VOLUME 1

ARTHUR RIVER MAGNESITE PROJECT

RL 8718

WEST TAKONE – NORTHWESTERN TASMANIA

ANNUAL REPORT
1998 - 1999

Crest Magnesium NL
Level 1/11 Ventnor Avenue
West Perth – WESTERN AUSTRALIA

Arthur River Magnesite Project

RL8718

West Takone – Northwestern Tasmania

Annual Report

Covering period 1998 –1999

Crest Magnesium NL
Level 1/11 Ventnor Avenue
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May 1999

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1. LOCATION

The Lyons and Arthur Rivers Magnesite Project is located in the West Takone area of Northwestern Tasmania, and some 52 kilometres southwest of the Port of Burnie (Figure 1).

Access from Burnie is by way of the small village of Yolla, along the sealed Rosebery – Queenstown Highway to the West Takone turn off, a distance of 24.5 kilometres, thence a further 6.8 kilometres of bitumen by way of Takone. At 33.1 kilometres, the bitumen gives way to a graded gravel road.
The proposed mine site is a further 19.4 kilometres along Farquhars Road, on the western side of the Arthur River (30 tonnes capacity) and just short of Keith River, which is spanned by the Wenzel Bridge having a 5 tonne capacity.

2. TOPOGRAPHY, DRAINAGE AND VEGETATION

The topography of the area investigated, namely Mining Lease Application 1M/99, ranges from 139 metres AHD at the Keith River to 190 metres AHD in the vicinity of a mafic intrusive centered about Drillhole AR011.

The area is drained by the Arthur River (136AHD) and its tributaries, the main tributary being the Keith River, which bounds the resource zone along its western margin and drains northerly into the Arthur River.

Three small intermittently flowing creeks drain both westerly and northerly into the Keith and Arthur Rivers (Figure 2).

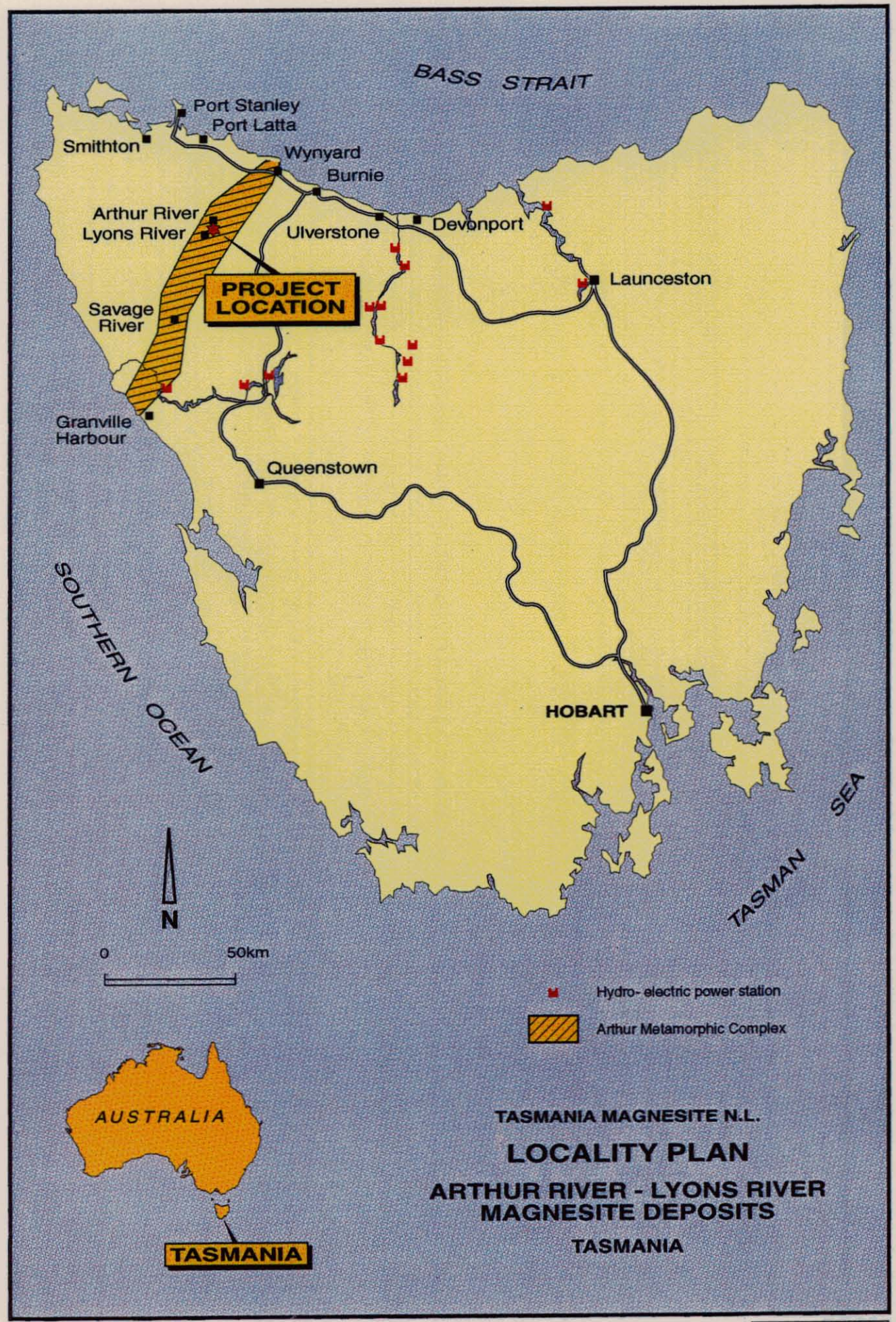
The vegetation is dense regrowth forest comprising eucalypts, myrtle and a virtually impenetrable, undercover of ferns and brambles together with fallen timber.

3. TENEMENT INFORMATION

Work completed during the reporting period was carried out within Retention Licence 8718 at Arthur River, West Takone, Northwestern Tasmania. This tenement has an area of five square kilometres and is one of two similarly sized licences covering an extensive zone of magnesite mineralisation. (Figures 2 and 3)

The second Retention Licence 8717, located at Lyons River some 4 kilometres southwest, covers the southern extension of the Arthur River magnesite resource which was the subject of diamond drill exploration during 1998/1999. Apart from reconnaissance inspections and data research no work was carried out in RL8717.

In February 1999, a Mining Lease, 1M/99, having an area of approximately 195 hectares was applied for within RL8718. This Mining Lease covers about 1.5 kilometres strike length of high grade magnesite mineralisation. The proposed mining operation to extract some 15 million tonnes of this high grade resource will be located in the southwestern corner of the mining lease.



Merrison Associates (+61 8) 9321 8598

FIGURE 1

5 cm

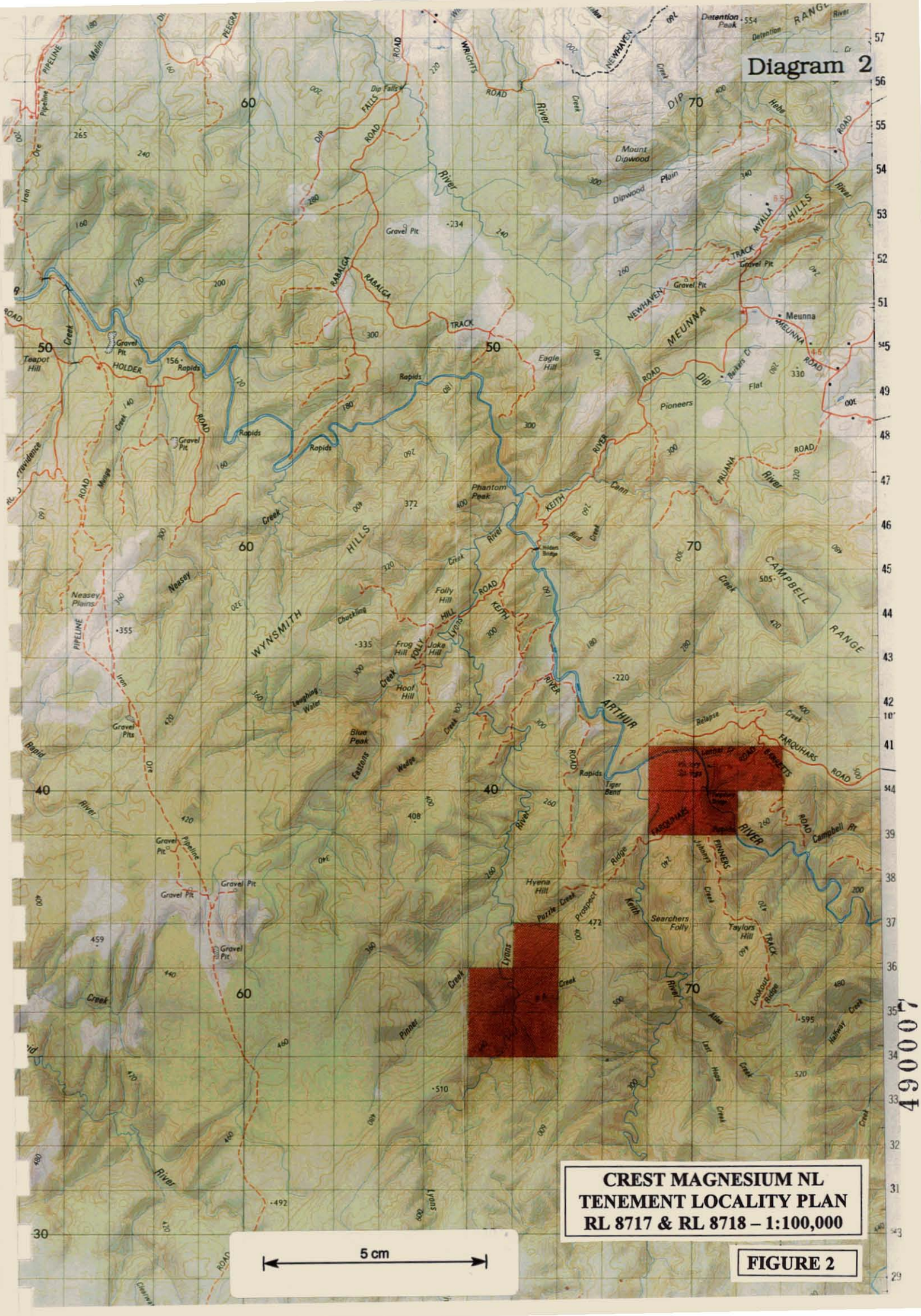


Diagram 2
CREST MAGNESIUM NL
TENEMENT LOCALITY PLAN
RL 8717 & RL 8718 – 1:100,000
5 cm
FIGURE 2
49000

490008

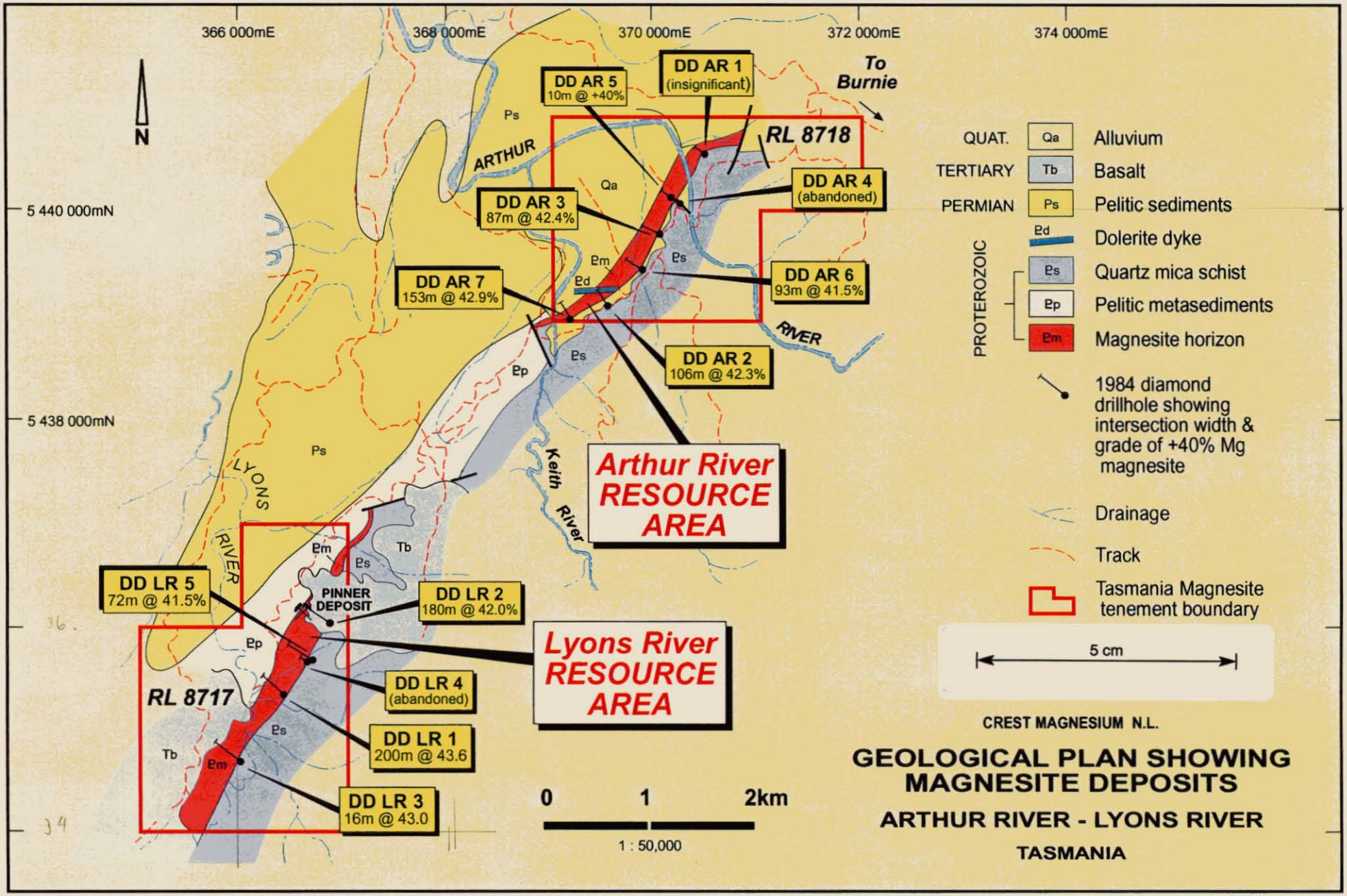


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FIGURE 3

4. SUMMARY OF PREVIOUS EXPLORATION

The Arthur River magnesite deposit was first discovered in 1925. In 1970, Mineral Holdings Australia Pty Ltd (MHA) were granted a large exploration licence (EL43/70) over the area and during the next three years carried out exploration in association with a number of joint venture partners. Up to 1981, MHA continued exploration, which resulted in the discovery of magnesite at Lyons River, about 4 kilometres along strike south of the Arthur River deposit.

Between 1982 and 1988, MHA in joint venture with CRAE, carried out exploration comprising geological mapping, geophysical gravity surveys, diamond drilling, metallurgical testing and feasibility and marketing studies with the view to assessing the deposit as a source of dead-burned magnesite, caustic calcined magnesite and direct shipping ore.

This work delineated a carbonate body at Arthur River occurring over a 3,500 metres strike length and a similar magnesite body at the Lyons River, some 2000 metres long.

In 1997, Tasmania Magnesite NL entered into an option agreement to purchase the deposit from MHA. Check and exploratory diamond drilling at Arthur River comprising seven holes totalling 1254.3 metres confirmed the results of earlier workers with the delineation of an Indicated Resource totalling some 29 million tonnes at an average grade of 42.8% MgO and 5.3% SiO_2.

It has been estimated from past and recent drilling that the Arthur and Lyons Rivers magnesite deposits possibly contain as much as 180 million tonnes of high grade magnesite mineralisation to a vertical depth of 150 metres. Diamond drilling evidence indicated that the high grades encountered continue at depth to at least 400 metres and probably much deeper.

5. SUMMARY OF WORK COMPLETED DURING PERIOD

Commencing on 25 November 1998 and finishing on the 20 March 1999, a programme of in-fill diamond drilling, totalling 2759.9 metres in fifteen holes was carried out within RL8718.

The programme was designed to upgrade the Indicated Resource delineated by Tasmania Magnesite NL in 1997 to Measured Resource status, so as to allow a bankable feasibility study to proceed.

Thirteen out of the 15 holes intersected high-grade magnesite, whilst the remaining two holes confirmed the presence of a dolerite intrusive (or intrusives) which intersects the magnesite body between MB004 and AR012.

Applying cut off grades derived from preliminary metallurgical test works, a Measured Resource was identified over a 250 metre strike length and to an average depth of 145 metres, of 13 million tonnes grading 43.4% MgO, 1.9% CaO, 1.3% Fe_2O_3 and 4.9% SiO_2. This resource does not include 3.7 million tonnes of clayey and calcium oxide rich, high-grade magnesite which will be used for blending as feedstock for the proposed treatment plant.

The Measured Resource identified to date comprises only part of the magnesite mineralisation indicated by others within RL8717 (Lyons River) and RL8718 (Arthur River). This mineralised zone has a total strike length of about 5 kilometres, a maximum width in excess of 300 metres and a depth of at least 400 metres with no indication of weakening grade.

The data derived from this latest programme of in-fill drilling, together with check holes drilled in 1997, have been converted into digital format to allow further processing. Resource modelling and estimation have been carried out using the Surpac 2000 mining software package.

6. SPECIFIC SURVEYS

6.1 Topographic Surveys

In 1999, both ground Theodolite and GPS surveys were carried out by Peacock, Darcey and Anderson Pty Ltd of Burnie in the Arthur River Project Area to establish the location of all completed drill holes, pump and monitoring water bore holes and access tracks. (Figure 13).

6.2 Test Pitting

A short programme of test pitting to check on the characteristics of the overburden in the vicinity of the proposed open pit mine was carried out by Pitt & Sherry, Consulting Engineers of Tasmania. A copy of their draft report is attached as Appendix No. 4.

6.3 Pump and Monitoring Bore Testing

Under Crest's supervision, five monitoring bores and one pump bore were drilled for Golder Associates Pty Ltd to allow preliminary pump testing to be carried out as part of drainage design studies.

6.4 Density Tests

Density tests were carried out on various types of resource and rock units and these results are contained in Appendix No. 5.

6.5 Petrographic Thin Section Identification

Drill core from several holes were submitted for petrographic thin section studies. These results are contained in Appendix No. 6.

7. REGIONAL GEOLOGY

The magnesite deposits of the Arthur and Lyons Rivers area are located within the Arthur River lineament, a north-northwesterly striking belt of metamorphosed Pre-Cambrian (Proterozoic) rocks, which extends from Wynyard in the north to Granville Harbour on the west coast, a distance of some 105 kilometres (Figure 1).

The regional geological setting of the area covering RL8717 and RL8718 comprises a steeply-dipping (65 – 80 degrees) sequence of folded quartz schist, quartzite and phyllite with minor dolomite, overlying a magnesite and dolomite sequence up to 400 metres thick which in turn overlies pyritic siltstone, mudstone and quartzite with minor carbonate and amphibolite. Intrusive into the Proterozoic sequence are mafic dolerite / gabbro dykes and/or plugs of both Proterozoic and Jurassic age.

These rocks are in turn overlain by younger Permian-aged siltstones, mudstones, fine-grained sandstones and carbonaceous phyllite.

In the Lyons River area there is extensive cover of Tertiary basalt, both as flows and possibly plugs, whilst in the Arthur River tenement area, with the exception of minor exposures in the watercourses, almost all the resource zone is concealed beneath a cover of Quaternary-aged alluvium, scree and residual soils (Figure 4).

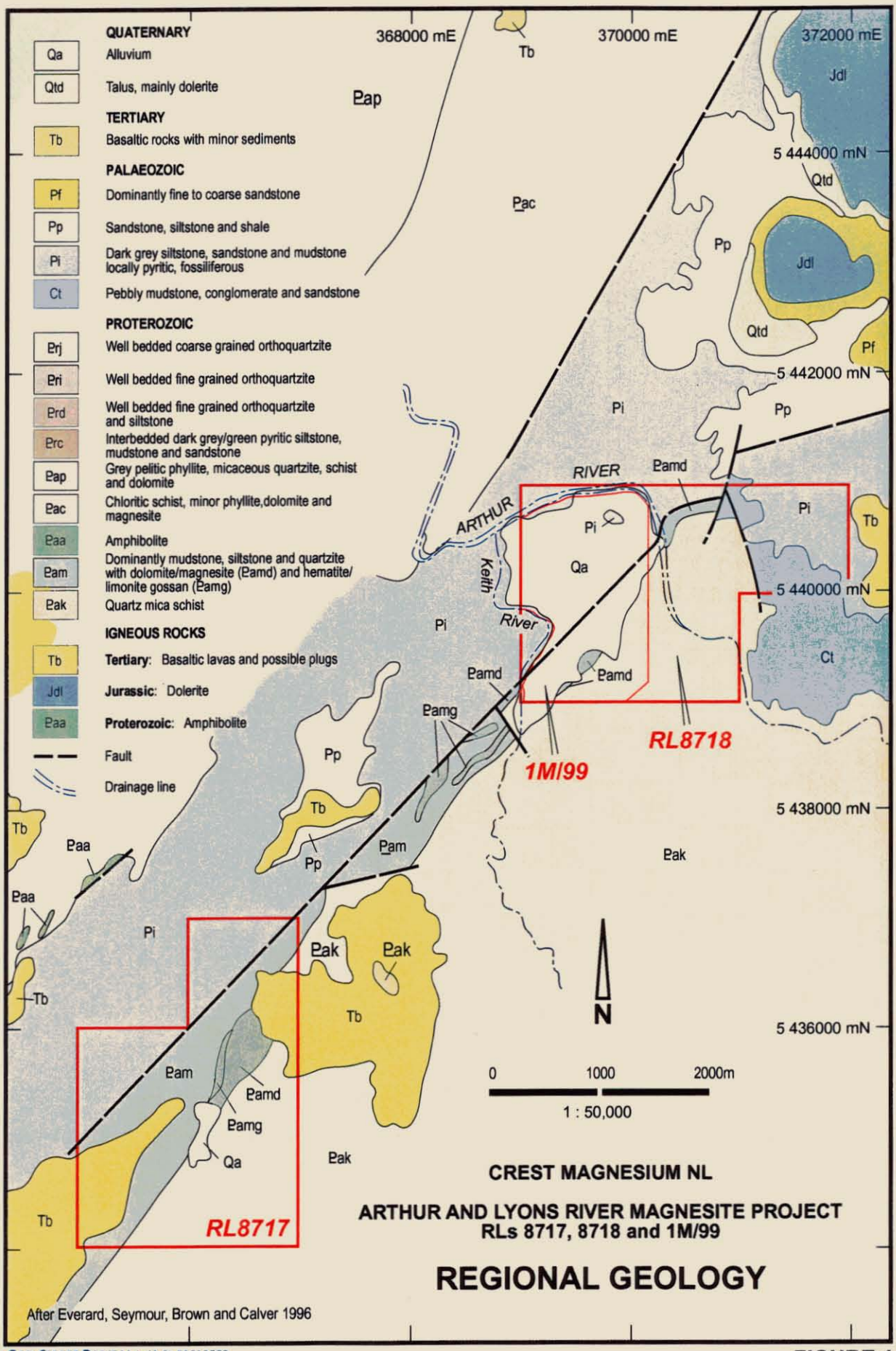

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FIGURE 4

5 cm

8. DETAILED GEOLOGY – RL8718 AND 1M/99 (applied for)

The Arthur River deposit occurs within Retention Licence 8718 which has an area of 5 square kilometres. Within this Retention Licence a magnesite resource has been identified by exploratory check and in-fill drilling having a strike length of about 3,500 metres and ranging in width from 100 metres to at least 350 metres and dipping steeply to the southeast.

The geology of the mining lease is almost totally concealed beneath a 10-15 metres deep cover of recent sand, gravel and boulder sediments, scree and residual soils together with a dense cover of regrowth forest vegetation.

Outcrop is negligible, being confined to in-situ magnesite in watercourses draining the area, together with scree material commonly exposed adjacent to the main, formed gravel forestry maintenance track which skirts the southern side of the resource zone (Figure 5).

In addition to mapping carried out by earlier workers, the bulk of the subsurface geological information has been obtained from drill core recovered during the three exploration programmes carried out by CRAE in 1983, Tasmania Magnesite NL in 1997 and Crest Magnesium NL in 1998/1999.

The geological setting is summarised as follows:

- Recent/Quaternary
  - Grey sand/silt/boulder alluvium, red-brown limonitic clay at the northeastern end of the resource zone (where dolerite scree indicates on the presence of underlying igneous intrusives), schistose scree and residual soils. The igneous intrusive(s) were encountered in several holes, but in the absence of sufficient drilling information, their geological setting is still unclear
- Tertiary
  - Basaltic rocks with minor sediments
- Paleozoic
  - Permian sandstones, siltstones and mudstones
- Proterozoic
  - Hanging wall quartz schist
  - Magnesite with minor dolomitic horizons
  - Footwall pyritic schist, dolomite and siltstone which is commonly contorted and brecciated adjacent to the contact with the overlying magnesite
- Proterozoic/Jurassic
  - Intrusive dolerite dykes or plugs

9. DRILLING

The 1998/1999 in-fill drilling programme was carried out by two local drilling contractors, using three drilling rigs, working one 10 hour shift for 12 days on then 2 days off.

The drilling commenced on November 25, 1998 and was completed on 15 March 1999 for a total of 2759.9 metres in 15 holes. (Table 1 and Figure 6)

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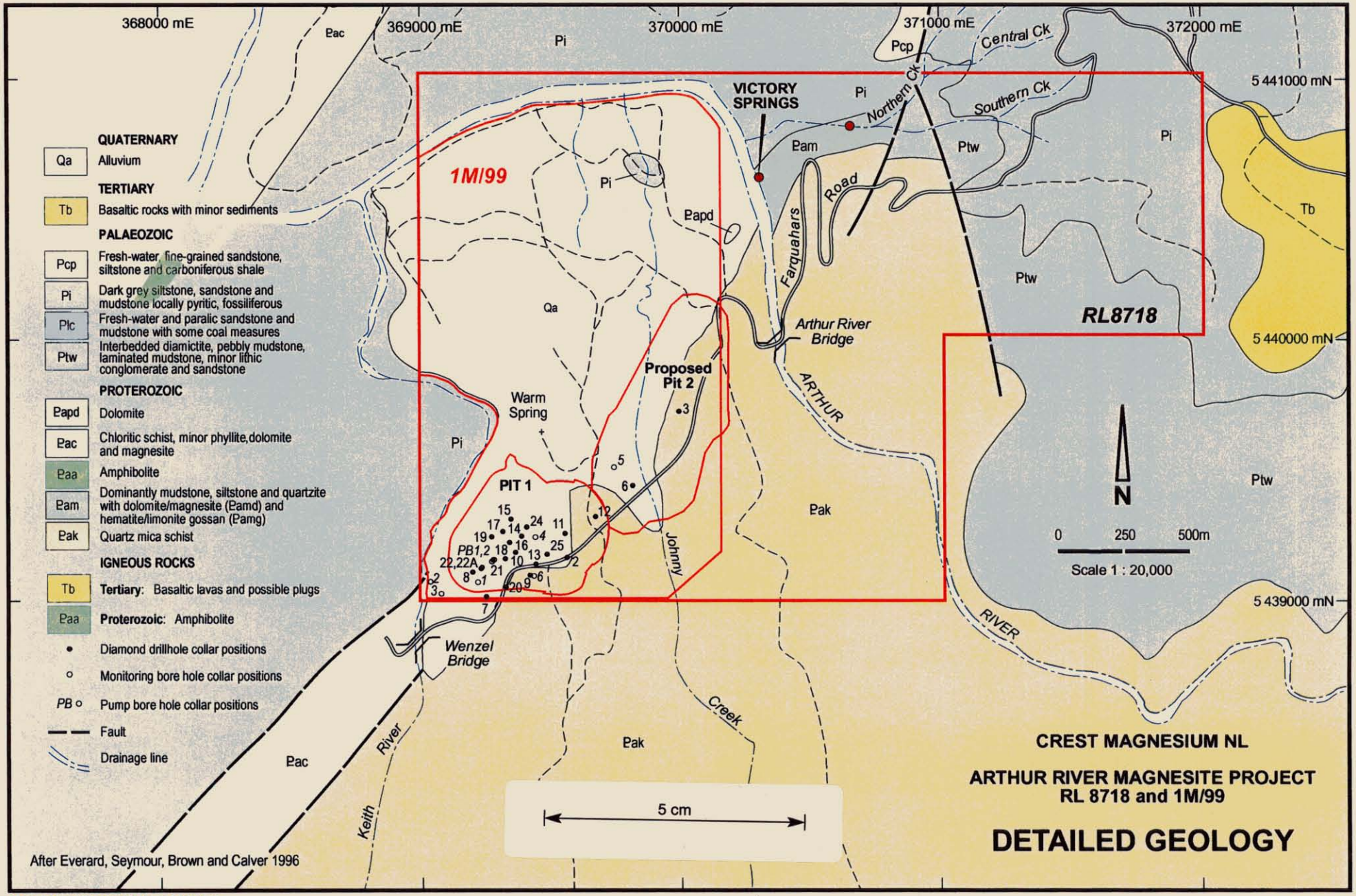

CREST MAGNESIUM NL

ARTHUR RIVER MAGNESITE PROJECT
RL 8718 and 1M/99

DETAILED GEOLOGY

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FIGURE 5

crestpde.pf

SURPAC SOFTWARE INTERNATIONAL. AUSTRALIA

1M/99

Arthur River

Keith River

Warm Spring

5440500N

5439500N

5439000N

369000E

370000E

AR02 AR06 AR07 AR08 AR09 AR10 AR11 AR12 AR13 AR14 AR15 AR16 AR17 AR18, AR26 AR19 AR20 AR21 AR22A, B AR24 AR25

PB01 PB02

MB01 MB02 MB03 MB04 MB05 MB06

SP20 SP21 SP22 SP23 SP24 SP25 SP26 SP27 SP28 SP29 SP30

5 cm

490014

CREST MAGNESIUM NL

ARTHUR RIVER MAGNESITE PROJECT
Peacock, Darcey & Anderson
Survey Plan, CRAE tracks

Scale: 1: 5000	Plan No.	Date: 17-May-99

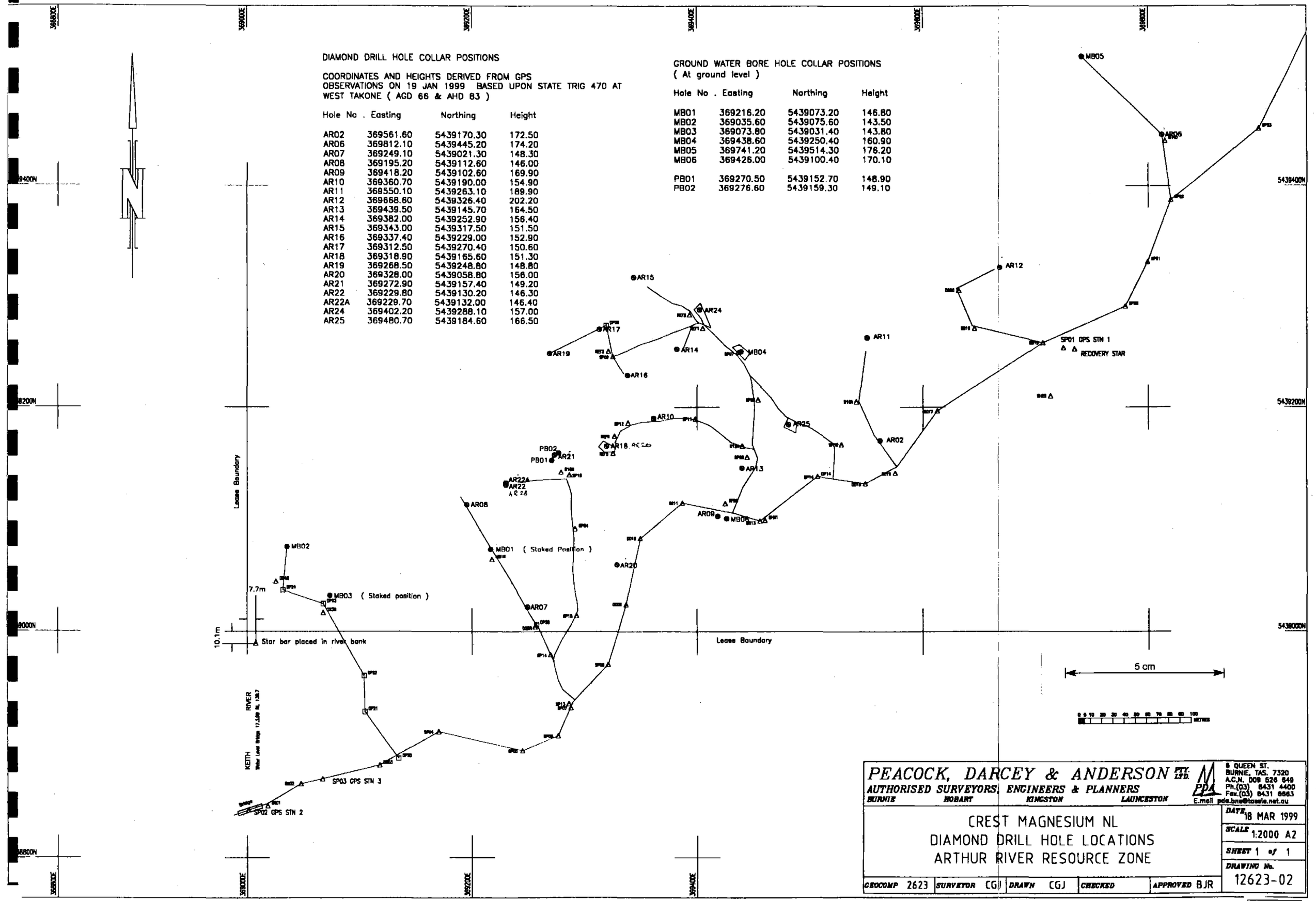
DIAMOND DRILL HOLE COLLAR POSITIONS

COORDINATES AND HEIGHTS DERIVED FROM GPS OBSERVATIONS ON 19 JAN 1999 BASED UPON STATE TRIG 470 AT WEST TAKONE (AGD 66 & AHD 83)

Hole No .	Easting	Northing	Height
AR02	369561.60	5439170.30	172.50
AR06	369812.10	5439445.20	174.20
AR07	369249.10	5439021.30	148.30
AR08	369195.20	5439112.60	146.00
AR09	369418.20	5439102.60	169.90
AR10	369360.70	5439190.00	154.90
AR11	369550.10	5439263.10	189.90
AR12	369668.60	5439326.40	202.20
AR13	369439.50	5439145.70	164.50
AR14	369382.00	5439252.90	156.40
AR15	369343.00	5439317.50	151.50
AR16	369337.40	5439229.00	152.90
AR17	369312.50	5439270.40	150.60
AR18	369318.90	5439165.60	151.30
AR19	369268.50	5439248.80	148.80
AR20	369328.00	5439058.80	156.00
AR21	369272.90	5439157.40	149.20
AR22	369229.80	5439130.20	146.30
AR22A	369229.70	5439132.00	146.40
AR24	369402.20	5439288.10	157.00
AR25	369480.70	5439184.60	166.50

GROUND WATER BORE HOLE COLLAR POSITIONS
(At ground level)

Hole No .	Easting	Northing	Height
MB01	369216.20	5439073.20	146.80
MB02	369035.60	5439075.60	143.50
MB03	369073.80	5439031.40	143.80
MB04	369438.60	5439250.40	160.90
MB05	369741.20	5439514.30	176.20
MB06	369426.00	5439100.40	170.10
PB01	369270.50	5439152.70	148.90
PB02	369276.60	5439159.30	149.10



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CREST MAGNESIUM NL
DIAMOND DRILL HOLE LOCATIONS
ARTHUR RIVER RESOURCE ZONE

GEOCOMP	2623	SURVEYOR	CGJ	DRAWN	CGJ	CHECKED	APPROVED BJR

DATE 18 MAR 1999
SCALE 1:2000 A2
SHEET 1 of 1
DRAWING No. 12623-02

TABLE 1

Drillhole Collar Locations and Hole Orientations – 1998 to 1999 Drilling

HOLE ID	AMG N	AMG E	COLLAR RL	TOTAL DEPTH	DIP	AZI AMG
AR013	5439145.7	369439.5	164.5	204.3	-46	330
AR014	5439252.9	369382.0	156.4	124.1	-46	330
AR015	5439317.5	369343.0	151.0	107.6	-46	330
AR016	5439229.0	369337.4	152.9	278.6	-46	150
AR017	5439270.4	369312.5	150.6	182.5	-46	330
AR018	5439165.6	369318.9	151.3	244.5	-46	330
AR019	5439248.8	369268.5	148.8	120.4	-46	330
AR020	5439058.8	369328.0	156.0	256.0	-46	330
AR021	5439157.4	369272.9	149.2	214.0	-46	330
AR022A	5439132.0	369229.7	146.4	51.0	-46	330
AR022B	5439132.0	369229.7	146.4	225.3	-46	330
AR023	5439129.0	369232.7	146.4	349.0	-46	150
AR024	5439288.1	369402.2	157.0	67.7	-46	330
AR025	5439184.6	369480.7	166.5	74.6	-46	330
AR026	5439162.6	369322.0	151.3	260.6	-46	150
MB002	5439075.6	369035.6	143.5	25.6	-90	0
MB003	5439031.4	369073.8	143.8	31.0	-90	0
MB004	5439250.4	369438.6	161.4	41.0	-90	0
MB005	5439514.3	369741.2	176.8	50.0	-90	0
MB006	5439100.4	369426.0	170.6	51.0	-90	0
PB001	5439152.7	369270.5	148.9	30.0	-90	0
PB002	5439159.3	369276.6	149.5	61.0	-90	0

Non-coring Tricone bits were used to penetrate the overburden with coring commencing when hard rock was encountered. All holes were started in PQ size, using both 1.5 and 3.0 metre triple tube, split barrels. When poor ground was encountered, the holes were reduced to HQ and if absolutely necessary, to NQ. Only two holes were completed in NQ size, namely AR021 and AR023.

Skid-mounted Longyear 38, Longyear 44 and Mindrill 52 machines were used and the drilling contractors were Diamond Drilling Tasmania and Contract Diamond Drillers, both Tasmanian-based companies.

The overall core recoveries averaged 86.4%, with the bulk of the core losses being recorded in the upper 70 metres of drilling where silt-filled cavities were numerous.

Drill access was by way of forestry tracks to the Arthur River Bridge and from the bridge to the site the rigs and equipment were hauled by bulldozer. Site clearing and access was carried out by Messrs A & R Champion, a local contractor, using a Komatsu Excavator and bulldozer.

Prior to commencing the programme, remedial strengthening works were carried out on the Arthur River bridge which allowed up to 30 tonne loads to be safely transported.

The drill core was collected in 1 metre long aluminium core trays and immediately photographed and then logged. Each day all the core was removed from the site and delivered to Analabs Pty Ltd, Burnie. The core was then quartered using a diamond saw and one quarter prepared for analysis. Sample analyses were carried out by Analabs in Perth, Western Australia. Bulk samples comprising

both drill core from 1983 (CRAE) and 1997 (Tasmag) exploration and pulps from the 1998/1999 (Crest) drilling were submitted for metallurgical test work.

The sample preparation and analytical methods used by Analabs are summarised below:-

SAMPLE PREPARATION.

A. SO62 The Diamond drill core samples are cut using a diamond saw. The angle of cutting should be clearly marked on the core prior to the samples being submitted to the laboratory, are composited as per your specifications.

S005/020 The total sample is dried, to a core temperature of 110C, jaw crushed, split and milled in a ungsten-carbide bowl to a nominal 90% passing 75pm. An analytical pulp of approximately 100g is achieved and the coarse residue is retained for future reference.

ANALYTICAL METHODS

X048 The sample is fused with 12/22 flux to form a glass fusion disc. This disc is presented to the XRF instrument for the determination of the silicate rock elements. An L.O.I is performed at 1000C the combination of the XRF analytical work and the L.O.I. will generally provide totals of 100% + 0.5%

SiO2 (0.02%)	TiO2 (0.01%)	Al2O3 (0.02%)	Fe2O3 (0.01%)
MnO (0.0025%)	MgO (0.02%	CaO (0.02%)	Na2O (0.05%)
K2O (0.005%)	P2O5 (0.005%)	SO3 (0.005%)	L.O.I. (0.01%)

The remaining core, sample duplicates and excess pulps are stored in Burnie.
Preliminary metallurgical testing was carried out on bulked drill core samples. These tests were established a cut off grade for the resource of 33% Mgo,4% Cao, 6% Fc203 and 12% Si02.

9.1 Drillhole AR013 – 369439.50 E, 5439145.70N – Figure 7

Diamond drillhole AR013 was commenced on 25 November 1998 and completed on the 8 December 1998 at a drill depth of 204.3 metres with an average core recovery of 76%.

The hole intersected 55.9 metres of ferruginous yellow-brown clays (decomposed hanging wall schist), before encountering hard, white, crystalline magnesite which contained occasional cavities to a drill depth of 83.0 metres. Drilling records show the cavities range from 10 centimetres to 2.4 metres in size and are commonly filled with red brown sandy silt and clay (see Appendix 3 AR13 54.2 – 78.6 m). At a drill depth of 161.1 metres the drill encountered dark, greenish black, talcose sheared dolerite which was still present when the hole was terminated at a depth of 204.3 metres. Identification of the dolerite was made following thin section petrographic examination. (see Appendix 6).

Four zones, containing CaO above the acceptable 6% were intersected as follows:

- 100.2 m - 101.6 m 1.4m @ 9.4% CaO
- 116.6 m - 118.2 m 1.4m @ 12.8% CaO
- 100.2 m - 125.6 m 1.4m @ 15.5% CaO
- 158.6 m - 161.2 m 2.6m @ 12.0% CaO

These high calcium zones could not be identified in hand specimen, which indicates that grade control will have to be carried out during mining. Overall, the hole intersected 103.68 metres of high grade magnesite averaging 44.12 MgO, 3.33% CaO, 0.51% Fe_2O_3 and 1.86% SiO_2.

9.2 AR014 - 369382.0E, 5439252.9N – Figure 7

Diamond drillhole AR014 was commenced on 10 December 1998 and completed on 17 December 1998 at a drill depth of 124.7m. The average core recovery was 94%. The hole was collared in grey, sandy, pebble alluvium and entered hard, white crystalline magnesite at a drill depth of 18.7 metres. Between 18.7 metres and 99.5 metres, when dolerite was intersected, the hole was drilled in crystalline magnesite which contained 15 cavities, ranging in size from a few centimetres to as much as 3.70 metres (54.5m – 58.2m). Diamond drillhole AR014 intersected 72.1 metres of high grade magnesite having an average grade of 43.58% MgO, 2.51% CaO, 0.38% Fe_2O_3 and 4.74% SiO_2.

Three CaO zones were encountered as follows:

- 21.6 m - 23.5 m 1.9 m 12% CaO
- 29.2 m - 30.7 m 1.5 m 11% CaO
- 32.2 m - 33.7 m 1.5 m 8% CaO

9.3 AR15 - 36934.0E, 5439317.5N – Figure 7

Diamond drillhole AR015 has commenced on 10 December 1998 and completed on the 17 December 1998 at a drill depth of 107.6 metres. The average core recovery was 81%. The hole was collared in grey, pebble alluvium and after 14.3 metres passed into red, brown and yellow clays comprising decomposed high and low grade magnesite and ferruginous limonite. At 73.0 metres the hole encountered hard, white magnesite and at 106.2 metres passed into dark grey pyritic (footwall) siltstone.

Cavities were encountered between 16.0 metres - 67 metres with the most significant occurring between 16.0 m - 18.5 metres and 46.4 m - 50.7 metres. Between 50.7 metres - 69.4 metres the puggy clays contained numerous hard limonitic fragments. Between 84.0 metres - 106.0 metres the crystalline magnesite averaged in exess of 7% CaO.

Diamond drillhole AR015 encountered 87.5 metres of low-grade clays and magnesite averaging 33.5% MgO, 3.53% CaO, 5.64% Fe_2O_3 and 12.82% SiO_2.

None of the resources intersected in AR015 were included in the resource tonnage calculations although if necessary, some mineralised sections of this hole could supply suitable resource tonnages for blending with higher grade material.

9.4 AR016 – 369337.4E, 5439229.ON – Figure 8

Diamond drillhole AR016 was commenced on 14 December 1998 and completed on 30 January 1999 at a drill depth of 278.6 metres in hard, white, high-grade magnesite. Core recovery for the hole averaged 94%.

The hole was drilled southerly at -46° in the direction of 139° (Mag) in an attempt to provide information of the position and dip of the hanging wall magnesite / schist contact. The hole was terminated at the southern boundary of the tenement before reaching its target, which indicates that the hanging wall magnesite/schist contact has a flatter dip than that inferred by previous workers.

Diamond drillhole AR016 was collared in grey, sandy, pebble alluvium and at 15.4 metres intersected khaki coloured clay and low-grade, broken, grey dolomitic magnesite. Between 15.4 metres to 43 metres, the hole passed through dark red-brown ferruginous clays and broken dolomite and magnesite ranging in grade from 25% to 44% MgO.

From 43 metres to the end of the hole at 278.6 metres, the hole passed through hard, white, high-grade magnesite. Cavities were confined to the upper 52 metres with cavities ranging up to a maximum of 2 metres.

Overall, AR016 intersected 260.8 metres of high-grade crystalline magnesite averaging 41.93% MgO, 2.23% CaO, 0.77% Fe_2O_3 and 7.61% SiO_2.

9.5 AR017 – 369312.5E, 5439270.AN – Figure 8

Diamond drillhole AR017 commenced on 5 January 1999 and has completed on 19 January 1999 at a drill depth of 182.5 metres in dark grey, pyritic footwall siltstone. Core recoveries average 88%.

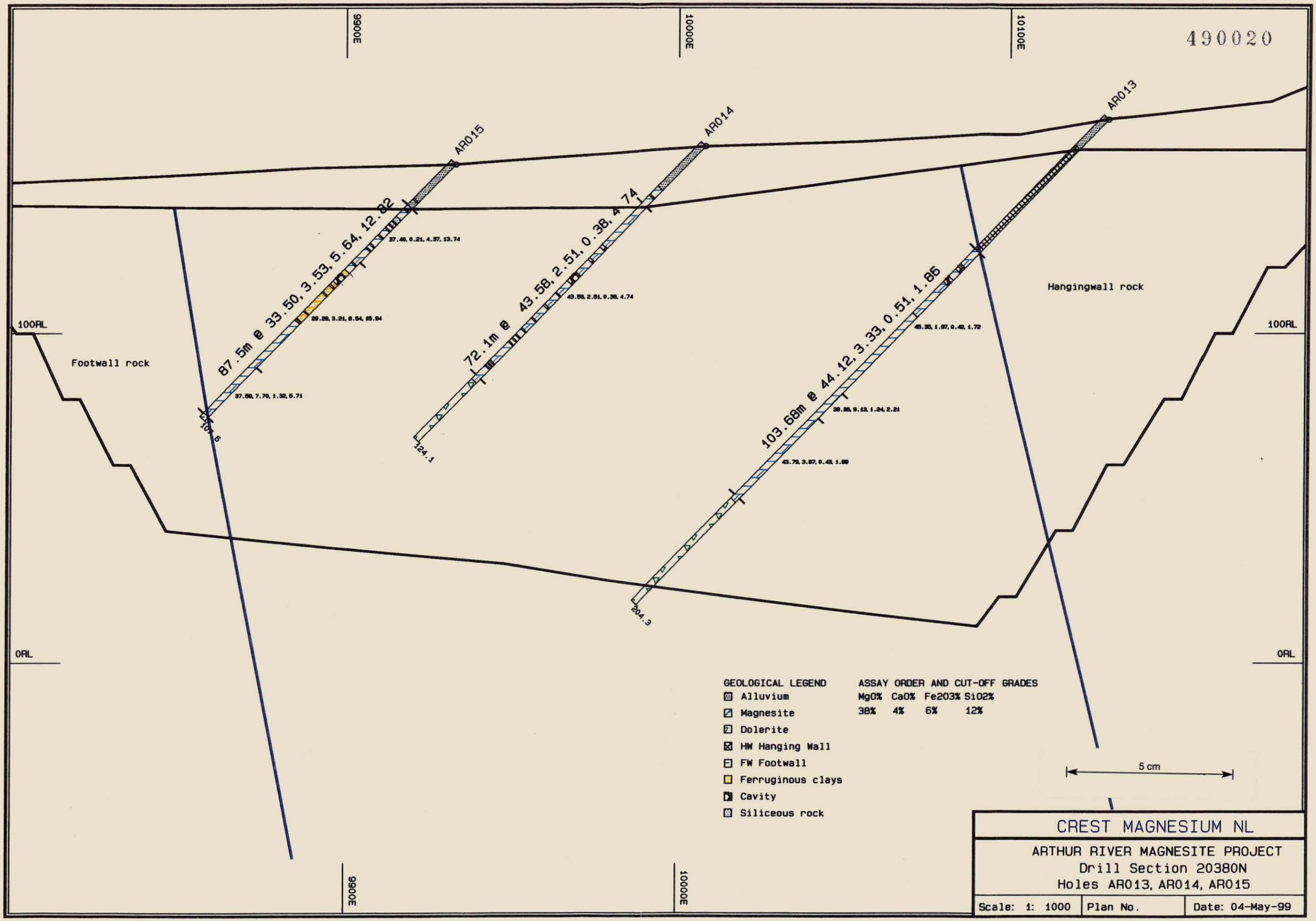
The hole was collared in grey, sandy, pebble, alluvium and at 17.1 metres entered iron-stained cavernous magnesite. Between 17.1 metres to 89.6 metres the hole was drilled through ferruginous clayey and cavernous low-grade magnesite containing cavities up to 2.5 metres in size. The average grade of this dolomitic limestone was 34.6% MgO, 5.4% CaO, 4.5% Fe_2O_3 and 11.3% SiO_2. Between 89.6 metres – 180.5 metres, the hole intersected hard, white magnesite, containing seven low-grade zones, some having a CaO content in excess of the 4% cut off.

At 180.5 metres the hole entered pyritic siltstone footwall rocks and the hole was terminated at 182.5 metres.

Overall, AR017 intersected 153.8 metres of magnesite having an average grade of 37.68% MgO, 6.18% CaO, 2.70% Fe_2O_3 and 6.12% SiO_2, which is very close to the acceptable feedstock cut off. Whereas it is likely that the high CaO lenses close to the pyritic siltstone contact will remain unmined, much of this rock could be stockpiled for future blending with higher grade material.

9.6 AR018 – 369318.9E, 5439465.6N – Figure 9

Diamond drillhole AR018 commenced on 30 January 1999 and was completed on the 19th February 1999 at a drill depth of 244.5 metres in pyritic footwall siltstone. The core recoveries averaged 88%.



CREST MAGNESIUM NL

ARTHUR RIVER MAGNESITE PROJECT
Drill Section 20380N
Holes AR013, AR014, AR015

Scale: 1: 1000	Plan No.	Date: 04-May-99

FIGURE 7

The hole was collared in sandy, pebble alluvium which extended to a drill depth of 12.0 metres. From 12.0 metres to 32.5 metres the hole passed through mainly dark brown ferruginous clays and limonite. A number of cavities were encountered containing brown silt and clay. Thin intersections of hard, white magnesite occurred at 12.0 – 14.0 metres, 24.0 – 26.0 metres and 32.0 – 34.0 metres. From 34.0 metres to 82.0 metres the magnesite was iron-stained and in places decomposed and clayey. From 82.0 metres – 175.5 metres the magnesite was only slightly iron-stained but very jointed and extremely fragmented. From 175..5 metres – 197.7 metres the magnesite was very iron-stained and decomposed. From 197.7 metres – 239.8 metres the magnesite was mainly massive, hard and white. At 239.8 metres the hole intersected contorted pyritic siltstone and the hole was terminated at 244.5 metres.

Overall diamond drillhole AR018 intersected 228.0 metres of magnesite having an average grade of 42.35% MgO, 2.06%, 2.79% Fe_2O_3, SiO_2.

9.7 AR019 – 369268.5E, 5439248.8N – Figure 9

Diamond drillhole AR019 was commenced on 21 January 1999 and completed on 26 January 1999 at a drill depth of 120.4 metres in pyritic siltstone.

The hole was collared in grey, sandy, pebble alluvium, which extended to a drill depth of 17.0 metres. From 17.0 metres to about 71.0 metres the magnesite was iron-stained and clayey and contained high CaO (13%) and SiO_2 (18%) levels between 55.6 metres – 71.5 metres. Between 71.5 metres – 90.8 metres, the magnesite was slightly iron-stained, very jointed and fractured but very high-grade, averaging 44% MgO. At 90.8 metres the hole entered contorted pyritic footwall siltstones. From 90.8 metres to the end of the hole at 120.8 metres, the hole was drilled in banded and contorted pyritic sediments.

Overall, AR019 contained 73.8 metres of magnesite which averaged 38.81% MgO, 3.54% CaO, 4.22% Fe_2O_3 and 6.62% SiO_2. This resource zone will probably be stockpiled for later blending with more suitable feedstock, which contains fewer clay zones.

9.8 AR020 – 369328.0E, 5439058.8N – Figure 10

Diamond drillhole AR020 commenced on the 28 November 1998 and was completed on the 9 December 1998 at a drill depth of 256.0 metres. Core recoveries averaged 81%. The hole was collared in sandy alluvium before passing into ferruginous clays. At a drill depth of 57.7 metres the hole intersected hard, white magnesite containing numerous silt-filled cavities. Between 57.7 metres to 246.5 metres a total of 53 cavities were encountered ranging in size from a few centimetres to as much as 2.0 metres. The magnesite contained a number of iron-stained and clayey zones usually associated with recorded cavities.

