Tasmania Department of State Development & Resources

Division of Mines — Report 1993/03

Evaluation of the limestone resources at Roberts Hill, Maydena

by P. K. Wrigley

Summary

A percussion drilling program on the southern slopes of Roberts Hill, Maydena, has delineated a measured and indicated limestone resource (to a down-dip depth of 50 m) of about 5.5 million tonnes grading 92.9% $CaCO_3$ and 0.59% Mg. Two lenses of higher grade limestone have been delineated within this resource. Combined, these lenses are estimated to contain a measured and indicated resource (to a down-dip depth of 50 m) of about 1 million tonnes of limestone grading 94.5% $CaCO_3$ and 0.38% Mg.

A geologically and geochemically similar deposit about 500 m to the northwest, at Risbys Basin, has not been drill tested, and is inferred to contain similar resources. This deposit is partly on private property.

Upgrading of the resources to reserve status depends on a number of variables beyond the scope of this report. These include quarry design and management, processing practices, grade requirements, dilution effects, supply contracts, mining costs, and demand for agricultural lime and stone for construction material. A detailed quarry plan or feasibility study has therefore not been attempted.

INTRODUCTION

This report presents the results of exploration for high grade limestone resources in the Maydena–Florentine Valley area. The aim of the exploration program was to locate an alternative quarry site to Benders Quarry at Lune River. The target was a resource of one million tonnes of limestone grading at least 94% $CaCO_3$ and not more than 0.4% Mg. The grade is specified by Bender's largest customer, the Pasminco-EZ Risdon plant, which currently consumes about 25 000 tonnes of limestone per annum.

Where used in this report, the term 'high-grade limestone' is defined as limestone that satisfies the current grade specifications set by Pasminco-EZ at Risdon.

Calver (1990) reported on a reconnaissance geological survey for high-grade limestone in the Maydena–Florentine Valley area and, based on a number of considerations, recommended that further work be focused on the Roberts Hill–Risbys Basin area. Calver (1992) reported that a fully-cored diamond-drill hole sited on Roberts Hill (Maydena DDH1, shown in Figure 1) intersected a true thickness of 50 m of limestone grading 94.9% $CaCO_3$, 0.64% Mg. Calver recommended that a systematic outcrop sampling program be undertaken to locate lenses of higher grade within the Cashions Creek Limestone.

A detailed, grid-based, surface rock-chip sampling and mapping program conducted between March and June 1992 outlined four high-grade limestone lenses on Roberts Hill, Maydena, grading ≥94% $CaCO_3$, ≤0.4% Mg (Wrigley, 1992). A systematic drilling program was recommended to test for continuity of grades with depth, and to enable calculation of resources. In November–December 1992 an eight-hole percussion drilling program was completed over two of the lenses (Zone A of Wrigley, 1992). The area drilled was chosen for its accessibility.

LOCATION AND ACCESS

Drill hole locations and elevations are listed in Table 1. The drill pads were sited as near as practicable to co-ordinates defined by the local exploration grid, which was surveyed by tape and compass (Wrigley, 1992). The drill hole locations were accurately surveyed after completion and are shown in Figure 1, together with the approximate position of the exploration grid. Lines 500 mN, 600 mN and 700 mN were surveyed and levelled to enable production of the profiles shown in Figures 3 (a–c) and 4 (a–c).

Table 1

Drill hole locations

Hole No.	Easting (m)	Northing (m)	Elevation (m)
PDH1A	468 570.8	5 264 073.6	435.8
PDH1B	468 570.9	5 264 083.7	435.8
PDH2	468 659.5	5 264 033.5	441.8
PDH3A	468 746.0	5 264 002.0	441.0
PDH3B	468 721.6	5 264 000.0	441.1
PDH4	468 724.3	5 263 953.3	428.1
PDH5	468 629.1	5 263 967.6	418.0
PDH6	468 545.2	5 264 005.4	423.4

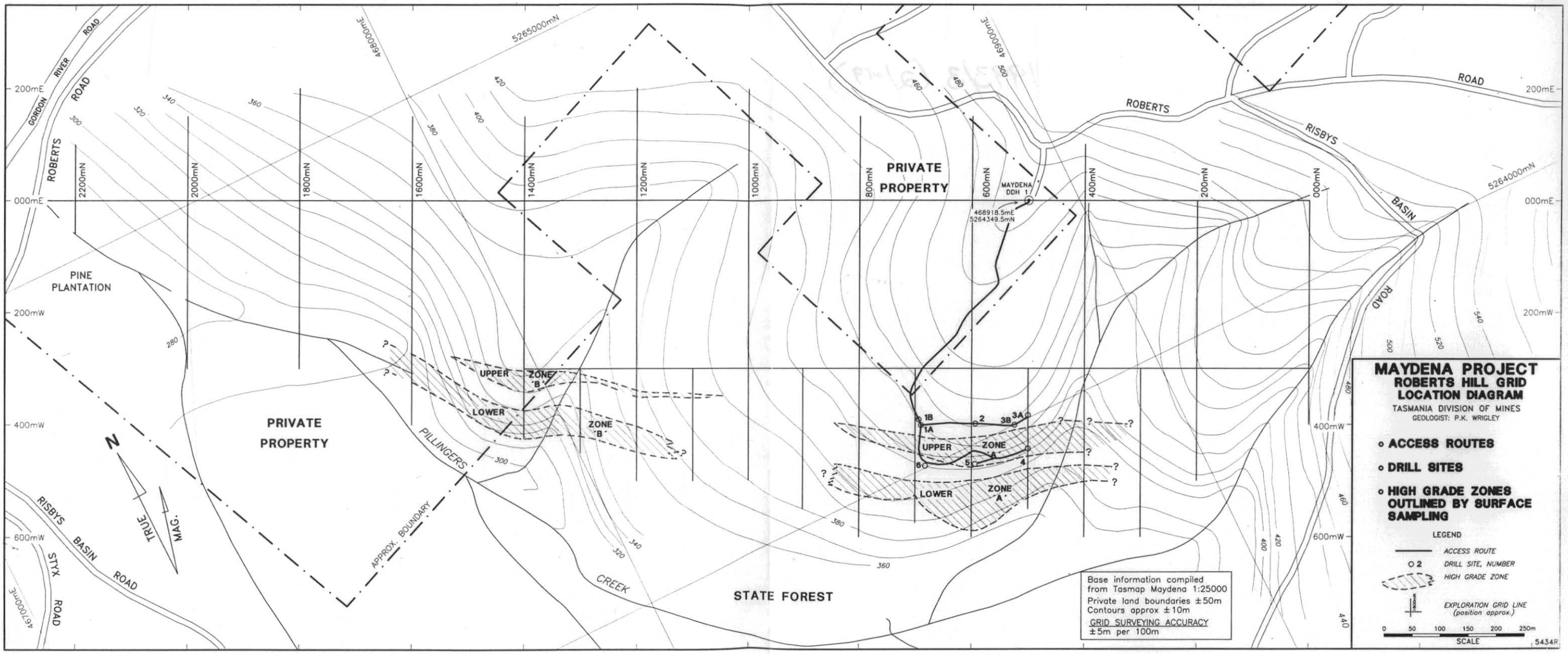

Figure 1

Location diagram, Roberts Hill area, Maydena

A track about one kilometre long was constructed to connect the drill sites to Roberts Road, the major access route in the area. The prospect drilled occurs within State Forest and is adjacent to private land owned by Australian Newsprint Mills Limited (fig. 1).

GEOLOGICAL SETTING

Wrigley (1992) described the local geology and included a geological map of the Maydena area from Calver (1990). The lenses drill tested occur in the Cashions Creek Limestone, which is the middle of three formations comprising the Ordovician Gordon Group. The formation dips at about 34° to the northeast, is about 115 m thick, and consists of alternating units of light to dark grey oncolitic and non-oncolitic fine to coarse-grained calcarenite.

DRILLING AND ANALYTICAL

A Warman 1000 drill rig was used to drill eight 140 mm diameter holes totalling 638 metres. Chip and dust samples from the open hole percussion drilling were taken over two metre intervals. Sample recovery was estimated visually. The dry samples were collected via a cyclone and each was reduced to about one kilogram in weight using a riffle-splitter. The holes were air-blasted every six metres to reduce potential for error due to time-lag in sample recovery.

A total of 542 samples were taken and analysed for $CaCO_3$ and Mg in the Division's laboratory using AAS. A further 200 samples were split using a 1.4 mm sieve, and the unwashed 'coarse-fraction' was analysed to test, by inference, for the presence of clay in the samples.

Analytical accuracy is estimated to be ±1% for $CaCO_3$ and ±0.05% for Mg (L. Hay, Division of Mines chemist, pers. comm.). Results are discussed under the section titled Geochemistry.

GEOLOGY

The coarse fraction (i.e. chips) from each two metre drill sample was geologically logged. Summary geological logs are given in Appendix 1.

The presence or absence of oncolites is the primary characteristic for lithological subdivision of the Cashions Creek Limestone Formation. Unfortunately, it is not possible to recognise oncolites in the percussion drill samples so lithological subdivision has been restricted to variations in colour, grainsize and relative abundance of stromatolites (mat or dome-like algal fossils) and stylolites (seams of impurities). This method of subdivision appears to correlate fairly well with the extrapolated position of lithological units interpreted from surface mapping (see fig. 2a–c).

Comparison of lithologies interpreted from both surface mapping and drill logs indicates that the upper high-grade lens (Upper Zone A) straddles a medium grey calcarenite and a light grey stromatolitic calcarenite. These are inferred to occur at about the base of a non-oncolitic unit mapped at the surface. The lower high-grade lens (Lower Zone A) occurs in a light grey stromatolitic calcarenite that is inferred to occur within an oncolitic unit mapped at the surface.

It should be noted here that PDH4 does not show a continuation of the high-grade interval intersected in holes PDH5 and 6 along strike. The highest grade interval intersected in PDH4 (10 m @ 93.7/0.55) occurs in a brownish-tinged, light grey stromatolitic calcarenite. This unit occurs within the non-oncolitic calcarenite (Lower Zone A) of Wrigley (1992). Therefore, the underlying oncolitic unit which contains the lower high-grade lens intersected in holes PDH5 and 6 has either decreased markedly in $CaCO_3$ grade or is contaminated by a significant proportion of clay or other minerals in PDH4. The coarse-fraction has not been analysed over this interval.

In addition, a second high-grade intersection in PDH2 (i.e. intersection 2(ii) of Table 2) does not continue through to the holes along strike (PDH 1B and 3B). This intersection occurs immediately below the upper intersection within a light grey calcarenite containing common to minor stromatolites. This unit was not logged in the hole along strike to the northwest (PDH1B) and in PDH3B, along strike to the southeast, appears to become less stromatolitic or is 'lensing' out against a non-stromatolitic light grey calcarenite.

The stromatolites within the sequence are usually red, locally hematitic, and are softer than the enclosing limestone. Consequently, they seldom crop out at surface and are inferred in the drill holes where 'red shale' chips were encountered in the samples, and where red 'fines' were produced.

Following construction of the access track and drill pads a brief reconnaissance for joints delineated a locally prominent set striking approximately N-S (between 350° and 15° Mag.) with vertical to steep dips to the west.

All figures presented in this report assume an average dip of 34° for bedding. A greater density of bedding orientation measurements is required to refine the model.

GEOCHEMISTRY

The geochemical data for each drill hole are presented in Appendix 2. Figure 3 (a–c) shows the geochemical profiles and interpreted geochemical 'units' for each data set, and depicts the approximate location of surface geochemical data for comparative purposes.

The $CaCO_3$ grades from drilling are usually at least 4–5% lower than those indicated by surface sampling. This could be caused by a number of factors, including the occurrence of non-outcropping, lower grade units in the sequence, or as a result of surface enrichment due to weathering. There is no discernible trend in the difference between Mg from drilling and that outlined by the surface sampling.

As described previously, the 'coarse fraction' of a number of samples was taken and analysed. The aim of performing coarse-fraction only analyses was to test the hypothesis that clay, occurring in the limestone in the form of fractures, joints and cavities, was present in the fine fraction of some samples, which would tend to depress $CaCO_3$ and/or increase Mg concentrations respectively.

Table 2

Comparison of high-grade intersections using 'whole-of-sample' vs 'coarse-fraction' results.

