	broad, well grassed and well vegetated valley drainage
MOREENIA	5243609	EL2067	571177	6208315	1.75	0.3	pisolithic lag likely transported from adjacent roadworks	-	well compacted, well defined drainage system
MOREENIA	5243610	EL2067	573074	6208259	12	0.75	pallid and mottled saprolite, ?fg calcarenite or calcrete, lineated qzte (mu rich), undeformed granite (kspar rich)	-	very sandy creek bed, ?some influence from nearby road metal
MOREENIA	5243611	EL2067	572505	6209030	1.6	0.6	pisolithic lag, mottled saprolite	-	MC sample
MOREENIA	5243612	EL2067	572500	6209601	1.6	0.3	pisolithic + mottle lag horizons, minor qz	-	Abundant silt fraction thoughout
MOREENIA	5243613	EL2067	574179	6208614	2	0.35	-	-	sample from OB material, sandy main channel
MOREENIA	5243614	EL2067	575392	6207282	1.5	0.1	lag	-	well grassed valley drainage system within cropped fields
MOREENIA	5243615	EL2067	575176	6207011	2.5	0.6	pisolithic lag, mottled saprolite	-	well grassed, well wooded channel
MOREENIA	5243616	EL2067	575343	6206655	1	1.5	pisolithic lag, ?recent calcrete		valley drainage, MC sample, well grassed within wheat paddock
MOREENIA	5243617	EL2067	575226	6208276	2.5	0.2	-	-	variable bank height, valley drainage through cropped fields, well compacted material, MC sample
MOREENIA	5243635	EL2067	573771	6206839	1	0.2	calcrete, pisolithic duricrust with calcareous cement	-	-
MOREENIA	5243636	EL2067	574297	6205459	2	0.1	minor lag	-	shallow valley drainage
MOREENIA	5243637	EL2067	575558	6205457	2	1.6	pisolithic duricrust, heavily weathered granite, mottled saprolite, lag present in stream banks	-	?galvanized iron pipe runs length of stream
MOREENIA	5243638	EL2067	575973	6206303	2	0.1	minor qz	-	very shallow valley drainage, well grassed within cultivated fields, material quite sandy
MOREENIA	5243639	EL2067	576260	6207570	1.5	0.2	minor lag	-	poorly defined shallow valley drainage, well grassed
MOREENIA	5243640	EL2067	576149	6207541	1.5	0.2	minor lag	eroding pisolithic duricrust	broad, shallow and poorly defined valley drainage, well grassed
MOREENIA	5243641	EL2067	574529	6204497	4	0.2	lag (mostly formed in situ or locally), granite breccia, duricrust fragments	-	broad valley drainage, well grassed
MOREENIA	5243642	EL2067	574355	6204481	2.5	0.4	qz, large mottle fragments	-	variable bank height, sediment sandy and gritty, well grassed
MOREENIA	5243643	EL2067	575494	6202723	2.5	1	qzte, grit	-	well vegetated (reeds)
MOREENIA	5243644	EL2067	575434	6202366	4.5	0.3	-	-	poorly defined valley drainage
MOREENIA	5243645	EL2067	575048	6202090	1.75	0.4	-	-	OB sample (material quite sandy)
MOREENIA	5243658	EL2067	575221	6199640	1.5	2	mottled saprolite containing large qz fragments, highly angular and appearing brecciated, qz, heavily weathered leucogranite, also bt rich granite	mottled saprolite containing large qz fragments, highly angular and appearing brecciated	-
MOREENIA	5243659	EL2067	574760	6200456	2	1.2	leucogranite, lag horizons, qz, heavily weathered sandstone	lag horizons	MC sample

Area	Sampno	Tenement	AMG	AMG	Stream	Bank			
			East	North	Width (m)	Height (m)	Float	Outcrop	Comments
MOREENIA	5243660	EL2067	574891	6200686	2.5	0.5	abundant lag (sample), yellow clay	-	strong drainage system cutting through lag profile
MOREENIA	5243661	EL2067	574725	6201084	2	0.75	abundant lag and yellow clay horizons	abundant lag and yellow clay horizons	significant drainage, well compacted
MOREENIA	5243662	EL2067	573253	6200852	20	0.1	-	-	very broad poorly defined valley drainage, well wooded
MOREENIA	5243663	EL2067	571870	6200589	4	0.1	-	-	valley drainage, likely affected by cultivation, well grassed
MOREENIA	5243664	EL2067	574572	6198854	1.75	1.5	minor lag, clay, silt, milky white qz (float rare)	-	-
MOREENIA	5243665	EL2067	573640	6199910	20	0.2	-	-	broad well vegetated major valley system
MOREENIA	5243666	EL2067	572866	6195969	2	0.1	qz, some fragments with Mn staining on fracture surfaces, fg granite	-	poorly defined valley drainage
MOREENIA	5243667	EL2067	572977	6195970	5	0.1	-	-	OB material, sandy creek, poorly defined transient MC, evidence of significant cultivation induced salinity
MOREENIA	5243668	EL2067	573196	6196309	8	0.4	-	conglomerate clay containing angular qz fragments, weathered leucogranite may be developing to mottled or ferruginous saprolite	several subsidiary channels within complex system, well grassed and well wooded
MOREENIA	5243708	EL2067	592714	6208361	-	-	Silt-sand	-	Broad valley drainage; Wet
MOREENIA	5243709	EL2067	592588	6208244	10	1.5	Quartz, siliceous fg rock	-	
MOREENIA	5244082	EL2048	586632	6209741	3	0.5	-	-	
MOREENIA	5244091	EL2067	591377	6214573	30	0.3	Lateritic ironstone	-	
MOREENIA	5244092	EL2067	591320	6213779	2	0.3	sand, Fe-lag	-	wheat paddock
MOREENIA	5244093	EL2067	590462	6215143	4	1.3	sand, Fe-lag	-	wheat paddock
MOREENIA	5244094	EL2067	590055	6214503	-	-	sand	-	broad anastomising drainage
MOREENIA	5244095	EL2067	590021	6214828	-	-	sand, Fe-lag	-	
MOREENIA	5244096	EL2067	586204	6214838	20	1	lateritised Tertiary sst, Fe-lag	weakly deformed granite	
MOREENIA	5244097	EL2067	587251	6215199	3	0.4	granite	-	
MOREENIA	5244098	EL2067	587613	6215302	6	0.4	granite	-	
MOREENIA	5244099	EL2067	587599	6216137	4	1.5	granite, qtz	-	
MOREENIA	5244100	EL2067	591334	6217894	1	0.2	calcrete	-	wheat paddock
MOREENIA	5244101	EL2067	591276	6216485	-	-	-	-	broad outwash plain
MOREENIA	5244102	EL2067	588559	6215636	40	1	-	-	
MOREENIA	5244103	EL2067	585450	6214328	4	0.2	granite, ferrug. saprolite	-	
MOREENIA	5244104	EL2067	584291	6216539	10	1.2	Ironstone, qtz, granite, granitic gniess	-	
MOREENIA	5244105	EL2067	586119	6217767	3	1.2	qtz, granite	-	up stream of rubbish dump
MOREENIA	5244106	EL2067	586729	6217994	8	1	qtz, granite	-	
MOREENIA	5244107	EL2067	586082	6216963	8	0.4	-	-	
MOREENIA	5244108	EL2067	584774	6218089	-	-	granite	-	broad
MOREENIA	5244110	EL2067	587055	6213788	2	0.5	granitic sand, qtz	-	over bank silt

Area	Sampno	Tenement	AMG East	AMG North	Stream Width (m)	Bank Height (m)	Float	Outcrop	Comments
MOREENIA	5244111	EL2067	587056	6213893	1	0.5	sand	-	over bank silt
MOREENIA	5244112	EL2067	586621	6214696	2.5	0.3	granitic sand, Fe lag	granite	
MOREENIA	5244113	EL2067	586881	6214711	10	0.3	granitic sand	-	
MOREENIA	5244114	EL2067	584237	6217939	2.5	0.4	granitic sand	-	
MOREENIA	5244115	EL2067	585225	6217113	12	0.4	bleached clay wd granite, Tertiary ironstone	-	
MOREENIA	5244116	EL2067	581625	6210100	3	1.5	granite (most with >50% fspar), some with gneissic affinity,granite may contain mafic (bt + hbde) enclaves)	possibly gneissic material	major drainage
MOREENIA	5244117	EL2067	581800	6210050	5	3	abundant float - ferr duricrust, leucogranite, qz, pallid saprolite after qzte, gneissic material from locality 5244116, often bt/hbde rich and with granitic veining, pelitic schist	-	-
MOREENIA	5244118	EL2067	580250	6209825	1.5	2	qz, leucogranite, sand and grit, Quaternary stream deposits, with saprolite, lag, qzte + granite fragments within coarsely laminated sand horizons	-	-
MOREENIA	5244119	EL2067	579900	6210500	2	0.5	-	-	poorly defined, possibly >1 MC, both MC and OB combination sample
MOREENIA	5244120	EL2067	580950	6211550	1.5	2	abundant lag as float and within clay banks, yellow clay, ferr duricrust fragments	-	OB sample
MOREENIA	5244121	EL2067	580500	6211125	1	0.3	lag, glass like sugary qz	-	drainagewithin paddock, downstream from dam
MOREENIA	5244122	EL2067	578450	6217625	1	0.2	sand and grit	-	OB sample within paddock
MOREENIA	5244123	EL2067	578525	6216750	1	0.2	-	-	likely human influenced, very broad, secondary valley drainage within fields
MOREENIA	5244124	EL2067	579250	6216650	1	0.1	-	-	shallow system through scrubland
MOREENIA	5244125	EL2067	579175	6216100	1	0.4	abundant lag, as float and within well defined layers within creek banks, calcrete, some containing lag fragments	-	-
MOREENIA	5244126	EL2067	580025	6217625	5	0.1	-	-	poorly defined very shallow broad valley drainage, well vegetated
MOREENIA	5244127	EL2067	580225	6218150	6	0.2	-	-	well vegetated, multichannel system, shallow and poorly defined
MOREENIA	5244128	EL2067	578400	6221875	4	0.2	minor lag in adjacent paddock	-	MC and OB sample, broad, shallow valley system
MOREENIA	5244129	EL2067	579825	6221200	3	0.2	ferr duricrust fragments most with cutan, white, fg calcrete - some containing lag fragments	-	shallow valley drainage, within fields
MOREENIA	5244130	EL2067	581300	6221425	4	0.5	-	-	between 2 large dams, may have human influence
MOREENIA	5244131	EL2067	570825	6211775	1	0.2	lag and calcrete	-	poorly defined valley drainage
MOREENIA	5244132	EL2067	571050	6210950	2	0.2	ferr duricrust and large mottles, weathered and Fe stained qz	-	poorly defined valley drainage within fields
MOREENIA	5244133	EL2067	572900	6212650	1	0.1	abundant black lag (pisolithic)	-	material well compacted, poorly defined valley drainage within cultivated fields

Area	Sampno	Tenement	AMG East	AMG North	Stream Width (m)	Bank Height (m)	Float	Outcrop	Comments
MOREENIA	5244134	EL2067	580350	6225900	20	0.1	-	-	broad, shallow but major drainage, no real MC, floodplain sample, elevated salinity
MOREENIA	5244135	EL2067	581650	6226300	2	0.4	-	-	shallow valley drainage within cultivated field
MOREENIA	5244136	EL2067	577400	6222150	8	0.2	lag and calcrete in adjacent paddocks	-	small MC within broad system, well vegetated, both OB and MC sample
MOREENIA	5244137	EL2067	576650	6223000	4	0.2	lag in adjacent fields	-	shallow, well grassed valley drainage, adjacent to cultivated fields
MOREENIA	5244138	EL2067	576850	6223400	1	1	abundant lag + qz fragments, large mottles and pisoliths, most with cutan	-	MC sample, variable bank height
MOREENIA	5244139	EL2067	576300	6222700	2	0.1	abundant lag, calcrete + qz float (qz sugary and Fe stained)	-	well vegetated valley drainage
MOREENIA	5244140	EL2067	574050	6221600	0.5	0.1	lag, large mottles some with cutan, calcrete, qz, sugary qz breccia	-	very poorly defined valley drainage within fields
MOREENIA	5244141	EL2067	574550	6222850	2	0.1	-	-	not a creek! paddock with very poorly defined drainage valley, well grassed
MOREENIA	5244142	EL2067	571150	6223475	2	0.3	mottle saprolite and duricrust, ferr duricrust, massive white, fg calcrete, lag in adjacent paddocks	-	shallow valley drainage
MOREENIA	5244143	EL2067	570900	6221450	3.5	0.6	lag in creek banks, most with cutan, white to beige calcrete, qz, most lag pisolithic	-	major valley drainage with well defined MC
MOREENIA	5244144	EL2067	570900	6220500	2	0.2	lag in adjacent fields, some calcrete, qzte ?some with vague foliation	-	well grassed within cultivated fields
MOREENIA	5244145	EL2067	591600	6212000	6	0.2	lag and qz in adjacent paddock	-	poorly defined valley drainage near to cultivated fields, well grassed
MOREENIA	5244146	EL2067	590600	6211250	2	0.1	-	-	poorly defined valley drainage within fields, some human influence, well grassed
MOREENIA	5244147	EL2067	589750	6218900	1.5	0.2	no natural float other than very minor amounts of lag, calcrete and qz grit	-	well grassed, proximal to cultivated fields
MOREENIA	5244148	EL2067	589200	6220150	0.75	0.2	qz, leucogranite (qz + fspar only remain), ferr duricrust	-	minor drainage within cultivated fields, material quite sandy
MOREENIA	5244149	EL2067	588300	6220000	3	0.1	crushed qz fragments, grit and white qz only	-	not a creek! within cultivated field, very poorly defined valley drainage
MOREENIA	5244150	EL2067	589600	6220850	2	0.1	minor ferr duricrust fragments, qz, grit	-	not a creek! within cultivated field, very sandy
MOREENIA	5244151	EL2067	589750	6220700	1	0.4	grit and qz fragments only	-	MC within shallow valley drainage, well grassed within fields
MOREENIA	5244152	EL2067	588400	6220550	2	0.5	qz grit, qzte, qz (Often highly ferruginous)	-	MC sample, broad major drainage, evidence for elevated salinity
MOREENIA	5244167	EL2067	588800	6217650	3	1.5	qz grit +minor lag float, yellow clay	-	major drainge channel, well vegetated
MOREENIA	5244168	EL2067	589075	6216950	6	0.5	-	-	OB sample, poorly defined MC, broad but well defined valley drainage, well vegetated
MOREENIA	5244169	EL2067	589275	6216850	4	0.3	qz, qzte, large mottles	-	small MC within shallow drainage valley
MOREENIA	5244170	EL2067	590150	6216725	5	0.4	qz, ferr duricrust, ferr and pallid saprolite	-	OB sample, elevated salinity, near to cultivated fields

Area	Sampno	Tenement	AMG East	AMG North	Stream Width (m)	Bank Height (m)	Float	Outcrop	Comments
MOREENIA	5244171	EL2067	588425	6215150	1	0.3	-	kspar, bt, mu, qz granitic gneiss with pegmatitic veining, often with good foliation defined by quatrzofeldspathic layers, variable across outcrop, some more felsic enclaves containing gt porphyroblasts	minor well vegetated drainage
MOREENIA	5244172	EL2067	588625	6215000	3	0.4	-	quartzofeldspathic bt gneiss, some with pegmatitic veining. Oc varies along length of the creek	OB material, well vegetated, poorly defined MC, galvanized pipes in creek, and junk upstream - likely contamination
MOREENIA	5244173	EL2067	588150	6214300	5	0.2	qz	-	material quite sandy, valley drainage, well wooded, with complex MC system
MOREENIA	5244174	EL2067	587975	6214350	4	1.5	qzte, sugary textured white qz	-	major valley drainage, , well wooded, elevated salinity, OB sample
MOREENIA	5244175	EL2067	588225	6213900	3	0.5	leucogranite, qz, pallid saprolite, fg gneiss/granitic breccia, ferr saprolite, para-amphibolite (vague foliation only, some with pegmatitic veining)	-	-
MOREENIA	5244176	EL2067	589850	6214100	20	0.2	qz grit and minor qz fragments	-	elevated salinity, broad, poorly defined drainage within grassed valley system, OB sample
MOREENIA	5244177	EL2067	591800	6220650	4	0.2	mottle and qz grit only	-	well grassed valley drainage
MOREENIA	5244178	EL2067	591650	6221100	5	0.2	ferr and limonitic saprolite after qzte, duricrust fragments in adjacent fields	-	well grassed valley drainage
MOREENIA	5244179	EL2067	591750	6221275	3	0.2	ferr duricrust after qzte, qz, minor mottle lag	-	well grassed valley drainage within cultivated fields
MOREENIA	5244181	EL2067	605925	6216100	30	0.1	calcrete in adjacent fields	-	vegetated, within paddocks, broad shallow valley drainage
MOREENIA	5244182	EL2067	602525	6216000	3	0.8	qz grit, abundant calcrete/limestone in adjacent fields	-	narrow MC within broad valley system, elevated salinity, OB sample
MOREENIA	5244183	EL2067	602900	6222725	1.5	0.4	qz grit, minor lag (mostly pisolithic, some mottles)	-	narrow MC through broad valley drainage and cultivated fields, limited drainage from adjacent hills
MOREENIA	5244184	EL2067	602600	6224500	2.5	0.3	calcrete, duricrust and ferr saprolite after qzte in adjacent fields	-	poorly defined valley drainage, well grassed within fields
MOREENIA	5244185	EL2067	588400	6226225	2	0.1	abundant lag float (pisoliths and large mottles)	-	within cultivated fields, drains hill containing rubbish so possible Zn contamination noted
MOREENIA	5244186	EL2067	587250	6226275	1	0.2	-	-	very poorly defined valley drainage, well grassed within fields, may have had human influence
MOREENIA	5244187	EL2067	586000	6225975	1.5	0.2	abundant lag in soil layers, qz, calcrete, saprolite after sandstone	-	within cultivated fields, may have human influence

Area	Sampno	Tenement	AMG East	AMG North	Stream Width (m)	Bank Height (m)	Float	Outcrop	Comments
MOREENIA	5244188	EL2067	584650	6224500	2	0.2	calcrete, ferr saprolite after sandstone/qzte, minor qz	-	not really a creek! poorly defined valley drainage within fields
MOREENIA	5244189	EL2067	585050	6224925	1	0.1	qz grit, calcrete, qzte, Fe stained qz breccia	-	not a creek! very poorly defined valley drainage through cultivated fields
MOREENIA	5244190	EL2067	587285	6224925	2	0.2	lag, heavily weathered qzte, saprolite after qzte	-	very poorly defined valley drainage, channel course may have been altered
MOREENIA	5244191	EL2067	588100	6224675	2	0.2	minor lag only	-	very poorly defined valley drainage through fields
MOREENIA	5244192	EL2067	588750	6224575	30	0.2	fg qzte, minor lag float + some qz grit	-	broad, shallow drainage, elevated salinity
MOREENIA	5244193	EL2067	588825	6224125	1.5	0.4	minor lag and qz fragments only	-	well grassed, poorly defined valley system
MOREENIA	5244194	EL2067	588400	6223825	2	0.3	lag	-	MC within shallow poorly defined valley drainage, well grassed near to cultivated fields
MOREENIA	5244195	EL2067	587775	6223250	8	0.2	lag, large mottles and duricrust fragments	-	well wooded and grassed, poorly defined MC, OB sample
MOREENIA	5244196	EL2067	587400	6222125	4	0.3	minor lag + qz grit only	-	well grassed and well wooded valley drainage
MOREENIA	5244197	EL2067	587250	6221975	2	0.3	lag + qz only	-	MC within shallow valley drainage, well grassed within paddocks
MOREENIA	5244198	EL2067	587200	6221675	1.5	0.6	qz grit, lag, pallid to mottled saprolite after qzte	-	well wooded, near to cultivated fields
MOREENIA	5244199	EL2067	589550	6210425	4	0.3	-	-	elevated salinity, OB +MC sample, MC material quite sandy, major drainage valley with broad OB zone
MOREENIA	5244200	EL2067	588500	6210775	4	1.5	cg holocrystalline leucogranite, both fresh and weathered, qz (some sugary)	-	major balley drainage, well defined MC
MOREENIA	5244551	EL2067	601290	6209878	2	1	qtz, well layered amph, granite	peg	
MOREENIA	5244552	EL2067	601094	6210228	2	1	qtz, bio-q schist/slate	peg	
MOREENIA	5244553	EL2067	599253	6210105	5	broad	peg, bio-q crenulated schist, banded amph, minor qtz		
MOREENIA	5244554	EL2067	599160	6210190	1	0.5	salt, q-fels-bio-musc peg, q-musc-bio schist, qtz, amph	q-fspar-musc-biot peg	salt
MOREENIA	5244555	EL2067	599806	6210489	10	0.5	peg, bio-q-misc-fspar peg, qtz		wet sample
MOREENIA	5244556	EL2067	600060	6211059	3	2	salt, musc-bio-qtz-schist, q-fels rock, peg	bio-musc-q schist +qtz veins and boudains	salt, wet sample
MOREENIA	5244557	EL2067	599898	6211335	1	broad	q-fels-(+/-musc) peg,	peg	
MOREENIA	5244558	EL2067	600893	6211449	1	broad	qtz, calcrete, q-fels-(+/-musc) peg	q-fels-(+/-musc) peg	
MOREENIA	5244559	EL2067	601210	6211715	1	broad	qtz, q-fels-(+/-musc) peg		rubbish present below site
MOREENIA	5244560	EL2067	599497	6213648	1	broad	qtz, q-fels fg peg,	q-fels-(musc) fine-crse gn peg/gneiss? with peg vn	
MOREENIA	5244561	EL2067	599143	6212573	12	2	qtz, musc-bio-q schist, fels-q-(+/-musc) peg	q-fels-(musc) fine-crse gn peg/gneiss? with peg vn	wet sample
MOREENIA	5244562	EL2067	599079	6212441	2	1	peg, qtz, bio-musc-q schist	peg	
MOREENIA	5244563	EL2067	599229	6212025	5	broad	bio-q schist, q-fspar granitic peg with qtz boudains, q-fels peg, qtz, weath banded amph		

Area	Sampno	Tenement	AMG	AMG	Stream	Bank			
			East	North	Width (m)	Height (m)	Float	Outcrop	Comments
MOREENIA	5244564	EL2067	599606	6212017	6	1.5	q-fels peg, bio-q schist/ mylonite ?	peg	wet sample
MOREENIA	5244565	EL2067	598685	6211247	0.5	broad	q-fels peg, qtz, granitic peg		wet sample
MOREENIA	5244566	EL2067	600772	6213126	2	0.5	peg, bio-q mylonite	q-fels-musc peg	rubbish present below site
MOREENIA	5244567	EL2067	600828	6212831	7	1	peg, qtz, bio-q schist, fg schist	nearby v.weath fels peg	
MOREENIA	5244568	EL2067	602503	6213414	broad		qtz, calcrete, q-fels peg	(mylonite), (q-fels peg)	
MOREENIA	5244569	EL2067	602784	6213634	10	1	q-fels crse gn rock, weath fg peg, qtz	mylonite with q-fels peg veins	rubbish present below site
MOREENIA	5244570	EL2067	602911	6213633	1	1	layered amph, q-fels peg, calcrete	crenulated schist with q vn (mylonite?)	
MOREENIA	5244571	EL2067	604003	6212331	broad		q-fels peg, qtz, amph		
MOREENIA	5244572	EL2067	604260	6212592	5	0.5	q-fels peg, amph	mylonite	wet sample
MOREENIA	5244573	EL2067	603709	6213253	broad		amph, fels, qtz	mylonite	
MOREENIA	5244574	EL2067	603180	6212923	3	broad	qtz, fels, mylonite?		
MOREENIA	5244575	EL2067	603731	6211413	2	broad	peg		
MOREENIA	5244590	EL2067	595526	6228464	flat		calcrete		
MOREENIA	5244591	EL2067	596834	6227216	broad		calcrete		
MOREENIA	5244592	EL2067	593795	6226307	5	broad	calcrete		
MOREENIA	5244593	EL2067	593424	6224092	0.5	broad	qtz, calcrete, fe-stone	(calcrete)	
MOREENIA	5244594	EL2067	594692	6222696	1	broad	fe-stone		
MOREENIA	5244595	EL2067	593225	6220852	broad		qtz, fe-stone		
MOREENIA	5244596	EL2067	593197	6220970	1	broad	qtz, fe-stone, calcrete		
MOREENIA	5244597	EL2067	594038	6219694	0.5	broad	qtz, lesser fe-stone		
MOREENIA	5244598	EL2067	593709	6218960	broad		qtz, lesser fe-stone		
MOREENIA	5244599	EL2067	594193	6218634	broad		qtz, lesser fe-stone		
MOREENIA	5244600	EL2067	592353	6219970	broad		q-fels rock, qtz		
MOREENIA	5244601	EL2067	592467	6221423	2	broad	fe-stone, limestone(possibly weath musc-q-fels gneissic peg)	fe-stone	
MOREENIA	5244602	EL2067	595623	6219889	flat				
MOREENIA	5244603	EL2067	600105	6224941	1	0.25	qtz, calcrete, fe-stone		
MOREENIA	5244604	EL2067	599536	6226920	1	broad	qtz, fe-stone		
MOREENIA	5244605	EL2067	599599	6227061	flat		calcrete, lesser fe-stone		
MOREENIA	5244606	EL2067	605643	6225474	flat		calcrete		
MOREENIA	5244607	EL2067	606579	6225464	flat		calcrete, minor qtz		
MOREENIA	5244612	EL2067	595619	6209080	flat				
MOREENIA	5244613	EL2067	595366	6208600	3	1	qtz, fels		
MOREENIA	5244614	EL2067	595305	6208420	3	1	q-fels granitic gneiss		
MOREENIA	5244615	EL2067	595267	6208230	2	1	musc-biot schist with q-vn (mylonitic?), q-fels-musc crse gn granitic rock		
MOREENIA	5244616	EL2067	595450	6208131	5	1	qtz, fels, q-fels-musc granitic gneiss, mylonite		wet sample
MOREENIA	5244617	EL2067	595872	6209605	1	1	granite (sometimes gneissic texture)		
MOREENIA	5244618	EL2067	595944	6209360	1	1	qtz, crse gn q-fels rock, lesser musc-bio-q schist		wet sample

Area	Sampno	Tenement	AMG	AMG	Stream	Bank			
			East	North	Width (m)	Height (m)	Float	Outcrop	Comments
MOREENIA	5244619	EL2067	596095	6209381	1	2	q-fels crse gn rock		wet sample
MOREENIA	5244620	EL2067	592772	6209491	2	broad	q-fels crse gn rock, qtz, calcrete	q-fels weath. pegmatitic gneiss	
MOREENIA	5244621	EL2067	592910	6211215	0.5	broad	ironstone, qtz		
MOREENIA	5244622	EL2067	593880	6212991	2	0.5	hem/hem-goeth pisolites, ironstone, lesser qtz		pisolites appear fairly close to insitu as high percent have goeth. coating and are only present on banks. Lag sample taken.
MOREENIA	5244623	EL2067	595022	6214008	flat		ironstone, calcrete		
MOREENIA	5244624	EL2067	597663	6217673	flat				
MOREENIA	5244625	EL2067	598698	6215954	flat		(clalcrete)		
MOREENIA	5244626	EL2067	598787	6215425	flat				
MOREENIA	5244627	EL2067	597183	6215322	2	1	calcrete, qtz, fels, ironstone, pisolites		
MOREENIA	5244628	EL2067	596579	6214243	flat		calcrete		
MOREENIA	5244629	EL2067	598903	6214322	3	0.5	q-fels-(musc) rock		wet sample
MOREENIA	5244630	EL2067	598397	6213925	7	broad	calcrete, q-fels granitic gneiss, fg q-fels rock, q-fels peg, qtz	q-fels-musc gneiss with megacrysts of fels and qtz	salt, wet sample
MOREENIA	5244631	EL2067	598422	6214044	broad		q-fels-(musc-bio) granitic gneiss		
MOREENIA	5244632	EL2067	599189	6214457	flat		q-fels crse gn granite, sometimes layered		minor rubbish
MOREENIA	5244633	EL2067	601900	6228250	1	0.4	calcrete, qz grit + gravel	calcrete	valley drainage in fields
MOREENIA	5244634	EL2067	601750	6228875	2.5	0.5	calcrete, lag + qz grit	calcrete	well defined MC of broad, shallow valley drainage
MOREENIA	5244635	EL2067	602375	6228850	2	0.2	calcrete, minor qz grit + lag	-	material quite sandy, poorly defined valley drainage in fields
MOREENIA	5244636	EL2067	607450	6228650	6	0.2	calcrete, weathered qzte, some leucogranite in adjacent paddocks	-	broad valley drainage within fields
MOREENIA	5244637	EL2067	606275	6230425	2.5	0.2	-	-	altered valley type drainage, artificially vegetated, quite sandy
MOREENIA	5244801	EL2067	574817	6218755	2	0.2	lag, abundant within upper soil horizons	-	well grassed, valley drainage within cultivated fields
MOREENIA	5244802	EL2067	574675	6219556	4	0.2	qz, abundant lag within upper soil horizons	-	poorly defined shallow valley drainage, within cultivated fields
MOREENIA	5244803	EL2067	575851	6220484	3	0.1	lag	-	valley drainage within cultivated fields
MOREENIA	5244804	EL2067	578783	6223061	10	0.1	lag, ferr duricrust	-	very poorly defined valley drainage, near to cultivated fields
MOREENIA	5244805	EL2067	582234	6223122	1.8	0.4	lag	-	near to cultivated fields
MOREENIA	5244806	EL2067	581329	6223140	3	0.2	-	-	valley system, well grassed drainage channel
MOREENIA	5244807	EL2067	581413	6222354	2	1.5	abundant lag throughout creek banks (most pisolithic with cutan)	-	evidence for elevated salinity
MOREENIA	5244808	EL2067	581324	6222211	1	0.2	lag, compacted claystone	-	MC within poorly defined valley drainage
MOREENIA	5244809	EL2067	587418	6221263	2	0.1	rare pink qz, fg ironstone breccia after granite	-	paddock! poorly defined valley drainage
MOREENIA	5244810	EL2067	586479	6220616	10	0.5	lag and qz gravel	-	OB sample, evidence for elevated salinity