490022

9900E

10000E

10100E

AR019

AR018

AR026

73.8m @ 38.81, 3.54, 4.22, 6.62

42.61, 0.52, 3.62, 5.14

24.65, 13.42, 8.28, 15.18

44.18, 0.37, 3.38, 1.70

228m @ 42.35, 2.06, 2.79, 3.96

43.26, 0.13, 3.25, 3.65

29.19, 0.31, 15.68, 10.10

43.58, 1.28, 2.30, 3.65

36.63, 9.42, 0.71, 9.63

42.48, 3.62, 1.77, 2.03

244.5

244.6m @ 41.44, 2.83, 0.89, 7.45

42.82, 1.10, 0.93, 7.11

39.58, 6.30, 1.57, 3.91

44.47, 1.74, 0.30, 4.19

37.41, 6.82, 0.84, 8.47

120.4

100RL

100RL

Hangingwall rock

Footwall rock

0RL

0RL

GEOLOGICAL LEGEND

- Alluvium
- Magnesite
- Dolerite
- HW Hanging Wall
- FW Footwall
- Ferruginous clays
- Cavity
- Siliceous rock

ASSAY ORDER AND CUT-OFF GRADES

MgO%	CaO%	Fe2O3%	SiO2%
38%	4%	6%	12%

5 cm

CREST MAGNESIUM NL

ARTHUR RIVER MAGNESITE PROJECT
Drill Section 20280N
Holes AR018, AR019, AR026

Scale: 1: 1000	Plan No.	Date: 04-May-99

30066

10000E

crestxsd.pf

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FIGURE 9

490023

9900E

10000E

10100E

AR021
PB002
PB001
AR020

30.0

61.0

100RL

100RL

187.5m @ 42.23, 2.64, 1.66, 4.56

43.41, 1.29, 1.64, 4.69

198.3m @ 41.89, 2.09, 2.11, 5.96

42.44, 1.73, 1.05, 5.31

42.55, 1.32, 2.30, 5.77

36.73, 8.99, 1.75, 3.95

214.0

286.0

Footwall rock

Hangingwall rock

0RL

0RL

GEOLOGICAL LEGEND

- Alluvium
- Magnesite
- Dolerite
- HW Hanging Wall
- FW Footwall
- Ferruginous clays
- Cavity
- Siliceous rock

ASSAY ORDER AND CUT-OFF GRADES

MgO%	CaO%	Fe2O3%	SiO2%
38%	4%	6%	12%

CREST MAGNESIUM NL

ARTHUR RIVER MAGNESITE PROJECT
Drill Section 20240N
Holes AR020, AR021, PB001, PB002

Scale: 1: 1000	Plan No.	Date: 04-May-99

crestxsc.pf

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FIGURE 10

Between 143.0 metres and 200.0 metres, the magnesite was generally very iron-stained, fragmented and partially decomposed. Similar smaller, broken and iron-stained zones occurred between 214.0 metres – 218.0 metres and 223.0 metres – 231.0 metres. At a drill depth of 256.0 metres the hole was terminated in high grade magnesite, when problems were experienced with the drill rig. At this point, the hole was already 50.0 metres past the anticipated mining depth of the proposed pit.

Overall AR020 intersected 198.3 metres of high-grade resource averaging 41.80% MgO, 2.09% CaO, 2.11% Fe_2O_3 and 5.96% SiO_2.

9.9 AR021 – 369272.9E, 5439157.4N – Figure 10

Diamond drillhole AR021 commenced on the 14 December 1998 and was completed on 7 January 1999 at a depth of 24.0 metres in footwall dolomitic sediments. Core recoveries for the hole averaged 91%.

The hole was collared in sandy, pebble alluvium and at 14.5 intersected magnesite. Between 14.5 metres and 50.0 metres the magnesite was iron-stained, cavernous and decomposed, becoming harder but more fragmented between 50.0 metres to 70.0 metres. From 70.0 metres to 108.0 metres the magnesite was generally hard, white and crystalline. From 108.0 metres to 177.0 metres the magnesite was again very jointed and fragmented and with an increase in CaO content (more dolomitic). The hole was terminated at 214.0 metres.

The cavities in AR021 are generally small and confined to the upper 40.0 – 50.0 metres of the hole. The largest recorded cavity being 2.2 metres between 28.0 – 30.0 metres. Evidence that the magnesite contains some interconnected cavities in the upper part of the section is provided by the fact that when Pump Bores No.'s 1 & 2 were drilled, ground collapse occurred during hole development. At the same time and probably as a result of this pumping, there was silt influx into AR022 some 50.0 metres to the west.

Overall, diamond drillhole AR021 intersected 187.5 metres of magnesite resource grading 42.23% MgO, 2.54% CaO, 1.66% Fe_2O_3 and 4.56 SiO_2.

9.10 AR022 – 369229.8E, 5439130,2N – Figure 11

Diamond drillhole AR022 commenced on 12 January 1999 and was abandoned of 22 January 1999 in caving ground at 34.2 metres drill depth. Core recoveries averaged 78%.

The hole was collared in pebble alluvium and at 19.7 metres intersected hard, white, high-grade magnesite. From 28.1 metres to 34.2 metres when the hole was abandoned the magnesite was broken, iron-stained and cavernous.

9.11 AR022A – 369229.7E, 5439132.ON – Figure 11

Diamond drillhole AR022A was commenced on 24 January 1999 and completed on 28 January 1999 at a drill depth of 47.0 metres in hard, white magnesite when the hole deviated off line after entering a cavity. Between 22.9 metres to 43.0 metres the hole encountered eight cavities ranging in size from a few centimetres up to 0.60 metre. Core recoveries from this hole averaged 82%.

490025

9900E

10000E

10100E

AR022A&B

AR023

100RL

Footwall rock

Hangingwall rock

100RL

189.5m @ 41.82, 3.73, 1.66, 3.63

185.3m @ 39.40, 2.52, 2.49, 9.92

43.31, 1.20, 1.54, 5.04

41.67, 1.07, 3.32, 6.90

21.0

38.11, 6.78, 0.98, 7.88

45.29, 1.54, 0.52, 2.29

38.65, 2.65, 3.20, 10.28

39.01, 6.41, 0.77, 6.36

43.71, 4.26, 0.70, 0.40

37.33, 10.98, 1.18, 1.09

38.51, 3.63, 0.62, 12.12

40.18, 3.52, 4.95, 1.95

40.71, 5.49, 1.47, 3.24

225.3

0RL

0RL

GEOLOGICAL LEGEND

- Alluvium
- Magnesite
- Dolerite
- HW Hanging Wall
- FW Footwall
- Ferruginous clays
- Cavity
- Siliceous rock

ASSAY ORDER AND CUT-OFF GRADES

MgO%	CaO%	Fe2O3%	SiO2%
38%	4%	6%	12%

5 cm

CREST MAGNESIUM NL

ARTHUR RIVER MAGNESITE PROJECT
Drill Section 20200N
Holes AR022A&B, AR023

Scale: 1: 1000	Plan No.	Date: 04-May-99

crestxsb.pf

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FIGURE 11

9.12 AR022B – 369229.7E, 5439132.ON – Figure 11

Diamond drillhole AR022B was re-commenced at a depth of 37.0 metres in AR022A on 29 January 1999 and completed on 6 February 1999 at a depth of 225.3 metres. Core recoveries averaged 98%.

Between 37.0 metres to 69.0 metres the core was jointed and fragmented and slightly iron-stained. From 69.0 metres to 164.5 metres the hole intersected hard, white, high- grade magnesite, with one lower-grade dolomitic lens containing CaO in excess of 10%, occurring between 145.0 metres – 157.0 metres. From 164.5 – 171.7 metres, the core was extremely broken, brown in colour and although appearing dolomitic was in fact, very high-grade magnesite averaging in excess of 45% MgO and less than 2% CaO. From 171.7 – 178.0 the core was dolomitic and pyritic with up to 30% Fe_2O_3. From 178.0 metres to 205.0 metres the core was hard, white, veined magnesite. From 205.0 metres to the end of the hole the core was a mix of brecciated, grey, pyritic dolomite and minor magnesite.

Overall AR022A and AR022B contained 189.5 metres of magnesite resource averaging 41.82% MgO, 3.73% CaO, 1.66% Fe_2O_3 and 3.63 and SiO_2. Core recoveries averaged 82.3%.

9.13 AR023 – 369232.7E, 5439129.0N – Figure 11

Diamond drillhole AR023,which was commenced on 9 February 1999 and completed on 9 March 1999 was collared in sandy, pebble alluvium and entered hard, white magnesite at 21.0 metres. From 21.0 metres to 153.0 metres the magnesite was generally iron-stained and contained a number of decomposed clayey zones and silt / clay-filled cavities up to 2.8 metres in size. A total of 35 cavities were recorded by the drillers over this interval. From 153.0 metres to the end of the hole at 205.0 metres where it passed out of the lease, the magnesite was hard, white and noticeably veined.

Overall, AR023 contained 185.3 metres of magnesite resource grading 39.40% MgO, 2.52% CaO, 2.49% Fe_2O_3 and 9.92% SiO_2.

Because of the proximity of the southern boundary of MLA IM/99, only the upper 50 metres of this resource zone will be mined. This section averages 41.7% MgO, 1.1% CaO, 3.3% Fe_2O_3 and 6.9% SiO_2. Core recoveries averaged 86%.

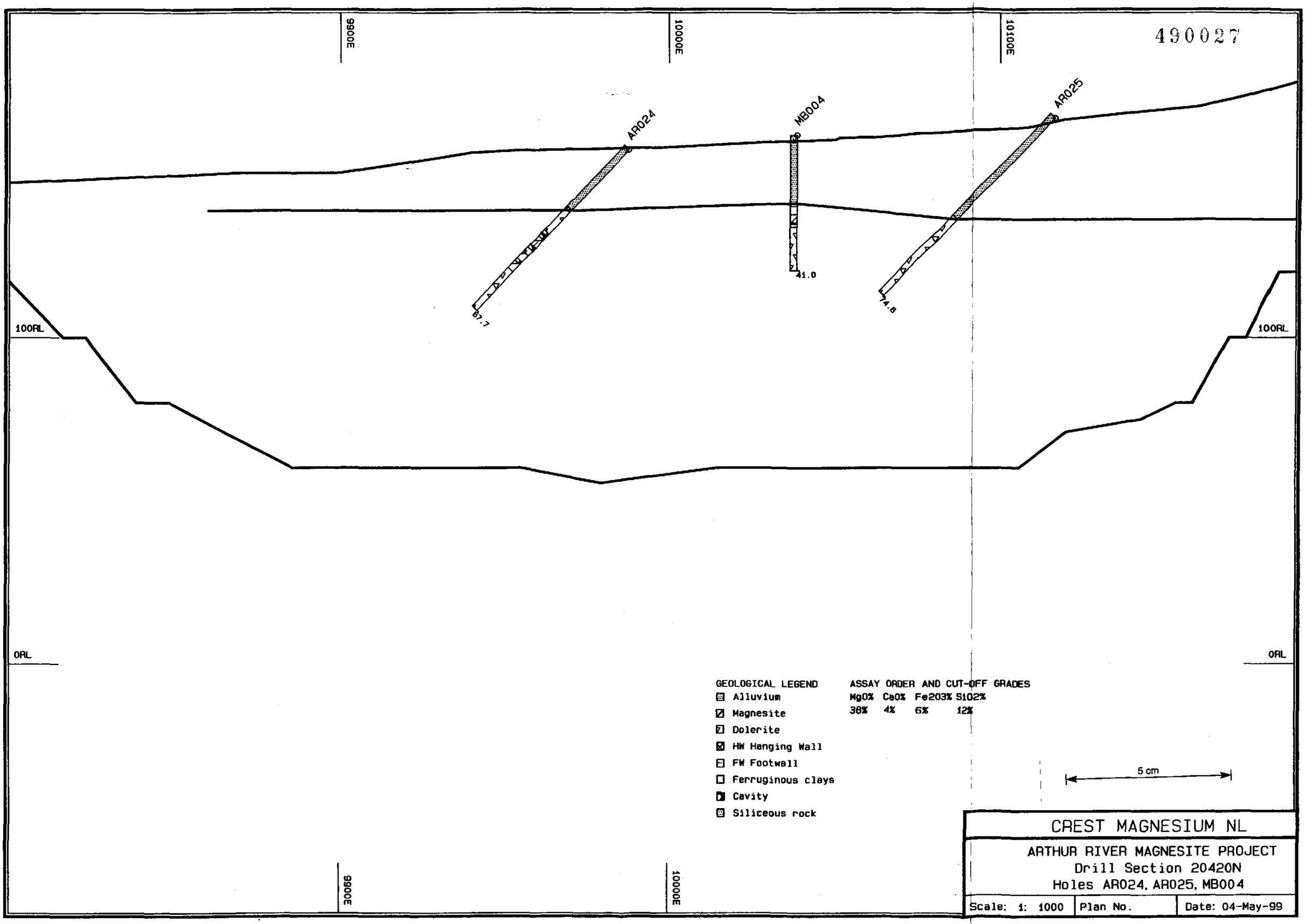
9.14 AR024 – 369402.2E, 5439288.IN – Figure 12

Diamond drillhole AR024, which commenced on 27 January 1999 and was completed on 2 January 1999 was sited at the north-eastern boundary of the resource zone adjacent to the intrusive mafic which cuts across the magnesite resource zone, dividing it into two parts (Figure 6). The hole was collared in alluvium and entered ferruginous clays and decomposed dolerite at 25.5 metres drill depth. Three thin zones of low-grade dolomitic magnesite were intersected between 38.0 metres to 41.6 metres, 44.8 metres to 47.2 metres and 48.4 metres to 51.5 metres, before the hole entered broken, iron-stained dolerite. The hole was terminated at 67.7 metres in fresh dolerite. Core recoveries in this hole averaged 86.5%.

9.15 AR025 – 369480.7E, 5439184.6N – Figure 12

Diamond drillhole AR025, which commenced on 2 January 1999 and was completed on 5 January 1999 was collared in brown, ferruginous clays and at 42.5 metres entered decomposed dolerite. Between 42.5 metres and 74.6 metres, the hole intersected decomposed clayey dolerite. The hole was stopped at 74.6 metres in dolerite. Core recoveries averaged 95%.

490027



GEOLOGICAL LEGEND

- Alluvium
- Magnesite
- Dolerite
- HW Hanging Wall
- FW Footwall
- Ferruginous clays
- Cavity
- Siliceous rock

ASSAY ORDER AND CUT-OFF GRADES

MgO%	CaO%	Fe2O3%	SiO2%
36%	4%	6%	12%

5 cm

CREST MAGNESIUM NL

ARTHUR RIVER MAGNESITE PROJECT
Drill Section 20420N
Holes AR024, AR025, MB004

Scale: 1: 1000	Plan No.	Date: 04-May-99

crestxsg.pf

SURPAC SOFTWARE INTERNATIONAL. AUSTRALIA

FIGURE 12

9.16 AR026 – 3693220.E, 5439162.6N – Figure 9

Diamond drillhole AR026, which commenced on 23 February 1999 and was completed on 15 March 1999, was collared in grey, sandy, pebble alluvium and entered massive magnesite at a drill depth of 16.0 metres. Between 16.0 metres to 67.6 metres the magnesite was broken, iron-stained and contained a number of cavities up to 1.0 metre in size. From 67.6 metres to the end of the hole at 260.6m the hole was drilled in hard, white, veined magnesite. This hole, which was drilled in a southerly direction in an attempt to establish the dip of the hanging wall magnesite schist contact was terminated in massive, high-grade magnesite when the hole reached the southern edge of the lease boundary.

Overall, AR026 intersected 244.6 metres of high grade resource averaging 41.44% MgO, 2.83% CaO, 0.89% Fe_2O_3 and 7.45 SiO_2. The average core recovery was 99%. Again because of the proximity of the resource to the southern boundary of the lease any proposed mining would most likely be restricted to the upper 80.0 metres of this hole, which has an average grade of 42.82% MgO, 1.1% CaO, 0.93% Fe_2O_3 and 7.1% SiO_2.

10. CONCLUSIONS AND RECOMMENDATIONS

The 1998/1999 diamond drilling exploration programme has confirmed the presence of a high grade (>38% MgO) magnesite resource which to a maximum open pit mining depth of 140.0 metres, totalled about 15 million tonnes grading 42.9% MgO, 2.4% CaO, 1.25% Fe_2O_3 and 4.80% SiO_2. This resource has been assigned Measured Resource status.

Based on diamond drilling evidence the resource has been divided into the following categories.

- Hard crystalline magnesite
- Iron-stained, hard crystalline magnesite
- Broken, hard crystalline magnesite
- Cavernous decomposed magnesite
- High-grade, clayey magnesite
- Low grade, clayey magnesite

From preliminary metallurgical test work the cut-off grades used in this resource estimate were 38% MgO, 4% CaO, 6% Fe_2O_3 and 12% SiO_2.

It is understood that the high and low-grade, clayey magnesite, which totals some 3.7 million tonnes, will be stockpiled for probably future use as feedstock once the plant is fully operational.

The exploratory and infill drilling programme has established the presence of a mafic dolerite intrusive which divides the magnesite resource zone into two parts. The dimensions and attitude of this intrusive body, which may in fact comprise two separate dykes or plugs, are still uncertain and will only be resolved once mining commences.

Concerning the detailed geology of the resource, whereas the footwall contact is fairly well understood, the dip of the hanging wall contact has still not been established because exploratory holes designed for this purpose had to be terminated when they reached the southern boundary of the Tenement. It seems probable however, that the dip is somewhat flatter, at possibly 65-75°, than that assigned by earlier workers. In each case the drill holes AR016, AR023 and AR026, drilled in a southerly direction, failed to intersect hanging wall schists and were terminated in high-grade, crystalline magnesite.

Some unexpected intersections of the footwall contact indicate that it may be either faulted, drag folded or have a variable dip. There is insufficient exploratory drilling to establish the correct interpretation.

The inability to more accurately define the detailed geological setting within IM/99 stems from a reluctance to allocate funds from the exploration budget for purely stratigraphic drilling, especially when it has been established that ample high-grade resources are present within the tenement to sustain a long term mining operation.

In-fill drilling has established the presence of both high CaO and SiO_2 zones within the resource zone which cannot be identified in hand specimen. Where these zones have been identified by sample analysis, they have been excluded from resource tonnages calculations

Because of the proximity of the identified resource both to the Keith River and the southern boundary of the tenement, it has been recommended that further drilling be carried out in 1M/99 between AR003 and AR006 (CRAE 1983). The results from the above two holes indicated the presence of a high grade magnesite resource some 100.0 metres thick, having a strike length of at least 500.0 metres and extending to a depth in excess of 300.0 metres vertical. Application has been made and preliminary approvals were given, to carry out this in-fill drilling programme in Crest's 1998/99 programme, but this work has been deferred, possibly until the summer of 1999/2000.

It is anticipated that this drilling will identify a further 10.0 - 15.0 million tonnes of high-grade magnesite resource.

The proposed programme is expected to comprise at least 12 holes totalling 3,000 metres of diamond drilling at a cost of $680,000, including sample analysis, supervision and administration.

11. BIBLIOGRAPHY

1990 Dickson, T.W.
1991 Arthur and Lyons River magnesite deposits.
Geology of the mineral deposits of Australia and Papua New Guinea. The Aus.I.MM. Monograph No 14.

1984 Mackenzie, P.C. Report on Exploration for 12 months to 15 October 1984 EL43/70 Arthur River, CRA Exploration Pty Limited

1998 Williams, Paul W Prof Report on the geo-conservation values of the magnesite karst in Northwest Tasmania
University of Auckland

1999 Household Magnesite karst in Northwestern Tasmania
Draft Summar Rept (unpublished) Dept. Primary Industry, Water and Environment and Mineral Resources Tasmania

1998 Wyatt, J.D. Explanatory Memorandum, Crest Resources Australia NL

APPENDIX 1

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718 — 1

Co-ordinates: 363439 5E 5439145.7 N — Azimuth: 319° MAG. (330°T) — Drillers: J. KAYE — Commenced: 4-11-98 — Depth: 204.3 — Plan-Map Reference: — Hole No: RR 13

RL Collar: 164.5 — Inclination: -46° — Drill Types: LONGYEAR 38 — Completed: 8-12-98 — Casing Left: — DPO No's:

49031

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	3.30	TRICONE			Sandy sediment																		
3.30	3.70	100%	PQ		Yellow clay																		
3.30	6.50	70%	"		Creamy white clay																		
6.50	8.50	90%	"		Yellow clay + quartz																		
8.50	10.50	50%	"		" "																		
10.50	12.50	50%	"		"																		
12.50	14.00	90%	"		Creamy clay + limonite																		
14.00	15.50	30%	"		Ferrug, banded clay.																		
15.50	17.50	100%	"		Yellow brown and creamy white clay																		
17.50	19.40	50%	"		Clay and limonite fragments																		
19.40	21.30	0%	"		Soft clay.																		
21.30	23.40	20%	"		Ferrug. sandy clay																		
23.40	25.40	5%	"		Hard ferrug mat.																		
25.40	27.30	50%	"		Gritty hard ferrug + clay																		
27.30	29.70	0%	"		WATER LOSS.																		
29.70	32.00	15%	"		Gritty ferrug clay																		
32.00	35.40	10%	"		Ferrug clay + hard limonite frags																		
35.40	37.30	15%	"		Hard limonitic.																		
37.30	38.30	20%	"		Limonitic gritty clay																		
38.30	39.50	10%	"		Ferrug. clay																		
39.50	43.40	10%	"		"																		
43.40	45.10	100%	"		"																		
45.10	46.50	5%	"		"																		
46.50	48.40	0%	"		NO RETURN																		
48.40	49.50	5%	"		Ferrug. clay																		
49.50	51.10	15%	"		"																		
51.10	53.50	40%	"		"																		
53.50	55.50	90%	"		Ferrug clay + white banded frags (mg)																		
55.50	57.40	50%	"		Ferrug clay and magnesite	55.9m	"																
					45° CONTACT 56.9m	↓																	
57.40	59.00	100%	"		Mass. wh. mg 5-10% silica veinlets/calcite		"																
59.00	60.60	100%	"		"		"																
60.60	62.20	100%	"		Mass. white mg (5% Si)		"																
61.20	63.30	70%	"		" " 50cm cavity																		
63.30	65.00	30%	"		Sandy clay from cavity falling.																		
					Cavity 63.30 - 64.50m																		

AR 13

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL8718 — 2

Plan-Map Reference:

Co-ordinates: ..... Azimuth: 319°

RL Collar: ..... Inclination: -46°

Drillers: F. KAYE — Commenced: 9-11-98 — Depth: 204.3 — Hole No: AR13

Drill Types: Longyear 38 — Completed: 8-12-98 — Casing Left: ..... — DPO No's: .....

490032

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by .....): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
65.0	66.70	70%	PQ		Mass, calc. veined magnesite		"																
66.70	70.40	30%	PQ		Hard, calc. vein. mg																		
					Cavity 67.40-69.80																		
70.40	71.60	75%	HQ		Massive (v.m. calcite) Mg.																		
71.60	73.20	100%	"		" "																		
					72.2-72.7m Creamy.																		
					@ 72.5m shear zone																		
73.2	74.6	100%	"		Massive white Mag.																		
74.6	76.2	100%	"		"																		
76.2	77.6	100%	"		"																		
77.6	79.20	100%	"		"																		
79.20	80.60	100%	"		"																		
80.60	82.20	100%	"		"																		
82.20	83.60				"																		
					Small 10cm cavity																		
					@ 82.90m																		
83.6	85.2	100%	"		Mass. white Mag.																		
85.2	86.3	100%	"		"																		
86.3	87.9	100%	"		"																		
87.9	89.5	100%	"		"																		
89.5	91.10	100%	"		"																		
91.10	92.6	100%	"		"																		
92.6	94.2	100%	"		"																		
94.2	95.6	100%	"		"																		
95.6	97.2	100%	"		"																		
97.2	98.6	100%	"		"																		
98.6	100.2	100%	"		"																		
100.2	101.6	100%	"		"																		
101.6	103.2	100%	"		"																		
103.2	104.6	100%	"		"																		
104.6	106.2	100%	"		"																		
106.2	107.6	100%	"		"																		
107.6	109.2	100%	"		"																		
109.2	110.6	100%			Mass Wht. and grey dolomitic mag.																		
					110-110.4 Whitey dolomite																		
110.6	112.2	100%	"		Massive white mag.																		

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: PL8718

Plan-Map Reference:

Co-ordinates: ..... Azimuth: 319°

RL Collar: ..... Inclination: -46°

Drillers: JKAYE

Drill Types: Longyear 38

Commenced: 5-11-98

Completed: 8-12-98

Depth: 209.3

Casing Left:

Hole No: AR13

DPO No's:

49033

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ..... MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
112.2	113.6	100%	HQ		Mass white mag.																		
113.6	115.2	100%	"		"																		
115.2	116.6	100%	"		"																		
116.6	118.2	100%	"		"																		
118.2	119.6	100%	"		"																		
119.6	121.2	100%	"		"																		
121.2	122.6	100%	"		"																		
122.6	124.2	100%	"		"																		
124.2	125.6	100%	"		"																		
125.6	127.7	100%	"		"																		
127.7	128.6	100%	"		"																		
128.6	130.2	100%	"		"																		
130.2	131.6	100%	"		"																		
131.6	133.2	100%	"		Mass white and grey dolomitic mag 138.1-133.2 Dolomitic vein																		
133.2	134.6	100%	"		Mass. White magnesite																		
134.6	136.2	100%	"		with dolomitic vein																		
136.2	137.6	100%	"		Mass White mag.																		
137.6	139.2	100%	"		"																		
139.2	142.2	100%	"		" + few veins																		
142.2	143.6	100%	"		Mass White mag.																		
143.6	145.2	100%	"		"																		
145.2	146.6	100%	"		"																		
146.6	148.2	100%	"		"																		
148.2	149.6	100%	"		"																		
149.6	151.2	100%	"		"																		
151.2	152.6	100%	"		"																		
152.6	154.2	100%	"		"																		
154.2	155.6	100%	"		" some fe jts																		
155.6	157.2	100%	"		"																		
157.2	158.6	100%	"		"																		
158.6	160.2	100%	"	POOR	Mass mag + dolmitic? Zone 159.6-159.9																		
160.2	161.60	100%	"	161.1 m	Contact Magnesite with grey green	DOLERITE		161.1M															
161.6	163.2	100%	"	"	talcose carbonate																		
163.2	164.0	100%	"	"	rock ?																		
164.0	165.6	100%	"		Dark grey green																		
165.6	167.2	100%	"	"	Talcose carbonate																		

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name:

Plan-Map Reference:

Co-ordinates: Azimuth: 319

RL Collar: Inclination: -46°

Drillers: JAMIE KAYE Drill Types: Longyear 38

Commenced: 11-98 Completed: 8-12-98

Depth: 209.3 Casing Left:

Hole No: AR13 DPO No's:

49034

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Minerals in Sparry patches: Dol	Minerals in Sparry patches: Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
167.2	168.7	100%	HQ		and jointed Broken dark grey green rock (dolerite)																		
168.7	170.3	"	"		"																		
170.3	171.8	"	"		"																		
171.8	172.6	"	"		"																		
172.6	173.6	"	"		"																		
173.6	175.3	"	"		"																		
175.3	176.5	"	"		"																		
176.5	177.3	90%	"		"																		
177.3	178.9	100	"		"																		
178.9	179.8	90%	"		"																		
179.8	181.4	90%	"		"																		
181.4	183.2	16%	"		"																		
183.2	183.8	33%	"		"																		
183.8	184.4	100%	"		"																		
184.4	184.9	"	"		"																		
184.9	185.6	"	"		"																		
185.6	187.2	20	"		"																		
187.2	188.1	22	"		"																		
188.1	189.7	31	"		"																		
189.7	190.9	33	"		"																		
190.9	192.6	17	"		"																		
192.6	193.5	29	"		"																		
193.5	193.9	50	"		"																		
193.9	194.2	66	"		"																		
194.2	194.3	100	"		"																		
194.3	195.6	43	"		"																		
195.6	196.5	44	"		"																		
196.5	198.1	80	"		"																		
198.1	199.7	80	"		"																		
199.7	201.1	70	"		"																		
201.1	209.3	69%	"		"																		
EOH					DOLERITE																		

Hole stopped as ground becoming too difficult to drill and drill undereamered

76% REC

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718 — 1

Plan-Map Reference:

Co-ordinates: ..... Azimuth: 319° MAG

RL Collar: ..... Inclination: -46°

Drillers: M. NEWMAN — Commenced: 3.11.98

Drill Types: LONGYEAR 48 — Completed: 10-11-98

Depth: 124.7 — Hole No: AR 14

Casing Left: ..... DPO No's: .....

49033

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Minerals in Sparry patches: Dol	Minerals in Sparry patches: Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by .....): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	16	TRICONE			Alluvial clays and cobbles																		
16	18.7	TRICONE																					
18.7	20.1	100%	PQ		Mass White mag																		
20.1	21.6	100%	PQ		"																		
21.6	23.5	75%	PQ		"																		
					40 cm cavity 22.1 - 22.5																		
23.5	24.1	100%	PQ		mass white mag																		
24.1	25.60	100%																					
25.60	26.2	100%	PQ		massive white mg																		
26.2	27.7	100%	PQ		"																		
27.7	29.2	100%	PQ		"																		
29.2	30.7	100%	PQ		"																		
30.7	32.2	100%	PQ		"																		
32.2	33.7	100%	PQ		"																		
33.7	35.2	100%	PQ		"																		
35.2	36.7	100%	PQ		"																		
36.7	38.2	100%	PQ		"																		
38.2	39.7	100%	PQ		"																		
39.7	41.2	100%	PQ		"																		
41.2	42.7	"	"		"																		
42.7	43.5	"	"		"																		
43.5	44.6	80	"		cavity																		
44.6	45.4	100	"		massive white mag																		
45.4	45.6	"			"																		
45.6	46.9	80	"		cavity																		
46.9	47.7	100			mass. white mag																		
47.7	48.5	80	"		cavity																		
48.5	49.7	100	"		mass. white mag																		
49.7	51.3	"	"		"																		
51.3	52.7	"	"		"																		
52.7	54.2	"	"		"																		
54.2	54.5	"	"																				
54.5	58.2	80			cavity																		
58.2	59.1	100	"		mass. white mag																		
59.1	59.5	"	"		"																		
59.5	60.8	80			cavity																		
60.8	61.0	100	"		mass. white mag																		
61.0	62.5	"	"		"																		

AR 14

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: EL 8718 2

Plan-Map Reference:

Co-ordinates: Azimuth: 319° mag

RL Collar: Inclination: -46°

Drillers: M. Newman Commenced: 7-11-98 Depth: 124.7 Hole No: AR 14

Drill Types: Longyear 44 Completed: 10-12-98 Casing Left: DPO No's:

49083

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches sil	Minerals in Sparry patches Dol	Minerals in Sparry patches Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ..... MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
62.5	61.0	100	PQ	/ \	mass white mag																		
61.0	62.5	"	"	\ /	"																		
62.5	63.0	"	"	\ /	"																		
63.0	65.0	50	"		cavity - water washed pebbles																		
65.0	65.4	100	"	/ /	mass white mag																		
65.4	65.8	"	"	— /	"																		
65.8	67.3	"	HQ	/ /	"																		
67.3	67.9	"	"	/ /	"																		
67.9	72.6	50																					
72.6	73.1	100	"	/ \	"																		
73.1	73.45	"	"	/ —	"																		
73.45	73.8	"			"																		
73.8	74.8	"	"	— /	"																		
74.8	77.8	"	"	/ \	"																		
77.8	78.8	"	"	\ /	"																		
78.8	79.6	50																					
79.6	80.2	100	"	/ /	"																		
80.2	80.5	"	"	/ \	"																		
80.5	81.1	50	"		cavity																		
81.1	82.2	80	"	/ \	mass white mag																		
82.2	82.6	100	"		cavity																		
82.6	82.7	"	"	— /	mass white mag																		
82.7	83.0	"	"	/ \	"																		
83.0	85.95	50	"		cavity																		
85.95	86.5	100	"	/ \	mass white mag																		
86.5	88.1	"	"	/ \	"																		
88.1	88.9	"	"	/ \	"																		
88.9	89.5	"	"		cavity																		
89.5	89.8	"	"	/ —	mass white mag																		
89.8	91.3	"	"	/ \	"																		
91.3	91.7	50	"		cavity																		
91.7	92.2	100	"	/ \	mass white mag/4 - broken bed 30cm.																		
92.2	93.5	50	"		cavity																		
93.5	93.9	50	"		"																		
93.9	95.1	100	"	/ \	mass white mag																		
95.1	96.1	"	"	/ — /	"																		
96.1	97.7	"	"	/	"																		
97.7	99.3	"	"	/	"																		
99.3	99.5	"	"	/	"																		
99.5	100.9	"	"	d	dk. grey mass dolerite																		
100.9	102.4	"	"	d	"																		
102.4	104.0	"	"	d	"																		
104.0	105.5	"	"	d	"																		
105.5	107.1	"	"	d	"																		
107.1	108.6	"	"	d	"																		

94% Rec

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL8718 — 3

Plan-Map Reference:

Co-ordinates: ..... Azimuth: 319° mag — Drillers: M. Newman — Commenced: 3-11-98 — Depth: 124.7 — Hole No: AR14

RL Collar: ..... Inclination: -46° — Drill Types: Longyear 44 — Completed: 10-12-98 — Casing Left: ..... — DPO No's: .....

49037

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Minerals in Sparry patches: Dol	Minerals in Sparry patches: Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by .....): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
108.6	110.2	108	HQ	d	ak grey/gr mass	dol	broken breccia																
110.2	111.5	"	"	" d	"		"	et 110.0.															
111.5	112.7	"	"	d	"	"	"																
112.7	113.4	"	"	d	"																		
113.4	115.0	"	"	d	grey/gr. mass.	dolarite																	
115.0	116.5	"	"	d	"																		
116.5	118.0	"	"	d	"																		
118.0	119.5	"	"	d	"																		
119.5	121.1	"	"	d	"																		
121.1	124.7	"	"	d	"																		
EOH.																							

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: EL 8718 — 1

Co-ordinates: 5439252.9N 369387.0E — Azimuth: 319° mag — Drillers: F. KAYE — Commenced: 1-12-98 — Depth: 107.6m — Hole No: AR15

RL Collar: 156.4m — Inclination: -46° — Drill Types: Longyear 38 — Completed: 17.12.98 — Casing Left: — DPO No's:

190038

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ....) MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
			open hole																				
0.0	11.7		PQ		Alluvium																		
11.7	14.3		"		" cobbles.																		
14.3	15.2	22	"		Oxid mass mag. red/yellow																		
15.2	15.3	100	"		"																		
15.3	15.5	50	"		"																		
15.5	16.0	40	"		" ✓																		
16.0	18.5	0			cavity																		
18.5	18.7	100	"		Yell. very oxid. mag ✓																		
18.7	20.3	"			"																		
20.3	21.9	66	"		"																		
21.9	23.5	63	"		" to 22.8																		
					then mass mag																		
23.5	24.0	100	"	d	lt gr. dolomitic																		
24.0	25.1	10	"	d	oxid. "																		
25.1	26.2	50		d	"																		
26.2	26.7	80	"		cream mass mag																		
26.7	27.2	100	"		"																		
27.2	28.3	45	"		Ybr v. oxid. clayey mag																		
28.3	28.9	87	"		"																		
28.9	31.6	82	"		"																		
31.6	33.1	100	"		"																		
33.1	34.7	93	"		"																		
34.7	36.3	75	"		"																		
36.3	37.9	100	"		"																		
37.9	39.5	69	"		"																		
39.5	41.1	100	"		oxid. dolerite?																		
41.1	42.5	86	"		extn. oxid mass mag																		
42.5	42.7	100	"		"																		
42.7	44.1	100	"	d	lt gr. dolomitic mag																		
44.1	45.7	100	"	d	"		brec	+ clays															
45.7	46.4	100	"	d	"		"																
46.4	47.3	0	"		cavity																		
47.3	50.7	0	"		"																		
50.7	51.8	50%	"		Fe. clay with limonite fragments																		
51.8	53.4	30%	"	Fe	"																		
53.4	55.0	50%	"		Sandy fe. clay - cavity fill(?)																		
55.0	56.6	60%	"	Fe	Fe. clay with hard indurated frags. decomposing?																		
56.6	58.2	60%	"		Sandy clay with limonitic frags FW schist (?)																		
58.2	59.2	100%	"	Fe	" "																		
59.2	61.4	100%	"		" "																		
61.4	63.0	0%	"	Fe	clay (washed away																		

AR 15

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: EL 8718 — 2

Co-ordinates: 369343.0 E, 5439317.5 N — Azimuth: 319° Mag — Drillers: J. KAYE — Commenced: 12.98 — Depth: 107.6 — Hole No: AR15

RL Collar: 151.0 — Inclination: -46° — Drill Types: LONGYEAR 38 — Completed: 17.12.98 — Casing Left: — DPO No's:

49039

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ....) MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
63.0	64.6	70%	PQ		Fe Clay with hard limonite nodules																		
64.6	66.2	"	PQ	Fe	"																		
66.2	67.5	100%	PQ		"																		
				Fe	67.3-67.8 50cms quartz vein																		
67.5	69.4	100%	HQ		Fe Clay with quartz frags and creamy mag.																		
69.4	71.0	100%	HQ		20 cms Fe. clay																		
					69.4-71.0 Creamy magnesite																		
71.0	72.6	100%	HQ		Decomposed magnesite with Fe. clay																		
72.6	73.0	100%	HQ		Sandy Fe. clay																		
73.0	74.0	100%	HQ		Hard Creamy magnesite																		
74.0	75.9	100%	HQ		Hard White magnesite																		
75.9	77.5	100%	HQ		"																		
77.5	79.1	100%	"		"																		
79.1	80.6	100%	"		"																		
80.6	82.2	100%	"		"																		
82.2	83.6	100%	"		"																		
83.6	85.2	100%	"		"																		
85.2	86.6	100%	"		"																		
86.6	88.2	100%	"		"																		
88.2	89.6	100%	"		"																		
89.6	91.2	100%	"		"																		
91.2	92.6	100%	"		"																		
92.6	94.2	100%	"		"																		
94.2	95.6	100%	"		Hard, white and creamy magnesite																		
95.6	97.0	100%	"		"																		
97.2	98.6	100%	"		"																		
98.6	100.2	100%	"		"																		
100.2	101.6	100%	"		"																		
101.6	103.2	100%																					
103.2	104.6	100%	"																				
104.6	106.2	100%	"		"	"		at 106 grey FN Siltstone(?)															
106.2	107.6	100%	"		FN dark grey siltstone(?)																		
	EOH																						

81% Recovery

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: EL 8718

Plan-Map Reference:

Co-ordinates: 369387.4 E 5439229.9 N Azimuth: 139° Mag. Drillers: M. NEWMAN Commenced: 11.1.98 Depth: 278.6 Hole No: AR 16

RL Collar: 152.9 Inclination: -46 Drill Types: LONGYEAR 48 Completed: 30.1.98 Casing Left: — DPO No's:

49040

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Minerals in Sparry patches: Dol	Minerals in Sparry patches: Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ....) MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	15.40	TRICONE			Alluvials, cobbles																		
15.40	16.8	100%	PQ	dm	Khaki clay and broken grey dolomite (?)																		
16.8	17.8	0	PQ																				
17.8	18.9	50%	PQ		Khaki clay and broken grey decomp. dolomite																		
18.9	20.3	100%	PQ	dm	"																		
20.3	21.8	60%	PQ		"																		
21.8	23.8	50%	PQ	dm	"		"	"															
23.8	26.5	30%	PQ		"																		
26.5	28.7	50%	PQ		"		"																
28.7	30.1	40%	PQ	dm	"																		
30.1	33.1	30%	PQ		Khaki clay and 15cm hard magnesite (?)																		
33.1	33.5	"	PQ		Decomp clayey dolomite?																		
33.5	35.8	"	PQ	dm	Broken white/khaki dolomite?																		
35.8	36.9	"	PQ		"	"																	
36.9	38.8	20%	PQ	dm	" clayey	"	"																
38.8	40.8	50	PQ		Clay and beige magnesite?																		
40.8	42.6	80%	PQ																				
42.6	43.50	80%	PQ		Broken magnesite (?) + clay																		
43.5	45.5	75%	PQ		"																		
45.5	46.9	100%	PQ		Hard white and creamy beige magnesite																		
46.9	48.5	100%	PQ		"																		
48.5	51.8	30%	PQ		"																		
					with quartz 49.50 – 50.70m																		
51.8	52.4	100%	PQ		Hard white and creamy beige magnesite																		
52.4	54.5	100%	HQ		Hard white Magnesite																		
54.5	56.10	100%	HQ		"																		
56.10	57.7	100%	HQ		"																		
57.1	59.3	100%	HQ		"																		
59.3	61.8	100%	HQ		"																		
61.8	62.4	100%	HQ		"																		
62.4	63.7	100%	HQ		"																		
63.9	65.5	100%	HQ		"																		
65.5	66.9	100%	HQ		"																		
66.9	68.4	100%	HQ		"																		
68.4	69.9	100%	HQ		Hard white magnesite																		
69.9	71.50	100%	HQ		"																		
71.5	73.1	100%	HQ		" "																		
73.1	74.6	100%	HQ		" "																		
74.6	76.1	100%	HQ		" "																		
76.1	77.6	100%	HQ		" "																		
77.6	80.6	100%	HQ		" "																		
80.6	82.10	100%	HQ		" "																		

94% Rec.

AR 16

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: ..... Azimuth: Mag 139°

RL Collar: ..... Inclination: -46°

Drillers: M. Newman

Drill Types: Longyear 44

Commenced: 1.2.98

Completed: 30.1.99

Depth: 378.6

Casing Left: —

Hole No: ATR16

DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Minerals in Sparry patches: Dol	Minerals in Sparry patches: Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by .....): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
82.1	83.6	100%	HQ		Hard White magnesite																		
83.6	85.1	100%	HQ		" "																		
85.1	86.6	100%	HQ		" "																		
86.6	88.1	100%	HQ		" "																		
88.1	89.6	100%	HQ		" "																		
89.6	91.0	100%	HQ		"																		
91.0	92.6	100%	HQ		"																		
92.6	94.1	100%	HQ		"																		
94.1	95.6	100%	HQ		"																		
95.6	97.1	100%	HQ		"																		
97.1	98.6	100%	HQ		"																		
98.6	100.1	100%	HQ		"																		
					small Fe break @ 99.7m																		
100.1	101.6	100%	HQ		Hard White magnesite																		
					100.7-101.2 beige coloured Fe break																		
101.6	103.1	100%	HQ		Hard White magnesite																		
					@ 102.6 clay break																		
103.1	104.6	100%	HQ		Hard White magnesite																		
					small Fe sand filled cavity (10cm) @ 103.1m																		
104.6	106.1	100%	HQ		Hard White magnesite																		
106.1	107.6	100%	HQ		"																		
107.6	109.1	100%	HQ		"																		
109.1	110.6	100%	HQ		"																		
110.6	112.1	100%	HQ		"																		
112.1	113.6	100%	HQ		"																		
113.6	115.1	100%	HQ		"																		
115.1	116.6	100%	HQ		"																		
116.6	118.1	100%	HQ		"																		
118.1	119.6	100%	HQ		"																		
119.6	121.1	100%	HQ		"																		
121.1	122.6	100%	HQ		"																		
122.6	124.1	100%	HQ		"																		
124.1	125.6	100%	HQ		"																		
125.6	127.1	100%	HQ		"																		
127.1	128.6	100%	HQ		"																		
128.6	130.1	100%	HQ		"																		
130.1	131.6	100%	HQ		"																		
131.6	133.1	100%	HQ		"																		
					clay joint at 133m																		
133.1	134.6	100%	HQ		Mass and brecciated hard white magnesite																		
134.6	136.1	100%	HQ		"	plus 15cm		grey dolomite															

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: EL 8718

Plan-Map Reference:

3

490042

Co-ordinates: ..... Azimuth: Mag 139°

RL Collar: ..... Inclination: -46°

Drillers: M. NEWMAN

Drill Types: Longyear 44

Commenced: 12.98

Completed: 30-1-99

Depth: 278.6

Casing Left: .....

Hole No: AR16

DPO No's: .....

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by .....): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
136.1	138.2	60%	HQ		Hard white magnesite																		
138.2	139.8	60%			With 60cm cavity @ 137.8																		
138.2	139.8	100%	HQ		Beige coloured magnesite																		
139.8	140.7	100%	HQ	dm	Clay and minor dark grey clayey magnesite and dolomite																		
140.7	143.2	60%			90cm cavity at 143.2m																		
				dm	30cm dolomite 140.7-141m																		
					141-143.2 hard creamy beige magnesite																		
143.2	144.8	100%	HQ		Hard creamy magnesite																		
144.8	146.3	100%	HQ		Hard beige and white magnesite																		
146.8	147.8	100%	HQ		"	"																	
147.8	149.3	100%	HQ		"	"																	
149.3	151.0	100%	HQ		Hard white magnesite																		
151.0	152.5	100%	HQ		Hard white and beige magnesite																		
152.5	154.0	100%	HQ		"	"																	
154.0	155.6	100%	HQ		"	"																	
155.6	157.1	100%	HQ		Some fine dark grey dolomite (?) bands																		
					Hard white magnesite																		
157.1	158.6	100%	HQ		"	"																	
158.6	160.1	100%	HQ		"	"																	
160.1	161.6	100%	HQ		"	"																	
161.6	163.1	100%	HQ		"	"																	
163.1	166.1	100%	HQ		"	"																	
166.1	167.6	100%	HQ		"	"																	
167.6	169.1	100%	HQ		"	"																	
169.1	170.6	100%	HQ		"	"																	
					with Fe stained clay Jt @ 169.60 m																		
170.6	172.1	100%	HQ		Hard white and stained magnesite + 30cm cavity																		
172.1	173.6	100%	HQ		Banded grey and white dolomitic (?) magnesite																		
173.6	175.1	100%	HQ		"	"																	
175.1	176.6	100%	HQ		"	"																	
176.6	178.1	"	"		Massive veined white mag.																		
178.1	179.6	"	"		Massive white mag																		
179.6	181.1	"	"		" veined + breccia 179.7-180.0																		
181.1	182.6	"	"		Massive white mag																		
182.6	184.1	"	"		"																		
184.1	185.6	"	"		"																		
185.6	187.1	"	"		" veined from 186.9																		
187.1	188.6	"	"		Massive veined white mag.																		
188.6	190.1	"	"		"																		
190.1	191.6	"	"		"																		
191.6	193.1	"	"		"																		
192.1	194.6	"	"		"																		

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 3718

Plan-Map Reference:

4

Co-ordinates: ..... Azimuth: 139° mag

RL Collar: ..... Inclination: -46°

Drillers: M Newman

Drill Types: Longyear 44

Commenced: 30-12-98

Completed: 30-1-99

Depth: 278.6

Casing Left:

Hole No: AR16

DPO No's:

49043

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ..... MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
194.6	196.1	100	HQ	-/	Mass. semi-schist mag																		
196.1	197.6	"	"	-/	"																		
197.6	199.1	"	"	-/	"																		
199.1	200.6	"	"	-/	"																		
200.6	202.1	"	"	-/	"																		
202.1	203.6	"	"	-/	"																		
203.6	205.1	"	"	-/	"																		
205.1	206.6	"	"	-/	"																		
206.6	208.1	"	"	-/	"																		
208.1	209.6	"	"	-/	"																		
209.6	211.1	"	"	-/	"																		
211.1	212.6	"	"	-/	"																		
212.6	214.0	"	"	-/	"																		
214.0	215.6	"	"	-/	"																		
215.6	216.9	"	"		"																		
216.9	217.9	"	"		"																		
217.9	218.3	"	"		"																		
218.3	219.8	"	"		"																		
219.8	221.4	"	"		"																		
221.4	222.9	"	"		"																		
222.9	224.5	"	"		"																		
224.5	225.1	"	"		" Itew HW schist from 224.8																		
225.1	226.6	"	"		HW schist to 225.5 Itew mafic with orange mag.																		
226.6	228.2	"	"		Mass with to cream mag																		
228.2	229.7	"	"		"																		
229.7	231.2	"	"		"																		
231.2	232.8	"	"		"																		
232.8	233.6	"	"		"																		
233.6	235.1	"	"		"																		
235.1	236.6	"	"		"																		
236.6	238.1	"	"		"																		
238.1	239.6	"	"		"																		
239.6	241.1	"	"		"																		
241.1	242.6	"	"		"																		
242.6	244.1	"	"		"																		
244.1	244.8	"	"		"																		
244.8	246.3	"	"		"																		
246.3	247.9	"	"		"																		
247.9	249.4	"	"		"																		
249.4	251.0	"	"		"																		
251.0	252.6	"	"		"																		
252.6	254.1	"	"		"																		

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL8718

Plan-Map Reference:

Co-ordinates: ..... Azimuth: 139° Mag

RL Collar: ..... Inclination: -46°

Drillers: M Donovan

Drill Types: Longyear 44

Commenced: 1-12-98

Completed: 30/1/99

Depth: 378.6

Casing Left:

Hole No: AR16

DPO No's:

49044

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches sil	Minerals in Sparry patches Dol	Minerals in Sparry patches Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ..... MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
354.1	356.1	ICE	HQ		Mag with. mag.																		
356.1	357.6	"	"		"																		
357.6	359.1	"	"		"																		
359.1	360.6	"	"		"																		
360.6	362.1	"	"		"																		
362.1	363.6	"	"		"																		
363.6	365.1	"	"		"																		
365.1	366.6	"	"		"																		
366.6	368.1	"	"		"																		
368.1	369.6	"	"		"																		
369.6	371.1	"	"		"																		
371.1	372.6	"	"		"																		
372.6	374.1	"	"		"																		
374.1	375.6	"	"		"																		
375.6	377.1	"	"		"																		
377.1	378.6	"	"		"																		
EOH																							

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718 (1)

Co-ordinates: 5493?0.5E 5439?70.4N Azimuth: 319° Mag. Drillers: JAMIE KAYE Commenced: 1·1999 Depth: 182.5 Hole No: AR17

Plan-Map Reference:

RL Collar: 150.6 Inclination: -46° Drill Types: LONGYEAR 38 Completed: 19·1·99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches sil	Minerals in Sparry patches Dol	Minerals in Sparry patches Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ....) MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	17.1	TR	CONE		Alluvials, cobbles																	
17.1	17.4		PQ		Mag, " "	Probably earthy fill																
17.4	19.0	50%	"		" "		"															
19.0	20.6	50%	"		Cobbles, alluv, sand		"															
20.6	22.2	50%	"		Grey alluv. sand and																	
22.2	23.8	20%	"		Fe clay																	
23.8	25.4	60%	"		Yellow ochrous clay																	
25.4	27.0	60%	"		Yellow clay + mag.																	
27.0	28.6	60%	"		"																	
28.6	30.2	20%	"		Yellow stained mag																	
30.2	31.8	20%	"		clay and " "																	
31.8	33.4	50%	"		White + fe. mag																	
33.4	35.0	50%	"		Yell. Fe clay, mag																	
35.0	36.6	70%	"		"																	
36.6	38.2	20%	"		"																	
38.2	39.8	15%	"		" "																	
39.8	41.4	80%	"		" "																	
41.4	43.0	0%																				
43.0	44.6	50%	"	Fe	Dark fer lim clay																	
44.6	44.5	100%	0		mass. magnesite																	
44.5	46.4	50%	"		Limonite clay + Qz																	
46.4	48.0	60%	"		"																	
48.0	50.4	0	"		CAVITY																	
50.4	52.0	30%	"		Yellow cream clay																	
52.0	53.6	50%	"		fe dusty clays																	
53.6	55.2	100%	"		MASS cream mag																	
55.2	56.8	50%	"		" + 90cm cavity																	
56.8	58.4	30%	"		cavernous magnesite, fe stained																	
58.4	60.0	60%	"		" , broken																	
60.0	60.6	100%	"	/dm/	fe clay and dolomitic - magnesite																	
60.6	62.0	100%	"	\dm/	" "																	
62.0	63.6	100%	"	\dm/	" "																	
63.6	65.2	100%	"	rdm	grey dolomitic mcl																	
					63.6 - 64.1 grey dolomitic																	
					+ soft clay patches																	
					64.1 - 65.2 grey/white magnesite																	
65.2	66.1	100%	"		Broken Fe stained magnesite + clay																	
66.1	68.1	100%	"	Fe	cavernous fe stained clayey magnesite																	
68.1	69.7	50%	"		Cavity sand filled																	
69.7	70.8	100%	"		Decomp. Fawn clay + stained magnesite																	

36% Rec

49 00 45

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718

Plan-Map Reference:

2

Co-ordinates:

Azimuth: 319° Mag

Drillers: J. Kaye

Commenced: 4/1/99

Depth: 182.5

Hole No: AR17

RL Collar:

Inclination: -46°

Drill Types: LONGYEAR 38

Completed: 19/1/99

Casing Left:

DPO No's:

490046

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches sil	Minerals in Sparry patches Dol	Minerals in Sparry patches Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ..... MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
70.8	71.7	100%	PQ		cavity + sand with creamy beige magnesite																		
71.7	72.4	100%	PQ		Cavity + sand with Fe stained magnesite.																		
72.4	73.7	100%	PQ		Broken yellow-Fe stained magnesite																		
73.7	75.0	100%	PQ		"																		
75.0	76.6	100%	PQ		Very broken "																		
76.6	78.0	100%	PQ		Broken and decomposed Fe clayey magnesite																		
78.0	79.6	100%	PQ		"																		
79.6	81.2	100%	PQ		"																		
81.2	81.8	100%	PQ		" last 40cm grey dolomitic																		
81.8	84.4	100%		Fe	Brown limonitic patchy Fe stained magnesite																		
84.4	86.0	100%	PQ		"																		
86.0	87.0	100%	PQ	Fe	Fe clayey broken magnesite																		
87.0	88.5	100%	HQ		Broken Fe stained magnesite last 20cm yellow ochrous clayey																		
88.5	89.6	100%	HQ		Broken creamy beige magnesite																		
					last 10cm yellow ochrous clay																		
89.6	91.1	100%	HQ		Hard white magnesite																		
91.1	92.6	100%	HQ		" " last 20cm stained																		
92.6	94.2	100%	HQ		" "																		
94.2	95.6	100%	HQ		Stained cavernous magnesite																		
95.6	97.2	100%	HQ		Pale beige hard magnesite																		
97.2	98.6	100%	HQ		" "																		
98.6	100.2	100%	HQ		" "																		
100.2	101.6	100%	HQ		Beige and white hard magnesite																		
101.6	103.2	100%	HQ		"																		
103.2	104.6	100%	HQ		"																		
104.6	106.2	100%	HQ		"																		
106.2	107.6	100%	HQ		"																		
107.6	109.2	100%	HQ		Hard white magnesite																		
109.2	110.6	100%	HQ		" " + 30cm stained + broken																		
110.6	112.2	100%	HQ		Hard white and beige magnesite with small 10cm cavity																		
112.2	113.6	100%	HQ		Hard white magnesite																		
113.6	115.2	100%	HQ		"																		
115.2	116.6	100%	HQ		"																		
116.6	118.2	100%	HQ		Hard, white and beige magnesite																		

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319° Mag. Drillers: J. KAYE Commenced: 5/1/99 Depth: 181.5 Hole No: AR17 3

RL Collar: Inclination: -46° Drill Types: Completed: 16/1/99 Casing Left: DPO No's:

49064

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches sil	Minerals in Sparry patches Dol	Minerals in Sparry patches Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by) MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
118·2	119·6	100%	HQ		Hard beige and white magnesite																	
119·6	121·2	100%	HQ		"	"																
121·2	122·6	100%	HQ		"	"																
122·6	126·8	100%	HQ		"	"																
126·8	130·2	100%	HQ		Hard white magnesite																	
130·2	131·6	100%	HQ		"																	
131·6	133·2	100%	HQ		"																	
133·2	134·6	100%	HQ		"																	
134·6	136·2	100%	HQ		"																	
136·2	137·6	100%	HQ		"																	
137·6	139·2	100%	HQ		"																	
139·2	140·6	100%	HQ		Some staining last 40cms																	
140·6	142·2	100%	HQ		Hard white magnesite																	
142·2	143·6	100%	HQ		white + beige magnesite																	
143·6	145·2	100%	HQ		Beige broken magnesite																	
145·2	146·6	100%	HQ		Hard white magnesite																	
146·6	148·2	100%	HQ		" "		last 40cm broken															
148·2	149·6	100%	HQ		" "																	
149·6	151·1	100%	HQ		" "																	
151·1	152·6	100%	HQ		" "																	
152·6	154·1	100%	HQ		" "																	
154·1	155·6	100%	HQ		" "																	
155·6	157·2	100%	HQ		"																	
157·2	158·6	100%	HQ		Beige magnesite																	
158·6	160·2	100%	HQ		Hard white magnesite																	
160·2	161·6	100%	HQ		" "																	
161·6	163·2	100%	HQ		" "																	
163·2	164·6	100%	HQ		" " with grey dolomite zones?																	
164·6	166·2	100%	HQ		White and beige magnesite																	
166·2	167·6	100%	HQ		" "																	
167·6	169·2	100	"		white mag. - broken																	
169·2	170·6	100	"		"																	
170·6	172·2	100	"		"																	
172·2	173·6	100	"		"																	
173·6	175·2	100	"		"																	
175·2	176·5	100	"		"																	
176·5	178·1	100	"		"																	
178·1	179·2	100	"		"																	
179·2	180·5	100	"		"		last 30cm pyritic s/stone															
180·5	181·5				broken breccia. pyritic clay s/stone + mag																	
181·5	181·5				breccia. dk gr + red brown pyritic s/stone + clay																	

EOH

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tonement Name: RL8718

Plan-Map Reference:

Co-ordinates: 369315.9E 5439165.1N Azimuth: 319 mag Drillers: M. Naumann Commenced: 5-1-99 Depth: 244.5m Hole No: AR18

RL Collar: 151.3 Inclination: -46 Drill Types: Hemy Tees 44 Completed: 19.2.99 Casing Left: DPO No's:

490048

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ....) MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	12	Open hole			Alluvium																		
12	13.6	100	PQ		Mass. wh - mag with dk br weath clayey cavities																		
13.6	15.0	71	"		" with sectns of dk brown weath mag																		
15.0	16.8	61	"		"																		
16.8	18.0	75	"		Mainly dk br weath mag with sectns of mass wh mag																		
18.0	19.8	100	"		"																		
19.8	20.8	"	"		Mass wh mag with sectns of dk br weath mag																		
20.8	22.0	"	"		mass wh mag + thin dk br weath mag. Jan 21.5																		
22.0	24.0	45	"		dk br. weath. mag.																		
24.0	6.0	50	"		dk br. sandy cavity fill / mag gravels ?																		
26.0	27.5	20%	"		dk br. sandy clayey material. (1 metre lost)																		
27.5	30.1	40%	"		" mg " (1 metre lost)																		
30.1	32.0	50%	"		" "																		
					" + some sd, cd magnesite + sand zones																		
32.0	33.70	100%	"		Hard stained magnesite																		
33.70	34.8	100%	"		Decomp. stained beige magnesite																		
34.8	36.5	100%	"		Massive magnesite + clay zone 35.3 (10cm)																		
36.5	38.0	80%	"		Hard yellow magnesite + yellow clay patches																		
38.0	39.5	90%	"		" "																		
39.5	41.0	0%	"		NO RECOVERY																		
41.0	42.3	90%	"		massive fe stained magnesite (20cm lost)																		
42.7	45.8	50%	"		White and stained magnesite (50cm lost)																		
45.8	48.8	50%	"		Hard magnesite + clay zones (1m lost)																		
48.0	48.8	70%	"		Hard white magnesite + cavity																		
48.8	50.5	70%	"		" " " (40cm lost)																		
50.5	52.5	50%	"		Decomp. magnesite red yellow brown - dark brn sand																		
52.5	53.2	10%	"		" " (50cm lost)																		
53.2	55.0	100%	"		Clayey yellow decomp magnesite + white mag																		
55.0	56.6	100%	"		Hard stained magnesite																		
56.6	57.5	100%	"		Broken and clayey magnesite																		
57.5	59.1	100%	"		Mass. magnesite + minor clay																		
59.1	60.7	100%	"		Hard White magnesite																		
60.7	62.3	100%	"		"																		
62.3	63.8	100%	"		"																		
63.8	66.9	50%	HQ		White magnesite and clay																		
66.9	68.6	30%	HQ		Cavernous magnesite 50cm sandy fill																		
68.6	70.0	100%	HQ		Hard and cavernous magnesite																		
70.0	71.6	100%	HQ		Hard White + cream magnesite																		
71.6	73.3	100%	HQ		Hard white mag																		
73.3	74.9	100%	HQ		"																		
74.9	76.5	100%	HQ		"																		
					"																		

88% Rec

490049

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: EL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319° Mag Drillers: M. Newman Commenced: 30.1.99 Depth: 244.5 m Hole No: AR 18

RL Collar: Inclination: -46° Drill Types: LONGYEAR 44 Completed: 19.2.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
78.0	79.5	100%	HQ		Broken ytd magnesite																	
79.5	81.0	100%	HQ		Dolomitic magnesite - beige																	
81.0	82.5	100%	HQ		Massive white mag.																	
82.5	84.0	100%	HQ		Beige/white ytd magnesite																	
84.0	85.9	50%	HQ		Cream/beige broken/clayey magnesite																	
85.9	87.3	100%	HQ		" "																	
					85.9 – 86.9 broken clayey																	
87.3	89.7	50%	HQ		Yellow magnesite, clay, broken frags.																	
89.7	90.9	100%	HQ		Broken beige dolomitic (?) magnesite																	
90.9	92	100%	HQ		" " "																	
92.0	94.0	80%	HQ		Massive white ad broken magnesite																	
94	95.2	80%	HQ		Broken + clayey magnesite																	
95.2	96.6	100%	HQ		Yellow clay ad stained magnesite																	
96.6	98.1	100%	HQ		Yellow beige + white hard magnesite																	
98.1	100.4	60%	HQ		" (70cm cavity)																	
100.4	102.0	100%	HQ		Cream and white mass. mag																	
102.0	103.5	100%	HQ		"																	
103.5	105	100%	HQ		"																	
105	108	100%	HQ		Mainly mass. magnesite																	
108	109.5	100%	HQ		"																	
109.5	111	100%	HQ		"																	
111	112.5	80%	HQ		Mainly mass magnesite 20cms clay																	
112.5	114	40%	HQ		Yellow clay and decomp magnesite																	
114	115.5	80%	HQ		"																	
115.5	117.0	100%	HQ		"																	

490050

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: Pt 8718

Plan-Map Reference:

Co-ordinates: Azimuth: Drillers: Commenced: 30.1.99 Depth: 244.5 m Hole No: AR18.