PDH No.	Whole	Coarse
1B	20 m @ 95.3/0.52 inc. 12 m @ 95.0/0.39	20 m @ 94.9/0.40
2 (i)	22 m @ 94.0/0.35	22 m @ 94.1/0.32
(ii)	30 m @ 90.5/0.34	30 m @ 94.3/0.32
3B	24 m @ 95.4/0.50 inc. 18 m @ 95.5/0.44	24 m @ 94.8/0.42
4	10 m @ 93.7/0.55	10 m @ 94.3/0.54
5	22 m @ 93.3/0.30 inc. 8 m @ 94.1/0.28	22 m @ 94.9/0.28
6	22 m @ 93.3/0.42 14 m @ 94.1/0.39	24 m @ 94.4/0.37

Holes PDH 1A and 3A were abandoned because cavities caused poor sample recovery and clay was seen in the coarse fraction of some samples. This would tend to support the above hypothesis. The 'coarse fraction' data is presented in Appendix 3 and is depicted on geochemical profiles in Figure 4 (a–c).

Table 2 compares the high-grade intervals for 'whole-of-sample' vs 'coarse-fraction'. The data indicate that the average $CaCO_3$ content has increased in the coarse fraction for the intersections in holes 2(ii) (3.8%), 5 (1.6%) and 6 (1.1%), whilst the Mg content has decreased for the intersections in holes 1B (0.12% Mg) and 3B (0.08% Mg). There were no significant decreases in $CaCO_3$ or increases in Mg grade for any of the other intersections listed in Table 2. Appendix 5 lists the difference between 'whole' and 'coarse fraction' assays for each sample, and lists the average of the differences for each hole.

The high-grade lenses defined by coarse-fraction data are more constant in both grade and width than the high-grade lenses as defined by the whole-of-sample results. The exception to this is intersection 2(ii) (see Table 2), which lenses out laterally and was not intersected in holes PDH's 1B and 3B along strike. As mentioned previously, this intersection occurs in a stromatolitic light grey calcarenite. Analysis of a stromatolite located at surface following track construction gave 78.1% $CaCO_3$, 0.14% Mg, so it is possible that the increase in $CaCO_3$ from 90.5% for 'whole-of-sample' data to 94.3% for 'coarse-fraction' data has occurred because the softer portions of the stromatolites are reporting to the 'fines'.

Other factors could be operating to produce the grades indicated by the 'coarse fraction' data. For example, other geological units and/or softer minerals could be preferentially reporting to the 'fines'. There is no guarantee that quarrying and/or processing could achieve a similar beneficiation of the limestone. During quarrying dilution of the grades may be expected if overburden contamination and/or overbreaking into lower grade limestone occurs to any significant extent.

RESOURCES

Detailed resource calculations are presented in Appendix 4. A density of 2.7 t/m^3 has been used throughout.

A nominal down-dip depth of 50 m is used for *in situ* resource calculations. Where two drill-hole intersections have been obtained for the same interval, the data for the intersection closest to surface has been used. Data from intervals with known poor sample recovery are also excluded from the calculations.

It should also be noted that the measured resource estimates are based on accurate survey data, whilst the indicated resource estimates (i.e. the strike lengths used in Appendix 4) are based on the less accurate exploration grid used for surface sampling and geological mapping.

The highest grade resource occurs in two lenses separated by lower grade material, and has been measured over a strike length of about 250 metres. Indicated resources comprise up to a further 150 m of strike.

Zone A

Two in situ resources have been calculated from the data. With a cut-off of 90% $CaCO_3$ and no Mg cut-off, a measured and indicated resource (to a down-dip depth of 50 m) of 5.5 million tonnes grading 92.9% $CaCO_3$, 0.59% Mg is estimated. Within this resource two thin lenses of higher grade (cut-off 94% $CaCO_3$, 0.4% Mg) limestone occur. Combined, these two lenses are estimated to comprise a measured and indicated resource of 1.04 million tonnes grading 94.5% $CaCO_3$, 0.38% Mg.

Zone B

This deposit (see fig. 1 for location) is about 500 m along strike from, and is geologically and geochemically similar to, Zone A (Wrigley, 1992). An inferred resource similar to Zone A is estimated.

Because of the wide (25 m) sample interval used in surface sampling, it is possible that the high-grade lenses are continuous between Zones A and B. Further sampling would be required to test this possibility.

'Coarse fraction' data

It is not considered appropriate to use the 'coarse-fraction' data to produce resource estimates because the data and derived estimates may not satisfy the resource assessment criteria defined by the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves (1988).

ACKNOWLEDGEMENTS

David Duncan and Rod Hargreaves are thanked for their valuable advice and discussions.

Grateful thanks are also made to the numerous other officers of the Division of Mines who have contributed to the Maydena limestone project and assisted in the production of this report.

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Report of the Joint Committee of the Australasian Institute of Mining and Metallurgy and Australian Mining Industry Council (1988). *Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves.*

[7 April 1993]