Area	Sampno	Tenement	AMG	AMG	Stream	Bank			
			East	North	Width (m)	Height (m)	Float	Outcrop	Comments
MOREENIA	5244811	EL2067	586631	6220655	2.5	0.2	quartzitic ironstone, lag	calcrete; ironstone outcrops on adjacent hill above both mottled and pallid saprolite horizons (quarry)	valley drainage
MOREENIA	5244812	EL2067	582204	6220033	5	0.3	ferr saprolite in adjacent paddocks	-	well defined valley drainage, well grassed
MOREENIA	5244813	EL2067	583604	6219221	8	0.2	-	-	both OB and MC material, evidence for elevated salinity
MOREENIA	5244814	EL2067	582498	6218718	20	0.2	lag, weathered qzte and leucogranite (?transported), qz, ferr and pallid saprolite	-	OB material, evidence for elevated salinity
MOREENIA	5244815	EL2067	587975	6210400	4	2	as for oc	heavily weathered leucogranite and well foliated mg pelitic schist, some duricrust development	major valley drainage, material quite sandy, MC sample
MOREENIA	5244816	EL2067	587650	6210650	1	0.3	weathered qzte, qz + qz grit	-	OB sample, small MC within broad, major valley drainage, well grassed
MOREENIA	5244817	EL2067	587600	6210500	6	3	as for oc	low grade quartzofeldspathic granitic gneiss with very coarse fspar, and bt defining foliation (vague) contains megacrystic granitic/pegmatitic intrusions, gneissic development variable, some pallid saprolite + duricrust development above granite	major valley drainage cutting through extensive oc
MOREENIA	5244818	EL2067	586450	6210950	6	1	abundant qz in adjacent woodland and paddocks, some sugary/glassy textured, ?very large qz vein intrusive within granite, as for oc	highly felsic holocrystalline to megacrystic granite (qz + fspar only)	major, well vegetated valley drainage
MOREENIA	5244819	EL2067	586175	6211225	3	3	as for oc, leucogranite, qz (grey + glassy containing some fspar crystals)	quartzofeldspathic gneiss	steep valley drainage, major system, the setting and rock relationships of qz in localities 817-821 may suggest ht vein hosted Au ????
MOREENIA	5244820	EL2067	585850	6211125	3	1	as for oc	high grade gneiss (granitic to quartzofeldspathic), multiply intruded by undeformed megacrystic pegmatites and some granite	OB sample

Area	Sampno	Tenement	AMG East	AMG North	Stream Width (m)	Bank Height (m)	Float	Outcrop	Comments
MOREENIA	5244821	EL2067	585800	6211075	2	1.5	qz, fspar leucogranite, some with sugary/brecciated texture, gneiss	highly felsic gneiss with bt defining foliation	well vegetated, OB sample
MOREENIA	5244822	EL2067	588525	6211575	1.5	0.4	lag	-	poorly defined shallow valley drainage within paddock, affected by cultivation, with likely Zn contamination
MOREENIA	5244823	EL2067	588650	6212250	3	0.5	white, glassy qz, ferr duricrust, abundant float (mainly duricrust or saprolite after qzte, and qz) in adjacent fields	-	valley drainage, well vegetated
MOREENIA	5244824	EL2067	588650	6212200	1	0.3	qz grit, some qz + duricrust fragments	-	small MC within shallow drainage valley, well vegetated
MOREENIA	5244825	EL2067	589275	6212550	3	0.2	Fe stained qz + qzte, saprolite (after sandstone)	-	poorly defined valley drainage within fields, no real creek
MOREENIA	5244826	EL2067	589525	6211625	2	0.2	lag, qz, duricrust	-	very poorly defined, altered valley drainage system within fields (not really a creek!)
MOREENIA	5244827	EL2067	586775	6212525	2	2	as for oc, qz, leucogranitic, leucopegmatitic float	qz, fspar, bt, mu, ?chl granite, some becoming vaguely foliated with gneissic affinity downstream	very sandy + gritty, deep + narrow major valley drainage
MOREENIA	5244828	EL2067	587450	6213100	2.5	1	cg leucogranite and granite, qz, duricrust fragments	-	well defined and well wooded valley drainage, material quite sandy, OB sample
MOREENIA	5244829	EL2067	587625	6213075	2	1	lag, qzte, leucogranite fragments, qz, well foliated gneiss	-	well defined, well wooded valley drainage
MOREENIA	5244830	EL2067	584600	6223225	2.5	0.4	duricrust + saprolite in adjacent fields	-	poorly defined MC within very broad valley system, well wooded, MC sample
MOREENIA	5244831	EL2067	584700	6223800	2	0.1	lag + qz grit	-	not really a creek! within fields, very poorly defined and altered drainage channel
MOREENIA	5244832	EL2067	585375	6222050	0.75	0.2	lag +qz fragments	-	small MC within wider but shallow valley drainage, near cultivated fields
MOREENIA	5244833	EL2067	584950	6220925	8	0.4	qz grit, lag, duricrust after qzte on adjacent banks	-	elevated salinity, OB sample, broad and shallow drainage system
MOREENIA	5244834	EL2067	586800	6219375	6	1	ferr duricrust + calcrete	-	broad major drainage, OB sample
MOREENIA	5244835	EL2067	587275	6219300	1.5	1.8	lag, qz grit + qz fragments, yellow clay	-	major valley drainage, well defined MC
MOREENIA	5244836	EL2067	587850	6220000	2	0.2	qz, ferr qz breccia +grit	-	poorly defined shallow valley drainage within fields
MOREENIA	5244837	EL2067	590550	6219400	5	0.2	pisolithic lag, grit + gravel, small leucogranite fragments	-	wide poorly defined creek in thick scrub, very sandy
MOREENIA	5244838	EL2067	589550	6222475	4	0.2	-	-	poorly defined but major valley drainage, well grassed
MOREENIA	5244839	EL2067	589100	6221175	4	0.4	-	-	well grassed valley drainage close to cultivated fields
MOREENIA	5244840	EL2067	591550	6223800	3.5	0.5	minor lag	-	valley drainage above dam, well grassed near to cultivated fields
MOREENIA	5244841	EL2067	591350	6223850	3.5	0.5	minor lag	-	well grassed valley drainage

Area	Sampno	Tenement	AMG East	AMG North	Stream Width (m)	Bank Height (m)	Float	Outcrop	Comments
MOREENIA	5244842	EL2067	590425	6224450	5	0.4	-	-	well grassed valley drainage near cultivated fields, broad shallow system draining low hills
MOREENIA	5244843	EL2067	604525	6220950	2	0.2	abundant calcrete	-	valley drainage within wheat paddocks, well grassed
MOREENIA	5244844	EL2067	604225	6221125	30	0.2	transported calcrete only	-	elevated salinity, shallow and broad major regional drainage
MOREENIA	5244845	EL2067	605175	6220000	2	0.1	qz grit, tourmaline bearing leucogranite, qz	-	not a creek! valley drainage within fields
MOREENIA	5244846	EL2067	605275	6219350	2	0.2	calcrete + weathered qz + fspar	-	poorly defined shallow valley drainage within fields
MOREENIA	5244847	EL2067	604975	6219300	5	0.2	calcrete, ?bt, chl schist	-	broad and shallow drainage, well grassed
MOREENIA	5244848	EL2067	602775	6226250	2	0.2	-	-	very sandy, poorly defined valley drainage within fields (not really a creek!)
MOREENIA	5244849	EL2067	602675	6226350	2	0.1	lag	-	not a creek! very poorly defined valley drainage in fields, very sandy
MOREENIA	5244850	EL2067	603050	6227200	2	0.1	qzte, calcrete, qz float in paddocks	-	very poorly defined valley drainage within fields
MOREENIA	5244851	EL2067	573764	6197698	2	2	-	-	OB material
MOREENIA	5244852	EL2067	573869	6197684	3.5	2	-	-	well grassed, well vegetated
MOREENIA	5244853	EL2067	573014	6197913	3	2.5	lag, saprolite	well cemented mottled saprolite forms creek base, creek sides consist of in situ lag horizon, and the creek cuts through laterite development horizon	deep major drainage
MOREENIA	5244855	EL2067	573192	6198908	4	0.2	minor qz in adjacent paddock	-	broad, well grassed valley drainage
MOREENIA	5244917	EL2067	573940	6197293	3	2	heavily weathered leucogranite, qz, qz gravel	-	major drainage system
MOREENIA	5244918	EL2067	574115	6197324	6	1	-	-	well wooded and well vegetated (access difficult)
MOREENIA	5244919	EL2067	574152	6197477	4	0.3	qz, gravel	-	well grassed, well wooded, material quite sandy
MOREENIA	5244920	EL2067	575024	6198512	5	0.1	heavily weathered fg leucogranite, ironstone, ferr saprolite, weathered qzte, fg bt/chl schist	-	evidence of high salinity
MOREENIA	5244921	EL2067	575155	6198685	5	0.2	weathered and iron stained leucogranite, still retaining many kspar grains, with well preserved crystal form	-	well grassed
MOREENIA	5244922	EL2067	575135	6195279	15	0.3	pallid saprolite (rare), qz + minor lag within OB material	-	well vegetated drainage
MOREENIA	5244923	EL2067	574885	6195177	10	0.4	ironstone conglomerate containing large angular qz fragments; qz	-	well grassed, OB material sampled
MOREENIA	5244924	EL2067	575422	6194891	8	0.5	heavily weathered leucogranite and ferr saprolite	-	well compacted, well wooded valley drainage
MOREENIA	5244962	EL2067	571944	6216054	6	0.2	-	-	valley drainage, shallow and well grassed within wheat paddock
MOREENIA	5244963	EL2067	571589	6214933	4	0.1	ironstone, mottle lag, calcarenitic ironstone conglomerate (Tertiary)	-	very broad drainage within fields, not major system
MOREENIA	5244967	EL2067	585447	6204247	5	0.2	ferr sandstone, qz, qzte, ironstone mottles	-	valley system within cultivated field

Area	Sampno	Tenement	AMG	AMG	Stream	Bank			
			East	North	Width (m)	Height (m)	Float	Outcrop	Comments
MOREENIA	5244969	EL2067	583674	6214454	30	0.2	-	-	salt/silt flats, evidence of elevated salinity, very shallow broad drainage
MOREENIA	5244970	EL2067	583384	6214853	7	0.2	ferr saprolite and duricrust fragments (after sandstone), qz	-	valley drainage within cultivated field
MOREENIA	5244971	EL2067	581887	6215625	10	0.1	abundant saprolite after sandstone in adjacent paddocks	-	poorly defined shallow valley drainage
MOREENIA	5244972	EL2067	581506	6215305	20	0.1	abundant qz and saprolite, mottle fragments	-	evidence of high salinity, very broad, shallow system
MOREENIA	5244973	EL2067	578958	6214561	10	0.2	pisolithic lag	-	valley drainage within fields, OB sample
MOREENIA	5244974	EL2067	578626	6212999	2.5	1	mudstone, heavily weathered qzte, qz	-	evidence for elevated salinity
MOREENIA	5244975	EL2067	579094	6212850	4	0.1	mottle lag	-	sample from cultivated field, reploughed material withinvery shallow valley drainage system
MOREENIA	5244976	EL2067	580197	6213102	10	0.1	minor lag float	-	well grassed, near to cultivated field
MOREENIA	5244977	EL2067	580427	6213352	5	0.1	-	-	shallow, broad valley drainage within fields
MOREENIA	5244978	EL2067	580351	6213544	30	0.1	-	-	very broad, poorly defined valley drianage/flood plain
MOREENIA	5244979	EL2067	580234	6213504	15	0.2	mottle and pisolithic lag, qz, Tertiary calcarenitic conglomerate	-	OB material, several MC within broader valley system
MOREENIA	5244980	EL2067	574289	6210625	6	0.4	Tertiary calcrete and silcrete, rare qz	-	OB sample, adjacent to cultivated fields, all contriburory channels poorly defined
MOREENIA	5244981	EL2067	574018	6211947	1.8	0.3	mottle and pisolithic duricrust, minor lay, calcrete + qz	-	likely Zn contamination
MOREENIA	5244982	EL2067	573808	6210711	2	1.2	lag, qz, pisolithic and mottle lag within calcrete/calcarenite, yellow ferr clay	-	well grassed within fields, possibly affected by cultivation
MOREENIA	5244983	EL2067	573477	6210319	3	1.5	abundant lag, qz, Tertiary calcrete and Quaternary sands	-	well grassed adjacent to cultivated fields
MOREENIA	5244984	EL2067	571657	6212247	2	0.2	lag, duricrust fragments	-	valley drainage within cultivated fields
MOREENIA	5244985	EL2067	578159	6210745	6	0.3	abundant sand, grit and gravel, qz, ironstone after sandstone	-	OB sample, material quite sandy, well grassed drainage
MOREENIA	5244986	EL2067	578145	6210443	8	4	qz, duricrust fragments, lag, Tertiary calcrete	-	major drainage within cultivated fields, material very sandy
MOREENIA	5244987	EL2067	577414	6217691	1.5	0.4	abundant lag - mostly mottles with some pisoliths	-	valley drainage within cultivated fields
MOREENIA	5244988	EL2067	573897	6218104	1.5	0.2	calcrete, minor lag	-	-
MOREENIA	5244989	EL2067	572379	6219663	2	0.2	lag	-	very broad and poorly defined valley system, subject to cultivation
MOREENIA	5244990	EL2067	573219	6218710	5	0.2	-	-	broad, well grassed valley within cultivated fields
MOREENIA	5244991	EL2067	577204	6225152	3	0.2	mottled saprolite, lag	-	well grassed, shallow valley drainage
MOREENIA	5244992	EL2067	584288	6222874	5	0.2	minor lag	-	both OB and MC samples, poorly defined valley drainage, evidence for elevated salinity
MOREENIA	5244993	EL2067	583753	6219938	15	0.2	qz, lag (mostly pisoliths), saprolite fragments	-	broad valley drainage, evidence for elevated salinity
MOREENIA	5244994	EL2067	582358	6217112	1.5	0.1	mottled saprolite after sandstone, sugary textures qz, minor lag	-	poorly defined MC within shallow valley drainage, sample site within cultivated field

Area	Sampno	Tenement	AMG	AMG	Stream	Bank			
			East	North	Width (m)	Height (m)	Float	Outcrop	Comments
MOREENIA	5244995	EL2067	583443	6217281	2.5	0.2	heavily weathered holocrystalline leucogranite, lag, qz, grit	-	material quite sandy, evidence for elevated salinity
MOREENIA	5244996	EL2067	580203	6218962	2	0.6	minor lag (both mottles and pisoliths, all with cutan)	-	well grassed, near to cultivated fields
MOREENIA	5244997	EL2067	580452	6218911	10	0.2	duricrust after sandstone, ferr saprolite	-	OB material (MC altered by human activity), evidence for elevated salinity
MOREENIA	5244998	EL2067	574853	6220178	5	0.2	minor lag	-	broad, shallow valley drainage, well grassed within cultivated fields
MOREENIA	5244999	EL2067	575433	6221205	2	0.2	calcrete, in situ lag horizons	-	well defined MC, altered downstream by agricultural activity
MOREENIA	5245000	EL2067	575245	6220929	1	0.3	lag	-	OB material, well vegetated, well defined valley drainage

APPENDIX IV

-80# STREAM SEDIMENT SAMPLE GEOCHEMICAL LEDGER

EL2067 MOREENIA -80# STREAM SEDIMENT SAMPLE GEOCHEMICAL LEDGER																													
AREA	SAMPNO	TENEMENT	EAST	NORTH	MATERIAL	DPO	Ag	As	Bi	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	Pb	Sb	Sn	Th	U	Zn	Au	Au Dp1	Pt	Pt Dp1	Pd	Pd Dp1
						SCHEME	IC3M	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3M	IC3E	FA3M	FA3M	FA3M	FA3M	FA3M	FA3M
						DL	0.1	3	0.1	2	2	2	100	5	0.1	2	5	5	5	5	0.02	0.02	2	0.1	0.1	0.2	0.2	0.2	0.2
						UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPB	PPB	PPB	PPB	PPB	PPB
MOREENIA	5243501	EL2067	591536	6204474	-80#SS	81594	<0.1	<3	0.2	4	32	11	21300	240	0.7	11	200	15	<5	10	6	1.1	22	0.8	na	0.4	na	<0.2	na
MOREENIA	5243502	EL2067	591051	6204756	-80#SS	81594	0.2	<3	0.5	4	36	13	35500	800	0.5	9	260	25	<5	10	10	2.6	23	0.7	na	0.4	na	0.4	na
MOREENIA	5243506	EL2067	585812	6204998	-80#SS	81594	0.2	6	1	5	80	25	31600	320	1.1	12	320	35	20	15	17	4.7	21	0.8	na	0.4	na	1.2	na
MOREENIA	5243507	EL2067	586025	6204965	-80#SS	81594	0.2	<3	0.4	3	22	11	19700	300	0.3	7	100	15	<5	10	8.5	1.45	14	0.8	na	0.4	na	0.6	na
MOREENIA	5243508	EL2067	586533	6206317	-80#SS	81594	0.3	<3	0.6	5	39	12	21700	700	1.7	9	360	40	15	15	28.5	4.4	31	0.5	na	<0.2	na	<0.2	na
MOREENIA	5243509	EL2067	587285	6206705	-80#SS	81594	0.2	<3	1.1	3	44	8	25600	130	0.9	11	130	25	15	10	13.5	1.9	14	0.7	na	<0.2	na	0.4	na
MOREENIA	5243510	EL2067	589186	6206008	-80#SS	81594	0.4	6	1.5	5	43	22	28900	820	1.2	12	1400	30	<5	10	19	8.5	48	0.5	na	0.6	na	0.4	na
MOREENIA	5243511	EL2067	589356	6205954	-80#SS	81594	0.2	4	1.7	4	50	11	21400	280	1.1	12	440	25	5	10	17.5	3.7	15	0.6	na	<0.2	na	<0.2	na
MOREENIA	5243512	EL2067	590528	6206947	-80#SS	81594	0.1	<3	0.7	3	36	12	26100	340	0.6	8	115	25	<5	10	9	1.85	17	1	na	0.6	na	0.6	na
MOREENIA	5243513	EL2067	590423	6207061	-80#SS	81594	0.2	6	1.4	7	54	21	30300	1600	0.9	15	340	25	5	10	16.5	5.5	43	0.8	na	0.4	na	0.4	na
MOREENIA	5243514	EL2067	590913	6207330	-80#SS	81594	0.2	<3	0.4	3	39	25	36100	260	0.7	8	580	25	<5	10	10	1.8	27	0.4	na	0.4	na	0.8	na
MOREENIA	5243515	EL2067	591154	6207709	-80#SS	81594	0.2	4	0.9	4	38	11	26700	580	0.6	7	175	25	<5	10	15.5	3.1	16	0.7	na	0.4	na	0.4	na
MOREENIA	5243516	EL2067	591194	6208254	-80#SS	81594	0.2	6	0.6	7	48	19	38200	280	1	16	200	35	15	10	15	2.4	24	0.5	na	0.2	na	0.4	na
MOREENIA	5243517	EL2067	591571	6209139	-80#SS	81594	0.1	<3	0.7	3	30	11	24500	420	0.7	8	185	25	5	10	16	3.2	16	0.6	na	0.2	na	0.4	na
MOREENIA	5243518	EL2067	588800	6209000	-80#SS	81594	0.2	<3	0.4	2	27	7	18600	440	0.6	5	165	20	<5	10	12.5	1.95	16	0.7	na	<0.2	na	<0.2	na
MOREENIA	5243519	EL2067	587332	6207337	-80#SS	81594	0.4	6	1	23	43	15	39400	8800	2	15	400	35	<5	10	34.5	5	48	0.9	na	0.2	na	0.4	na
MOREENIA	5243528	EL2067	584116	6204314	-80#SS	81594	0.3	<3	0.4	<2	18	8	15400	260	0.8	3	240	20	<5	10	15	2.3	24	0.3	na	<0.2	na	<0.2	na
MOREENIA	5243529	EL2067	583891	6204769	-80#SS	81594	0.3	<3	0.4	<2	39	9	31800	220	1.4	7	220	40	10	10	25.5	3.8	18	0.4	na	0.2	na	0.4	na
MOREENIA	5243530	EL2067	583899	6204628	-80#SS	81594	0.5	4	0.3	2	36	10	36500	240	1.6	7	520	40	15	10	28.5	4.2	22	0.7	na	<0.2	na	0.4	na
MOREENIA	5243543	EL2067	584851	6204690	-80#SS	81594	0.3	10	0.7	3	29	6	29900	280	1	6	500	40	<5	10	53	5	52	0.4	na	<0.2	na	0.2	na
MOREENIA	5243544	EL2067	583372	6206887	-80#SS	81594	0.6	<3	0.3	<2	33	7	30400	125	2.5	7	360	45	<5	10	51	6.5	20	0.2	na	<0.2	na	<0.2	na
MOREENIA	5243545	EL2067	583388	6207116	-80#SS	81594	0.4	4	0.3	<2	16	6	21900	50	1.4	63	320	35	<5	5	35	6.5	14	0.6	na	<0.2	na	<0.2	na
MOREENIA	5243546	EL2067	583820	6207930	-80#SS	81594	0.4	4	0.3	2	21	9	28000	220	2.4	7	360	40	5	10	31	4.7	20	0.9	na	<0.2	na	<0.2	na
MOREENIA	5243547	EL2067	584127	6208212	-80#SS	81594	0.2	<3	0.2	<2	5	5	7700	75	0.7	2	200	25	<5	5	19.5	2.5	13	0.6	na	<0.2	na	<0.2	na
MOREENIA	5243548	EL2067	583741	6208626	-80#SS	81594	0.4	<3	0.3	5	26	12	23700	460	1.6	9	540	35	<5	10	26.5	3.4	26	0.5	na	<0.2	na	<0.2	na
MOREENIA	5243549	EL2067	584899	6208883	-80#SS	81594	0.3	4	0.3	4	27	8	31500	125	1.9	9	380	35	5	10	24.5	2.9	25	0.6	na	<0.2	na	<0.2	na
MOREENIA	5243550	EL2067	584939	6207992	-80#SS	81594	0.4	4	0.3	4	28	10	24500	300	2	8	420	40	10	10	30	4.4	23	0.5	na	<0.2	na	<0.2	na
MOREENIA	5243555	EL2067	582637	6206050	-80#SS	81594	0.4	<3	0.2	<2	16	7	14300	195	0.8	4	280	35	<5	5	24.5	2.7	25	0.3	na	<0.2	na	<0.2	na
MOREENIA	5243556	EL2067	582306	6206404	-80#SS	81594	0.3	<3	0.2	3	30	6	19900	340	0.7	6	200	30	<5	5	21	2.4	25	1.5	na	0.4	na	0.2	na
MOREENIA	5243557	EL2067	582439	6206461	-80#SS	81594	0.4	4	0.4	6	33	13	33900	420	1.7	10	360	45	5	10	22.5	3.4	34	0.7	na	<0.2	na	<0.2	na
MOREENIA	5243558	EL2067	582422	6207136	-80#SS	81594	0.3	<3	0.2	<2	9	5	12000	100	0.9	2	260	35	<5	5	32	4.5	13	0.9	na	<0.2	na	<0.2	na
MOREENIA	5243559	EL2067	582919	6205925	-80#SS	81594	0.4	<3	0.2	<2	18	10	15000	170	1.1	5	420	30	<5	10	22.5	2.7	21	0.4	na	<0.2	na	<0.2	na
MOREENIA	5243560	EL2067	583124	6206068	-80#SS	81594	0.1	<3	0.1	<2	7	3	7800	75	0.7	3	105	30	<5	10	4.5	0.97	8	0.6	na	<0.2	na	<0.2	na
MOREENIA	5243561	EL2067	581566	6207361	-80#SS	81594	0.4	6	0.3	5	27	8	27200	360	1.5	8	260	40	<5	10	22	2.6	25	0.5	na	<0.2	na	<0.2	na
MOREENIA	5243562	EL2067	581696	6207548	-80#SS	81594	0.4	4	0.3	4	35	10	39200	220	1.9	10	220	65	20	10	17	2.5	27	0.5	na	<0.2	na	0.4	na
MOREENIA	5243563	EL2067	581561	6208280	-80#SS	81594	0.3	4	0.1	2	26	6	23700	115	0.9	6	300	25	<5	10	10	0.99	21	0.6	na	<0.2	na	<0.2	na
MOREENIA	5243564	EL2067	580991	6208143	-80#SS	81594	0.2	4	0.2	3	22	6	20900	260	1.1	5	240	25	<5	5	21.5	2.4	32	1	na	<0.2	na	<0.2	na
MOREENIA	5243565	EL2067	580335	6209161	-80#SS	81594	0.2	<3	0.2	3	27	4	18500	100	0.7	8	125	15	<5	5	7	0.64	40	0.6	na	<0.2	na	<0.2	na
MOREENIA	5243566	EL2067	577991	6205835	-80#SS	81594	0.2	<3	0.2	<2	25	8	16800	195	1.1	7	560	15	<5	5	7.5	0.75	19	0.6	na	<0.2	na	<0.2	na
MOREENIA	5243567	EL2067	577000	6204950	-80#SS	81594	0.3	4	<0.1	<2	10	5	12400	160	0.5	4	240	20	<5	5	34.5	3.1	16	0.5	na	<0.2	na	<0.2	na
MOREENIA	5243568	EL2067	576400	6204247	-80#SS	81594	0.4	<3	0.2	<2	18	6	15700	150	0.9	5	260	25	<5	5	35	3.3	17	0.4	na	<0.2	na	<0.2	na
MOREENIA	5243569	EL2067	576269	6203281	-80#SS	81594	1	<3	0.3	3	16	5	14700	195	0.8	5	260	25	<5	<5	34	2.9	31	0.8	na	<0.2	na	<0.2	na
MOREENIA	5243574	EL2067	576204	6201182	-80#SS	81594	0.2	<3	0.1	<2	21	4	16400	100	0.5	5	105	20	<5	5	6	0.91	11	0.8	na	<0.2	na	<0.2	na
MOREENIA	5243578	EL2067	578452	6208587	-80#SS	81594	0.1	<3	0.1	2	21	5	12300	70	0.7	6	195	10	<5	5	3.3	0.41	9	1	na	0.6	na	<0.2	na
MOREENIA	5243579	EL2067	578226	6206661	-80#SS	81594	0.5	4	0.2	4	32	13	30600	240	1.9	9	360	25	5	10	9	1.1	15	0.9	na	0.4	na	<0.2	na
MOREENIA	5243580	EL2067	578126	6207364	-80#SS	81594	0.2	<3	<0.1	<2	6	5	7200	70	0.6	4	85	5	<5	<5	2.5	0.32	7	0.4	na	<0.2	na	<0.2	na
MOREENIA	5243581	EL2067	577819	6207317	-80#SS	81594	0.3	<3	0.2	3	36	13	19200	95	1.1	8	460	10	<5	5	3.4	0.53	13	0.4	na	<0.2	na	<0.2	na
MOREENIA	5243582	EL2067	577547	6206658	-80#SS	81594	0.3	<3	0.2	3	26	9	17800	125	1.5	9	260	15	<5	10	5.5	0.6	11	0.8	na	<0.2	na	<0.2	na