RL Collar: Inclination: Drill Types: Completed: 19.2.99 Casing Left: DPO No's:

Depth		Core	Core	Graphic																		
From	To	Rec	Size	Log	Core description	Sample	From	To	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
(m)	(m)	(m)					(m)	(m)														
117	118.1	100%	HQ		Hard broken fe stained brown mag																	
118.1	119.7	100%	HQ		" "																	
119.7	121	60%	HQ		Grey dolomitic magnesite																	
121	122.8	100%	HQ		Brecciated magnesite 121.2 - 121.7																	
					Broken grey dol/mg 121.7 - 122.8																	
122.8	124.4	100%	HQ		122.8 - 123 "																	
					123 - 124.4 Broken fer. & creamy mag																	
124.4	125.7	100%	HQ		"																	
125.7	128.8	50%	HQ		"																	
128.8	130.4	100%	HQ		fe. mag as broken hard brecciated	mg																
130.4	131.9	100%	HQ		Broken fe. stained mag last 40cm dol.																	
131.9	133.1	100%	HQ		"																	
133.1	134.5	70%	HQ		Yellow stained magnesite																	
134.5	135.6	100%	HQ		Yellow magnesite wit dolomite(?)																	
135.6	136.4	100%	HQ		Broken magnesite																	
136.4	137.8	100%	HQ		Broken pale beige dol/magnesite																	
137.8	139.4	100%	HQ		" "																	
139.4	140.6	100%	HQ		" "																	
140.6	141.6	100%	HQ		" "																	
141.6	142.9	100%	HQ		" "																	
142.9	145.1	100%	HQ		Hard beige magnesite/dolom.																	
145.1	146.5	100%	HQ		" "																	
146.5	147.7	60%	HQ		Very broken " "																	
147.7	148.7	30%	HQ		" "																	
148.7	150	100%	HQ		Massive ad clayey mag/dol.																	

490051

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: Drillers: M. NEWMAN Commenced: 30.1.99 Depth: 244.5m Hole No: AR 18

RL Collar: Inclination: Drill Types: LONGYEAR 44 Completed: 19.2.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
150.0	151.5	100%	HQ		Massive + clayey mag/dolomite																	
151.5	153.0	100%	HQ		" magnesite																	
153.0	154.5	100%	HQ		Broken yellow stained magnesite																	
154.5	156.0	100%	HQ		" "																	
156.0	157.4	100%	HQ		Hard cream + white magnesite																	
157.4	159.9	100%	HQ		"																	
159.9	160.5	100%	HQ		"																	
160.5	162.0	100%	HQ		Cream yellow and white magnesite																	
162.0	164.0	75%	HQ	50cm	"																	
164.0	165.4	100%	HQ		Hard white magnesite																	
165.4	166.7	100%	HQ		Broken magnesite mainly grey (dolomitic?)																	
166.7	168.2	50%	HQ	80cm	Broken yellow stained magnesite																	
168.2	169.8	80%	HQ	40cm	" "																	
169.8	171.0	100%	HQ		Hard white magnesite																	
171.0	172.5	100%	HQ		"																	
172.5	174.0	100%	HQ		Hard white + pale grey dolomitic(?)																	
174.0	175.5	100%	HQ		" "																	
175.5	177.0	100%	HQ		Fe stained dolomitic/magnesite																	
177.0	178.5	100%	HQ		"																	
178.5	180.0	100%	HQ		" (dolomitic to 179m)																	
180.0	181.5	100%	HQ		Hard white magnesite																	
181.5	182.3	100%	HQ		"																	
182.3	183.9	100%	HQ		"																	
183.9	185.4	100%	HQ		"																	
185.4	186.9	100%	HQ		"																	

490052

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: L 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319° mag. Drillers: M. NENNAN Commenced: 30.1.99 Depth: 244.5 m Hole No: AR 18

RL Collar: Inclination: -46° Drill Types: LONGYEAR 44 Completed: 19.2.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
188.9	188.5	100%	HQ		Hard white magnesite																	
188.5	189.9	100%	HQ		"																	
189.9	191.5	100%	HQ		" with grey veining																	
191.5	193.1	100%	HQ		"																	
193.1	194.7	100%	HQ		"																	
194.7	196.2	100%	HQ		"																	
196.2	197.7	100%	HQ		"																	
197.7	198.3	100%	HQ		"																	
					197.7 - 198.3 hard white magnesite																	
198.3	199.4	60%	HQ	40cm	Grey clay and magnesite																	
199.4	202.2	80%	HQ	40cm	Grey dolomite and clay																	
202.2	202.7	100%	HQ		Hard white magnesite																	
202.7	203.7	100%	HQ		" " last 2cm Fe.																	
203.7	205.7	80%	HQ	2cm	" some clay seam																	
205.7	207.0	100%	HQ		1st 30cm clay rest hard white magnes																	
207.0	208.5	100%	HQ		"																	
208.5	211.0	100%	HQ		Cream magnesite																	
211.0	211.5	100%	HQ		1st 30cm broken clay rest magnesite																	
211.5	212.6	100%	HQ		1st 50cm clay rest broken magnesite																	
					last 10cm grey dolomitic magnes																	
212.6	213.6	40%	HQ		Very broken beige dolomite/magnes																	
213.6	215.2	100%	HQ		1st 50cm " " rest magnesite																	
215.2	216.4	100%	HQ		Hard white magnesite																	
216.2	218.0	100%	HQ		216.2 - 217.1 "																	
					217.1 - 218 broken grey clay/mg																	

490053

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 349° mag Drillers: M. NEWMAN Commenced: 30·1·99 Depth: 244·5m Hole No: AR 18

RL Collar: Inclination: -46° Drill Types: LONGYEAR 44 Completed: 19·2·99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
218·0	219·4	100%	HQ		Very broken clay altered magnesite (?)																	
219·4	220·3	100%	HQ		"																	
220·3	221·5	100%	HQ		"																	
221·5	222·3	100%	HQ		"																	
222·3	223·5	100%	HQ		Broken decomposed soft magnesite																	
223·5	225·0	100%	HQ		white crackle magnesite veined																	
225·0	226·5	100%	HQ		"																	
226·5	228	100%	HQ		Hard white magnesite																	
228	229·5	100%	HQ		"																	
229·5	231·0	100%	HQ		"																	
231·0	232·5	100%	HQ		"																	
232·5	234·0	100%	HQ		"																	
234·0	235·5	100%	HQ		"																	
235·5	237·0	100%	HQ		"																	
237·0	238·5	100%	HQ		"																	
238·5	240·2	100%	HQ		"																	
240·2	241·8	100%	HQ		last 40cm dark grey banded siltstone																	
					minor pyrite 239·8M																	
					Dark grey banded contorted																	
241·8	243	100%	HQ		pyritic siltstone																	
243·0	244·5	100%	HQ																			
EOH					244·5m																	

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: KL8/18

Co-ordinates: 369318.9E 5439165.6N | Azimuth: 319 mag -46 | Drillers: M. Nawrocki | Commenced: 30-1-99 | Depth: 244.5m | Hole No: AR18

RL Collar: 151.3 | Inclination: | Drill Types: Hemsworth 44 | Completed: 19.2.99 | Casing Left: | DPO No's:

Plan-Map Reference:

49054

88% Rec

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	12	open hole			Alluvium																		
12	13.6	100	PQ		Mass. wh. mag with dk br. weath clay/soil																		
13.6	15.0	71	"		" with section of dk brown weath mag																		
15.0	16.8	61	"		"																		
16.8	18.0	75	"		Mainly dk br weath mag with section of mass wh. mag																		
18.0	19.8	100	"		"																		
19.8	20.8	"	"		mass wh mag with section of dk br weath mag																		
20.8	22.0	"	"		mass wh mag + thin dk br weath mag. for 21.5																		
22.0	24.0	45	"		dk br. weath. mag.																		
24.0	6.0	50	"		dk br. sandy cavity fill / mag gravels ?																		
26.0	27.5	20%	"		dk br. sandy clayey material. (1 metre lost)																		
27.5	30.1	40%	"		" mg. " (1 metre lost)																		
30.1	32.0	50%	"		" "																		
					" + some soft mg magnesite + sand zones																		
32.0	33.70	100%	"		Hard stained magnesite																		
33.70	34.8	100%	"		Decomp. stained beige magnesite																		
34.8	36.5	100%	"		massive magnesite + clay zone 35.3 (10cm)																		
36.5	38.0	80%	"		Hard yellow magnesite + yellow clay patches																		
38.0	39.5	90%	"		"																		
39.5	41.0	0%	"		NO RECOVERY																		
41.0	42.7	90%	"		massive & stained magnesite (20cm lost)																		
42.7	45.8	50%	"		White and Stained magnesite (50cm lost)																		
45.8	48.0	50%	"		Hard magnesite + clay zones (1m lost)																		
48.0	48.8	70%	"		Hard White magnesite + cavity																		
48.8	50.5	70%	"		" (40cm lost)																		
50.5	52.5	50%	"		Decomp. magnesite + yellow brown - dark brown sand																		
52.5	53.2	10%	"		" (50cm lost)																		
53.2	55.0	100%	"		Clayey yellow decomp magnesite + White mag																		
55.0	56.6	100%	"		Hard stained magnesite																		
56.6	57.5	100%	"		Broken and clayey magnesite																		
57.5	59.1	100%	"		Mass. magnesite + minor clay.																		
59.1	60.7	100%	"		Hard White magnesite																		
60.7	62.3	100%	"		"																		
62.3	63.8	100%	"		"																		
63.8	66.9	50%	HQ		White magnesite and clay																		
66.9	68.6	30%	HQ		Cavernous magnesite 50cm sandy fill																		
68.6	70.0	100%	HQ		Hard and cavernous magnesite																		
70.0	71.6	100%	HQ		Hard White + Cream magnesite																		
71.6	73.3	100%	HQ		Hard White mag																		
73.3	74.9	100%	HQ		"																		
74.9	76.5	100%	HQ		"																		

490055

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: M 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319° Mag Drillers: M. Newman Commenced: 30.1.99 Depth: 244.5 m Hole No: AR 18

RL Collar: Inclination: -46° Drill Types: LONGYEAR 44 Completed: 19.2.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
78.0	79.5	100%	HQ		Broken ytd magnesite																	
79.5	81.0	100%	HQ		Dolomitic magnesite - beige																	
81.0	82.5	100%	HQ		Massive white mag.																	
82.5	84.0	100%	HQ		Beige/white ytd magnesite																	
84.0	85.9	50%	HQ		Cream/beige broken/clayey magnesite																	
85.9	87.3	100%	HQ		" "																	
					85.9 - 86.9 broken clayey																	
87.3	89.7	50%	HQ		Yellow magnesite, clay, broken frags.																	
89.7	90.9	100%	HQ		Broken beige dolomitic(?) magnesite																	
90.9	92	100%	HQ		" "																	
92.0	94.0	80%	HQ		Massive white ad broken magnesite																	
94	95.2	80%	HQ		Broken & clayey magnesite																	
95.2	96.6	100%	HQ		Yellow clay and stained magnesite																	
96.6	98.1	100%	HQ		Yellow beige + white hard magnesite																	
98.1	100.4	60%	HQ		" (70cm cavity)																	
100.4	102.0	100%	HQ		Cream and white mass. mag.																	
102.0	103.5	100%	HQ		"																	
103.5	105	100%	HQ		"																	
105	108	100%	HQ		Mainly mass. magnesite																	
108	109.5	100%	HQ		"																	
109.5	111	100%	HQ		"																	
111	112.5	80%	HQ		Mainly mass magnesite 20cms clay																	
112.5	114	40%	HQ		Yellow clay and decomp magnesite																	
114	115.5	80%	HQ		"																	
115.5	117.0	100%	HQ		"																	

490056

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: EL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: Drillers: Commenced: 30.1.99 Depth: 244.5 m Hole No: AR18

RL Collar: Inclination: Drill Types: Completed: 19.2.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
117	118.1	100%	HQ		Hard broken fe stained brown mag																	
118.1	119.7	100%	HQ		" "																	
119.7	121	60%	HQ		grey dolomitic magnesite																	
121	122.8	100%	HQ		Brecciated magnesite 121.2 - 121.7																	
					Broken grey dol/mg 121.7 - 122.8																	
122.8	124.4	100%	HQ		122.8 - 123 "																	
					123 - 124.4 Broken fer. & creamy mag																	
124.4	125.7	100%	HQ		"																	
125.7	128.8	50%	HQ		"																	
128.8	130.4	100%	HQ		Fe. mag as broken hard brecciated	mg																
130.4	131.9	100%	HQ		Broken fe. stained mag left from dol.																	
131.9	133.1	100%	HQ		"																	
133.1	134.5	70%	HQ		Yellow stained magnesite																	
134.5	135.6	100%	HQ		Yellow magnesite with dolomite(?)																	
135.6	136.4	100%	HQ		Broken magnesite																	
136.4	137.8	100%	HQ		Broken pale beige dol/magnesite																	
137.8	139.4	100%	HQ		" "																	
139.4	140.6	100%	HQ		" "																	
140.6	141.6	100%	HQ		" "																	
141.6	142.9	100%	HQ		" "																	
142.9	145.1	100%	HQ		Hard beige magnesite/dolom																	
145.1	146.5	100%	HQ		" "																	
146.5	147.7	60%	HQ		Very broken " "																	
147.7	148.7	30%	HQ		" "																	
148.7	150	100%	HQ		Massive as clayey mag/dol.																	

430057

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: Drillers: M. NEWMAN Commenced: 30·1·99 Depth: 244·5m Hole No: AR 18

RL Collar: Inclination: Drill Types: LONGYEAR 44 Completed: 19·2·99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
150·0	151·5	100%	HQ		Massive + clayey mag/dolomite																	
151·5	153·0	100%	HQ		" magnesite																	
153·0	154·5	100%	HQ		Broken yellow stained magnesite																	
154·5	156·0	100%	HQ		" "																	
156·0	157·4	100%	HQ		Hard cream + white magnesite																	
157·4	159·9	100%	HQ		"																	
159·9	160·5	100%	HQ		"																	
160·5	162·0	100%	HQ		Cream yellow and white magnesite																	
162·0	164·0	75%	HQ	50cm	"																	
164·0	165·4	100%	HQ		Hard white magnesite																	
165·4	166·7	100%	HQ		Broken magnesite mainly grey (dolomitic?)																	
166·7	168·2	50%	HQ	80cm	Broken yellow stained magnesite																	
168·2	169·8	80%	HQ	40cm	" "																	
169·8	171·0	100%	HQ		Hard white magnesite																	
171·0	172·5	100%	HQ		"																	
172·5	174·0	100%	HQ		Hard white + pale grey dolomitic(?)																	
174·0	175·5	100%	HQ		" "																	
175·5	177·0	100%	HQ		Fe stained dolomitic/magnesite																	
177·0	178·5	100%	HQ		"																	
178·5	180·0	100%	HQ		" (dolomitic to 179m)																	
180·0	181·5	100%	HQ		Hard white magnesite																	
181·5	182·3	100%	HQ		"																	
182·3	183·9	100%	HQ		"																	
183·9	185·4	100%	HQ		"																	
185·4	186·9	100%	HQ		"																	

490058

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: M 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319° mag. Drillers: M. NENMAN Commenced: 30.1.99 Depth: 244.5 m Hole No: AR 18

RL Collar: Inclination: -46° Drill Types: LONGYEAR 44 Completed: 19.2.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
186.9	188.5	100%	HQ		Hard white magnesite																	
188.5	189.9	100%	HQ		"																	
189.9	191.5	100%	HQ		" with grey veining																	
191.5	193.1	100%	HQ		"																	
193.1	194.7	100%	HQ		"																	
194.7	196.2	100%	HQ		"																	
196.2	197.7	100%	HQ		"																	
197.7	198.3	100%	HQ		"																	
					197.7 - 198.3 hard white magnesite																	
198.3	199.4	60%	HQ	100cm	Grey clay and magnesite																	
199.4	202.2	80%	HQ	100cm	Grey dolomite and clay																	
202.2	202.7	100%	HQ		Hard white magnesite																	
202.7	203.7	100%	HQ		" " 1st 2cm fe.																	
203.7	205.7	80%	HQ	20cm	" " some clay zones																	
205.7	207.0	100%	HQ		1st 30cm clay rest hard white magnes.																	
207.0	208.5	100%	HQ		"																	
208.5	211.0	100%	HQ		Cream magnesite																	
211.0	211.5	100%	HQ		1st 30cm broken clay rest magnesite																	
211.5	212.6	100%	HQ		1st 50cm clay rest broken magnesite																	
					last 10cm grey dolomitic magnes																	
212.6	213.6	40%	HQ		Very broken beige dolomite/magnes																	
213.6	215.2	100%	HQ		1st 50cm " " rest magnesite																	
215.2	216.2	100%	HQ		Hard white magnesite																	
216.2	218.0	100%	HQ		216.2 - 217.1 "																	
					217.1 - 218 broken grey dol/mg																	

190059

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 349° mag. Drillers: M. NEWMAN Commenced: 30.1.99 Depth: 244.5m Hole No: AR 18

RL Collar: Inclination: -46° " Drill Types: LONGYEAR 44 Completed: 19.2.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
218.0	219.4	100%	HQ		Very broken dolomitic magnesite (?)																	
219.4	220.3	100%	HQ		"																	
220.3	221.5	100%	HQ		"																	
221.5	222.3	100%	HQ		"																	
222.3	223.5	100%	HQ		Broken decomposed soft magnesite																	
223.5	225.0	100%	HQ		white and beige magnesite veined																	
225.0	226.5	100%	HQ		"																	
226.5	228	100%	HQ		Hard white magnesite																	
228	229.5	100%	HQ		"																	
229.5	231.0	100%	HQ		"																	
231.0	232.5	100%	HQ		"																	
232.5	234.0	100%	HQ		"																	
234.0	235.5	100%	HQ		"																	
235.5	237.0	100%	HQ		"																	
237.0	238.5	100%	HQ		"																	
238.5	240.2	100%	HQ		"																	
240.2	241.8	100%	HQ		last 40cm dark grey banded siltstone minor pyrite 239.8M																	
					Dark grey banded contorted																	
241.8	243	100%	HQ		pyritic siltstone																	
243.0	244.5	100%	HQ																			
EOH					244.5m																	

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718

Co-ordinates: 369268.5 E, 5439249.8 N Azimuth: 319° Mag. Drillers: J Kaye Commenced: 1/1/99 Depth: 120.4 Hole No: DR19

RL Collar: 145.8 Inclination: -46° Drill Types: Longyear 38 Completed: 26/1/99 Casing Left: DPO No's:

490060

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	17	TH	core		Alluvium																		
17	18.9	67	PQ		Massive white mag.																		
18.9	20.8	76	"		"		Y. weathered fr 19.1																
20.8	24.0	66			Clayey yellow weath. mag																		
24.0	25.6	63	"		" dolomite			24.2-24.5															
25.6	27.2	69	"		Yel + grey weath dolomite mag																		
27.2	28.8	75	"		"																		
28.8	29.8	100	"		"																		
29.8	31.4	100	"		Mass lt grey to white dol. mag.																		
31.4	32.6	100	"		"																		
32.6	34.2	100	"		Yel. & grey partly weath dol. mag																		
34.2	35.6	79	"		"																		
35.6	37.2	38	"		"																		
37.2	38.8	69	"		"																		
38.8	40.4	100	"		"																		
40.4	41.8	"	"		Y + grey white weath dol mag																		
41.8	43.1	"	"		Y + wh weath mag. gr dol 43.6-44.4																		
43.1	44.8	"	"		"																		
44.8	46.4	"	"		dk. grey dol.																		
46.4	46.6	"	"		Y weath mag																		
46.6	47.7	0			caving																		
47.7	48.8	100	"		Y + wh. weath mag																		
48.8	48.9	"	"		"																		
48.9	50.0	C			caving																		
50.0	50.8	100	"		Y + lt. gr. weath dol. mag																		
50.8	52.4	"	"		"																		
52.4	54.0	"	"		Y + wh weath mag																		
54.0	55.6	"	"		" dk gy dol fm 55.4																		
55.6	57.6	85	"		dk gr. weath dol.																		
57.6	59.2	100	"		Y + gr weath dol. mag																		
59.2	60.7	"	"		" dk gy dol fm 59.7																		
60.7	62.3	"	"		dk. gr. dol																		
62.3	63.9	81	"		" lt gr dol mag 63.0 >																		
63.9	64.8	100	"		lt gr. to brown dol mag.																		
64.8	66.5	"	"		"																		
66.5	69.3	"			"																		
69.3	69.3	0	"		caving																		
69.3	69.8	100	"		lt gr to grey to brown dol mag																		
69.8	71.5	"	"		" gr wh mass mag fm 70.8																		
71.5	73.1	"	"		lt gr to white mass veined mag																		
73.1	74.8	"	"		"																		

broken

(1)

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319° Mag

RL Collar: Inclination: -46°

Drillers: J Kaye

Drill Types: Longyear 38

Commenced: 1.1.99

Completed: 26.1.99

Depth: 120.4

Casing Left:

Hole No: AR19

DPO No's:

49006 1

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches sil	Minerals in Sparry patches Dol	Minerals in Sparry patches Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ....) MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
76.2	78.0	100	PQ		Yellow. part. weath. meso mag.																		
78.0	78.2	"	"		"																		
78.2	78.9	0			cavity																		
78.9	79.4	100	"		dk gr sl gt dol.																		
79.4	79.6	"	"		"																		
79.6	81.0	0			cavity																		
81.0	81.3	100	"		dk gr dol																		
81.3	81.8	"	"		"																		
81.8	83.3	"	"		lt gr dol.																		
83.3	84.5	83	"		"																		
84.5	85.4	100	"		"																		
85.4	86.4	100	"		"																		
86.4	87.4	"	HQ		"																		
87.4	88.4	"	"		"																		
88.4	88.8	"	"		"																		
88.8	89.3	"	"		"																		
89.3	90.8	90	"		"																		
90.8	92.1	67	"		"																		
92.1	93.3	100	"		lt br weath meso mag to 92.8 then grn-grey massive sulphide																		
93.8	95.0	100	"		grey green meso sulphide (pyrite)																		
95.0	96.6	100	"		grey banded sulphide with many pyrite bands.																		
96.6	98.3	"	"		"																		
98.3	100.6	"	"		"																		
100.0	101.6	"	"		"																		
101.6	103.2	"	"		"																		
103.2	104.6	"	"		"																		
104.6	106.4	"	"		"																		
106.4	107.6	"	"		"																		
107.6	109.2	"	"		"																		
109.2	110.6	"	"		"																		
110.6	112.2	"	"		"																		
112.2	113.6	"	"		"																		
113.6	115.2	"	"		"																		
115.2	116.6	"	"		"																		
116.6	118.2	"	"		"																		
118.2	120.4	"	"		"																		
EOH																							

86% Rec

(2)

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: EL 8718 — 1

Plan-Map Reference:

49066

Co-ordinates: 369328.5E 5459052.2N — Azimuth: 319° MAG — Drillers: F.ORTNER / D.ORTNER — Commenced: 11.98 — Depth: 256.0 — Hole No: AR 20

RL Collar: 156.0 — Inclination: -46° — Drill Types: MINDRILL 52 — Completed: 9/12/98 — Casing Left: — DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	6.50	TRICONE			Sandy sediment																		
6.50	18.2	"	"		Brown ferr. clay																		
18.2	19.7	90%	PQ		Brown ferry clay + limonite frags																		
19.7	21.7	90%	PQ		"																		
21.7	23.7	50%	PQ		"																		
23.7	25.7	90%	PQ		"																		
25.7	27.7	90%	PQ		"																		
27.7	29.7	90%	PQ		"																		
29.7	31.7	90%	PQ		"																		
31.7	33.7	90%	PQ		"																		
33.7	37.7	90%	PQ		Ochrous yell. clay																		
37.7	39.7	90%	PQ		"																		
39.7	41.7	90%	PQ		"																		
41.7	43.7	90%	PQ		"																		
43.7	45.7	90%	PQ		"																		
45.7	47.7	90%	PQ		"																		
47.7	49.7	90%	PQ		"																		
49.7	51.7	90%	PQ		"																		
51.7	53.7	90%	PQ		"																		
			PQ																				
53.7	55.7	90%	PQ		"																		
55.7	57.7	90%	PQ		"																		
57.7	59.2	100%	PQ		Hard white mag.																		
59.2	61.2	90%	PQ		58.8 - 61.4																		
61.2	63.7	90%	PQ		clay filled cavity																		
63.7	65.7	90%	PQ		63.7 - 66.9 clay																		
65.7	67.7	90%	PQ		From 66.9 hard white magnesite																		
67.7	69.7	80%	"		white-cream																		
			"		broken mag																		
69.7	71.7	30%	"		white-cream frags mag.																		
71.7	72.7				cavity																		
72.7	72.8	50%	"		wh/cr mass mag																		
72.8	73.5	50			cavity																		
73.5	73.8	50%	"		wh/cr mass mag																		
73.8	74.0	100	"		"																		
74.0	74.8	100	HQ		"																		
74.8	75.4	50	"		cavity																		
75.4	76.0	100	"		mass wh. mag																		

AR 20

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319

RL Collar: Inclination: -46°

Drillers: ORTNER Commenced: 8-11-98

Drill Types: HINDRILL 52 Completed: 9-12-98

Depth: 256.0 Hole No: AR20

Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
76.0	78.2	50	HQ	●	cavity																		
78.2	79.0	100		/ \	wh/cr mass. mag																		
79.0	82.0	"	"	\ /	"																		
82.0	83.6	"	"	\ /	"																		
83.6	83.8	50		●	cavity																		
83.8	85.0	100	"	\ /	wh/cr mass mag																		
85.0	88.0	"	"	/ \	"																		
88.0	91.0	"	"	/ \	"																		
91.0	94.0	"	"	/ \	"																		
94.0	95.3	"	"	/ \	"																		
95.3	96.4	"	"	/ /	"																		
96.4	96.8	"	"	/ \	Y.br. weath mag																		
96.8	96.9	50		●	cavity																		
96.9	97.0	100	"	\ /	Y mass mag																		
97.0	97.1	"	"	\ \	"																		
97.1	98.4	50		●	cavity																		
98.4	100.0	90	"	/ \	Y mass. mag.																		
100.0	100.2	50		●	cavity																		
100.2	100.7	100	"	/ \	Y/wh mass mag																		
100.7	101.8	"	"	●	cavity																		
101.8	103.0	"	"	\ /	Y/wh/p.br mass mag																		
103.0	105.6	"	"	/ \	"																		
105.6	106.7	50		●	cavity																		
106.7	107.1	100	"	/ \	Y weath mag																		
107.1	107.6	50		●	cavity																		
107.6	109.0	100	"	\ /	Y/wh mass mag																		
109.0	110.5	50		●	cavity																		
110.5	111.2	80	"	\ /	Y/weath. broken mag																		
111.2	111.4	50		●	cavity																		
111.4	112.0	80	"	/ \	Y/weath brok! mag																		
112.0	115.0	100	"	\ /	Y+wh mass mag																		
115.0	117.0	"	"	\ /	wh. mass mag																		
117.0	117.3	50		●	cavity																		
117.3	117.8	100	"	\ /	Y/weath brok. mag																		
117.8	121.0	"	"	\ /	Y/th br. veined mass. mag. weath from 119.8.																		
121.0	129.0	"	"	\ /	"																		
129.0	127.0	"	"	\ /	"																		
127.0	128.0	"		\ /	"																		
128.0	128.2	50		●	cavity																		
128.2	128.3	100		/ \	Y/weath mag																		
128.3	128.6	50		●	cavity																		

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319°

RL Collar: Inclination: -46°

Drillers: ORTNER Drill Types: Mudrill 52

Commenced: 5-11-98 Completed:

Depth: 256.0 Casing Left: 9-12-98

Hole No: MR20 DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
128.6	129.1	100	HQ	\ /	Y/weath. mag																		
129.1	129.6	"	"	/ \	"																		
129.6	130.0	50		●	cavity																		
130.0	130.8	100	"	/ \	Y/weath mag																		
130.8	131.7	50		●	cavity																		
131.7	132.5	100	"	\ /	Y/lt.br. weath mag																		
132.5	135.6	"	"	/ \	Cr/wh. meso mag																		
135.6	138.7	"	"	\ /	white meso mag.																		
				\ /	to 137.0 then Y+wh weath mag																		
138.7	139.1	"	"	\ /	wh. meso mag																		
139.1	139.5	50		●	cavity																		
139.5	140.6	100	"	\ /	Y/wh + Y/lt brn mag																		
140.6	140.7	50		●	cavity																		
140.7	142.0	100	"	\ /	white meso mag																		
142.0	143.4	"		\ /	Y/weath + broken mag.																		
143.4	145.5	50		●	cavity																		
145.5	146.4	100	"	\ /	Y/weath + brok. mag																		
146.4	147.8	50		●	cavity																		
147.8	148.0	100	"	\ /	Y/weath + brok. mag.																		
148.0	148.1	"	"	- /	"																		
148.1	148.7	50		●	cavity																		
148.7	149.1	100	"	\ /	Y/weath. brok. mag																		
149.1	149.3	50		●	cavity																		
149.3	149.4	100	"	\ /	Y/weath. brok mag.																		
149.4	149.7	50		●	cavity																		
149.7	149.8	100	"	\ /	Y/weath. brok. mag.																		
149.8	150.1	50		●	cavity																		
150.1	150.5	100	"	\ /	Y/weath. brok. mag.																		
150.5	150.6	"	"	/ \	"																		
150.6	150.8	50		●	cavity																		
150.8	152.4	100	"	\ /	Y/weath brok. mag																		
152.4	152.5	"	"	/ \	"																		
152.5	152.6	50		●	cavity																		
152.6	154.5	90	"	\ /	Y/weath brok. mag																		
154.5	156.0	100	"	\ /	"																		
156.0	158.0	"	"	/ \	Y/lt.br. mag																		
158.0	158.5	50		●	cavity																		
158.5	159.7	100	"	\ /	Y/lt br to Y weath mag																		
159.7	160.4	"	"	\ /	"																		
160.4	160.6	50		●	cavity																		
160.6	161.0	100	"		Y/lt br to Y weath mag																		

49065

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL8718

Plan-Map Reference:

4

Co-ordinates: Azimuth: 319°

RL Collar: Inclination: -46°

Drillers: ORTNER Commenced: 8-11-98

Drill Types: Mindrill 52 Completed: 9-12-98

Depth: 256.0 Hole No: AR 20

Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches sil	Minerals in Sparry patches Dol	Minerals in Sparry patches Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ..... MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
161.0	161.2	100	HQ		Y/weath brok mag.																		
161.2	161.4	50			cavity																		
161.4	164.6	100	"		Y/weath brok. mag.																		
164.6	167.3	"	"		Y/wh mass mag																		
167.3	167.5	"	"		Y/weath brok mag																		
167.5	167.8	50	"		cavity																		
167.8	168.6	100	"		Y/weath brok. mag																		
168.6	169.0	90	"		cavity																		
169.0	169.3	100			Y weath brok mag																		
169.3	172.1	90	"		cavity																		
172.1	174.9	90	"		Y weath. brok mag																		
174.9	176.6	100	"		Y/lt.br. mass mag																		
176.6	176.9	50	"		cavity																		
176.9	177.0	100	"		Y/lt br. brok mass mag																		
177.0	177.1	50	"		cavity																		
177.1	178.0	70	"		Y weath. brok mag																		
178.0	179.2	100	"		"																		
179.2	181.0	"	"		Y/lt.br. part weath mag																		
181.0	181.3	"	"		"																		
181.3	181.7	50	"		cavity																		
181.7	182.5	100	"		Y/lt br. part. weath mag																		
182.5	183.0	50	"		cavity																		
183.0	183.9	50	"		Y weath brok. mag.																		
183.9	184.5	100	"		"																		
184.5	185.4	50	"		cavity																		
185.4	186.7	100	"		Y/wh/grey part oxidised mag.																		
186.7	187.9	100	"		" +dol																		
187.9	188.4	100	"		Y oxidised mag																		
188.4	188.8	50	"		cavity																		
188.8	189.0	100	"		Y oxidised mag																		
189.0	189.2	50	"		cavity																		
189.2	191.8	100	"		Y/wh mass mag																		
191.8	192.9	50	"		cavity - sand filled																		
192.9	193.3	100	"		Y oxidised mag																		
193.3	195.0	100	"		cavity																		
195.0	195.5	100	"		Y oxid. mag																		
195.5	198.2	100	"		Y/wh oxid mag																		
198.2	199.1	100	"		"																		
199.1	201.2	100	"		lt grey dolomitic mag.																		
201.2	202.7	100	"		"																		
202.7	203.1	50	"		cavity																		
203.1	204.4	100	"		lt grey dolomitic mag.																		

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718 5

Plan-Map Reference:

Co-ordinates: Azimuth: 319

RL Collar: Inclination: -46

Drillers: OETNER Commenced: 8/11/98

Drill Types: Mindrill 52 Completed: 9-12-98

Depth: 256.0 Hole No: AR20

Casing Left: DPO No's:

49056

61% REC

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...) MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
204.9	207.6	100	HQ	/d\	Lt gr dol/mag with mag lenses																		
207.6	210.7	"	"	/d\	"																		
210.7	214.0	"	"	/ \	br/wh mass mag (dolomitic?)																		
214.0	216.0	"	"		" with grey dol. lenses																		
216.0	218.9	"	"		"																		
218.9	222.0	"	"		Lt gr dol. with mag. lenses																		
222.0	224.5	"	"		"																		
224.5	226.8	"	"		"																		
226.8	227.3	50																					
227.3	227.6	100	"		Y/gr. oxid dol with Y/mag. bands																		
227.6	227.9	"	"		Broken Y/brbl. dol "																		
227.9	228.0	50			cavity																		
228.0	229.3	100	"		Broken Y/gr/bl dol "																		
229.3	229.7	50																					
229.7	230.4	100	"		"																		
230.4	230.7	50																					
230.7	230.8	100	"		"																		
230.8	231.3	50																					
231.3	234.1	100	"		gr to wh. dol + mag																		
234.1	237.3	95			"																		
237.3	240.4	100	"		"																		
240.4	243.5	"	"		"																		
243.5	246.2	"	"		"																		
246.2	246.5	50																					
246.5	246.8	100	"		gr to wh. mass dol/mag																		
246.8	247.7	"	"		"																		
247.7	250.0	"	"		cr/wh mass. mag																		
250.0	253.0	100			grey dolomite/magnesite																		
253.0	256.0	100			grey dolomite/magnesite																		
E.O.H.					HOLE STOPPED BECAUSE DRILL NOT CAPABLE OF GREATER DEPTH THIS SIZE CORE.																		

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: EL 8718 (1)

Co-ordinates: 369272.95 / 5439157.45 N Azimuth: 319° Drillers: F. ORTNER Commenced: 7.12.98 Plan-Map Reference:

RL Collar: 199.2 Inclination: -46° Drill Types: MINDRILL 52 Completed: 7.1.99 Depth: 214m Casing Left: Hole No: AR 21 DPO No's:

49067

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches sil	Minerals in Sparry patches Dol	Minerals in Sparry patches Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by) MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	14.5	TRICONE			Sandy cobble alluvium.																	
14.5	15.5	100%	PQ		Hard non stain magnesite																	
15.5	19.0	50%	"		1.5m cav "	+	cavities															
19.0	22.0	60%	"		"	+	3 cavities (21m Log + H2O)															
22.0	25.0	100%	"		small 20cm cavities "																	
25.0	28.0	100%	"		"																	
28.0	31.0	30%	"		2.2m cavities																	
31.0	34.0	20%	"	dm	Cavities + stained beige decomp. mag/dol ? (1.6m + 0.5m cavities)																	
34.0	36.8	90%	"	dm	"																	
36.8	39.9	60%	"	dm	Broken clayey decomp magnesite / dolomite ? (0.7 and 1.0m cavities)																	
39.9	40.8	80%	"	dm	mainly clayey dolomite ?																	
40.8	41.1	80%	"	dm	Dolomite ? fragments																	
41.1	42.8	100%	"	dm	"																	
42.8	44.1	80%	"	dm	clay + dolomite frags																	
44.1	45.1	50%	"	dm	"																	
45.1	47.1	50%	"	dm	dolomite and magnesite (small cavity)																	
47.1	49.4	80%	"	dm/mg	98.4-99.4 hard white + stained magnesite																	
49.4	51.1	100%	"		Broken magnesite																	
51.1	54.2	100%			Hard white magnesite																	
54.2	55.8	100%		dm/mg	Broken clayey beige magnesite/dolomite																	
55.8	57.0	100%		dm	Broken beige magnesite																	
57.0	60.5	100%			Beige magnesite (small cavity)																	
60.5	63.7	100%			"																	
63.7	66.5	100%			"																	
66.5	69.6	100%			Hard white magnesite																	
69.6	73.0	100%			"																	
73	76.0	100%			"																	
76.0	79.0	100%			"																	
					76-76.1 clay																	
79	82	100%			79.2-79.6 yellow clay																	
					79.6-80 creamy grey decomp magnesite																	
82	85	100%			Stained hard white magnesite																	
85	88	100%			Creamy beige and white magnesite																	
					85-86 creamy broken mag and sandy clay																	
					86-88 hard white magnesite																	
88	91	100%			Hard white magnesite																	
91	94	100%			"																	
94	97	100%			"																	
97	100	100%			"																	
					97-98.5 hard magnesite																	
				dm/mg	98.5-99.4 creamy beige dol/magnesite																	
					99.4-100 Fe and broken brown magnesite																	

91% Rec

AR 21

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: EL 8/98 (2)

Plan-Map Reference:

Co-ordinates: Azimuth: 319°

RL Collar: Inclination: -46°

Drillers: F. ORTNER Commenced: 12.98

Drill Types: AIRDRILL 52 Completed: 7.1.99

Depth: 214m Casing Left:

Hole No: AE21

DPO No's:

19008

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
100	103	100%	HQ		Frac and brecciated broken mag																		
103	106	100%	HQ		Massive white magnesite 105=				103.4	breccia	beige Mg.												
106	109	100%	HQ	dm/	Dolomite																		
109	112	100%	HQ	dm	"																		
112	115	100%	HQ	dm	Broken beige grey dolomite																		
115	118	100%	HQ	dm	"																		
118	121	100%	HQ	dm	"																		
121	123.9	100%	HQ	dm	"																		
123.9	127	100%	HQ	dm	"																		
127	128.3	100%	HQ	/dm	Broken dolomitic magnesite																		
128.3	130.3	100%	HQ	dm	Grey dolomite																		
130.3	132.3	100%	HQ	dm	"																		
132.3	135	100%	HQ	/dm	Broken grey hard dolomitic magnesite																		
135	138.6	100%	HQ	/	" last 30cm magnesite																		
138.6	141.6	100%	HQ	/	Creamy yellow + white magnesite																		
141.6	144.9	100%	HQ	dm	dolomite																		
144.9	146.6	100%	HQ	dm	dolomite / magnesite																		
1				/dm	144.9 - 145.9 dolomitic magnesite																		
				dm	145.9 - 146.6 dark grey deep mg dolomite																		
146.6	148.2	100%	NQ	dm	Very broken dol/mg																		
148.2	151.2	100%	NQ	/dm	"																		
151.2	153.0	90%	NQ		" + 30cm cavities																		
153.0	155.8	100%	NQ	/	Creamy broken mg																		
155.8	158.9	100%	NQ	/	"																		
158.9	161.4	100%	NQ	dm	"																		
					159.9 - 161.4 dolomite																		
161.4	163.0	100%	NQ	dm	Broken grey dolomite																		
163.0	165.7	75%	NQ	/	"																		
165.7	168.8	100%	NQ	/dm	" dolom / mag																		
168.8	169.0	100%	NQ	/	white magnesite																		
169.0	172.0	100%	NQ	/	"																		
172.0	175.0	100%	NQ	/	"																		
175.0	178	100%	NQ	/	"																		
178	181	100%	NQ	/dm	"																		
					last 30cm dk grey dolomite / mag breccia																		
181	184	100%	NQ	dm	"																		
184	187	100%	NQ		184 - 186 dk grey dolomite																		
					186 - 187 breccia magnesite																		
187	190	100%	NQ	/	Solid white mag																		
190	193	100%	NQ	/	"																		
193	196	100%	NQ	/	"																		
				dm	last 20cm broken dolomite																		

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718 (3)

Plan-Map Reference:

Co-ordinates: Azimuth: 319° Mag

RL Collar: Inclination: -46°

Drillers: F. DRTNER Drill Types: MINDRILL 52

Commenced: 14·12·98 Completed: 7·1·99

Depth: 214m Casing Left:

Hole No: AR 21 DPO No's:

49069

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
196	199	100%	NQ		Creamy broken magnesite/dolomite																		
199	202	100%	NQ		" "																		
					199-201 dolomitic																		
					201-202 grading into magnesite																		
202	205	100%	NQ		dolomite-magnesite																		
					202-202·9 white magnesite																		
					202·9-204·7 dolomite, pyritic																		
					204·7-205 altered calcic pyritic dolomitic																		
205	208	100%	NQ		dense dark grey sheared pyritic dolomite																		
208	211	100%	NQ		" "																		
211	214	100%	NQ		grading in paler grey altered pyritic dolomite.																		
		EOH																					

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718

Plan-Map Reference:

(1)

Co-ordinates: 369229.8E 5439130.2N Azimuth: 319° Mag

RL Collar: 126.3m Inclination: -46°

Drillers: F. CORNER Drill Types: MINDRILL 52

Commenced: 1.1.99 Completed: 22.1.99

Depth: 34.2 Casing Left:

Hole No: AR 212

DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ..... MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	19.7m	TRICONE			Alluvials, sand, clay																		
19.7	21.7	90%	PQ		Stained decomposed and hard magnesite																		
21.7	23.3	100%	PQ		Hard White magnesite																		
23.3	24.7	100%	PQ		"																		
24.7	26.4	100%	PQ		20cm cavity 24.7 - 24.9 rest hard magnesite																		
26.4	28.1	100%	PQ		Hard white and beige magnesite																		
28.1	29.7	5%	PQ		" magnesite with 1.6m cavity																		
29.7	30.7	100%	PQ		Hard white magnesite																		
30.7	31.4	60%	PQ		Broken and hard magnesite - last 40cm cavity																		
31.4	34.2	50%	PQ		Hard stained magnesite + cavity																		
		Hole stopped by caving ground																					

78%
Rec

4900204

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL 8718 (1)

Co-ordinates: 369229·7E 5439132·0N Azimuth: 319° mag

Plan-Map Reference:

Drillers: F. Ortner Commenced: 1/1/99 Depth: 51·0 Hole No: AR22A

RL Collar: Inclination: −46° Drill Types: Mudhill 52 Completed: 28/1/99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches sil	Minerals in Sparry patches Dol	Minerals in Sparry patches Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ..... MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	15·5	100	PQ		Alluvium																		
15·5	17·5	"	"		wh. mass mag																		
17·5	18·7	"	"		"																		
18·7	20·5	"	"		"																		
20·5	21·7	"	"		"																		
21·7	22·7	"	"		"																		
22·7	22·9	"	"		"																		
22·9	28·7	50			cavity																		
28·7	30·4	100	"		wh to cream mass mag																		
30·4	30·9	50			cavity																		
30·4	31·7	100	"		wh to cream mass. mag																		
31·7	32·9	"	"		"																		
32·4	33·0	50%			cavity																		
33·0	33·3	100	"		wh to cream mass mag																		
33·3	33·6	50%			cavity																		
33·6	33·7	100	"		wh to cream mass mag																		
33·7	33·9	"	HQ		Cream to wh mass mag.																		
33·9	34·5	50%			cavity																		
34·5	35·3	100	"		wh. mass mag.																		
35·3	35·8	100			Cream cavity																		
35·8	37·0	92	"		Cream to wh mass mag																		
37·0	40·0	100	"		"																		
40·0	41·9	"	"		"																		
41·9	43·0	50%			cavity																		
43·0	46·0	100	"		Cream to wh mass mag.																		
46·0	49·0	"	"		"																		
49·0	51·0	"	"		"																		
EOH																							

Hole jumbled due to drilling problems Cemented + exited off at 37·0 where AR22B was started.

82·3%

40071

1

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: E8718

Co-ordinates: 369229.7E 5439132.0N Azimuth: 319° mags Drillers: Fred Ertner Commenced: 19/1/99 Depth: 125.3m Hole No: AR22B (1)

Plan-Map Reference:

RL Collar: 146.4m Inclination: -46 Drill Types: Mindrill 52 Completed: 6.2.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...) MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
AR	22B	stacked on			wedge off																		
22	A at 37.0m																						
					slightly weathered																		
37.0	40.0	80	HQ		Cream to white	mass	mag																
40.0	43.0	100	"		"																		
43.0	45.6	"	"		"																		
45.6	48.8	"	"		"																		
48.8	51.6	"	"		"																		
51.6	53.8	"	"		"																		
53.8	55.0	"	"		"																		
55.0	58.0	"	"		"																		
58.0	61.0	"	"		"																		
61.0	64.0	"	"		"																		
64.0	67.0	"	"		mass with mag																		
67.0	70.0	"	"		"																		
70.0	73.0	"	"		"																		
73.0	76.0	"	"		"																		
76.0	79.0	"	"		"																		
79.0	82.0	"	"		mass wh./cream	mag																	
82.0	85.0	"	"		mass wh mag																		
85.0	88.0	"	"		"																		
88.0	91.0	"	"		"																		
91.0	94.0	"	"		"																		
94.0	97.0	"	"		"																		
97.0	100.0	"	"		"																		
100.0	103.0	"	"		"																		
103.0	106.0	"	"		"																		
106.0	109.0	"	"		"																		
109.0	112.0	"	"		"																		
112.0	115.0	"	"		"																		
115.0	118.0	"	"		"																		
118.0	121.0	"	"		"																		
121.0	124.0	"	"		"																		
124.0	127.0	"	"		"																		
127.0	130.0	"	"		"																		
130.0	133.0	"	"		"																		
133.0	136.0	"	"		"																		
136.0	139.0	"	"		"																		
139.0	142.0	"	"		"																		
142.0	145.0	"	"		"																		
145.0	148.0	"	"		"																		
148.0	151.0	"	"		"																		
151.0	154.0	"	"		"																		
154	157.0	"	"		"																		

4900792

98?

Rec

490073

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319° Mag Drillers: FRED ORTNER Commenced: 29.1.99 Depth: 225.3m Hole No: AR 22 B

RL Collar: Inclination: -46° Drill Types: MINDRILL 52 Completed: 6.2.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
160.0	163.0	100%	HQ		Mass white magnesite																	
163.0	166.0	100%	HQ		" @ 166.4 Broken fwn																	
166.0	168.6	100%	HQ		Broken and mass. beige dolomite/mag																	
168.6	171.7	100%	HQ	dm	"																	
171.7	175.0	100%	HQ	dm	Dolomite and hard magnesite + clay bds																	
					at 175m + 174m clay																	
175.0	178	100%	HQ	dm/Py	Broken grey dolomite + solid pyrite																	
					176.5 - 177.5 Fe_2S																	
178	181	100%	HQ		Hard white magnesite																	
181.0	184.0	100%	HQ		"																	
184	187.0	100%	HQ		"																	
187.0	190.0	100%	HQ		"																	
190.0	193.0	100%	HQ	dm	Hard white magnes + some grey dolomite veining																	
193.0	196.0	100%	HQ		"																	
196.0	199.0	100%	HQ	dm	Hard white magnesite with some dolomite veins																	
199.0	202.0	100%	HQ		"																	
202.0	205.0	100%	HQ	dm	"																	
205.0	208.0	100%	HQ		"																	
208.0	211.0	100%	HQ	dm	Mix of grey dolomite and cream magnesite																	
211.0	214.0	100%	HQ		Grey pyritic magnesite/siltstone																	
214.0	217.0	100%	HQ		Brecciated magnesite + pale grey dol/mg																	
217.0	220.0	100%	HQ	dm/mg	" "																	
				minim	Fault breccia 218-219m																	
219.0	223	100%	HQ		Sheared brecciated dk grey dol/mg																	
223	225.3	100%	HQ		Sheared dk grey pyritic dolomite																	

EOH.