MAYDENA LIMESTONE PROJECT

ROBERTS HILL DRILLING
SECTION 700mN

INTERPRETATIVE COMPARISON OF SURFACE AND DRILLHOLE GEOLOGY

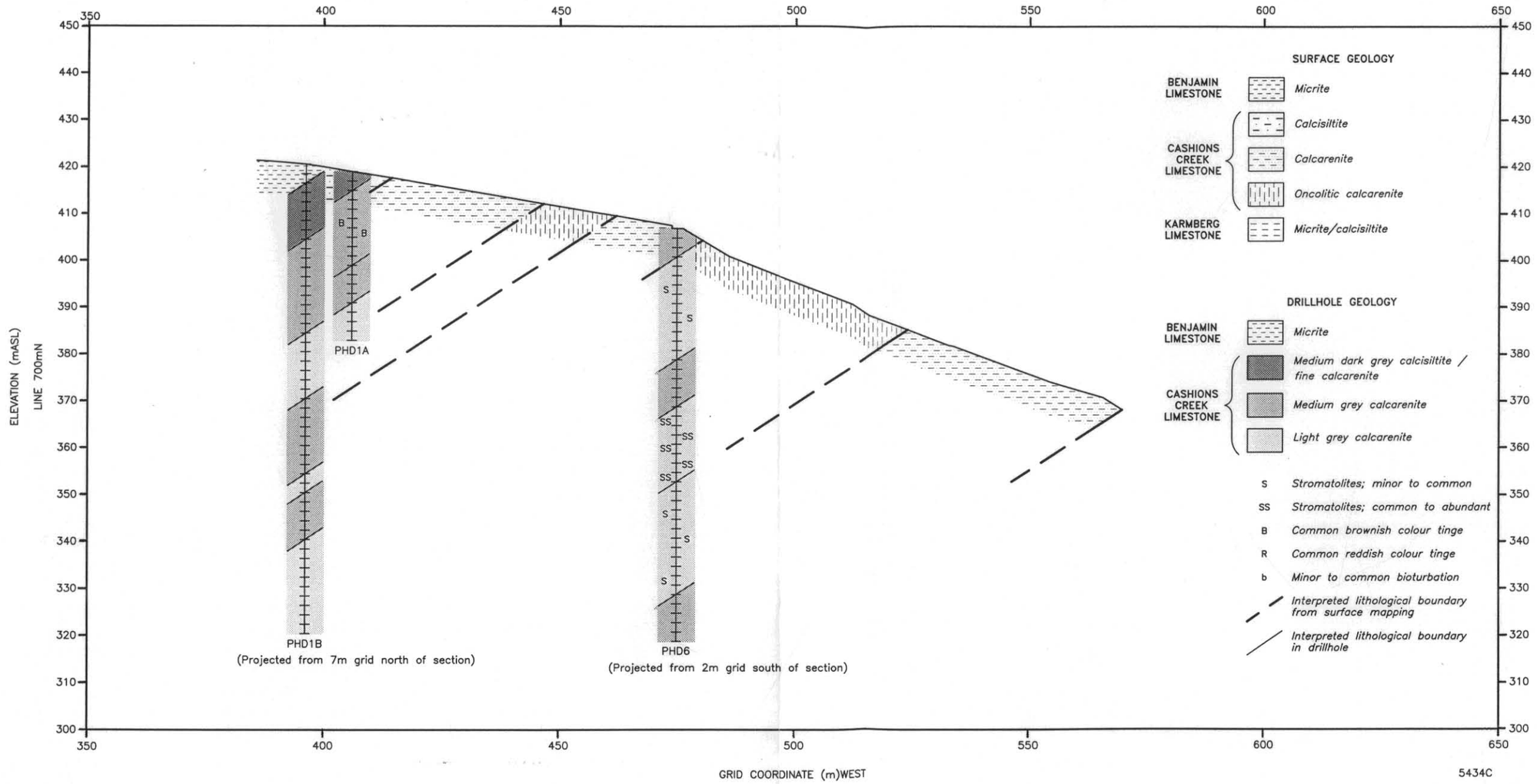

Figure 2a

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MAYDENA LIMESTONE PROJECT

ROBERTS HILL DRILLING
SECTION 600mN

INTERPRETATIVE COMPARISON OF SURFACE AND DRILLHOLE GEOLOGY

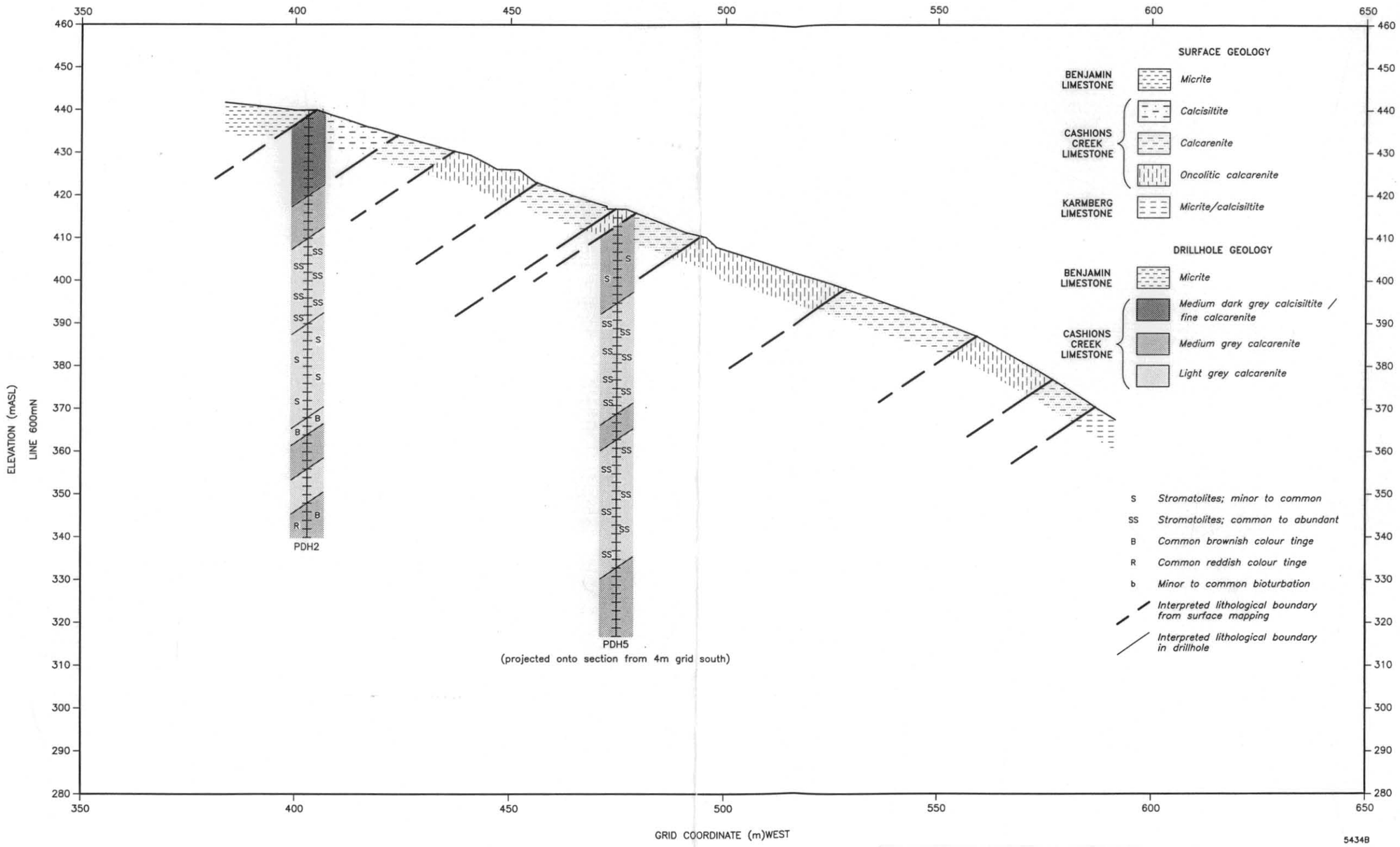

Figure 2b

MAYDENA LIMESTONE PROJECT

ROBERTS HILL DRILLING
SECTION 500mN

INTERPRETATIVE COMPARISON OF SURFACE AND DRILLHOLE GEOLOGY

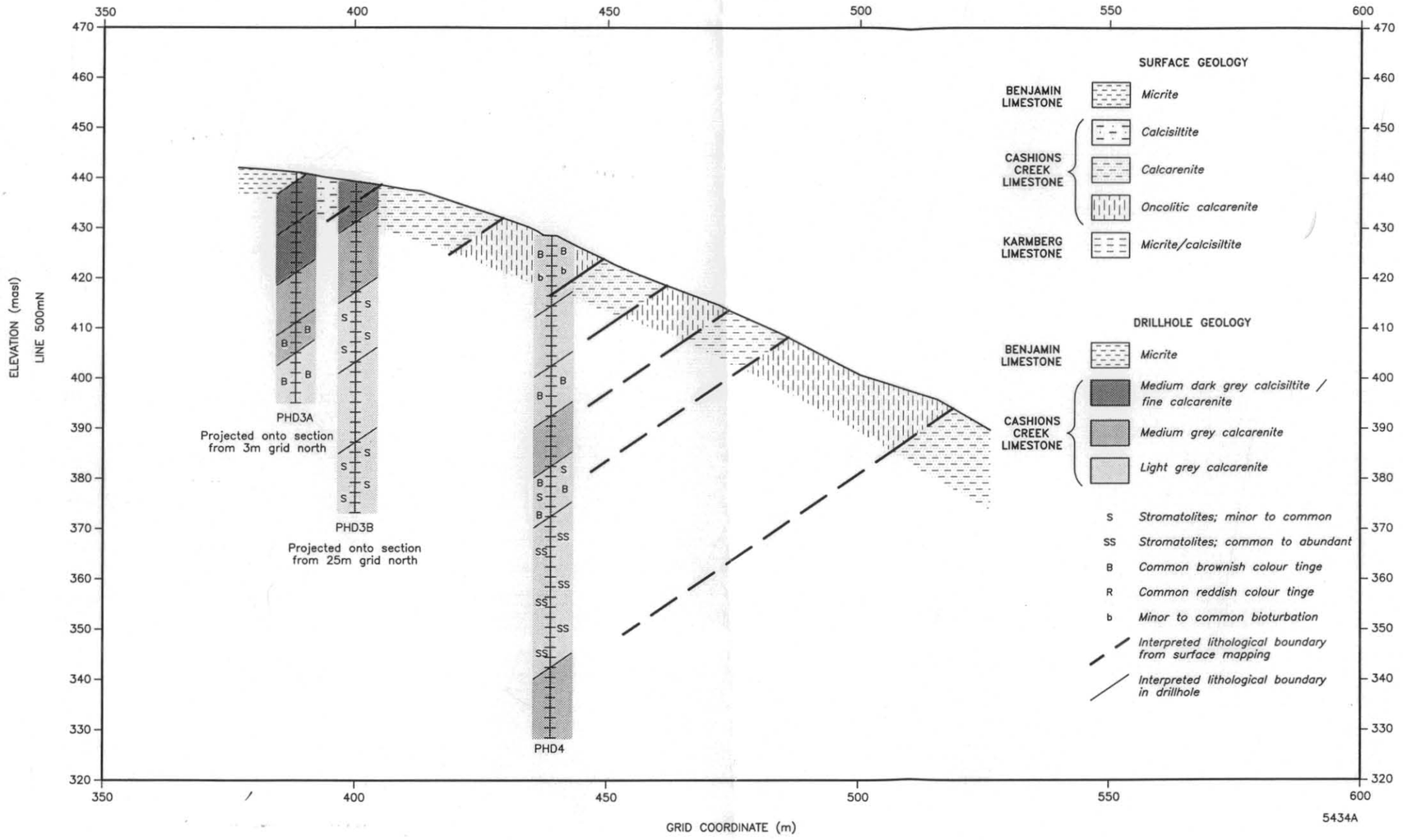

Figure 2c

MAYDENA LIMESTONE PROJECT

ROBERTS HILL DRILLING
SECTION 700mN

WHOLE OF SAMPLE GEOCHEMISTRY

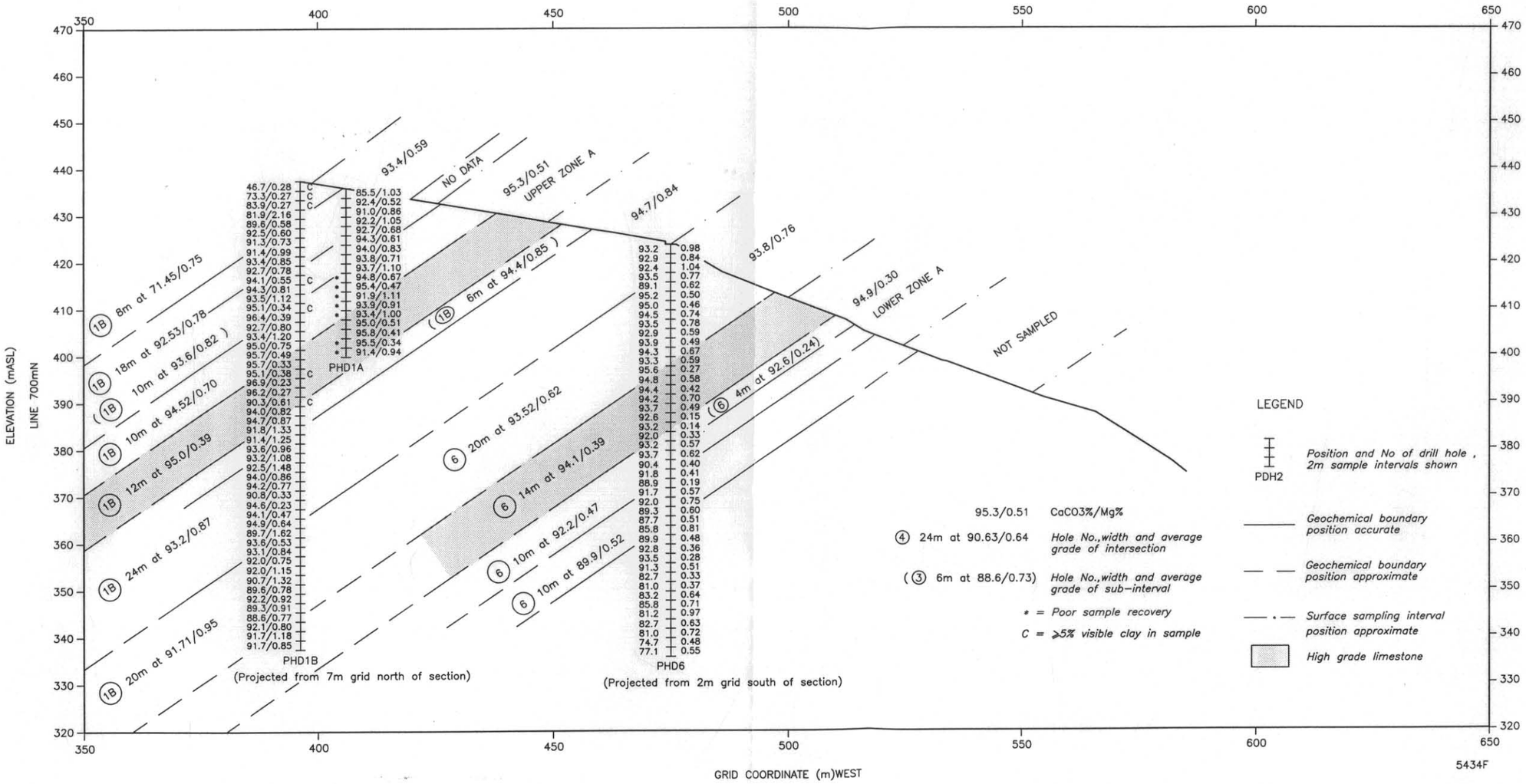

Figure 3a