AREA	SAMPNO	TENEMENT	EAST	NORTH	MATERIAL	DPO	Ag	As	Bi	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	Pb	Sb	Sn	Th	U	Zn	Au	Au Dp1	Pt	Pt Dp1	Pd	Pd Dp1
						SCHEME	IC3M	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3M	IC3E	FA3M	FA3M	FA3M	FA3M	FA3M	FA3M
						DL	0.1	3	0.1	2	2	2	100	5	0.1	2	5	5	5	5	0.02	0.02	2	0.1	0.1	0.2	0.2	0.2	0.2
						UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPB	PPB	PPB	PPB	PPB	PPB
MOREENIA	5243583	EL2067	578253	6207802	-80#SS	81594	0.5	4	0.1	2	27	8	16800	150	1	7	380	15	<5	5	3.7	0.46	12	0.1	na	<0.2	na	<0.2	na
MOREENIA	5243584	EL2067	579672	6208762	-80#SS	81594	0.7	<3	0.1	3	18	7	23400	145	0.9	5	110	25	<5	5	6	0.57	19	<0.1	na	0.2	na	0.2	na
MOREENIA	5243585	EL2067	580761	6204571	-80#SS	81594	0.6	<3	0.2	<2	8	5	12300	90	0.8	3	135	35	<5	5	6	1.05	20	0.2	na	<0.2	na	<0.2	na
MOREENIA	5243586	EL2067	580439	6204425	-80#SS	81594	1	4	0.2	5	23	9	30600	400	1.1	8	220	25	<5	10	6	1.05	51	0.5	na	0.4	na	<0.2	na
MOREENIA	5243587	EL2067	580743	6204875	-80#SS	81594	0.6	<3	0.2	<2	12	6	11000	120	0.8	4	200	30	<5	10	8	1.4	37	0.3	na	<0.2	na	<0.2	na
MOREENIA	5243588	EL2067	579895	6205290	-80#SS	81594	0.6	<3	<0.1	<2	13	7	16100	130	0.8	4	300	25	<5	5	5.5	0.62	22	0.2	na	<0.2	na	<0.2	na
MOREENIA	5243589	EL2067	579966	6205216	-80#SS	81594	0.9	<3	<0.1	2	12	6	13700	155	0.9	4	260	25	<5	5	6	0.81	30	0.4	na	<0.2	na	<0.2	na
MOREENIA	5243590	EL2067	580169	6206327	-80#SS	81594	0.2	<3	<0.1	<2	5	<2	5600	80	0.3	<2	70	20	<5	<5	12.5	1.05	13	0.2	na	<0.2	na	<0.2	na
MOREENIA	5243591	EL2067	580073	6206499	-80#SS	81594	0.7	4	0.3	3	37	7	18200	60	1.2	10	260	15	<5	10	4.2	0.32	16	1.1	na	<0.2	na	<0.2	na
MOREENIA	5243592	EL2067	580268	6206650	-80#SS	81594	0.2	4	0.2	5	33	9	26500	620	0.5	7	240	25	5	5	32	3	57	0.3	na	<0.2	na	<0.2	na
MOREENIA	5243593	EL2067	580451	6207171	-80#SS	81594	1.3	4	0.1	3	34	7	22300	240	1.2	9	300	20	<5	5	5.5	0.5	18	0.8	na	<0.2	na	<0.2	na
MOREENIA	5243594	EL2067	580087	6207359	-80#SS	81594	1.1	<3	0.1	3	14	5	18000	240	1	5	130	20	<5	5	4	0.36	20	0.9	na	<0.2	na	<0.2	na
MOREENIA	5243595	EL2067	580928	6205381	-80#SS	81594	1.5	4	0.2	6	40	15	19200	340	0.8	8	540	30	<5	5	4.1	0.6	29	0.3	na	<0.2	na	<0.2	na
MOREENIA	5243596	EL2067	581572	6204924	-80#SS	81594	2.5	4	0.2	7	23	12	26700	800	1.3	9	500	30	5	10	5.5	0.87	45	1	na	<0.2	na	<0.2	na
MOREENIA	5243597	EL2067	581274	6204667	-80#SS	81594	0.2	6	0.2	14	46	10	44200	720	1	13	580	20	5	10	32.5	3.6	71	1.2	na	<0.2	na	<0.2	na
MOREENIA	5243609	EL2067	571177	6208315	-80#SS	81594	0.2	4	0.3	5	31	6	24000	80	0.8	11	105	15	5	10	11	0.69	14	1	na	0.2	na	0.2	na
MOREENIA	5243610	EL2067	573074	6208259	-80#SS	81594	0.2	<3	0.2	3	17	5	17300	175	0.7	6	95	20	<5	5	13	1.1	13	0.3	na	<0.2	na	<0.2	na
MOREENIA	5243611	EL2067	572505	6209030	-80#SS	81594	0.3	8	0.4	8	64	6	39100	100	1.8	21	140	20	15	10	14.5	0.97	17	0.5	na	<0.2	na	<0.2	na
MOREENIA	5243612	EL2067	572500	6209601	-80#SS	81594	0.2	<3	0.2	3	30	5	17700	100	0.7	8	75	15	<5	10	8.5	0.73	9	0.5	na	<0.2	na	<0.2	na
MOREENIA	5243613	EL2067	574179	6208614	-80#SS	81594	0.1	<3	0.1	3	26	5	16900	105	0.8	8	90	20	5	10	17.5	1.6	13	0.5	na	<0.2	na	<0.2	na
MOREENIA	5243614	EL2067	575392	6207282	-80#SS	81594	<0.1	<3	<0.1	<2	16	5	8800	50	0.4	5	160	10	<5	5	5.5	0.55	9	0.3	na	<0.2	na	<0.2	na
MOREENIA	5243615	EL2067	575176	6207011	-80#SS	81594	<0.1	<3	0.1	<2	18	3	11600	40	0.7	6	55	10	<5	5	16	1.05	7	0.3	na	<0.2	na	<0.2	na
MOREENIA	5243616	EL2067	575343	6206655	-80#SS	81594	0.2	<3	0.2	6	45	6	32000	85	1.6	14	185	35	15	10	24.5	2	18	0.9	na	0.2	na	0.4	na
MOREENIA	5243617	EL2067	575226	6208276	-80#SS	81594	<0.1	6	0.1	4	25	4	16700	55	0.7	9	65	10	<5	10	9	0.64	9	0.8	na	<0.2	na	<0.2	na
MOREENIA	5243635	EL2067	573771	6206839	-80#SS	81594	0.1	<3	0.1	3	25	5	19300	85	0.7	9	130	15	<5	10	13	1.1	11	0.4	na	<0.2	na	<0.2	na
MOREENIA	5243636	EL2067	574297	6205459	-80#SS	81594	0.3	4	0.2	2	26	7	17100	80	1.6	9	140	25	10	10	23	2.8	13	0.7	na	<0.2	na	<0.2	na
MOREENIA	5243637	EL2067	575558	6205457	-80#SS	81594	0.2	4	0.2	3	38	11	28500	135	1.6	10	240	40	10	10	41	4.4	23	0.6	na	0.4	na	0.6	na
MOREENIA	5243638	EL2067	575973	6206303	-80#SS	81594	0.3	4	0.2	3	37	12	27600	185	1.8	9	420	45	15	10	40	5	20	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5243639	EL2067	576260	6207570	-80#SS	81594	0.1	4	0.2	4	26	6	21300	80	0.9	11	220	15	5	10	11.5	0.73	11	1.2	na	<0.2	na	<0.2	na
MOREENIA	5243640	EL2067	576149	6207541	-80#SS	81594	0.2	6	0.2	6	41	6	31300	60	0.9	17	115	15	10	10	15.5	0.77	13	0.7	na	<0.2	na	<0.2	na
MOREENIA	5243641	EL2067	574529	6204497	-80#SS	81594	0.2	4	0.3	2	35	8	23500	90	1.7	9	115	20	5	10	15	1.6	10	0.8	na	<0.2	na	<0.2	na
MOREENIA	5243642	EL2067	574355	6204481	-80#SS	81594	0.2	6	0.2	3	14	7	15600	155	0.7	5	300	30	5	10	105	8	15	0.3	na	<0.2	na	<0.2	na
MOREENIA	5243643	EL2067	575494	6202723	-80#SS	81594	0.3	6	0.2	5	27	5	24300	135	1.2	7	200	25	<5	5	55	4.1	40	0.6	na	0.2	na	0.2	na
MOREENIA	5243644	EL2067	575434	6202366	-80#SS	81594	0.2	<3	0.2	4	29	10	24000	300	1	11	400	25	5	10	20.5	2.3	22	0.9	na	<0.2	na	<0.2	na
MOREENIA	5243645	EL2067	575048	6202090	-80#SS	81594	0.2	<3	0.2	3	53	8	20000	480	0.5	7	240	25	5	10	48	4.8	20	0.2	na	<0.2	na	<0.2	na
MOREENIA	5243658	EL2067	575221	6199640	-80#SS	81594	0.3	8	0.2	3	21	4	17300	95	1.3	5	240	25	<5	<5	53	7.5	19	0.2	na	<0.2	na	<0.2	na
MOREENIA	5243659	EL2067	574760	6200456	-80#SS	81594	<0.1	<3	<0.1	<2	12	<2	11500	75	0.6	4	120	15	<5	<5	13.5	1.5	9	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5243660	EL2067	574891	6200686	-80#SS	81594	<0.1	<3	<0.1	<2	10	4	9400	30	0.4	8	35	5	<5	5	4.9	0.4	61	0.6	na	0.2	na	<0.2	na
MOREENIA	5243661	EL2067	574725	6201084	-80#SS	81594	0.2	4	0.3	6	40	10	30300	195	1.4	15	500	20	5	10	11.5	1.45	43	0.3	na	<0.2	na	<0.2	na
MOREENIA	5243662	EL2067	573253	6200852	-80#SS	81594	0.3	4	0.2	4	28	14	23400	600	1.1	9	260	35	10	10	28	3.8	51	0.4	na	<0.2	na	<0.2	na
MOREENIA	5243663	EL2067	571870	6200589	-80#SS	81594	0.2	8	0.3	6	60	10	37900	105	1.9	20	500	30	15	10	16	1.6	18	1.2	na	<0.2	na	0.2	na
MOREENIA	5243664	EL2067	574572	6198854	-80#SS	81594	0.1	<3	0.2	6	45	25	39600	280	0.8	13	135	30	<5	10	25.5	2.4	50	1.2	na	0.2	na	0.4	na
MOREENIA	5243665	EL2067	573640	6199910	-80#SS	81594	0.4	4	0.3	11	71	30	52400	920	2	21	2800	45	20	10	23.5	6.5	48	1	na	0.4	na	0.8	na
MOREENIA	5243666	EL2067	572866	6195969	-80#SS	81594	0.5	<3	0.2	10	54	40	52300	1400	1.3	16	340	35	15	10	38	4.1	48	<0.1	na	0.8	na	0.6	na
MOREENIA	5243667	EL2067	572977	6195970	-80#SS	81594	0.7	<3	0.1	4	27	12	23300	115	2.3	6	220	40	<5	5	36.5	3.4	25	0.6	na	0.2	na	0.2	na
MOREENIA	5243668	EL2067	573196	6196309	-80#SS	81594	0.2	<3	0.1	5	29	8	42800	300	1.3	6	400	25	<5	5	35	3.4	42	1.4	na	0.2	na	0.4	na
MOREENIA	5243669	EL2067	572986	6196449	-80#SS	81594	0.2	<3	0.1	6	31	16	29800	620	0.6	10	260	20	10	10	22.5	2.1	32	0.5	na	0.4	na	0.2	na
MOREENIA	5243708	EL2067	592714	6208361	-80#SS	81594	0.1	6	0.3	6	32	10	18300	110	0.6	13	340	35	<5	5	22.5	2.8	16	0.4	na	<0.2	na	<0.2	na
MOREENIA	5243709	EL2067	592588	6208244	-80#SS	81594	0.1	<3	0.5	3	25	9	21600	360	0.2	6	165	20	5	5	7	1.6	16	0.1	na	0.4	na	0.4	na
MOREENIA	5244082	EL2048	586632	6209741	-80#SS	81598	0.1	<3	0.3	2	16	9	15900	240	2.1	<2	300	50	5	5	83	6	20	<0.1	na	<0.2	na	<0.2	na

AREA	SAMPNO	TENEMENT	EAST	NORTH	MATERIAL	DPO	Ag	As	Bi	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	Pb	Sb	Sn	Th	U	Zn	Au	Au Dp1	Pt	Pt Dp1	Pd	Pd Dp1
						SCHEME	IC3M	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3M	IC3E	FA3M	FA3M	FA3M	FA3M	FA3M	FA3M
						DL	0.1	3	0.1	2	2	2	100	5	0.1	2	5	5	5	5	0.02	0.02	2	0.1	0.1	0.2	0.2	0.2	0.2
						UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPB	PPB	PPB	PPB	PPB	PPB
MOREENIA	5244091	EL2067	591377	6214573	-80#SS	81598	0.2	<3	0.2	3	20	6	14600	120	0.7	9	320	10	<5	<5	10	1.3	15	0.3	<0.1	<0.2	0.2	<0.2	0.2
MOREENIA	5244092	EL2067	591320	6213779	-80#SS	81598	<0.1	<3	0.2	3	29	9	16600	65	1	9	280	10	<5	<5	7.5	0.76	17	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244093	EL2067	590462	6215143	-80#SS	81598	<0.1	<3	0.1	3	19	5	15400	95	0.9	2	300	25	<5	<5	29	2.8	24	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244094	EL2067	590055	6214503	-80#SS	81598	<0.1	<3	0.3	<2	14	5	10300	110	1	5	200	20	<5	<5	21	2.2	15	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244095	EL2067	590021	6214828	-80#SS	81598	<0.1	<3	0.1	<2	12	5	8800	75	0.9	4	300	10	<5	<5	11	1.35	13	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244096	EL2067	586204	6214838	-80#SS	81598	<0.1	<3	0.2	3	36	8	23800	165	1.5	7	280	20	<5	<5	28	2.2	19	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244097	EL2067	587251	6215199	-80#SS	81598	<0.1	<3	0.2	5	41	12	24900	135	1.7	9	340	25	<5	<5	32.5	2.4	25	<0.1	na	<0.2	na	0.2	na
MOREENIA	5244098	EL2067	587613	6215302	-80#SS	81598	<0.1	<3	0.1	3	17	8	12200	110	0.7	4	360	20	<5	<5	35	2.7	15	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244099	EL2067	587599	6216137	-80#SS	81598	<0.1	6	0.3	4	34	5	22600	85	1.5	10	220	20	<5	<5	46	3.1	20	0.1	na	<0.2	na	0.2	na
MOREENIA	5244100	EL2067	591334	6217894	-80#SS	81598	<0.1	<3	0.8	4	29	9	18500	180	0.7	9	500	25	<5	<5	13.5	2.2	30	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244101	EL2067	591276	6216485	-80#SS	81598	<0.1	<3	0.3	4	22	7	18400	165	1.2	9	360	25	<5	<5	28	3.1	26	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244102	EL2067	588559	6215636	-80#SS	81598	<0.1	4	0.2	3	21	7	19800	260	1.3	6	240	25	<5	<5	50	4.3	22	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244103	EL2067	585450	6214328	-80#SS	81598	<0.1	<3	0.2	4	36	10	24900	105	2.2	7	500	25	<5	5	52	4.3	19	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244104	EL2067	584291	6216539	-80#SS	81598	<0.1	4	0.2	4	18	5	20600	150	1.1	4	360	30	<5	<5	86	5.5	58	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244105	EL2067	586119	6217767	-80#SS	81598	<0.1	<3	0.2	5	31	7	19100	115	0.9	8	200	25	<5	<5	42.5	2.7	20	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244106	EL2067	586729	6217994	-80#SS	81598	<0.1	6	0.3	3	19	6	12100	75	0.8	6	380	30	<5	<5	160	9	13	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244107	EL2067	586082	6216963	-80#SS	81598	<0.1	<3	0.2	4	34	6	21200	85	1.1	9	260	15	<5	<5	25	1.85	17	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244108	EL2067	584774	6218089	-80#SS	81598	<0.1	6	0.1	<2	11	5	9500	100	0.7	5	300	15	<5	<5	23.5	1.95	14	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244110	EL2067	587055	6213788	-80#SS	81598	<0.1	<3	0.1	<2	16	5	13700	220	0.6	4	280	15	<5	<5	39.5	4.2	16	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244111	EL2067	587056	6213893	-80#SS	81598	0.4	<3	0.1	3	14	5	14900	120	0.6	3	155	10	<5	<5	10.5	1.1	13	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244112	EL2067	586621	6214696	-80#SS	81598	<0.1	<3	0.2	<2	26	6	17400	95	0.9	4	195	15	<5	<5	10	1.1	15	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244113	EL2067	586881	6214711	-80#SS	81598	<0.1	<3	0.2	3	34	9	16800	140	0.8	8	260	20	<5	<5	12.5	2.1	18	1	na	<0.2	na	<0.2	na
MOREENIA	5244114	EL2067	584237	6217939	-80#SS	81598	<0.1	<3	0.1	2	16	5	12400	90	0.8	5	220	15	<5	<5	33.5	2	18	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244115	EL2067	585225	6217113	-80#SS	81598	<0.1	<3	0.2	3	26	6	17200	240	1.1	8	220	15	<5	<5	33	2.1	16	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244116	EL2067	581625	6210100	-80#SS	54322	0.3	8	0.4	9	12	11	10800	120	0.4	180	280	20	<5	<5	135	5.5	30	1.1	na	0.2	na	<0.2	na
MOREENIA	5244117	EL2067	581800	6210050	-80#SS	54322	0.2	<3	0.2	5	16	8	18400	180	0.9	44	280	30	<5	5	56	5.5	24	0.9	na	0.2	na	<0.2	na
MOREENIA	5244118	EL2067	580250	6209825	-80#SS	54322	0.2	6	0.1	5	22	6	21800	220	1.1	13	260	30	<5	5	76	6	24	0.4	na	0.2	na	<0.2	na
MOREENIA	5244119	EL2067	579900	6210500	-80#SS	54322	0.1	<3	0.2	4	28	6	17500	60	0.9	5	220	15	<5	<5	17.5	1	19	0.3	na	0.2	na	<0.2	na
MOREENIA	5244120	EL2067	580950	6211550	-80#SS	54322	0.2	8	0.2	5	32	6	25900	70	1.3	3	90	20	<5	<5	26.5	1.25	17	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244121	EL2067	580500	6211125	-80#SS	54322	0.1	<3	0.1	3	25	5	15800	60	1.1	6	200	5	<5	<5	15	0.96	12	0.5	na	<0.2	na	<0.2	na
MOREENIA	5244122	EL2067	578450	6217625	-80#SS	54322	0.1	<3	0.1	<2	13	5	9600	85	0.7	<2	240	10	<5	<5	47.5	2.2	9	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244123	EL2067	578525	6216750	-80#SS	54322	0.2	4	0.1	3	21	7	15500	120	0.9	5	300	10	<5	<5	36.5	1.7	13	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244124	EL2067	579250	6216650	-80#SS	54322	0.9	8	3	5	21	20	13700	180	2.6	9	220	40	<5	<5	54	2.2	32	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244125	EL2067	579175	6216100	-80#SS	54322	0.1	<3	0.2	<2	8	<2	6100	30	0.4	<2	55	10	<5	<5	13.5	0.56	6	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244126	EL2067	580025	6217625	-80#SS	54322	0.2	<3	0.2	<2	23	16	20600	115	1.4	<2	400	15	<5	<5	40.5	2	16	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244127	EL2067	580225	6218150	-80#SS	54322	<0.1	4	0.1	3	18	13	14500	115	0.8	8	360	15	<5	5	39.5	2.1	17	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244128	EL2067	578400	6221875	-80#SS	54322	<0.1	<3	0.2	3	24	6	15200	60	0.9	4	200	10	<5	<5	10	1.05	10	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244129	EL2067	579825	6221200	-80#SS	54322	0.2	6	0.1	2	19	6	11700	60	0.8	5	300	5	<5	<5	5.5	0.6	13	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244130	EL2067	581300	6221425	-80#SS	54322	0.2	<3	0.1	<2	14	5	9900	65	0.5	3	260	5	<5	<5	5	0.59	9	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244131	EL2067	570825	6211775	-80#SS	54322	0.1	4	0.4	5	25	13	18300	460	0.9	6	300	20	<5	<5	12.5	1.65	12	<0.1	0.1	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244132	EL2067	571050	6210950	-80#SS	54322	0.1	<3	0.3	3	31	11	19100	190	0.7	6	440	15	<5	<5	11.5	1.75	17	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244133	EL2067	572900	6212650	-80#SS	54322	<0.1	<3	0.2	<2	19	4	11900	55	0.5	<2	135	5	<5	<5	5	0.72	5	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244134	EL2067	580350	6225900	-80#SS	54322	<0.1	6	0.2	3	24	5	15400	50	0.6	2	200	10	<5	5	7	0.64	10	1.3	0.9	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244135	EL2067	581650	6226300	-80#SS	54322	0.1	<3	<0.1	<2	10	6	7100	45	0.4	<2	240	<5	<5	<5	2.6	0.36	11	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244136	EL2067	577400	6222150	-80#SS	54322	0.2	<3	0.3	<2	17	5	13100	60	0.5	3	100	10	<5	<5	8.5	0.83	4	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244137	EL2067	576650	6223000	-80#SS	54322	<0.1	<3	0.3	<2	20	5	14500	65	0.5	3	195	10	<5	<5	8.5	0.55	8	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244138	EL2067	576850	6223400	-80#SS	54322	<0.1	<3	0.2	6	18	7	11900	65	0.5	10	180	15	<5	<5	5.5	2.1	13	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244139	EL2067	576300	6222700	-80#SS	54322	0.4	4	0.4	9	37	14	22800	140	1.1	26	125	25	<5	<5	9.5	5	26	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244140	EL2067	574050	6221600	-80#SS	54322	0.5	8	1.8	15	50	28	30000	220	2.5	41	320	50	<5	5	18.5	8.5	54	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244141	EL2067	574550	6222850	-80#SS	54322	0.2	4	0.3	<2	20	7	12500	75	0.9	5	260	15	<5	<5	11	1.3	18	<0.1	na	<0.2	na	<0.2	na

AREA	SAMPNO	TENEMENT	EAST	NORTH	MATERIAL	DPO	Ag	As	Bi	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	Pb	Sb	Sn	Th	U	Zn	Au	Au Dp1	Pt	Pt Dp1	Pd	Pd Dp1
						SCHEME	IC3M	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3M	IC3E	FA3M	FA3M	FA3M	FA3M	FA3M	FA3M
						DL	0.1	3	0.1	2	2	2	100	5	0.1	2	5	5	5	5	0.02	0.02	2	0.1	0.1	0.2	0.2	0.2	0.2
						UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPB	PPB	PPB	PPB	PPB	PPB
MOREENIA	5244142	EL2067	571150	6223475	-80#SS	54322	<0.1	<3	<0.1	<2	5	2	4600	30	0.2	<2	45	5	<5	<5	4.6	0.39	5	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244143	EL2067	570900	6221450	-80#SS	54322	0.3	4	0.2	4	25	4	14600	50	0.8	6	60	10	<5	<5	6.5	0.6	5	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244144	EL2067	570900	6220500	-80#SS	54322	0.2	<3	0.1	3	25	5	14900	40	0.7	6	100	15	<5	<5	7	0.53	8	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244145	EL2067	591600	6212000	-80#SS	54322	<0.1	4	0.2	<2	23	7	15600	200	0.5	5	165	15	<5	<5	8.5	1.1	12	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244146	EL2067	590600	6211250	-80#SS	54322	0.2	4	0.2	<2	10	6	7400	220	0.7	<2	340	30	<5	<5	54	4.9	12	1.4	na	<0.2	na	<0.2	na
MOREENIA	5244147	EL2067	589750	6218900	-80#SS	54322	0.1	4	0.2	2	13	5	8500	125	0.9	4	260	20	<5	<5	32	2.9	11	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244148	EL2067	589200	6220150	-80#SS	54322	<0.1	4	<0.1	2	9	6	7800	85	0.7	<2	300	20	<5	<5	28	2.4	27	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244149	EL2067	588300	6220000	-80#SS	54322	<0.1	<3	0.1	3	9	8	8700	85	0.8	<2	340	25	<5	<5	41.5	3.8	24	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244150	EL2067	589600	6220850	-80#SS	54322	0.1	6	0.2	<2	11	8	11000	100	0.9	<2	320	25	<5	<5	54	4.6	12	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244151	EL2067	589750	6220700	-80#SS	54322	0.1	<3	0.2	4	14	8	14900	110	1	<2	320	30	<5	<5	56	6.5	13	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244152	EL2067	588400	6220550	-80#SS	54322	0.2	10	0.3	6	36	10	29400	100	3	<2	140	45	10	10	51	3.7	14	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244167	EL2067	588800	6217650	-80#SS	54322	<0.1	4	0.1	3	17	4	14100	70	0.9	<2	160	15	<5	<5	38.5	2.6	5	0.5	na	<0.2	na	<0.2	na
MOREENIA	5244168	EL2067	589075	6216950	-80#SS	54322	0.1	<3	0.2	2	14	5	10800	85	0.8	<2	220	20	<5	<5	26	2.2	7	0.5	na	<0.2	na	<0.2	na
MOREENIA	5244169	EL2067	589275	6216850	-80#SS	54322	<0.1	<3	0.2	7	18	7	16600	620	0.9	<2	360	25	<5	5	25	2	17	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244170	EL2067	590150	6216725	-80#SS	54322	0.2	4	0.2	5	27	8	20300	175	1.6	<2	220	30	<5	5	47	4.1	14	0.2	0.2	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244171	EL2067	588425	6215150	-80#SS	54322	0.1	4	0.1	7	27	7	28800	1600	1.2	<2	380	30	5	10	53	4.1	15	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244172	EL2067	588625	6215000	-80#SS	54322	0.2	6	0.2	4	15	7	21800	880	1.7	<2	400	35	<5	5	65	6	32	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244173	EL2067	588150	6214300	-80#SS	54322	0.1	<3	0.1	3	8	4	14600	240	0.8	<2	300	30	<5	10	66	4.6	18	0.8	na	<0.2	na	<0.2	na
MOREENIA	5244174	EL2067	587975	6214350	-80#SS	54322	0.2	6	0.2	7	35	10	25300	160	2.1	<2	220	30	<5	10	55	3.5	14	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244175	EL2067	588225	6213900	-80#SS	54322	0.2	<3	0.2	2	8	6	10100	150	0.7	<2	460	30	<5	<5	38.5	2.8	14	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244176	EL2067	589850	6214100	-80#SS	54322	0.2	4	1	3	27	8	13900	105	1.9	2	340	25	<5	10	38	2.8	11	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244177	EL2067	591800	6220650	-80#SS	54322	<0.1	<3	0.7	3	16	7	22800	155	0.6	<2	300	20	<5	<5	22	2.1	15	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244178	EL2067	591650	6221100	-80#SS	54322	0.2	8	1.4	4	31	12	31100	220	1.2	<2	400	30	<5	<5	35.5	4	20	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244179	EL2067	591750	6221275	-80#SS	54322	0.1	4	0.5	<2	17	8	18400	130	0.5	<2	500	20	<5	<5	38.5	5	14	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244181	EL2067	605925	6216100	-80#SS	54322	0.5	<3	0.3	10	38	17	25900	500	0.5	17	260	20	<5	5	11	1.35	32	0.2	na	0.4	na	<0.2	na
MOREENIA	5244182	EL2067	602525	6216000	-80#SS	54322	0.5	12	0.3	15	59	21	36100	400	0.8	23	120	15	<5	10	3.4	0.44	29	0.4	na	0.2	na	0.2	na
MOREENIA	5244183	EL2067	602900	6222725	-80#SS	54322	0.5	<3	0.3	4	23	7	15700	80	0.8	6	360	15	<5	5	6	0.94	21	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244184	EL2067	602600	6224500	-80#SS	54322	0.8	4	0.3	7	28	10	18600	115	0.7	9	115	25	<5	<5	6	0.7	55	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244185	EL2067	588400	6226225	-80#SS	54322	0.5	<3	0.1	3	25	5	13500	80	0.7	5	260	10	<5	5	5	0.65	7	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244186	EL2067	587250	6226275	-80#SS	54322	0.4	4	<0.1	2	12	4	8500	65	0.4	2	185	5	<5	<5	3.6	0.44	80	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244187	EL2067	586000	6225975	-80#SS	54322	0.4	<3	<0.1	2	14	4	8500	65	0.4	4	135	5	<5	5	4.6	0.4	5	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244188	EL2067	584650	6224500	-80#SS	54322	0.4	<3	0.1	3	22	8	14200	110	0.5	5	280	10	<5	<5	8	0.61	12	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244189	EL2067	585050	6224925	-80#SS	54322	0.4	<3	0.1	<2	10	6	5500	55	0.3	2	190	5	<5	10	4.6	0.5	9	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244190	EL2067	587285	6224925	-80#SS	54322	0.4	6	0.1	3	28	5	18200	75	1	3	105	10	<5	5	7	0.71	16	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244191	EL2067	588100	6224675	-80#SS	54322	0.4	<3	0.1	2	14	8	7900	70	0.6	4	240	10	<5	<5	6.5	0.65	8	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244192	EL2067	588750	6224575	-80#SS	54322	0.4	4	0.2	3	21	5	13700	95	1.1	4	160	10	<5	10	11.5	1.05	8	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244193	EL2067	588825	6224125	-80#SS	54322	0.4	4	0.2	3	23	10	14700	85	0.6	7	440	20	<5	5	13	1.25	560	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244194	EL2067	588400	6223825	-80#SS	54322	0.4	4	0.1	3	19	6	15400	70	1	4	155	10	<5	<5	10.5	0.72	10	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244195	EL2067	587775	6223250	-80#SS	54322	0.5	<3	0.1	<2	15	5	10500	80	1.3	3	220	10	<5	<5	7.5	0.64	8	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244196	EL2067	587400	6222125	-80#SS	54322	0.5	4	0.2	3	24	8	15800	100	0.9	4	175	15	<5	10	13	0.95	200	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244197	EL2067	587250	6221975	-80#SS	54322	0.5	4	0.1	3	21	8	20300	115	0.9	3	220	15	<5	5	12	0.87	37	<0.1	0.2	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244198	EL2067	587200	6221675	-80#SS	54322	0.5	<3	0.2	<2	23	6	19000	80	0.7	<2	260	15	<5	5	18.5	1.15	11	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244199	EL2067	589550	6210425	-80#SS	54322	0.4	4	0.4	2	24	9	15600	240	0.6	4	240	25	<5	5	28.5	3.3	18	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244200	EL2067	588500	6210775	-80#SS	54322	0.5	6	0.4	3	18	8	18300	200	1.9	<2	480	35	<5	15	88	5.5	18	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244551	EL2067	601290	6209878	-80#SS	81598	0.1	<3	0.7	18	61	49	49800	800	0.7	32	900	10	5	10	6	1.25	84	0.2	na	0.8	na	1.4	na
MOREENIA	5244552	EL2067	601094	6210228	-80#SS	81598	0.1	<3	0.8	14	62	32	41400	700	0.5	30	320	15	5	10	4.3	1.2	65	0.2	na	0.8	na	1.2	na
MOREENIA	5244553	EL2067	599253	6210105	-80#SS	81598	<0.1	<3	0.9	12	52	24	35400	660	0.3	21	220	20	5	15	2.6	1.35	81	<0.1	<0.1	0.6	1	1.2	0.6
MOREENIA	5244554	EL2067	599160	6210190	-80#SS	81598	<0.1	<3	0.6	8	42	14	21200	520	0.3	16	240	20	5	5	11.5	2.7	32	<0.1	na	0.2	na	0.4	na
MOREENIA	5244555	EL2067	599806	6210489	-80#SS	81598	<0.1	<3	0.9	15	59	24	50500	1100	1	26	220	20	<5	15	6.5	2.5	64	0.1	na	0.8	na	0.8	na
MOREENIA	5244556	EL2067	600060	6211059	-80#SS	81598	0.1	<3	0.9	11	48	25	31800	840	0.7	17	580	20	10	15	8	15.5	55	0.1	na	0.6	na	1.6	na