62 Sample

490074

3

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: RL 8778

Plan-Map Reference:

Co-ordinates: 5439129.0N Azimuth: 139° Mag Drillers: F. ORTNER Commenced: 9.2.99 Depth: 349m Hole No: AR 23

RL Collar: 369232.7E Inclination: −46° Drill Types: Completed: 9.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
0	21	0%	PQ		No coring - pebbles, sand																86% loc	
21	21.7	100%	PQ		Hard white magnesite																	
21.7	24.0	80%	PQ	50cm	" "																	
24.0	25.7	100%	PQ		" "																	
25.7	28.7	60%	PQ	2x50cm	Yellow decomp clayey mag.																	
28.7	30.7	30%	PQ	2x50cm	"																	
30.7	33.7	50%	PQ	1.6m	"																	
33.7	36.7	50%	PQ	Bo+40	"																	
36.7	38.7	80%	PQ	50cm	" "																	
38.7	40.7	75%	PQ		"																	
40.7	42.7	50%	PQ	80cm	"																	
42.7	47.7	50%	PQ	1.5m+2m	"																	
47.7	49.7	100%	PQ		Mottled yellow magnesite																	
49.7	52.7	100%	PQ		Hard white and yellow magnesite																	
52.7	54.7	40%	PQ	40+40cm	"																	
54.7	57.7	60%	PQ	60+30cm	"																	
57.7	60.7	60%	PQ	2m?	Clay filled cavity + white mag.																	
60.7	62.7	100%	PQ		Hard creamy magnesite																	
62.7	64.3	100%	PQ		"																	
64.3	65.9	60%	PQ	70cm	" ad cavity																	
65.9	66.6	80%	PQ	30cm	"																	
66.6	70.0	60%	HQ	1.3m	Hard white magnesite																	
70.0	73.0	25%	HQ	2.7m	Yell. Clay																	
73.0	76.0	90%	HQ	2.4m	Sandy clay Then hard white mag																	
76.0	79.0	100%	HQ		Hard white magnesite																	

490675

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 139° mag -46° Drillers: FORTNER Commenced: 9-2-99 Depth: 349m Hole No: AR23

RL Collar: Inclination: Drill Types: Completed: 9.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
79.0	82.0	50%	HQ	1.6m	White mag. and yellow stained																	
82.0	85.0	5%	HQ	3m	Yellow stained mag frags and clay																	
85.0	88.0	65%	HQ	1.3m	Yellow stained mag. and clay																	
88.0	91.0	30%	HQ	2m	Yellow clay sand + decomp mag																	
91.0	94.0	25%	HQ	1.5+1.1	Yellow clay																	
94.0	97.0	50%	HQ	1m+50cm	Yellow clay and dec. mag																	
97.0	100.0	45%	HQ	1.5m	" "																	
100.0	103.0	100%	HQ		Yellow stained and hard white mag																	
103.0	106.0	100%	HQ		Hard white magnesite																	
106.0	109.0	75%	HQ	20cm+30cm	Yellow stained decomp mag																	
109.0	112.0	75%	HQ	60cm	Cream yellow stained mag																	
112.0	113.5	50%	HQ	0.5m	" "																	
113.5	115.0	50%	HQ	0.6m	" "																	
115.0	118.0	100%	HQ		Creamy magnesite																	
118.0	121.0	60%	HQ	1m	" 120-121 clayey Fe																	
121.0	124.0	100%	HQ		Mainly hard white magnesite																	
124.0	127.0	75%	HQ	50cm	Mainly Fe stained hard magnesite																	
127.0	130.0	60%	HQ	60cm	50/50 clayey and hard magnesite																	
130.0	133.0	25%	HQ	2.4m	Yellow clayey decomp magnesite																	
133.0	136.0	30%	HQ	2.8m	" "																	
136.0	139.0	60%	HQ	2x30cm	"																	
139.0	142.0	100%	HQ		Hard Fe stained magnesite																	
142.0	145.0	100%	HQ		" " last 20cm broken																	
145.0	148.0	50%	HQ	1.44m	Dark yellow decomp magnesite																	
148.0	151.0	90%	HQ	20cm	"																	

430076

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 139°Mgg Drillers: FORTNER Commenced: 9.2.99 Depth: 349 Hole No: AR 23

RL Collar: Inclination: -46° Drill Types: Completed: 9.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description
151.0	154.0	96%	HQ	dm	50cm grey dolomite, 1m magnesite
154.0	157.0	100%	HQ		Hard white grey veined magnesite
157.0	160.0	100%	HQ		"
160.0	163.0	100%	HQ		"
163.0	166.0	100%	HQ		"
166.0	169.0	100%	HQ	dm	166-168 Magnesite 168-169 dark grey pyritic dolomite(?)
169.0	172.0	100%	HQ	dm	169-169.3 dolomite 169.3-170.2 White magnesite 170.2-170.7 grey dolomite 170.7-172 White magnesite
172.0	175.0	100%	HQ		Veined hard white magnesite
175.0	178.0	100%	HQ		" "
178.0	181.0	100%	HQ		" "
181.0	184.0	100%	HQ		" "
184.0	187.0	100%	HQ		" "
187.0	190.0	100%	HQ		" "
190.0	193.0	100%	HQ		" "
193.0	196.0	100%	HQ		" "
196.0	199.0	100%	HQ		" "
199.0	202.0	100%	HQ		" "
202.0	205.0	100%	HQ		" "
205.0	208.0	100%	HQ		" "
208.0	211.0	100%	HQ		" "
211.0	214.0	100%	HQ		" "

Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI

490077

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 139° mag −46° Drillers: FORTNER Commenced: 9-2-99 Depth: 349m Hole No: AR23

RL Collar Inclination: Drill Types: Mudrill 52 Completed: 9.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
214.0	217.0	100%	HQ		Veined mass white mag																	
217.0	219.8	"	"		"																	
219.8	222.9	"	"		"																	
222.9	224.5	"	"		"																	
224.5	226.0	"	"		"																	
226.0	229.0	"	"		"																	
229.0	232.0	"	"		"																	
232.0	235.0	"	"		"																	
235.0	238.0	"	"		"																	
238.0	241.0	"	"		"																	
241.0	244.0	"	"		"																	
244.0	247.0	"	"		"																	
		"	NQ																			
247.0	250.0	"	"		mass wh mag with wispy grey dol. streaks																	
250.0	253.0	"	"		"																	
253.0	256.0	"	"		"																	
			"		NB. 5cm band of schist at 255.75																	
256.0	259.0	"	"		mass wh. mag with wispy grey dol streaks.																	
259.0	262.0	"	"		"																	
262.0	265.0	"	"		"																	
265	268.0	"	"		"																	
268.0	271.0	"	"		"																	
271.0	274.0	"	"		"																	
274.0	277.0	"	"		"																	
277.0	280.0	"	"		"																	

490078

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: RL 8719

Plan-Map Reference:

Co-ordinates: Azimuth: 139° mag Drillers: F. Eastmer Commenced: 9-2-99 Depth: 349 Hole No: AR23

RL Collar: Inclination: -46° Drill Types: Hundrill 52 Completed: 9.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
280.0	283.0	100	NQ		mass sh mag. with whispy grey dol streaks																	
283.0	286.0	"	"		"																	
		"	"																			
286.0	289.0	"	"		"																	
289.0	292.0	"	"		dolomitic mass with mag (with dol																	
292.0	295.0	"	"		mass sh. mag																	
295.0	298.0	"	"		" with grey whispy dol. streaks																	
298.0	301.0	"	"		"																	
301.0	304.0	"	"		"																	
304.0	307.0	"	"		Brecciated sh. mag in ltr gr dolomitic mag.																	
307.0	310.0	"	"		"																	
310.0	313.0	"	"		"																	
313.0	316.0	"	"		"																	
316.0	319.0	"	"		"																	
319.0	322	"	"	*	ONE SHOT EASTMAN DIP BENDING 316m = 46°																	
322	325	"	"		NO DIP DEVIATION																	
325	328	"	"		" + thin dark dolomitic? lenses																	
328	331	"	"		Veined (dolomitic) white magnesite and sheared talc zones																	
331	334	"	"		"																	
334	337	"	"		"																	
337.0	340	"	"		"																	
340	343	"	"		"																	
343	346	"	"		"																	
346	349	"	"		"																	
					EOH																	

DRILL CORE LOG

TASMANIA MAGNESITE NL

Tenement Name: RL8718

Plan-Map Reference:

Co-ordinates: 369402.2 E, 5439288.1 N Azimuth: 319° mag Drillers: F Kaye Commenced: 1/1/99 Depth: 67.7 Hole No: AR24

RL Collar: 157.0 Inclination: -46° Drill Types: Longyear 38 Completed: 2/1/99 Casing Left: DPO No's:

46009

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core Description	Mostly Buff	Mostly White	% Cryptocryst Magnesite	Minerals in Sparry patches: sil	Dol	Mag	Sample No.	From (m)	To (m)	Rec (m)	Assay Values (Analysed by ...): MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	LOI
0	25.5	open hole			Alluvium																		
25.5	27.1	100	PQ		Weath. dolerite																		
27.1	28.8	65	"		"																		
28.8	30.4	81	"		"																		
30.4	31.6	50	"		"																		
31.6	33.6	56	"		"																		
33.6	35.2	100	"		"																		
35.2	35.5	"	"		"																		
35.5	36.5	"	"		cavity																		
36.5	36.7	"	"		Weath dolerite																		
36.7	38.0				cavity																		
38.0	38.8	"	"		Mass white mag																		
38.8	40.4	"	"		"																		
40.4	41.6	"	"		"																		
41.6	41.9				cavity																		
41.9	43.2	"	"		Weath dolerite																		
43.2	44.8	"	"		"																		
44.8	45.5	"	"		Mass gr/wh. weath. mag.																		
45.5	47.2	88	"		"																		
47.2	47.4	100	"		"																		
47.4	48.4	0			cavity																		
48.4	49.8	100	"		Mass wh. mag																		
49.8	51.5	54	"		wh. to gr. weath. mag.																		
51.5	52.8	100	"		dk green/grey Mass broken Fe dolerite																		
52.8	54.4	"	"		"																		
54.4	55.0	"	"		"																		
55.0	56.6	"	"		"																		
56.6	58.2	"	"		dk grey green Mass weathd Fe dolerite																		
58.2	59.8	"	"		" dolerite																		
59.8	60.8	"	"		"																		
60.8	61.7	"	"		"																		
61.7	62.1	"	"		"																		
62.1	63.1	"	"		"																		
63.1	64.0	"	"		"																		
64.0	64.8	"	"		"																		
64.8	65.8	"	"		"																		
65.8	66.5	"	"		"																		
66.5	67.7	"	"		"																		
EOH					DOLERITE																		

490080

DRILL CORE LOG **CREST MAGNESIUM NL** Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319° MAG Drillers: JAMIE KATE Commenced: 2.1.99 Depth: 74.6m Hole No: AR25

RL Collar: Inclination: -46° Drill Types: LONGYEAR 38 Completed: 5.1.99 Casing Left: DPO No's:

Depth		Core	Core	Graphic																		
From	To	Rec	Size	Log	Core description	Sample	From	To	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
(m)	(m)	(m)					(m)	(m)														
0	42.5	TRICONE			Clays																	
42.5	43.9	100%	PQ		Decomposed dolerite																	
43.9	45.4	"	"		Decomp. and mass dolerite																	
45.4	46.3	"	"		"																	
46.3	47.4	"	"		"																	
47.4	49.0	"	"		"																	
49.0	50.0	"	"		"																	
50.0	51.0	"	"		"																	
51.0	52.2	"	"		"																	
52.2	53.5	"	"		"																	
53.5	54.7	"	"		Jointed dolerite																	
54.7	56.3	"	"		Dolerite																	
56.3	57.9	"	"		Clayey dolerite																	
57.9	59.5	"	"		Broken decomp dolerite																	
59.5	60.5	"	"		Very decomp clayey dolerite																	
60.5	61.0	0%	HQ		Decomposed dolerite																	
61.0	62.2	100%	"		Dolerite																	
62.2	62.8	80%	"		"																	
62.8	63.4	100%			"																	
63.4	63.7	100%			Clay, decomp. dol																	
63.7	63.9	"			Dolerite																	
63.9	65.4	"			"																	
65.4	67.0	"			Hard dolerite with minor pyrite																	
67.0	68.5	"			"																	
68.5	71.4	"			"																	

430081

2

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 319° Mag Drillers: J. KAYE Commenced: 2.1.99 Depth: 74.6m Hole No: AR 25

RL Collar: Inclination: -46° Drill Types: LONG EAR 38 Completed: 5.1.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
71.4	72.9	100%			dolerite.																	
72.9	74.6	100%																				
	EOH																					

490082

99% rec

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 139° mag Drillers: M NEWMAN Commenced: 23-2-99 Depth: 260.5 Hole No: NP 26

RL Collar: Inclination: -46° Drill Types: Completed: 15.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
0	16	Tri-cone			Alluvium																	
16	17.5	100	PQ		Massive yell/white part. weath mag.																	
17.5	19.1	"	"		"																	
19.1	20.0	"	"		"																	
20.0	20.5	"	"		"																	
20.5	21.7	50		●	cavity																	
21.7	21.8	100	"		broken wh/cream weath mag.																	
21.8	22.7	"	"		"																	
22.7	23.4	50		●	cavity filled with dk br sand.																	
23.4	25.1	100	"		mass wh. mag.																	
25.1	25.7	"	"		"																	
25.7	26.4	50		●	sand filled cavity																	
26.4	27.8	100	"		broken mass wh mag																	
27.8	28.1	50		●	cavity																	
28.1	29.0	100	"		mass wh. mag.																	
29.0	30.6	"	"		"																	
30.6	31.5	"	"		"																	
31.5	34.3	20		●	cavity																	
34.3	34.6	100	"	●	mass wh/cream mag.																	
34.6	36.2	"	"		"																	
36.2	37.6	"	"		"																	
37.6	38.4	"	"		part weath "																	
38.4	39.0	50		●	cavity																	
39.0	39.7	100	"		part weath mass wh/cr mag																	
39.7	41.1	"	"		"																	

490083

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 139° mag Drillers: NEWMAN Commenced: 23-2-99 Depth: 260.5 Hole No: AR26

RL Collar: Inclination: -46° Drill Types: Longyear 44 Completed: 15.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
41.1	42.2	1.00	PQ		part weath mass wh/cr. mag.																	
42.2	43.4	50	"		cavity																	
43.4	44.4	100	"		part weath mass wh. mag.																	
44.4	45.4	"	"		"																	
45.4	46.4	"	"		"																	
46.2	46.6	"	"		"																	
46.6	48.2	50			cavity																	
48.2	48.5	50			"																	
48.5	50.1	100	"		mass wh/cr. mag																	
50.1	51.6	"	"		"																	
51.6	52.0	"	"		"																	
52.0	54.1	30			cavity with dk brown sand																	
54.1	54.7	100	"		broken white mag.																	
54.7	55.5	80			cavity																	
55.5	57.1	100	"		mass wh. mag.																	
57.1	57.9	50			cavity																	
57.4	58.2	38	"		mass wh. mag.																	
58.2	58.4	100	"		"																	
58.4	60.8	"	"		cavity																	
			HQ																			
60.8	61.4	67	"		mass wh. mag.																	
61.4	62.9	100	"		"																	
62.9	64.2	"	"		"																	
64.2	64.4	20			cavity																	
64.4	65.3	100	"		mass wh/cream mag																	

490084

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 139° mag Drillers: MAEWHAU Commenced: 23-3-99 Depth: 260.5m Hole No: AR26

RL Collar: Inclination: -46° Drill Types: Longyear 44 Completed: 15.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
65.3	65.6	50%			cavity.																	
65.6	65.9	100	HQ		mass. wh. mag																	
65.9	66.6	50			cavity																	
66.6	67.4	100	"		mass white mag.																	
67.4	68.6	"	"		"																	
68.6	69.0	"	"		"																	
69.0	69.8	50			cavity																	
69.8	71.0	100	"		mass wh. mag.																	
71.0	72.5	"	"		"																	
72.5	73.0	"	"		"																	
73.0	75.3	50%			cavity																	
75.3	76.0	100	"		mass wh. mag																	
76.0	77.6	"	"		"																	
77.6	78.4	"	"		"																	
78.4	78.8	"	"		grey dolomite																	
78.8	79.1	"	"		mass wh. mag																	
79.1	80.6	"	"		"																	
80.6	82.1	"	"		"																	
82.1	83.6	"	"		"																	
83.6	85.1	"	"		mass wh. mag.																	
85.1	86.6	"	"		"																	
86.6	87.7	"	"		"																	
87.7	88.2	90			cavity																	
88.2	88.7	100	"		mass wh/cream mag																	
88.7	92.4	"	"		"																	

with whispy dol veins

490085

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: M 8718

Plan-Map Reference:

Co-ordinates: ... Azimuth: 139° mags ... Drillers: M NEWMAN ... Commenced: 23-2-99 ... Depth: 260.5m ... Hole No: AR26

RL Collar: ... Inclination: -46° ... Drill Types: Longyear 44 ... Completed: 15-3-99 ... Casing Left: ... DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description
90.2	90.6	100	HQ		Mass with cream mag
90.6	90.8	80			cavity
90.8	92.0	100	"		Mass with cream mag
92.0	93.3	"	"		"
93.3	93.5	50%			cavity
93.5	93.7	100	"		Mass with mag
93.7	95.1	"	"		"
95.1	96.7	"	"		"
96.7	98.2	"	"		"
98.2	99.8	"	"		"
99.8	101.3	"	"		"
101.3	101.8	"	"		"
101.8	101.9	50			cavity
101.9	103.0	100	"		Mass. with mag.
103.0	104.6	"	"		"
104.6	106.1	"	"		"
106.1	107.6	"	"		"
107.6	109.1	"	"		"
109.1	110.6	"	"		"
110.6	112.1	"	"		"
112.1	113.6	"	"		"
113.6	115.1	"	"		"
115.1	116.6	"	"		"
116.6	118.1	"	"		"
118.1	119.6	"	"		"

Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI

490086

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 139° mag Drillers: M Newman Commenced: 23-3-99 Depth: 260.5m Hole No: AR26

RL Collar: Inclination: -46° Drill Types: Longyear 44 Completed: 15.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description
119.6	121.1	100	HQ		mass with mag'
121.1	122.6	"	"		"
122.6	124.1	"	"		"
124.1	125.6	"	"		"
125.6	127.1	"	"		"
127.1	128.6	"	"		"
128.6	130.1	"	"		"
130.1	131.6	"	"		"
131.6	133.1	"	"		"
133.1	134.6	"	"		"
134.6	136.1	"	"		"
136.1	137.6	"	"		"
137.6	139.1	"	"		"
139.1	140.6	"	"		"
140.6	142.1	"	"		"
142.1	143.6	"	"		"
143.6	145.1	"	"		"
145.1	146.6	"	"		"
146.6	148.1	"	"		"
148.1	149.6	"	"		"
149.6	151.1	"	"		"
151.1	152.6	"	"		"
152.6	154.1	"	"		"
154.1	155.6	"	"		"
155.6	157.1	"	"		"

Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI

490087

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 139° MAG Drillers: M. NEWMAN Commenced: 23.2.99 Depth: 260.5 Hole No: AR26

RL Collar: Inclination: -46° Drill Types: LONGYEAR 44 Completed: 15.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
157.1	158.6	100%	HQ		Hard white and veined magnesite																	
158.6	160.10	"	"		"																	
160.1	161.6	"	"		"																	
161.6	163.1	"	"		"																	
163.1	164.6	"	"		"																	
164.6	166.1	"	"		"																	
166.1	167.6	"	"		"																	
167.6	169.1	"	"		"																	
169.1	170.6	"	"		"																	
170.6	172.1	"	"		"																	
172.1	173.6	"	"		Some minor vugs "																	
173.6	175.1	"	"		"																	
175.1	176.6	"	"		Hard white & veined magnesite																	
176.6	179.6	"	"		"																	
179.6	181.1	"	"		"																	
181.1	182.6	"	"		"																	
182.6	184.1	"	"		"																	
184.1	185.4	"	"		" " with dark																	
					ferroan dolomite 184.5 - 184.70																	
					brecciated angular fragments																	
185.4	187.0	"	"		Hard veined magnesite																	
187.0	188.6	"	"		"																	
188.6	190.1	"	"		"																	
190.1	191.6	"	"		"																	
191.6	193.1	"	"		Some patches dark grey dolomite																	

430088

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 139° Mag Drillers: M. NEWMAN Commenced: 23.2.99 Depth: 260.5m Hole No: AR 26

RL Collar: Inclination: -46° Drill Types: LONGYEAR 44 Completed: 15.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
193.1	194.6	100%	HQ		Hard white veined magnesite																	
194.6	196.1	"	"		"																	
196.1	197.6	"	"		"																	
197.6	199.1	"	"		"																	
199.1	200.6	"	"		"																	
200.6	202.1	"	"		grey dolomitic mag. and grey veined hard white magnesite																	
202.1	203.6	"	"		Hard white veined magnesite																	
203.6	205.1	"	"		"																	
205.1	206.6	"	"		"																	
206.6	208.1	"	"		"																	
208.1	209.6	"	"		"																	
209.6	211.1	"	"		"																	
211.1	212.6	"	"		"																	
212.6	214.1	"	"		breccia zone 213.8 10cms wide																	
214.1	215.6	"	"		Hard white veined magnesite, last 70cm Fe																	
215.6	217.1	"	"		"																	
217.1	218.6	"	"		"																	
218.6	220.1	"	"		"																	
220.1	221.6	"	"		"																	
221.6	223.1	"	"		"																	
223.1	226.1	"	"		"																	
226.1	227.6	"	"		"																	
227.6	229.1	"	"		"																	
229.1	230.6	"	"		"																	

490089

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: Azimuth: 139° Mag. Drillers: M. NEWMAN Commenced: 23·2·99 Depth: 260.5 m Hole No: AR 26

RL Collar: Inclination: -46° Drill Types: LONGYEAR 44 Completed: 15·3·99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
230·6	232·1	100%	HQ		Hard white veined magnesite																	
232·1	233·6	"	"		"																	
233·6	235·1	"	"		"																	
235·1	236·6	"	"		"																	
236·6	238·1	"	"		"																	
238·1	239·6	"	"		"																	
239·6	241·1	"	"		"																	
241·1	242·6	"	"		"																	
242·6	244·1	"	"		"																	
244·1	245·6	"	"		"																	
245·6	247·1	"	"		"																	
247·1	248·6	"	"		"																	
248·6	251·6	"	"		"																	
251·6	253·1	"	"		"																	
253·1	254·6	"	"		"																	
254·6	256·1	"	"		"																	
256·1	257·6	"	"		"																	
257·6	259·1	"	"		"																	
259·1	260·5	"	"		"																	
EOH																						

490090

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: PB1 369270·5E 5439152·7N
PB2 369276·6E 5439159·3N. Azimuth:

Drillers: S. SPALDING

Commenced: 22·2·99

Depth: 61 M

Hole No: PB1 & 2 comp ABANDONED

RL Collar: ① 148·9 , ② 149·10 Inclination: VERTICAL

Drill Types: INGERSOLL RAND TH 60

Completed: ?

Casing Left:

DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
0	3				Surface alluvial, pebbly and orange brown clay.																	
3	6				Wet clayey, pebbly alluvials																	
6	9				wet " gravel/clay. H2O at 8metres																	
9	12				Massive white magnesite																	
12	61				broken yellow stained white magnesite with cavernous brown sand fill.																	
EOH																						
					When developing and sinking this bore sink hole, collapse area formed PB1 abandoned, karst cavernous zone filled new hole PB 2 drilled about 5 metres to northeast.																	

490091

DRILL CORE LOG

CREST MAGNESIUM NL

Tenement Name: EL 8718

Co-ordinates: 369035.6E 5439075.6N Azimuth: Drillers: F. ORTNER Commenced: 15.3.99 Depth: 25.6m Hole No: MB2

RL Collar: 143.5m Inclination: VERTICAL Drill Types: MINDRILL 52 Completed: 16.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
0	4.7	NON CORE			ALLUVIAL GRAVELS/CLAY																	
4.7	7.6	100%			Hard White magnesite																	
7.6	10.6	70%			" with pebble filled																	
				●	cavity 7.6 - 8m																	
10.6	13.6	100%			Hard white magnesite																	
13.6	16.6	"			"	Lost H2O		16m														
16.6	18.6	50%		●	Broken soft and " (1m cavity at 17m)																	
18.6	21.7	100%			Hard white magnesite																	
21.7	24.4				Part dessimp. magnesite																	
24.4	25.6				"																	
EOH																						

490092 * GET ROUGH LOG OFF FRED ORTNER PHONE (03) 6492 3334.
I LEFT SITE PRIOR TO HOLE COMPLETION

DRILL CORE LOG **CREST MAGNESIUM NL**

Tenement Name: RL 8718

5439031.4N

Co-ordinates: 369073.8E Azimuth: Drillers: F. ORTNER Commenced: 18.3.99 Depth: Hole No: MB 3

Plan-Map Reference:

RL Collar: 143.8 m Inclination: VERTICAL Drill Types: MINDRILL 52 Completed: 19.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
0	10.8	NON CORE			Soil, gravel and clay alluvials (lost H2O @ 10m)																	
10.8	13.4	50%	PQ		Broken magnetite (1.2m cavity)																	
13.4	16.4	35%	PQ		Broken and soft magnetite (2.4m cavity)																	
16.4	19.4	55%	PQ		Hard magnetite 2.1m cav. (lost water @ 17.5m)																	
19.4	22.4	100%	PQ		Fractured rock mine cavities																	
22.4	27.3	100%	PQ																			
27.3	30.3	75%	PQ		Broken clays (0.5m cavity)																	
30.3	31.4	100%			Broken hard magnetite																	
	EOH																					

490093

DRILL CORE LOG — **CREST MAGNESIUM NL**

Tenement Name: RL 8718

Plan-Map Reference:

Co-ordinates: 5439250mN 369438.6E Azimuth: Drillers: Commenced: 3.3.99 Depth: 41.0 m Hole No: MB4

RL Collar: 160.9 m Inclination: VERTICAL Drill Types: Completed: 4.3.99 Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
0	20.6	NON CORING.			Alluvium																	
20.6	26.5	100%			Massive white magnesite																	
26.5	26.8	"		●	Cavity																	
26.8	27.8	"			Massive white magnesite																	
27.8	41.0	"			Massive grey green dolerite																	
EOH					45° sheared contact																	
					Abundant pyrite																	

430094

DRILL CORE LOG — **CREST MAGNESIUM NL**

Tenement Name: GL 8718

Plan-Map Reference:

Co-ordinates: 369741.2E 5439514.3N Azimuth: Drillers: STACKPOOLE (WAYNE) Commenced: 50m Depth: 50m. Hole No: MB 5

RL Collar: 176.2 m Inclination: VERTICAL Drill Types: Completed: Casing Left: DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al2O3	Fe2O3	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
0	32.7	NON	CORING		alluvials and clay.																	
32.7	35.7	100%			Hard white magnesite																	
35.7	38.7	"			"																	
38.7	40.7	"			Magnesite and beige grey dolomitic magnesite																	
40.7	42.5	50%			" with 1m cavity																	
42.5	43.8	70%			" with 0.3 cavity																	
43.8	45.5	100%			beige grey decomp mag/dolom.																	
45.5	47.6	"			"																	
47.6	48.5				Jellow grey clayey decomp magnes.																	
48.5	50m				" 0.9m cavity																	
EOH.																						

490095

DRILL CORE LOG — **CREST MAGNESIUM NL** — Tenement Name: EL 8718

Co-ordinates: 569926.00 E 5439100.40 N — Azimuth: — Drillers: STACKPOOLE — Commenced: 8.3.99 — Depth: 51m — Hole No: MB6 (SITE OF AR 9)

Plan-Map Reference:

RL Collar: 170.1 m — Inclination: VERTICAL — Drill Types: — Completed: 9.3.99 — Casing Left: — DPO No's:

Depth From (m)	Depth To (m)	Core Rec (m)	Core Size	Graphic Log	Core description	Sample	From (m)	To (m)	MgO	CaO	SiO2	Al203	Fe203	MnO	SO3	B	Cr	Zn	Cu	Mn	Ni	LOI
0	51	NON CORING			Ferruginous clay, no hard rock - all section on HW side of Magnesite resource zone																	
EOH																						

APPENDIX 2

ASSAYS FOR HOLE AR013

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR013	55.9	57.4	46.06	0.90	0.42	2.20
AR013	57.4	59.0	45.69	0.85	0.71	3.49
AR013	59.0	60.6	45.50	0.88	0.55	2.71
AR013	60.6	62.2	45.74	1.26	0.49	1.91
AR013	62.2	63.5	43.68	2.57	1.17	2.46
AR013	63.5	65.0				
AR013	65.0	66.7	45.76	0.94	1.18	1.69
AR013	66.7	67.4	45.05	1.44	0.79	1.45
AR013	67.4	70.5	46.56	0.91	0.29	0.42
AR013	70.5	71.6	45.65	2.13	0.40	0.38
AR013	71.6	73.2	46.18	1.52	0.42	0.13
AR013	73.2	74.6	44.73	2.37	0.32	2.20
AR013	74.6	76.2	46.35	0.92	0.14	2.52
AR013	76.2	77.6	45.93	1.94	0.18	1.91
AR013	77.6	79.2	44.63	3.32	0.30	1.06
AR013	79.2	80.6	46.45	1.51	0.13	0.70
AR013	80.6	82.2	46.43	1.07	0.16	1.26
AR013	82.2	83.6	46.61	0.95	0.35	1.49
AR013	83.6	85.2	44.32	2.95	0.53	2.07
AR013	85.2	86.3	46.93	0.86	0.20	1.79
AR013	86.3	87.9	46.70	0.68	0.12	2.90
AR013	87.9	89.5	46.73	1.00	0.10	1.97
AR013	89.5	91.1	47.27	0.71	0.17	1.50
AR013	91.1	92.6	45.89	1.43	0.31	2.81
AR013	92.6	94.2	46.29	1.28	0.35	1.80
AR013	94.2	95.6	46.71	0.75	0.33	1.86
AR013	95.6	97.2	46.91	1.07	0.20	1.33
AR013	97.2	98.5	45.92	1.69	0.38	1.16
AR013	98.5	100.2	44.03	3.77	0.54	1.85
AR013	100.2	101.6	38.37	9.44	0.67	2.09
AR013	101.6	103.2	44.07	3.43	0.55	1.73
AR013	103.2	104.6	44.76	2.91	0.47	1.29
AR013	104.6	106.2	46.09	0.89	0.28	1.82
AR013	106.2	107.6	44.66	2.66	0.38	1.71
AR013	107.6	109.2	45.99	0.72	0.41	1.68
AR013	109.2	110.6	44.20	3.17	0.56	1.19
AR013	110.6	112.2	42.66	4.47	0.56	1.19
AR013	112.2	113.6	42.65	3.37	0.67	2.19
AR013	113.6	115.2	43.47	3.52	0.62	2.19
AR013	115.2	116.6	41.07	6.23	1.15	2.09
AR013	116.6	118.2	34.94	12.78	1.69	1.42
AR013	118.2	119.6	43.81	3.05	0.70	2.56
AR013	119.6	121.2	43.13	3.21	0.88	3.86
AR013	121.2	122.6	40.45	6.68	0.96	2.20
AR013	122.6	124.2	32.25	16.24	1.82	1.46
AR013	124.2	125.6	33.54	15.04	1.36	1.87
AR013	125.6	127.2	45.57	1.68	0.70	1.35
AR013	127.2	128.6	46.06	1.48	0.38	0.78

ASSAYS FOR HOLE AR013

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR013	128.6	130.2	42.99	4.73	0.68	1.68
AR013	130.2	131.6	44.75	2.38	0.38	2.82
AR013	131.6	133.2	45.68	1.64	0.41	1.53
AR013	133.2	134.6	39.12	9.09	0.66	2.27
AR013	134.6	136.2	26.67	23.68	1.65	0.58
AR013	136.2	137.6	43.01	4.59	0.39	2.18
AR013	137.6	139.2	46.13	1.35	0.12	2.43
AR013	139.2	140.6	46.62	1.18	0.08	1.73
AR013	140.6	142.2	44.26	3.31	0.26	2.23
AR013	142.2	143.6	45.96	1.44	0.26	2.24
AR013	143.6	145.2	44.91	2.36	0.31	2.75
AR013	145.2	146.6	46.23	1.19	0.14	2.42
AR013	146.6	148.2	44.91	2.24	0.24	3.22
AR013	148.2	149.6	46.02	0.99	0.46	2.82
AR013	149.6	151.2	46.38	1.25	0.17	1.93
AR013	151.2	152.6	46.53	1.04	0.14	1.90
AR013	152.6	154.2	46.07	1.25	0.18	2.13
AR013	154.2	155.6	41.27	6.29	0.59	2.45
AR013	155.6	157.2	44.81	3.13	0.39	0.92
AR013	157.2	158.6	43.22	4.96	0.43	1.22
AR013	158.6	159.6	39.23	8.63	0.95	2.41
AR013	159.6	160.2	23.91	9.91	5.90	25.63
AR013	160.2	161.2	32.40	16.77	0.95	2.22

ASSAYS FOR HOLE AR014

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR014	18.7	20.0	41.17	2.87	1.54	8.30
AR014	20.0	21.6	41.00	5.39	1.21	5.16
AR014	21.6	23.5	36.67	10.05	1.31	5.29
AR014	23.5	24.1	34.95	13.89	1.19	1.45
AR014	24.1	25.6	42.54	6.08	0.53	0.94
AR014	25.6	26.2	43.65	3.90	0.75	2.18
AR014	26.2	27.7	43.80	3.20	0.63	3.62
AR014	27.7	29.2	42.28	3.57	0.91	8.24
AR014	29.2	30.7	35.46	11.35	0.70	8.44
AR014	30.7	32.2	44.97	1.30	0.68	4.66
AR014	32.2	33.7	37.77	8.63	0.95	8.07
AR014	33.7	35.2	45.43	1.82	0.25	2.52
AR014	35.2	36.7	45.92	1.20	0.55	0.91
AR014	36.7	38.2	43.60	3.95	0.93	0.96
AR014	38.2	39.7	46.14	0.87	0.48	1.80
AR014	39.7	41.2	46.01	0.72	0.40	3.27
AR014	41.2	42.7	44.92	2.14	0.31	2.88
AR014	42.7	45.4	40.53	4.92	1.19	5.44
AR014	45.4	47.7	44.21	2.24	0.16	3.68
AR014	47.7	49.7	45.98	1.62	0.20	1.52
AR014	49.7	51.3	43.33	4.90	0.48	1.39
AR014	51.3	52.7	45.11	1.92	0.23	2.53
AR014	52.7	54.2	45.25	1.02	0.09	4.03
AR014	54.2	59.1	43.20	2.30	0.44	6.59
AR014	59.1	61.0	38.75	0.92	0.94	16.55
AR014	61.0	62.5	44.95	0.69	0.28	5.13
AR014	62.5	65.4	38.61	4.28	0.17	11.46
AR014	65.4	65.8	45.46	1.09	0.07	3.35
AR014	65.8	67.3	45.22	1.46	0.10	3.37
AR014	67.3	73.1	43.71	1.51	0.12	6.08
AR014	73.1	74.8	44.65	1.98	0.13	3.28
AR014	74.8	76.3	46.94	0.84	0.08	0.88
AR014	76.3	77.8	45.43	1.26	0.15	2.72
AR014	77.8	80.2	43.92	2.16	0.11	5.36
AR014	80.2	82.7	44.52	1.62	0.12	4.55
AR014	82.7	86.5	43.24	1.98	0.25	5.97
AR014	86.5	88.1	43.68	3.26	0.33	2.29
AR014	88.1	89.8	44.88	2.28	0.32	2.43
AR014	89.8	91.7	44.15	1.43	0.16	5.14
AR014	91.7	93.5	41.72	4.82	0.47	3.59
AR014	93.5	95.1	45.37	1.75	0.28	2.00
AR014	95.1	96.1	46.24	0.65	0.26	1.79
AR014	96.1	97.7	46.67	0.89	0.29	0.90

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR015	13.1	13.2	0.70	-0.01	1.31	84.14
AR015	13.2	14.3	0.79	0.43	1.85	88.96
AR015	14.3	15.2	2.07	0.03	1.28	90.84
AR015	15.2	15.3	1.26	0.02	1.20	90.46
AR015	15.3	15.5	3.89	-0.01	1.18	93.49
AR015	15.5	18.7	13.31	0.02	1.61	72.29
AR015	18.7	20.3	40.09	0.10	5.93	7.19
AR015	20.3	21.9	41.25	0.33	4.38	6.83
AR015	21.9	23.5	36.52	0.21	2.58	18.10
AR015	23.5	25.1	6.41	0.60	6.05	72.18
AR015	25.1	26.7	39.08	0.19	2.24	14.30
AR015	26.7	28.3	39.57	0.27	3.39	10.77
AR015	28.3	29.9	36.28	0.22	6.34	12.13
AR015	29.9	31.5	35.43	0.18	4.94	14.85
AR015	31.5	33.1	42.94	0.16	4.66	3.08
AR015	33.1	34.7	42.61	0.12	3.43	4.89
AR015	34.7	36.3	39.44	0.10	4.33	10.19
AR015	36.3	37.9	41.16	0.13	4.05	6.64
AR015	37.9	41.1	41.42	0.13	4.42	5.63
AR015	41.1	42.5	18.42	20.02	3.31	15.97
AR015	42.5	44.1	24.93	1.04	3.12	39.48
AR015	44.1	45.7	20.26	1.01	2.83	44.36
AR015	45.7	47.3	21.77	1.02	3.97	41.68
AR015	47.3	50.7				
AR015	50.7	51.8	28.11	0.18	18.64	14.39
AR015	51.8	53.4	12.40	0.83	15.25	30.97
AR015	53.4	55.0	28.35	0.36	13.06	21.27
AR015	55.0	56.6	28.23	0.12	13.64	22.64
AR015	56.6	58.2	28.20	0.44	9.77	22.77
AR015	58.2	59.8	18.05	0.15	41.92	8.32
AR015	59.8	61.4	40.12	0.14	6.60	7.39
AR015	61.4	63.0	Missing			
AR015	63.0	64.6	16.17	0.31	46.02	6.61
AR015	64.6	66.2	33.42	0.25	15.52	9.10
AR015	66.2	67.5	42.45	1.05	4.95	3.14
AR015	67.1	67.8	21.56	27.30	1.74	3.73
AR015	67.8	69.4	30.03	9.21	3.79	16.10
AR015	69.4	71.0	39.05	2.36	1.48	13.07
AR015	71.0	72.6	24.49	1.15	12.60	29.74
AR015	72.6	73.0	28.71	3.46	3.16	28.44
AR015	73.0	74.0	39.82	2.39	0.66	11.47
AR015	74.0	75.9	36.95	8.01	1.19	6.26
AR015	75.9	77.5	42.36	2.73	0.98	4.38
AR015	77.5	79.1	40.70	3.79	1.05	6.22
AR015	79.1	80.6	39.67	4.02	1.33	7.91
AR015	80.6	82.2	36.50	5.52	2.21	9.91
AR015	82.2	83.6	39.85	2.93	0.76	9.79
AR015	83.6	85.2	39.87	3.29	0.61	9.70

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR015	85.2	86.6	26.75	20.37	1.34	6.09
AR015	86.6	88.2	37.89	7.51	1.59	4.75
AR015	88.2	89.6	42.23	4.05	1.71	1.45
AR015	89.6	91.2	42.26	4.38	1.05	1.74
AR015	91.2	92.6	43.05	3.22	1.17	2.13
AR015	92.6	94.2	37.68	7.18	1.01	7.23
AR015	94.2	95.6	38.75	5.24	0.76	8.32
AR015	95.6	97.2	38.91	2.98	1.29	11.64
AR015	97.2	98.6	38.81	4.90	1.50	7.99
AR015	98.6	100.2	38.02	6.98	1.16	6.29
AR015	100.2	101.6	34.65	11.38	1.64	5.51
AR015	101.6	103.2	29.71	17.54	1.59	4.69
AR015	103.2	104.6	42.74	2.88	0.91	4.39
AR015	104.6	106.2	35.32	9.00	1.72	7.25
AR015	106.2	107.2	13.16	5.34	6.62	43.14

ASSAYS FOR HOLE AR016

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR016	15.4	16.8	29.14	1.42	2.76	29.67
AR016	16.8	17.8				
AR016	17.8	18.9	46.37	0.30	1.42	0.43
AR016	18.9	20.0	45.98	0.33	1.93	-0.05
AR016	20.0	21.8				
AR016	21.8	23.8	46.47	0.32	1.42	0.33
AR016	23.8	26.5				
AR016	26.5	27.5	45.71	0.29	1.67	1.54
AR016	27.5	28.7				
AR016	28.7	30.1				
AR016	30.1	33.1	41.77	0.19	5.76	2.47
AR016	33.1	33.5	41.49	0.14	4.33	5.95
AR016	33.5	35.8	43.10	0.70	3.86	1.83
AR016	35.8	36.9	26.36	19.44	3.27	5.43
AR016	36.9	38.8	23.97	8.83	8.11	11.83
AR016	38.8	40.8	40.90	2.54	2.46	5.24
AR016	40.8	42.6	43.40	0.50	2.13	4.46
AR016	42.6	43.5	44.43	0.87	1.79	2.92
AR016	43.5	45.5	37.33	8.51	1.54	4.94
AR016	45.5	46.9	41.23	4.43	1.12	4.15
AR016	46.9	48.5	43.95	2.13	1.12	3.03
AR016	48.5	51.8	40.89	5.57	1.55	1.58
AR016	51.8	52.4	44.34	1.69	0.96	2.59
AR016	52.4	54.5	41.15	4.26	0.48	6.13
AR016	54.5	56.1	43.24	1.75	0.41	5.84
AR016	56.1	57.7	44.23	1.33	0.56	3.98
AR016	57.7	59.3	43.19	3.48	0.47	2.95
AR016	59.3	61.8	44.93	2.86	0.37	0.32
AR016	61.8	62.4	43.47	2.73	0.60	3.63
AR016	62.4	63.9	44.71	1.85	0.68	2.02
AR016	63.9	65.5	43.26	3.28	0.74	2.22
AR016	65.5	66.9	43.27	3.08	0.46	3.34
AR016	66.9	68.4	43.90	2.35	0.39	2.88
AR016	68.4	69.9	41.79	4.81	0.72	3.08
AR016	69.9	71.5	41.54	4.97	0.64	2.93
AR016	71.5	73.1	43.59	4.41	0.68	0.64
AR016	73.1	74.6	45.58	1.53	0.38	2.10
AR016	74.6	76.1	44.46	2.21	0.33	3.48
AR016	76.1	77.6	45.69	1.36	0.34	2.36
AR016	77.6	79.1	45.24	1.89	0.27	2.13
AR016	79.1	80.6	45.12	1.70	0.29	2.28
AR016	80.6	82.1	45.02	2.80	0.23	1.53
AR016	82.1	83.6	45.13	2.71	0.18	0.98
AR016	83.6	85.1	44.97	1.39	0.13	3.32
AR016	85.1	86.6	45.27	1.37	0.19	3.18
AR016	86.6	88.1	46.67	0.71	0.20	1.23
AR016	88.1	89.6	46.75	0.56	0.27	1.53
AR016	89.6	91.1	44.89	2.33	0.73	2.03

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR016	91.1	92.6	40.44	5.84	0.77	6.19
AR016	92.6	94.1	44.20	1.08	0.54	7.37
AR016	94.1	95.6	45.30	0.86	0.28	3.79
AR016	95.6	97.1	44.15	1.76	0.39	3.95
AR016	97.1	98.6	44.89	1.30	0.42	3.13
AR016	98.6	100.1	44.96	1.22	0.19	4.62
AR016	100.1	101.6	44.96	0.92	0.23	4.74
AR016	101.6	103.1	46.89	0.64	0.24	1.60
AR016	103.1	104.6	46.24	0.69	0.40	2.40
AR016	104.6	106.1	47.06	0.77	0.17	0.98
AR016	106.1	107.6	39.59	6.92	0.50	4.43
AR016	107.6	109.1	44.32	3.16	0.56	1.35
AR016	109.1	110.6	46.00	1.47	0.30	1.24
AR016	110.6	112.1	45.84	1.77	0.17	1.73
AR016	112.1	113.6	45.63	1.35	0.09	2.99
AR016	113.6	115.1	45.55	1.03	0.13	3.26
AR016	115.1	116.6	45.00	0.66	0.15	5.10
AR016	116.6	118.1	46.63	0.62	0.10	2.53
AR016	118.1	119.6	46.55	0.67	0.36	2.51
AR016	119.6	121.1	45.73	0.72	0.65	3.78
AR016	121.1	122.6	44.99	1.37	0.60	4.10
AR016	122.6	124.1	41.90	4.86	0.73	5.31
AR016	124.1	125.6	44.08	1.95	0.59	7.48
AR016	125.6	127.1	45.29	0.87	0.43	6.87
AR016	127.1	128.6	45.14	1.96	0.24	4.71
AR016	128.6	130.1	45.48	1.16	0.19	5.81
AR016	130.1	131.6	43.58	0.89	0.42	13.00
AR016	131.6	133.1	42.04	3.06	0.61	11.43
AR016	133.1	134.6	44.64	1.56	0.36	6.99
AR016	134.6	136.1	38.71	4.08	0.98	10.57
AR016	136.1	138.2	38.46	3.89	0.86	11.87
AR016	138.2	139.8	38.71	3.88	0.83	11.64
AR016	139.8	140.7	21.29	8.74	2.91	37.59
AR016	140.7	143.2	38.45	3.83	1.77	8.00
AR016	143.2	144.8	40.20	4.85	0.91	6.34
AR016	144.8	146.3	42.08	4.21	0.87	3.80
AR016	146.3	147.8	41.95	4.27	0.55	4.43
AR016	147.8	149.4	45.63	1.17	0.19	3.18
AR016	149.4	151.0	46.00	1.60	0.17	1.37
AR016	151.0	152.5	45.49	3.02	0.23	0.37
AR016	152.5	154.0	44.13	3.23	0.41	1.83
AR016	154.0	155.6	45.27	1.87	0.23	2.00
AR016	155.6	157.1	42.25	0.86	0.47	10.45
AR016	157.1	158.6	39.14	6.07	1.03	6.47
AR016	158.6	160.1	44.59	1.80	0.63	3.31
AR016	160.1	161.6	45.39	2.02	0.65	0.80
AR016	161.6	163.1	44.24	0.92	0.49	5.83
AR016	163.1	164.6	45.54	1.15	1.02	1.79

ASSAYS FOR HOLE AR016

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR016	164.6	166.1	45.54	1.81	0.87	0.88
AR016	166.1	167.6	39.00	4.62	1.05	8.59
AR016	167.6	169.1	42.52	1.89	0.60	7.39
AR016	169.1	170.6	41.79	1.66	0.53	8.50
AR016	170.6	172.1	39.23	1.70	0.32	14.45
AR016	172.1	173.6	41.66	1.02	0.18	11.01
AR016	173.6	175.1	35.21	3.23	0.27	19.91
AR016	175.1	176.6	37.33	3.02	0.35	16.32
AR016	176.6	178.1	35.74	3.16	0.43	19.13
AR016	178.1	179.6	39.57	1.83	1.03	12.37
AR016	179.6	181.1	39.47	1.93	0.99	12.38
AR016	181.1	182.6	38.17	1.46	1.11	15.52
AR016	182.6	184.1	41.10	1.03	1.24	10.48
AR016	184.1	185.6	39.93	1.87	1.31	10.95
AR016	185.6	187.1	39.02	1.55	1.34	13.90
AR016	187.1	188.6	40.13	1.69	0.22	12.30
AR016	188.6	190.1	38.99	2.90	0.11	13.39
AR016	190.1	191.6	42.54	1.97	0.17	7.91
AR016	191.6	193.1	42.61	1.75	0.08	8.32
AR016	193.1	194.6	39.86	1.41	0.05	14.07
AR016	194.6	196.1	37.83	1.71	0.17	17.51
AR016	196.1	197.6	37.19	1.89	0.07	18.86
AR016	197.6	199.1	37.20	2.08	0.05	18.60
AR016	199.1	200.6	37.50	2.00	0.08	18.25
AR016	200.6	202.1	38.92	2.92	0.06	14.15
AR016	202.1	203.6	38.05	2.77	0.07	15.98
AR016	203.6	205.1	38.05	2.48	0.07	15.98
AR016	205.1	206.6	37.46	1.94	0.08	17.67
AR016	206.6	208.1	39.79	1.20	0.14	14.72
AR016	208.1	209.6	39.62	1.97	0.12	13.57
AR016	209.6	211.1	39.78	1.65	0.28	13.52
AR016	211.1	212.6	39.19	2.19	0.35	13.69
AR016	212.6	214.1	39.76	2.42	0.48	11.60
AR016	214.1	215.6	41.90	1.79	0.42	8.53
AR016	215.6	216.4	40.71	3.11	0.62	8.51
AR016	216.4	218.3	42.79	1.90	0.47	6.85
AR016	218.3	219.8	42.00	1.20	0.50	9.44
AR016	219.8	221.4	40.91	2.11	0.51	10.60
AR016	221.4	222.9	41.68	1.67	0.49	9.28
AR016	222.9	224.5	40.69	2.25	0.92	9.98
AR016	224.5	225.1	27.96	4.84	4.89	18.47
AR016	225.1	226.6	30.81	4.31	3.00	20.07
AR016	226.6	228.2	35.77	7.32	1.27	10.42
AR016	228.2	229.7	37.86	1.16	0.62	18.58
AR016	229.7	231.2	38.27	5.43	0.63	14.96
AR016	231.2	232.8	43.06	2.78	0.53	8.14
AR016	232.8	233.6	43.82	0.75	0.49	8.43
AR016	233.6	235.1	40.54	1.50	0.13	12.26

ASSAYS FOR HOLE AR016

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR016	235.1	236.6	43.48	0.85	0.09	8.02
AR016	236.6	238.1	40.49	1.22	0.05	12.77
AR016	238.1	239.6	40.71	1.47	0.10	12.22
AR016	239.6	241.1	39.25	4.87	0.30	9.51
AR016	241.1	242.6	38.96	1.22	0.13	16.71
AR016	242.6	244.1	41.26	1.17	0.27	11.09
AR016	244.1	244.8	43.04	1.26	0.06	7.89
AR016	244.8	246.3	41.17	1.16	0.02	12.24
AR016	246.3	247.9	42.56	0.58	0.05	10.36
AR016	247.9	249.4	44.44	0.39	0.11	6.42
AR016	249.4	251.0	43.59	0.82	0.20	7.59
AR016	251.0	252.6	43.47	2.68	0.05	5.11
AR016	252.6	254.1	43.83	0.61	0.02	7.51
AR016	254.1	254.6	42.40	0.67	0.03	10.40
AR016	254.6	256.1	41.82	0.46	0.19	11.36
AR016	256.1	257.6	42.58	0.87	0.46	8.64
AR016	257.6	259.1	39.79	0.23	0.68	15.39
AR016	259.1	260.6	42.48	0.40	0.87	9.86
AR016	260.6	262.1	43.69	0.35	1.36	6.21
AR016	262.1	263.6	43.48	0.28	1.14	7.06
AR016	263.6	265.1	42.80	0.27	1.87	7.45
AR016	265.1	266.6	41.35	0.38	1.24	10.00
AR016	266.6	268.1	39.76	0.46	0.54	15.46
AR016	268.1	269.6	40.21	0.90	0.76	13.09
AR016	269.6	271.1	41.72	0.86	0.61	10.87
AR016	271.1	272.6	43.33	0.83	0.68	7.28
AR016	272.6	274.1	43.41	1.15	0.46	6.84
AR016	274.1	275.6	42.53	0.53	0.77	8.94
AR016	275.6	277.1	40.85	0.35	0.57	13.43
AR016	277.1	278.6	41.11	0.36	0.61	12.99

ASSAYS FOR HOLE AR017

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR017	23.8	25.4	35.00	0.22	4.07	20.13
AR017	25.4	27.0	38.72	0.10	4.23	13.33
AR017	27.0	28.6	38.43	0.16	5.20	12.91
AR017	28.6	30.2	42.11	0.26	3.34	6.57
AR017	30.2	31.8	41.39	0.18	2.62	8.69
AR017	31.8	33.4	40.35	2.07	2.57	8.37
AR017	33.4	35.0	41.61	0.31	3.86	6.08
AR017	35.0	36.6	42.01	0.40	4.17	5.04
AR017	36.6	38.2	23.78	0.36	13.53	27.25
AR017	38.2	39.8	32.53	0.37	8.65	17.17
AR017	39.8	41.4	36.68	0.25	3.73	17.51
AR017	41.4	43.0				
AR017	43.0	44.6	31.69	0.11	4.04	27.98
AR017	44.6	44.8	41.32	0.16	1.94	10.70
AR017	44.8	46.4	28.53	0.14	6.05	31.48
AR017	46.4	48.0	26.63	0.08	4.28	37.88
AR017	48.0	50.4				
AR017	50.4	52.0	38.73	0.46	5.62	10.29
AR017	52.0	53.6	37.26	0.25	4.70	14.87
AR017	53.6	55.2	30.63	17.20	2.04	2.98
AR017	55.2	56.8	21.34	27.56	1.90	3.45
AR017	56.8	58.4	19.41	28.60	1.15	7.07
AR017	58.4	60.0	19.11	26.87	1.20	9.85
AR017	60.0	60.6	19.90	17.61	4.65	20.84
AR017	60.6	62.0	17.47	10.51	6.00	36.07
AR017	62.0	63.6	20.81	10.88	5.82	32.00
AR017	63.6	65.2	23.11	20.32	2.87	14.54
AR017	65.2	66.1	19.39	25.80	6.50	4.55
AR017	66.1	68.1	44.19	2.69	1.37	0.54
AR017	68.1	69.7	36.64	5.13	7.75	3.05
AR017	69.7	70.8	45.10	1.33	1.98	-0.05
AR017	70.8	71.7	44.30	1.78	2.50	0.26
AR017	71.7	72.4	42.37	2.12	3.21	2.93
AR017	72.4	73.7	44.67	1.23	2.34	0.55
AR017	73.7	75.0	45.18	0.35	2.05	2.35
AR017	75.0	76.6	44.69	0.82	2.63	0.68
AR017	76.6	79.6	41.31	1.21	6.51	2.41
AR017	79.6	81.2	42.01	0.16	4.19	5.37
AR017	81.2	82.8	41.22	0.14	4.14	6.86
AR017	82.8	84.4	40.51	0.14	5.84	6.64
AR017	84.4	86.0	40.50	0.15	5.18	7.14
AR017	86.0	87.0	20.02	7.15	21.46	15.77
AR017	87.0	88.5	26.76	16.49	2.90	7.86
AR017	88.5	89.6	37.07	8.97	2.27	3.52
AR017	89.6	91.1	42.00	4.13	1.22	2.72
AR017	91.1	92.6	42.93	3.76	1.21	1.86
AR017	92.6	94.2	43.94	1.50	1.73	2.29
AR017	94.2	95.6	32.61	15.14	1.88	2.59