MAYDENA LIMESTONE PROJECT

ROBERTS HILL DRILLING
SECTION 600mN

"WHOLE OF SAMPLE" GEOCHEMISTRY

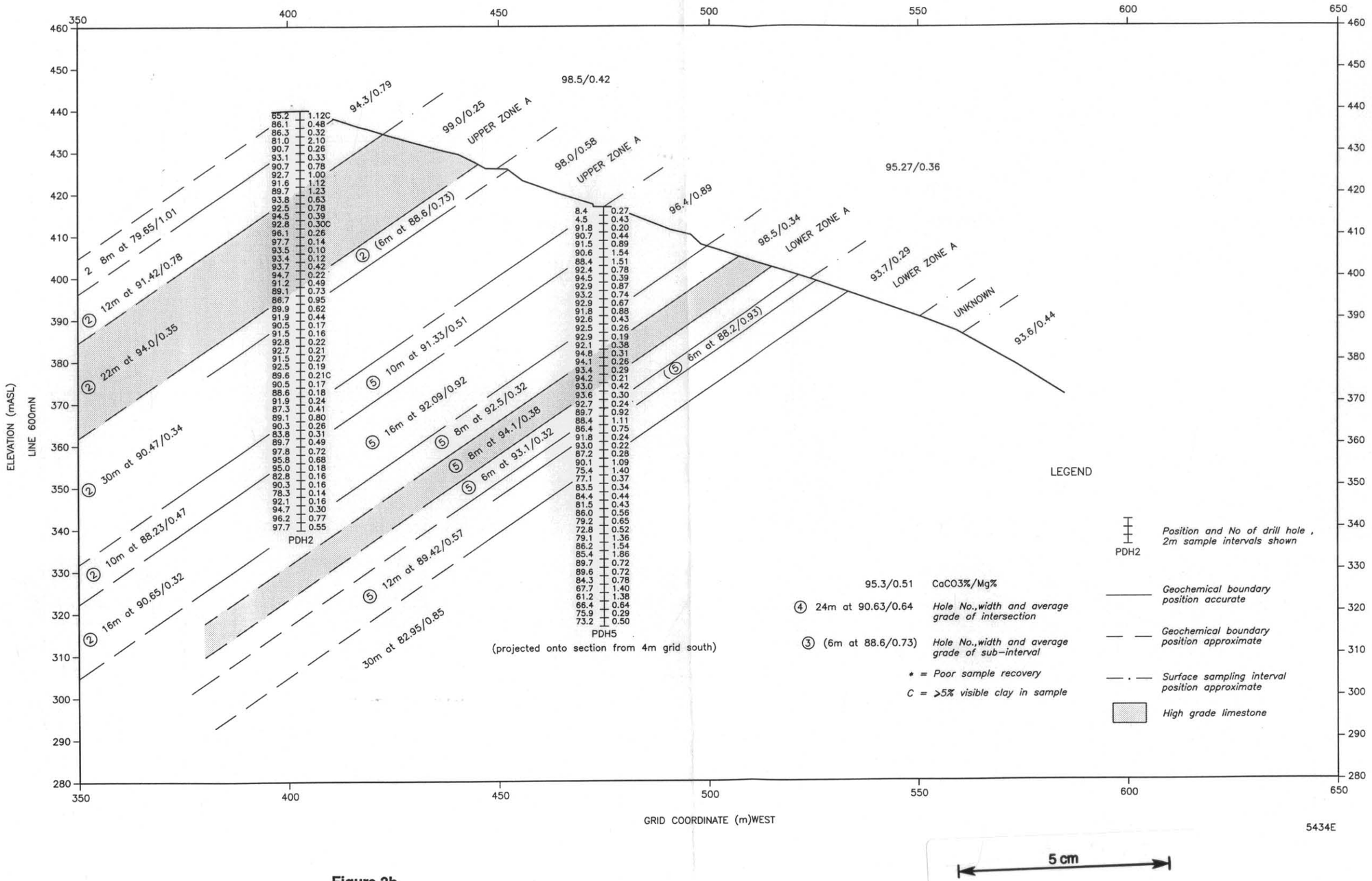

Figure 3b

MAYDENA LIMESTONE PROJECT

ROBERTS HILL DRILLING
SECTION 500mN

"WHOLE OF SAMPLE" GEOCHEMISTRY

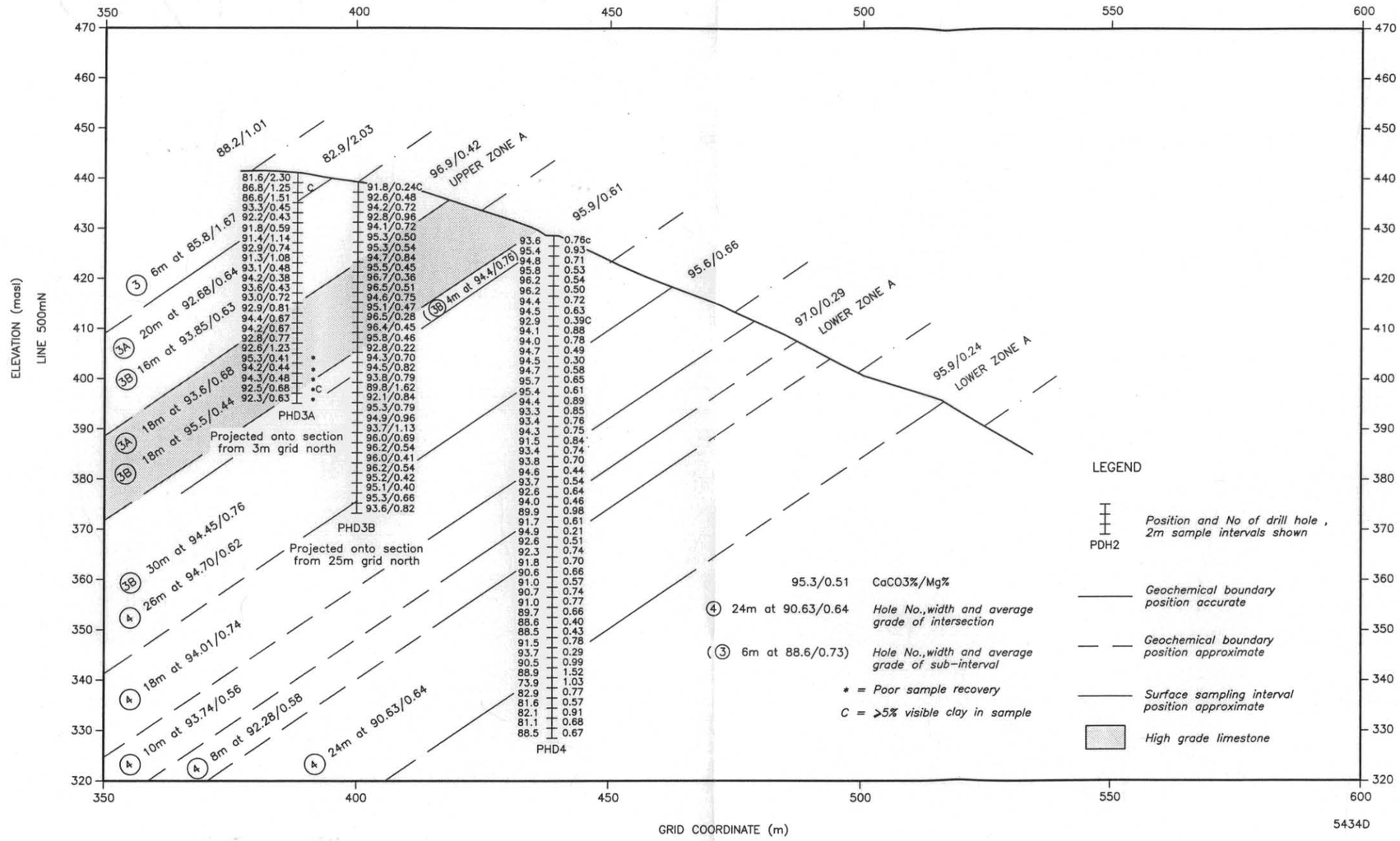

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Figure 3c

MAYDENA LIMESTONE PROJECT

ROBERTS HILL DRILLING
SECTION 700mN

" COARSE FRACTION " GEOCHEMISTRY

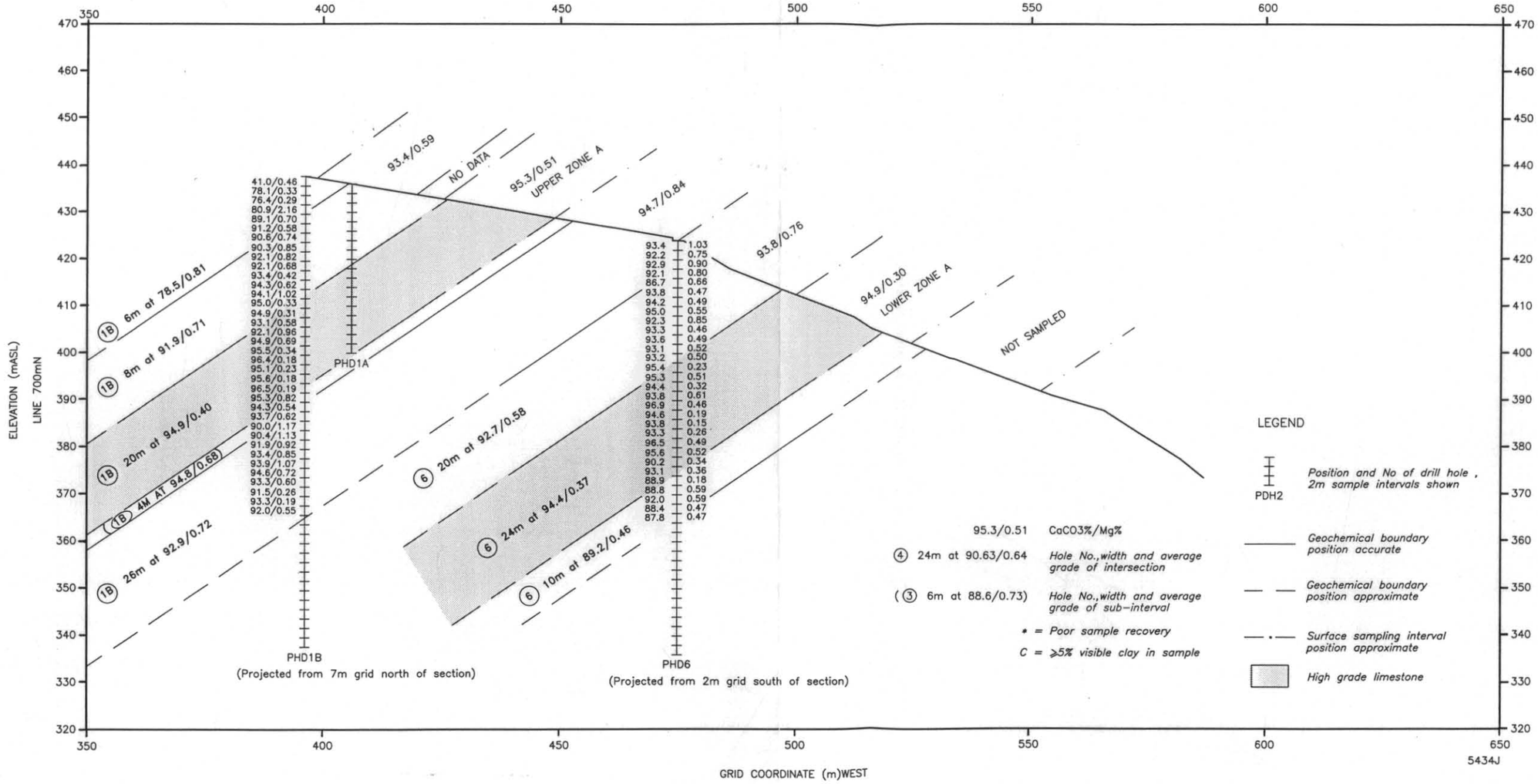

Figure 4a

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MAYDENA LIMESTONE PROJECT

ROBERTS HILL DRILLING
SECTION 600mN

" COARSE FRACTION " GEOCHEMISTRY

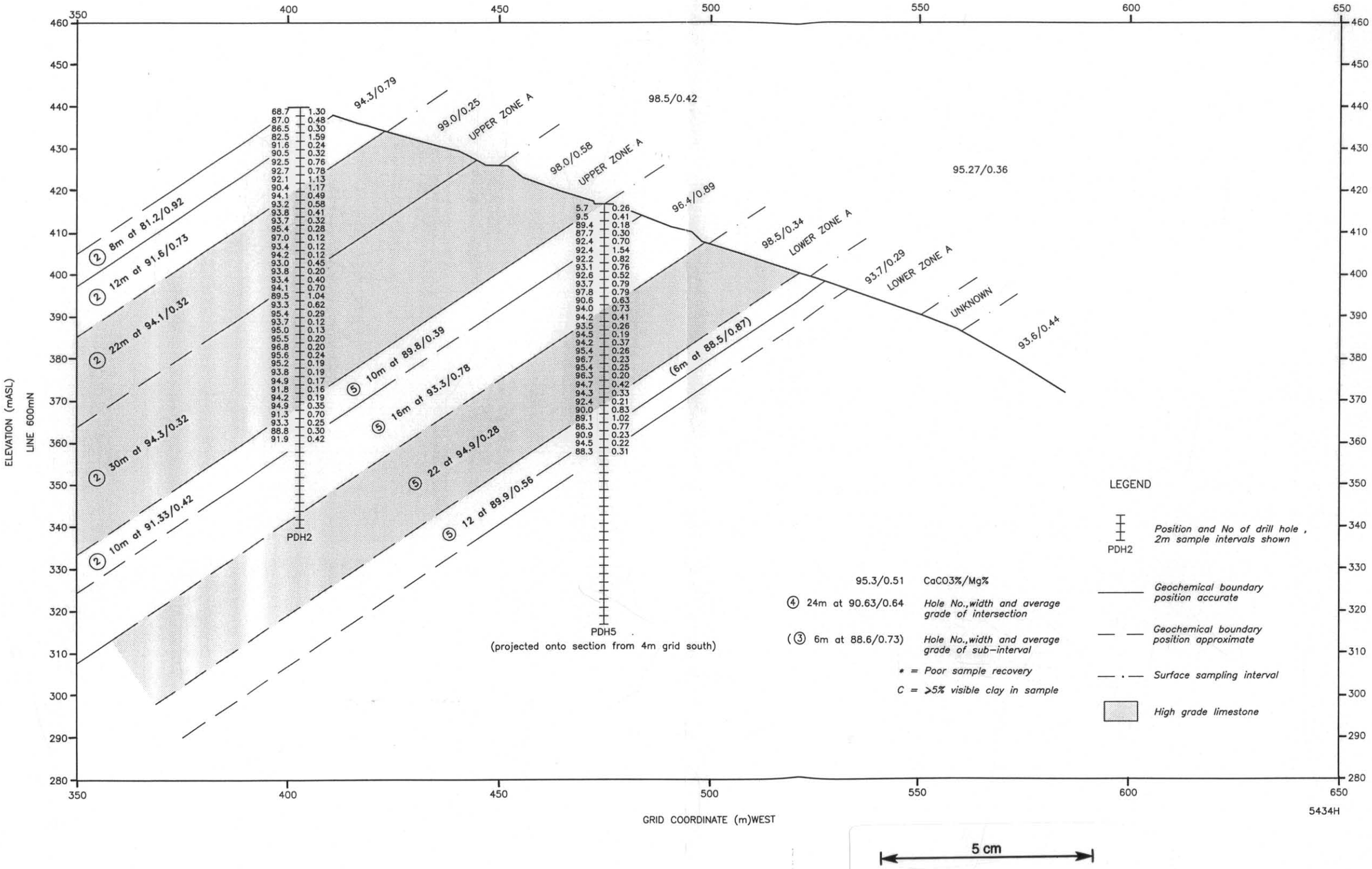
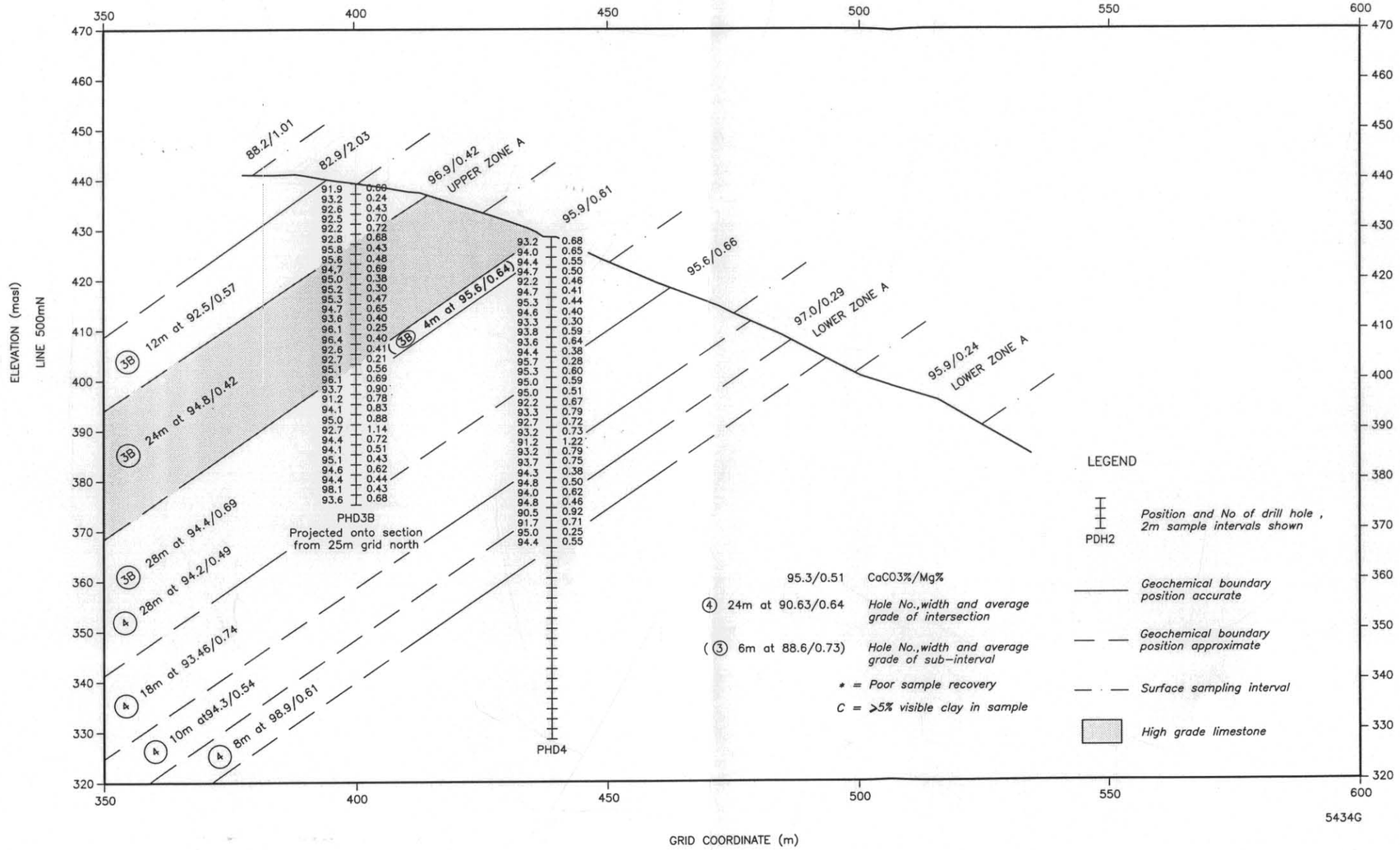