AREA	SAMPNO	TENEMENT	EAST	NORTH	MATERIAL	DPO	Ag	As	Bi	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	Pb	Sb	Sn	Th	U	Zn	Au	Au Dp1	Pt	Pt Dp1	Pd	Pd Dp1
						SCHEME	IC3M	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3M	IC3E	FA3M	FA3M	FA3M	FA3M	FA3M	FA3M
						DL	0.1	3	0.1	2	2	2	100	5	0.1	2	5	5	5	5	0.02	0.02	2	0.1	0.1	0.2	0.2	0.2	0.2
						UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPB	PPB	PPB	PPB	PPB	PPB
MOREENIA	5244557	EL2067	599898	6211335	-80#SS	81598	0.1	<3	1.4	16	81	37	48200	720	0.9	34	720	30	10	15	13	2.8	74	0.1	na	0.2	na	0.4	na
MOREENIA	5244558	EL2067	600893	6211449	-80#SS	81598	<0.1	<3	0.6	6	30	11	19300	420	0.4	10	460	15	<5	5	12	1.75	33	<0.1	<0.1	<0.2	<0.2	0.2	0.2
MOREENIA	5244559	EL2067	601210	6211715	-80#SS	81598	<0.1	<3	0.8	6	31	11	20700	380	0.6	11	660	15	<5	5	11.5	1.95	32	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244560	EL2067	599497	6213648	-80#SS	81598	<0.1	<3	0.6	6	24	12	17000	340	0.3	11	120	15	<5	<5	7.5	1.3	21	<0.1	na	0.2	na	0.4	na
MOREENIA	5244561	EL2067	599143	6212573	-80#SS	81598	<0.1	<3	0.6	8	50	17	36200	320	0.9	17	190	20	5	10	10.5	2.9	38	0.2	na	0.4	na	0.6	na
MOREENIA	5244562	EL2067	599079	6212441	-80#SS	81598	0.2	<3	0.4	3	14	9	10900	560	0.2	6	195	40	<5	<5	9	2.1	28	<0.1	na	<0.2	na	0.2	na
MOREENIA	5244563	EL2067	599229	6212025	-80#SS	81598	0.2	<3	0.5	2	15	10	10600	560	0.2	7	190	40	<5	<5	9.5	1.75	30	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244564	EL2067	599606	6212017	-80#SS	81598	<0.1	<3	0.5	5	35	15	27900	600	0.5	13	240	20	<5	10	14.5	3.4	45	<0.1	na	0.2	na	0.2	na
MOREENIA	5244565	EL2067	598685	6211247	-80#SS	81598	0.2	<3	1.2	9	59	32	40200	740	0.6	24	200	35	10	10	13.5	2.6	80	0.2	na	0.4	na	0.4	na
MOREENIA	5244566	EL2067	600772	6213126	-80#SS	81598	<0.1	<3	1.2	9	45	13	26100	380	0.6	20	175	15	<5	10	11.5	3.7	31	<0.1	<0.1	<0.2	0.2	0.2	0.4
MOREENIA	5244567	EL2067	600828	6212831	-80#SS	81598	<0.1	<3	0.8	8	54	20	32100	500	0.7	18	260	20	<5	10	13	9	47	0.1	na	0.4	na	0.6	na
MOREENIA	5244568	EL2067	602503	6213414	-80#SS	81598	<0.1	<3	1	5	35	10	21400	320	0.4	24	340	20	<5	5	7.5	1.75	32	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244569	EL2067	602784	6213634	-80#SS	81598	<0.1	<3	0.9	16	38	12	27600	940	0.4	16	220	25	<5	5	8	1.85	42	<0.1	na	0.2	na	0.2	na
MOREENIA	5244570	EL2067	602911	6213633	-80#SS	81598	0.3	<3	0.4	4	26	10	17600	185	0.5	11	340	20	<5	<5	7	1.75	30	0.1	na	<0.2	na	0.4	na
MOREENIA	5244571	EL2067	604003	6212331	-80#SS	81598	0.1	<3	0.4	17	67	39	42800	820	0.3	35	460	20	5	10	6	0.88	82	1	na	1	na	1	na
MOREENIA	5244572	EL2067	604260	6212592	-80#SS	81598	0.1	<3	0.6	10	54	24	34700	560	0.9	22	280	25	5	10	8.5	2.7	58	0.1	na	1	na	1	na
MOREENIA	5244573	EL2067	603709	6213253	-80#SS	81598	0.1	<3	0.3	11	48	26	32900	520	1.4	22	460	20	<5	5	6	0.93	53	<0.1	na	0.8	na	0.8	na
MOREENIA	5244574	EL2067	603180	6212923	-80#SS	81598	<0.1	<3	0.3	15	54	28	47000	820	0.2	25	260	15	5	10	6	0.87	64	0.1	na	1.2	na	1	na
MOREENIA	5244575	EL2067	603731	6211413	-80#SS	81598	<0.1	<3	0.4	18	64	38	40800	920	0.5	35	400	20	5	5	7.5	0.79	75	<0.1	<0.1	0.8	0.4	0.6	1.2
MOREENIA	5244590	EL2067	595526	6228464	-80#SS	81598	<0.1	4	<0.1	<2	5	3	4800	40	0.3	3	300	<5	<5	<5	1.8	0.68	24	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244591	EL2067	596834	6227216	-80#SS	81598	<0.1	<3	0.1	2	25	6	14500	95	0.5	6	620	15	<5	<5	4.2	0.97	25	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244592	EL2067	593795	6226307	-80#SS	81598	<0.1	<3	0.1	3	18	3	17300	65	0.5	8	50	10	<5	<5	7.5	0.6	16	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244593	EL2067	593424	6224092	-80#SS	81598	<0.1	<3	0.3	5	32	7	27800	85	0.7	12	115	15	<5	<5	17	1.1	27	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244594	EL2067	594692	6222696	-80#SS	81598	<0.1	<3	0.8	<2	28	9	23000	145	0.7	5	340	15	<5	<5	9.5	1.3	22	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244595	EL2067	593225	6220852	-80#SS	81598	<0.1	4	0.4	3	41	13	20700	240	0.8	6	280	20	<5	<5	10	1.65	23	0.2	na	<0.2	na	0.2	na
MOREENIA	5244596	EL2067	593197	6220970	-80#SS	81598	0.2	<3	1.1	4	35	11	35300	240	0.8	9	280	45	<5	5	22	2.7	46	0.2	na	<0.2	na	0.2	na
MOREENIA	5244597	EL2067	594038	6219694	-80#SS	81598	<0.1	4	0.8	6	57	13	30200	160	0.9	16	240	25	5	5	13	2.2	37	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244598	EL2067	593709	6218960	-80#SS	81598	<0.1	<3	0.3	4	57	9	18000	130	0.5	7	440	20	<5	<5	12	1.85	25	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244599	EL2067	594193	6218634	-80#SS	81598	<0.1	<3	0.3	<2	24	8	14200	120	0.4	7	200	15	<5	<5	9	1.45	18	0.5	na	0.4	na	0.4	na
MOREENIA	5244600	EL2067	592353	6219970	-80#SS	81598	<0.1	<3	0.6	2	27	8	20000	200	1	6	460	30	<5	<5	27.5	4.1	28	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244601	EL2067	592467	6221423	-80#SS	81598	<0.1	<3	1.5	2	26	11	32500	200	0.8	6	300	30	<5	5	13.5	2.5	29	0.4	na	<0.2	na	0.6	na
MOREENIA	5244602	EL2067	595623	6219889	-80#SS	81598	0.1	<3	0.3	4	28	11	18200	195	0.5	10	340	15	<5	<5	7.5	1.4	26	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244603	EL2067	600105	6224941	-80#SS	81598	<0.1	<3	0.1	<2	12	3	11100	90	0.3	6	220	10	<5	<5	3.6	0.48	12	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244604	EL2067	599536	6226920	-80#SS	81598	<0.1	<3	0.1	<2	15	5	11400	80	0.4	5	320	10	<5	<5	3.6	0.66	14	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244605	EL2067	599599	6227061	-80#SS	81598	<0.1	<3	0.2	3	28	7	18500	115	0.5	12	360	15	<5	<5	7	1	21	0.5	na	<0.2	na	<0.2	na
MOREENIA	5244606	EL2067	605643	6225474	-80#SS	81598	0.1	<3	0.5	5	32	12	22200	260	0.4	16	400	25	<5	<5	7.5	1.2	55	0.7	na	<0.2	na	0.2	na
MOREENIA	5244607	EL2067	606579	6225464	-80#SS	81598	<0.1	<3	0.3	4	24	12	16500	260	0.3	13	360	10	<5	<5	4.5	0.76	34	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244612	EL2067	595619	6209080	-80#SS	81598	0.2	<3	0.4	4	25	10	16400	175	0.5	10	175	20	<5	<5	18.5	2.1	23	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244613	EL2067	595366	6208600	-80#SS	81598	0.1	6	0.6	4	26	13	15600	195	0.6	7	220	25	<5	<5	58	7.5	22	0.5	na	<0.2	na	0.2	na
MOREENIA	5244614	EL2067	595305	6208420	-80#SS	81598	<0.1	<3	0.5	4	18	12	14100	340	0.5	7	240	25	<5	<5	24	3.9	21	0.5	na	<0.2	na	0.2	na
MOREENIA	5244615	EL2067	595267	6208230	-80#SS	81598	<0.1	<3	0.8	4	19	7	13400	920	0.2	4	240	30	<5	<5	24	4.2	18	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244616	EL2067	595450	6208131	-80#SS	81598	<0.1	<3	0.3	3	11	5	16100	300	0.2	4	130	20	<5	<5	6	1.7	24	0.5	0.3	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244617	EL2067	595872	6209605	-80#SS	81598	<0.1	6	0.3	4	27	10	16400	135	0.8	11	130	20	<5	<5	18.5	2.7	19	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244618	EL2067	595944	6209360	-80#SS	81598	<0.1	8	1.1	5	38	16	30800	220	0.7	12	120	25	<5	5	22	3.2	35	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244619	EL2067	596095	6209381	-80#SS	81598	<0.1	<3	1	5	30	9	21800	220	0.4	9	130	30	<5	<5	14	2.5	29	0.7	na	<0.2	na	0.2	na
MOREENIA	5244620	EL2067	592772	6209491	-80#SS	81598	<0.1	42	0.1	<2	14	5	280000	200	1.3	6	1600	20	<5	<5	8	1.65	65	0.6	na	<0.2	na	<0.2	na
MOREENIA	5244621	EL2067	592910	6211215	-80#SS	81598	<0.1	<3	0.2	4	28	5	17100	110	0.8	9	175	15	<5	<5	15	1.55	12	0.5	na	0.2	na	0.2	na
MOREENIA	5244622	EL2067	593880	6212991	-80#SS	81598	<0.1	4	0.2	5	29	4	21500	85	0.7	12	85	10	<5	<5	15	1.55	17	0.6	na	<0.2	na	0.2	na
MOREENIA	5244623	EL2067	595022	6214008	-80#SS	81598	<0.1	<3	0.3	5	39	8	24900	135	0.8	12	420	20	<5	<5	16.5	1.9	43	0.7	na	<0.2	na	<0.2	na
MOREENIA	5244624	EL2067	597663	6217673	-80#SS	81598	0.1	<3	0.2	3	29	8	20500	110	0.4	10	300	15	<5	<5	17	2.2	21	0.4	na	<0.2	na	<0.2	na

AREA	SAMPNO	TENEMENT	EAST	NORTH	MATERIAL	DPO	Ag	As	Bi	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	Pb	Sb	Sn	Th	U	Zn	Au	Au Dp1	Pt	Pt Dp1	Pd	Pd Dp1
						SCHEME	IC3M	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3M	IC3E	FA3M	FA3M	FA3M	FA3M	FA3M	FA3M
						DL	0.1	3	0.1	2	2	2	100	5	0.1	2	5	5	5	5	0.02	0.02	2	0.1	0.1	0.2	0.2	0.2	0.2
						UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPB	PPB	PPB	PPB	PPB	PPB
MOREENIA	5244625	EL2067	598698	6215954	-80#SS	81598	<0.1	<3	0.2	3	27	9	16300	105	0.7	6	440	10	<5	<5	10	1.45	21	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244626	EL2067	598787	6215425	-80#SS	81598	0.1	<3	0.3	5	25	20	18600	280	0.8	10	580	15	<5	<5	11.5	2.1	37	0.4	na	0.2	na	0.4	na
MOREENIA	5244627	EL2067	597183	6215322	-80#SS	81598	0.2	<3	0.4	4	33	10	23300	195	0.7	10	300	20	<5	<5	19	2.3	23	0.5	na	<0.2	na	0.4	na
MOREENIA	5244628	EL2067	596579	6214243	-80#SS	81598	<0.1	<3	0.3	<2	23	6	17500	85	0.7	6	240	10	<5	<5	11.5	1.55	13	0.3	na	<0.2	na	0.4	na
MOREENIA	5244629	EL2067	598903	6214322	-80#SS	81598	0.2	4	0.9	9	63	27	59600	300	1.6	22	260	35	<5	<5	33	8	41	0.2	na	<0.2	na	0.2	na
MOREENIA	5244630	EL2067	598397	6213925	-80#SS	81598	0.1	4	0.4	33	19	12	28600	2200	0.4	23	220	20	<5	<5	43.5	7.5	74	0.5	na	<0.2	na	0.2	na
MOREENIA	5244631	EL2067	598422	6214044	-80#SS	81598	0.1	<3	1.1	9	41	26	28400	600	0.8	18	800	25	<5	<5	13.5	2	44	<0.1	1.2	<0.2	<0.2	0.4	<0.2
MOREENIA	5244632	EL2067	599189	6214457	-80#SS	81598	<0.1	<3	0.2	3	21	5	12900	110	0.3	7	360	20	<5	<5	23	4.1	19	0.4	0.5	<0.2	<0.2	<0.2	0.2
MOREENIA	5244633	EL2067	601900	6228250	-80#SS	54322	0.4	<3	0.1	3	15	6	9200	240	0.5	4	220	10	<5	<5	6.5	0.76	10	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244634	EL2067	601750	6228875	-80#SS	54322	0.4	<3	0.2	5	30	6	17700	140	0.5	7	155	15	<5	5	6	0.56	17	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244635	EL2067	602375	6228850	-80#SS	54322	0.4	<3	<0.1	<2	8	4	5700	160	0.2	3	140	5	<5	<5	3.5	0.42	6	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244636	EL2067	607450	6228650	-80#SS	54322	0.5	<3	0.3	5	27	11	16700	260	0.5	13	220	20	<5	5	6.5	0.76	49	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244637	EL2067	606275	6230425	-80#SS	54322	0.4	<3	0.2	3	12	7	8600	170	0.4	4	200	10	<5	<5	4.7	0.64	10	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244801	EL2067	574817	6218755	-80#SS	81598	<0.1	<3	0.3	3	29	8	21400	145	0.4	10	300	15	<5	<5	16	2	18	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244802	EL2067	574675	6219556	-80#SS	81598	<0.1	<3	0.2	<2	19	7	13000	145	0.4	6	200	15	<5	<5	14.5	1.95	13	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244803	EL2067	575851	6220484	-80#SS	81598	<0.1	<3	0.5	4	41	16	34100	170	0.7	10	420	25	<5	<5	32	3.7	28	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244804	EL2067	578783	6223061	-80#SS	81598	0.1	<3	0.6	6	54	8	33800	140	1.3	17	240	20	<5	<5	22.5	1.95	23	0.5	na	<0.2	na	0.2	na
MOREENIA	5244805	EL2067	582234	6223122	-80#SS	81598	<0.1	<3	0.1	2	20	5	12100	75	0.4	8	320	5	<5	<5	4.7	0.58	16	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244806	EL2067	581329	6223140	-80#SS	81598	<0.1	<3	0.1	2	21	5	12200	50	0.5	7	165	10	<5	<5	5.5	0.62	10	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244807	EL2067	581413	6222354	-80#SS	81598	<0.1	4	0.2	7	39	30	26100	125	0.7	18	65	10	<5	5	8	0.46	43	0.5	0.4	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244808	EL2067	581324	6222211	-80#SS	81598	0.1	<3	0.2	6	37	7	19400	75	0.7	14	200	10	<5	<5	8.5	0.81	20	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244809	EL2067	587418	6221263	-80#SS	81598	<0.1	<3	0.2	3	24	11	14400	105	0.8	8	520	15	<5	<5	24.5	2.5	18	0.5	na	<0.2	na	<0.2	na
MOREENIA	5244810	EL2067	586479	6220616	-80#SS	81598	0.1	<3	0.3	4	43	9	25200	150	1.7	16	135	20	<5	<5	26.5	2.6	22	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244811	EL2067	586631	6220655	-80#SS	81598	<0.1	<3	0.2	3	19	6	16000	100	0.6	7	75	10	<5	<5	15	1.5	13	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244812	EL2067	582204	6220033	-80#SS	81598	<0.1	<3	0.1	2	15	4	10200	105	0.5	6	280	<5	<5	<5	4.2	0.66	11	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244813	EL2067	583604	6219221	-80#SS	81598	<0.1	<3	0.2	6	29	6	24800	260	0.9	11	240	15	<5	<5	28.5	2.6	18	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244814	EL2067	582498	6218718	-80#SS	81598	0.3	4	0.3	9	54	9	34800	220	1.7	17	240	20	<5	5	41	3.2	23	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244815	EL2067	587975	6210400	-80#SS	54322	0.5	<3	0.2	2	7	5	6100	80	0.3	<2	130	15	<5	<5	23.5	1.9	12	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244816	EL2067	587650	6210650	-80#SS	54322	0.6	8	0.3	4	17	8	11100	400	1.3	<2	460	45	<5	15	220	13.5	17	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244817	EL2067	587600	6210500	-80#SS	54322	0.6	6	0.1	3	13	7	15200	195	0.8	<2	380	35	<5	10	110	6.5	21	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244818	EL2067	586450	6210950	-80#SS	54322	0.6	4	0.2	9	27	12	26300	340	1.8	5	480	35	<5	10	55	6	29	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244819	EL2067	586175	6211225	-80#SS	54322	0.6	6	0.3	5	19	7	18600	220	1.4	<2	280	30	<5	10	80	6.5	50	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244820	EL2067	585850	6211125	-80#SS	54322	0.5	4	0.2	3	15	8	16800	220	1.2	<2	360	35	<5	5	43.5	4	15	0.7	na	<0.2	na	<0.2	na
MOREENIA	5244821	EL2067	585800	6211075	-80#SS	54322	0.5	6	0.2	3	14	6	16200	240	1.3	<2	340	40	<5	5	88	4.7	16	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244822	EL2067	588525	6211575	-80#SS	54322	0.4	4	0.2	4	87	8	16100	160	1.9	21	560	25	<5	5	50	3.2	14	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244823	EL2067	588650	6212250	-80#SS	54322	0.4	4	0.4	5	93	12	19100	135	1.4	4	540	30	<5	5	37.5	4	14	<0.1	na	<0.2	na	0.2	na
MOREENIA	5244824	EL2067	588650	6212200	-80#SS	54322	0.4	6	0.3	4	30	10	17100	185	1.9	<2	380	30	<5	10	55	4.3	13	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244825	EL2067	589275	6212550	-80#SS	54322	0.3	4	0.3	<2	15	7	12200	100	0.4	<2	320	15	<5	<5	24	1.85	11	0.3	0.2	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244826	EL2067	589525	6211625	-80#SS	54322	0.4	<3	0.3	2	14	10	9400	115	1	<2	480	25	<5	<5	19	1.7	14	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244827	EL2067	586775	6212525	-80#SS	54322	0.4	4	0.1	4	15	6	22000	220	1.1	<2	340	30	<5	<5	73	4.9	25	0.5	na	<0.2	na	<0.2	na
MOREENIA	5244828	EL2067	587450	6213100	-80#SS	54322	0.5	8	0.1	<2	9	7	13200	240	0.7	<2	280	30	<5	<5	83	5	24	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244829	EL2067	587625	6213075	-80#SS	54322	0.4	<3	0.2	<2	10	5	13500	135	0.8	<2	190	40	<5	<5	51	3.7	16	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244830	EL2067	584600	6223225	-80#SS	54322	0.4	4	0.2	6	31	12	22100	440	0.7	4	300	20	<5	5	15	0.94	11	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244831	EL2067	584700	6223800	-80#SS	54322	0.3	<3	<0.1	<2	14	5	9400	75	0.5	3	260	10	<5	<5	5.5	0.58	9	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244832	EL2067	585375	6222050	-80#SS	54322	0.3	<3	0.1	2	23	5	17400	75	0.5	<2	95	15	<5	<5	21.5	1.35	8	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244833	EL2067	584950	6220925	-80#SS	54322	0.3	4	0.2	<2	12	6	9600	100	0.5	<2	100	15	<5	<5	22	2	11	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244834	EL2067	586800	6219375	-80#SS	54322	0.4	8	0.2	6	32	9	22300	300	0.8	<2	190	30	<5	5	67	3.8	17	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244835	EL2067	587275	6219300	-80#SS	54322	0.5	6	0.2	10	32	6	34400	85	1.1	9	195	30	<5	5	49.5	3	27	0.5	na	<0.2	na	<0.2	na
MOREENIA	5244836	EL2067	587850	6220000	-80#SS	54322	0.3	4	<0.1	<2	5	<2	6900	35	0.2	2	25	20	<5	<5	5	0.41	7	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244837	EL2067	590550	6219400	-80#SS	54322	0.4	8	0.3	6	26	5	23900	70	1	<2	340	45	<5	5	145	11.5	17	0.5	na	<0.2	na	<0.2	na