ASSAYS FOR HOLE AR017

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR017	95.6	97.2	24.01	24.57	2.09	2.79
AR017	97.2	98.6	37.80	7.93	1.56	4.13
AR017	98.6	100.2	29.91	19.36	1.87	0.52
AR017	100.2	101.6	42.18	4.82	1.48	0.63
AR017	101.6	103.2	44.91	2.38	1.29	-0.05
AR017	103.2	104.6	44.44	2.60	1.12	0.43
AR017	104.6	106.2	43.93	2.96	0.87	1.27
AR017	106.2	107.6	41.92	5.37	0.88	1.33
AR017	107.6	109.2	37.83	10.03	1.10	1.30
AR017	109.2	110.6	29.37	19.09	1.03	2.73
AR017	110.6	112.2	43.15	4.09	0.90	0.49
AR017	112.2	113.6	28.13	22.02	1.00	0.62
AR017	113.6	115.2	41.97	4.83	0.96	2.25
AR017	115.2	116.6	43.90	2.66	0.76	2.20
AR017	116.6	118.2	44.34	2.07	0.62	2.24
AR017	118.2	119.6	43.97	2.54	0.57	2.48
AR017	119.6	121.2	42.38	2.73	1.22	4.01
AR017	121.2	122.6	41.21	3.17	1.06	6.27
AR017	122.6	124.2	40.90	1.64	1.29	9.26
AR017	124.2	125.6	30.19	14.33	1.88	8.15
AR017	125.6	127.2	35.06	11.56	1.76	3.61
AR017	127.2	128.6	40.02	4.11	1.43	7.08
AR017	128.6	130.2	42.34	0.64	1.26	7.96
AR017	130.2	131.6	38.90	3.67	1.11	11.80
AR017	131.6	133.2	38.23	8.02	1.61	3.47
AR017	133.2	134.6	44.98	1.06	1.15	2.52
AR017	134.6	136.2	38.58	7.09	1.67	3.44
AR017	136.2	137.6	40.57	4.90	1.97	3.04
AR017	137.6	139.2	40.98	4.71	1.90	2.82
AR017	139.2	140.6	34.94	10.81	2.88	2.61
AR017	140.6	142.2	43.22	2.49	1.45	2.97
AR017	142.2	143.6	44.11	1.37	1.51	2.70
AR017	143.6	145.2	43.30	2.91	1.50	2.27
AR017	145.2	146.6	42.01	3.88	1.49	2.95
AR017	146.6	148.2	40.71	5.34	1.63	2.52
AR017	148.2	149.6	41.92	4.11	1.44	2.27
AR017	149.6	151.1	40.54	6.72	1.59	1.06
AR017	151.1	152.6	41.16	5.76	1.79	1.14
AR017	152.6	154.1	37.98	9.19	1.72	1.35
AR017	154.1	155.6	41.21	4.48	1.33	2.78
AR017	155.6	157.2	36.18	10.05	2.44	2.76
AR017	157.2	158.6	33.72	12.78	2.14	3.44
AR017	158.6	160.2	39.42	7.39	1.21	2.39
AR017	160.2	161.6	36.81	8.41	1.70	5.33
AR017	161.6	163.2	33.04	13.74	1.78	3.46
AR017	163.2	164.6	36.25	8.55	1.48	6.40
AR017	164.6	166.2	40.00	5.89	1.70	2.53
AR017	166.2	167.6	41.64	4.64	2.13	0.79

ASSAYS FOR HOLE AR017

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR017	167.6	169.2	44.72	2.36	1.20	-0.05
AR017	169.2	170.6	43.09	3.51	1.69	0.96
AR017	170.6	172.2	42.36	4.15	1.65	0.99
AR017	172.2	173.6	39.10	7.78	1.49	1.49
AR017	173.6	175.2	39.65	7.48	1.17	1.81
AR017	175.2	176.5	42.96	3.30	1.33	1.85
AR017	176.5	178.1	41.83	5.49	1.11	0.77
AR017	178.1	179.2	44.61	2.77	1.07	0.25
AR017	179.2	180.5	37.59	10.02	1.16	1.30
AR017	180.5	181.5	8.22	11.23	4.24	43.99
AR017	181.5	182.5	7.24	6.96	7.70	47.51

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR018	12.0	13.6	43.83	0.15	2.06	4.82
AR018	13.6	15.0	44.29	0.11	2.18	3.56
AR018	15.0	16.8	43.71	0.12	2.92	3.18
AR018	16.8	18.0	40.15	0.12	6.20	5.09
AR018	18.0	19.8	43.53	0.10	2.31	5.06
AR018	19.8	20.8	43.83	0.11	2.76	3.17
AR018	20.8	22.0	42.83	0.18	5.45	1.44
AR018	22.0	24.0	29.32	0.35	17.60	5.69
AR018	24.0	26.0	25.58	0.41	24.39	4.87
AR018	26.0	27.5	11.13	0.50	34.21	20.73
AR018	27.5	30.1	37.50	0.20	7.33	8.74
AR018	30.1	32.0	35.73	0.16	6.56	13.70
AR018	32.0	33.7	41.07	2.09	1.85	7.26
AR018	33.7	34.8	41.30	0.75	1.70	9.50
AR018	34.8	36.5	43.49	0.74	1.49	5.30
AR018	36.5	38.0	44.73	0.77	2.06	2.07
AR018	38.0	39.5	38.75	4.24	3.52	5.48
AR018	39.5	42.7	42.96	2.04	1.87	3.17
AR018	42.7	45.8	44.00	0.47	3.23	2.56
AR018	45.8	48.0	43.45	0.31	3.49	2.87
AR018	48.0	48.8	45.25	0.36	1.22	4.52
AR018	48.8	50.5	44.80	0.46	1.17	5.29
AR018	50.5	52.5	43.22	0.23	2.51	5.85
AR018	52.5	53.2	43.46	0.13	2.50	5.29
AR018	53.2	55.0	42.62	0.21	5.09	4.56
AR018	55.0	56.6	45.94	0.17	1.12	3.69
AR018	56.6	57.5	43.81	0.12	2.63	7.22
AR018	57.5	59.1	44.98	0.61	1.83	4.36
AR018	59.1	60.7	43.66	1.96	1.60	5.01
AR018	60.7	62.3	44.55	1.83	0.86	4.28
AR018	62.3	63.8	43.47	3.32	0.95	2.95
AR018	63.8	66.1	41.62	3.39	1.85	4.37
AR018	66.1	66.9	41.45	0.39	5.22	5.73
AR018	66.9	68.6	41.44	3.83	2.09	5.07
AR018	68.6	70.0	38.32	7.31	2.54	2.96
AR018	70.0	71.6	43.96	1.54	2.27	2.29
AR018	71.6	73.3	44.47	1.22	0.52	4.82
AR018	73.3	74.9	45.51	1.41	0.60	1.65
AR018	74.9	76.5	43.50	3.25	1.01	1.40
AR018	76.5	78.0	43.82	3.33	0.99	1.02
AR018	78.0	79.5	41.36	5.78	1.53	0.92
AR018	79.5	81.0	44.85	1.36	2.34	0.17
AR018	81.0	82.5	41.37	5.87	0.87	1.69
AR018	82.5	84.0	43.92	3.11	0.98	1.19
AR018	84.0	85.9	45.18	0.67	2.16	1.09
AR018	85.9	87.3	40.44	7.00	1.74	0.74
AR018	87.3	89.7	40.08	3.31	6.23	1.82
AR018	89.7	90.9	44.15	0.33	2.88	2.64

ASSAYS FOR HOLE AR018

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR018	90.9	92.0	45.42	0.32	1.69	1.93
AR018	92.0	94.0	44.43	1.79	1.49	1.71
AR018	94.0	95.0	41.92	0.50	3.49	4.90
AR018	95.0	96.6	43.71	1.18	3.03	2.52
AR018	96.6	98.1	45.47	0.34	0.99	3.73
AR018	98.1	100.4	45.03	1.59	1.42	1.23
AR018	100.4	102.0	45.07	1.11	1.41	1.73
AR018	102.0	103.5	43.11	3.15	1.35	2.36
AR018	103.5	105.0	41.45	3.43	1.51	4.81
AR018	105.0	106.5	45.19	1.10	1.22	1.87
AR018	106.5	108.0	45.41	0.73	1.18	2.03
AR018	108.0	109.5	45.13	1.86	1.23	0.68
AR018	109.5	111.0	44.37	1.65	1.14	2.55
AR018	111.0	112.5	37.73	7.52	2.18	3.73
AR018	112.5	114.0	44.10	0.17	2.13	3.39
AR018	114.0	115.5	44.66	0.27	1.80	3.39
AR018	115.5	117.0	45.43	0.14	1.68	2.47
AR018	117.0	118.1	44.95	0.50	1.51	3.36
AR018	118.1	119.7	44.45	0.24	1.68	3.89
AR018	119.7	121.2	44.31	0.20	2.65	2.97
AR018	121.2	122.8	38.54	0.25	12.19	0.96
AR018	122.8	124.4	44.76	0.17	3.25	1.34
AR018	124.4	125.7	43.36	0.19	4.95	2.51
AR018	125.7	128.8	43.28	0.19	5.86	1.35
AR018	128.8	130.4	44.40	0.24	3.07	2.82
AR018	130.4	131.9	42.99	0.26	6.12	0.64
AR018	131.9	133.1	44.63	0.18	3.68	0.73
AR018	133.1	134.5	44.96	0.16	1.96	1.65
AR018	134.5	135.6	46.64	0.28	1.25	-0.05
AR018	135.6	136.4	44.85	0.24	1.86	3.45
AR018	136.4	137.8	45.71	0.14	1.37	1.97
AR018	137.8	139.4	43.97	0.27	2.85	3.24
AR018	139.4	140.6	45.10	0.25	1.46	3.06
AR018	140.6	141.6	43.94	0.25	2.79	2.70
AR018	141.6	142.0	45.68	0.26	1.92	0.98
AR018	142.0	142.9	45.33	0.28	1.67	1.96
AR018	142.9	143.7	45.39	0.26	1.45	2.21
AR018	143.7	145.1	44.62	0.25	2.15	3.05
AR018	145.1	146.5	45.50	0.19	1.04	3.42
AR018	146.5	147.7	43.38	0.23	1.44	6.07
AR018	147.7	148.7	44.70	0.20	1.27	3.89
AR018	148.7	150.0	46.46	0.19	1.07	0.73
AR018	150.0	151.5	45.46	0.17	0.81	3.77
AR018	151.5	153.0	43.26	0.18	0.99	8.32
AR018	153.0	154.0	41.21	0.16	1.28	12.05
AR018	154.0	156.0	41.59	0.17	1.15	11.18
AR018	156.0	157.4	43.16	0.27	0.61	9.18
AR018	157.4	159.0	42.48	0.25	0.41	13.29

ASSAYS FOR HOLE AR018

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR018	159.0	160.5	45.19	0.53	0.22	4.88
AR018	160.5	162.0	45.73	1.02	0.49	3.40
AR018	162.0	164.0	44.51	1.36	0.87	5.07
AR018	164.0	165.4	44.63	0.28	1.66	5.99
AR018	165.4	166.7	45.67	0.16	2.11	2.27
AR018	166.7	168.2	44.76	0.20	3.18	1.10
AR018	168.2	169.8	45.98	0.15	2.02	1.07
AR018	169.8	171.0	44.78	0.18	1.19	6.81
AR018	171.0	172.5	44.16	0.17	1.68	8.03
AR018	172.5	174.0	42.90	0.22	4.14	4.29
AR018	174.0	175.5	43.91	0.22	2.82	3.24
AR018	175.5	177.0	43.33	0.16	3.42	4.31
AR018	177.0	178.5	33.75	0.27	15.91	5.72
AR018	178.5	180.0	42.77	0.13	3.09	6.32
AR018	180.0	181.5	41.35	5.04	1.37	3.83
AR018	181.5	182.3	43.73	2.22	1.07	5.24
AR018	182.3	183.9	43.59	1.60	0.80	8.76
AR018	183.9	185.4	44.24	2.05	0.47	5.41
AR018	185.4	186.9	41.41	5.31	0.64	5.88
AR018	186.9	188.5	39.48	6.67	0.71	6.43
AR018	188.5	189.9	35.45	9.26	0.67	16.04
AR018	189.9	191.5	29.41	15.30	0.60	19.10
AR018	191.5	193.1	37.72	9.54	0.65	5.42
AR018	193.1	194.7	33.03	13.28	0.89	9.86
AR018	194.7	196.2	35.71	10.90	0.77	8.07
AR018	196.2	197.7	41.25	4.58	0.73	6.55
AR018	197.7	199.4	40.12	4.02	1.88	6.93
AR018	199.4	201.0	43.50	0.41	1.74	7.45
AR018	201.0	202.2	41.33	2.95	2.91	3.59
AR018	202.2	203.7	39.31	6.76	0.88	4.37
AR018	203.7	205.7	42.44	3.75	1.02	3.44
AR018	205.7	207.0	40.05	5.79	0.49	4.98
AR018	207.0	208.5	41.90	3.83	0.58	4.49
AR018	208.5	210.0	42.32	3.16	1.10	4.17
AR018	210.0	211.5	45.72	0.60	1.66	0.12
AR018	211.5	212.6	44.74	0.98	1.49	2.43
AR018	212.6	213.6	45.68	0.28	2.15	0.65
AR018	213.6	215.2	42.70	4.51	1.66	-0.05
AR018	215.2	216.7	42.94	3.67	0.70	2.70
AR018	216.7	218.0	43.65	3.48	1.38	0.55
AR018	218.0	219.4	44.29	0.28	3.49	1.22
AR018	219.4	220.3	41.75	0.32	7.15	1.23
AR018	220.3	221.5	42.40	0.30	5.27	2.51
AR018	221.5	222.3	43.76	1.22	3.15	0.39
AR018	222.3	223.5	37.70	2.94	9.25	1.73
AR018	223.5	225.0	35.54	12.36	1.75	0.90
AR018	225.0	226.5	40.03	7.48	1.33	0.70
AR018	226.5	228.0	42.18	4.91	0.92	1.41

ASSAYS FOR HOLE AR018

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR018	228.0	229.5	45.75	1.97	0.60	0.22
AR018	229.5	231.0	45.36	2.12	0.77	-0.05
AR018	231.0	232.5	45.01	2.81	0.47	0.46
AR018	232.5	234.0	45.35	1.77	0.81	0.11
AR018	234.0	235.5	40.94	7.19	0.93	0.22
AR018	235.5	237.0	43.67	3.44	0.91	0.63
AR018	237.0	238.5	42.57	5.29	0.96	0.48
AR018	238.5	240.0	42.69	4.88	1.05	0.39
AR018	240.0	241.8	19.46	13.02	3.70	28.79
AR018	241.8	243.0	19.03	13.52	3.59	31.17
AR018	243.0	244.5	18.42	13.52	3.90	32.22

ASSAYS FOR HOLE AR019

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR019	17.0	18.9	37.77	4.80	1.14	11.19
AR019	18.9	20.3	44.62	0.53	1.63	4.09
AR019	20.3	22.4	43.46	0.21	3.29	4.39
AR019	22.4	24.0	39.62	0.28	9.76	1.91
AR019	24.0	25.6	40.14	0.20	7.20	4.22
AR019	25.6	27.2	42.84	0.16	2.40	6.98
AR019	27.2	28.8	44.62	0.17	2.51	3.00
AR019	28.8	29.8	42.17	0.13	1.71	9.64
AR019	29.8	31.4	43.69	0.66	1.12	8.64
AR019	31.4	32.6	45.39	0.43	1.48	2.29
AR019	32.6	34.2	44.64	0.18	1.91	3.98
AR019	34.2	35.6	45.35	0.27	2.44	0.37
AR019	35.6	37.2	43.96	0.59	3.24	2.28
AR019	37.2	38.8	41.77	0.20	2.95	8.40
AR019	38.8	40.4	42.47	0.20	1.57	8.70
AR019	40.4	41.8	41.94	0.21	2.21	9.15
AR019	41.8	43.1	44.26	0.28	2.13	4.72
AR019	43.1	44.8	44.83	0.30	3.14	1.86
AR019	44.8	46.4	39.03	0.27	9.65	2.59
AR019	46.4	48.8	43.65	0.46	3.34	4.58
AR019	48.8	50.8	43.23	0.18	2.56	5.97
AR019	50.8	52.4	38.88	0.19	11.92	4.26
AR019	52.4	54.0	42.92	0.22	4.46	4.97
AR019	54.0	55.6	36.58	0.27	12.78	3.62
AR019	55.6	57.6	18.58	18.43	10.13	10.26
AR019	57.6	59.2	20.78	28.31	1.69	3.29
AR019	59.2	60.7	18.40	14.02	5.27	28.81
AR019	60.7	62.3	18.23	9.93	5.13	37.31
AR019	62.3	63.9	21.54	5.55	6.12	36.69
AR019	63.9	64.8	40.50	0.32	3.63	15.43
AR019	64.8	66.5	32.89	1.79	7.17	22.49
AR019	66.5	69.8	20.88	26.75	2.33	4.76
AR019	69.8	71.5	31.39	8.73	10.24	2.76
AR019	71.5	73.1	41.79	2.55	2.66	5.28
AR019	73.1	74.8	42.95	0.22	2.52	8.71
AR019	74.8	76.2	45.87	0.12	2.56	0.18
AR019	76.2	78.0	45.06	0.12	1.90	2.43
AR019	78.0	79.4	46.30	0.12	1.64	-0.05
AR019	79.4	81.3	45.86	0.14	2.08	-0.05
AR019	81.3	81.8	45.87	0.12	1.96	-0.05
AR019	81.8	83.3	43.77	0.13	4.83	-0.05
AR019	83.3	84.5	41.38	0.23	8.21	-0.05
AR019	84.5	85.4	42.67	0.20	6.35	0.12
AR019	85.4	86.4	44.81	0.22	3.53	-0.05
AR019	86.4	87.4	45.23	0.21	2.95	0.38
AR019	87.4	88.4	43.96	0.22	3.21	1.92
AR019	88.4	88.8	42.88	0.20	4.61	2.52
AR019	88.8	89.3	42.24	0.22	5.55	1.92

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR019	89.3	90.8	44.41	0.22	3.55	0.38

ASSAYS FOR HOLE AR020

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR020	33.0	33.7	0.87	0.02	61.76	24.39
AR020	33.7	35.7	0.87	0.02	69.62	15.87
AR020	35.7	37.7	0.72	0.01	59.95	27.89
AR020	37.7	39.7	0.44	0.01	71.12	15.59
AR020	39.7	41.7	0.47	-0.01	58.50	29.51
AR020	41.7	43.7	0.34	-0.01	68.55	19.78
AR020	43.7	45.7	0.41	-0.01	50.97	39.87
AR020	45.7	47.7	0.71	0.01	42.80	46.43
AR020	47.7	49.7	0.44	-0.01	46.55	43.27
AR020	49.7	51.7	0.44	-0.01	64.01	24.22
AR020	51.7	53.7	0.44	0.02	46.74	40.66
AR020	53.7	55.7	4.16	0.01	25.31	61.21
AR020	55.7	57.7	0.92	0.02	26.53	62.06
AR020	57.7	58.6	43.59	2.02	0.26	5.24
AR020	58.6	59.7				
AR020	59.7	61.4				
AR020	61.4	61.7	27.35	18.79	1.11	7.40
AR020	61.7	63.1				
AR020	63.1	63.7	44.81	1.33	0.47	3.06
AR020	63.7	65.7	25.85	15.63	4.99	10.18
AR020	65.7	67.1	29.58	16.52	2.38	5.45
AR020	67.1	72.0	34.85	9.33	1.41	9.61
AR020	72.0	74.0	39.68	6.77	0.75	4.01
AR020	74.0	76.0	43.59	1.98	0.71	4.83
AR020	76.0	79.0	32.49	13.00	1.24	7.54
AR020	79.0	82.0	41.66	1.46	1.06	8.48
AR020	82.0	85.0	43.64	0.62	0.62	6.25
AR020	85.0	86.3	44.46	0.99	0.75	4.23
AR020	86.3	88.0	39.77	5.22	0.75	6.28
AR020	88.0	91.0	42.89	2.59	0.83	4.42
AR020	91.0	94.0	41.75	1.82	1.76	6.42
AR020	94.0	95.3	40.93	0.99	1.50	9.43
AR020	95.3	97.0	43.03	0.35	1.74	6.67
AR020	97.0	100.0	43.19	1.59	0.73	5.32
AR020	100.0	103.0	42.16	1.48	1.54	6.61
AR020	103.0	106.0	42.26	1.67	2.39	5.08
AR020	106.0	109.0	41.06	2.65	1.60	6.88
AR020	109.0	112.0	44.45	0.38	1.12	4.10
AR020	112.0	115.0	44.50	1.12	1.09	5.41
AR020	115.0	117.8	43.41	0.64	1.61	5.32
AR020	117.8	121.0	45.05	0.19	1.97	3.07
AR020	121.0	124.0	43.45	1.24	1.54	4.23
AR020	124.0	127.0	42.52	1.39	1.36	6.67
AR020	127.0	129.1	41.50	2.19	1.65	5.66
AR020	129.1	132.5	44.29	0.21	1.86	3.18
AR020	132.5	135.6	44.30	0.90	1.30	3.81
AR020	135.6	138.7	42.35	1.40	1.72	5.90
AR020	138.7	142.0	38.61	7.34	0.94	4.87

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR020	142.0	145.0	41.12	2.94	0.95	6.88
AR020	145.0	148.0	40.08	4.25	1.93	5.96
AR020	148.0	150.5	43.42	0.28	2.27	5.50
AR020	150.5	152.4	42.92	0.34	4.79	3.16
AR020	152.4	154.5	44.84	0.28	2.35	2.52
AR020	154.5	156.0	41.93	0.29	3.68	6.44
AR020	156.0	159.1	43.12	2.93	1.55	2.23
AR020	159.1	162.0	45.75	0.18	2.09	0.86
AR020	162.0	164.6	45.69	0.19	2.31	1.10
AR020	164.6	167.3	44.24	0.23	1.37	4.02
AR020	167.3	169.0	45.19	0.36	1.52	2.87
AR020	169.0	172.0	42.46	0.31	8.04	0.35
AR020	172.0	174.9	44.26	1.03	2.22	2.80
AR020	174.9	178.0	45.05	0.20	2.36	1.60
AR020	178.0	179.2	44.99	0.25	2.50	2.32
AR020	179.2	181.0	44.81	0.39	1.59	3.69
AR020	181.0	183.9	37.22	7.90	1.67	5.86
AR020	183.9	186.7	44.84	0.23	2.93	2.91
AR020	186.7	187.9	43.56	0.23	4.35	4.79
AR020	187.9	189.0	44.90	0.24	2.50	4.01
AR020	189.0	191.8	42.92	2.49	1.10	5.89
AR020	191.8	195.5	36.61	3.07	7.98	10.64
AR020	195.5	198.2	44.30	0.22	3.00	5.44
AR020	198.2	201.2	44.28	0.22	2.94	5.52
AR020	201.2	204.4	45.25	0.23	2.14	2.57
AR020	204.4	207.6	45.74	0.29	1.40	3.09
AR020	207.6	210.7	45.33	0.37	1.15	6.06
AR020	210.7	212.2	45.30	0.20	1.34	4.85
AR020	212.2	214.0	44.19	0.21	2.38	6.68
AR020	214.0	216.0	44.65	0.20	2.14	4.58
AR020	216.0	218.9	44.22	0.16	1.26	7.48
AR020	218.9	222.0	40.19	0.18	3.19	9.56
AR020	222.0	224.5	37.17	0.12	1.89	19.13
AR020	224.5	227.6	38.16	0.14	2.01	17.08
AR020	227.6	230.8	38.33	0.18	9.25	5.26
AR020	230.8	234.1	36.83	6.29	1.40	10.07
AR020	234.1	237.3	39.94	4.96	0.99	7.54
AR020	237.3	240.4	42.91	1.15	0.93	6.98
AR020	240.4	243.5	45.70	0.17	1.83	0.76
AR020	243.5	246.8	41.60	0.40	1.23	10.89
AR020	246.8	250.0	43.57	0.66	2.09	3.78
AR020	250.0	253.0	39.45	0.27	1.71	13.81
AR020	253.0	256.0	38.92	0.23	3.70	12.24

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR021	14.5	15.5	41.85	0.12	1.67	9.51
AR021	15.5	19.0	38.10	0.23	4.45	13.74
AR021	19.0	22.0	43.64	1.77	1.50	5.41
AR021	22.0	25.0	42.81	1.65	0.85	7.33
AR021	25.0	28.0	43.50	1.91	0.64	6.13
AR021	28.0	31.0	43.20	0.27	1.95	6.24
AR021	31.0	34.0	42.00	0.64	2.55	6.22
AR021	34.0	36.8	43.58	0.47	1.32	5.17
AR021	36.8	41.0	41.37	0.38	2.68	7.73
AR021	41.0	42.8	42.35	0.33	1.73	7.15
AR021	42.8	44.0	42.76	0.40	1.84	6.00
AR021	44.0	45.7	40.93	0.37	1.89	10.45
AR021	45.7	47.0	38.06	0.30	3.23	14.12
AR021	47.0	49.4	44.18	0.48	1.36	4.54
AR021	49.4	51.0	45.50	0.42	0.66	3.04
AR021	51.0	54.0	45.86	0.61	0.22	3.29
AR021	54.0	55.8	44.09	0.38	1.14	4.79
AR021	55.8	57.0	43.69	0.36	1.03	5.81
AR021	57.0	60.8	44.78	0.35	1.27	3.03
AR021	60.8	63.7	36.06	10.76	1.38	4.02
AR021	63.7	66.8	39.97	5.68	1.28	4.69
AR021	66.8	69.9	44.32	0.62	0.97	5.70
AR021	69.9	73.0	44.97	1.24	0.51	4.42
AR021	73.0	76.0	45.30	1.38	0.43	4.52
AR021	76.0	79.0	45.51	1.05	0.57	3.23
AR021	79.0	82.0	45.72	0.33	1.78	2.39
AR021	82.0	85.0	45.92	0.69	0.75	2.66
AR021	85.0	88.0	45.15	0.73	0.77	4.11
AR021	88.0	91.0	44.75	0.83	0.19	6.19
AR021	91.0	94.0	45.04	1.35	0.39	3.69
AR021	94.0	97.0	45.55	0.99	0.62	2.90
AR021	97.0	100.0	45.59	0.49	0.86	1.92
AR021	100.0	103.0	45.41	0.33	1.70	1.87
AR021	103.0	106.0	44.08	2.17	0.89	2.88
AR021	106.0	109.0	41.84	2.12	0.49	7.45
AR021	109.0	112.0	43.80	1.85	0.56	4.23
AR021	112.0	115.0	43.26	0.47	1.98	4.68
AR021	115.0	118.0	45.05	0.27	0.87	3.67
AR021	118.0	121.0	44.88	0.23	1.04	3.36
AR021	121.0	123.9	41.97	0.26	3.59	5.96
AR021	123.9	127.0	43.01	0.18	2.54	5.63
AR021	127.0	128.3	43.33	0.22	2.58	4.38
AR021	128.3	130.3	44.00	0.21	2.11	4.03
AR021	130.3	132.3	43.35	0.21	2.54	4.31
AR021	132.3	135.4	42.76	0.19	2.38	6.31
AR021	135.4	138.6	41.63	0.17	0.90	10.42
AR021	138.6	141.6	39.27	4.82	0.86	10.37
AR021	141.6	144.9	43.76	0.51	1.27	7.12

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR021	144.9	146.6	39.21	0.24	8.29	5.38
AR021	146.6	148.2	42.41	0.21	6.03	1.53
AR021	148.2	151.0	44.63	0.24	4.19	0.23
AR021	151.0	153.0	45.43	0.25	2.35	0.77
AR021	153.0	155.8	45.31	1.85	1.05	0.94
AR021	155.8	158.9	43.23	4.77	1.14	-0.05
AR021	158.9	161.4	41.54	6.31	1.43	-0.05
AR021	161.4	163.0	46.05	0.99	1.70	-0.05
AR021	163.0	165.7	45.28	0.27	3.07	-0.05
AR021	165.7	168.8	44.69	1.35	2.97	-0.05
AR021	168.8	169.0	30.78	18.43	1.94	0.14
AR021	169.0	172.0	39.63	8.29	1.88	-0.05
AR021	172.0	175.0	42.25	5.66	1.42	-0.05
AR021	175.0	178.0	39.67	8.32	1.51	0.40
AR021	178.0	181.0	37.69	11.16	1.20	0.50
AR021	181.0	184.0	17.89	23.06	2.05	16.79
AR021	184.0	187.0	21.05	11.33	2.97	22.00
AR021	187.0	190.0	40.97	7.01	1.21	0.78
AR021	190.0	193.0	42.36	5.39	1.36	0.36
AR021	193.0	196.0	39.73	7.63	1.97	1.03
AR021	196.0	199.0	42.92	3.67	2.17	0.57
AR021	199.0	202.0	39.82	7.35	1.50	1.05
AR021	202.0	205.0	26.62	16.05	2.46	13.05
AR021	205.0	208.0	17.80	13.00	3.95	32.65
AR021	208.0	211.0	17.59	14.06	4.15	32.48
AR021	211.0	214.0	20.74	11.79	4.13	28.15

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A N A L A B S

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Page : 1 of 2

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ANALYTICAL DATA

Sample	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO
AR22 19.7-21.7	7.50	<0.01	<0.05	2.18	0.12	41.85
AR22 21.7-23.3	5.16	<0.01	<0.05	0.78	0.05	43.57
AR22 23.3-24.7	5.35	<0.01	<0.05	1.47	0.05	44.31
AR22 24.7-26.4	6.54	<0.01	<0.05	0.94	0.05	44.01
AR22 26.4-28.1	6.94	<0.01	<0.05	0.48	0.03	43.13
AR22 29.7-30.7	11.05	<0.01	0.09	1.01	0.43	40.64
AR22 30.7-31.4	12.16	0.21	1.45	2.15	0.09	39.00
AR22 31.4-33.8	5.14	<0.01	<0.05	0.81	0.07	44.11
AR22 18-20 TRICONE	27.88	0.06	1.31	5.54	0.27	29.25
Method	X408	X408	X408	X408	X408	X408
Units	%	%	%	%	%	%
Detection Limit	0.05	0.01	0.05	0.01	0.01	0.01

Notes: N.A. = not analysed, -- = element not determined, I.S. = insufficient sample, L.N.R. = listed not received

ASSAYS FOR HOLE AR022A,B

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR022A	15.5	17.5	43.47	0.86	0.79	6.37
AR022A	17.5	18.7	43.51	0.85	0.51	6.65
AR022A	18.7	20.5	44.25	0.93	0.45	5.45
AR022A	20.5	21.7	42.52	3.17	0.66	5.36
AR022A	21.7	22.7	42.29	2.97	1.35	6.17
AR022A	22.7	22.9	44.24	0.70	1.58	5.16
AR022A	22.9	28.7	34.51	0.93	8.39	12.88
AR022A	28.7	30.3	41.92	1.96	0.71	7.80
AR022A	30.3	31.7	42.80	0.96	0.93	7.19
AR022A	31.7	33.7	42.19	1.17	0.86	8.35
AR022A	33.7	37.0	44.69	0.67	0.63	4.28
AR022A	37.0	40.0	44.25	0.71	0.73	5.44
AR022A	40.0	43.0	41.51	4.82	1.56	2.31
AR022A	43.0	46.0	45.05	1.40	1.10	1.47
AR022A	46.0	49.0	44.06	1.03	0.98	4.60
AR022A	49.0	51.0	44.52	1.36	0.38	3.91
AR022B	37.0	40.0	44.42	0.61	0.71	4.43
AR022B	40.0	43.0	43.44	1.92	1.48	3.77
AR022B	43.0	45.6	44.66	0.76	2.07	2.55
AR022B	45.6	48.8	43.40	2.47	0.82	4.23
AR022B	48.8	51.0	44.13	2.11	0.44	3.35
AR022B	51.0	51.6	45.85	0.51	0.54	2.38
AR022B	51.6	53.8	44.45	0.42	1.63	2.90
AR022B	53.8	55.0	44.50	0.56	0.70	5.29
AR022B	55.0	58.0	45.33	1.08	0.29	3.36
AR022B	58.0	61.0	45.84	1.02	0.40	2.47
AR022B	61.0	64.0	45.30	0.65	0.44	3.94
AR022B	64.0	67.0	45.76	0.47	0.64	2.32
AR022B	67.0	70.0	45.77	0.58	0.88	2.00
AR022B	70.0	73.0	44.59	1.06	0.59	3.91
AR022B	73.0	76.0	36.75	6.14	0.91	10.38
AR022B	76.0	79.0	31.62	14.61	1.13	7.53
AR022B	79.0	82.0	39.95	5.58	0.85	5.67
AR022B	82.0	85.0	46.12	0.58	0.34	2.88
AR022B	85.0	88.0	44.60	2.15	0.73	3.21
AR022B	88.0	91.0	45.31	1.23	1.43	1.50
AR022B	91.0	94.0	45.12	2.59	0.43	1.01
AR022B	94.0	97.0	44.99	2.09	0.60	1.29
AR022B	97.0	100.0	45.32	2.14	0.42	0.92
AR022B	100.0	103.0	45.21	1.10	0.60	2.64
AR022B	103.0	106.0	45.02	0.99	0.35	4.00
AR022B	106.0	109.0	45.85	0.60	0.28	3.07
AR022B	109.0	112.0	44.88	2.12	0.26	2.35
AR022B	112.0	115.0	45.78	1.40	0.23	2.27
AR022B	115.0	118.0	39.69	7.07	0.84	3.48
AR022B	118.0	121.0	45.70	0.87	0.24	3.83
AR022B	121.0	124.0	39.86	5.45	0.43	6.80
AR022B	124.0	127.0	31.17	8.60	0.73	19.02

ASSAYS FOR HOLE AR022A,B

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR022B	127.0	130.0	44.41	2.40	0.85	2.10
AR022B	130.0	133.0	33.22	14.09	1.55	2.95
AR022B	133.0	136.0	44.55	2.79	0.73	1.02
AR022B	136.0	139.0	46.48	1.54	0.52	-0.05
AR022B	139.0	142.0	43.37	5.14	0.58	-0.05
AR022B	142.0	145.0	40.42	7.64	0.99	0.57
AR022B	145.0	148.0	37.19	10.90	0.91	1.77
AR022B	148.0	151.0	37.43	11.84	0.72	-0.05
AR022B	151.0	154.0	37.42	10.96	1.53	0.86
AR022B	154.0	157.0	37.29	10.22	1.57	1.72
AR022B	157.0	160.0	45.10	2.32	0.92	0.30
AR022B	160.0	163.0	45.77	2.90	0.50	-0.05
AR022B	163.0	166.0	43.44	3.69	1.45	1.35
AR022B	166.0	168.6	46.60	0.34	1.14	0.34
AR022B	168.6	171.7	46.32	0.49	1.50	-0.05
AR022B	171.7	175.0	37.14	7.77	4.52	2.14
AR022B	175.0	178.0	13.04	5.86	29.61	11.96
AR022B	178.0	181.0	41.31	4.72	3.08	0.79
AR022B	181.0	184.0	43.90	2.80	1.45	0.53
AR022B	184.0	187.0	39.43	7.95	2.23	0.58
AR022B	187.0	190.0	40.90	5.24	2.23	2.00
AR022B	190.0	193.0	39.07	5.56	1.82	5.95
AR022B	193.0	196.0	39.47	5.94	1.29	5.33
AR022B	196.0	199.0	41.69	4.63	0.83	3.64
AR022B	199.0	202.0	41.16	5.19	0.91	3.86
AR022B	202.0	205.0	43.25	3.92	0.97	1.31
AR022B	205.0	208.0	35.69	11.19	1.64	3.01
AR022B	208.0	211.0	32.55	13.73	3.18	2.68
AR022B	211.0	214.0	27.24	10.54	5.68	15.36
AR022B	214.0	217.0	16.04	21.75	2.91	20.21
AR022B	217.0	220.0	14.55	19.65	3.08	24.59
AR022B	220.0	223.0	9.29	11.85	3.88	40.30

ASSAYS FOR HOLE AR023

490122

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR023	21.0	21.7	35.91	1.36	5.26	14.51
AR023	21.7	24.0	42.96	0.57	2.52	5.50
AR023	24.0	25.7	43.25	2.34	1.06	4.82
AR023	25.7	28.7	43.82	0.62	2.03	5.37
AR023	28.7	30.7	38.60	0.18	4.07	14.53
AR023	30.7	33.7	39.74	0.27	3.75	10.34
AR023	33.7	36.7	40.14	0.41	7.26	4.19
AR023	36.7	38.7	43.66	0.35	2.94	5.16
AR023	38.7	40.7	39.48	1.61	5.10	7.04
AR023	40.7	42.7	41.51	1.31	3.55	5.95
AR023	42.7	47.7	41.45	0.98	5.11	6.92
AR023	47.7	49.7	41.16	1.12	3.22	8.37
AR023	49.7	52.7	41.64	1.50	3.07	6.74
AR023	52.7	54.7	43.72	1.13	1.12	5.85
AR023	54.7	57.7	44.42	1.13	0.69	5.05
AR023	57.7	60.7	37.65	1.80	7.05	10.90
AR023	60.7	62.7	44.33	0.68	1.18	4.74
AR023	62.7	64.3	44.98	0.59	0.54	4.78
AR023	64.3	65.9	43.13	1.37	0.87	5.84
AR023	65.9	66.6	37.26	2.70	2.37	14.31
AR023	66.6	70.0	40.83	1.86	2.74	5.80
AR023	70.0	73.0	27.58	8.76	8.24	17.34
AR023	73.0	76.0	30.17	6.37	4.01	19.91
AR023	76.0	79.0	40.34	1.85	0.44	11.48
AR023	79.0	82.0	42.47	2.02	0.50	7.50
AR023	82.0	85.0	29.68	9.38	0.94	19.55
AR023	85.0	88.0	41.18	1.23	0.77	10.51
AR023	88.0	91.0	25.33	0.75	12.20	30.30
AR023	91.0	94.0	39.45	2.86	1.47	10.29
AR023	94.0	97.0	39.59	3.27	1.99	9.18
AR023	97.0	100.0	41.44	1.66	1.13	9.14
AR023	100.0	103.0	42.18	2.07	0.49	7.22
AR023	103.0	106.0	43.58	1.18	0.21	7.11
AR023	106.0	109.0	42.52	1.04	0.60	8.27
AR023	109.0	112.0	40.75	1.53	0.60	11.20
AR023	112.0	113.5	42.41	0.36	1.80	9.07
AR023	113.5	115.0	42.33	0.33	2.62	7.98
AR023	115.0	118.0	41.91	1.14	0.71	8.96
AR023	118.0	121.0	43.07	1.16	0.81	7.34
AR023	121.0	124.0	43.02	1.31	1.09	7.77
AR023	124.0	127.0	25.89	18.04	1.45	11.22
AR023	127.0	130.0	43.01	0.53	3.21	5.42
AR023	130.0	133.0	43.32	0.24	2.50	6.00
AR023	133.0	136.0	34.62	0.96	12.20	10.63
AR023	136.0	139.0	40.12	0.36	4.63	9.24
AR023	139.0	142.0	43.16	0.21	3.90	4.04
AR023	142.0	145.0	42.57	0.27	3.19	5.49
AR023	145.0	148.0	39.78	0.32	9.72	4.14

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR023	148.0	151.0	41.78	0.22	5.22	5.71
AR023	151.0	154.0	31.62	5.12	5.08	14.25
AR023	154.0	157.0	41.35	2.79	0.73	7.21
AR023	157.0	160.0	40.48	2.89	0.43	9.75
AR023	160.0	163.0	40.63	2.49	0.30	10.32
AR023	163.0	166.0	36.89	5.10	0.53	13.19
AR023	166.0	169.0	31.69	3.79	2.00	19.61
AR023	169.0	172.0	35.02	6.64	1.72	10.45
AR023	172.0	175.0	38.34	3.46	0.35	13.81
AR023	175.0	178.0	40.43	1.61	0.26	13.09
AR023	178.0	181.0	39.26	2.96	0.28	12.89
AR023	181.0	184.0	39.74	2.45	0.31	12.88
AR023	184.0	187.0	35.30	4.83	0.73	16.87
AR023	187.0	190.0	36.40	6.02	0.66	12.24
AR023	190.0	193.0	32.74	11.02	1.31	10.50
AR023	193.0	196.0	41.10	2.35	0.30	10.02
AR023	196.0	199.0	40.05	2.38	0.19	12.57
AR023	199.0	202.0	43.31	0.81	0.12	8.46
AR023	202.0	205.0	41.25	1.00	0.29	12.07
AR023	205.0	208.0	39.47	2.31	0.59	12.21
AR023	208.0	211.0	41.27	1.14	0.09	12.65
AR023	211.0	214.0	39.24	2.77	0.17	13.93
AR023	214.0	217.0	41.46	2.03	0.27	10.04
AR023	217.0	219.8	33.02	9.64	0.91	12.79
AR023	219.8	222.9	34.17	8.61	0.85	12.29
AR023	222.9	224.5	40.25	1.47	1.13	11.38
AR023	224.5	226.0	37.48	1.44	0.92	17.42
AR023	226.0	229.0	37.59	2.94	0.60	15.57
AR023	229.0	232.0	40.53	1.69	0.22	12.20
AR023	232.0	235.0	43.15	1.31	0.23	7.35
AR023	235.0	238.0	43.63	0.86	0.28	7.34
AR023	238.0	241.0	43.08	1.15	0.35	7.72
AR023	241.0	244.0	42.05	1.77	0.79	7.71
AR023	244.0	247.0	39.89	2.51	0.61	11.75
AR023	247.0	250.0	32.86	2.62	1.05	24.17
AR023	250.0	253.0	38.59	2.38	0.41	14.87
AR023	253.0	256.0	36.05	3.55	0.50	18.06
AR023	256.0	259.0	41.29	1.26	0.71	12.51
AR023	259.0	262.0	38.99	6.75	0.97	8.47
AR023	262.0	265.0	41.37	1.78	0.61	12.94
AR023	265.0	268.0	42.07	2.20	1.00	12.42
AR023	268.0	271.0	38.50	6.95	1.18	9.78
AR023	271.0	274.0	41.81	2.16	1.44	7.59
AR023	274.0	277.0	38.57	6.34	0.96	10.82
AR023	277.0	280.0	42.88	1.15	0.70	9.32
AR023	280.0	283.0	40.12	1.31	0.38	13.38
AR023	283.0	286.0	41.92	1.70	1.29	8.08
AR023	286.0	289.0	39.31	2.07	1.95	10.41

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR023	289.0	292.0	29.32	15.27	1.79	8.87
AR023	292.0	295.0	29.72	15.10	2.10	7.36
AR023	295.0	298.0	37.77	5.78	1.12	8.84
AR023	298.0	301.0	37.12	3.40	0.46	15.26
AR023	301.0	304.0	35.84	5.46	0.36	15.01
AR023	304.0	307.0	32.79	8.13	0.36	16.47
AR023	307.0	310.0	40.22	5.29	0.32	8.94
AR023	310.0	313.0	41.36	3.49	0.13	10.80
AR023	313.0	316.0	39.90	5.37	0.29	7.34
AR023	316.0	319.0	38.73	3.58	0.42	12.12
AR023	319.0	322.0	39.85	1.84	0.33	12.20
AR023	322.0	325.0	37.70	2.43	0.41	15.98
AR023	325.0	328.0	40.72	1.22	2.15	7.42
AR023	328.0	331.0	42.88	0.81	2.12	6.16
AR023	331.0	334.0	45.61	0.74	0.63	3.03
AR023	334.0	337.0	45.47	0.84	0.17	3.29
AR023	337.0	340.0	45.29	1.00	0.14	3.55
AR023	340.0	343.0	44.79	1.28	0.11	4.52
AR023	343.0	346.0	45.54	0.94	0.09	3.83
AR023	346.0	349.0	46.14	0.59	0.83	1.52

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR024	35.2	38.8	35.00	4.43	2.08	13.74
AR024	38.8	40.4	34.47	13.12	0.70	5.96
AR024	40.4	43.2	26.88	10.49	1.54	23.16
AR024	43.2	44.8	17.94	0.82	2.64	49.82
AR024	44.8	45.5	23.45	0.78	2.05	43.87
AR024	45.5	47.2	32.38	2.51	1.24	26.60
AR024	47.2	49.8	32.85	14.69	1.02	5.95
AR024	49.8	51.5	18.39	5.38	5.39	39.17
AR024	51.5	52.8	13.08	1.43	9.25	47.65

ASSAYS FOR HOLE AR026

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR026	16.0	17.5	42.74	0.19	0.63	9.44
AR026	17.5	19.1	42.25	0.91	0.29	9.86
AR026	19.1	20.0	41.12	0.97	0.36	11.27
AR026	20.0	21.8	43.02	0.18	0.74	8.59
AR026	21.8	23.4	42.59	0.22	0.40	9.45
AR026	23.4	24.3	41.80	0.35	0.40	11.09
AR026	24.3	25.1	44.18	0.32	0.70	5.83
AR026	25.1	26.4	43.93	0.20	0.60	6.97
AR026	26.4	28.1	43.28	1.85	0.51	5.33
AR026	28.1	29.0	44.79	0.43	0.72	4.51
AR026	29.0	30.6	44.72	0.68	0.51	4.65
AR026	30.6	34.3	44.86	2.33	0.64	2.00
AR026	34.3	36.2	43.46	0.66	0.97	6.24
AR026	36.2	37.6	44.57	1.23	1.38	2.94
AR026	37.6	39.7	41.77	1.13	1.64	8.33
AR026	39.7	41.1	41.58	0.71	1.94	8.78
AR026	41.1	43.4	42.17	0.13	1.82	8.16
AR026	43.4	44.4	43.91	0.25	1.12	5.79
AR026	44.4	46.2	41.93	1.26	1.58	7.32
AR026	46.2	48.2	41.89	2.21	1.34	5.69
AR026	48.2	50.1	42.51	1.45	0.87	7.52
AR026	50.1	51.6	43.33	1.43	0.42	6.28
AR026	51.6	54.1	31.79	0.93	1.73	28.65
AR026	54.1	55.5	45.69	0.62	0.83	2.19
AR026	55.5	57.4	45.30	0.79	0.54	3.34
AR026	57.4	58.2	45.07	0.71	0.72	3.66
AR026	58.2	61.4	44.30	1.15	0.88	4.46
AR026	61.4	62.9	44.35	1.25	0.66	4.02
AR026	62.9	64.4	43.63	3.14	0.67	2.54
AR026	64.4	65.6	43.45	2.63	0.97	2.87
AR026	65.6	67.4	40.98	6.18	1.24	1.85
AR026	67.4	68.6	40.47	6.20	1.29	2.48
AR026	68.6	71.0	38.15	9.51	1.13	1.73
AR026	71.0	72.5	44.57	1.17	1.07	3.73
AR026	72.5	76.0	32.56	2.38	7.38	17.63
AR026	76.0	77.6	44.79	3.39	0.53	0.12
AR026	77.6	79.1	38.68	4.12	1.24	8.32
AR026	79.1	80.6	41.52	6.50	0.81	1.07
AR026	80.6	82.1	43.21	4.39	0.53	0.53
AR026	82.1	83.6	43.80	4.11	0.42	0.44
AR026	83.6	85.1	38.24	10.46	0.65	1.05
AR026	85.1	86.6	36.31	10.79	1.27	2.19
AR026	86.6	88.7	37.14	11.04	1.14	0.95
AR026	88.7	90.2	34.81	8.79	3.56	6.42
AR026	90.2	92.0	40.44	6.72	0.75	2.87
AR026	92.0	93.7	40.22	7.53	0.59	1.50
AR026	93.7	95.1	36.13	12.89	0.84	1.05
AR026	95.1	96.7	41.26	6.60	0.54	1.56

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR026	96.7	98.2	43.89	2.28	0.68	3.22
AR026	98.2	99.8	42.65	3.63	0.64	4.08
AR026	99.8	101.3	41.62	3.96	0.96	4.76
AR026	101.3	103.0	35.64	7.48	1.42	7.08
AR026	103.0	104.6	40.47	7.65	1.23	1.32
AR026	104.6	106.1	42.10	5.01	1.01	2.75
AR026	106.1	107.6	45.15	1.46	0.30	2.86
AR026	107.6	109.1	45.91	1.95	0.29	0.61
AR026	109.1	110.6	45.94	1.23	0.14	2.46
AR026	110.6	112.1	45.54	2.26	0.24	0.94
AR026	112.1	113.6	44.29	2.67	0.77	2.14
AR026	113.6	115.1	44.07	0.81	0.73	5.72
AR026	115.1	116.6	45.01	1.55	0.28	3.53
AR026	116.6	118.1	42.21	3.47	0.73	5.23
AR026	118.1	119.6	45.00	1.02	0.28	4.71
AR026	119.6	121.1	44.66	1.47	0.14	4.80
AR026	121.1	122.6	47.11	0.82	0.09	1.01
AR026	122.6	124.1	45.77	1.55	0.19	2.37
AR026	124.1	125.6	41.85	0.81	0.21	11.82
AR026	125.6	127.1	43.81	1.11	0.22	6.95
AR026	127.1	128.6	44.98	0.96	0.31	4.92
AR026	128.6	130.1	41.52	3.88	0.31	6.22
AR026	130.1	131.6	43.16	2.45	0.28	6.14
AR026	131.6	133.1	44.96	0.92	0.11	5.07
AR026	133.1	134.6	44.28	2.81	0.17	2.63
AR026	134.6	136.1	44.71	0.98	0.16	4.98
AR026	136.1	137.6	45.44	1.27	0.32	2.80
AR026	137.6	139.1	44.32	1.92	0.34	3.71
AR026	139.1	140.6	43.13	2.71	0.28	4.84
AR026	140.6	142.1	30.57	10.54	0.69	16.57
AR026	142.1	143.6	41.16	4.52	0.78	4.96
AR026	143.6	145.1	40.51	5.41	1.04	3.87
AR026	145.1	146.6	42.13	0.87	1.31	8.79
AR026	146.6	148.1	44.35	0.70	0.59	5.65
AR026	148.1	149.6	40.85	1.13	1.24	10.60
AR026	149.6	151.1	39.81	4.26	0.97	7.15
AR026	151.1	152.6	43.45	1.88	0.39	5.13
AR026	152.6	154.1	41.48	3.07	0.48	6.81
AR026	154.1	155.6	45.00	0.83	0.83	2.72
AR026	155.6	157.1	42.18	4.94	1.10	1.30
AR026	157.1	158.6	42.74	1.77	1.14	7.60
AR026	158.6	160.1	42.44	2.14	1.29	8.21
AR026	160.1	161.6	38.77	5.27	1.27	11.98
AR026	161.6	163.1	38.83	1.67	1.18	14.12
AR026	163.1	164.6	36.61	2.34	0.68	17.72
AR026	164.6	166.1	40.00	0.75	1.16	12.93
AR026	166.1	167.6	42.19	0.98	0.20	9.95
AR026	167.6	169.1	40.63	0.98	0.42	12.83

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR026	239.6	241.1	43.62	0.76	1.52	9.32
AR026	241.1	242.6	39.78	4.77	1.43	10.59
AR026	242.6	244.1	41.29	3.77	1.68	4.37
AR026	244.1	245.6	40.57	3.92	1.86	5.81
AR026	245.6	247.1	37.53	7.83	1.45	7.61
AR026	247.1	248.6	40.39	4.03	1.71	5.68
AR026	248.6	250.1	42.24	2.80	1.60	4.36
AR026	250.1	251.6	44.06	1.95	1.51	2.33
AR026	251.6	253.1	39.50	6.87	1.31	3.57
AR026	253.1	254.6	42.06	3.62	1.17	4.68
AR026	254.6	256.1	41.47	2.04	1.56	6.34
AR026	256.1	257.6	42.36	0.93	0.78	8.75
AR026	257.6	259.1	42.78	0.86	0.52	7.84
AR026	259.1	260.6	42.51	1.93	0.48	6.59

HOLE_ID	FROM	TO	MgO%	CaO%	Fe2O3%	SiO2%
AR026	169.1	170.6	40.77	0.89	0.17	12.77
AR026	170.6	172.1	40.07	1.05	0.22	13.78
AR026	172.1	173.6	41.70	0.99	0.22	10.45
AR026	173.6	175.1	43.71	1.44	0.21	5.71
AR026	175.1	176.6	39.33	0.91	0.15	16.14
AR026	176.6	178.1	41.07	1.04	0.09	12.28
AR026	178.1	179.6	38.62	1.56	0.08	16.79
AR026	179.6	181.1	40.70	1.38	0.05	13.23
AR026	181.1	182.6	42.12	1.81	0.12	9.22
AR026	182.6	184.1	43.30	1.11	0.08	7.79
AR026	184.1	185.4	39.75	3.59	0.36	9.97
AR026	185.4	187.0	43.02	1.29	0.54	6.81
AR026	187.0	188.6	38.84	2.49	0.59	13.36
AR026	188.6	190.1	38.98	1.88	0.44	14.21
AR026	190.1	190.8	40.87	2.01	0.30	10.78
AR026	190.8	191.6	30.99	2.41	0.89	27.74
AR026	191.6	193.1	34.60	3.25	0.61	19.32
AR026	193.1	194.6	40.22	1.79	0.14	12.93
AR026	194.6	196.1	37.59	5.84	0.58	11.14
AR026	196.1	197.6	43.31	0.82	0.35	6.89
AR026	197.6	199.1	42.79	1.10	0.31	7.65
AR026	199.1	200.6	41.77	0.90	0.36	9.97
AR026	200.6	202.1	38.56	1.50	0.90	13.38
AR026	202.1	203.6	41.62	1.40	0.53	9.84
AR026	203.6	205.1	41.58	1.74	0.19	10.53
AR026	205.1	206.6	42.83	1.77	0.20	7.84
AR026	206.6	208.1	42.70	0.82	0.55	9.46
AR026	208.1	209.6	43.78	1.09	0.61	6.57
AR026	209.6	211.1	43.72	2.64	0.59	5.44
AR026	211.1	212.6	37.62	7.97	0.74	8.94
AR026	212.6	214.1	35.70	7.33	1.26	10.39
AR026	214.1	215.6	38.00	2.58	1.17	14.17
AR026	215.6	217.1	38.30	3.97	1.20	14.28
AR026	217.1	218.6	44.21	1.03	1.11	6.52
AR026	218.6	220.1	44.50	1.29	0.69	5.58
AR026	220.1	221.6	44.44	1.05	0.66	5.06
AR026	221.6	223.1	43.13	1.66	1.33	5.67
AR026	223.1	224.6	35.21	5.56	0.86	14.82
AR026	224.6	226.1	39.98	1.69	0.48	13.36
AR026	226.1	227.6	40.51	0.78	0.72	14.29
AR026	227.6	229.1	36.50	0.72	0.56	22.92
AR026	229.1	230.6	40.61	1.15	0.34	12.93
AR026	230.6	232.1	40.03	0.70	0.34	15.40
AR026	232.1	233.6	43.45	0.38	0.97	11.15
AR026	233.6	235.1	42.06	1.32	1.44	13.35
AR026	235.1	236.6	29.22	17.78	2.08	5.49
AR026	236.6	238.1	38.35	7.82	2.02	5.18
AR026	238.1	239.6	42.58	1.88	1.63	7.63

VOLUME 2

ARTHUR RIVER MAGNESITE PROJECT

RL 8718

WEST TAKONE – NORTHWESTERN TASMANIA

ANNUAL REPORT
1998 - 1999

Crest Magnesium NL
Level 1/11 Ventnor Avenue
West Perth – WESTERN AUSTRALIA

APPENDIX 3

AR 13

490133

AR 13

3.30m

DECOMPOSED HANGING WALL ROCK.
IRON STAINED CLAYS

54.2m

AR 13 490134

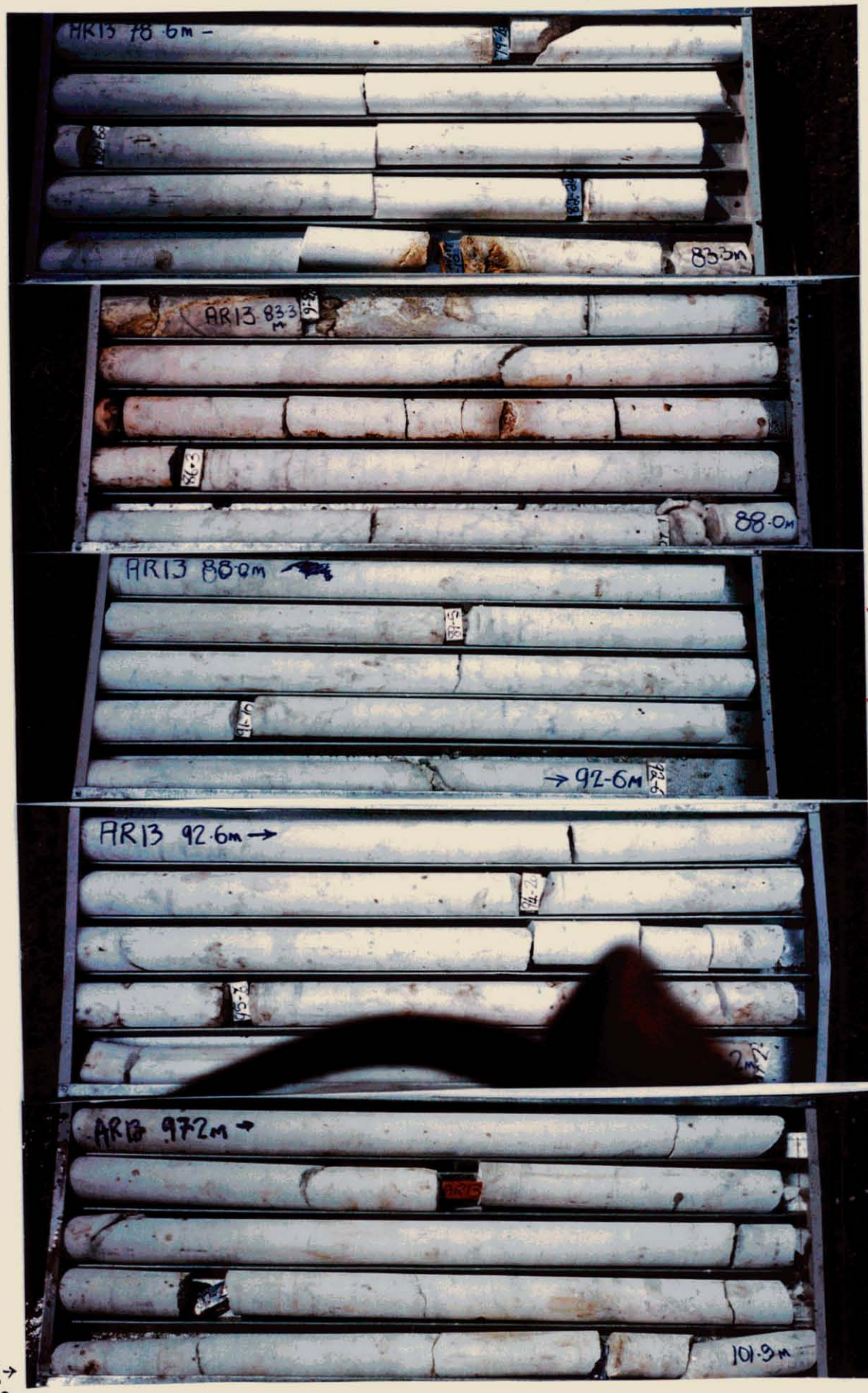
54.2m

78.6m

490135

AR 13

78.6m



47.3%

HIGH GRADE

38% → MgO

101.3 m

AR 13

490136

101·9m

HIGH GRADE

35% 1·6m MgO, 1·4 S 12·8% C

HIGH GRADE

32·5% MgC 3m 1·4% S 15·5% Ca

124·9m

490137

AR 13

124.9m

HIGH GRADE

27% 1.6m MgO, 0.6% SiO 23.6%

HIGH GRADE

148.0m

490138

AR 13

148.0m

HIGH GRADE

↑

Av.
28% MgO
14% SiO_2
13% CaO

170.9m

AR 13

490139

170·9m

204·3m

EDH

AR 14

490141

AR 14

18·7 m

35·5 % MgO
2·5m
5·4% SiO2
12·0% CaC

35·5 % MgO
1·5m
8·4% SiO2
11·3% CaC

38% Mg
1·5m
8·1% SiO
8·60% Ca

35.4m

AR 14

490142

35·4m

58.5m

AR 14

490143

58.5m

38.75% MgO
16.55% SiO
0.92% CaO

2.9m
38.6% MgO
11.5% SiO2
4.3% CaO

94.2m

AR 14

490144

94.2m

DOLERITE DYKE DIP, STRI AND THI UNKNOV

116.5m

AR 14

490145

116.5m

DOLERITE DYKE

124.1m EOH.