Figure 4b

MAYDENA LIMESTONE PROJECT

ROBERTS HILL DRILLING
SECTION 500mN

" COARSE FRACTION " GEOCHEMISTRY



5 cm

Figure 4c

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APPENDIX 1

Summary geological logs

Hole No.: Maydena PDH 1A

Depth (m) From	To	Description	Interpreted lithological unit
0	2	dark grey calcisiltite/fine calcarenite	*med–dark grey CS*
2	4	medium grey calcisiltite	
4	6	brownish medium grey fine calcarenite/calcarenite, common stylolites	
6	8	brownish medium grey fine calcarenite, abundant stylolites	
8	10	as previous plus brachiopod fragment	
10	12	as previous plus brachiopod fragment and abundant calcite	*brownish med grey*
12	14	as previous	*FCA*
14	16	as previous	
16	18	as previous	
18	20	as previous	
20	22	medium to light grey calcarenite, minor stylolites	
22	24	as previous	*med–light grey CA*
24	26	as previous	
26	28	as previous plus common stylolites	
28	30	light grey fine calcarenite	
30	32	as previous plus brownish	*light grey FCA*
32	34	as previous plus brownish	
34	36	as previous plus brownish	

Hole No.: Maydena PDH 1B

Depth (m) From	To	Description	Interpreted lithological unit
0	2	90% clay, 10% pale grey micrite	*micrite*
2	4	40% clay, 50% pale grey micrite, 10% dark grey calcisiltite	
4	6	50% clay, 50% dark grey calcisiltite	
6	8	dark grey calcisiltite, 5% clay	
8	10	90% dark grey calcisiltite, 10% light grey calcisiltite/fine calcarenite	
10	12	90% medium grey fine calcarenite, 5% dark grey, 5% light grey	*med–dark grey*
12	14	50% medium grey fine calcarenite, 50% light grey fine calcarenite	*CS/FCA*
14	16	medium grey fine calcarenite, common stylolites, 2% clay	
16	18	medium–dark grey calcarenite, common stylolites, 2% clay	
18	20	as previous	
20	22	as previous plus 25% calcite, 5% clay	
22	24	brownish medium grey stylolites calcarenite	
24	26	as previous	
26	28	as previous plus 25% dark grey calcarenite, 5–10% clay	*med–dark grey CA*
28	30	as previous plus 25% dark grey calcarenite	
30	32	as previous	
32	34	as previous	
34	36	as previous	
36	38	brownish light grey calcarenite, minor stylolites	

38	40	as previous	
40	42	as previous and 5% clay	
42	44	as previous	
44	46	as previous	*light grey CA*
46	48	as previous and 5% clay	
48	50	as previous and 2% clay	
50	52	brownish, medium grey calcarenite, common stylolites	
52	54	as previous	
54	56	as previous	
56	58	as previous	
58	60	as previous plus 1% clay	*med grey CA*
60	62	as previous (fine calcarenite)	
62	64	as previous, 40% weathered material	
64	66	as previous	
66	68	light grey calcarenite, 15% calcarenite, 15% clay, 50% weathered material	*light grey CA*
68	70	as previous	
70	72	medium grey fine calcarenite, common stylolites, 10% calcite	
72	74	as previous, 1% calcite	
74	76	as previous, 1% clay, nil calcite	*med grey FCA*
76	78	as previous, 2% clay, 2% calcite	
78	80	as previous, 5–10% calcite	
80	82	brownish light to medium grey fine calcarenite, minor stylolites	
82	84	as previous	
84	86	light grey calcarenite, minor stylolites, 10% calcite, 2% clay, rare sst	
86	88	as previous	
88	90	as previous	
90	92	as previous	*light grey CA*
92	94	as previous	
94	96	as previous	
96	98	as previous plus brownish, fine calcarenite	
98	100	as previous plus brownish, fine calcarenite	

Hole No.: Maydena PDH 2

Depth (m) From	To	Description	Interpreted lithological unit
0	2	20% brown clay; 30% light grey micrite; 50% dark grey calcisiltite	*micrite*
2	4	dark grey calcisiltite, 5% calcite	
4	6	medium grey fine calcarenite, 5% calcite	
6	8	70% dark grey fine calcarenite/calcisiltite; 30% light grey fine calcarenite/calcisiltite; 1% calcite	
8	10	medium grey fine calcarenite/calcisiltite, 2% calcite	
10	12	brownish, medium grey fine calcarenite, 1% calcite	*med–dark grey*
12	14	70% medium grey calcarenite, 3% light grey calcarenite, 1% calcite	*CS/FCA*
14	16	80% medium grey calcarenite; 20% dark grey calcarenite, 1% calcite	
16	18	60% medium grey calcarenite; 40% dark grey calcarenite	
18	20	50% medium, 25% light, 25% dark grey calcarenite	
20	22	brownish medium grey fine calcarenite/calcisiltite	
22	24	medium grey calcarenite, 1–5% calcite	
24	26	medium to light grey fine calcarenite, 5% calcite, minor stylolites	*med–light grey*
26	28	light grey calcarenite, 35% calcite, 5% clay	*FCA/CA*

28	30	medium to light grey calcarenite, 5% calcite	
30	32	50% light grey calcarenite/fine calcarenite, 50% calcite	
32	34	40% light grey calcarenite, 30% calcite, 30% 'red shale'	
34	36	80% reddish and light grey calcarenite, 20% 'red shale'	
36	38	90% reddish and light grey calcarenite, 10% 'red shale'	
38	40	80% light grey calcarenite, 10% 'red shale'	*stromatolitic light*
40	42	light grey calcarenite	*grey CA*
42	44	90% light grey calcarenite, 10% 'red shale'	
44	46	60% light grey calcarenite, 40% 'red shale'	
46	48	90% light grey calcarenite, 10% 'red shale'	
48	50	light grey calcarenite (10% reddish tinge)	
50	52	light grey calcarenite, 20% calcite	
52	54	as previous; 10% calcite	
54	56	as previous; 5% calcite	
56	58	as previous (10% reddish tinge)	
58	60	as previous; 10% calcite	
60	62	light grey fine calcarenite	*light grey CA*
62	64	as previous; 5% clay	*minor stromatolites*
64	66	light to medium grey calcarenite (5% reddish)	
66	68	light grey calcarenite (5% red chips)	
68	70	light grey calcarenite	
70	72	as previous and common stylolites	
72	74	brownish light to medium grey calcarenite, common stylolites	*brownish light–med*
74	76	light–medium grey calcarenite, 5–10% red chips, 5% calcite	*grey CA*
76	78	80% brownish medium grey calcarenite, common stylolites; 20% pale grey calcareous sst	
78	80	as previous (no sst)	*med grey CA*
80	82	as previous	
82	84	as previous, 5% calcite	
84	86	light grey fine calcarenite/calcisiltite, 20% calcite	
86	88	50% light grey fine calcarenite/calcisiltite; 50% cream sst	*argillaceous light*
88	90	70% light–medium grey fine calcarenite; 30% cream sst	*grey FCA*
90	92	60% reddish medium grey fine calcarenite; 40% cream/grey sst	
92	94	85% reddish medium grey fine calcarenite; 10% cream/grey sst	
94	96	90% light to medium grey fine calcarenite, 10% 'red shale'	*reddish & brownish*
96	98	brownish medium–dark grey calcarenite, common stylolites	*med grey FCA*
98	100	reddish light–medium grey fine calcarenite, minor stylolites	

Hole No.: Maydena PDH 3A

Depth (m) From	To	Description	Interpreted lithological unit
0	2	30% pale grey micrite, 70% dark grey calcisiltite/fine calcarenite	
2	4	90% dark grey calcisiltite, 5% pale grey micrite, 5% clay, 1–2% calcite	
4	6	dark grey calcisiltite, 2% calcite	
6	8	50% dark grey calcisiltite/fine calcarenite, 50% medium–light grey fine calcarenite, 2% calcite, 1% clay	*dark grey CS/FCA*
8	10	5% calcite, dark grey fine calcarenite	
10	12	medium to dark grey fine calcarenite, common stylolites	
12	14	as previous	*med–dark grey FCA*
14	16	as previous	

16	18	as previous	
18	20	as previous	
20	22	brownish medium grey fine calcarenite, common stylolites	
22	24	as previous	
24	26	as previous plus rare cream sst	
26	28	as previous	*brownish med grey*
28	30	as previous	*FCA*
30	32	as previous	
32	34	as previous	
34	36	as previous plus 20% light grey calcarenite	
36	38	brownish light to medium grey fine calcarenite, common stylolites	
38	40	as previous	
40	42	as previous	
42	44	as previous and 10% clay	*brownish light–med*
44	46	as previous	*grey FCA*
46	48	-	
48	50	-	
50	52	-	

Hole No.: Maydena PDH 3B

Depth (m) From	To	Description	Interpreted lithological unit
0	2	10% surface clay, 90% dark grey calcisiltite	
2	4	medium to dark grey calcisiltite/fine calcarenite common stylolites, 2% calcite, 5% clay	*dark grey CS/FCA*
4	6	as previous, no clay	
6	8	as previous but fine calcarenite/calcarenite	
8	10	70% medium grey calcarenite, 30% dark grey calcarenite, 1% calcite	
10	12	as previous, 5% calcite	
12	14	10% dark grey calcarenite, 90% light grey calcarenite, 1% calcite	*light–med dark grey*
14	16	as previous but 2–5% calcite; brachiopod fragment	*CA*
16	18	light grey calcarenite, common stylolites, 10% calcite	
18	20	as previous	
20	22	60% light to medium grey calcarenite; 40% dark grey calcarenite, 1% calcite	
22	24	as previous plus 5% weathered ?marl	
24	26	as previous	
26	28	light grey calcarenite, minor stylolites, 5% calcite, 2% cream mst	*stromatolitic light*
28	30	brownish light grey calcarenite, minor stylolites, 5% calcite	*grey CA*
30	32	as previous but 5% red, cream and green mst chips	
32	34	as previous plus 2% calcite	
34	36	as previous	
36	38	light to medium grey fine calcarenite, 1% shale, 2% calcite	
38	40	as previous	
40	42	brownish medium grey calcarenite, minor stylolites, <1% calcite	
42	44	90% light to medium grey calcarenite, minor stylolites, 10% creamy sst, 1–2% calcite	*light–med grey CA*
44	46	as previous	
46	48	light to medium grey calcarenite, minor stylolites, 2% calcite	
48	50	as previous	
50	52	as previous	