AREA	SAMPNO	TENEMENT	EAST	NORTH	MATERIAL	DPO	Ag	As	Bi	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	Pb	Sb	Sn	Th	U	Zn	Au	Au Dp1	Pt	Pt Dp1	Pd	Pd Dp1
						SCHEME	IC3M	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3M	IC3E	FA3M	FA3M	FA3M	FA3M	FA3M	FA3M
						DL	0.1	3	0.1	2	2	2	100	5	0.1	2	5	5	5	5	0.02	0.02	2	0.1	0.1	0.2	0.2	0.2	0.2
						UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPB	PPB	PPB	PPB	PPB	PPB
MOREENIA	5244838	EL2067	589550	6222475	-80#SS	54322	0.4	<3	0.3	5	26	10	18500	175	0.8	<2	380	20	<5	<5	17	1.25	16	<0.1	0.3	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244839	EL2067	589100	6221175	-80#SS	54322	0.3	<3	0.1	3	18	7	12200	100	0.7	<2	440	25	<5	<5	25.5	2	15	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244840	EL2067	591550	6223800	-80#SS	54322	0.3	<3	0.2	<2	11	4	8700	70	0.5	<2	90	15	<5	<5	21	0.94	8	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244841	EL2067	591350	6223850	-80#SS	54322	0.4	4	0.2	6	35	7	23500	85	0.7	7	90	20	<5	<5	14.5	0.72	16	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244842	EL2067	590425	6224450	-80#SS	54322	0.3	<3	<0.1	<2	12	5	10300	65	0.3	2	175	10	<5	<5	5.5	0.37	9	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244843	EL2067	604525	6220950	-80#SS	54322	0.4	<3	0.2	11	41	29	28800	380	0.3	21	220	20	<5	<5	6	0.58	32	0.6	na	0.8	na	1.2	na
MOREENIA	5244844	EL2067	604225	6221125	-80#SS	54322	0.4	6	0.3	14	57	25	35900	780	1.1	23	195	30	<5	5	12	1.35	39	0.6	na	0.4	na	0.4	na
MOREENIA	5244845	EL2067	605175	6220000	-80#SS	54322	0.3	<3	0.2	3	14	8	10600	160	0.3	5	260	10	<5	<5	5	0.62	17	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244846	EL2067	605275	6219350	-80#SS	54322	0.4	<3	0.2	5	20	8	13900	240	0.3	6	280	15	<5	<5	7	0.95	15	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244847	EL2067	604975	6219300	-80#SS	54322	0.4	<3	0.3	7	35	13	23200	320	0.8	11	260	30	<5	<5	11	1.2	31	0.4	na	0.2	na	<0.2	na
MOREENIA	5244848	EL2067	602775	6226250	-80#SS	54322	0.3	<3	<0.1	<2	9	4	7600	65	0.3	3	220	15	<5	<5	3	0.42	10	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244849	EL2067	602675	6226350	-80#SS	54322	0.3	<3	0.1	3	19	7	14100	135	0.4	4	320	15	<5	<5	6	0.64	13	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244850	EL2067	603050	6227200	-80#SS	54322	0.4	<3	<0.1	<2	7	5	6000	70	0.2	<2	220	10	<5	<5	2.7	0.37	9	0.2	0.2	<0.2	<0.2	<0.2	<0.2
MOREENIA	5244851	EL2067	573764	6197698	-80#SS	81598	<0.1	4	0.2	6	22	13	22800	320	0.8	7	420	25	<5	<5	73	7	37	0.7	na	<0.2	na	<0.2	na
MOREENIA	5244852	EL2067	573869	6197684	-80#SS	81598	0.1	<3	0.2	8	31	16	24400	1300	0.7	9	380	20	<5	<5	21.5	2	38	0.7	<0.1	0.2	1.6	0.8	<0.2
MOREENIA	5244853	EL2067	573014	6197913	-80#SS	81598	<0.1	<3	0.2	10	39	25	41400	720	0.9	10	200	25	<5	5	39.5	3.7	61	0.6	na	0.2	na	0.4	na
MOREENIA	5244855	EL2067	573192	6198908	-80#SS	81598	0.1	<3	0.2	4	28	9	18100	105	0.8	9	360	5	<5	<5	13	1.25	19	0.5	na	<0.2	na	0.2	na
MOREENIA	5244917	EL2067	573940	6197293	-80#SS	81598	<0.1	<3	0.2	6	24	8	34300	260	1.1	7	440	25	<5	5	64	7.5	36	1.5	na	0.2	na	<0.2	na
MOREENIA	5244918	EL2067	574115	6197324	-80#SS	81598	<0.1	4	0.1	5	22	5	23700	320	1	7	320	20	<5	<5	52	5	27	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244919	EL2067	574152	6197477	-80#SS	81598	<0.1	<3	0.2	8	35	40	44400	720	1.3	14	440	30	<5	<5	26	4.7	51	1	na	0.4	na	0.4	na
MOREENIA	5244920	EL2067	575024	6198512	-80#SS	81598	<0.1	<3	0.2	8	32	19	33400	1800	1.1	11	600	15	<5	5	20.5	4.3	50	0.6	na	0.2	na	0.2	na
MOREENIA	5244921	EL2067	575155	6198685	-80#SS	81598	<0.1	<3	0.2	10	39	26	31900	1400	1	15	560	35	<5	<5	27	4	67	0.3	na	0.2	na	<0.2	na
MOREENIA	5244922	EL2067	575135	6195279	-80#SS	81598	<0.1	<3	0.2	6	39	9	24300	360	2.3	12	600	15	<5	5	19.5	3.1	26	0.7	na	<0.2	na	<0.2	na
MOREENIA	5244923	EL2067	574885	6195177	-80#SS	81598	<0.1	<3	0.2	4	32	7	23400	280	1.6	9	620	15	<5	5	15	1.9	46	0.5	na	<0.2	na	<0.2	na
MOREENIA	5244924	EL2067	575422	6194891	-80#SS	81598	<0.1	<3	0.8	7	72	16	31100	560	1.1	17	460	15	10	10	18	3.4	34	0.8	<0.1	0.4	3.2	1.2	2.2
MOREENIA	5244962	EL2067	571944	6216054	-80#SS	81598	<0.1	<3	<0.1	<2	4	<2	4400	35	0.3	4	165	<5	<5	<5	1.6	0.27	5	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244963	EL2067	571589	6214933	-80#SS	81598	<0.1	4	0.1	2	10	4	9000	55	0.5	6	200	<5	<5	<5	3.4	0.39	9	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244967	EL2067	585447	6204247	-80#SS	81598	<0.1	<3	0.5	6	52	35	27400	380	0.7	13	500	10	<5	<5	9.5	2.2	33	0.2	na	0.2	na	0.6	na
MOREENIA	5244969	EL2067	583674	6214454	-80#SS	81598	0.2	<3	0.3	4	27	8	21800	260	1.9	15	190	30	<5	5	48.5	3.8	23	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244970	EL2067	583384	6214853	-80#SS	81598	<0.1	4	0.2	2	17	8	11300	90	1.2	5	560	25	<5	<5	120	6	15	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244971	EL2067	581887	6215625	-80#SS	81598	<0.1	<3	0.1	3	20	6	14400	130	1.1	7	260	15	<5	<5	21	2.4	12	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244972	EL2067	581506	6215305	-80#SS	81598	<0.1	4	0.1	3	15	3	17300	100	0.9	5	135	10	<5	<5	16	1	9	0.4	0.2	<0.2	1.2	<0.2	0.4
MOREENIA	5244973	EL2067	578958	6214561	-80#SS	81598	<0.1	<3	<0.1	2	16	5	9600	80	0.7	5	300	<5	<5	<5	5.5	0.47	11	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244974	EL2067	578626	6212999	-80#SS	81598	0.1	<3	0.2	7	45	3	38400	200	1.3	17	165	20	10	5	63	3.5	30	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244975	EL2067	579094	6212850	-80#SS	81598	<0.1	<3	0.2	3	26	7	16300	130	0.9	9	240	15	<5	<5	18	1.55	18	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244976	EL2067	580197	6213102	-80#SS	81598	<0.1	<3	0.2	6	39	12	25100	150	1.9	13	600	20	<5	<5	19.5	1.65	28	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244977	EL2067	580427	6213352	-80#SS	81598	<0.1	4	<0.1	<2	12	6	11500	115	0.7	5	280	<5	<5	<5	7.5	0.61	16	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244978	EL2067	580351	6213544	-80#SS	81598	0.2	<3	0.1	3	26	7	15700	135	1.5	16	180	20	<5	<5	43	3.2	18	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244979	EL2067	580234	6213504	-80#SS	81598	<0.1	<3	0.2	3	22	5	14100	145	1.1	7	240	20	<5	5	72	6.5	18	0.3	na	<0.2	na	<0.2	na
MOREENIA	5244980	EL2067	574289	6210625	-80#SS	81598	0.1	6	0.2	6	28	4	24600	280	1.2	9	260	25	<5	5	95	7	28	0.3	na	<0.2	na	0.2	na
MOREENIA	5244981	EL2067	574018	6211947	-80#SS	81598	<0.1	<3	0.2	3	22	10	17200	195	0.6	6	440	15	<5	<5	17.5	3	23	<0.1	na	<0.2	na	<0.2	na
MOREENIA	5244982	EL2067	573808	6210711	-80#SS	81598	<0.1	<3	0.2	4	31	5	22900	65	0.7	10	145	10	<5	<5	11.5	1	22	0.1	na	<0.2	na	0.2	na
MOREENIA	5244983	EL2067	573477	6210319	-80#SS	81598	<0.1	<3	0.3	3	26	10	21700	120	0.7	10	180	15	<5	<5	13	1.5	27	0.2	na	0.2	na	0.2	na
MOREENIA	5244984	EL2067	571657	6212247	-80#SS	81598	<0.1	<3	0.5	6	34	20	34200	1100	1	17	500	15	<5	<5	14	2.2	35	0.4	na	0.4	na	0.2	na
MOREENIA	5244985	EL2067	578159	6210745	-80#SS	81598	<0.1	<3	0.2	4	20	<2	20800	180	0.9	8	280	15	<5	<5	28	2.8	19	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244986	EL2067	578145	6210443	-80#SS	81598	<0.1	4	0.2	3	12	5	21700	800	0.7	<2	360	30	<5	<5	125	10	46	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244987	EL2067	577414	6217691	-80#SS	81598	<0.1	<3	0.2	6	28	4	22600	105	0.8	14	195	5	<5	<5	11.5	1.15	22	0.4	na	<0.2	na	<0.2	na
MOREENIA	5244988	EL2067	573897	6218104	-80#SS	81598	<0.1	<3	0.2	3	19	48	12800	95	0.5	6	300	10	<5	<5	7.5	0.87	27	0.1	na	<0.2	na	<0.2	na
MOREENIA	5244989	EL2067	572379	6219663	-80#SS	81598	<0.1	<3	0.1	2	19	5	12500	70	0.9	8	240	5	<5	<5	6	0.68	10	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244990	EL2067	573219	6218710	-80#SS	81598	<0.1	<3	0.2	2	16	5	12200	60	0.7	10	240	<5	<5	<5	4.6	0.59	11	1.1	na	<0.2	na	<0.2	na

AREA	SAMPNO	TENEMENT	EAST	NORTH	MATERIAL	DPO	Ag	As	Bi	Co	Cr	Cu	Fe	Mn	Mo	Ni	P	Pb	Sb	Sn	Th	U	Zn	Au	Au Dp1	Pt	Pt Dp1	Pd	Pd Dp1
						SCHEME	IC3M	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3E	IC3E	IC3E	IC3E	IC3E	IC3M	IC3M	IC3E	FA3M	FA3M	FA3M	FA3M	FA3M	FA3M
						DL	0.1	3	0.1	2	2	2	100	5	0.1	2	5	5	5	5	0.02	0.02	2	0.1	0.1	0.2	0.2	0.2	0.2
						UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPB	PPB	PPB	PPB	PPB	PPB
MOREENIA	5244991	EL2067	577204	6225152	-80#SS	81598	<0.1	<3	0.4	3	31	6	21500	90	0.8	9	520	10	<5	<5	8	0.83	24	0.2	na	<0.2	na	<0.2	na
MOREENIA	5244992	EL2067	584288	6222874	-80#SS	81598	<0.1	6	0.2	4	29	6	19300	130	1.1	10	600	<5	<5	<5	8	1.4	32	1	1.4	0.8	0.4	0.4	0.4
MOREENIA	5244993	EL2067	583753	6219938	-80#SS	81598	<0.1	10	0.2	3	29	10	23700	220	1.2	14	340	30	<5	5	97	6.5	28	0.6	na	0.4	na	0.2	na
MOREENIA	5244994	EL2067	582358	6217112	-80#SS	81598	<0.1	<3	0.4	3	28	9	21800	130	1.5	9	300	15	<5	<5	18	1.75	21	0.7	<0.1	0.4	<0.2	<0.2	<0.2
MOREENIA	5244995	EL2067	583443	6217281	-80#SS	81598	<0.1	4	0.3	9	42	7	31700	480	1.6	17	120	25	<5	5	29	2.1	24	1.1	na	0.4	na	0.2	na
MOREENIA	5244996	EL2067	580203	6218962	-80#SS	81598	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MOREENIA	5244997	EL2067	580452	6218911	-80#SS	81598	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MOREENIA	5244998	EL2067	574853	6220178	-80#SS	81598	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MOREENIA	5244999	EL2067	575433	6221205	-80#SS	81598	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MOREENIA	5245000	EL2067	575245	6220929	-80#SS	81598	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

APPENDIX V

CONTRACTORS REPORT:

TUMBY BAY AIRBORNE MAGNETIC & RADIOMETRIC SURVEY

LOGISTICS & PROCESSING REPORT

Tumby Bay, South Australia

for

CRA Exploration Pty Ltd

by

TESLA AIRBORNE GEOSCIENCE PTY LTD
TESLA-10 PTY LTD
March 1996

TESLA AIRBORNE GEOSCIENCE

A.C.N. 009 183 082

LOGISTICS REPORT

41 Kishorn Road, Applecross, Western Australia 6153
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CONTENTS

APPENDICES

INTRODUCTION

On the 6th November 1995 Tesla Airborne Geoscience Pty Ltd was contracted to acquire and process airborne geophysical data for CRA Exploration Pty Ltd over Tumby Bay Area, South Australia.

All final processing and map production was carried out by Tesla-10 Pty Ltd in their Perth office.

1. SURVEY DETAILS

The Tumby Bay airborne survey covers sections of the Lincoln and Kimba 1:250,000 topographic map sheets.

a) SURVEY LOCATION

A map of the survey area location can be found in Appendix A. The eastings and northings of the boundary lines, beginning at the north west corner and preceding clockwise, are as follows. The co-ordinates reference AGD84.

Section 1

577029 E	6246296 N
585752 E	6246451 N
585621 E	6238675 N
607756 E	6238449 N
607489 E	6215039 N
620030 E	6214888 N
616227 E	6207541 N
610386 E	6200219 N
602955 E	6197854 N
599633 E	6197890 N
599574 E	6192546 N
591914 E	6192625 N
591896 E	6190777 N
588833 E	6190806 N
588780 E	6185661 N
585719 E	6185691 N
585650 E	6178298 N
564337 E	6178470 N
564390 E	6200648 N
562857 E	6200659 N
562894 E	6206203 N
564428 E	6206193 N
564467 E	6211737 N
567536 E	6211715 N
567590 E	6219108 N
570662 E	6219085 N
570718 E	6226477 N
572255 E	6226466 N
572311 E	6233858 N
576927 E	6233822 N
577029 E	6246296 N

Section 2

574000 E	6276200 N
589600 E	6276200 N
589600 E	6266200 N
587200 E	6265200 N
587200 E	6260800 N
583900 E	6260800 N
583900 E	6253900 N
577000 E	6253900 N
577000 E	6259600 N

The area traversed Australian map grid zone 53. The traverse and tie lines were flown along AMG Eastings and Northings.

The aircraft and crew were based at Port Lincoln in South Australia for the duration of the survey.

b) SURVEY SPECIFICATIONS

Survey Distance Flown			
Section 1	:	13,224.4	kilometres
Section 2	:	1,732.7	kilometres
TOTAL		14,957.1	kilometres
Traverse Spacing	:	200 metres	
Traverse Direction	:	AMG Grid North/South	
Number of Traverse Lines	:	556	
Tie Spacing	:	2,000 metres	
Tie Direction	:	AMG Grid East/West	
Number of Tie Lines	:	37	
Flying Height	:	70 metres	
Sample Intervals			
Magnetics	:	0.1 second (6-8 metres)	
Gamma-Ray Spectrometer	:	1.0 second (60-80 metres)	
GPS	:	1.0 second (60-80 metres)	
Radar Altimeter	:	0.1 second (6-8 metres)	
Barometric Pressure	:	1.0 second (60-80 metres)	
Temperature/Humidity	:	1.0 second (60-80 metres)	

A summary of the survey progress can be found in the Operations Report - Appendix B.

2. PERSONNEL

Pilots	:	I.Anderson B.Chick
Operators	:	B.Tasker (Crew Leader) T.Frost
Electronics Technician	:	P. McMullen T.Grzelak
Aircraft Maintenance	:	Rossair, Adelaide
Data Processing	:	D.Abbott A.Kielniacz
Project Supervision	:	R.Pullin

3. AIRCRAFT AND EQUIPMENT

a) SUMMARY

Aircraft

Model	:	Cessna 210N
Registration	:	VH-JBH

Compensator

Model	:	RMS Instruments Automatic Aeromagnetic Digital Compensator

Magnetometer Sensor

Model	:	Geometrics G-822A
Mounting	:	Tail Stinger
Sample Interval	:	0.1 seconds (6-8 metres)
Sensitivity	:	0.001 nT

Vector Magnetometer

Model	:	Billingsley TFM100-IE (3-axis fluxgate)

Compensator

Model	:	RMS Instruments Automatic Aeromagnetic Digital Compensator

Gamma-Ray Spectrometer

Model	:	Exploranium GR820 Self Calibrating Spectrometer
Detectors	:	8 All Viewing NaI (Tl activated) Crystals Total Crystal Volume - 33.6 Litres
Sample Interval	:	1.0 seconds
Number of Channels	:	4 ROIs (TC, K, U, Th), Cosmic and 256 Channels

Computer

Model	:	486 DX2/66

Acquisition Software

Programme	:	Custom in-house developed TAG3 acquisition software
Version	:	3

Aircraft Navigation

GPS, Model	:	Novatel 951R
Update rate	:	0.5 seconds

Radar Altimeter

Model	:	Bendix King KRA 10A
Sample Interval	:	0.1 seconds

Temperature/Humidity

Model	:	Vaisala HMD 50Y
Sample Interval	:	1.0 seconds

Pressure

Model	:	Vaisala PTB 200A
Sample Interval	:	1.0 seconds

Base Station Magnetometers

Model	:	Geometrics G-856
Sample Interval	:	6.0 seconds

Base GPS

Model	:	Novatel 951R
Sample Interval	:	1.0 seconds

b) MAGNETOMETER AND COMPENSATOR

A Geometrics G-822A Magnetometer Sensor, mounted in a stinger secured to the rear of the aircraft was used for this survey. The specifications of the Magnetometer Sensor are summarised in Appendix G.

The Magnetometer Sensor was coupled to a RMS Instruments Automatic Aeromagnetic Digital Compensator (AADC). The AADC compensates the total magnetic field data in real time for the magnetic interference caused by the aircraft manoeuvring in the earth's magnetic field and by the aircraft itself.

The correction coefficients used by the AADC during compensation, were calculated from a compensation flight conducted prior to the survey commencing. The coefficients were also calculated at any other time the aircraft underwent maintenance.

The specifications of the AADC are summarised in Appendix H.

Compensation procedures are described in Section 4.

c) GAMMA-RAY SPECTROMETER

An Exploranium GR-820 Multi-channel Gamma-Ray Spectrometer, coupled to two GPX-1024 Crystal Detectors with a total volume of 33.6 litres were used for this survey. The Crystal Detectors were mounted in two packs, side by side secured to a rack on the floor of the aircraft.

The specifications of the Gamma-Ray Spectrometer are summarised in Appendix I.

The GR-820 uses a sophisticated automatic control method to ensure crystal alignment is maintained, while stabilising on naturally occurring isotopes. The system continuously monitors each of the eight crystal signals and accumulates an individual spectra for each configured signal. The peak channel of the selected stabilisation isotope is computed when a specified number of counts have been accumulated. This peak channel is then compared to the correct peak location and the gain is subsequently adjusted.

Two hundred and fifty six channels of data between 0.3 MeV and 3.0 MeV were recorded once per second. Additionally, 4 ROIs and a cosmic channel were recorded using the following window limits:

Total Count	:	0.41 - 2.81 MeV
Potassium (K40 peak at 1.46 MeV)	:	1.37 - 1.57 MeV
Uranium (Bi214 peak at 1.76 MeV)	:	1.66 - 1.86 MeV
Thorium (T1208 peak at 2.61 MeV)	:	2.41 - 2.81 MeV
Cosmic	:	3.00 - 6.00 MeV

The calibration procedures for the Gamma-Ray Spectrometer system are described in Section 4.

d) DATA ACQUISITION SYSTEM

The TAG3 Acquisition System runs on a 486 personal computer. The data was recorded to hard disk and dumped to DC2120 data cartridge at the completion of each flight. The system was synchronised to GPS time. The data was viewed in real time, enabling the operator to confirm that quality specifications are being met. The following parameters were recorded digitally.

(a) Time in seconds (to 0.1 seconds)
(b) Fiducial number, incrementing by smallest data sample interval
(c) Navigation data including GPS height
(d) Terrain clearance (radar altimeter)
(e) Barometric pressure
(f) Relative humidity
(g) Ambient temperature outside the aircraft in degrees Celsius
(h) Uncompensated Magnetometer reading
(i) Fluxgate x, y, z
(j) Fluxgate Total Field
(k) Raw Magnetometer 4th Difference
(l) Compensated Magnetometer reading
(m) Full 256-channel gamma-ray spectrum
(n) Total count reading in counts per second (uncorrected)
(o) Potassium window reading in counts per second (uncorrected)
(p) Uranium window reading in counts per second (uncorrected)
(q) Thorium window reading in counts per second (uncorrected)
(r) Cosmic window reading in counts per second (uncorrected)

e) NAVIGATION

The GPS position, referencing WGS84, is read by the TAG3 acquisition system. This is the first step in the TAG3 navigation cycle. The position is then transformed to the AGD84 datum using the full 7 parameters. Conversion to AMG co-ordinates follows. The navigational errors, with reference to the planned survey line, are then calculated and displayed for the pilot and operator. This completes the cycle. Two navigation cycles are performed each second.

Real time differential correction was achieved via Fugro Surveys Omni Star System.

The Novatel 951R Global Positioning System card specifications can be found in Appendix J.

f) RADAR ALTIMETER

A Bendix King KRA-10A Radar Altimeter was used to measure the aircraft height above ground level (AGL). The Radar Altimeter System is of high resolution designed for automatic continuous operation over a wide variation of terrain, target reflectivity, weather and aircraft altitude.

The Radar Altimeter data was recorded 10 times per second with an accuracy of ± 1 m (at 80 m AGL).

Bendix King KRA-10A Radar Altimeter specifications can be found in Appendix K.

g) TEMPERATURE AND HUMIDITY

A Vaisala HMD50Y Sensor was used to measure outside air temperature and relative humidity. The data was recorded once per second.

Vaisala HMD50Y Sensor specifications can be found in Appendix L.

h) BAROMETER

Atmospheric pressure was measured using an Vaisala PTB 200A Digital Barometer that was tapped into the aircraft static system. The barometric data was recorded once per second.

Vaisala PTB 200A Digital Barometer specifications can be found in Appendix M.

i) BASE STATION MAGNETOMETER

Diurnal variations in the earth's magnetic field were recorded using two Geometrics G856 Proton Precession Base Station Magnetometers. The Base Stations were located away from cultural influences in an area of shallow magnetic gradient. They were cycling at a 6 second sample interval at all times the aircraft was on survey.

At the completion of each days flying, the data was dumped onto an infield processing computer, where data quality and compliance with contractual specifications were checked. The data was subsequently backed up onto a data cartridge tape for shipment to the processing office.

Base Station Magnetometer specifications can be found in Appendix N. Base Station Magnetometers records can be found in Appendix E.

j) GPS BASE STATION POSITION

Final aircraft positional information was determined post flight.

An accurate GPS Base Station position was calculated by recording latitude, longitude and height information over a seven to twelve hour period and then averaging these positions.

The final GPS Base Station position was then entered into the "Ranger" software and used to calculate post flight differentially corrected aircraft positions. This procedure was conducted at the completion of each flight.

The differentially corrected flight path was then viewed to ensure it did not exceed contractual specifications.

GPS Base Station records can be found in Appendix F.

4. CALIBRATION

a) MAGNETIC COMPENSATION

The compensation sequences were flown in a region of low magnetic relief located approximately 15 kilometres north east of Port Lincoln. The aircraft's altitude was 5,500 feet (above mean sea level).

Each sequence consisted of a series of manoeuvres performed on each of the cardinal headings. The manoeuvres comprised ± 10 degree rolls, ± 5 degree pitches and ± 5 degree yaws.

The coefficients used in compensating for the effects of permanent magnetism, induced magnetism, eddy currents and heading error were calculated automatically by the AADC upon completion of a sequence. The calculated coefficients were then applied to the uncompensated total field readings (collected during the sequence) in order to assess the quality of the "solution". This (now compensated) data was then statistically analysed. The resultant statistics, revealing the quality of the compensation solution, are displayed by the AADC.

A three-axis fluxgate magnetometer, mounted in the stinger, enables derivation of motion information by the AADC during a sequence.

The statistics include: standard deviation of the high-passed uncompensated (UNC), standard deviation of the high-passed compensated (CMP), improvement ratio (IR) and "vector norm of the interference set" (NRM). The IR is the result of dividing UNC by CMP.

The statistics from each solution can be found in Appendix C.

b) GAMMA-RAY SPECTROMETER CALIBRATION

At the commencement and conclusion of each day's production, a low level test line was flown and ground calibrations performed. Statistics were calculated and recorded for each of the calibration processes.

i) The Low Level Test Line

The low level test line was located along a power line orientated in a north/south direction, approximately 30 kilometres north east of Port Lincoln. The test lines were flown at survey height. The start and end points were visually definable positions captured as GPS waypoints for ease of orientation and reference purposes.

The start and end point co-ordinates were:

Start	(WGS84)	-34° 28' 54" S	136° 02' 02"E
End	(WGS84)	-34° 24' 04" S	136° 02' 03" E

The test line was flown in both directions.

ii) Ground Radiometric Button Checks

Crystal stabilisation using Thorium was undertaken prior to each day's acquisition. For each ground calibration, the aircraft was parked in exactly the same position. Similarly the spectrometer button samples were positioned in exactly the same location with reference to the detectors.

The precision involved in all calibrations ensured the statistics were an accurate indication of the Gamma-Ray Spectrometer system status.

The statistics for both the low level test lines and ground radiometric button checks were recorded on a calibration log with appropriate figures transferred to various spreadsheets. These statistics were compared with those from preceding flights in order to detect any irregularities and to ensure contractual requirements were being met.

This was primarily achieved through calculating the percentage difference in statistics from the most recent calibration to statistics of the running average of all previous calibrations.

Some variation was occasionally noticeable in the Total Count and Uranium windows, due to the effects of daily Radon variations.

Copies of the Calibration Logs can be found in Appendix D.

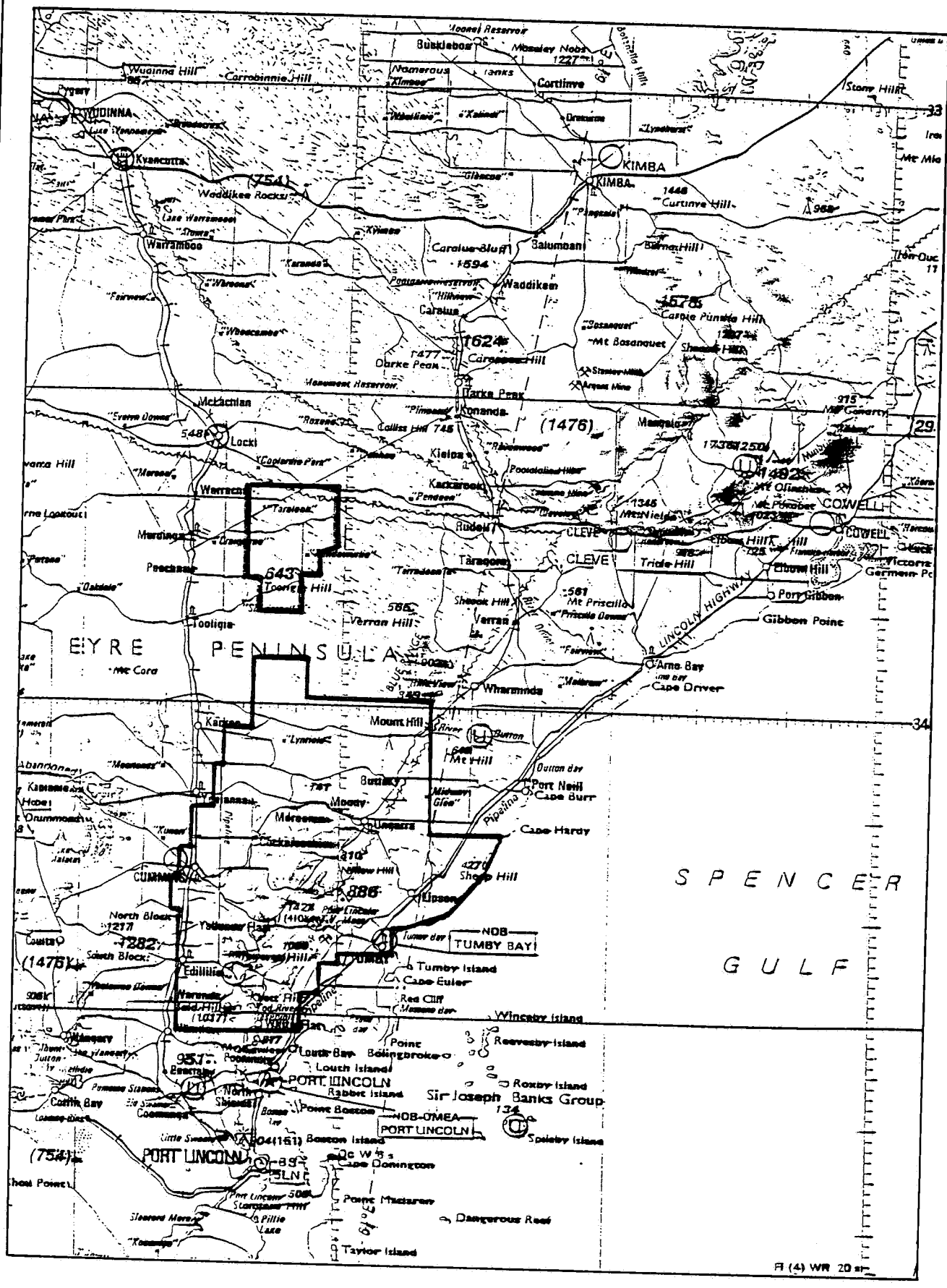
CRA EXPLORATION PTY LTD

APPENDIX A

Tumby Bay

CRA EXPLORATION

Tumby Bay



CRA EXPLORATION PTY LTD

APPENDIX B

Tumby Bay

TESLA AIRBORNE GEOSCIENCE
OPERATIONS REPORT
CRA EXPLORATION VH- JBH
JOB No. TA2247

DATE	FLT NO.	CREW PLT	CREW OP	TIME T/O	TIME LAND	THIS FLT PROD	THIS FLT REFL	TO DATE PROD	TO DATE REFL	RUNNING AVERAGE	COMMENTS
WED 08-Nov	1	IA	BT	719	1022	309.7	0.0				
	2	BC	TF	1140	1630	714.4					
JULIAN 312											
DAY 0						1024.1	0.0	1024.1	0.0	1024.1	
THU 09-Nov	3	BC	TF	613	642						SPIKES ON RADALT
	3	BC	TF	755	910	126.2					BAD WEATHER (STORM) POOR VISABILITY
JULIAN 313	4	IA	BT	1402	1839	594.9					
DAY 1						721.1	0.0	1745.2	0.0	1745.2	
FRI 10-Nov	5	IA	BT	624	1108	761.7					RADALT SPIKES
	6	BC	TF	1155	1645	754.7					
JULIAN 314											
DAY 2						1516.4	0.0	3261.6	0.0	1630.8	
SAT 11-Nov											NO PRODUCTION: WAITING FOR ROMS AND CARDS FOR SPECTROMETER
JULIAN 315											
DAY 3						0.0	0.0	3261.6	0.0	1087.2	
SUN 12-Nov											NO PRODUCTION: WAITING FOR ROMS AND CARDS FOR SPECTROMETER
JULIAN 316											
DAY 4						0.0	0.0	3261.6	0.0	815.4	
MON 13-Nov	7	IA	BT	1355	1653	229.6					ORIGINAL SPECTROMETER ROMS ARRIVED AND INSTALLED / CARDS REPLACED
JULIAN 317											3261.6 TO BE REFLOWN
DAY 5						229.6	0.0	3491.2	0.0	698.2	
TUE 14-Nov	8	IA	BT	608	1104	648.0	32.8				VAC PUMP FAILED ON TAKE OFF No. 2 USED
	9	BC	TF	1134	1618	597.9					COMP BOX CARRIED OUT
JULIAN 318	10	TA	TF	1654	2033	265.5					RE- PT LINCOLN EARLY DUE TO BIRD STRIKE
DAY 6						1511.4	32.8	5002.6	32.8	833.8	

TESLA AIRBORNE GEOSCIENCE
OPERATIONS REPORT
CRA EXPLORATION VH- JBH
JOB No. TA2247

DATE	FLT NO.	CREW PLT	CREW OP	TIME T/O	TIME LAND	THIS FLT PROD	THIS FLT REFL	TO DATE PROD	TO DATE REFL	RUNNING AVERAGE	COMMENTS
WED 15-Nov	11	BC	TF	608	1104	675.7	49.2				
	12	IA	BT	1134	1618	935.4					
JULIAN 319	13	TA	BT	1654	2033	759.7					
DAY 7						2370.8	49.2	7373.3	82.0	1053.3	
THU 16-Nov	14	BC	BT	610	1055	1020.7					
	15	IA	TF	1129	1616	868.2					
JULIAN 320	16	TA	TF	1646	1959	670.5					
DAY 8						2559.5	0.0	9932.8	82.0	1241.6	
FRI 17-Nov	17	BC	TF	618	1114	951.4	48.9				
	18	IA	BT	1155	1617	968.0					
JULIAN 321	19	TA	BT	1734	2006	483.8					
DAY 9						2403.2	48.9	12336.0	130.9	1370.7	
SAT 18-Nov	20	IA	BT	610	1106	940.6	53.6				
	21	BC	TF	1147	1555	827.8					AIRCRAFT DEPT PT LINCOLN FOR PARRAFIELD FOR 100 HRLY
JULIAN 322											
DAY 10						1768.4	53.6	14104.4	184.5	1410.4	
SUN 19-Nov											AIRCRAFT ARRIVED PT LINCOLN EX PARRAFIELD LATE PM NO PRODUCTION
JULIAN 323											
DAY 11						0.0	0.0	14104.4	184.5	1282.2	
MON 20-Nov	22	IA	TF	603	1100	928.9					RADALT SPIKES / REFLY OF START LINES 10122 & 10123 NEEDED
	23	BC	BT	1141	1650	1004.8					MORE SPEC BLOCKS BOTH FLIGHTS
JULIAN 324											
DAY 12						1933.7	0.0	16038.1	184.5	1336.5	
TUE 21-Nov	24	BC	BT	729	1222	805.0	33.0				
	25	IA	TF	1153	1742	1032.2					
JULIAN 325	26	IA	TF	1758	1830	40.6					
DAY 13						1877.7	33.0	17915.9	217.5	1378.1	

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APPENDIX C

Tumby Bay

APPENDIX C

Compensation Box Statistics

Magnetometer compensation checks were flown at survey commencement. The results are shown below:

COMPENSATION 1.