AR 15

AR 15

490147

13.1m

18.7m
18.7 - 23.5
39.3% MgO
10.7% SiO2
0.2% CaO

23.5m
LOW GRADE 6%
25.1m

39.8% MgO
9.2% SiO
0.2% CaO

37.9m

AR 15

490148

37.9m

39·8% Mg

41·1m

LOW

45·7m

GRADE

NO

ASSAYS

(RANDOM

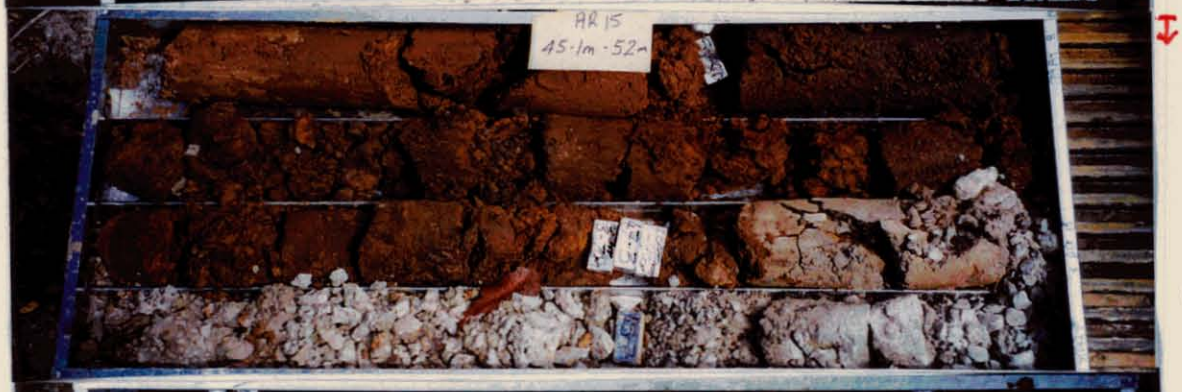
CHECK

ASSAYS

SHOW

NO

GRADE



63.6m

AR 15

490149

START OF CORING

63.6 m

42·5% MgO
3·1% SiO2
1% CaO

73.0m

39% MgO.
6·84% SiO2
5·52% CaO

84·2m

AR 15

490150

84.2m

26.7% Mg
6.0% Si
20.4% C

37.9% M
4.7% Gr
7.5% Ca

100.2

LOW GRADE

32% M

103.2

39% M
5.8
5.9

106.
F.V
Shs

107.6m

EOH

AR 16

AR 16

490152

15.40m

LOW GR
19m 29·
29·7
16·8 1·4

19m
44·41
1·8 <
0·32

27·5
?
NO
ASSA
(CAVITY
FILL
32m

35·
3M
LOW
GRAI
25·2%
8·63%
14·1%
38·8m

43.0m

AR 16

490153

43.0m

63·9m

AR 16 490154

63.9m

87.2m

AR16

490155

87.2m

110.9 m

AR 16

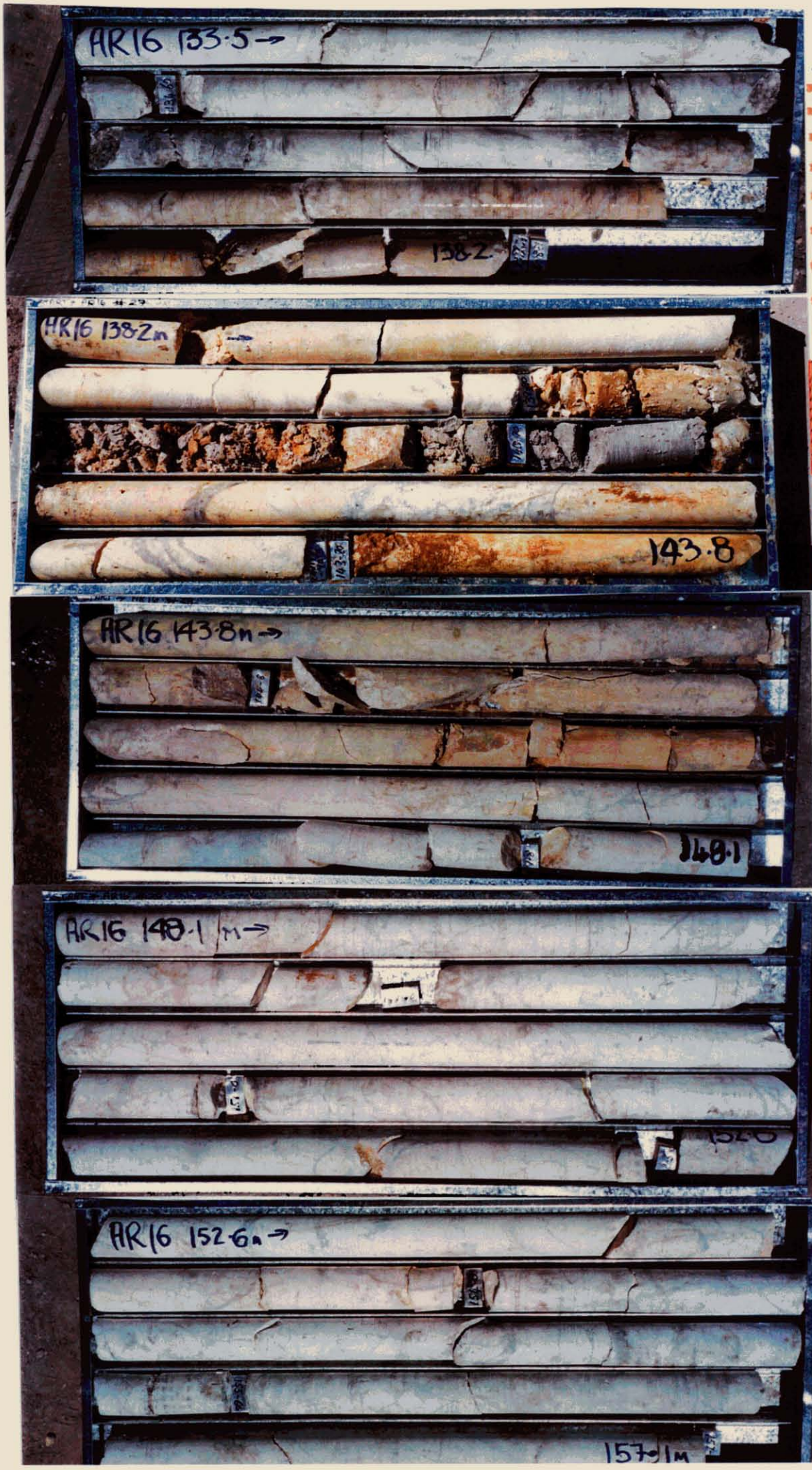
490156

110.9m

133.5m

AR 16 490157

133.5m



ON EITHER SIDE
38% MgO
11% SiO2
3.9% Ca
0.9m
LOW GRADE
21.3 MgO
37.6 SiO2
8.7 % Ca
38% Mg
8% Si
3.8% C

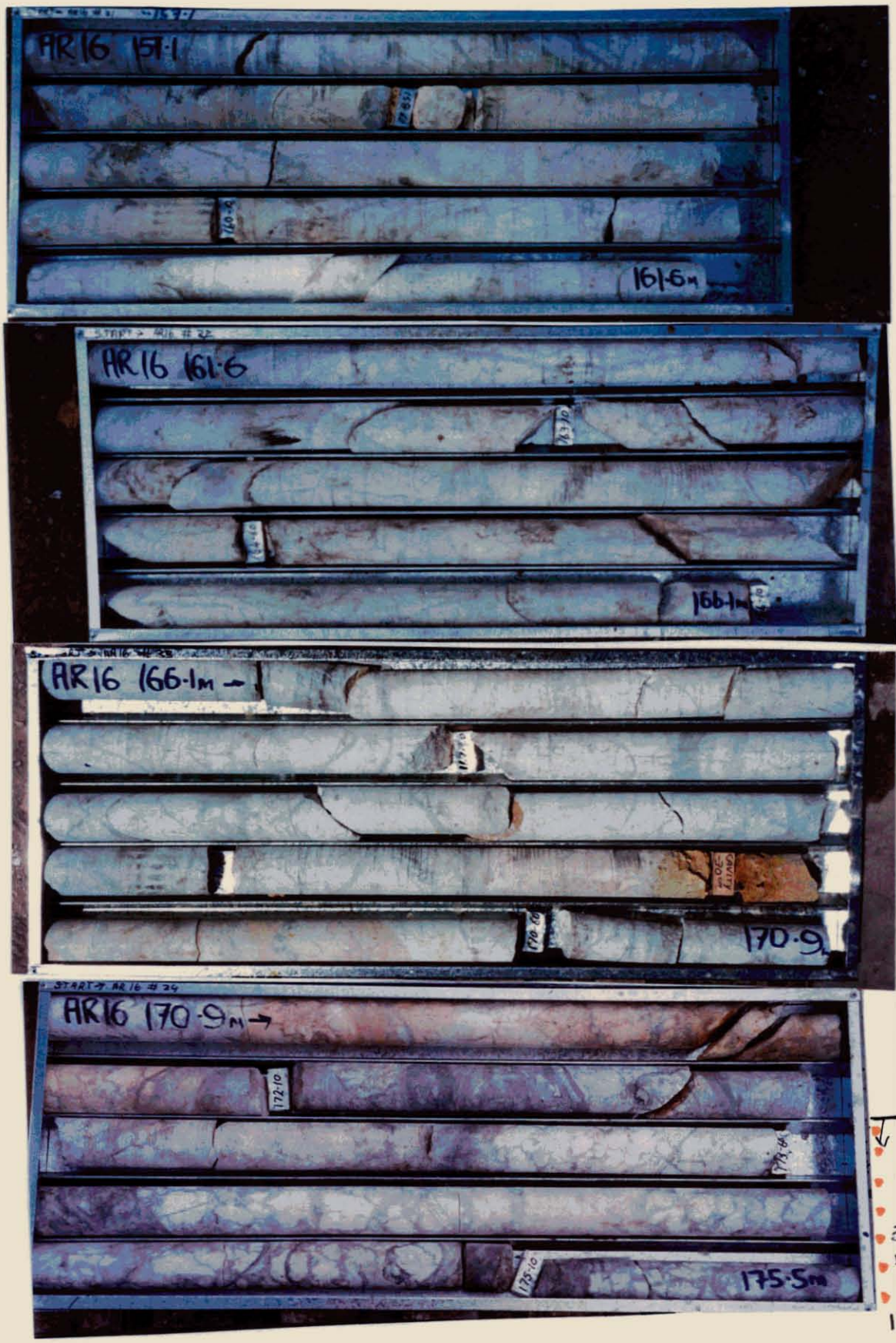
SMALL CAVITY →

157.1m

AR 16

490158

157.1m



173·6
4·5m
LOWER G1
ZONE

36·1% MgO
18·4% SiO
3·1% CaO

175·5m

HK 16

490159

175·5 M

178·1

194·6

LOWER GRADE ZO
12m ?
37·8% Mgi
17·1% Sii
2·2% Cal

198·6m

AR16

490160

198.6m

221.7m

AR 16 490161

221·7m

224·5
LOW GRADE
28 % MSS
18·5% SIO
225·1

244·3m

AR16

490162

244.3m

262.8m

AR 16

490163

262.8

278.6 m
E.O.H.

AR 17

AR 17.

490165

17.1m

NO ASSAYS BEFORE 23.8m

23.8m
35.00 MgO
20.13 SiO2
0.22 CaO
25.4

11.2m

40.7% MgO
8.7% SiO2
0.5% CaO

36.6m
8m
LOW GRADE ZONE
31.2% MgO
22.5% SiO2
0.3 % CaO

44.6
44.8
LOW GRADE
3.2m
27.6 MgO
34.6 SiO2
0.4 CaO

48.0m
CAVITY
NO ASSA
50.4m
3.2m
38% MgO
12.6 SiO2
0.4 CaO
53.6m

LOW GRADE ZONE
12.5m
21.2 MgO
14.6 SiO2
20.6 CaO

HIGH GI

59.0m

AR17

490166

59.0m

HIGH CaO
20.6%

66.1

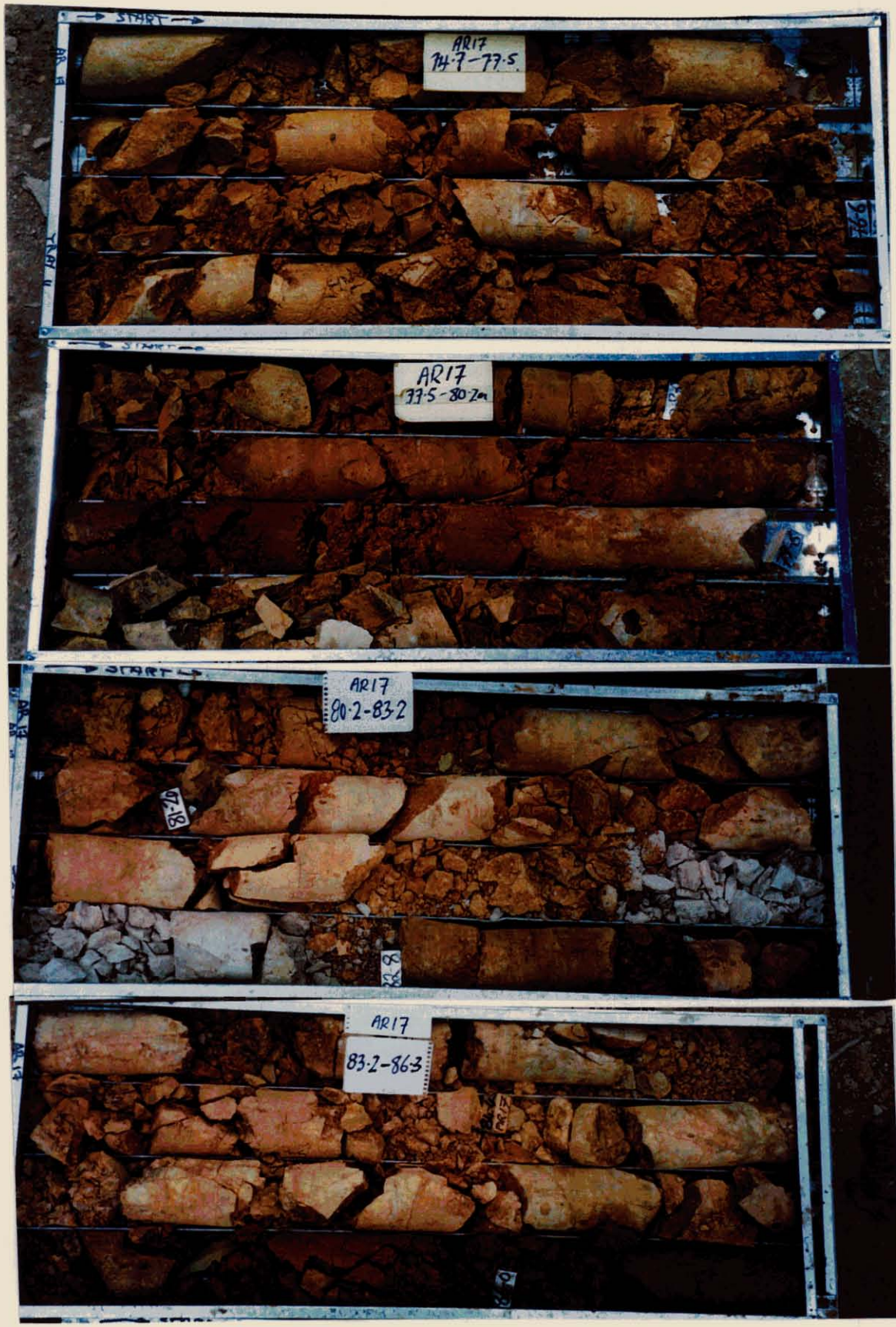
19.9m
High grade
Zone
42.5 MgO
3.0 SiO_2
1.3 CaO

74.7m

AR17

490167

74.7m



High Gr
+42%
mg
Low Ca
1·3%

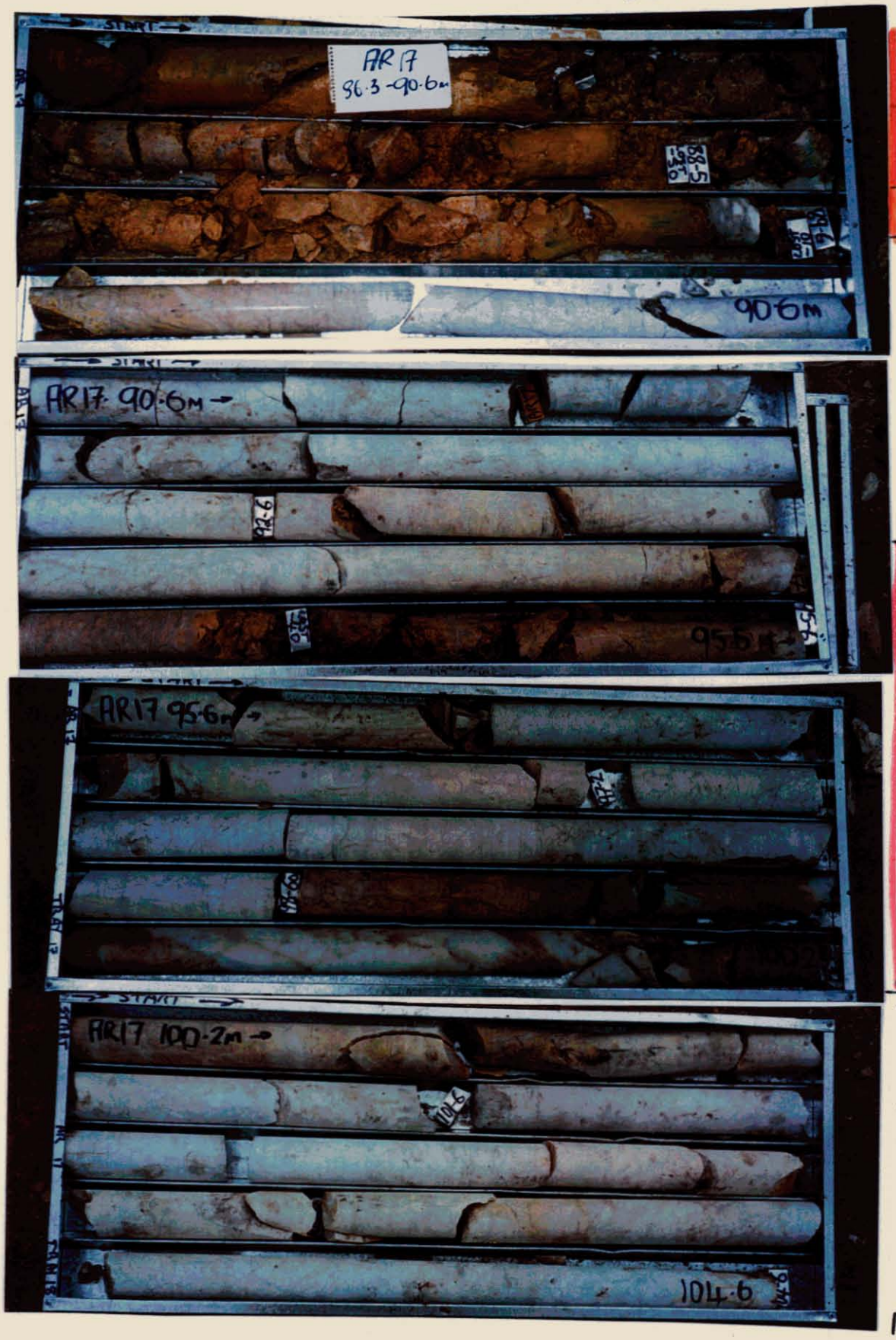
86m

86.3m

2·5m

AR17 490168

86.3m



2.5m
23.4
11.8
12.C
HIGH
89.
+12
MgO
3% C
1.5%S
94
LOW G
5.8m
31.1
2.5S
16.7%
HIGH
100.
HIGH
7.4m
43.3
0.7S
3.6% C

104.6m

AR17

490169

104.6m

126·8

AR 17 490170

126·8m

13% HIGH CaO
127·2
131·6
9m
6·1% CaO
39·7 Mg
3% S
HIGHEST CaO
140·6
148·8m

AR 17. 490171

148.8m

1.5m 38% r

155.6

HIGH CaO

36.% n
4 % Si
10% C
9m

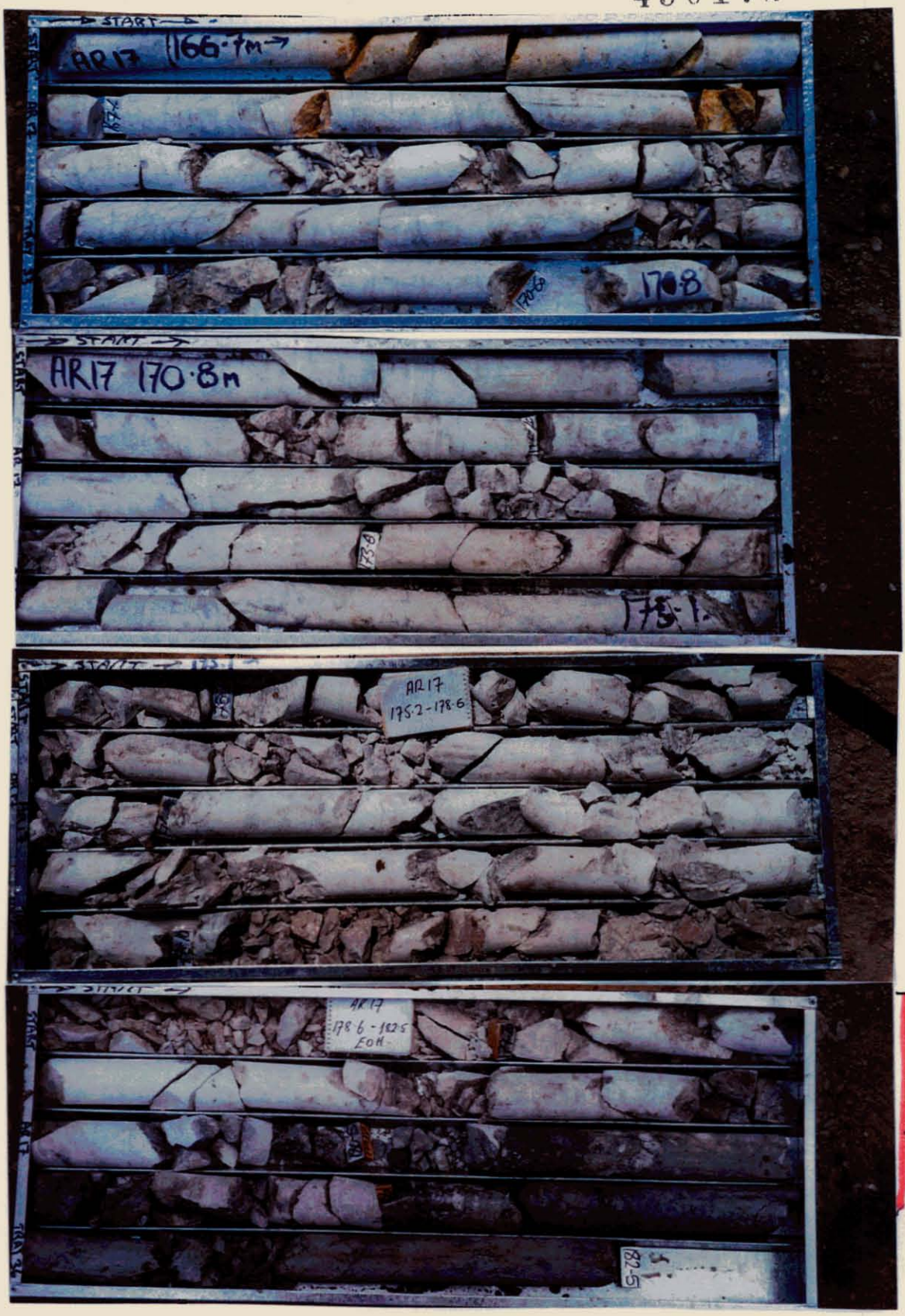
164.6

166.7m

AR17

490172

166·7m



179·2m

2·3m

HIGH Ca

37·6 Mg

1·3 Si

10% CaS

180·5

FW PYR

Rocks

15% SiO_2

182·5

E.O.H

AR 18

490174

AR 18

12.0m

High Gr
43.2%
3.8%
1:0.12 (

22m

LOW GRA
29.25
10.74
0.32

32m

HIGH GRA
43.7 M

34.0m

AR 18

490175

34.0m

HIGH
A3·

58·5m

490176

AR18

58.5m

82m

AR18

490177

82m

Fe Stained

HIGH GR

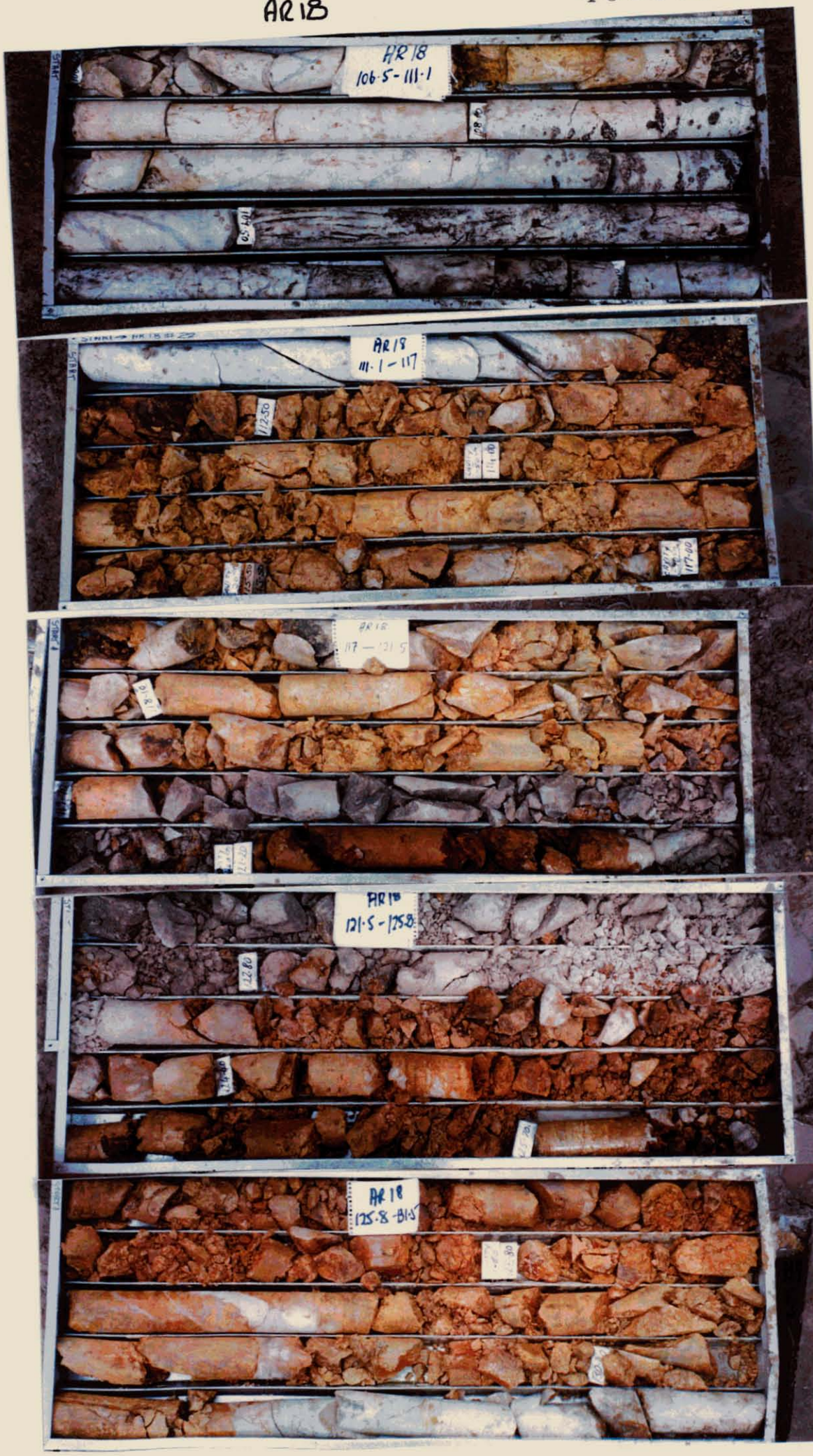
A357 V

106.5m

490178

AR18

106.5m

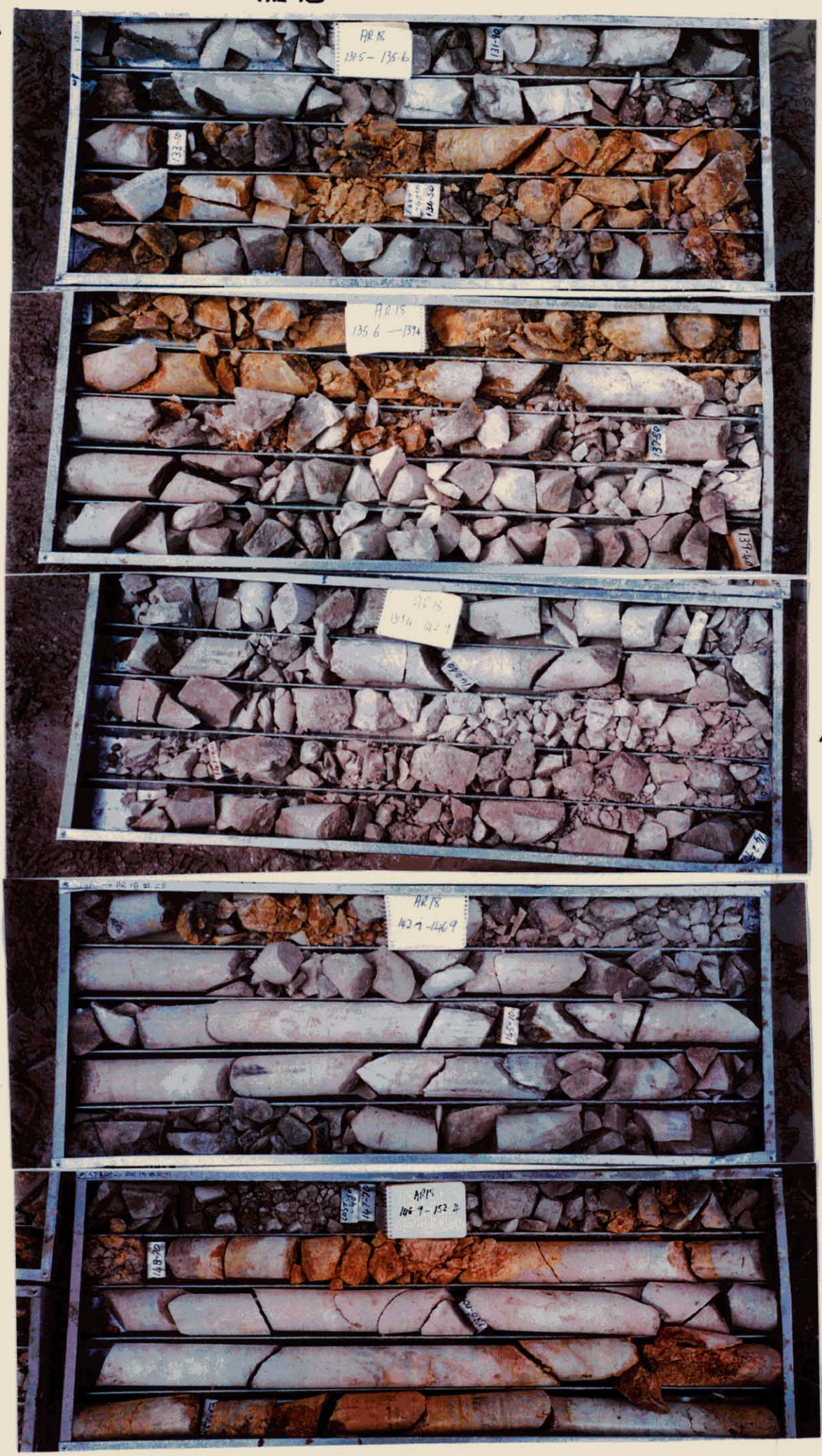


131.5m

AR 18

490179

131.5m



HIGH GR
43.7 MJ

152.4m

490180

AR18

152.4m

175.5m

AR18

490181

175.5m

198.1m

AR18

490182

198.1m

221.5m

AR18 490183

221.5m

222.5
High Ca
36.5% Mg
1.3% SiO
12% Ca
225m
7.5% Ca

239.
FW
SILTSTON

244.5m
E.O.H.

490184

AR 19

AR 19. 490185

17.0m

18-53

39·2m

AR19

490186

39.2m

55.6m
LOW GR
8.3m
19% MgC
23% SiC
15% CaC
HIGH G

59.9m

AR19

490187

59.9m

77.4m

AR19

490188

77.4M

Magn: Zon

44.4°/1

90

FW

ROCK

NO

GRAI

97.0M

AR 19 490189

97.0m

FOR NP

RO

NO

GR

118.0m

AR19 490190

118.0m

FN ROCK NO GRADE

120.4m EOH.

AR 20

AR 20

490192

18.2 m

HANGING WALL ROCK

NO

GRADE

41.0m

AR20

41.0m

HANGING WALL ROCK NO GRADE

57.7m

AR 20 490194

57.7m

43.6 MgO
5.2 SiO_2
58.6
NO ASSAYS
CAVITY FILL
61.4-61.7 .19% CaO
44.8 MgO
3.1 % SiO_2
63.7m
LOW GRADE
8.3m
30% MgO
8.4 SiO_2
12 % CaO
HIGH CaO
72m
76.0m
32.5 MgO
79.0

89.1m

490195

AR 20

89.1 m

117.5m

AR 20

490196

117.5 m

139·5m

AR 20

490197

139.5m

ALL MED TO HIGH GRADE + 4Z%

43% MgO!

163.2m

AR 20

490198

163.2m

188.1m

AR 20

490199

188.1m

212.6m

AR 20

490200

212.6m

231.6m

AR 20

490201

231.6 m

252.7m

AR 20

490202

252.7m

256.0m
EOH.

AR 21

490204

AR 21.

14.5m

44.8m.

AR 21.

490205

44.8m

60.8 m

High CaO
8%

66.8 m

67.4m

AR 21

490206

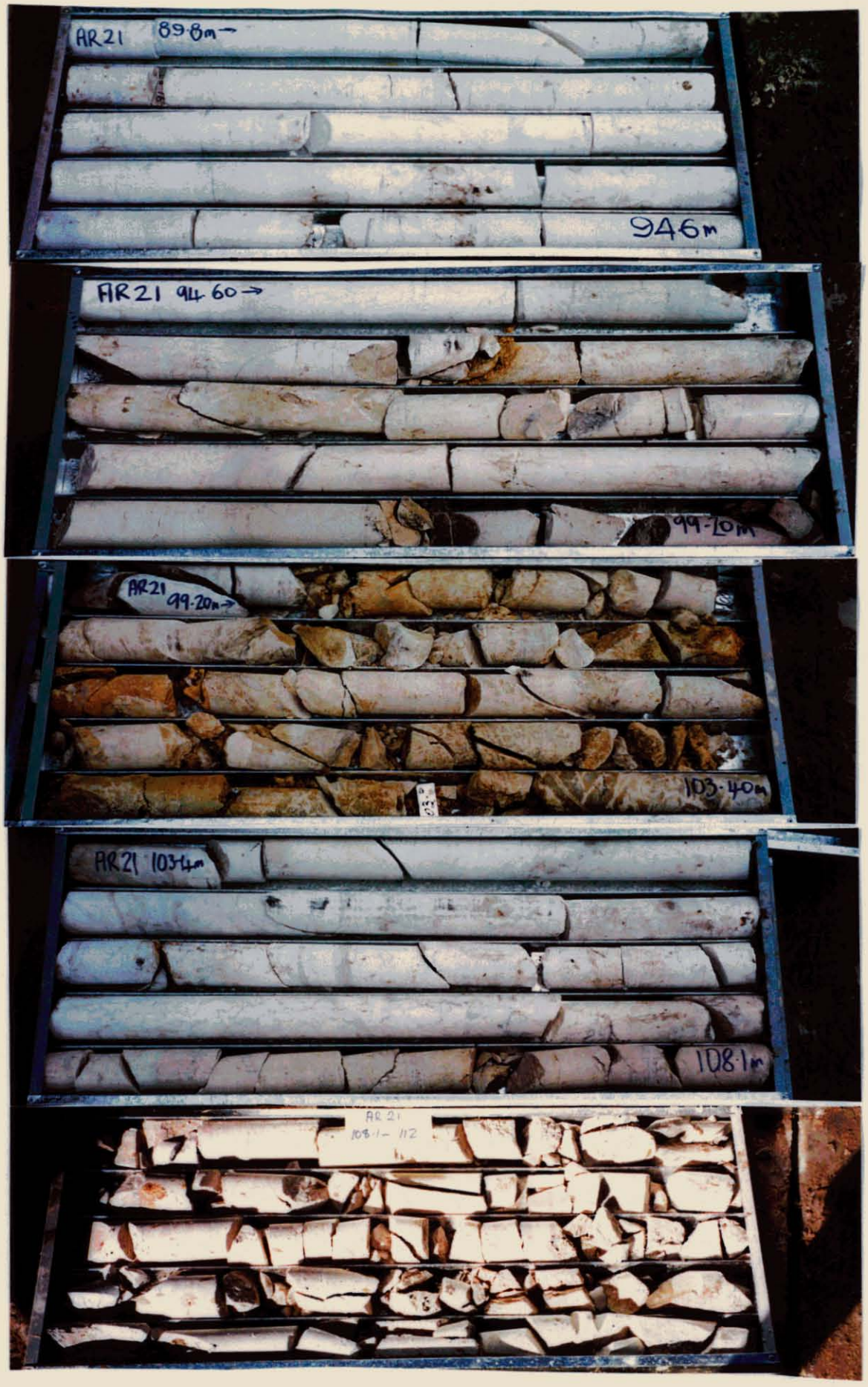
67.4m

89.8m

AR21

490207

89.8m



112.0m

AR 21

490208

112m

130.0m

AR 21

130.0m

490209

150.8m

AR 21.

490210

150.8m

155.8

5.6m
High G

42% 1
40.5 %
5.5%

161.4

168.8m

33.2m
HIGH G
10%

172.5m

AR 21.

490211

172.5m

HIGH
CaO
10%

195.0

AR 21.

490212

195.0m

HIGH CaO 10%

202

FW & LOW GRADE DOLOMITE MAGNE

20.7%
26%S
13.7%

214.0
EOH

AR 22

AR 22

490214

19.7m

33.8m EOH

HOLE ABANDONED
RESTARTED AS 22A.

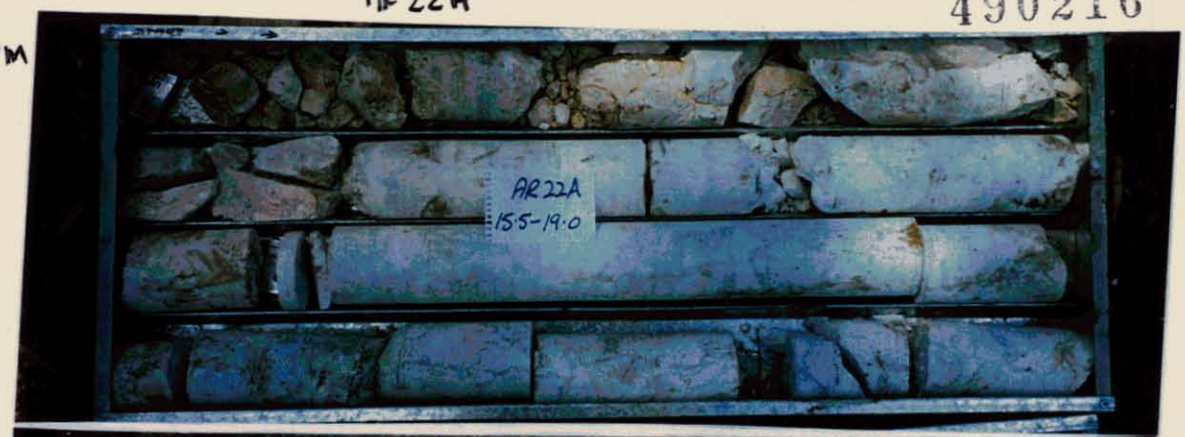
490215

AR 22A & AR 22 B

AR22A

490216

15.5m



22.9-28.7
34.5% MgO
12.9% SiO_2
0.93% CaC

CLOSE UP

37.6m

AR 22 A.

490217

37.6m

51.0m

(HOLE ABANDONED)
WENT OFF LINE.

AR 22 B. (RESTARTED PART WAY DOWN AR 22A)

37.0m

46.8m

AR 22 B. 490218

46·8m

65·6m

AR 22 B

490219

65·6m

44·6% m.

73m

HIGH CaC

92% CaC

82m

46·12% MS

87.4m

AR 22 B

490220

87.4m

109·2m

AR 22B.

490221

109·2m

45% MS

121

31·2 % MgO
19·0 % SiO₂
8·6 % CaO

127

44% MgO

130

130·8m

AR22B 490222

130.8m

35.2m
3½S
14.1%

133

139m

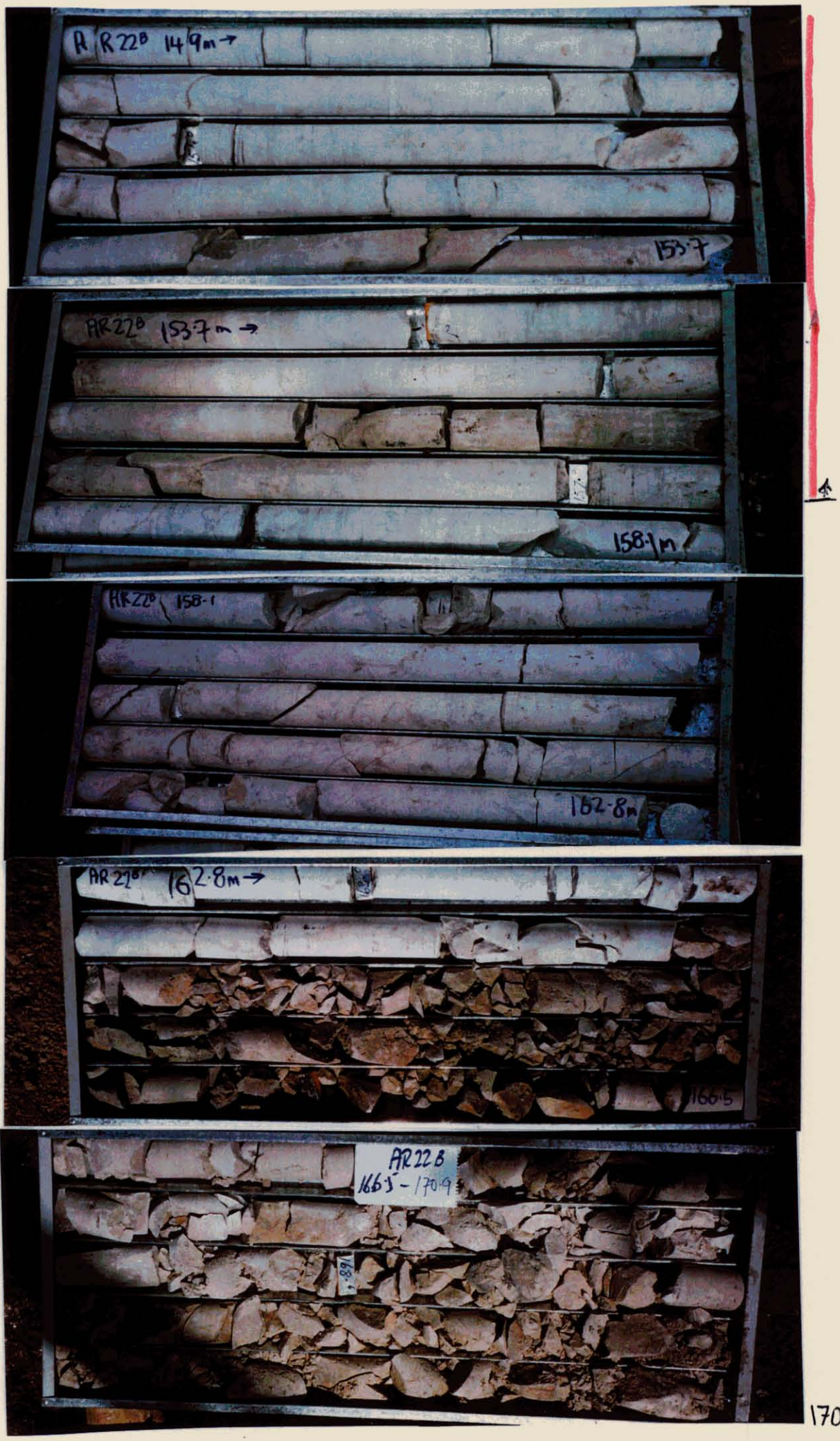
HIGH CaO

149.0m

490223

AR 22 B

149.0m



170.7m

AR 22 B

490224

170·7m

170·7

6·3m

Pyritic dolomitic zone

1% Fe_2S

7% CaO

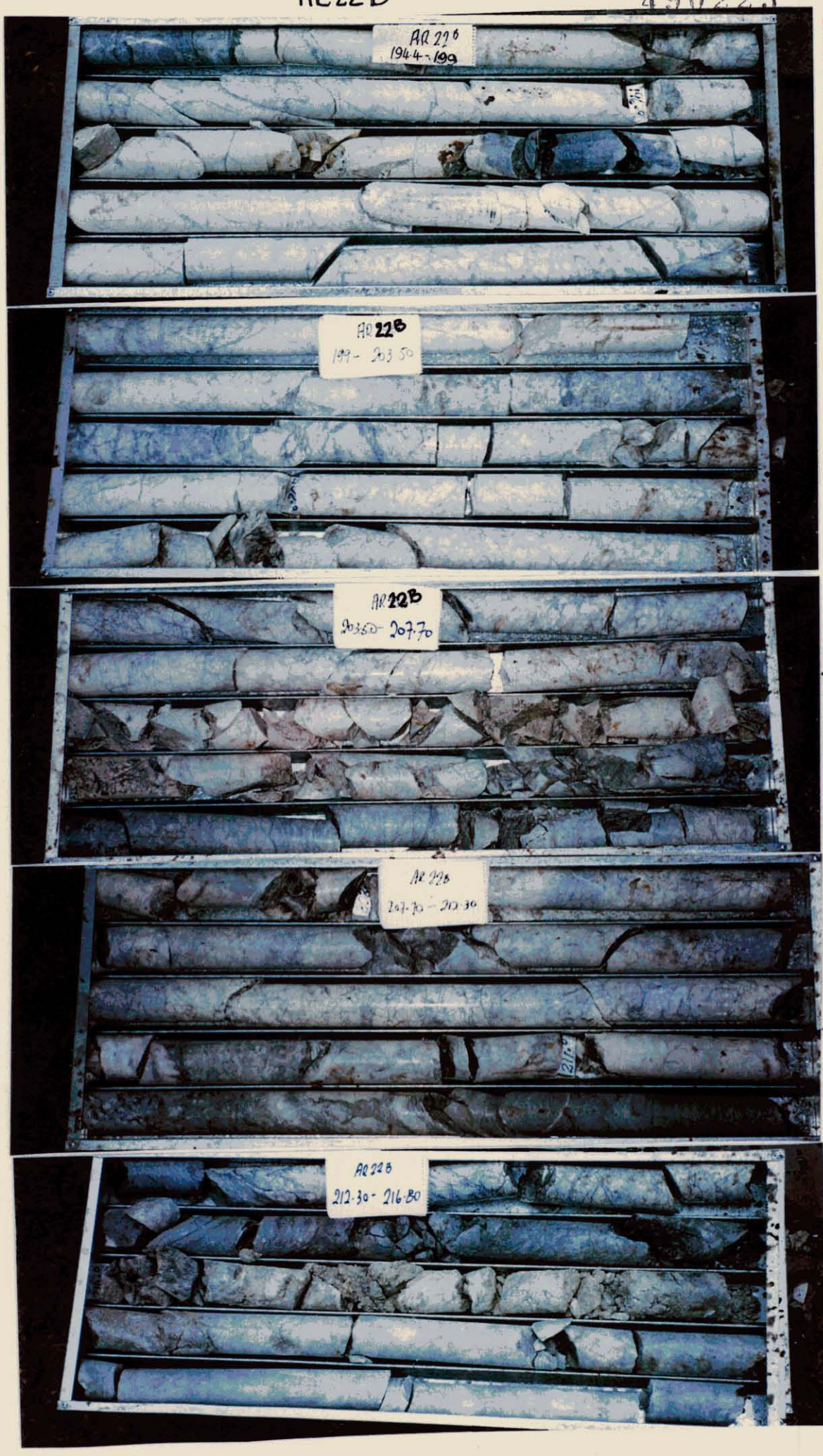
178

194·4m

AR22B

490225

194.4m



12.2 Ca

205 ↓ END OF RB

Low GR MAG

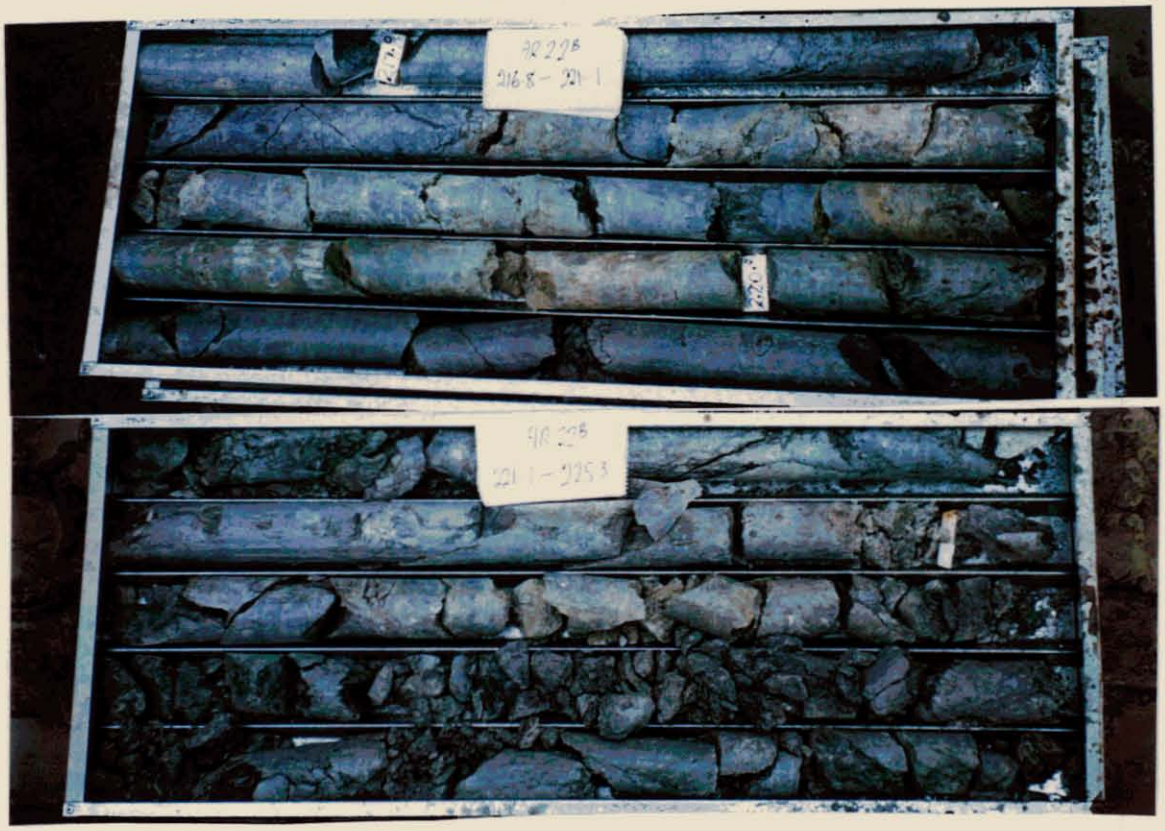
211

216.8m

AR 22B

490226

216·8m



225·3m
EOH.