52	54	brownish light to medium grey calcarenite, minor–common stylolites, 1% cream shale	
54	56	as previous	
56	58	as previous but nil shale	*light–med grey CA*
58	60	as previous plus 1% cream shale	*minor stromatolites*
60	62	as previous, nil shale, 1% calcite	
62	64	as previous	
64	66	as previous	

Hole No.: Maydena PDH 4

Depth (m) From	To	Description	Interpreted lithological unit
0	2	brownish light grey calcarenite, minor stylolites; 10% clay	
2	4	light to medium grey calcarenite, common stylolites	
4	6	brownish light grey calcarenite, minor stylolites, common burrows, 5% calcite, 5% clay	*brownish light grey CA, minor burrows*
6	8	as previous but nil clay, minor burrows	
8	10	as previous (6–8 m)	
10	12	as previous	
12	14	as previous	
14	16	as previous but nil burrows and 10–15% calcite	
16	18	brownish light grey calcarenite, 10% calcite, 5% clay, minor stylolites and burrows	
18	20	as previous but nil calcite, nil clay, common stylolites	*light grey CA*
20	22	light to medium grey calcarenite, 1% calcite, common stylolites	
22	24	light grey calcarenite, common burrows, 1% calcite	
24	26	as previous plus 5% calcite, 5% clay	
26	28	slightly brownish light grey calcarenite, rare 'red shale', 1% calcite, minor stylolites	
28	30	as previous	*brownish light grey*
30	32	brownish light grey calcarenite, common burrows, minor stylolites	*CA*
32	34	as previous	
34	36	as previous	
36	38	light to medium grey calcarenite, common stylolites	
38	40	as previous and 1–2% calcite	
40	42	as previous	*light–med grey CA*
42	44	as previous	
44	46	as previous	
46	48	slightly brownish light grey calcarenite/fine calcarenite, 1–2% calcite, rare reddish tinge, minor stylolites	
48	50	as previous but 5% calcite	*brownish light grey*
50	52	as previous (48–50)	*CA, minor*
52	54	as previous (48–50), 1% calcite	*stromatolite*
54	56	medium grey fine calcarenite, brownish, common stylolites	
56	58	as previous	
58	60	brownish light grey calcisiltite, rare stylolites, 2% calcite, 20–30% red to cream shale	
60	62	slightly brownish light grey calcisiltite/fine calcarenite, 5–10% red and cream shale, 1–2% calcite	*light grey CA, common stromatolites*
62	64	light grey calcisiltite/fine calcarenite, 1–2% calcite, <1% shale	
64	66	as previous	

66	68	slightly brownish, light grey fine calcarenite, 5% reddish chips, minor stylolites, 1–2% calcite	
68	70	as previous (but nil reddish and calcite)	
70	72	as previous (68–70)	
72	74	as previous	
74	76	as previous	
76	78	as previous plus 2–5% reddish chips	
78	80	as previous but 5–10% dark chips	
80	82	medium grey calcarenite, common stylolites	
82	84	light grey fine calcarenite, 5% dark chips, 2–5% calcite, 5–10% tan weathered material (calcite)	
84	86	as previous but 10–20% dark chips, 1–2% clay	
86	88	brownish medium grey fine calcarenite, 20% dark chips	
88	90	brownish medium grey fine calcarenite, common stylolites	
90	92	as previous	
92	94	as previous	*med–grey FCA*
94	96	as previous	
96	98	as previous	
98	100	as previous	

Hole No.: Maydena PDH 5

Depth (m) From	To	Description	Interpreted lithological unit
0	2	100% clay	
2	4	100% clay	
4	6	50% light grey calcarenite, 20% 'red shale', minor stylolites, 20% clay, 5% cream sst	
6	8	20% clay, 70% light grey calcarenite, 10% 'red shale'	
8	10	medium–light grey calcarenite, minor stylolites, 1% 'red shale'	
10	12	medium grey calcarenite/fine calcarenite, minor–common stylolites, 2% clay	*med–light grey CA*
12	14	as previous plus rare 'red shale'	*minor stromatolites*
14	16	medium–light grey calcarenite, 1% clay, 1% brown and 'red shale'	
16	18	medium–light grey calcarenite, 1% clay, 2% red, cream and green shale, 1% calcite	
18	20	light grey calcarenite	
20	22	medium–light grey calcarenite, minor–common stylolites, 2% clay, 1% calcite, % shale	
22	24	light grey calcarenite, minor stylolites, 2% red and tan shale, 2% calcite, 0.5% clay	
24	26	light grey calcarenite, 10–20% red shale (pink fines)	
26	28	light grey calcarenite, rare shale	
28	30	brownish light grey calcarenite, 20% red shale, 1% calcite (slightly pink fines)	
30	32	brownish and reddish light grey calcarenite, minor burrows	*light grey CA*
30	34	as previous and 20% dark grey calcarenite	*common*
32	36	light grey calcarenite, 1% clay	*stromatolites*
34	38	light grey calcarenite	
36	40	as previous plus minor burrows	
48	42	light grey calcarenite (minor reddish)	
40	44	light–medium grey calcarenite, minor stylolites	

42	46	brownish light grey calcarenite	
44	48	as previous	
48	50	medium grey calcarenite	
50	52	medium grey calcarenite	*med grey CA*
52	54	medium–light grey calcarenite, 1% calcite, minor burrows	
54	56	brownish light grey calcarenite	
56	58	80% light grey calcisiltite/micrite, 20% chocolate shale (pinkish fines)	
58	60	80% light grey calcisiltite/micrite, 10% dark grey calcarenite 5% grey shale, 5% calcite	
60	62	as previous but 5% 'red shale' (not grey)	
62	64	80% medium grey fine calcarenite, 20% dark grey, 1% calcite	
64	66	as previous plus 1% 'red shale', 2% calcite	
66	68	as previous	*med–light grey FCA*
68	70	as previous	*common*
70	72	70% light grey fine calcarenite, 15% medium–dark grey calcarenite, 15% chocolate shale	*stromatolites*
72	74	medium grey calcarenite, common stylolites and dark chips	
74	76	as previous	
76	78	as previous	
78	80	as previous	
80	82	as previous and 2% calcite and minor burrows	
82	84	as previous and 20% tan, ferro-mag rich sst/greywacke	
84	86	medium–dark grey calcarenite	
86	88	as previous and 1% creamy fine sst, 1–2% calcite	
88	90	as previous	
90	92	60% medium grey fine calcarenite, 40% dark grey calcarenite/doloarenite	
92	94	80% brownish, light–medium grey fine calcarenite/calcisiltite, 20% dark grey calcarenite/doloarenite	*med–dark grey argillaceous FCA/CS*
94	96	as previous	
96	98	as previous	
98	100	50% dark grey calcarenite, 50% light–medium grey fine calcarenite/ calcisiltite, abundant weathering	

Hole No.: Maydena PDH 6

Depth (m) From	To	Description	Interpreted lithological unit
0	2	medium grey calcarenite, common stylolites, 1% calcite	
2	4	as previous	*med grey CA*
4	6	as previous (bit lighter, slightly brownish)	
6	8	brownish light grey calcarenite, minor stylolites	
8	10	as previous plus 20% light brown and red 'shale' (pink fines)	
10	12	as previous and <5% shale, ~5% burrows, 2% calcite	
12	14	light grey calcarenite, 5% burrowed, 2% calcite	
14	16	brownish light grey calcarenite, minor stylolites, 1% calcite	*light grey CA*
16	18	light grey calcarenite, minor–common stylolites, 2% clay, rare siltstone	*minor stromatolites*
18	20	light grey calcarenite/fine calcarenite, minor to common stylolites	
20	22	light grey calcarenite, abundant burrows, rare green fragments	
22	24	brownish light grey calcarenite	
24	26	as previous and minor burrows	
26	28	as previous and 5–10% calcite	

28	30	light–medium grey calcarenite	
30	32	as previous	
32	34	as previous, minor burrows	*light–med grey CA*
34	36	as previous, minor burrows, and rare sltst/sst	
36	38	as previous	
38	40	brownish light grey calcarenite, minor reddish chips, minor burrows	
40	42	brownish light grey calcarenite, 5–10% red and tan shale, common weathering	
42	44	light grey calcarenite	
44	46	as previous	*light grey CA*
46	48	as previous plus 5% 'red shale'	*common*
48	50	as previous plus 5% 'red shale'	*stromatolite*
50	52	as previous, 10% shale (pinkish fines)	
52	54	as previous, 10% shale (pinkish fines)	
54	56	light–medium grey calcarenite	
56	58	light–medium grey fine calcarenite, 5% pale micrite, 5–10% 'red shale'	
58	60	light grey fine calcarenite, 2–5% creamy fine sst	
60	62	medium grey calcarenite, common stylolites/dark calcarenite/doloarenite	
62	64	light–medium grey calcarenite/fine calcarenite, minor–common stylolites, 2% calcite	*light–med grey CA*
64	66	as previous	*minor stromatolites*
66	68	light grey calcarenite, common burrows	
68	70	light–medium grey calcarenite, 2% clay	
70	72	as previous, nil clay	
72	74	as previous, common weathering	
74	76	as previous, nil weathering	
76	78	as previous, nil weathering	
78	80	medium grey calcarenite, minor–common stylolites or dark calcarenite/doloarenite	
80	82	as previous	
82	84	as previous	*med grey CA*
84	86	as previous	
86	88	as previous	

CS = calcisiltite
FCA = fine calcarenite
CA = calcarenite

APPENDIX 2

'Whole-of-sample' Geochemistry

Sample Interval	*Reg. No.*	*Sample No.*	*% $CaCO_3$*	*% Mg*
PDH 1A				
0-2 m	920781	106723	85.5	1.03
2-4 m	920782	106724	92.4	0.52
4-6 m	920783	106725	91.0	0.86
6-8 m	920784	106726	92.2	1.05
8-10 m	920785	106727	92.7	0.68
10-12 m	920786	106728	94.3	0.61
12-14 m	920787	106729	94.0	0.83
14-16 m	920788	106730	93.8	0.71
16-18 m	920789	106731	93.7	1.10
18-20 m	920790	106732	94.8	0.67
20-22 m	920791	106733	95.4	0.47
22-24 m	920792	106734	91.9	1.11
24-26 m	920793	106735	93.9	0.91
26-28 m	920794	106736	93.4	1.00
28-30 m	920795	106237	95.0	0.51
30-32 m	920796	106738	95.8	0.41
32-34 m	920797	106739	95.5	0.34
34-36 m	920798	106740	91.4	0.94
PDH 1B				
0-2 m	920905	106850	46.7	0.28
2-4 m	920906	106851	73.3	0.27
4-6 m	920907	106852	53.9	0.27
6-8 m	920908	106853	81.9	2.16
8-10 m	920909	106854	89.6	0.58
10-12 m	920910	106855	92.5	0.60
12-14 m	920911	106856	91.3	0.73
14-16 m	920912	106857	91.4	0.99
16-18 m	920913	106858	93.4	0.88
18-20 m	920914	106859	92.7	0.78
20-22 m	920915	106860	94.1	0.55
22-24 m	920916	106861	94.3	0.81
24-26 m	920917	106862	93.5	1.12

Sample Interval	*Reg. No.*	*Sample No.*	*% $CaCO_3$*	*% Mg*
26-28 m	920918	106863	95.1	0.34
28-30 m	920919	106864	96.4	0.39
30-32 m	920920	106865	92.7	0.80
32-34 m	920921	106866	93.4	1.20
34-36 m	920922	106867	95.0	0.75
36-38 m	920923	106868	95.7	0.49
38-40 m	920924	106869	95.7	0.33
40-42 m	920925	106870	95.1	0.38
42-44 m	920926	106871	96.9	0.23
44-46 m	920927	106872	96.2	0.27
46-48 m	920928	106873	90.3	0.61
48-50 m	920929	106874	94.0	0.82
50-52 m	920930	106875	94.7	0.87
52-54 m	920931	106876	91.8	1.33
54-56 m	920932	106877	91.4	1.25
56-58 m	920933	106878	93.6	0.96
58-60 m	920934	106879	93.2	1.08
60-62 m	920935	106880	92.5	1.48
62-64 m	920936	106881	94.0	0.86
64-66 m	920937	106882	94.2	0.77
66-68 m	920938	106883	90.8	0.33
68-70 m	920939	106884	94.6	0.23
70-72 m	920940	106885	94.1	0.47
72-74 m	920941	106886	94.9	0.64
74-76 m	920942	106887	89.7	1.62
76-78 m	920943	106888	93.6	0.53
78-80 m	920944	106889	93.1	0.84
80-82 m	920945	106890	92.0	0.75
82-84 m	920946	106891	92.0	1.15
84-86 m	920947	106892	90.7	1.32
86-88 m	920948	106893	89.6	0.78
88-90 m	920949	106894	92.2	0.92
90-92 m	920950	106895	89.3	0.91
92-94 m	920951	106896	88.6	0.77
94-96 m	920952	106897	92.1	0.80
96-98 m	920953	106898	91.7	1.18
98-100 m	920954	106899	91.7	0.85