Date Flown: 08.11.95
Dates Used: 08.11.95 to 13.11.95

UNC	=	1.945×10^{-01}
CMP	=	3.684 x 10-02
IR	=	5.3
NRM	=	25.4

COMPENSATION 2.

Date Flown: 14.11.95
Dates Used: 14.11.95 to 21.11.95

UNC	=	2.160×10^{-01}
CMP	=	3.281×10^{-02}
IR	=	6.6
NRM	=	21.0

UNC: The standard deviation of the uncompensated signal in nT.
CMP: The expected standard deviation of the compensated signal in nT.
IR: The improvement ratio (UNC/CMP).
NRM: The vector norm of the interference terms set.

CRA EXPLORATION PTY LTD

APPENDIX D

Tumby Bay

TESLA AIRBORNE GEOSCIENCE

REFLIGHT CALIBRATION

Job No: TA 2247

Area: TUMBY BAY

Flight No: 001 / 002

File: J2247001 / J2247002.

Date: 8th NOV 1995

Julian: 312

Resolution: 5.4

ain

	209.9	2		210.6	3		210.3	4		210.2
	209.7	6		210.3	7		210.2	8		210.3

210.2

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	% Change
Th	691	75	152	3965					
U									
	680	61	48	3322					

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	% Change
est Line	190	42	69	1821					
High evel									

ST FLIGHT CALIBRATION

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	% Change
	182	46	66	1817					
Level									

amples

	Counts Per Second				Counts Per Second Minus Background				Total Count
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	% Change
Th	497	76	147	3980					
U	483	65	97	3560					
Back ound									

Resolution: ________

ain

		2			3			4		
		6			7			8		

Comments:

TESLA AIRBORNE GEOSCIENCE

REFLIGHT CALIBRATION

Job No: 2247

Area: Tumby Bay

Resolution: 5.5 209.9

Flight No: 003 / 004

File: J2247003 J2247004

Date: 9/11/95

Julian: 313

Gain

1	4.1	210.1	2	7.5	210.0	3	6.2	209.4	4	5.5	210.1
5	4.8	209.7	6	5.3	210.3	7	6.0	210.8	8	5.0	209.5

Samples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	497	72	151	3941					
U									
[redacted]	489	61	98	3339					

Test Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Test Line	184	39	69	1780					
High Level									

POST FLIGHT CALIBRATION

Test Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
[redacted]	182	37	65	1720					
[redacted] Level									

Samples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	506	72	156	4001					
U									
Background	491	58	95	3301					

Resolution: _____

Gain

1			2			3			4		
5			6			7			8		

Comments:

TESLA AIRBORNE GEOSCIENCE

EFLIGHT CALIBRATION

Job No: 3247

Area: TUMBY BAY

Resolution: 5.4

Flight No: 005 / 006

File: J3247005 / J3247006

Date: 10/11/95

Julian: 314

in

4	210.0	2	7.2	210.9	3	6.0	209.5	4	55	210.0
5	209.6	6	5.1	209.8	7	5.1	209.9	8	50	209.5

209.5

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
	1295								
1	[illegible]	72	156	3377					
U									
	685	58	94	3097					

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
st ine	180	37	66	1693					
High vel									

ST FLIGHT CALIBRATION

1634

t Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
	185	35	67	1723					
evel									

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	502	69	153	3929					
J									
ack nd	458	58	99	3315					

Resolution:

in

		2			3			4		
		6			7			8		

Comments:

TESLA AIRBORNE GEOSCIENCE

EFLIGHT CALIBRATION

Job No: 2207

Area: Tumby Bay

Flight No: 007

File: 5220007

Date: 13/11/95

Julian: 317

Resolution: 5.5 / 210.0

ain

5.3	209.9	2	5.5	209.8	3	5.8	210.1	4	5.6	210.2
5.9	209.6	6	5.3	210.4	7	5.8	210.3	8	5.9	209.9

amples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
h	688	70	153	3805					
J									
	682	57	96	3216					
	6	13	57	631					

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
st ne	182	301	66	1606	176	21	9	1015	
igh vel									

ST FLIGHT CALIBRATION

NO F.M. LOW LEVEL TEST LINE.

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
vel									

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	591	70	156	3932					
J									
Back ound	690	58	98	3250					

Resolution: _____

in

		2			3			4		
		6			7			8		

Comments:

AIRBORNE GEOSCIENCE

EFLIGHT CALIBRATION

Job No: 3267

Area: Tumby Bay

Flight No: 008/009/010

File: J3267008/J3267009

Date: 14/11/1995

Julian: 318

Resolution: 5.3 CH 210.2

in

1	116	2	5.3	120	3	7.3	108	4	5.2	99
0.9	164	6	2.9	106	7	5.5	103	8	4.8	109.

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
h	094	68	154	3850					
U									
	079	56	90	3181					
	11	12	60	669					

est Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
st Line	179	30	65	1626	168	22	5	977.	
High vel									

ST FLIGHT CALIBRATION

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
T---	152	35	67	1658	175.	22	14	1036	
Level									

amples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	495	70	151	3858					
J									
Background	486	57	98	3236					
	9	13	53	622.					

Resolution:

in

		2			3			4		
		6			7			8		

Comments:

TESLA AIRBORNE GEOSCIENCE

EFLIGHT CALIBRATION

Job No: 2247

Area: TOMBY BAY

Resolution: 210.0 5-5

Flight No: 011 / 012 / 013

File: J2247011 / J2247012 / J2247013

Date: 15/11/95

Julian: 319

in

1	116	2	7.5	119	3	5.8	109	4	5.3	96
46	144	6	5.4	109	7	5.7	104	8	5.2	108

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
n	501	76	150	3866					
U									
	485	57	99	3244					
	13	13	51	622					

t Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
st pe	184	35	66	1646	171	22	15	1026	
High vel									

ST FLIGHT CALIBRATION

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
T—	185	35	67	1661	166	25	12	1011	
vel									

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	506	68	154	3895					
J									
Back und	487	58	99	3245					
	19	10	55	650					

Resolution:

in

		2			3			4		
		6			7			8		

Comments:

AIRBORNE GEOSCIENCE

REFLIGHT CALIBRATION

Job No: 2247.

Area: JUMBY BAY

Flight No: 014/015/016

File: J2247014/J2247015/J2247016

Date: 16/11/95

Julian: J320.

Resolution: 5.3 / 2099

Main

	4.4	116	2	5.4	120	3	5.9	110	4	5.7	97
5	5.0	146	6	4.9	110	7	5.8	105	8	5.0	107.

Samples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	506	71	151	3919					
U									
Background	493	58	99	3268					
	11	13	55	651					

Test Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Test Line	186	37	68	1674	173	24	13	1023.	
High Level									

POST FLIGHT CALIBRATION

Test Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Test Line	189	40	67	1742	172	27	14	1133	
High Level									

Samples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	567	75	151	3932					
U									
Background	495	62	98	3323					
	17	13	53	609					

Resolution: _____

Main

1			2			3			4		
5			6			7			8		

Comments:

TESLA AIRBORNE GEOSCIENCE

REFLIGHT CALIBRATION

Job No: 2247

Area: TUMBY BAY

Flight No: 017/018/19

File: T2247017, T2247018, T2247019

Date: 17/11/95

Julian: 321

Resolution:

ain

0	121	2	59	125	3	61	115	4	53	105
50	152	6	52	114	7	59	110	8	52	116

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	% Change
h	507	75	154	3698					
U									
	494	65	101	3373					
	13	10	53	325					

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	% Change
est ne	97	44	69	1783	180	30	16	1058	
High vel									

OST FLIGHT CALIBRATION

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	% Change
T—	193	41	68	1761	170	29	11	1104	
evel									

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	% Change
Th	513	73	156	3700					
U									
Back ound	490	61	99	3287					
	23	12	57	657					

Resolution:

ain

			2			3			4		
			6			7			8		

Comments:

AIRBORNE GEOSCIENCE

REFLIGHT CALIBRATION

Resolution: 5.5 / 210.0

Job No: 2247

Area: TUMBY BAY S.A

Flight No: 020/021

File: J2247020/J2247021

Date: 18/11/95

Julian: 322

ain

[illegible]	121	2	7.9	135	3	5.8	115	4	5.4	106
[illegible]	151	6	5.1	113	7	5.0	109	8	5.3	110

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
h	496	67	150	3839					
U	566	194	102	4972					
	489	57	98	3249					
	7	10	52	590					

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
est Line	190	35	67	1675	183	25	15	1083	
High vel									

ST FLIGHT CALIBRATION

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Te	185	35	68	1658	170	22	19	1058	
evel									

amples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	502	70	149	3842					
U									
Back und	487	57	100	3242					
	15	13	49	600					

Resolution:

ain

		2			3			4		
		6			7			8		

Comments:

TESLA AIRBORNE GEOSCIENCE

REFLIGHT CALIBRATION

Resolution: _____

Job No: 2247

Area: TOMBY BAY

Flight No: 022 / 023

File: J2247022 / J2247023

Date: 20/11/95

Julian: 324

ain

..	115	2	76	118	3	58	107	4	53	96
47	145	6	51	107	7	55	105	8	52	107

amples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	502	70	151	3882					
U									
	489	57	100	3262					
	13	13	51	620					

est Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Test Line	185	35	67	1663	172	22	16	1603	
High Level									

POST FLIGHT CALIBRATION

est Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Test Line	186	36	68	1665	173	25	-12	1637	
High Level									

amples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
Th	506	70	151	3893					
U									
Background	493	59	71	3260					
	13	11	80	629					

Resolution: _____

ain

			2			3			4		
			6			7			8		

Comments:

TESLA AIRBORNE GEOSCIENCE

EFLIGHT CALIBRATION

Job No: 2247

Area: TUMBY BAY

Flight No: 024/025/026/

File: T2247024/T2247025/T2247026

Date: 21/11/95

Julian: 325

Resolution: 5.4 CH 210.1

n

4.4	115	2	5.4	120	3	6.2	106	4	5.3	98
3.7	107	6	5.4	107	7	5.5	103	8	5.3	107.

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
1	490	67	107	3779					
U									
	378	57	96.	3170					
	12	10	51	609					

st Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
t ine	175	35	64	1582.	163.	25	13	975	
h el									

ST FLIGHT CALIBRATION

t Line & High Level Background

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
	190	35	69	1690	168	20	16	1060	
evel									

mples

	Counts Per Second				Counts Per Second Minus Background				Total Count % Change
	K Ch	U Ch	Th Ch	Total Count	K Ch	U Ch	Th Ch	Total Count	
1	505	71	151	3850					
nd	483	56	98	3220					
	22	15	53	630					

Resolution:

n

		2			3			4			
		6			7			8			

Comments:

CRA EXPLORATION PTY LTD

APPENDIX E

Tumby Bay

TESLA AIRBORNE GEOSCIENCE

A.C.N. 009 183 082

BMR - 1 (11/94)

BASE - MAGNETOMETER - RECORD

Job No./Client: TA2247 / CRA
Area: TUMBY BAY
Aircraft: VH-JBH
Crew Leader: T. ATKINSON / B. TASKER
Operator: B. TASKER / T. FROST
Date: 11/11/95 Completed By: T. ATKINSON
Julian: Signature:

Magnetometer Type: G856
Serial No:
Magnetometer Location: PT LINCOLN AIRPORT
Cycle Rate: 6 sec
Sensor Height: 4 pole sections
Area Gradient: 0.5 nT/M
North:
South:
East:
Central:

Magnetometer Type: G856
Serial No:
Magnetometer Location: PT LINCOLN AIRPORT
Cycle Rate: 6 sec
Sensor Height: 4 pole sections
Area Gradient: 0.5 nT/m
North:
South:
East:
Central:

41 Kishorn Road, Applecross, Western Australia 6153

CRA EXPLORATION PTY LTD

APPENDIX F

Tumby Bay

TESLA AIRBORNE GEOSCIENCE

A.C.N. 009 183 082

BGPS - 1 (11/94)

BASE - GPS - RECORD

Job No./Client: TA2247 / CRA
Area: TUMBY BAY
Aircraft: VH - JBH
Crew Leader: T. ATKINSON / B. TASKER
Operator: B. TASKER / T. FROST
Date: 11/11/95
Julian:

GPS Unit No:
Serial No: 93110360
Completed By: T. ATKINSON
Signature:

TRIG STATION Lat: Long:
CO-ORDINATES Lat: Long:
ELLIPSOID Height: N.A

CALCULATED BASE STATION Lat: Long:
CO-ORDINATES Lat: -34.7057385 Long: 135.8506718
ELLIPSOID WGS84 Height: 13.587 M

TIME RECORDED: 07:12
DATE RECORDED: 11/11/95

RADIO LINK REQUIREMENTS: FUBRO OMNISTAR TO BE USED.

COMMENTS:

FORM FILING REQUIREMENT: CREW LEADER ->FIELD FILE->JOB FILE

41 Kishorn Road, Applecross, Western Australia 6153
Telephone (09) 364 8444 Fax (09) 364 6575

CRA EXPLORATION PTY LTD

APPENDIX G

Survey Area

APPENDIX G

Specifications - Geometrics G-822A Cesium Magnetometer Sensor

OPERATING PRINCIPLE	:	Self Oscillating Cesium Vapour Magnetometer
OPERATING RANGE	:	20000 nT to 95000 nT
GRADIENT TOLERANCE	:	40000 nT/meter
TEMPERATURE LIMITATIONS	:	-35°C to 50°C
SUPPLY VOLTAGE	:	24 to 32V DC
OUTPUT	:	Continuous signals at the Larmor frequency which is proportional to the magnetic field (proportionally constant 3.498 Hz/nT).
DIMENSIONS	:	Diameter - 51 mm Length - 178 mm
WEIGHT	:	0.8 kg

CRA EXPLORATION PTY LTD

APPENDIX H

Tumby Bay

APPENDIX H

Specifications - RMS Instruments Automatic Aeromagnetic Digital Compensator

INPUTS	:	one to four high sensitivity magnetometers of optical absorption type.
INPUT FREQUENCY RANGE	:	70 KHz - 350 KHz - Cs sensor 140 KHz - 700 KHz - K sensor 560 KHz - 2800 Khz - He sensor 850 Hz - 4 260 Hz - Overhauser
MAGNETIC FIELD RANGE	:	20000 - 100000 nT (gamma)
RESOLUTION	:	1 pT (picotesla)
COMPENSATION PROCEDURE	:	improvement ratio 10-20 typical for total field improvement ratio 20-100 typical for gradient
ACCURACY OF COMPENSATION	:	0.035 nT (gamma) standard deviation for the entire aircraft flight envelope in the bandwidth 0-1 Hz typical.
DATA OUTPUT RATE	:	10 Hz
SYSTEM FREQUENCY RESPONSE	:	0 - 0.9 Hz
INTERNAL SYSTEM NOISE	:	less than 2 pT (standard deviation in the bandwidth 0-1 Hz)
DURATION OF CALIBRATION FLIGHT MANOEUVRES	:	5-8 minutes typical
MICROCOMPUTER	:	SBC-11/21 Plus (DEC) Front End LSI-11/73 (DEC) Main CPU
KEYBOARD	:	limited alphanumeric
DISPLAY	:	green fluorescent, 80 character self scan panel
OUTPUTS	:	serial data communication port: RS232C - max. rate 19.2 K Baud parallel output port: 16 bit with full handshaking (DRV11-J) (optional)

		parallel output port: 16 bit with full handshaking (DRV11-J) (optional)
POWER	:	28 ± 4 VDC, 5A, 150W (for single magnetometer) 7A, 196W (for gradiometer system)
ENVIRONMENTAL	:	operating temperature: 0 to 50°C storage temperature: -20 to 55°C relative humidity: 0-99%, non-condensing altitude: 0 to 6000 m (0 to 20000 ft)
PHYSICAL DATA	:	console dimension: 483 x 178 x 440 mm console weight: 12.5 kg power supply dimensions: 225 x 180 x 220 mm power supply weight: 5.5 kg

CRA EXPLORATION PTY LTD

APPENDIX 1

Tumby Bay

APPENDIX I

Specifications - GR820 Spectrometer System

Detector Controller

- Maximum number of crystals - 16. Each crystal has individual pole-zero cancellation, semi gaussian shaping and advanced base line restoration circuitry.
- Continuous, individual-crystal spectrum analysis ensures that optimum system stabilisation is achieved. Resolution is calculated by a sophisticated gaussian curve fitting algorithm to perform an accurate centroid analysis of the selected stabilisation peak.
- High energy cosmic pulses are accumulated in a separate channel.
- Accurate pile-up rejection for simultaneous pulses allows qualitative gamma-ray spectrum analysis almost independent of the system count rate. Special circuitry analyses for pulse pile-up and permits only detector signals from single events to be analysed. Simultaneous events in adjacent crystals are added to reduce the Compton effect.
- Residual pulse pile-up at 100000 counts/sec are less than 2%

Analog to digital converter (ADC)

- 50 MHz Wilkinson ramp ADC.
- Linearity - integral - less than 0.2%; -differential - less than 1%
- Average system dead-time is less than 5 microsec/pulse.
- Live-time channel records the actual system live-time. This data is output with the digital data which allows post correction for system dead-time to an accuracy of 0.1%.
- Number of channels - selection of 256 channels or 512 channel operation.
- Maximum number of counts/channel - 65535 (16 bits).
- The lower threshold - manually selectable from channel 2 to channel 50 (20-500 keV).
- The upper threshold is set to 3 MeV. All pulses above 3 MeV are accumulated in the cosmic channel as a direct measure of cosmic ray activity.
- ADC offset set from the keyboard.
- The maximum input count rate is 100000 counts/second.

System outputs

- Visual display - the front panel display is a 640 x 200 electroluminescent (EL) high contrast graphics display which allows full spectrum display, system set-up and various parameter monitoring functions. In the spectrum display mode, the region of interest and cursor may be viewed by channel number or directly in keV.
- The internal channel number to energy level (keV) conversion table compensates for non-linearity of the detector's light output.
- The front panel has a 21 button keyboard for easy operator control.
- The system's operation is fully menu driven.

- Digital outputs
  - RS-232 port (1200 to 19200 baud).
  - IEEE-488 bus output - talk listen/talk only.
  - Geometrics GR-800 output format.
  - Some system functions can be controlled remotely by an external computer via the RS-232 and the IEEE-488 digital ports.
- Analog output
  - 4 channels of roi data can be selected for output on the analog port. The outputs have 10 bit resolution (0-10V). Scaling can be set from the keyboard (100-50 K counts/sec FSD) and output data may be raw or stripped using internally stored calibration constants. Analog output wraps at fsd limits and is dead-time corrected.

Miscellaneous

- Regions of interest (ROI) 8 ROIs can be selected. The upper and lower thresholds can be individually set over the entire spectrum range.
- The first 4 ROIs are available for digital and analog output. The second 4 ROIs are available only for digital output on the RS-232 or the IEEE-488 ports.
- System resolution. Detector resolution is automatically computed for each (and summed crystals) during peak analysis and is displayed for operator monitoring when required. The summed down resolution is also output on the data stream.
  System test. At power on, a full system test of all internal pcb handshaking is performed. Included in the testing is the lithium back-up battery, the system ram memory, display handshaking, the systems configuration (options installed), the selected detectors (checked via ADC analysis) and peripheral handshaking response.
- Configuration menus. The configuration menus allow the selection of the number of detectors in use, confidence levels for gain analysis, maximum crystal resolution levels for each detector (with operator warning if levels exceeded), output configurations for analog and digital data and various special display/monitoring functions.
- Maintenance. A set of special menus allows the user to test and calibrate many systems functions including system test, ADC offset, low level discriminator etc.
- Power: 28V - 1.25amps.

Detectors

The crystals are housed in a specially designed hi-impact polystyrene cases using low background materials for minimum signal attenuation. Full thermal and internal shock protection allows the units to be directly mounted to the floor. A very low noise, high voltage power supply is housed in each pack so high voltage is not present in the connecting cables. A unique preamplifier with special processing for signal optimisation is used. The GPX-1024 has 4 crystals with a total volume of 16.78 litres.

- Outputs. Individual BNC connectors output each crystal's signal separately.
- Size: GPX-1024: 73 x 51 x 30 cm
- Weight: GPX-1024: 84 kg
- Power: 28V @ 0.5 A/crystal pack

- Temperature limitations
  - Closed pack: storage -40°C to +60°C, operation -40°C to 60°C
  - Open pack: not recommended
  - Temperature gradient:
    Closed pack: -40°C to +50°C (instantaneous)
    Open pack: a change of 1°C/hour.

CRA EXPLORATION PTY LTD

APPENDIX J

Tumby Bay

APPENDIX J

Specifications - Novatel 951R Global Positioning System Card

FREQUENCY	:	L1, 1575.42 MHz
CODE TRACKED	:	C/A Code (SPS)
CHANNELS	:	12 Discrete Channels
TIME TO FIRST FIX	:	<70 seconds typical (cold start: no initial time, almanac, or position required)
RE-ACQUISITION	:	3 seconds typical
COMPUTED DATA UPDATE RATE	:	10 solutions per second
SINGLE CHANNEL PHASE ACCURACY	:	3 mm RMS, C/No> 44 dB Hz loop BW=15Hz
DIFFERENTIAL CHANNEL PHASE MEASUREMENT ACCURACY	:	0.75 mm RMS, 1 second smoothed, no multipath, C/No> 44d BHz
TIME ACCURACY (RELATIVE)	:	50 nanoseconds (SA off) 250 nanoseconds (SA on)
HEIGHT LIMIT	:	60000 ft maximum
VELOCITY LIMIT	:	Up to 575 ms^{-1} maximum
OPERATING TEMPERATURE	:	0° to +70°C
SIZE	:	216 mm x 107 mm x 19 mm
WEIGHT	:	220 g
MOUNTING	:	installed inside an IBM-PC Compatible

CRA EXPLORATION PTY LTD

APPENDIX K

Tumby Bay

APPENDIX K

Specifications - Bendix King KRA-10A Radar Altimeter

KRA 10A Receiver/Transmitter

ALTITUDE OUTPUT RANGE	:	20 ft. to 2500 ft. max. AGL - Maximum Altitude is dependant on ground reflectivity
ACCURACY (with or without KI 250)	:	± 5 ft. 50 ft. to 100 ft. ± 5% 100 ft. to 500 ft. ± 7% 500 ft. to 2000 ft.
POWER REQUIREMENTS	:	27.5 VDC ± 20% @ 200 ma Max. Total for system
ALTITUDE	:	45000 ft. (13716 m)
TEMPERATURE	:	- 54°C to 71°C
COOLING	:	Convection
SIZE	:	7.9 x 8.9 x 20.3 cm
WEIGHT	:	0.9 kg
MOUNTING	:	Any position
AUX. ANALOG OUTPUT	:	+ 4 mv/ft.

KI250 Indicator

ALTITUDE RANGE	:	20 to 2500 ft. AGL
DECISION HEIGHT RANGE (pilot adjustable)	:	20 to 2500 ft. AGL
DH LAMP	:	Lights when descending thru DH
DH AUDIO	:	2 sec. 1 KHz tone when descending thru DH
ALTITUDE	:	15000 ft. (4,572 m)
TEMPERATURE	:	- 15°C to 71°C

COOLING	:	Convection
SIZE	:	8.28 x 10.0 x 8.28 cm
WEIGHT	:	0.4 kg

KA 131 Antenna

BEAMWIDTH		
E-Plane	:	40 ± 5°
H-plane	:	40 ± 5°
MOUNTING SURFACE ANGLE FROM HORIZON		
KA 131-00 (parallel)	:	± 6°
KA 131-01 (skewed)	:	6° to 20°

CRA EXPLORATION PTY LTD

APPENDIX L

Tumby Bay

APPENDIX L

Specifications - Vaisala HMD50Y Temperature and Humidity Sensor

Relative Humidity

OPERATING RANGE	:	0-100% RH
SENSOR	:	Intercap Humidity Sensor, Part No. 15778

Temperature

OPERATING RANGE	:	-10°C to 60°C
TOTAL ACCURACY AT 25°C	:	± 0.3°C
SENSOR	:	PR 1000 DIN 43760B

General

OUTPUT SIGNAL	:	Equals 0 to 100% RH and -40°C to 60°C 0 to 10V Load Resistance > 10k OHM
POWER SUPPLY	:	15 to 35 VDC
CURRENT CONSUMPTION	:	6mA typical
HOUSING CLASSIFICATION	:	IP 65

CRA EXPLORATION PTY LTD

APPENDIX N

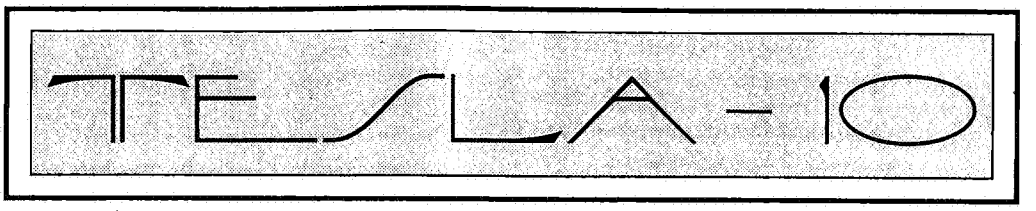
Tumby Bay

APPENDIX N

Specifications - Geometrics G-856 Magnetometer

DISPLAYS	:	Six digit display of magnetic field to resolution of 0.1 gamma or time to nearest second. Additional three digit display of station, day of year, and line number.
RESOLUTION	:	Typically 0.1 gamma in average conditions. May degrade to lower resolution in weak fields, noisy conditions or high gradients.
ABSOLUTE ACCURACY	:	One gamma, limited by remnant magnetism in sensor and crystal oscillator accuracy.
CLOCK	:	Julian clock with stability of five seconds per month at room temperature and five seconds per day over the temperature range of -20 to +50 degrees Celsius.
TUNING	:	Push button tuning from keyboard with current value displayed on request. Tuning range 20 to 90 kilogammas.
GRADIENT TOLERANCE	:	Tolerates gradients to 5000 gammas/meter. When high gradients truncate count internal, maintains partial reading to an accuracy consistent with data.
CYCLE TIME	:	Complete field measurement in three second in normal operation. Internal switch selection for faster cycle (1.5 seconds) at reduced resolution or longer cycles for increased resolution.
MANUAL READ	:	Takes reading on command. Will store data in memory on command.
MEMORY	:	Stores more than 1000 readings in survey mode, keeping track of time, station number, line number, day and magnetic field reading. In base station operation, computes for retrieval but does not store time of recording designated by sample interval, allowing storage of over 2500 readings.
OUTPUT	:	Plays data out in standard RS-232 format at selectable baud rates. Also outputs data in real time byte parallel, character serial BCD for use with digital recorders.
INPUTS	:	Will accept an external sample command.

SPECIAL FUNCTIONS	:	An internal switch allows: 1) adjustment of polarisation time and count time to improve performance in marginal areas or to improve resolution or speed operation, 2) three count averaging, 3) choice of lighted displays in auto mode.
PHYSICAL	:	Instrument console: 18 x 27 x 9 cm (2.7 kg) Sensor: 9 x 13 cm (1.8 kg) Staff Section: 3 cm x 60.5 cm (0.4 kg)
ENVIRONMENTAL	:	Meets specifications from 1 to 40°C Operates satisfactorily from -20 to 50°C Weatherproof.
POWER	:	Operates from 8 D-cell flashlight batteries (or 12V external power). May be operated at 18V external power to improve resolution. Power failure or replacement of batteries will not cause loss of data stored in memory.



A.C.N. 009 039 918

PROCESSING REPORT

41 Kishorn Road, Applecross, Western Australia 6153
Telephone (09) 364 8444 Fax (09) 364 6575

CONTENTS

1.0 INTRODUCTION

The airborne geophysical survey was initiated by CRA Exploration Pty Limited, flown by Tesla Airborne Geoscience Pty Ltd, and processed by Tesla-10 Pty Ltd. The survey was flown between November 1995 and February 1996. Processing was completed in March 1996.