AR 23

AR 23 490228

21m

43·1m

AR 23

490229

43.1m

70.0m

AR23

490230

70.0m

110.0m

AR 23

490231

110.0m

143·2m

AR 23

490232

143.2m

168.7m

AR 23.

490233

168.7m

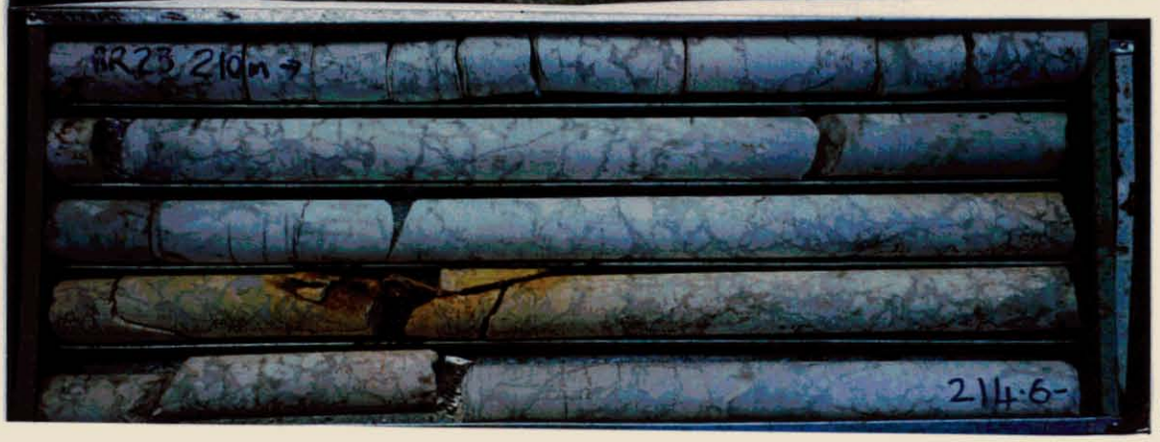
191.8m

AR 23

490234

191.8m

EDGE
LEASE
EL87



214.6m

AR 23

490235

214·6m

217·

High Ca

LOWER GRADE ZONE

33·5% Mg
12·5% Si
9% Ca

222·9m

226

LOWER GRADE Zo

37·59% Mg
15·6% Si
2·9% Ca

229

237·6m

AR23.

490236

237.6m

247

LOWER GRADE ZONE
35.8'
19%
2.8%

NO OBV. VISUAL O.

25

41.9 M.
12.5°
1.3°

261.3m

AR23.

490237.

261·3m

284·8m

AR23

490238

284.8m

Lower crush zone

3½% N

12% Si

97 G

308.0m

AR23

490239

3080

329·5m

AR 23.

490240

329.5m

VERY HIGH GRADE Zn
>15% Zn
>3% S
<10% Ca

349.0m
EOH.

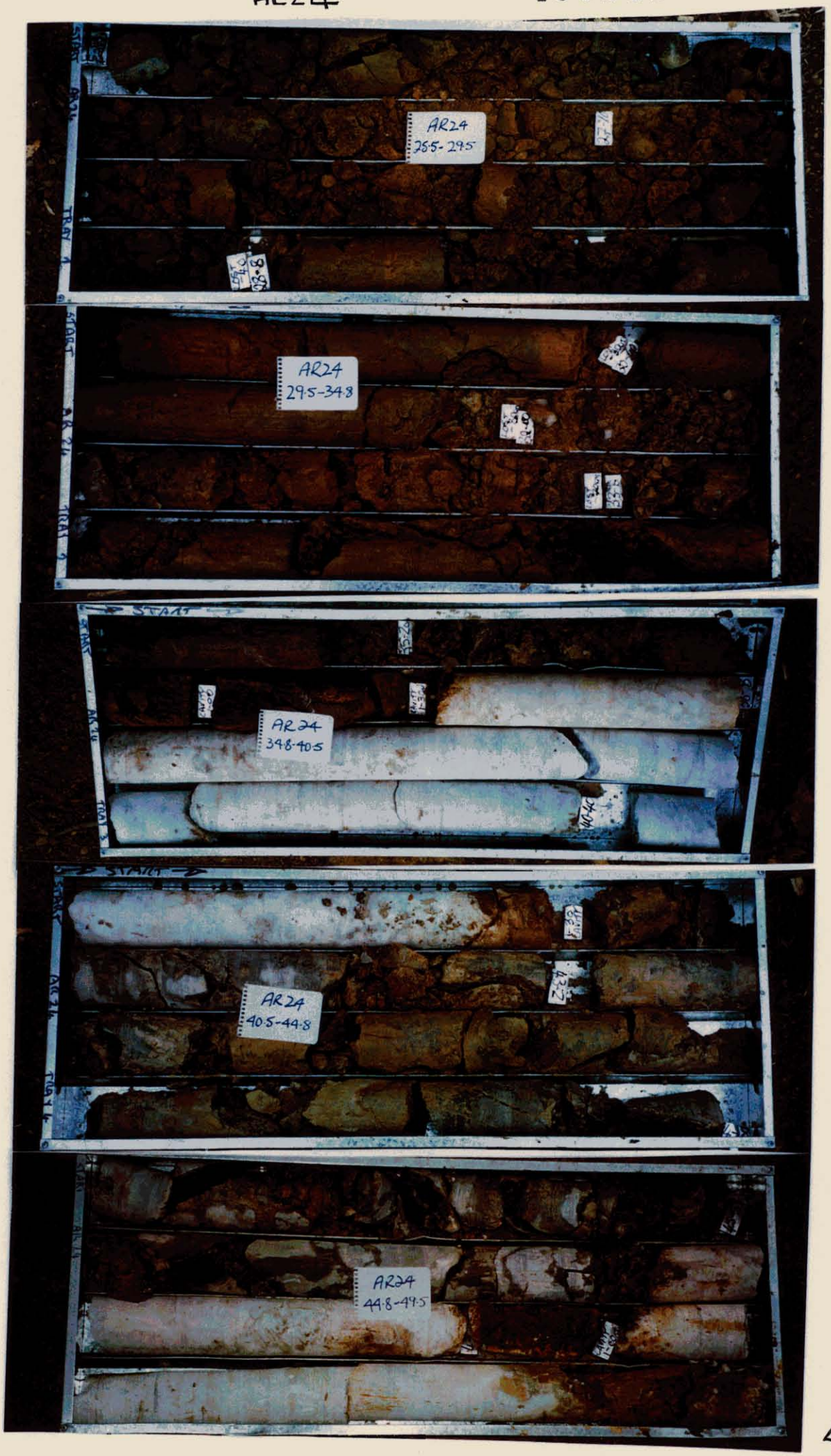
349. EOH

490241

AR 24

AR24 490242

25.5m

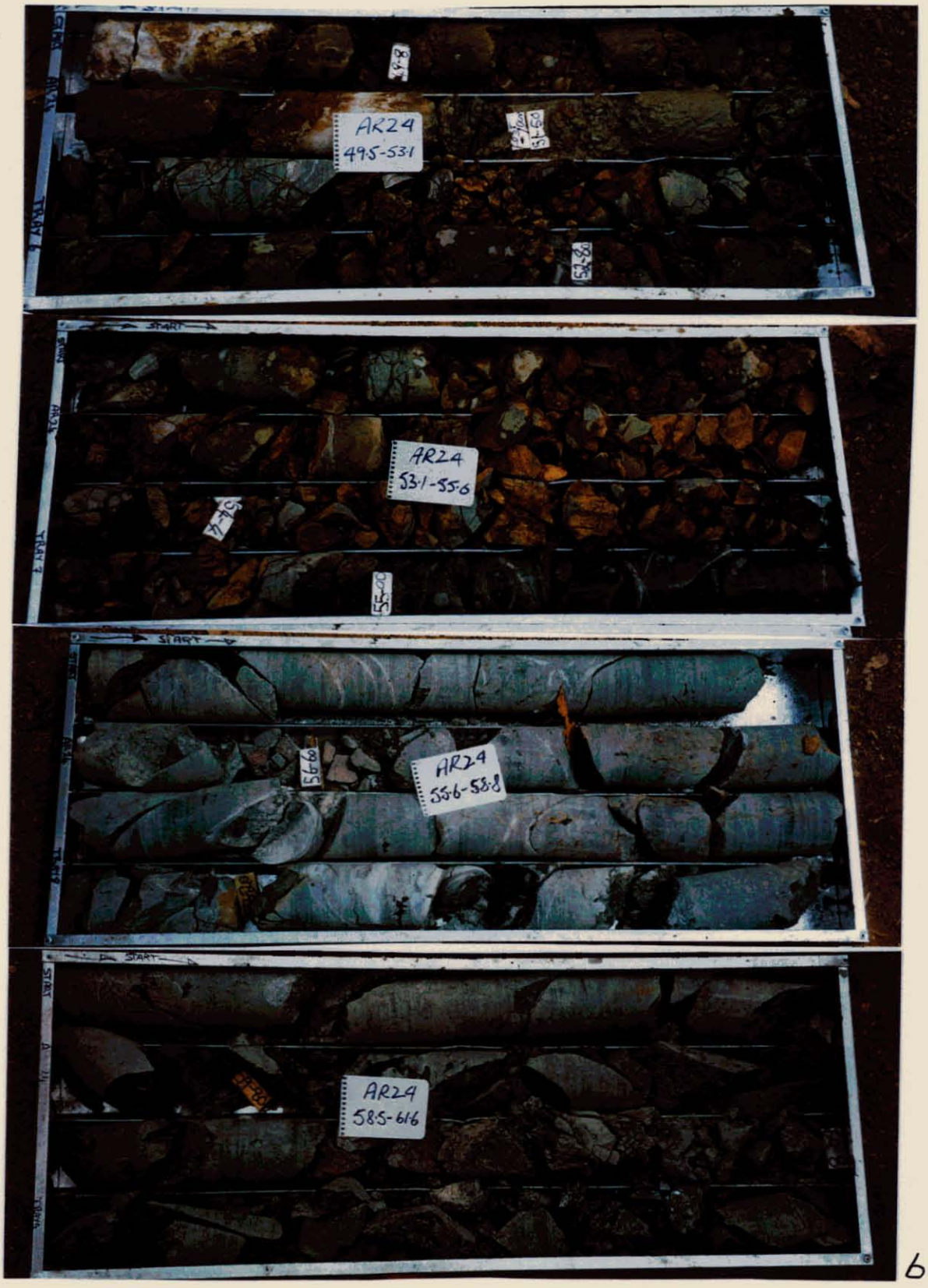


49.5m

AR 24.

490243

49.5m



61.6m

AR 24.

490244

61.6m

67.3m
EOH

AR 25

AR25

490246

42.5m

56.0m

AR 25

490247

56m

77.0m
E.O.H.

AR 26

AR 26

490249

16.0m

38.0m

AR26

490250

38.0m

58.2m

AR 26

490251

58·2m

86·6m

AR26 490252

86.6m

109.0m

AR26

490253

109.0m

131.5m

AR26

490254

131.5m

154.4m

AR 26

490255

154.4M

AR 26

490256

177.3 m

200.0 m

AR26

490257

200.0m

218.5m

AR 26

490258

218·5m

240·5m

AR 26

490259

240·5m

260·6m

E.O.H.

0 - 27.9m NON CORING

27.9m

MONITORING BORE - MB5.

490260

50m
EOH

APPENDIX 4

CONSULTING ENGINEERS
ENVIRONMENTAL SCIENTISTS
PROJECT MANAGERS
BUILDING SURVEYORS

490262

PITT
&
SHERRY
Incorporating
Morgan Klok & Nelson

Hatch Australia Pty. Ltd.

Magnesite Mine Overburden Investigation

May 99

Excavation Pitt MM5

Quality Endorsed Company

E99019H003.geo_rep/30.1/CJD:BS
Rev A

PITT & SHERRY

490263

Hatch Australia Pty. Ltd.

Magnesite Mine Overburden Investigation

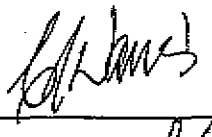
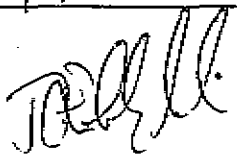
	Name	Signature	Date
Prepared by:	C J Davies		19 May 1999
Authorised by:	J C Eckersley-Maslin		19 May 1999

TABLE OF CONTENTS

1. INTRODUCTION

The proposed Crest/Multiplex Magnesite Mine is located between the Arthur and Keith Rivers. This report by Pitt & Sherry was commissioned by Hatch Australia Pty. Ltd. to provide geotechnical information to support Hatch's mine pit and overburden design and management plans.

Five (5) excavator test pits were located within the planned mining pit boundaries to improve the understanding of the nature of the overburden materials at the magnesite mine site. The location of the pits is shown in Figure 1. The intended location of the pit boundaries has been modified since this investigation.

2. BACKGROUND

The geological maps of the area show the surface geology to be late Quaternary (Holocene) deposits, with the key indicating sand, gravel and mud of alluvial, lacustrine and littoral origin.

The drilling for mineral exploration and for the installation of pump and monitor bores showed alluvial materials of variable depth up to approximately 20 metres. Sampling and evaluation of the alluvial materials was not part of the drilling programmes.

The budget for the investigation allowed for five excavation pits. The sites for the pits were selected to provide a representative range of topographic conditions within the restraints of the budget.

3. INVESTIGATION

3.1 Excavation Pits

The logs for five excavation pits and site photographs are shown in Appendix A, together with a summary of the logs. The summary identifies the location of samples subsequently tested, the type of laboratory tests undertaken and abbreviated results. Twenty five (25) samples were recovered from the excavation pits.

3.2 Laboratory Testing

Laboratory testing on selected samples included:

- Atterberg Limits test, including linear shrinkage (12)
- Sieve analysis gradings to - 75 μm (14)
- Hydrometer analysis gradings to - 2 μm (4)

- Particle Density tests (for hydrometer analysis) (4)
- Visual assessments of settlement/sedimentation in deionized water (4)
- Emerson Dispersion tests (6)

The results of laboratory testing are shown in Appendix B, together with photographs from the sedimentation tests and an extract from AS1289.3.8.1.6 describing the Determination of Emerson Class Number.

4. DISCUSSION

4.1 Excavation Pits

Excavation Pits MM1 and MM2 exposed silts overlaying riverwash gravels of mixed origin. The gravels were relatively unconsolidated and became coarser with depth. Below the watertable the gravels became semi fluid when disturbed and excavation below about 4 metres was not possible due to hole collapse. The watertable had probably been lowered by the pump bore drawdown test which was completed on the 14th of April. In MM2 extremely weathered (EW) magnesite was recovered from approximately 4.8 m which was beneath the surface of the fluid gravels.

Extremely weathered magnesite with an irregular surface was exposed below 2 metres in MM3, underlying a varied exposure of probably Quaternary sediments. This hole was stable to 6.8 metres, with no water inflows. Sample MM3/5 was interesting as it was composed of fine quartz crystals when viewed under a microscope.

Excavation MM4 contained relatively unconsolidated angular gravels of mixed metamorphic origin which became finer graded with depth. A distinct and horizontal boundary separated the gravels from the underlying grey silt. The silt contained some fine angular quartzite gravel which occurred in interbedded layers increasingly with depth. The strength of the silt was variable with pocket penetrometer values of 35 to 40 kPa up to 200 kPa measured for the full depth. The silt and metamorphic gravel are likely to be of Quaternary age. The hole was stable.

Excavation MM5 at RL174 was located on the hill slopes on the east side of the pit. The pit exposed angular metamorphic gravels interbedded with irregular silt layers. The sediments are likely to be slope deposits of Quaternary age. Some hole collapse occurred below 4 metres where water seepage occurred.

4.2 Laboratory Testing

The suite of laboratory tests was selected to characterise the overburden materials. The Emerson classification number 3 for the EW magnesite is notable (samples 2/5 and 3/3). A class 3 soil disperses in water after remoulding.

The four samples tested by hydrometer analysis were also tested in a non-standard test to evaluate settlement with time and residual colour/turbidity. A 30 g sample of –75 µm fraction was agitated with 1 litre of deionized water and the settlement/appearance was monitored and photographed.

Significant colour remained in the water after 125 hours. A 50 ml aliquot pipetted from the 300 ml level of the litre measuring cylinder was centrifuged for 20 minutes at approximately 3000 rpm. The centrifuging produced a small deposit of fine sediment in the test tube, however some colouration remained in the water (photograph 6). The yellow colour in the magnesite samples was notable.

The settlement test was carried out using deionized water. The water from the mine may have a different effect on the suspended solids.

5. SUMMARY

- The depth of Quaternary sediments was often less than indicated from the drilling. The drilling may not have distinguished between sediments and EW magnesite.
- The high water table within the sediments produced instability in the holes.
- The relationship with ground water in the magnesite is unknown.
- The ad-hoc sedimentation/turbidity test raises questions on settlement times and water treatment requirements.

490268

Magnesite Mine Overburden Investigation
Excavation Pit Locations

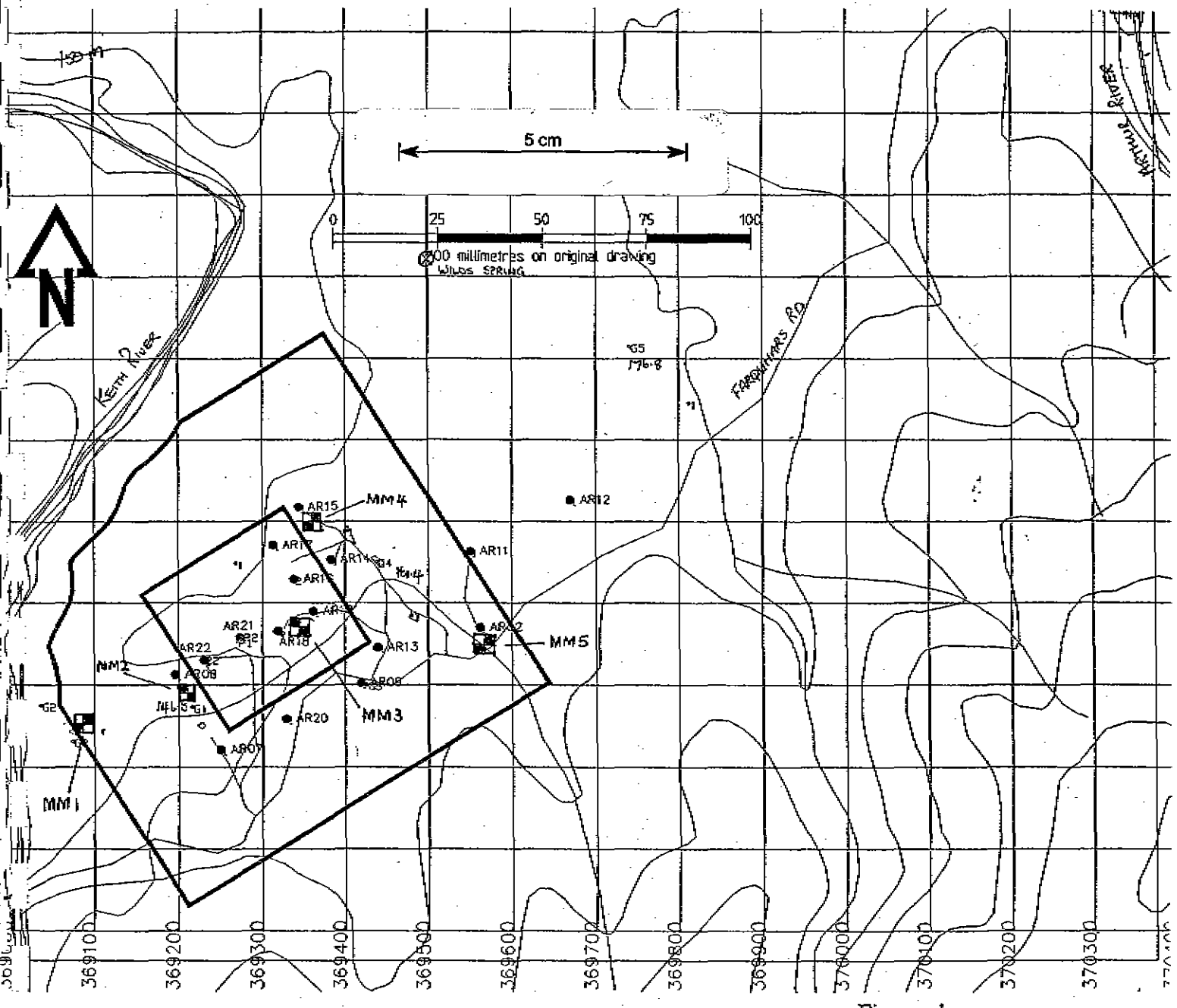


Figure 1.

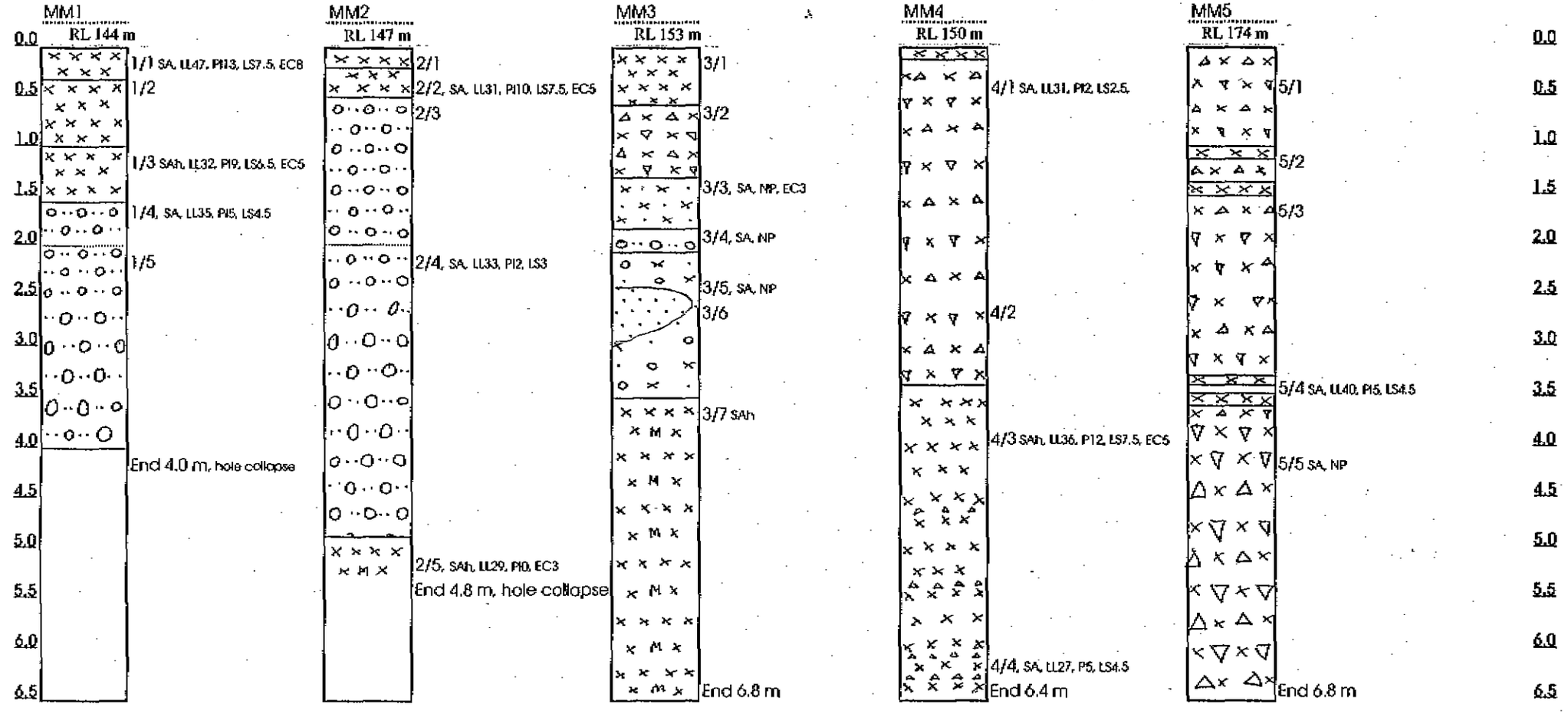
Appendix A

Excavation Pit Logs and Site Photographs

EXCAVATION PIT LOG LAB TESTING SUMMARY

JOB: **Magnesite Mine Overburden Investigation**

Job No: E99019



KEY

SA = Seive Analysis
SAh = SA + hydrometer analysis
LL = Liquid Limit
PI = Plastic Index
LS = Linear Shrinkage
NP = Non Plastic
EC = Emerson Class

SILT: medium PI, grey pebbles & charcoal

GRAVEL: mixed metamorphic, medium PI

SAND: cream, fine, crystalline quartz

RIVERWASH GRAVEL: low PI.

GRAVEL: low PI, brown, EW magnesite

SILT: low PI, yellow, EW magnesite

SILT: low PI, grey, sandy

Excavlog

13/05/99

Pitt & Sherry Consulting Engineers
Environmental & Earth Sciences Unit

MRF—41 (Jan '89)

engineering log — excavation

490271

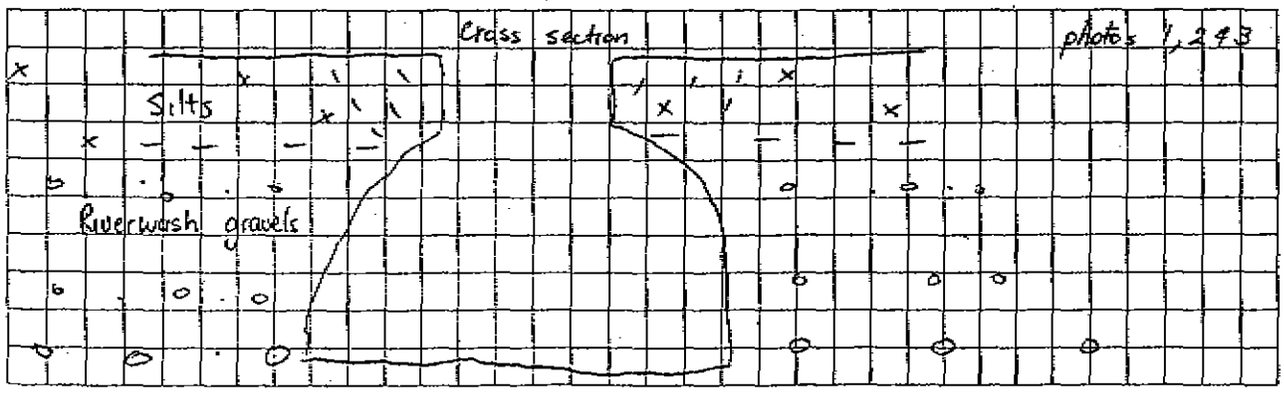
excavation no.: MM 1
sheet 1 of 1

job no.: E99019 file:

project: MAGNESITE MINE - OVERBURDEN INVESTIGATION
pit location: 369070 E 5439 045 N, 5m West of MB3
pit commenced:
pit completed: 150499
pit logged by: C. Davies
log checked by: RMC

equipment type and model: HITACHI EX 200
excavation dimensions 5 m long, 2.5 m wide
R.L. surface 144 m
datum: SMTE operator: A. CHAMPION

method	penetration 1 2 3	support	water	notes samples, tests, etc.	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, density index	hand penetrometer kPa 100 200 300 400 500	structure and additional observations
								Surface is Myrtle forest				
EX				1/1			ML	TOPSOIL, SILT; med plasticity, grey	M	S-F	x	Uniform appearance,
					0.35			brown, contains some pebbles, roots	>PL		x x	sub-vertical fissuring
				1/2				SILT: med plasticity, pale grey with			x	Granular appearance with
							ML	some orange/grey banding, some	M		x	fine fissuring, remoulds
				Torvane 6.5	1			pebbles & charcoal fragments	>PL	St-	x	easily. Also fissuring 300mm
								SILT: med plasticity, slightly		VSt	x x	As above, more
				1/3			ML	sandy, some pebbles, roots,	M-		x	uniform & more sandy
					1.6			charcoal fragments	W		x	with depth
				Torvane 7.0			GW	RIVERWASH GRAVEL: low PI	W			
			▶	water	2			dark brown, contains cobbles		L		
				table				MS 75mm to coarse sand				The riverwash gravels
				slows but								are well graded but
				continuous	2.5		GW	RIVERWASH GRAVEL: low PI				do not contain much
				in flow				yellow brown, MS 200mm	W			fine sand to clay
				1/4	3			H_2S smell	Sat			size particles. Voids
										VL		in the gravel are
												water filled and the
												saturated lower gravels
												behave like wet
					4			unable to increase depth due				concrete when disturbed
								to hole collapse. The riverwash				Particles are rounded to
								gravels flow to fill the hole				sub rounded and
								Angle of recline is near 0° for				mainly mixed
								disturbed gravels. The silts				metamorphic origin
								collapse into hole when undercut				



KEY

method
N — natural exposure
E — existing excavation
BH — backhoe bucket
B — bulldozer blade
R — ripper
EX — excavator bucket

support
T — timbering

penetration
1 2 3 no resistance ranging to refusal

water
level (date)
inflow
outflow

notes—samples and tests
U — undisturbed sample (subscript = tube diameter)
D — disturbed sample (subscript = ref. number)
F — in situ CBR value by Farnell penetrometer

classification symbols and soil description based on Unified Classification system

moisture condition
D — dry, M — moist, W — wet
< PL, = PL, > PL relative to plastic limit done by hand test

(consistency/density index)
VS — very soft
S — soft
F — firm
St — stiff
VSt — very stiff
H — hard
Fb — friable
VL — very loose
L — loose
MD — medium dense
D — dense
VD — very dense

Pitt & Sherry Consulting Engineers
Environmental & Earth Sciences Unit

490272

MRF—41 (Jan '89)

engineering log — excavation

excavation no.: MM 2
sheet 1 of 1

job no.: E99019 file:

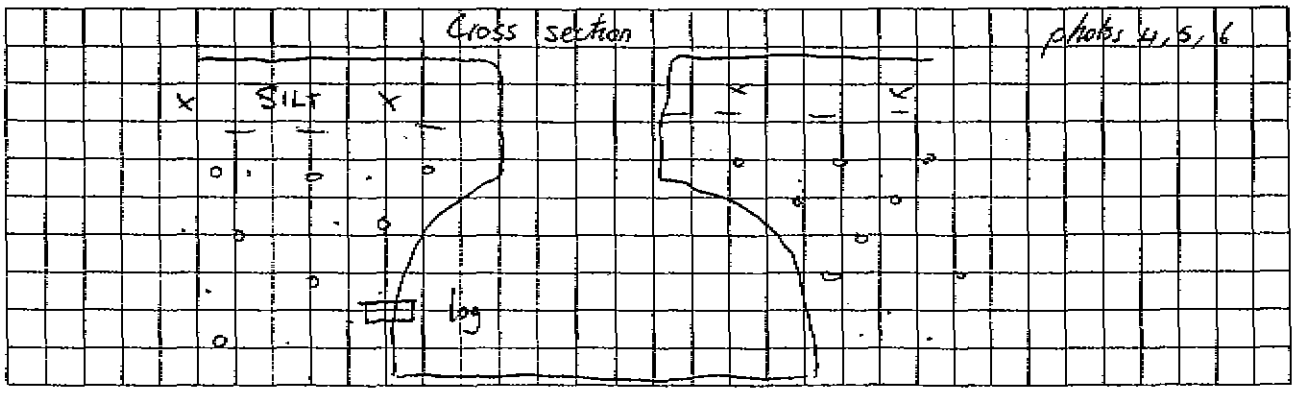
project: MAGNESITE MINE - OVERBURDEN INVESTIGATION
pit location: 369210 E 5439080 N, 20m West of MB1

pit commenced:
pit completed: 150499
pit logged by: C. Davies
log checked by:

equipment type and model: HITACHI EX 200
excavation dimensions 7 m long, 4 m wide

R.L. surface 147 m
datum: SITE operator: A. Champion

method	penetration 1 2 3	support	water	notes samples, tests, etc.	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, density index	hand penetrometer kPa 100 200 300 400 500	structure and additional observations
												Surface is Myrtle forest
EX				2/1	0.2		ML	TOPSOIL, SILT: med plasticity,	M	F		Uniform appearance,
				2/2				grey brown, some pebbles &	>PL			sandy texture
					0.5		ML	sand, some roots		S-F		Granular appearance
								SILT: med plasticity, pale grey with	M			with fine fissuring,
					1			some irregular orange yellow banding	>PL	St		remoulds easily
								some pebbles		-VSt		
							GW	RIVERWASH GRAVEL: low to med PI,				
				2/3				red brown, MS 75mm to	M	MD		
								coarse sand, moderate to				
					2			highly weathered, slightly cemented				
					2.5		GW	RIVERWASH GRAVEL: low to med		L		
								PI, yellow brown. MS 200mm	M-W			
				2/4	3			to coarse sand				
												below 3.5m walls of
									Sat			the trench starting to
										L		collapse as the hole
				slow persistent flow, mainly from NW	4							was dug deeper. The
				2/6				log at approx 4.5m				recovered gravels are
												fluid, resembles wet
				2/5	~4.8			SILT: low plasticity, pale yellow	W	Fb		concrete.
								possibly EW magnesite				low strength



KEY

method
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support
T — timbering

penetration
1 2 3 no resistance ranging to refusal

water
level (date)
inflow
outflow

notes—samples and tests
U — undisturbed sample (subscript = tube diameter)
D — disturbed sample (subscript = ref. number)
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classification symbols and soil description based on Unified Classification system

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< PL, = PL, > PL relative to plastic limit done by hand test

(consistency/density index)
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S — soft
F — firm
St — stiff
VSt— very stiff
H — hard
Fb — friable
VL — very loose
L — loose
MD — medium dense
D — dense
VD — very dense

Pitt & Sherry Consulting Engineers
Environmental & Earth Sciences Unit

490273

MRF—41 (Jan '89)

excavation no.: MM3
sheet 1 of 1

engineering log — excavation

job no.: E99019 file:

project: MAGNESITE MINE - OVERBURDEN INVESTIGATION
pit location: 369340 E 5439200 N 15 m East of AR26

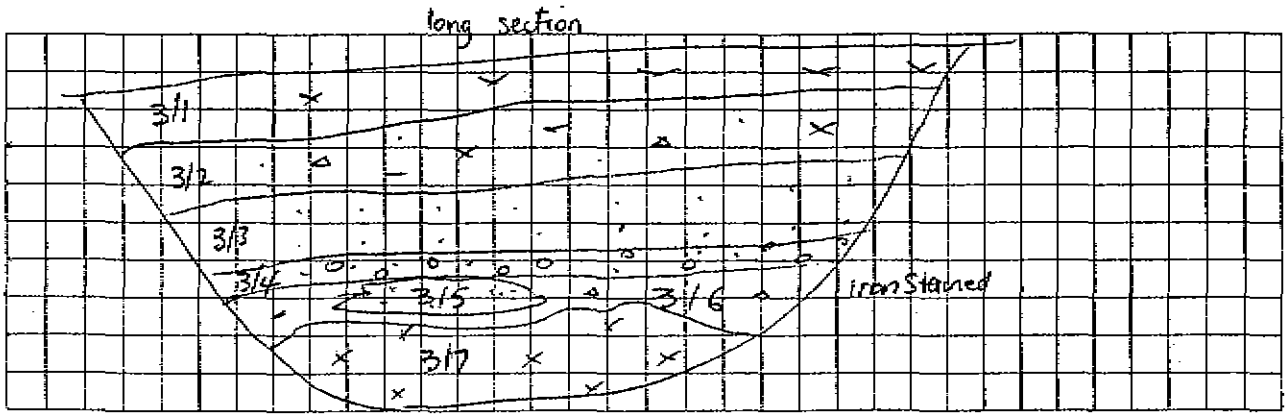
pit commenced:
pit completed: 15/4/99
pit logged by: C. Davies
log checked by:

equipment type and model: HITACHI EX 200
excavation dimensions 7 m long, 3 m wide

R.L. surface 153 m
datum: STATE operator: A. CHAMPION

method	penetration 1 2 3	support	water	notes samples, tests, etc.	R.L. depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, density index	hand penetrometer kPa 100 200 300 500	structure and additional observations
												Surface is Myrtle forest
EX								TOPSOIL, SILT: med plasticity	M	F		some bull rushes
				3/1			ML	grey brown, contains some pebbles	>PL		x	
					0.6							
								MIXED GRAVEL: low to med plasticity	M			
				3/2	1		GM	with brown sand & grey silt	>PL	H		slightly cemented
					1.3							
				3/3			SM	SAND: non plastic, fine, grey silty	M	H	x	
					1.8				-W		x	
				3/4	2		GP	RIVERWASH GRAVEL: non plastic, grey				slightly cemented c/ fine white sand
					2.1			brown, quartzite & sandstone	M	H		
							—	VARIABLE MATERIALS + SURFACE, contains				
			inflows	3/5, 3/6	3		SP	SAND, medium, quartz, cream	Fb	H		slightly cemented
			1 wall				-GM	GRAVEL, fine, low PI soft rock				
			no wall					particles, iron stained, with silt,				
					3.5			possibly EW magnesite				
								gradual change to				
				3/7	4		ML	SILT: low plasticity, pale yellow	W	Fb		H_2S smell.
								some black veins 1-2 cm	Sat			
								relic structure, possibly EW= magnesite (extremely weathered)		?		Strength decreases with depth
								END of MM3 @ 6.8 m				

long section



KEY

method
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T — timbering

penetration
1 2 3 no resistance ranging to refusal

water
level (date)
inflow
outflow

notes—samples and tests
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classification symbols and soil description based on Unified Classification system

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(consistency/density index)
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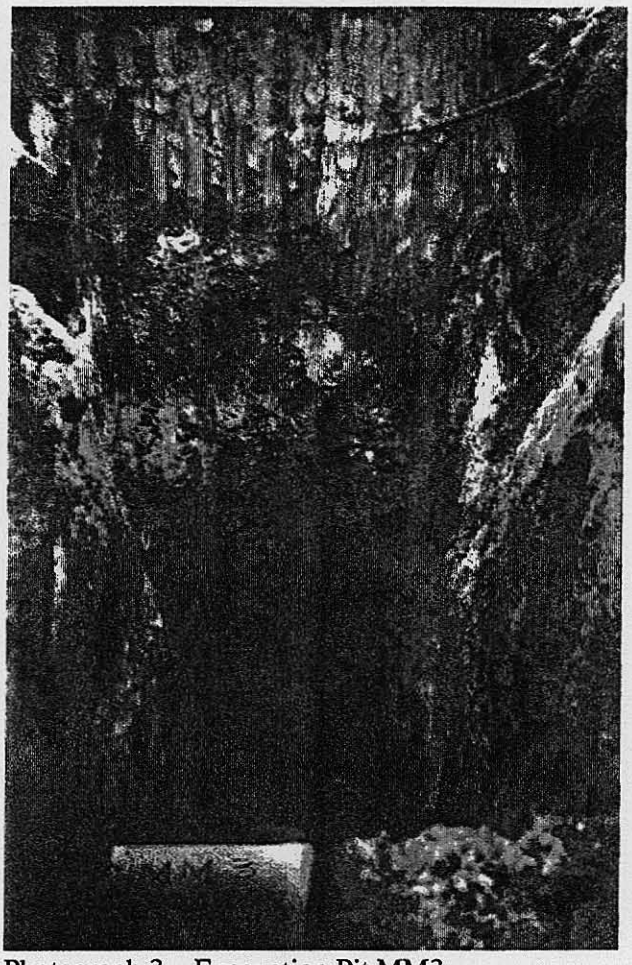
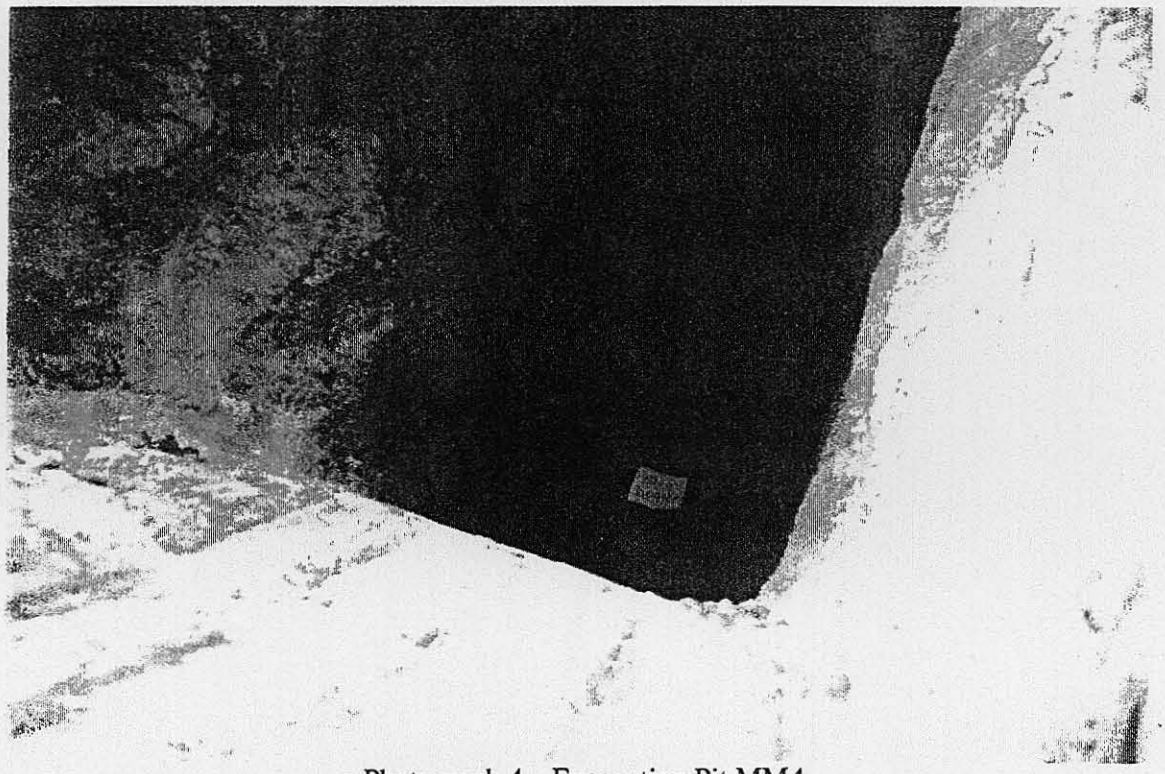
S — soft
F — firm
St — stiff
VSt— very stiff
H — hard
Fb — friable
VL — very loose
L — loose
MD — medium dense
D — dense
VD — very dense

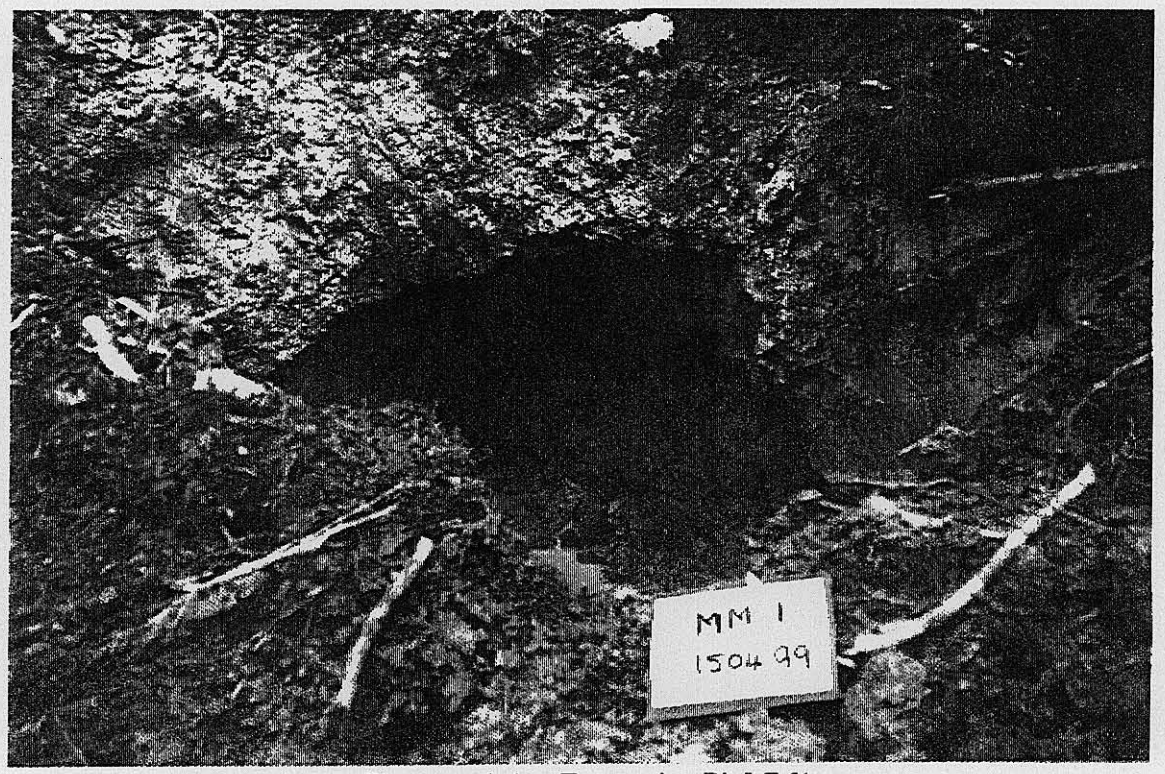


Photograph 3 – Excavation Pit MM3

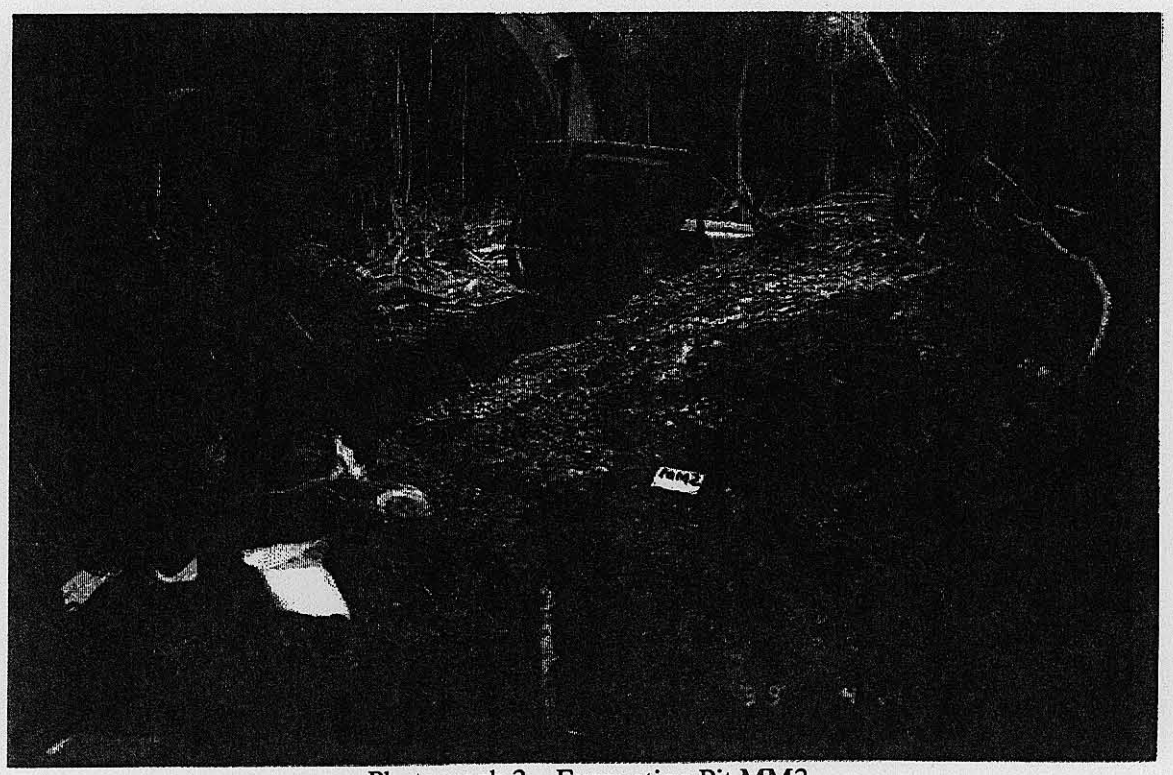


Photograph 4 – Excavation Pit MM4

490275



Photograph 1 – Excavation Pit MM1



Photograph 2 – Excavation Pit MM2

Appendix B

Laboratory Test Results and Photographs
Extract from AS1289.3.8.1.6 - Emerson Class Number

PITT & SHERRY

490277

LABORATORY AND FIELD TESTING SERVICES

TEST REPORT

Report N°:	N1904
File N°:	14.000

LAB No: A1129 PITT & SHERRY JOB No: E99019 DATE RECEIVED: 16.4.1999

JOB: Magnesite Mine Overburden Investigation.

MATERIAL: Various gravels, sands and silts.

SOURCE: Excavation test pits, Magnesite mine, Keith/Arthur River.

SUBMITTED BY: Chris Davies for Pitt & Sherry.

ATTERBERG LIMITS

AS 1289.3.1.1, 3.1.2, 3.2.1, 3.3.1 & 3.4.1
Condition – oven dried 50°C
Preparation – dry sieved

Sample Reference:	1/1	1/3	1/4	2/2	2/4	2/5
Liquid Limit, %:	47	32	35	31	33	29
Plastic Limit, %:	34	23	30	21	31	30
Plastic Index, %:	13	9	5	10	2	0
Linear Shrinkage, %:	7.5	6.5	4.5	7.5	3.0	Unobtainable

Sample Reference:	3/3	4/1	4/3	4/4	5/4	5/5
Liquid Limit, %:	Unobtainable	31	36	27	40	Unobtainable
Plastic Limit, %:	17	29	24	22	35	28
Plastic Index, %:	Non Plastic	2	12	5	5	Non Plastic
Linear Shrinkage, %:	Unobtainable	2.5	7.5	4.0	4.5	Unobtainable

EMERSON CLASS NUMBER

AS 1289.3.8.1

Sample Reference:	1/1	1/3	2/2	2/5	3/3	4/3
Emerson Class N°:	8	5	5	3	3	5

NOTE: (1) Deionised water at 17°C
(2) NATA accreditation is not applicable to this test.

Report N°:	N1904
File N°:	14.000

SIEVE ANALYSIS

AS 1289.3.6.1

Sample Reference:	1/1	1/3	1/4	2/2	2/4	2/5	3/3
% Pass AS 75mm			100		100		
53mm			94		89		
37.5mm			91		78		
26.5mm			85		67		
19mm		100	78		57	100	
9.5mm		99	63	100	43	97	
4.75mm		99	46	97	30	93	
2.36mm	100	99	34	95	18	89	100
0.425mm	97	93	11	87	6	80	88
0.075mm	75	62	6	69	4	75	56
Unified soil Classification	OL	CL-ML	GW-GM	CL	GP	ML	ML

Sample Reference:	3/4	3/5	4/1	4/3	4/4	5/4	5/5
% Pass AS 75mm							100
53mm	100		100				93
37.5mm	87		98				87
26.5mm	83	100	95		100		77
19mm	76	99	93		98		66
9.5mm	65	98	81	100	90	100	52
4.75mm	57	97	68	99	80	98	41
2.36mm	52	94	55	98	70	96	34
1.18mm	-	89	-	-	-	-	-
0.600mm	-	76	-	-	-	-	-
0.425mm	39	65	36	92	54	84	19
0.300mm	-	53	-	-	-	-	-
0.150mm	-	33	-	-	-	-	-
0.075mm	21	19	24	69	36	58	9
	GM	SM	GM	CL-ML	SM-SC	ML	GW-GM

R. Absolom
Laboratory Manager

29.4.1999

PITT & SHERRY 490279

LABORATORY AND FIELD TESTING SERVICES

TEST REPORT

Report N°:	A1129/1
File N°:	16.018

LAB No: A1129 PITT & SHERRY JOB No: E99019 DATE RECEIVED: 16.4.1999

JOB: Magnesite Mine Overburden Investigation.

MATERIAL: Various clayey silts and sands.

SOURCE: Excavation pits, Keith/ Arthur River.

SUBMITTED BY: C. Davies for Pitt & Sherry.

HYDROMETER ANAYSIS

Test Method: P & S T14 – analysis of -75µm material recovered from sieve analysis test.

Sample Reference:		1/3	2/5	3/7	4/3
Description	Size	Percent distribution			
Medium Gravel	20 – 6 mm		6		
Fine Gravel	6 – 2 mm	1	6	4	3
Coarse Sand	2 – 0.6 mm	3	6	11	4
Medium Sand	0.6 – 0.2 mm	9	4	28	7
Fine Sand	0.2 – 0.06 mm	37	5	27	29
Coarse Silt	0.06 – 0.02 mm	16	11	14	22
Medium Silt	0.02 – 0.006 mm	11	18	7	9
Fine Silt	0.006 – 0.002 mm	7	32	2	8
Clay	< 0.002 mm	16	12	7	18

See also attached grading curves.