Sample Interval	*Reg. No.*	*Sample No.*	*% $CaCO_3$*	*% Mg*
PDH 2				
0-2 m	920799	106741	65.2	1.12
2-4 m	920800	106742	86.1	0.48
4-6 m	920801	106743	86.3	0.32
6-8 m	920802	106744	81.0	2.10
8-10 m	920803	106745	90.7	0.26
10-12 m	920804	106746	93.1	0.33
12-14 m	920805	106747	90.7	0.78
14-16 m	920806	106748	92.7	1.00
16-18 m	920807	106749	91.6	1.12
18-20 m	920808	106750	89.7	1.23
20-22 m	920809	106751	93.8	0.63
22-24 m	920810	106752	92.5	0.78
24-26 m	920811	106753	94.5	0.39
26-28 m	920812	106754	92.8	0.30
28-30 m	920813	106755	96.1	0.26
30-32 m	920814	106756	97.7	0.14
32-34 m	920815	106757	93.5	0.10
34-36 m	920816	106758	93.4	0.12
36-38 m	920817	106759	93.7	0.42
38-40 m	920818	106760	94.7	0.22
40-42 m	920819	106761	91.2	0.49
42-44 m	920820	106762	89.1	0.73
44-46 m	920821	106763	86.7	0.95
46-48 m	920822	106764	89.9	0.62
48-50 m	920823	106765	91.9	0.44
50-52 m	920824	106766	90.5	0.17
52-54 m	920825	106767	91.5	0.16
54-56 m	920826	106768	92.8	0.22
56-68 m	920827	106769	92.7	0.21
58-60 m	920828	106770	91.5	0.27
60-62 m	920829	106771	92.5	0.19
62-64 m	920830	106772	89.6	0.21
64-66 m	920831	106773	90.5	0.17
66-68 m	920832	106774	88.6	0.18
68-70 m	920833	106775	91.9	0.24
70-72 m	920834	106776	87.3	0.41

Sample Interval	*Reg. No.*	*Sample No.*	*% $CaCO_3$*	*% Mg*
72-74 m	920835	106777	89.1	0.80
74-76 m	920836	106778	90.3	0.26
76-78 m	920837	106779	83.8	0.31
78-80 m	920838	106780	89.7	0.49
80-82 m	920839	106781	97.8	0.72
82-84 m	920840	106782	95.8	0.68
84-86 m	920841	106783	95.0	0.18
86-88 m	920842	106784	82.8	0.16
88-90 m	920843	106785	90.3	0.16
90-92 m	920844	106786	78.3	0.14
92-94 m	920845	106787	92.1	0.16
94-96 m	920846	106788	94.7	0.30
96-98 m	920847	106789	96.2	0.77
98-100 m	920848	106790	97.7	0.55
PDH 3A				
0-2 m	920849	106791	81.6	2.30
2-4 m	920850	106792	86.6	1.25
4-6 m	920851	106793	86.6	1.51
6-8 m	920852	106794	93.3	0.45
8-10 m	920853	106795	92.2	0.43
10-12 m	920854	106796	91.8	0.59
12-14 m	920855	106797	91.4	1.14
14-16 m	920856	106798	92.9	0.74
16-18 m	920857	106799	91.3	1.08
18-20 m	920858	106800	93.1	0.48
20-22 m	920859	106801	94.2	0.38
22-24 m	920860	106802	93.6	0.43
24-26 m	920861	106803	93.0	0.72
26-28 m	920862	106804	92.9	0.81
28-30 m	920863	106805	94.4	0.67
30-32 m	920864	106806	94.2	0.67
32-34 m	920865	106807	92.8	0.77
34-36 m	920866	106808	92.6	1.23
36-38 m	920867	106809	95.3	0.41
38-40 m	920868	106810	94.2	0.44
40-42 m	920869	106811	94.3	0.48

Sample Interval	*Reg. No.*	*Sample No.*	*% $CaCO_3$*	*% Mg*
42-44 m	920870	106812	92.5	0.68
44-46 m	920871	106813	92.3	0.63
PDH 3B				
0-2 m	920872	106815	91.8	0.24
2-4 m	920873	106816	92.6	0.48
4-6 m	920874	106817	94.2	0.72
6-8 m	920875	106818	92.8	0.96
8-10 m	920876	106819	94.1	0.72
10-12 m	920877	106820	95.3	0.50
12-14 m	920878	106821	95.3	0.54
14-16 m	920879	106822	94.7	0.84
16-18 m	920880	106823	95.5	0.45
18-20 m	920881	106824	96.7	0.36
20-22 m	920882	106825	96.5	0.51
22-24 m	920883	106826	94.6	0.75
24-26 m	920884	106827	95.1	0.47
26-28 m	920885	106828	96.5	0.28
28-30 m	920886	106829	96.4	0.45
30-32 m	920887	106830	95.8	0.46
32-34 m	920888	106831	92.8	0.22
34-36 m	920889	106832	94.3	0.70
36-38 m	920890	106833	94.5	0.82
38-40 m	920891	106834	93.8	0.79
40-42 m	920892	106835	89.8	1.62
42-44 m	920893	106836	92.1	0.84
44-46 m	920894	106837	95.3	0.79
46-48 m	920895	106838	94.9	0.96
48-50 m	920896	106839	93.7	1.13
50-52 m	920897	106840	96.0	0.69
52-54 m	920898	106841	96.2	0.54
54-56 m	920899	106842	96.0	0.41
56-58 m	920900	106843	96.2	0.54
58-60 m	920901	106844	95.2	0.42
60-62 m	920902	106845	95.1	0.40
62-64 m	920903	106846	95.3	0.66
64-66 m	920904	106847	93.6	0.82

Sample Interval	*Reg. No.*	*Sample No.*	*% $CaCO_3$*	*% Mg*
PDH 4				
0-2 m	920955	106900	93.6	0.76
2-4 m	920956	106901	95.4	0.93
4-6 m	920957	106902	94.8	0.71
6-8 m	920958	106903	95.8	0.53
8-10 m	920959	106904	96.2	0.54
10-12 m	920960	106905	96.2	0.50
12-14 m	920961	106906	94.4	0.72
14-16 m	920962	106907	94.5	0.63
16-18 m	920963	106908	92.9	0.39
18-20 m	920964	106909	94.1	0.88
20-22 m	920965	106910	94.0	0.78
22-24 m	920966	106911	94.7	0.49
24-26 m	920967	106912	94.5	0.30
26-28 m	920968	106913	94.7	0.58
28-30 m	920969	106914	95.7	0.65
30-32 m	920970	106915	95.4	0.61
32-34 m	920971	106916	94.4	0.69
34-36 m	920972	106917	93.3	0.85
36-38 m	920973	106918	93.4	0.76
38-40 m	920974	106919	94.3	0.75
40-42 m	920975	106920	91.5	0.84
42-44 m	920976	106921	93.4	0.74
44-46 m	920977	106922	93.8	0.70
46-48 m	920978	106923	94.6	0.41
48-50 m	920979	106924	93.7	0.54
50-52 m	920980	106925	92.6	0.64
52-54 m	920981	106926	94.0	0.46
54-56 m	920982	106927	89.9	0.98
56-58 m	920983	106928	91.7	0.61
58-60 m	920984	106929	94.9	0.21
60-62 m	920985	106930	92.6	0.51
62-64 m	920986	106931	92.3	0.74
64-66 m	920987	106932	91.8	0.70
66-68 m	920988	106933	90.6	0.66
68-70 m	920989	106934	91.0	0.57
70-72 m	920990	106935	90.7	0.74

Sample Interval	*Reg. No.*	*Sample No.*	*% $CaCO_3$*	*% Mg*
72-74 m	920991	106936	91.0	0.77
74-76 m	920992	106937	89.7	0.66
76-78 m	920993	106938	88.6	0.40
78-80 m	920994	106939	88.5	0.43
80-82 m	920995	106940	91.5	0.78
82-84 m	920996	106941	93.7	0.29
84-86 m	920997	106942	90.5	0.99
86-88 m	920998	106943	88.9	1.52
88-90 m	920999	106944	73.9	1.03
90-92 m	921000	106945	82.9	0.77
92-94 m	921001	106946	81.6	0.57
94-96 m	921002	106946	82.1	0.91
96-98 m	921003	106948	81.1	0.68
98-100 m	921004	106949	88.5	0.67
PDH 5				
0-2 m	921007	106950	8.4	0.27
2-4 m	921008	106951	4.5	0.43
4-6 m	921009	106952	91.8	0.20
6-8 m	921010	106953	90.7	0.44
8-10 m	921011	106954	91.5	0.89
10-12 m	921012	106955	90.6	1.54
12-14 m	921013	106956	88.4	1.51
14-16 m	921014	106957	92.4	0.78
16-18 m	921015	106958	94.5	0.39
18-20 m	921016	106959	92.9	0.87
20-22 m	921017	106960	93.2	0.74
22-24 m	921018	106961	92.9	0.67
24-26 m	921019	106962	91.8	0.88
26-28 m	921020	106963	92.6	0.43
28-30 m	921021	106964	92.5	0.26
30-32 m	921022	106965	92.9	0.19
32-34 m	921023	106966	92.1	0.38
34-36 m	921024	106967	94.8	0.31
36-38 m	921025	106968	94.1	0.26
38-40 m	921026	106969	93.4	0.29
40-42 m	921027	106970	94.2	0.21

Sample Interval	*Reg. No.*	*Sample No.*	*% $CaCO_3$*	*% Mg*
42-44 m	921028	106971	93.0	0.42
44-46 m	921029	106972	93.6	0.30
46-48 m	921030	106973	92.7	0.24
48-50 m	921031	106974	89.7	0.92
50-52 m	921032	106975	88.4	1.11
52-54 m	921033	106976	86.4	0.75
54-56 m	921034	106977	91.8	0.24
56-58 m	921035	106978	93.0	0.22
58-60 m	921036	106979	87.2	0.28
60-62 m	921037	106980	90.1	1.09
62-64 m	921038	106981	75.4	1.40
64-66 m	921039	106982	77.1	0.37
66-68 m	921040	106983	83.5	0.34
68-70 m	921041	106984	84.4	0.44
70-72 m	921042	106985	81.5	0.43
72-74 m	921043	106986	86.0	0.56
74-76 m	920144	106987	79.2	0.65
76-78 m	921045	106988	72.8	0.52
78-80 m	921046	106989	79.1	1.36
80-82 m	921047	106990	86.2	1.54
82-84 m	921048	106991	85.4	1.86
84-86 m	921049	106992	89.7	0.72
86-88 m	921050	106993	89.6	0.72
88-90 m	921051	106994	84.3	0.78
90-92 m	921052	106995	67.7	1.40
92-94 m	921053	106996	61.2	1.38
94-96 m	921054	106997	66.4	0.64
96-98 m	921055	106998	75.6	0.29
98-100 m	921056	106999	73.2	0.50
PDH 6				
0-2 m	921057	107000	93.2	0.98
2-4 m	921058	107001	92.9	0.84
4-6 m	921059	107002	92.4	1.04
6-8 m	921060	107003	93.5	0.77
8-10 m	921061	107004	89.1	0.62
10-12 m	921062	107005	95.2	0.50

Sample Interval	*Reg. No.*	*Sample No.*	*% $CaCO_3$*	*% Mg*
12-14 m	921063	107006	95.0	0.46
14-16 m	921064	107007	94.5	0.74
16-18 m	921065	107008	93.5	0.78
18-20 m	921066	107009	92.9	0.59
20-22 m	921067	107010	93.9	0.49
22-24 m	921068	107011	94.3	0.67
24-26 m	921069	107012	93.3	0.59
26-28 m	921070	107013	95.6	0.27
28-30 m	921071	107014	94.8	0.58
30-32 m	921072	107015	94.4	0.42
32-34 m	921073	107016	94.2	0.70
34-36 m	921074	107017	93.7	0.49
36-38 m	921075	107018	92.6	0.15
38-40 m	921076	107019	93.2	0.14
40-42 m	921077	107020	92.0	0.33
42-44 m	921078	107021	93.2	0.57
44-46 m	921079	107022	93.7	0.62
46-48 m	921080	107023	90.4	0.40
48-50 m	921081	107024	91.8	0.41
50-52 m	921082	107025	88.9	0.19
52-54 m	921083	107026	91.7	0.57
54-56 m	921084	107027	92.0	0.75
56-58 m	921085	107028	89.3	0.60
58-60 m	921086	107029	87.7	0.51
60-62 m	921087	107030	85.8	0.81
62-64 m	921088	107031	89.9	0.48
64-66 m	921089	107032	92.8	0.36
66-68 m	921090	107033	93.5	0.28
68-70 m	921091	107034	91.3	0.51
70-72 m	921092	107035	82.7	0.33
72-74 m	921093	107036	81.0	0.37
74-76 m	921094	107037	83.2	0.64
76-78 m	921095	107038	85.8	0.71
78-80 m	921096	107039	81.2	0.97
80-82 m	921097	107040	82.7	0.63
82-84 m	921099	107041	81.0	0.72
84-86 m	921099	107042	74.7	0.48
86-88 m	921100	107043	77.1	0.55