Data acquisition comprised magnetics, radiometrics, temperature, humidity, barometric pressure and altitude, and radar altitude. Navigation was by GPS with final positions differentially post processed.

Two areas were flown, with the same parameters for each. The survey area adjoined the coastline at Tumby Bay, South Australia.

2.0 JOB SUMMARY

2.1 Data Acquisition

Survey Flown	:	Tesla Airborne Geoscience Pty Ltd 41 Kishorn Road APPLECROSS WA 6153 November 1995 Job No. j2247
Acquisition System	:	Tesla TAG3 Aircraft - Cessna 210N VH-JBH Navigation - GPS differentially post processed
Survey Parameters	:	Flown as two areas - 70 metre mean terrain clearance 200 metres east-west traverses 2,000 metre north-south ties sample interval - magnetics 0.1 sec (~ 7 m) radiometrics 1.0 sec (~ 70 m)

2.2 Processing Overview

Co-ordinate System	:	WGS84 based GPS lats, longs and heights were transformed to AGD84, with the lats and longs subsequently converted to eastings and northings by the utm projection TMAMG zone 53.
Quality Control	:	Check plots verifying adherence to required specifications were made for flight path, survey boundary, aircraft ground speed and ground clearance, magnetic system noise, magnetic daily variation and aircraft altitude (GPS). Statistical analysis of all data was made. Consistency and continuity of data was verified by stacked profile plots.
IGRF	:	IGRF model 1995 projected to 1995.9 and utilising GPS altitude was removed and a base value added back to the final levelled magnetics.

3.0 MAGNETICS PROCESSING

3.1 Processing Sequence

A 0.1 second database was collated, with positions transformed to AGD84, and quality control plots produced for comparison with required specifications and flight logs. Once verified, data acquisition was declared complete.

De-spiking and/or filtering was applied to some of the data as necessary. Median and Fourier Domain wavelength filters were used. Data may have been interpolated through spikes, but a raw data channel is maintained.

System parallax (read/write delay) was corrected, the daily magnetic field variations removed, and the IGRF removed. Base levels were added back to these data to maintain an approximate mean value. This is the usual preliminary magnetics stage.

Tieline levelling (traverse to tie line adjustments) and micro-levelling applied to any remaining or residual minor errors brings the data to final levelled form (tmi). Any magnetics from cultural features, if any, remain in the data set.

3.2 Final Data

Located Data	:	Line number, fid number, day, time, GPS week, GPS time, easting and northing (parallax corrected, AGD84), latitude and longitude (parallax uncorrected, WGS84), diurnal, rawmag, compmag (compensated for aircraft presence and altitude), levmag (final levelled tmi), radalt, gpsalt (AGD84), flux-total, flux-x, flux-y, flux-z, grid flag.
Gridded Data	:	ER Mapper format channel levmag, where gridflag = 0. For some parts of some overlapping lines, gridflag = 1. Grid cell size is 50 x 50 metres.

A detailed header file was included with the located data, which details the survey layout and processing information.

4.0 RADIOMETRICS PROCESSING

4.1 Processing Summary

The 256 channel data was checked for spectral stability between flights, and pre-processed to obtain data for Radon gas background removal. Subsequent processing closely follows the IAEA publication "Technical Reports Series No. 323" (1991) - filtering, background removal, channel stripping, height corrections and levelling.

Test flights were flown to determine co-efficients for background removal. Pad tests were used to obtain stripping co-efficients.

4.2 Background Correction Co-efficients

Cosmic and aircraft background co-efficients were obtained from multi-level flights over the ocean. Plotting total, potassium, uranium and thorium counts against cosmic count should give straight line graphs, where the gradient gives the cosmic background correction and the cosmic axis intercept gives the aircraft background count for that channel.

Where this straight line graph varies is where Radon gas concentrates. The background was calculated using the differential absorption spectral ratio technique. This separates the Uranium count into a component due to normal ground contribution and one due to Radon gas in the atmosphere.

4.3 Stripping and Height Co-efficients

Stripping co-efficients were calculated from pad tests, and solutions to simultaneous equations describing the count rates as a function of the background, Potassium, Uranium and Thorium pads.

Correlation co-efficients for a nominal terrain clearance were derived from low-level test flights. The measured heights were corrected to STP, with the usual

dead-time, background and stripping corrections applied to get corrected counts. The height correction co-efficients are gradients of straight line plots of the log (ln) of count rates against corrected height.

4.4 256 Channel Pre-processing

256 channel spectral plots for each flight and each line are made. IAEA windows are plotted over the three main peak channel positions and compared from flight to flight, and for test lines. As Thorium count is largely unaffected by Radon gas variations, the test lines should be stable to within 5%. Similar plots are made for the daily button source tests.

Raw count rates used for final processing were extracted by summing the 256 channel data over the IAEA windows centres on the peak locations, to the nearest channel.

Radon gas correction ratios were obtained as described above, using exactly the same modified source spectral windows as used for the calibration of the ratios from the daily test flights.

4.5 Final Processing

A very light filter is applied to the channel data to smooth the worst of the saw-tooth statistical variation. Longer filters are applied to height, temperature, pressure and altitude.

The cosmic stripping co-efficients multiplied by the cosmic count are taken from the channel counts, as are the aircraft backgrounds. The Radon background correction for the Uranium channel is:

$$\text{Airborne Radon Uranium Count} = \left(\frac{R - Rg}{Rr - Rg}\right) \text{Uranium count}$$

Where R is the low energy Uranium correlation to high energy ratio,
Rg is this ratio for a pure ground Uranium source, and
Rr the same ratio for a pure airborne Radon gas Uranium source

The Radon gas Uranium count component is removed from the Uranium count, and the contribution to the other channels calculated by applying the Radon gas stripping co-efficients. These are then removed from the respective channels, including total count.

The Potassium, Uranium and Thorium count rates are corrected for Compton scattering (stripped). The co-efficients themselves are corrected to the STP corrected height using theoretical linear corrections for the three primary stripping co-efficients.

Corrections to the terrain clearance are made using STP corrected heights and the absorption factors appropriate to the exponentially decreasing count rates with height.

The data was tie line levelled and micro-levelled. A detailed header file was included with the located data and 256 channel data, detailing the co-efficients applied.

5.0 DELIVERABLES

5.1 Magnetics

1:100,000 Black and White Contours TMI on Film
Located Data (ASCII) CD ROM
Gridded Data (ERM) CD ROM

5.2 Radiometrics

1:100,000 Black and White Contours Total Count on Film
1:100,000 Colour Contours Total Count on Film
1:100,000 Colour Contours Potassium on Film
1:100,000 Colour Contours Thorium on Film
1:100,000 Colour Contours Uranium on Film

Located Data (ASCII) CD ROM
Located Data (ASCII) 256 Channels CD ROM
Gridded Data (ERM) Total Count, Potassium, Uranium, Thorium

5.3 1:100,000 Flight Path Map on Film

5.4 Processing Report (This Document)

by
Anthony Kielniacz
DATA PROCESSOR

RIO TINTO EXPLORATION PTY. LIMITED
ACN 000 057 125

Second Annual & Surrender Report
For The Period Ending April 7, 1997
EL 2067 Moreenia, South Australia

Author:	**D.J. McInnes**
Date:	**June, 1997**
Licence Holder:	**Rio Tinto Exploration Pty. Limited**
Submitted to:	**Chief Geologist, SE District**
Copies to:	**Mines and Energy, South Australia (2)** **Rio Tinto Exploration Pty. Limited - Adl** **Rio Tinto Exploration Pty. Limited - Mlb**
Submitted by:	FOR DJ. McINNES
Accepted by:	

CRAE Report No. 23306

Abstract

Exploration Licence 2067 was granted on March 6, 1995. The licence covers 1318 square kilometres and is located approximately 70 km north of Port Lincoln. The geology across the EL from west to east comprises of the Sleaford complex adjacent to Hutchison Group. The Lincoln complex is in the eastern part of the EL and is separated from the Hutchison Group by the Kalinjala Mylonite zone. The area is regional metamorphosed to upper amphibolite-granulite.

The EL was taken to explore for ultramafic-hosted Ni within the early Proterozoic Hutchison Group similar to deposits of the Thompson Belt in Canada. Multi-element analysis of 358 -80# stream sediment samples and 47 lag samples, collected in the first year of tenure, highlighted six areas comprising of samples with elevated Ni and samples with anomalous Ni to Cr ratio.

Subsequent follow up of these anomalies by ground traversing of the catchment, further stream sediment sampling, soil sample traverses and rock chip sampling recorded no results with geochemical significance.

The conceptual target, "Thompson Belt nickel sulphide play", has been tested by the stream sediment sampling program. No significant results were recorded and ultramafics were found to comprise a small portion of the sequence. No further work is recommended on the EL.

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List Of Plans

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SAa 6351	Moreenia EL 2067, South Australia Location Plan	1:250 000
SAa 6711	Moreenia EL 2067, South Australia Follow Up Rock Chip And Stream Sediment Sample Locations	1:100 000
SAa 6613	Moreenia EL 2067, South Australia Lag Sample Locations	1:100 000
SAa 6614	Moreenia EL 2067, South Australia -80# Stream Sediment Sample Locations	1:100 000

List Of Appendix

Appendix 1 Follow Up Rock and Stream Sediment Sample Ledger and Results

1. Conclusions and Recommendations

Exploration Licence 2067 was granted on March 6, 1995. During the second year of tenure analysis of the 358, -80# stream sediment samples, collected during the first twelve months, provided six sites with elevated geochemistry. The anomalous geochemical sites were a combination of seven stream sediment samples with an elevated Ni to Cr ratio, four samples of which also had elevated nickel stream sediment samples (Ni greater then 40 ppm). Follow up work consisted of catchment traversing, further stream sediment sampling, rock chip sampling and soil sample traverses. This failed to detect any significant geochemical results and only minor amounts of ultramafic. No further work is recommended.

2. Introduction

Exploration Licence 2067 Moreenia was granted on March 6, 1995 for a period of one year. This was subsequently extended for a second term of twelve months. The lease covers an area of 1318 km^2 in the southern Eyre Peninsula, South Australia. This report is the second annual and relinquishment report detailing all work carried out by Rio Tinto Exploration within EL2067.

EL 2067 is located approximately 70 km north of Port Lincoln (plan SAa 6315). The licence application was made to assess the base and precious metal potential of the strongly deformed Early Proterozoic lithologies adjacent to the south eastern margin of the Gawler Block, South Australia.

In the west, the tenement covers possible granitic Archaean-Early Proterozoic rocks of the Sleaford Complex adjacent to early Proterozoic Hutchison Group graphitic metasediments, carbonates, ironstone, gneiss and minor amphibolite. The Kalinjala Mylonite zone is to the east, with the dominantly granitic rocks of the Lincoln Complex in the eastern part of the Tenement. Numerous mafic dykes and minor ultramafic rocks occur in the area. The area is regional metamorphosed to upper amphibolite-granulite facies. Deformation and intrusive igneous activity in the area is associated with the Archaean-Early Proterozoic Sleafordian Orogeny, Early Proterozoic Kimbian Orogeny and possibly younger events. Ferruginous laterite is well developed in the east of the tenement and extensive sand covers much of the western part.

3. Review of Previous work

3.1 Prior to Current Tenement

A review of the previous exploration was undertaken by Tim Moody. From this it was suggested that the area had not been systematically explored for Ni, PGE and Au mineralisation. A stream sediment sampling was proposed to explore for ultramafic hosted Ni similar to the Thompson belt nickel sulphide deposits.

Previously minor amounts of exploration had been conducted focussing on Cu, Pb, Zn and diamonds. To date no significant mineralisation has been identified, however small copper, graphite and iron occurrences are known to exist within EL 2048.

3.2 During Current Tenement

A total of 47 ferruginous lag samples, 358 -80# stream sediment samples were collected during the first year of tenure. Several areas displayed elevated Cu, Ni, Pt, Pd, Co, Cr geochemistry. An airborne magnetic and radiometric survey was completed over the entire tenement.

4. Exploration Completed in 12 Month Period Ending

CRAE proprietary and open file Magnetic and Radiometric data for the Port Lincoln 1:250k mapsheet were levelled and merged. The processing of these data was undertaken by Pitt Research Pty. Ltd. Products produced include 1:250k TMI, 1VD and Radiometric hardcopy and CD (0300068) with digital located data, various grid and image formats.

Multi-element geochemical analysis of the 358 -80# stream sediment samples and 47 lag samples identified six areas of elevated geochemistry that were selected for follow up (plan SAa 6711). Lag sample locations and -80# stream sediment sample locations are included (plans SAa 6613 and SAa 6614, respectively).

Follow up involved ground traversing, further stream sediment sampling and rock chip sampling of catchments upstream from where the elevated geochemical anomalies were recorded. Thirty two rock chip samples, six -80# stream sediment samples and 77 soil samples were collected during the follow up. No significantly anomalous geochemical values were recorded in the follow up samples. Results are in included in Appendix 1.

5. Rehabilitation

As exploration comprised of predominantly stream sediment, soil and rock chip sampling little disturbance was made to the ground. Rehabilitation of the sample sites was undertaken immediately. Existing fence lines and tracks were used to access areas and where this was not possible, the site was entered by foot.

6. References

Moody, T.C. & Barlow, M.G. 1996	Annual Report For The Period Ending March 5, 1996 for Exploration Licence 2067 Moreenia, South Australia. CRAE Report No. 21936.

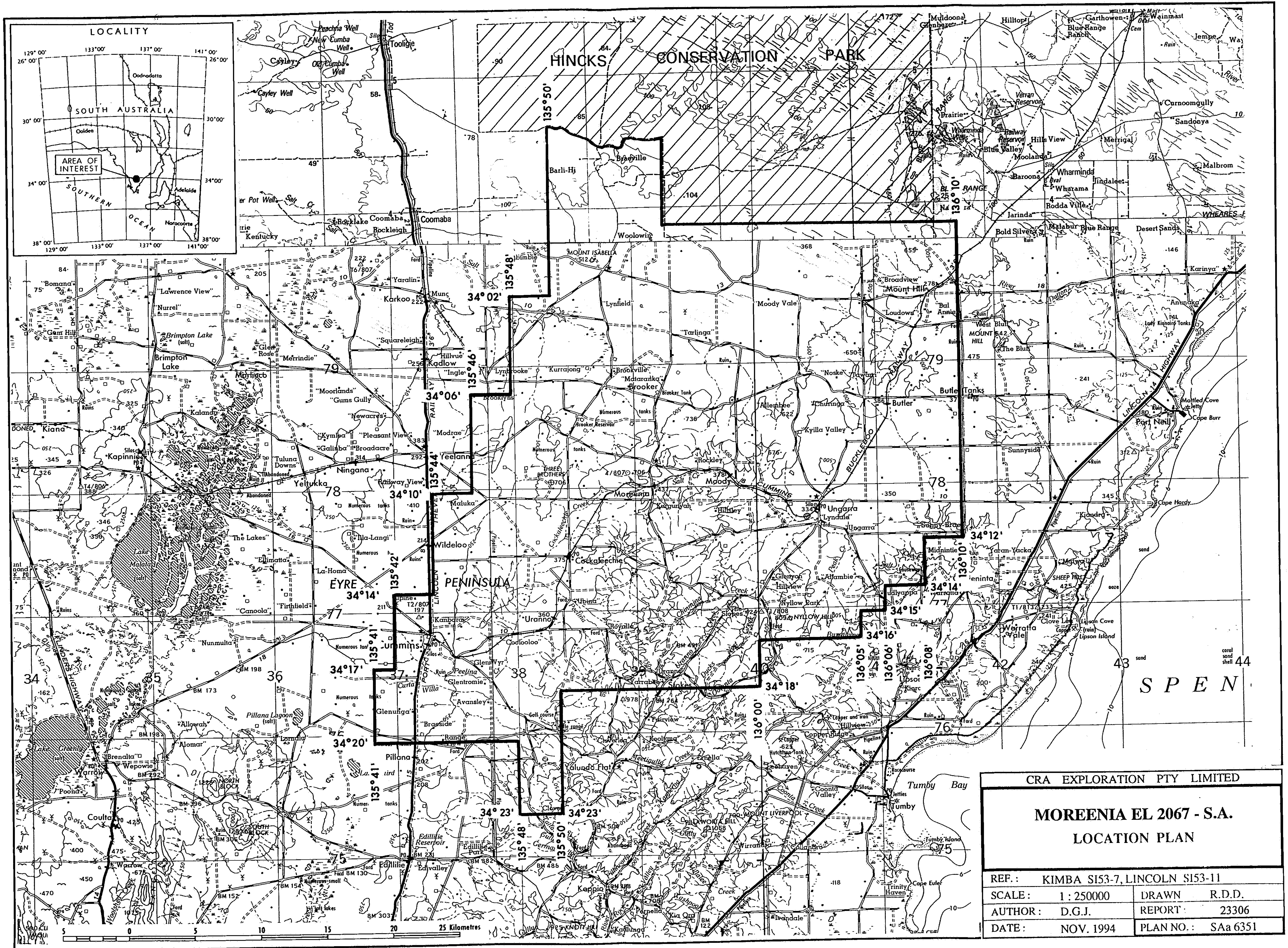
7. Location

Lincoln	SI53-11	1:250 000 sheet

8. Keywords

Copper, Nickel, Gold, -80# stream sediment, -2mm BLEG, Lag, Rock Sampling, Airborne Magnetics, Airborne Radiometrics, Archaean, Proterozoic, Hutchinson Group, Lincoln Group, Sleaford Complex, Gawler Craton, Kalinjala Mylonite Zone

DPO #	Lab	Lab Location	DPO Date	Office	Geologist	Tenement Name	Tenement No.	Sample Type	No. of Samples	250,000 Sheet
54322	Amdel	ADL	02/05/96		TCM	Moreenia	EL2067	-80#ss	126	Lincoln
54323	Analabs	ADL	02/05/96		TCM	Moreenia	EL2067	-10mm+2mm lag	5	Lincoln
81598	Amdel	ADL	22/01/96		TCM	Moreenia	EL2067	-80#ss	232	Lincoln
81595	Analabs	ADL	22/12/95		TCM	Moreenia	EL2067	-10mm+2mm lag	40	Lincoln
57758	Amdel	ADL	19/02/97		AMR	Moreenia	EL2067	rock	32	Lincoln
57758	Amdel	ADL	19/02/97		AMR	Moreenia	EL2067	sl	77	Lincoln
57759	Amdel	ADL	19/02/97		AMR	Moreenia	EL2067	-80#ss	6	Lincoln



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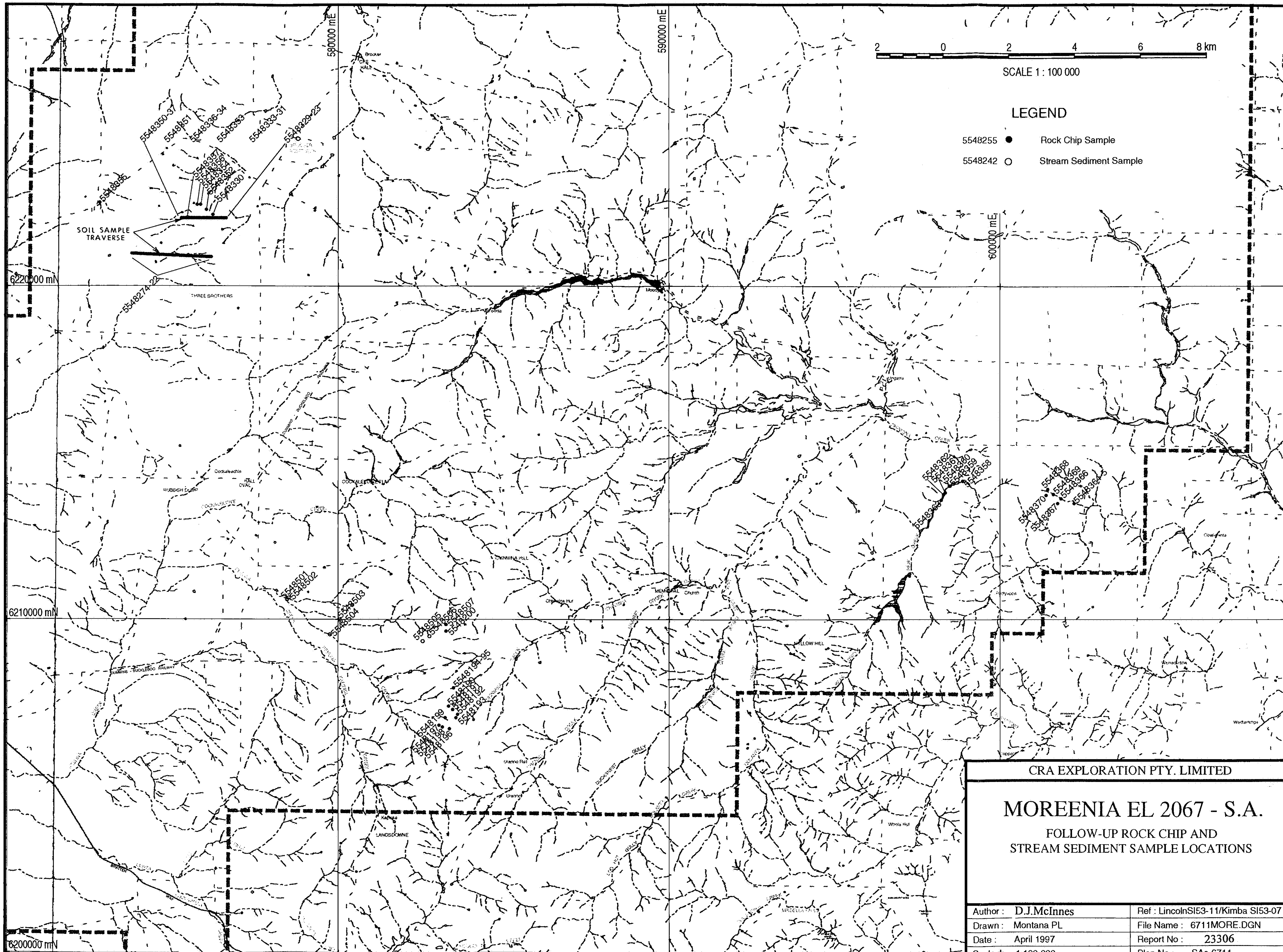
MOREENIA EL 2067 - S.A.

LOCATION PLAN

REF.:	KIMBA SI53-7, LINCOLN SI53-11		
SCALE:	1 : 250000	DRAWN	R.D.D.
AUTHOR:	D.G.J.	REPORT:	23306
DATE:	NOV. 1994	PLAN NO.:	SAa 6351



CRA EXPLORATION PTY. LIMITED

MOREENIA EL 2067 - S.A.

FOLLOW-UP ROCK CHIP AND
STREAM SEDIMENT SAMPLE LOCATIONS

Author :	D.J.McInnes	Ref : LincolnSI53-11/Kimba SI53-07	
Drawn :	Montana PL	File Name :	6711MORE.DGN
Date :	April 1997	Report No :	23306
Scale +	1:100,000	Plan No :	SAa 6711

135° 45' 00" 570000 mE | 135° 50' 00" 580000 mE | 135° 55' 00" | 136° 00' 00" 590000 mE | 136° 05' 00" 600000 mE | 136° 10' 00"

6240000 mN — 34° 00' 00"

6230000 mN — 34° 05' 00"

6220000 mN — 34° 10' 00"

6210000 mN — 34° 15' 00"

6200000 mN — 34° 20' 00"

2 0 2 4 6 8 km

SCALE 1 : 100 000

CRA EXPLORATION PTY. LIMITED

MOREENIA EL 2067 - S.A.

-80# STREAM SEDIMENT SAMPLE LOCATIONS

Author : T.C.Moody	Ref : Lincoln SI5311 / Kimba SI5307
Drawn : F.R.	File Name : 66134MORE DGN
Date : APRIL 96	Report No : 23306
Scale : 1:100 000	Plan No : SAa 6614

135°45' 00"
570000 mE
135°50' 00"
580000 mE
135°55' 00"
590000 mE
136°00' 00"
600000 mE
136°05' 00"
136°10' 00"

6240000 mN — 34°00' 00"
6230000 mN — 34°05' 00"
6220000 mN — 34°10' 00"
6210000 mN — 34°15' 00"
6200000 mN — 34°20' 00"

5244751 5244759 5243333 5243334 5244752 5243335 5243336 5243337 5244501 5244502
5241450 5244756 5244758 5244755 5244757 5241449 5241448 5244753 5244754 5241400 5244505
5241444 5241445 5241446 5241442 5241443 5241447 5248315 5243324 5243317 5243316 5243323 5243322 5243321 5243307 5243312 5243308 5243306 5244504 5244503 5243305 5243304 5243309 5243311 5243310 5243328 5243329

2 0 2 4 6 8 km
SCALE 1 : 100 000

CRA EXPLORATION PTY. LIMITED

MOREENIA EL 2067 - S.A.

LAG SAMPLE LOCATIONS

Author : T.C.Moody	Ref : Lincoln SI5311 / Kimba SI5307
Drawn : F.R.	File Name : 6613MORE.DGN
Date : APRIL 96	Report No : 23306
Scale :1:100 000	Plan No : SAa 6613

Appendix 1

Follow Up Rock and Stream Sediment Sample Ledger and Results

Area	Datum	Sample Number	Sample Type	Sample Depth	AMG East	AMG North	Zone	Map 250K	Geologist	Date	MESA LITH	Field ID	Texture	Alt/Min	Colour	Comments
Moreenia	AGD66	5548190	RKCHIP		583325	6207400	53	SI 53 11	A. Radojkovic	15/02/97		Clt	Fe	Cy	MRBW	Lateritic capping on bleached clay altered (pallid zone) schist.
Moreenia	AGD66	5548191	RKCHIP		583450	6207300	53	SI 53 11	A. Radojkovic	15/02/97		CsfClt	Ma	Go	DPBR	Strongly pitted.
Moreenia	AGD66	5548193	RKCHIP		583550	6207050	53	SI 53 11	A. Radojkovic	15/02/97		Clt Csf	VuBn		DPB	Sandy gritty texture, mottled when cracked open.(Copse of black boys developed)
Moreenia	AGD66	5548194	RKCHIP		583475	6207950	53	SI 53 11	A. Radojkovic	15/02/97		Ovq	Ma	Qz		Qtz-mica vein. Massive muscovite fish developed adjacent to qtz.
Moreenia	AGD66	5548195	RKCHIP		583475	6207950	53	SI 53 11	A. Radojkovic	15/02/97		Ccy	Bl	Qz		Pallid on contact with qtz-mica vein, very soft & talc like. Minor reddish staining.
Moreenia	AGD66	5548196	RKCHIP		583350	6206725	53	SI 53 11	A. Radojkovic	15/02/97		CsfMsc	We		LBW	With oxidised layer parallel ferrug. veining. Striking 630 degrees m.
Moreenia	AGD66	5548197	RKCHIP		583040	6206825	53	SI 53 11	A. Radojkovic	15/02/97		MgsMsc	WeBn	Go	MR	Lateritised crust on surface. Striking 100 degrees m.
Moreenia	AGD66	5548199	RKCHIP		583225	6207050	53	SI 53 11	A. Radojkovic	15/02/97		Igr	MaWe	Qz	LB	Med. grained F/spar-Qtz granitoid, unfoliated. Outcrop common over large area.
Moreenia	AGD66	5548351	RKCHIP		575850	6222050	53	SI 53 11	D. McInnes	15/02/97		Scg	Fe			Fe conglomerate. Fe/Si nodules in a saprolite matrix.
Moreenia	AGD66	5548353	RKCHIP		576200	6222150	53	SI 53 11	D. McInnes	15/02/97		Csf				Taken fron topographic high.
Moreenia	AGD66	5548355	RKCHIP		572775	6222500	53	SI 53 11	D. McInnes	15/02/97		Im	Fe	Qz		Qtz, amphibole, biotite & f/spar.
Moreenia	AGD66	5548356	RKCHIP		575725	6222450	53	SI 53 11	D. McInnes	15/02/97		Ma				
Moreenia	AGD66	5548357	RKCHIP		575425	6222075	53	SI 53 11	D. McInnes	15/02/97		Csf				North-South strike.
Moreenia	AGD66	5548507	RKCHIP		583250	6209850	53	SI 53 11	A. Radojkovic	16/02/97		Mgn	Bn	BiQz		Thinly banded qtz-F/spar-Bi gneiss.
Moreenia	AGD66	5548192	RKFLOAT		583600	6207150	53	SI 53 11	A. Radojkovic	15/02/97		CltOqvObx	Fe	QzCyGo		
Moreenia	AGD66	5548198	RKFLOAT		583140	6206775	53	SI 53 11	A. Radojkovic	15/02/97		Mq	Ma	Qz	G	Fine grained qtz (metamorphosed).
Moreenia	AGD66	5548352	RKFLOAT		576000	6222300	53	SI 53 11	D. McInnes	15/02/97		Ma	Bn	Qz		Variable amounts of amphibole and f/spar.
Moreenia	AGD66	5548354	RKFLOAT		575825	6222450	53	SI 53 11	D. McInnes	15/02/97		Ma	Sc	BiQz		Amphibole, qtz, minor f/spar & biotite.
Moreenia	AGD66	5548200	RKGRAB		583250	6209650	53	SI 53 11	A. Radojkovic	16/02/97		Mgn	We	QzBiMt	VB	Strongly micaceous qtz-F/spar-Bi gneiss + Mt. Highly magnetic.
Moreenia	AGD66	5548274	Soil	25 cm	573750	6220975	53	SI 53 11	D. McInnes	15/02/97						Red/Brown clay. No o/c. Saprolite float.
Moreenia	AGD66	5548275	Soil	25 cm	573800	6220972.917	53	SI 53 11	D. McInnes	15/02/97						Red/brown. Saprolite float. No o/c.
Moreenia	AGD66	5548276	Soil	20 cm	573850	6220970.833	53	SI 53 11	D. McInnes	15/02/97						Red brown (clayey). Saprolite float. No o/c.
Moreenia	AGD66	5548277	Soil	15 cm	573900	6220968.75	53	SI 53 11	D. McInnes	15/02/97						Orange clay. No o/c. Laterite, Fe stone float.
Moreenia	AGD66	5548278	Soil	20 cm	573950	6220966.667	53	SI 53 11	D. McInnes	15/02/97						Orange brown clay. No o/c, no float.
Moreenia	AGD66	5548279	Soil	25 cm	574000	6220964.583	53	SI 53 11	D. McInnes	15/02/97						Dark brown/orange (clayey). No o/c, no float.
Moreenia	AGD66	5548280	Soil	25 cm	574050	6220962.5	53	SI 53 11	D. McInnes	15/02/97						Dark brown/orange (clayey). No o/c, no float. Edge of valley, thicker cover.
Moreenia	AGD66	5548281	Soil	20-25 cm	574100	6220960.417	53	SI 53 11	D. McInnes	15/02/97						Red/brown clay. No float, no o/c.
Moreenia	AGD66	5548282	Soil	20-25 cm	574150	6220958.333	53	SI 53 11	D. McInnes	15/02/97						Yellow/Orange/Brown sandy clay. No float, no o/c. 75 mm cover.
Moreenia	AGD66	5548283	Soil	20 cm	574200	6220956.25	53	SI 53 11	D. McInnes	15/02/97						Grey/brown clay. No o/c or float.
Moreenia	AGD66	5548284	Soil	15 cm	574250	6220954.167	53	SI 53 11	D. McInnes	15/02/97						Red/brown clay. No float or o/c. Very thin cover.