SOIL PARTICLE DENSITY

Test Method: P & S T10

Sample Reference:	1/3	2/5	3/7	4/3
Soil Particle Density (-75µm), g/cm^3:	2.67	3.04	2.80	2.67

490280

Report N°:	A1129/1
File N°:	16.018

SIEVE ANALYSIS

Test Method : AS 1289.3.6.1

Sample Reference:	3/7
% Pass AS 9.5mm	100
4.75mm	98
2.36mm	97
0.425mm	79
0.075mm	37

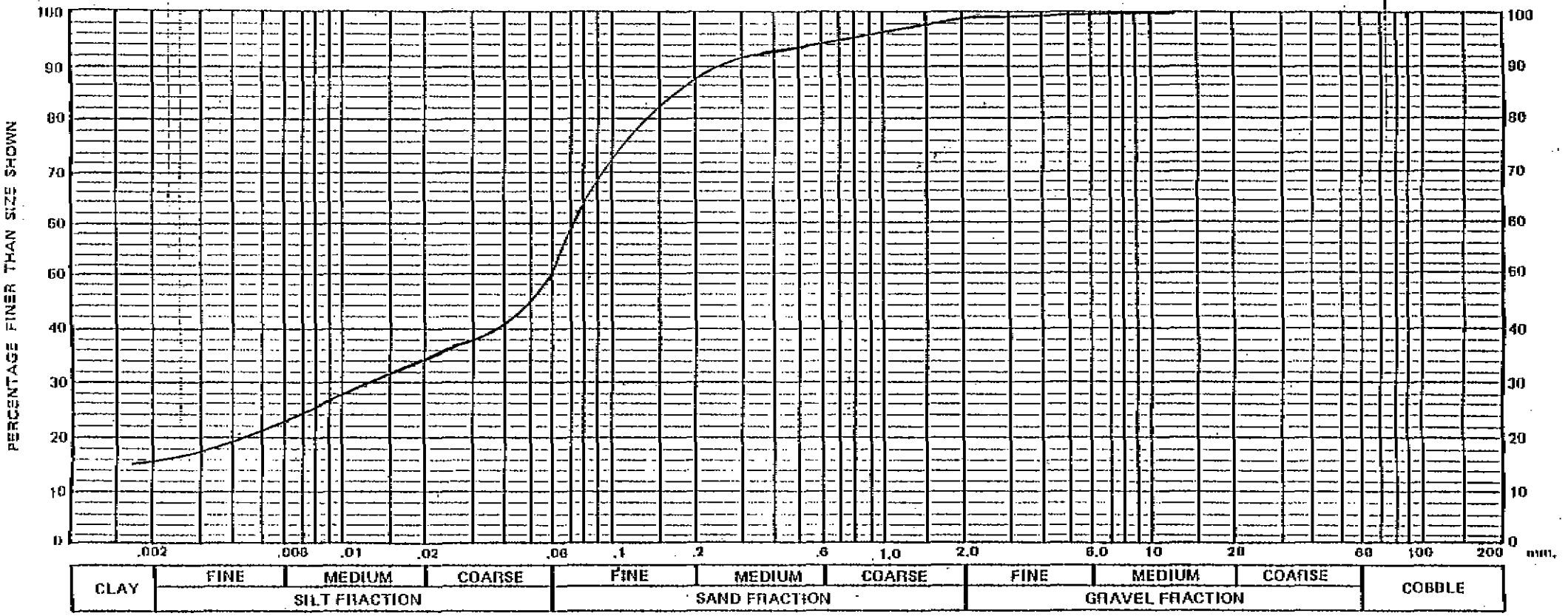
R. Absolom
Laboratory Manager 12.5.1999

FORM No.

MECHANICAL ANALYSIS

LAB. No.	A1129
REF. No.	1/3

MATERIAL: TOPSOIL, SILT, grey SOURCE: MM1



Effective Size.....mm.

Uniformity Coefficient.....

Classification.....

Organic Matter.....%

Particle Density (-75μm) 2.670

Soluble Solids.....%

SIZE	%
COBBLE	
GRAVEL	1
SAND	49
SILT	34
CLAY	16

A.S. Sieve (mm)	% Pass	A.S. Sieve (mm)	% Pass	A.S. Sieve (mm)	% Pass
150		19.0		600	
75		9.5		425	
63		4.75		300	
37.5		2.36		150	
28.5		1.18		75	

Remarks:.....

490281

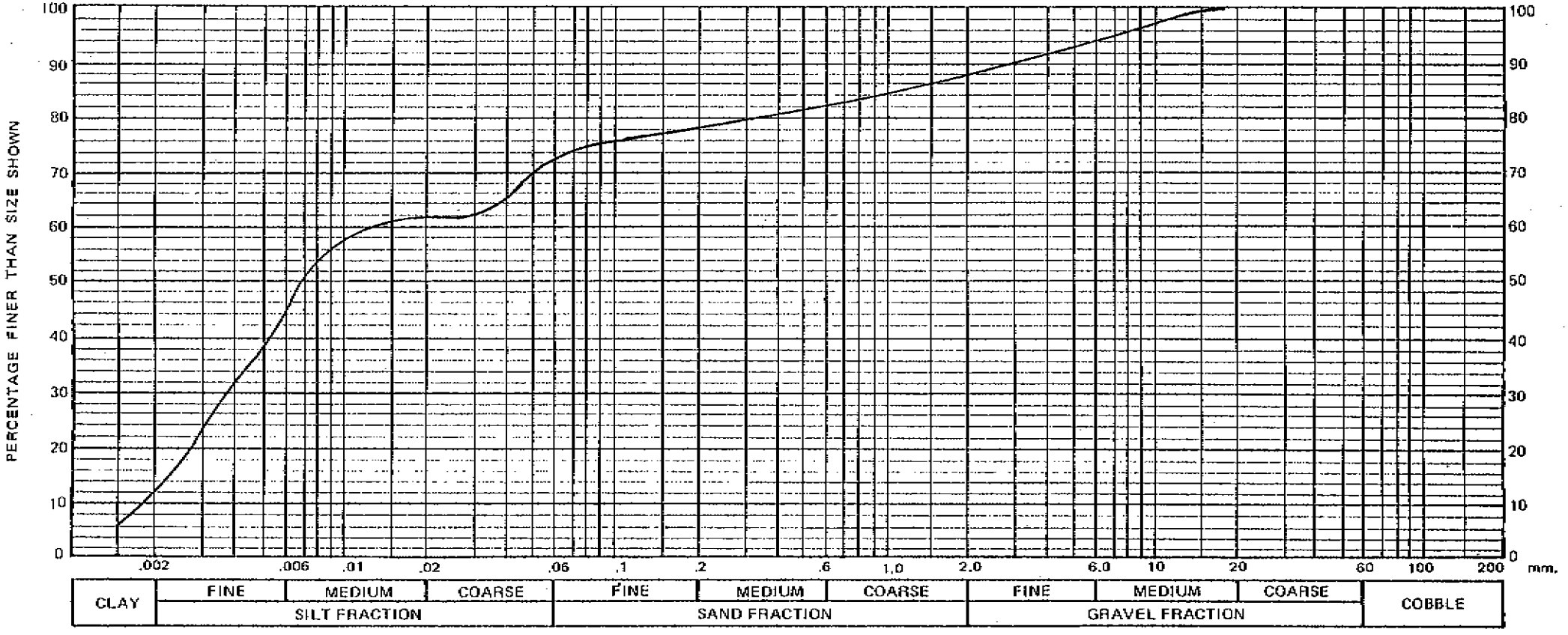
M 1647

Date 11.5.1999 Prepared by R. Absolom Approved by.....

MECHANICAL ANALYSIS

LAB. No.	A 1129
REF. No.	2/5

MATERIAL: Silt: pale yellow – EW magnesite SOURCE: MM2.



Effective Size.....mm.

Uniformity Coefficient.....

Classification.....

Organic Matter.....%

Specific Gravity (-75μm) 3.040

Soluble Solids.....%

SIZE	%	A.S. Sieve (mm)	% Pass	A.S. Sieve (mm)	% Pass	A.S. Sieve (mm)	% Pass
COBBLE		150		19.0		600	
GRAVEL	12	75		9.5		425	
SAND	15	53		4.75		300	
SILT	61	37.5		2.36		150	
CLAY	12	26.5		1.18		75	

Remarks:.....

49028

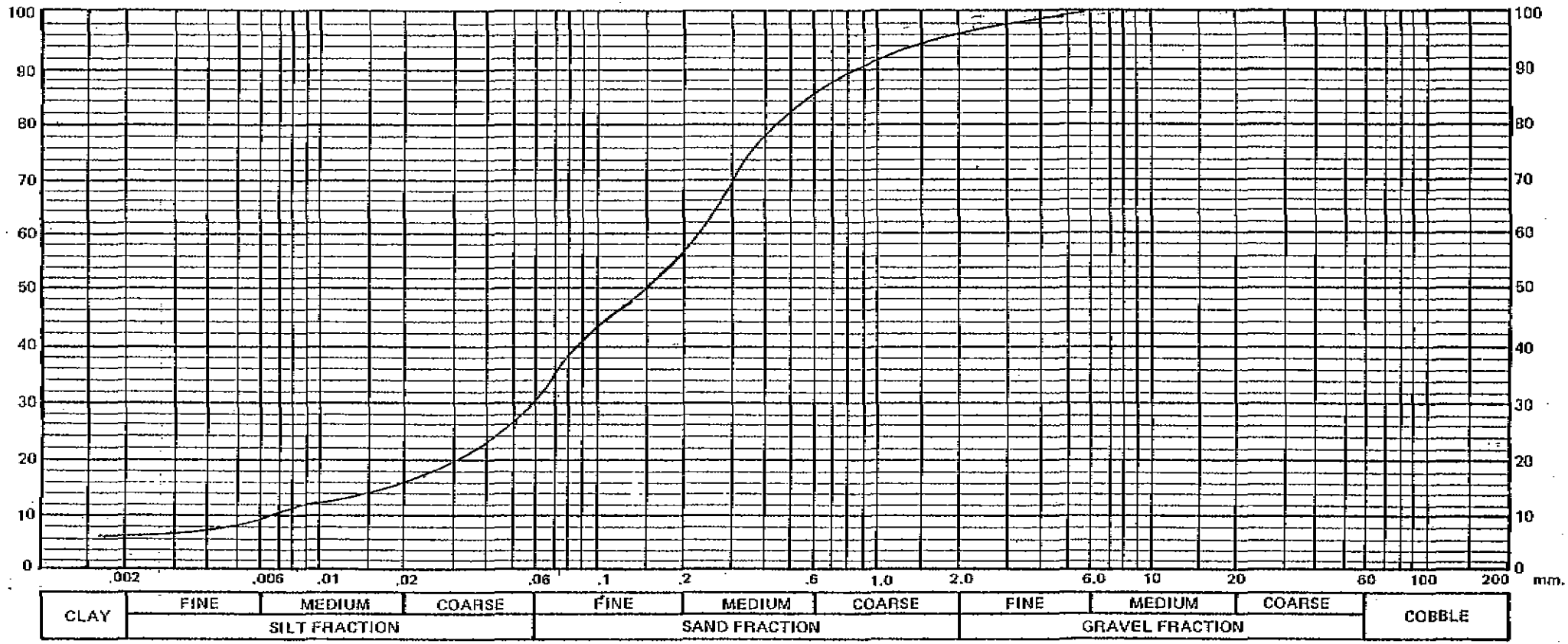
M 1647

Date 11.5.1999 Prepared by R. Absolom Approved by.....

MECHANICAL ANALYSIS

LAB. No.	A 1129
REF. No.	317

MATERIAL: SILT: pale yellow - EW magnesite SOURCE: MM3



Effective Size.....mm.

Uniformity Coefficient.....

Classification.....

Organic Matter.....%

Particle Density (-75μm) 2.800

Soluble Solids.....%

SIZE	%
COBBLE	
GRAVEL	4
SAND	66
SILT	23
CLAY	7

A.S. Sieve (mm)	% Pass	A.S. Sieve (mm)	% Pass	A.S. Sieve (mm)	% Pass
150		19.0		600	
75		9.5		425	
53		4.75		300	
37.5		2.36		150	
26.5		1.18		75	

Remarks:.....

490283

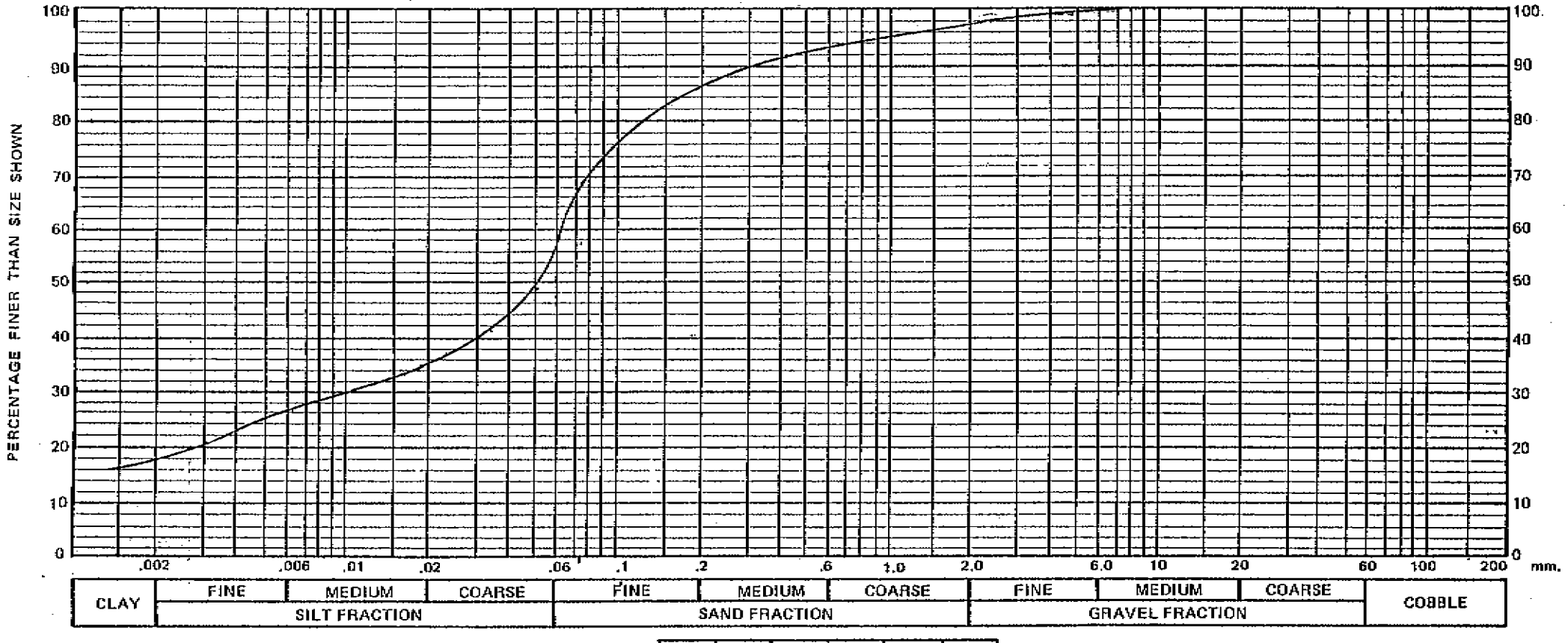
M 1647 +

Date 11.5.1999 Prepared by R. Absolom Approved by.....

MECHANICAL ANALYSIS

LAB. No.	A1129
REF. No.	4/3

MATERIAL: Silt: dark grey SOURCE: MM4



Effective Size.....mm.

Uniformity Coefficient.....

Classification.....

Organic Matter.....%

Particle Density (-15μm) 2.670

Soluble Solids.....%

SIZE	%
COBBLE	
GRAVEL	3
SAND	40
SILT	39
CLAY	18

A.S. Sieve (mm)	% Pass	A.S. Sieve (mm)	% Pass	A.S. Sieve (mm)	% Pass
150		19.0		600	
75		9.5		425	
53		4.75		300	
37.5		2.36		150	
26.5		1.18		75	

Remarks:.....

490284

M 1647

Date 11-5-1999 Prepared by R. Absolom Approved by.....

(d) If the soil slakes but does not disperse, obtain a few grams of air-dried soil and add distilled water to bring the soil to approximately the plastic limit. Remould at this moisture content with the spatula for 2 min. Roll three balls of this soil (six if reservoir or other contact water is also to be tested) about 3 mm in diameter. Repeat Step (b) with these remoulded balls (see Note 3).

(e) If the soil still does not disperse, check chemically for presence of calcium carbonate or calcium sulfate (see Note 4).

(f) If calcium carbonate or calcium sulfate is not present, prepare a 1:5 soil/water suspension by placing 2 g of original air-dried soil in the bottom of a test tube and adding 10 mL of water. Shake vigorously for 10 min. Record whether the suspension remains dispersed or flocculates, showing clear or almost clear water at the surface, within 5 min.

6 DETERMINATION OF EMERSON CLASS NUMBER If a soil slakes it belongs to one of Classes 1 to 6 (see Figure 1). If it does not slake it belongs to Class 7 or Class 8. The soil shall be classified as follows:

(a) *Class 1* Air-dried crumbs of soil shall show a strong dispersing reaction, i.e. a colloidal cloud shall cover nearly the whole of the bottom of the beaker, usually in a very thin layer. No fixed time can be set for observation of the dispersing reaction, but the reaction should be evident within about 10 min. In extreme cases all the water in the beaker becomes cloudy leaving only a coarse residue in a cloud of clay.

(b) *Class 2* Air-dried crumbs of soil shall show a moderate to slight reaction. A moderate reaction consists of an easily recognizable cloud of colloids in suspension usually spreading in thin streaks on the bottom of the beaker. A slight reaction consists of the bare hint of cloud in water at the surface of the crumbs.

(c) *Class 3* The soil remoulded at the plastic limit shall disperse in water.

(d) *Class 4* The remoulded soil shall not disperse in water and calcium carbonate nor shall calcium sulfate be present.

(e) *Class 5* The remoulded soil shall not disperse in water and the 1:5 soil/water suspension shall remain dispersed after 5 min.

(f) *Class 6* The remoulded soil shall not disperse in water and the 1:5 soil/water suspension shall begin to flocculate within 5 min.

(g) *Class 7* The air-dried crumbs of soil shall remain coherent in water and shall swell.

(h) *Class 8* The air-dried crumbs of soil shall remain coherent in water and shall not swell.

7 REPORTING OF RESULTS The following shall be reported:

(a) Emerson class number.

(b) Sample identification.

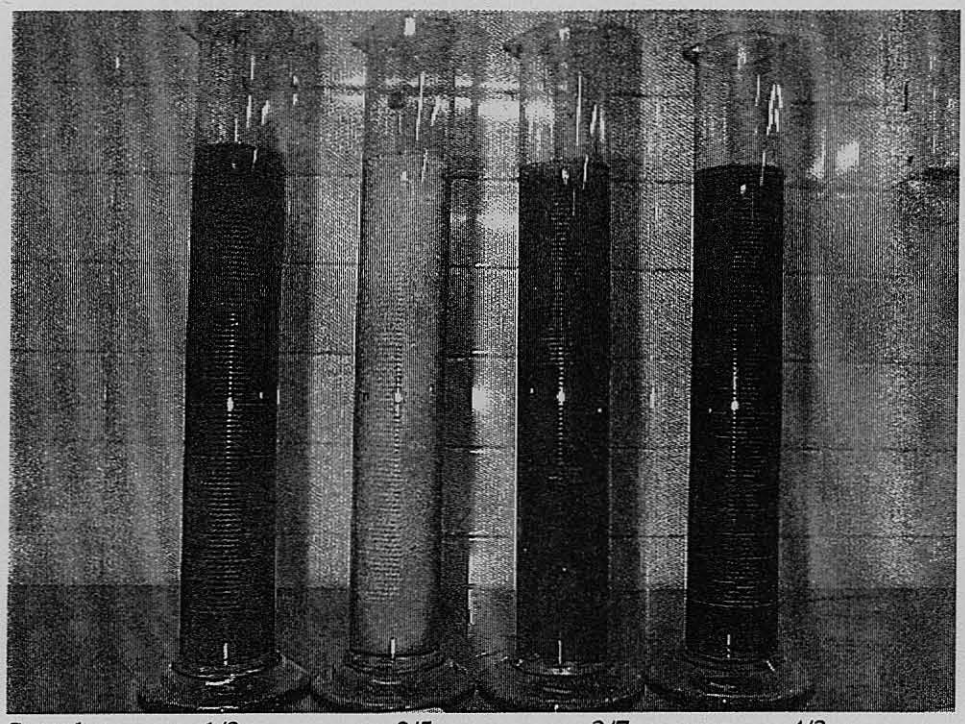
(c) Source of material.

(d) Date of sampling.

(e) Soil description.

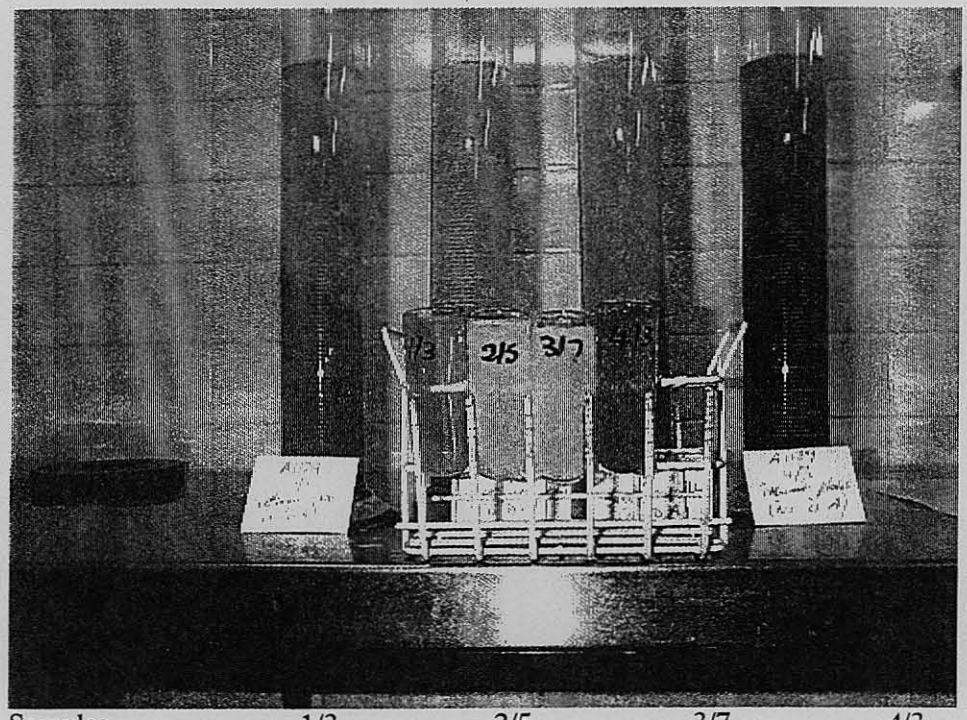
(f) Type and temperature of water used for testing.

(g) Reference to this Standard, i.e. AS 1289.3.8.1.



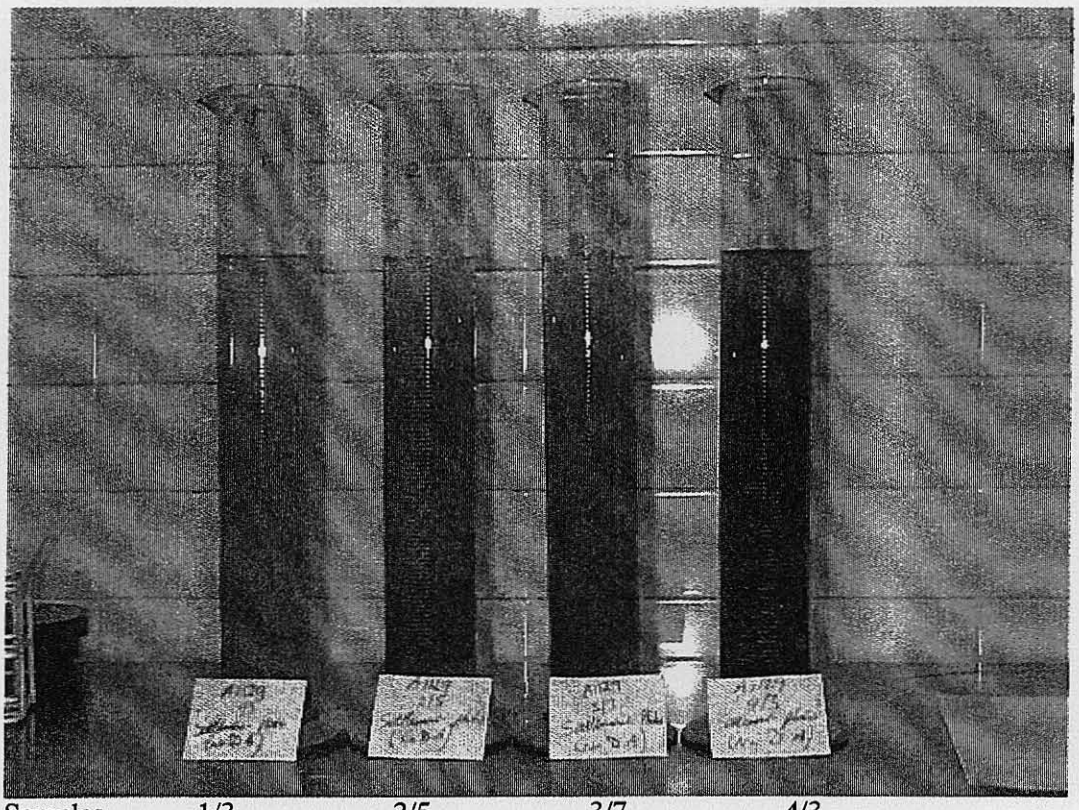
Samples 1/3 2/5 3/7 4/3

Photograph 5 – Settlement Test, Time = 0, 12/5/1999



Samples 1/3 2/5 3/7 4/3

Photograph 6 – Settlement Test, Time = + 125 hours, including centrifuged samples 17/5/1999



Samples 1/3 2/5 3/7 4/3

Photograph 7 – Settlement Test, Time = + 150 hours (6 days 6 hours) (18/5/1999)

Pitt & Sherry Consulting Engineers
Environmental & Earth Sciences Unit

490288

MRF—41 (Jan '89)

engineering log — excavation

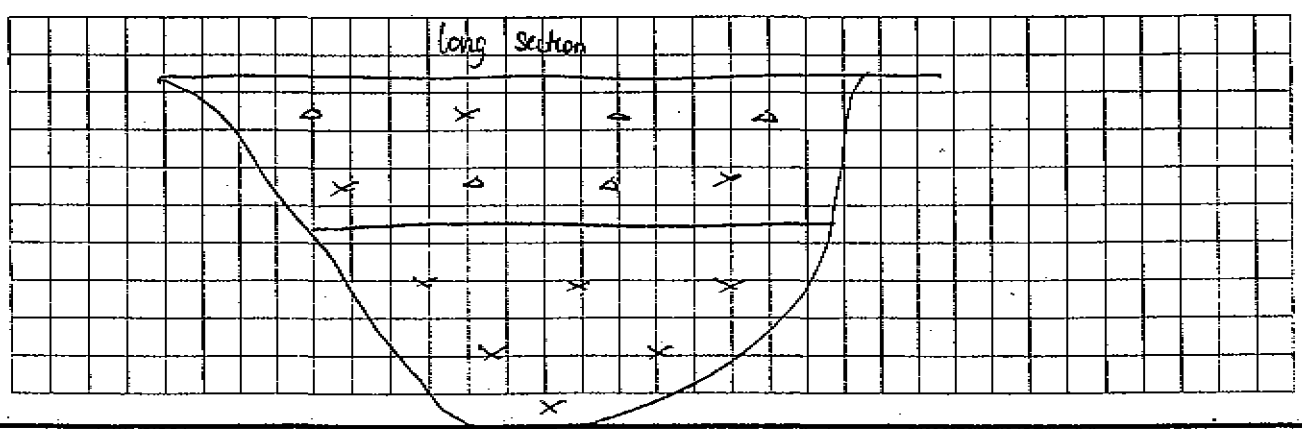
excavation no.: MM4
sheet 1 of 1

job no.: E99019 file:

project: MAGNESITE MINE - OVERBURDEN INVESTIGAT.
pit location: 369 380 E 5439300 N, 20 m East of AR15
pit commenced:
pit completed: 15/4/99
pit logged by: C. Davies
log checked by: RMC

equipment type and model: HITACHI EX200
excavation dimensions 6 m long, 3 m wide
R.L. surface 150 m
datum: STATE operator: A Champion

method	penetration 1 2 3	support	water	notes samples, tests, etc.	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, density index	hand penetrometer kPa 100 200 300 400 500	structure and additional observations
EX				NS	NSOI		ML	TOPSOIL, SILT; med PI grey	M	Fb		
				4/1				GRAVEL: med plasticity, orange	>PL			
								low strength particles with silty				
							GM	fines. Some sub angular cobbles of schist				
					2			GRAVEL: similar to above,	M	Fb		
				4/2				finer graded, sandy silty fines	-W			
								mostly	>PL			
					3.6							
					4		ML	SILT: med. plasticity, dark grey	M			Very distinct boundary
			water inflows	4/3				contains some fine angular gravel/pebble gravel, paler grey with depth	-W	VS		Pocket penetrometer values very variable min 35 - 40 kPa
									>PL	-S		
								interbedded with more gravelly				
								layers (see 4/4)				
					6							
				4/4				6.4 m END				
			no									



KEY

method
N — natural exposure
E — existing excavation
BH — backhoe bucket
B — bulldozer blade
R — ripper
EX — excavator bucket

support
T — timbering

penetration
1 2 3 no resistance ranging to refusal

water
level (date)
inflow
outflow

notes—samples and tests
U — undisturbed sample (subscript = tube diameter)
D — disturbed sample (subscript = ref. number)
F — in situ CBR value by Farnell penetrometer

classification symbols and soil description based on Unified Classification system

moisture condition
D — dry, M — moist, W — wet
< PL, = PL, > PL relative to plastic limit done by hand test

(consistency/density index)
VS — very soft
S — soft
F — firm
St — stiff
VSt — very stiff
H — hard
Fb — friable
VL — very loose
L — loose
MD — medium dense
D — dense
VD — very dense

Pitt & Sherry Consulting Engineers
Environmental & Earth Sciences Unit

490289

MRF—41 (Jan '89)

excavation no.: MM 5
sheet 1 of 1

engineering log — excavation

job no.: E99019 file:

project: MAGNESITE MINE - OVERBURDEN INVESTIGATION
pit location: 369 580 E 5239 160 N 2m East of AR2

pit commenced:
pit completed: 15 JUL 99
pit logged by: C. Davies
log checked by: RMK

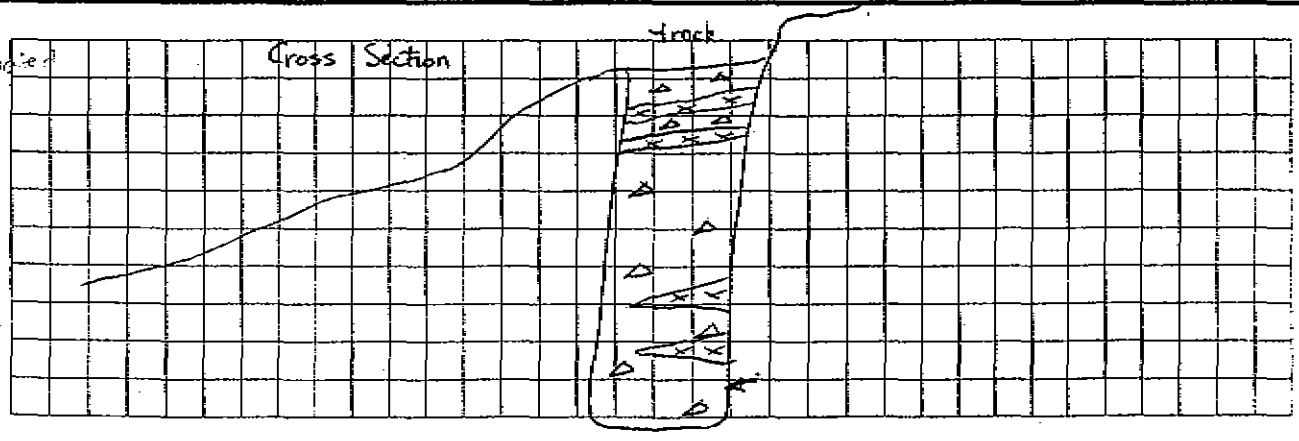
equipment type and model: HITACHI EX 200
excavation dimensions 6 m long, 2·5 m wide

R.L. surface 174 m
datum: State operator: A. Champion

method	penetration 1 2 3	support	water	notes samples, tests, etc.	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency, density index	hand penetrometer kPa 100 200 300 400 500	structure and additional observations
												Surface is drill pad
EX				S1				SILTY GRAVEL: med plasticity, tan	M	H		in Myrtle forest
							GM	contains weathered metamorphic	>PL	Fb		
								rock, some quartzite, magnesite +				
								schist				
				S2	1.0							
					1.15		ML	SILT: med plasticity, grey	M-W	Vs	x	
				S1				SILTY GRAVEL: see S1	M	H,Fb		
				S2	1.35		ML	SILT: med plasticity, grey	M-W	Vs	x	
					1.50							
								GRAVEL: mixed metamorphic, med				
					2							
				B3				plasticity, pale brown, angular &	M			
							GM -GP	sub angular particles ms 20 mm	>PL	Fb		
					3							
				S4	3.30		ML	SILT: med plasticity, dark grey,	M-W	Vs		The configuration of this
				S4	3.40		ML	contains angular quartzite gravel				hole not clear. The
				S5	3.60			2 bands				silt beds are more
			▶	constant								apparent on the west
				seepage	4		GP	GRAVEL, mixed metamorphic				& north (uphill) sides
				200l				rock, medium plasticity, tan,	W	L		of the hole. The area
				after 15				angular & sub angular particles	Sat			may be one of locally
				minutes				ms 200mm				derived slope deposits.
								END OF MM5 @ 6·8m				

* Pit excavated in WN quartz schist.

Cross Section



KEY

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penetration
1 2 3 no resistance ranging to refusal

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level (date)
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classification symbols and soil description based on Unified Classification system

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< PL, = PL, > PL relative to plastic limit done by hand test

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VS — very soft
S — soft
F — firm
St — stiff
VSt— very stiff
H — hard
Fb — friable
VL — very loose
L — loose
MD — medium dense
D — dense
VD — very dense

APPENDIX 5

APPENDIX 5

Bulk Density Tests

1983 Testing CRAE

	HOLE	DEPTH	WT (gm)	VOL (cc)	DENSITY (gm/cc)
Magnesite					
(good)	AR3	301.5	135.02	48.5	2.78 ± 0.12
(recryst)	AR3	330.0	109.92	39.0	2.82 ± 0.15
(recryst low qual)	AR3	257.8	143.52	49.0	2.93 ± 0.12
(weathered)	AR3	197.0	179.86	61.0	
(weathered)	AR3	93.0	107.60	41.5	
				Mean = 2.81 gm/cc	St. dev = 0.14
Amphibolite					
Footwall	AR3	406.0	369.49	129.0	2.86 ± 0.04
	AR3	400.5	233.96	88.0	2.66 ± 0.06
	AR3	400.5	41.73	16.0	2.61 ± 0.33
				Mean = 2.71 gm/cc	St. dev. = 0.13
Schist	AR2	91.0	211.95	84.0	2.52 ± 0.06
Hangingwall	AR2	96.0	211.75	115.0	1.84 ± 0.03
(weathered) AR2					
					Mean = 2.18
Permian					
Fresh foliated	AR2				
Siltstones KR2	AR2	16.49	333.96	127.0	2.63 ± 0.04

1999 Testing – Analabs Pty Ltd, Burnie

	DESCRIPTION	DENSITY
AR019	High grade clayey magnesite 20.8 m – 22.4 m	2.67
AR019	High grade ferruginous hard magnesite 40.4-41.8 m	2.65
AR019	High grade ferruginous and clayey magnesite 52.4 – 54.0m	2.61
AR020	High grade white crystalline magnesite 88.0 – 91.0 m	2.78
AR020	High grade ferruginous hard magnesite 162.0 – 164.6m	2.82

APPENDIX 6

430253

ROGER TOWNEND AND ASSOCIATES

CONSULTING MINERALOGISTS

ACN 069 920 476

Principal: Dr. Roger Townend

PHONE: (08) 9358 1138
A/H: (08) 9386 9420
FAX: (08) 9358 1139

John Wyatt,

4 Minim Close,

Mosman Park

WA

4-5-99

our ref. 99116

Preparation of four thin sections of various drill cores, and rock identifications.

R Townend

103 - 105 Dowd Street, Welshpool, Western Australia 6106
Correspondence to Box 120 Bentley W.A. 6102

(PATALYN PTY LTD TRADING FOR THE TOWNEND FAMILY TRUST)

SAMPLE AR 8

DRILL CORES(3)

THIN SECTION

The three cores mounted are each composed of a fine grained laminated carbonate , which is FERROAN DOLOMITE(SEM)

Coarse grained carbonate veining is composed of the same mineral.

SAMPLE AR 9

DRILL CORES (5)

THIN SECTION

The five cores mounted all consist of igneous rocks.

Two are coarse DOLERITES with altered plagioclase, actinolite, and coarse titanite. One is a finer grained equivalent, with abundant ores.

Two are more altered, with one(METADOLERITE) having chlorite as the ferromagnesian, abundant rutile and the quite fresh plagioclase part recrystallised. The fifth example is heavily chloritised , with some carbonate veining, and has partly lost its primary texture.

SAMPLE AR 10

DRILL CORES (3)

THIN SECTION IGNEOUS/SCHIST FW

The three cores mounted are all altered igneous rocks.

One is a METADOLERITE , with several clinoamphiboles, one having a distinct purple pleochoic tint, and part sericitised plagioclase.

The second was probably basic, now consisting of chlorite subordinate to recrystallised plagioclase, and ? quartz , plus 5% leucoxene/rutile.

The third has totally lost its igneous texture, now a finely laminated semi SCHIST of chlorite, quartz, Ti oxides etc, also with coarse veins OF carbonate ,quartz, chlorite and some tourmaline.

SAMPLES AR 2

DRILL CORES (2)

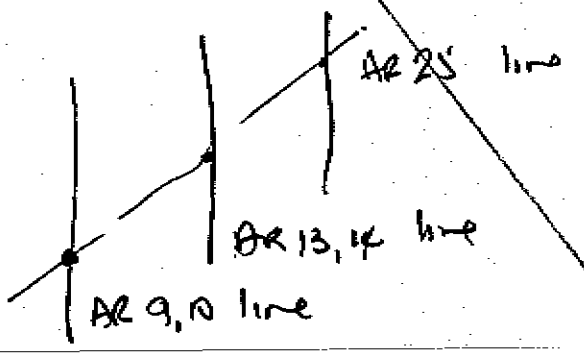
THIN SECTION

AR2 and AR 2 are altered DOLERITES. They retain their intrusive texture, now composed of several clinoamphiboles, and a totally sericitised feldspar plus extensive oxide ores.

Query AR 7 40% MgO. MVST B

The identification of igneous / metadolerite/schist in AR10. (+AR9) indicates possibility of dolerite plug with a sloping contact in Section Line AR 9, 10, 16, 17 up to Section Line 13, 14, 15. Then up to Section Line 24, 25.

17



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ROGER TOWNEND AND ASSOCIATES

CONSULTING MINERALOGISTS

ACN 069 920 476

Principal: Dr. Roger Townend

PHONE: (08) 9358 1138
A/H: (08) 9386 9420
FAX: (08) 9358 1139

John Wyatt,

Geological Investigations,

4 Minim Close

Mosman Park,.

WA. 6012

18-1-99

our ref. 99007

Preparation of 5 thin sections and brief petrographic/SEM examination of 5 drill cores.(AR 21)

R Townend

103 - 105 Dowd Street, Welshpool, Western Australia 6106
Correspondence to Box 120 Bentley W.A. 6102

(PATALYN PTY LTD TRADING FOR THE TOWNEND FAMILY TRUST)

SAMPLE AR 21 199M

DRILL CORE creamy brown carbonate with grey carbonate veins.

THIN SECTION

MAGNESITE	DOMINANT,
PYRITE	TRACE

VEINS

MAGNESITE	DOMINANT
DOLOMITE	

The interval consists of a very fine grained brown tinted slightly FERROAN MAGNESITE , that is extensively veined and penetrated by a clear coarse grained carbonate .

This is mainly magnesite, but does contain a narrow vein of DOLOMITE.

SAMPLE AR 21 203M

DRILL CORE grey carbonate with white carbonate veins

THIN SECTION

PIECE A.

DOLOMITE	
OPAQUES	TRACE

VEIN
DOLOMITE

PIECE B

DOLOMITE	
OPAQUES	TRACE

VEIN
DOLOMITE

Two core pieces were mounted. In a, the rock consisted of a medium grained tinted carbonate,DOLOMITE , crossed by a carbonate vein that was a clear DOLOMITE
The former has about a 0.2mm grainsizes, with undulose extinction and irregular contacts.

In B, there are three types of carbonate. Part is a micritic type, with very fine grainsize, part is a tinted undulose carbonate, as in A, and there are also clear carbonate veins. The SEM found all to be DOLOMITE.

SAMPLE AR 21 204.7M

DRILL CORE dark grey fine carbonate

THIN SECTION

DOLOMITE	DOMINANT
QUARTZ	TRACE
ORES	TRACE

VEINS

DOMINANT	DOMINANT
QUARTZ	MINOR

This is a fine grained well lineated DOLOMITE.

The dolomite occurs as sub 50 micron elongate aligned crystals with low levels of fine ores and quartz.

The fabric is crossed by folded veined of coarse carbonate(dolomite), and quartz.

SAMPLE AR 21 211M

DRILL CORE fine grained grey carbonate

THIN SECTION

DOLOMITE	DOMINANT,
CHLORITE	MINOR TO TRACE
QUARTZ	ACCESSORY TO TRACE
RUTILE	ACCESSORY TO TRACE
PYRITE	TRACE

This is a very fine grained DOLOMITE, containing some narrow bands low in carbonate, that are a mixture of chlorite, quartz, Ti oxides and pyrite etc.

SAMPLE AR 21 214M

DRILL CORE grey carbonate with white carbonate veins.

THIN SECTION

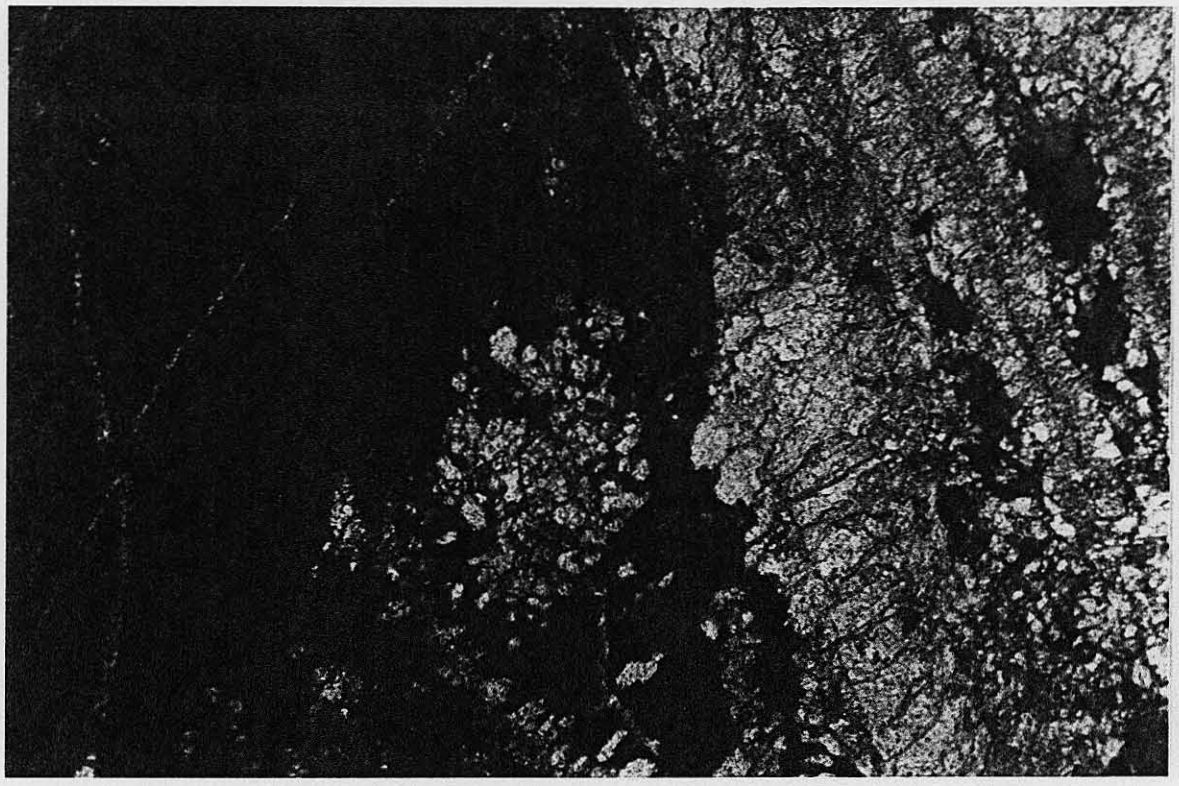
DOLOMITE

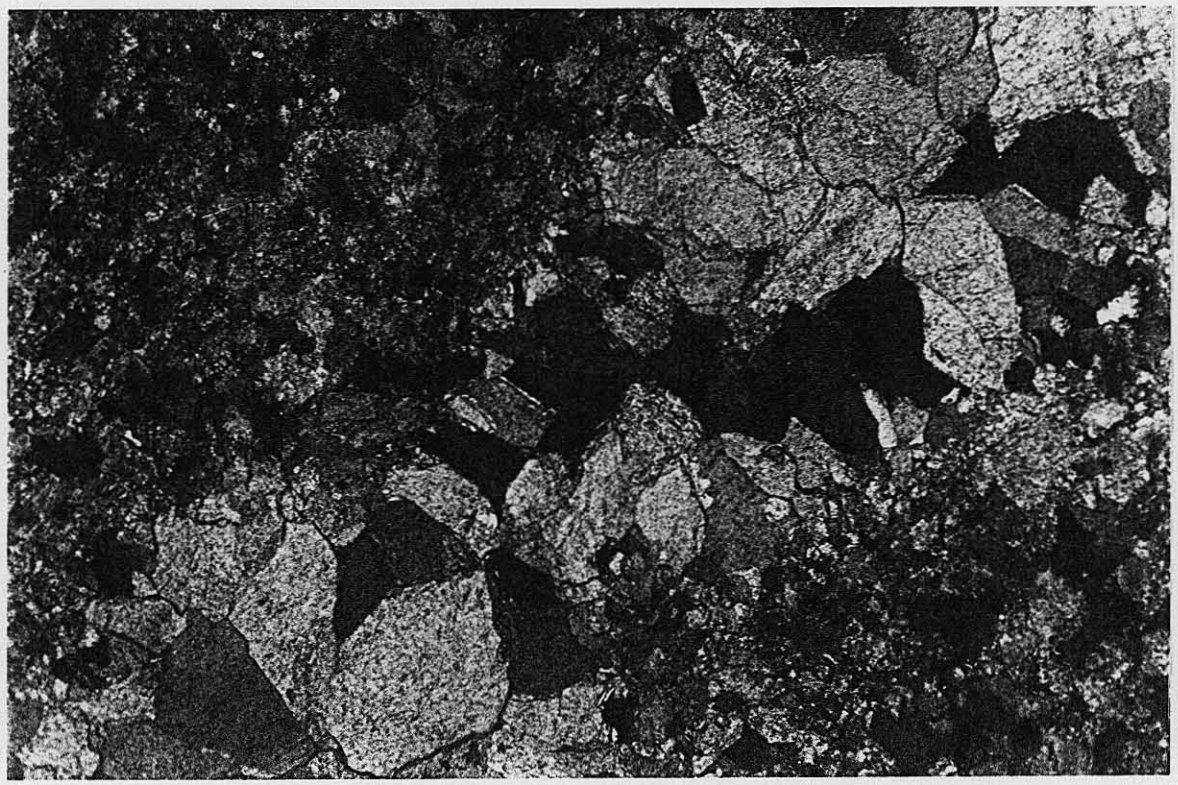
VEIN
MG CALCITE

The core is a DOLOMITE , that has a variable texture. This consists of medium and fine grained dolomite with either locally dominant.

The coarse veins are of Mg CALCITE.

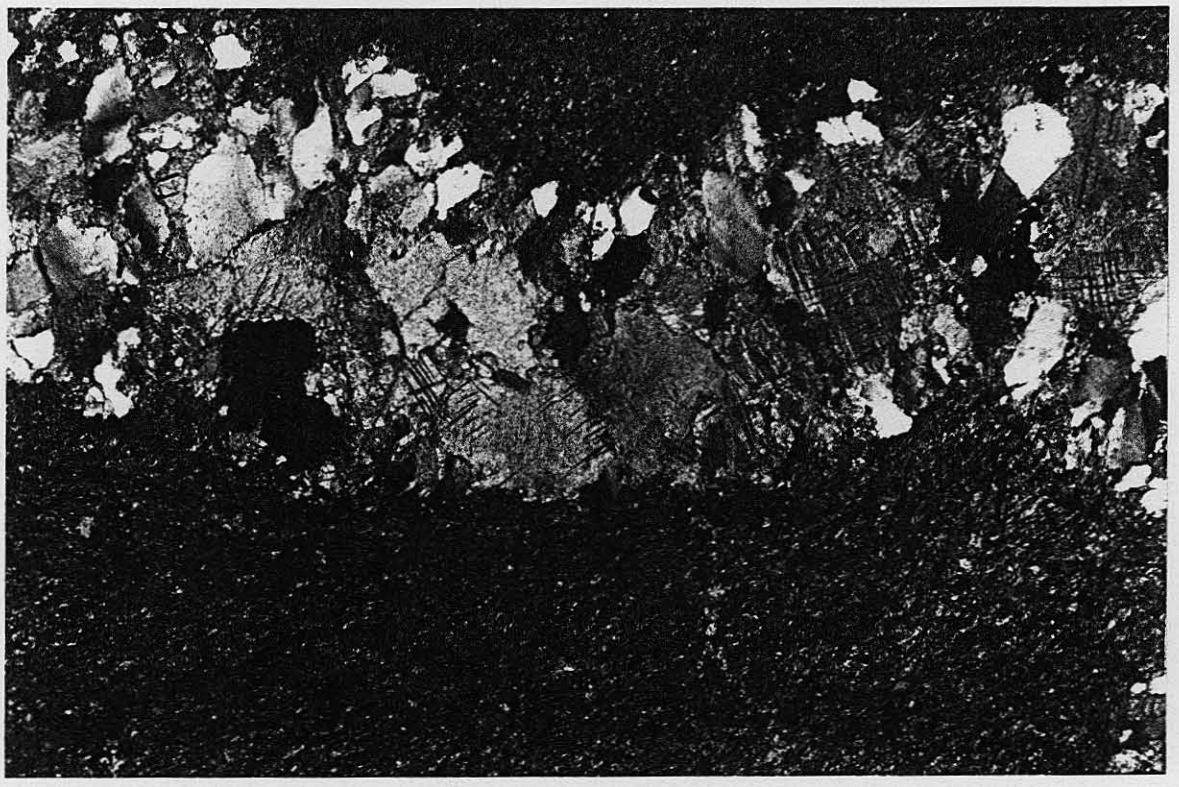
21/199 DARK FINE GRAINED FERROAN MAGNESITE AND COARSER CLEAR MAGNESITE. FIELD WIDTH 2.2MM

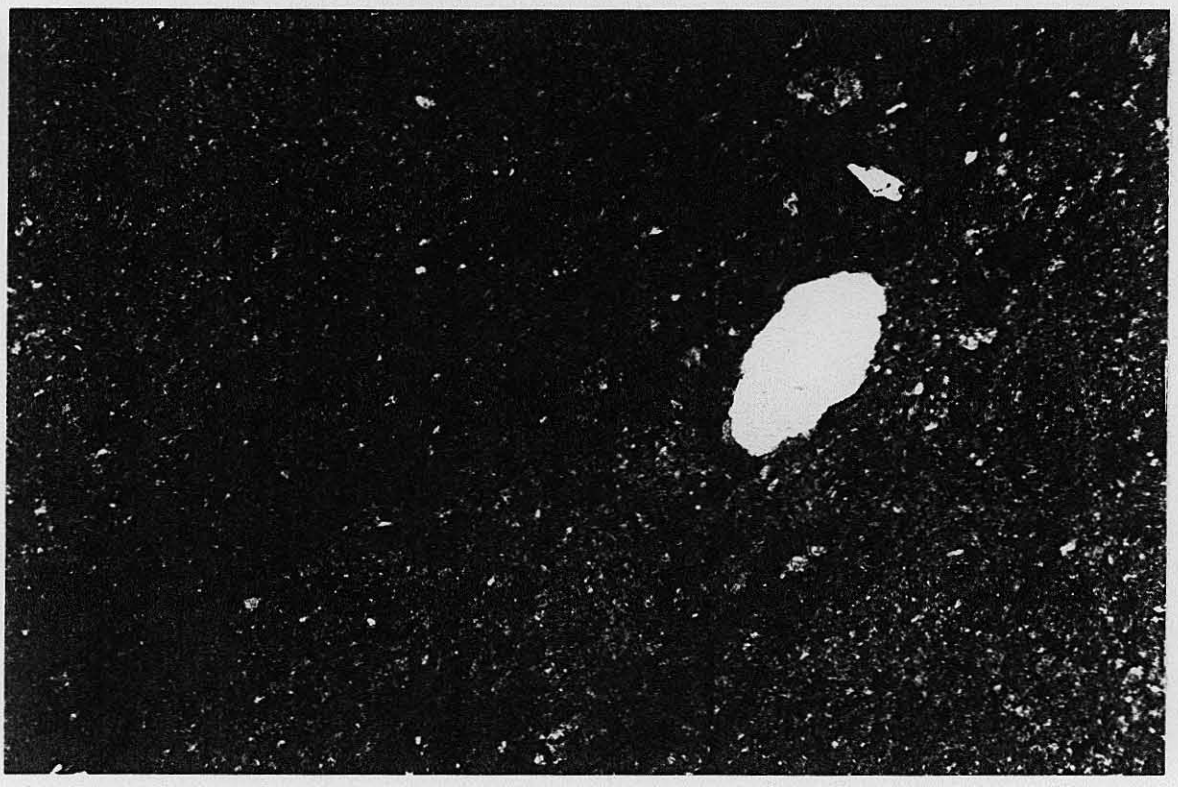




21/203 DOLOMITE VEIN THROUGH DOLOMITE WALLROCK. FIELD WIDTH 2.2MM

21/204.7. DOLOMITE QUARTZ VEIN THROUGH FINE GRAINED DOLOMITE. FIELD WIDTH 2.2MM





21/211. QUARTZ CLAST IN FINE GRAINED DOLOMITE WITH SILICEOUS BANDS. FIELD WIDTH 2.2MM

21/214. MG CALCITE VEIN THROUGH DOLOMITE. FIELD WIDTH 2.2MM