Area	Datum	Sample Number	Sample Type	Sample Depth	AMG East	AMG North	Zone	Map 250K	Geologist	Date	MESA LITH	Field ID	Texture	Alt/Min	Colour	Comments
Moreenia	AGD66	5548285	Soil	15-20 cm	574300	6220952.083	53	SI 53 11	D. McInnes	15/02/97						Grey/brown clay. No o/c or float.
Moreenia	AGD66	5548286	Soil	15 cm	574350	6220950	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. No o/c or float.
Moreenia	AGD66	5548287	Soil	20 cm	574400	6220947.917	53	SI 53 11	D. McInnes	15/02/97						Red brown clay, dark nodules. No o/c or float.
Moreenia	AGD66	5548288	Soil	20 cm	574450	6220945.833	53	SI 53 11	D. McInnes	15/02/97						Yellow orange clay. No o/c or float.
Moreenia	AGD66	5548289	Soil	10-15 cm	574500	6220943.75	53	SI 53 11	D. McInnes	15/02/97						Consolidated clay. Orange/yellow.
Moreenia	AGD66	5548290	Soil	15-20 cm	574550	6220941.667	53	SI 53 11	D. McInnes	15/02/97						Orange-red clay. No o/c or float.
Moreenia	AGD66	5548291	Soil	10-15cm	574600	6220939.583	53	SI 53 11	D. McInnes	15/02/97						Red/brown clay. No o/c or float.
Moreenia	AGD66	5548292	Soil	10-15 cm	574650	6220937.5	53	SI 53 11	D. McInnes	15/02/97						Brown-Red clay. No o/c or float.
Moreenia	AGD66	5548293	Soil	10-15cm	574700	6220935.417	53	SI 53 11	D. McInnes	15/02/97						Red-Brown clay. No o/c or float.
Moreenia	AGD66	5548294	Soil	10-15 cm	574750	6220933.333	53	SI 53 11	D. McInnes	15/02/97						Orange brown clay. Nil o/c, Nil float.
Moreenia	AGD66	5548295	Soil	10 cm	574800	6220931.25	53	SI 53 11	D. McInnes	15/02/97						Dark brown to Red. No o/c or float.
Moreenia	AGD66	5548296	Soil	10-15 cm	574850	6220929.167	53	SI 53 11	D. McInnes	15/02/97						Red brown clay.
Moreenia	AGD66	5548297	Soil	35 cm	574900	6220927.083	53	SI 53 11	D. McInnes	15/02/97						Cream colour fine sand with abundant pebbles. No o/c or float.
Moreenia	AGD66	5548298	Soil	25 cm	574950	6220925	53	SI 53 11	D. McInnes	15/02/97						Cream colour, fine sand. No o/c or float.
Moreenia	AGD66	5548299	Soil	15 cm	575000	6220922.917	53	SI 53 11	D. McInnes	15/02/97						Red-brown sandy clay. No float, or o/c.
Moreenia	AGD66	5548300	Soil	10 cm	575050	6220920.833	53	SI 53 11	D. McInnes	15/02/97						Brown-Red clay. No o/c or float.
Moreenia	AGD66	5548301	Soil	10 cm	575100	6220918.75	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. No o/c no float.
Moreenia	AGD66	5548302	Soil	5-10 cm	575150	6220916.667	53	SI 53 11	D. McInnes	15/02/97						Red brown clayey soil. No o/c no float.
Moreenia	AGD66	5548303	Soil	10-15 cm	575200	6220914.583	53	SI 53 11	D. McInnes	15/02/97						Red brown clayey soil. No o/c no float.
Moreenia	AGD66	5548304	Soil	15 cm	575250	6220912.5	53	SI 53 11	D. McInnes	15/02/97						Orange-red / light brown clay. No o/c no float.
Moreenia	AGD66	5548305	Soil	10-15 cm	575300	6220910.417	53	SI 53 11	D. McInnes	15/02/97						Orange red brown clay. No o/c no float.
Moreenia	AGD66	5548306	Soil		575350	6220908.333	53	SI 53 11	D. McInnes	15/02/97						Yellow light brown sandy soil. No o/c no float.
Moreenia	AGD66	5548307	Soil	10-15 cm	575400	6220906.25	53	SI 53 11	D. McInnes	15/02/97						Orangey red clay. No o/c no float.
Moreenia	AGD66	5548308	Soil	15-20 cm	575450	6220904.167	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. No o/c no float.
Moreenia	AGD66	5548309	Soil	10-15 cm	575500	6220902.083	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. No o/c no float.
Moreenia	AGD66	5548310	Soil	5 cm	575550	6220900	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. No o/c no float.
Moreenia	AGD66	5548311	Soil	10-15 cm	575600	6220897.917	53	SI 53 11	D. McInnes	15/02/97						Orange red brown clay. No o/c no float.
Moreenia	AGD66	5548312	Soil	10 cm	575650	6220895.833	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. No o/c no float.
Moreenia	AGD66	5548313	Soil	10-15 cm	575700	6220893.75	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. No o/c no float.
Moreenia	AGD66	5548314	Soil	15-20 cm	575750	6220891.667	53	SI 53 11	D. McInnes	15/02/97						Orange red brown sandy clay. No o/c no float.
Moreenia	AGD66	5548315	Soil	10-15 cm	575800	6220889.583	53	SI 53 11	D. McInnes	15/02/97						Orange brown sandy clay. No o/c. Note: higher % of iron stone lag.
Moreenia	AGD66	5548316	Soil	10-15 cm	575850	6220887.5	53	SI 53 11	D. McInnes	15/02/97						Orange brown clay. No o/c, lag float.
Moreenia	AGD66	5548317	Soil	20-25 cm	575900	6220885.417	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. Surface lag. No o/c.
Moreenia	AGD66	5548318	Soil	10-20 cm	575950	6220883.333	53	SI 53 11	D. McInnes	15/02/97						Red brown. No o/c, surface lag.
Moreenia	AGD66	5548319	Soil	10-15 cm	576000	6220881.25	53	SI 53 11	D. McInnes	15/02/97						Orange brown clay. No o/c no float.
Moreenia	AGD66	554832U	Soil	10-15 cm	576050	6220879.167	53	SI 53 11	D. McInnes	15/02/97						Orange brown clay. No o/c no float.
Moreenia	AGD66	5548321	Soil		576100	6220877.083	53	SI 53 11	D. McInnes	15/02/97						Orange brown clay. No o/c, laterite float present.
Moreenia	AGD66	5548322	Soil	10-20 cm	576150	6220875	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. Lateritic, iron stone float. No o/c.

Area	Datum	Sample Number	Sample Type	Sample Depth	AMG East	AMG North	Zone	Map 250K	Geologist	Date	MESA LITH	Field ID	Texture	Alt/Min	Colour	Comments
Moreenia	AGD66	5548323	Soil	15-20 cm	576600	6222050	53	SI 53 11	D. McInnes	15/02/97						Orange brown clay. No o/c no float.
Moreenia	AGD66	5548324	Soil		576550	6222050	53	SI 53 11	D. McInnes	15/02/97						Orange brown clay. No o/c no float.
Moreenia	AGD66	5548325	Soil	10-15 cm	576500	6222050	53	SI 53 11	D. McInnes	15/02/97						Orange/Red brown clay. No o/c. Lag float.
Moreenia	AGD66	5548326	Soil	15 cm	576450	6222050	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. Ironstone float.
Moreenia	AGD66	5548327	Soil	30-35 cm	576400	6222050	53	SI 53 11	D. McInnes	15/02/97						Light brown, leeched. No o/c. Float: saprolite & iron stone.
Moreenia	AGD66	5548328	Soil	15-20 cm	576350	6222050	53	SI 53 11	D. McInnes	15/02/97						Light brown clay. No o/c. Saprolite float.
Moreenia	AGD66	5548329	Soil		576300	6222050	53	SI 53 11	D. McInnes	15/02/97						Saprolite rich iron stained clay. No o/c.
Moreenia	AGD66	5548330	Soil	20 cm	576250	6222050	53	SI 53 11	D. McInnes	15/02/97						Red brown clayey soil.
Moreenia	AGD66	5548331	Soil	20 cm	576200	6222050	53	SI 53 11	D. McInnes	15/02/97						Light brown silty clay. No o/c no float.
Moreenia	AGD66	5548332	Soil	15-20 cm	576150	6222050	53	SI 53 11	D. McInnes	15/02/97						Orange-brown sandy clay. Saprolite float abundant. No o/c.
Moreenia	AGD66	5548333	Soil		576100	6222050	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. Saprolite float. No o/c.
Moreenia	AGD66	5548334	Soil	15 cm	576050	6222050	53	SI 53 11	D. McInnes	15/02/97						Light brown, silty clayey weathered saprolite. No o/c.
Moreenia	AGD66	5548335	Soil	20 cm	576000	6222050	53	SI 53 11	D. McInnes	15/02/97						Orange brown clay. Iron stone float. No o/c.
Moreenia	AGD66	5548336	Soil	20 cm	575950	6222050	53	SI 53 11	D. McInnes	15/02/97						Red brown clayey soil. No o/c no float.
Moreenia	AGD66	5548337	Soil	20 cm	575900	6222050	53	SI 53 11	D. McInnes	15/02/97						Orange-Red brown silty clay soil. Iron stone float. No o/c.
Moreenia	AGD66	5548338	Soil	10-15 cm	575850	6222050	53	SI 53 11	D. McInnes	15/02/97						Red brown sandy-silty clay. No o/c no float.
Moreenia	AGD66	5548339	Soil	10-15 cm	575800	6222050	53	SI 53 11	D. McInnes	15/02/97						Dark red brown clay. No o/c no float.
Moreenia	AGD66	5548340	Soil	10-15 cm	575750	6222050	53	SI 53 11	D. McInnes	15/02/97						Dark brown silty clay. No o/c no float.
Moreenia	AGD66	5548341	Soil	10-15 cm	575700	6222050	53	SI 53 11	D. McInnes	15/02/97						Dark red-brown clay. No o/c no float.
Moreenia	AGD66	5548342	Soil	25 cm	575650	6222050	53	SI 53 11	D. McInnes	15/02/97						Dark red-brown clayey silty soil. No o/c no float.
Moreenia	AGD66	5548343	Soil	10 cm	575600	6222050	53	SI 53 11	D. McInnes	15/02/97						Light brown/orange clayey silt. No o/c no float.
Moreenia	AGD66	5548344	Soil	10 cm	575550	6222050	53	SI 53 11	D. McInnes	15/02/97						Red brown clayey soil. Iron stone, laterite float. Nil o/c.
Moreenia	AGD66	5548345	Soil	15 cm	575500	6222050	53	SI 53 11	D. McInnes	15/02/97						Red brown clayey soil. Iron stone, laterite float. Nil o/c.
Moreenia	AGD66	5548346	Soil		575450	6222050	53	SI 53 11	D. McInnes	15/02/97						Orangey brown.
Moreenia	AGD66	5548347	Soil	15 cm	575400	6222050	53	SI 53 11	D. McInnes	15/02/97						Orangey brown clay. Nil o/c. Ironstone, laterite float.
Moreenia	AGD66	5548348	Soil	10-15 cm	575350	6222050	53	SI 53 11	D. McInnes	15/02/97						Light brown sandy material with abundant ironstone nodules (well weathered). No o/c. Fe stone float.
Moreenia	AGD66	5548349	Soil	15-20 cm	575300	6222050	53	SI 53 11	D. McInnes	15/02/97						Red brown clay. Fe stone flaot. No o/c.
Moreenia	AGD66	5548350	Soil	10-15 cm	575250	6222050	53	SI 53 11	D. McInnes	15/02/97						Red-dark brown clay. Abundant Fe stone nodules (& float around the surface). No o/c.

Mag Sus (x10-3)	DPO	Sample Number	Au	Au Dp1	Ag	Al	As	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Sb	Sr	Ti	V	Y	Zn
8.15	57758	5548190	-1		-1	87800	-3	115	-5	500	-5	20	-2	29	1000	51700	1750	850	10	-3	1200	30	6	95	15	10	17	3850	32	2	13
0.44	57758	5548191	-1	2	1	92700	32	70	-5	420	-5	-10	-2	185	37	232000	11500	800	400	-3	370	30	6	65	50	10	9	14800	500	-2	54
0.24	57758	5548193	-1		2	63100	6	60	-5	650	-5	70	-2	50	10	232000	600	470	25	-3	260	25	4	290	75	-5	30	3500	71	3	8
0.3-0.02	57758	5548194	-1		-1	43300	-3	-5	-5	75	-5	-10	-2	110	32	11000	18800	650	120	-3	1300	140	5	25	-5	-5	3	290	-2	-2	15
0.06	57758	5548195	-1		-1	162000	6	125	-5	115	-5	700	-2	-2	10	6550	360	145	-5	-3	1600	-5	6	900	290	60	74	60	-2	2	11
0.15	57758	5548196	-1		-1	72600	-3	105	-5	140	-5	80	-2	110	16	69700	2950	700	25	-3	4200	25	5	360	35	-5	40	2650	62	4	8
0.07	57758	5548197	-1		-1	73200	4	95	-5	340	-5	65	-2	48	13	103000	3750	1400	30	-3	1850	30	4	135	40	-5	11	4250	73	9	17
0.06	57758	5548199	-1		-1	68000	-3	240	-5	1250	-5	20	-2	40	6	8250	25000	175	15	-3	14400	15	4	115	85	-5	65	340	3	5	7
	57758	5548351	-1		2	137000	16	100	-5	32800	-5	15	-2	150	5	306000	470	900	25	4	600	45	10	430	20	35	51	6950	240	-2	10
	57758	5548353	-1		-1	92800	8	120	-5	900	-5	115	-2	74	32	226000	2850	800	35	-3	500	25	12	360	75	5	41	3800	79	4	22
	57758	5548355	-1		-1	68000	4	220	-5	8050	-5	80	12	220	11	111000	12400	13000	2750	-3	9450	20	28	500	15	-5	72	3350	59	38	76
0.2	57758	5548356	-1		-1	76700	-3	900	-5	6300	-5	120	9	80	2	43400	20800	8750	1400	-3	15100	20	15	700	45	5	195	3450	44	20	71
	57758	5548357	-1		1	95100	6	95	-5	650	-5	15	-2	87	95	314000	850	550	70	-3	430	15	19	290	25	5	21	1450	49	2	51
1-10	57758	5548507	-1		-1	70000	-3	650	-5	10900	-5	130	8	74	5	39900	21800	6900	490	-3	26000	30	8	650	35	-5	110	4450	22	27	175
0.01	57758	5548192	-1		-1	11900	-3	-5	-5	190	-5	-10	-2	230	120	41000	210	105	25	4	90	-5	6	35	10	-5	2	200	24	3	6
	57758	5548198	-1		-1	1850	-3	70	-5	105	-5	25	-2	110	11	5350	1100	45	25	4	85	-5	5	20	-5	-5	5	90	3	-2	3
	57758	5548352	-1		-1	75600	4	190	-5	12500	-5	85	15	200	9	103000	8250	14200	2600	-3	13000	20	31	800	10	-5	115	4200	71	30	71
	57758	5548354	-1		-1	79800	-3	900	-5	5300	-5	90	15	140	3	60300	21300	12700	850	-3	11900	20	34	480	35	5	150	4650	84	18	92
10-30	57758	5548200	-1		-1	70200	-3	800	-5	12200	-5	150	7	89	8	43700	23100	2300	550	-3	20500	25	11	490	30	5	120	4300	23	22	67
10	57758	5548274	-1	-1	-1	63400	10	115	-5	9700	-5	30	7	76	8	71600	7750	3700	95	-3	900	15	20	220	25	-5	50	4250	155	10	25
13.5	57758	5548275	-1		-1	63500	14	125	-5	6900	-5	40	7	79	10	103000	7100	3250	105	-3	800	15	22	220	35	-5	44	4650	210	13	23
8	57758	5548276	-1		-1	52800	10	130	-5	35500	-5	40	7	90	8	63200	7700	4050	130	-3	750	10	20	290	25	-5	88	3950	135	12	21
7.5	57758	5548277	-1		-1	73100	14	95	-5	1550	-5	40	8	115	6	82700	5050	1550	65	-3	650	15	23	200	25	5	24	4950	170	14	20
13	57758	5548278	-1		-1	49000	22	85	-5	1200	-5	35	6	99	4	108000	3750	900	55	-3	550	15	20	130	30	-5	20	3950	220	11	14
4.4	57758	5548279	-1		-1	57600	6	145	-5	3800	-5	45	6	94	8	48600	7800	2350	155	-3	1300	15	19	380	20	-5	45	4850	98	12	21
5	57758	5548280	-1		-1	51400	6	155	-5	4050	-5	55	6	61	8	51400	8450	2550	220	-3	1650	15	17	200	20	-5	53	4750	97	12	24
3.1	57758	5548281	-1		-1	75000	6	110	-5	2200	-5	50	9	99	8	58000	10000	4850	90	-3	2250	15	22	170	25	5	48	4350	105	11	32
9.2	57758	5548282	-1		-1	37200	6	145	-5	1000	-5	25	3	67	5	51300	8150	1150	60	-3	1400	10	10	135	20	-5	30	3300	88	6	17
5.8	57758	5548283	-1		-1	34700	6	160	-5	1800	-5	30	3	83	5	51900	8850	1100	70	-3	1600	15	10	125	20	-5	37	3450	89	7	16
5.2	57758	5548284	-1		-1	51900	6	120	-5	2000	-5	35	5	85	6	55000	8950	3100	75	-3	2100	10	17	220	25	-5	46	3150	94	9	22

Mag Sus (x10-3)	DPO	Sample Number	Au	Au Dp1	Ag	Al	As	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Sb	Sr	Ti	V	Y	Zn
5.5	57758	5548285	-1		-1	46900	6	125	-5	3500	-5	35	5	110	5	53200	9150	2850	95	-3	1150	10	16	140	25	-5	65	3350	92	10	19
5.7	57758	5548286	-1		-1	61600	8	120	-5	2000	-5	45	6	115	6	72300	8900	3600	75	-3	1750	15	19	110	30	-5	49	3950	120	11	24
6.1	57758	5548287	-1		-1	47500	8	115	-5	3700	-5	40	5	105	6	58700	8250	2650	80	-3	1050	15	16	145	25	-5	61	3300	100	9	20
5.9	57758	5548288	-1		-1	40600	4	130	-5	3000	-5	35	4	71	7	51800	7800	2000	60	-3	1300	15	13	130	25	-5	42	3300	92	7	17
1.5	57758	5548289	-1	-1	-1	60500	6	110	-5	2150	-5	50	7	52	5	44100	9650	4350	60	-3	1550	15	17	105	20	-5	49	3850	80	11	24
9.8	57758	5548290	2		-1	54000	10	125	-5	2450	-5	45	5	90	5	94400	8550	2950	75	-3	1100	15	19	145	35	-5	43	3600	160	11	22
1.2	57758	5548291	1		-1	66200	4	115	-5	2950	-5	55	8	57	6	46200	11000	5150	75	-3	1250	15	21	140	25	-5	57	3950	80	13	27
2.5	57758	5548292	-1		-1	39100	-3	120	-5	2000	-5	35	4	92	5	32500	8400	2750	55	-3	1100	10	13	100	20	-5	42	3000	58	9	19
3	57758	5548293	4		-1	57300	6	115	-5	7350	-5	40	8	63	6	50500	10200	4900	75	-3	1050	15	20	140	25	-5	64	3550	86	14	27
3.7	57758	5548294	-1		-1	59500	4	200	-5	1900	-5	50	5	87	10	38400	11200	2450	170	-3	2300	20	16	185	20	-5	43	5200	70	9	26
3.8	57758	5548295	-1		-1	65700	6	180	-5	2000	-5	50	6	110	10	61000	11500	2750	115	-3	2200	15	18	210	25	-5	43	3950	99	10	38
4.8	57758	5548296	1		-1	68600	6	130	-5	1950	-5	40	6	91	6	62300	10200	3450	70	-3	1850	15	18	125	20	-5	40	3750	105	10	22
9.4	57758	5548297	5		-1	24000	8	160	-5	800	-5	25	-2	145	4	61400	8050	440	55	-3	1500	10	9	105	25	-5	27	2350	93	5	11
14.2	57758	5548298	-1		-1	47800	14	130	-5	1200	-5	40	4	140	7	115000	6400	900	85	-3	1000	20	15	125	35	-5	26	4550	180	8	18
9.3	57758	5548299	-1		-1	41700	10	125	-5	1050	-5	30	3	100	6	85000	6000	950	65	-3	1200	15	13	125	25	-5	27	4050	140	7	16
6	57758	5548300	2		-1	47900	8	105	-5	2150	-5	20	4	94	5	62200	5800	1800	55	-3	850	15	14	120	20	-5	26	3550	105	6	18
8.7	57758	5548301	-1		-1	84300	14	110	-5	4750	-5	25	8	125	7	111000	7450	4550	80	-3	700	15	25	135	25	10	39	4600	185	10	25
3.7	57758	5548302	4		-1	53100	8	95	-5	1900	-5	25	5	95	5	61900	6300	3050	55	-3	1350	15	15	120	15	-5	33	3700	110	9	18
8.7	57758	5548303	4		-1	53800	8	95	-5	1950	-5	20	4	93	5	73900	5350	1950	60	-3	800	15	14	120	20	-5	26	3850	130	6	17
5.2	57758	5548304	-1		-1	44900	10	105	-5	1800	-5	25	3	125	5	88500	5450	2150	95	-3	1150	15	15	130	25	-5	35	3350	140	9	16
4	57758	5548305	1		-1	57400	6	95	-5	2000	-5	30	6	98	5	62600	8000	3650	90	-3	1400	15	18	120	20	-5	46	3650	100	10	23
1.5	57758	5548306	-1		-1	41000	4	95	-5	171000	-5	35	8	34	7	26000	3550	9550	75	-3	750	-5	12	90	10	-5	370	2300	51	9	15
10	57758	5548307	1		-1	54300	10	120	-5	1800	-5	45	4	96	6	109000	7300	2600	105	-3	1600	15	19	135	30	-5	40	4200	165	11	20
6.2	57758	5548308	3		-1	60700	6	165	-5	4500	-5	50	6	91	8	67300	9800	3450	85	-3	1450	15	18	180	25	-5	49	3650	100	12	24
7.6	57758	5548309	1		-1	52000	4	175	-5	2000	-5	35	4	95	6	61600	10600	3000	85	-3	1950	10	16	120	25	-5	46	3450	94	10	21
9.3	57758	5548310	4		-1	45200	6	200	-5	1650	-5	40	3	120	6	72000	10000	2050	105	-3	2350	10	13	165	25	-5	46	2900	100	10	18
1.7	57758	5548311	-1		-1	52100	-3	260	-5	2000	-5	65	4	100	12	30100	12700	2000	100	-3	3250	15	10	240	30	-5	43	2800	52	8	23
2.6	57758	5548312	-1		-1	56100	-3	270	-5	1350	-5	40	3	140	9	32100	14400	1600	95	-3	3450	15	11	220	30	-5	45	3400	56	6	24
4.1	57758	5548313	3		-1	49200	4	250	-5	1350	-5	50	3	130	10	41900	15900	1800	115	-3	3350	10	11	210	35	-5	40	2600	69	7	21
5.6	57758	5548314	-1	1	-1	56300	8	150	-5	950	-5	35	4	135	6	57100	11200	1000	55	-3	1650	15	15	160	25	-5	29	3650	105	7	16
6.6	57758	5548315	4	3	-1	86400	14	85	-5	950	-5	30	7	150	5	96200	5400	1250	50	-3	750	20	26	155	20	10	25	5400	170	11	17
2.8	57758	5548316	-1		-1	72400	10	65	-5	800	-5	20	5	110	5	63700	3850	1150	40	-3	600	20	19	120	15	-5	20	4700	120	8	15
3.5	57758	5548317	2		-1	65600	10	70	-5	950	-5	15	4	105	4	77300	3500	1400	40	-3	500	15	17	95	15	-5	21	4150	140	7	14
3.7	57758	5548318	-1		-1	85700	8	70	-5	3050	-5	20	5	65	6	66500	5550	3100	55	-3	-10	15	22	115	10	-5	30	4100	120	6	22
2.2	57758	5548319	-1		-1	93200	10	90	-5	4450	-5	45	9	80	7	87000	6950	4950	80	-3	-10	15	25	135	20	5	42	4100	150	12	27
10.3	57758	5548320	1		-1	76400	20	120	-5	2650	-5	30	-2	130	7	180000	3950	1850	65	-3	-10	20	15	200	45	-5	29	3600	280	8	27
1.1	57758	5548321	-1		-1	139000	8	75	-5	2050	-5	35	7	60	6	71400	4250	2550	45	-3	-10	25	26	130	15	30	30	5900	115	7	23
1.35	57758	5548322	-1		-1	107000	-3	120	-5	2950	-5	80	6	52	7	62500	6550	6000	85	-3	300	15	15	190	65	15	76	3500	75	6	20

Mag Sus (x10-3)	DPO	Sample Number	Au	Au Dp1	Ag	Al	As	Ba	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Sb	Sr	Ti	V	Y	Zn
15	57758	5548323	1		-1	56900	6	85	-5	1600	-5	35	3	73	7	106000	5000	2750	100	-3	650	20	14	145	20	-5	41	3800	120	8	21
20	57758	5548324	1		1	55100	10	85	-5	2100	-5	25	-2	110	8	204000	4000	1900	135	-3	65	20	18	185	30	-5	46	3500	210	8	19
7	57758	5548325	-1		-1	88300	6	90	-5	3900	-5	25	5	56	8	91400	6450	4350	100	-3	15	20	18	160	10	-5	65	3900	98	8	26
1.1	57758	5548326	-1		1	83600	-3	40	-5	750	-5	-10	-2	63	11	198000	1450	600	85	-3	-10	25	11	155	10	-5	14	4300	86	3	15
1.2	57758	5548327	1		-1	48500	8	105	-5	143000	-5	30	3	31	16	39200	2250	10100	65	-3	-10	-5	9	130	-5	-5	600	1700	30	2	13
2.1	57758	5548328	-1		-1	99600	6	110	-5	46800	-5	40	4	52	22	74200	5600	6600	160	-3	-10	20	13	195	10	10	190	3350	61	5	25
0.8	57758	5548329	1		-1	86400	4	95	-5	55600	-5	40	3	73	16	55100	2900	4500	105	-3	-10	15	10	190	10	5	165	3150	59	4	16
0.85	57758	5548330	-1		-1	102000	-3	95	-5	5400	-5	35	3	68	6	38600	5600	5200	70	-3	-10	15	11	110	10	15	46	3700	58	4	19
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16.8	57758	5548350	-1		1	82200	18	125	-5	3550	-5	60	5	165	9	197000	7500	4450	125	-3	1400	25	26	200	50	-5	68	5000	330	13	31