Sample Interval	*Reg. No.*	*Sample No.*	*% $CaCO_3$*	*% Mg*
Stromatolite	930001	107044	77.9	0.15
	930001	107044	78.3	0.13
Repeat Analyses on Fine Fractions				
-	930002	R920794F	91.6	1.16
-	930003	R920812F	93.0	0.34
-	930004	R920821F	90.7	1.14
-	930005	R920839F	92.1	0.79
-	930006	R920864F	91.8	0.77
-	930007	R920866F	91.4	1.07
-	930008	R920883F	94.4	0.54
-	930009	R920892F	90.7	1.28
-	930010	R920894F	92.4	0.91
-	930011	R920917F	90.9	1.33
-	930012	R920922F	93.3	0.81
-	930013	R920928F	89.2	0.96
-	930002	R920794F	91.7	1.16
-	930003	R920812F	93.0	0.35
-	930004	R920821F	90.0	1.16
-	930005	R920839F	92.2	0.80
-	930006	R920864F	93.1	0.77
-	930007	R920866F	91.8	1.09
-	930008	R920883F	93.8	0.60
-	930009	R920892F	89.9	1.22
-	930010	R920894F	93.5	0.86
-	930011	R920917F	91.7	1.29
-	930012	R920922F	93.6	0.82
-	930013	R920928F	88.1	1.01

APPENDIX 3

Repeat Analyses on Coarse Fractions

Reg No.	*Identification*	*% $CaCO_3$*	*% Mg*
930014	R920794C	92.7	0.78
930015	R920812C	93.7	0.32
930016	R920821C	90.0	1.12
930017	R920839C	92.0	0.74
930018	R920864C	94.1	0.65
930019	R920866C	93.6	0.83
930020	R920883C	95.3	0.47
930021	R920892C	93.7	0.90
930022	R920894C	94.1	0.83
930023	R920917C	94.1	1.02
930024	R920922C	94.9	0.69
930025	R920928C	95.3	0.82
930121	920903C/R	93.6	0.68
930122	920902C/R	95.1	0.43
930123	920901C/R	94.4	0.44
930124	920900C/R	94.6	0.62
930125	920897C/R	94.4	0.72
930126	920895C/R	95.0	0.88
930127	920896C/R	92.7	1.14
930128	920898C/R	94.1	0.51
930129	920899C/R	95.1	0.43
930130	920985C/R	94.4	0.55
930131	920984C/R	95.0	0.25
930132	920983C/R	91.7	0.71
930133	920982C/R	90.5	0.92
930134	920981C/R	94.8	0.46
930135	920980C/R	94.0	0.62
930136	920979C/R	94.8	0.50
930137	920978C/R	94.3	0.38
930138	920977C/R	93.7	0.75
930139	920976C/R	93.2	0.79
930140	920975C/R	91.2	1.22
930141	920967C/R	95.7	0.28
930142	920966C/R	94.4	0.38
930143	920965C/R	93.6	0.64

Reg No.	*Identification*	*% $CaCO_3$*	*% Mg*
930144	920964C/R	93.8	0.59
930145	920963C/R	93.3	0.30
930146	920962C/R	94.6	0.40
930147	920961C/R	95.3	0.44
930148	920960C/R	94.7	0.41
930149	920959C/R	92.2	0.46
930150	920958C/R	94.7	0.50
930151	920957C/R	94.4	0.55
930152	920956C/R	94.0	0.65
930153	920809C/R	94.1	0.49
930154	920810C/R	93.2	0.58
930155	920811C/R	93.8	0.41
930156	920813C/R	95.4	0.28
930157	920814C/R	97.0	0.12
930158	920815C/R	93.4	0.12
930159	920816C/R	94.2	0.12
930160	920817C/R	93.0	0.45
930161	920818C/R	93.8	0.20
930162	920819C/R	93.4	0.40
930163	920930C/R	93.7	0.62
930164	920929C/R	94.3	0.54
930165	920927C/R	96.5	0.19
930166	920926C/R	95.6	0.18
930167	920925C/R	95.1	0.23
930168	920924C/R	96.4	0.18
930169	920923C/R	95.5	0.34
930170	920921C/R	92.1	0.96
930171	920920C/R	93.1	0.58
930172	920919C/R	94.9	0.31
930173	920918C/R	95.0	0.33
930174	920916C/R	94.3	0.60
930175	920915C/R	93.4	0.42
930176	920834C/R	94.9	0.35
930177	920833C/R	94.2	0.19
930178	920832C/R	91.8	0.16
930179	920831C/R	94.9	0.17
930180	920830C/R	93.8	0.19
930181	920829C/R	95.2	0.19

Reg No.	*Identification*	*% $CaCO_3$*	*% Mg*
930182	920828C/R	95.6	0.24
930183	920827C/R	96.8	0.20
930184	920826C/R	95.5	0.20
930185	920825C/R	95.0	0.13
930186	920824C/R	93.7	0.12
930187	920823C/R	95.4	0.29
930188	920876C/R	92.2	0.72
930189	920877C/R	92.8	0.60
930190	920878C/R	95.8	0.43
930191	920879C/R	95.6	0.48
930192	920880C/R	94.7	0.69
930193	920881C/R	95.0	0.38
930194	920882C/R	95.2	0.30
930195	920884C/R	94.7	0.65
930196	920885C/R	93.6	0.40
930197	920886C/R	96.1	0.25
930198	920887C/R	96.4	0.40
930199	920888C/R	92.6	0.41
930200	920889C/R	92.7	0.21
930201	920890C/R	95.1	0.56
930202	920891C/R	96.1	0.69
930203	921082C/R	88.9	0.18
930204	921081C/R	93.1	0.36
930205	921080C/R	90.2	0.34
930206	921079C/R	95.6	0.52
930207	921078C/R	96.5	0.49
930208	921077C/R	93.3	0.26
930209	921076C/R	93.8	0.15
930210	921075C/R	94.6	0.19
930211	921074C/R	96.9	0.46
930212	921073C/R	93.8	0.61
930213	921020C/R	94.2	0.41
930214	921021C/R	93.5	0.26
930215	921022C/R	94.5	0.19
930216	921023C/R	94.2	0.37
930217	921024C/R	95.4	0.26
930218	921025C/R	96.7	0.23
930219	921026C/R	95.4	0.25

Reg No.	*Identification*	*% $CaCO_3$*	*% Mg*
930220	921027C/R	96.3	0.20
930221	921028C/R	94.7	0.42
930222	921029C/R	94.3	0.33
930223	921030C/R	92.4	0.21
930224	921062C/R	93.8	0.47
930225	921063C/R	94.2	0.49
930226	921064C/R	95.0	0.55
930227	921065C/R	92.3	0.85
930228	921066C/R	93.3	0.46
930229	921067C/R	93.6	0.49
930230	921068C/R	93.1	0.52
930231	921069C/R	93.2	0.50
930232	921070C?R	95.4	0.23
930233	921071C/R	95.3	0.51
930234	921072C/R	94.4	0.32
930263	920905C/R	41.0	0.46
930264	920906C/R	78.1	0.33
930265	920907C/R	76.4	0.29
930266	920908C/R	80.9	2.16
930267	920909C/R	89.1	0.70
930268	920910C/R	91.2	0.58
930269	920911C/R	90.6	0.74
930270	920912C/R	90.3	0.85
930271	920913C/R	92.1	0.82
930272	920914C/R	92.1	0.68
930273	921007C/R	5.7	0.26
930274	921008C/R	9.5	0.41
930275	921009C/R	89.4	0.18
930276	921010C/R	87.7	0.30
930277	921011C/R	92.4	0.70
930278	921012C/R	92.4	1.18
930279	921013C/R	92.2	0.82
930280	921014C/R	93.1	0.76
930281	921015C/R	92.6	0.52
930282	921016C/R	93.7	0.79
930283	921017C/R	97.8	0.79
930284	921018C/R	90.6	0.63
930285	921019C/R	94.0	0.73

Reg No.	*Identification*	*% $CaCO_3$*	*% Mg*
930286	920799C/R	68.7	1.30
930287	920800C/R	87.0	0.48
930288	920801C/R	86.5	0.30
930289	920802C/R	82.5	1.59
930290	920803C/R	91.6	0.24
930291	920804C/R	90.5	0.32
930292	920805C/R	92.5	0.76
930293	920806C/R	92.7	0.78
930294	920807C/R	92.1	1.13
930295	920808C/R	90.4	1.17
930296	920820C/R	94.1	0.70
930297	920821C/R	91.6	0.85
930298	920822C/R	93.3	0.62
930299	920873C/R	92.3	0.24
930300	920874C/R	92.6	0.43
930301	920875C/R	92.5	0.70
930302	920955C/R	93.2	0.68
930303	920968C/R	95.3	0.60
930304	920969C/R	95.0	0.59
930305	920970C/R	95.0	0.51
930306	920971C/R	92.2	0.67
930307	920972C/R	93.3	0.79
930308	920973C/R	92.7	0.72
930309	920974C/R	93.2	0.73
930310	921031C/R	90.0	0.83
930311	921032C/R	89.1	1.02
930312	921033C/R	86.3	0.77
930313	921034C/R	90.9	0.23
930314	921035C/R	94.5	0.22
930315	921036C/R	88.3	0.31
930316	921057C/R	93.4	1.03
930317	921058C/R	92.2	0.75
930318	921059C/R	92.9	0.90
930319	921060C/R	92.1	0.80
930320	921061C/R	86.7	0.61
930321	920872C/R	91.9	0.66
930324	R920931C	90.0	1.17
930325	920932C	90.4	1.13

Reg No.	*Identification*	*% $CaCO_3$*	*% Mg*
930326	920933C	91.9	0.92
930327	920934C	93.4	0.85
930328	920935C	93.9	1.07
930329	920936C	94.6	0.72
930330	920937C	93.3	0.60
930331	920938C	91.5	0.26
930332	920939C	93.3	0.19
930333	920940C	92.0	0.55
930334	921083C	88.8	0.59
930335	921084C	92.0	0.59
930336	921085C	88.4	0.47
930337	921086C	87.8	0.47
930338	920835C	91.3	0.70
930339	920836C	93.3	0.25
930340	920837C	88.8	0.30
930341	920838C	91.9	0.42
930342	920821C	86.9	1.16
930343	920893C	91.2	0.78

APPENDIX 4

Resource Calculations

(1) IN SITU RESOURCES — WHOLE OF SAMPLE DATA

(a) Material grading ≥ 94% $CaCO_3$, ≤ 0.4% Mg

Upper Zone A

PDH No.	*True Width (m)*	*Weighting Multiplier*	*% $CaCO_3$*	*% Mg*
1B	10	0.2381	95.0	0.39
2	18	0.4286	94.0	0.35
3B	14	0.3333	95.5	0.44
Average	14		94.7	0.39

Lower Zone A

PDH No.	*True Width (m)*	*Weighting Multiplier*	*% $CaCO_3$*	*% Mg*
5	7	0.3784	94.1	0.28
6	11.5	0.6216	94.1	0.39
Average	9.25		94.1	0.35

Upper Zone A

Measured Resource:

Length: 158 m + 100 m = 258 m (drilled strike length + 50 m each side)
Width: 14 m
Depth: 50 m
Density: 2.7 t/m^3

= 487 620 t @ 94.7/0.39

Indicated Resource:

Length: 150 m [750N–850N; 475N–400N]
Width: ~ 10 m
Depth: 50 m
Density: 2.7 t/m^3

= 202 500 t @ 94.7/0.39

Lower Zone A

Measured Resource:

Length: 185 m (drilled strike length + 50 m each side)
Width: 9.25 m
Depth: 50 m
Density: 2.7 t/m^3

= 231 019 t @ 94.1/0.35

Indicated Resource:

Length: 90 m (~750N–850N)
Width: ~10 m
Depth: 50 m
Density: 2.7 t/m^3

= 121 500 t @ 94.1/0.35

Therefore:

Total Measured Resource: 718 600 t @ weighted average grade 94.5% $CaCO_3$, 0.38% Mg;
Total Indicated resource: 324 000 t @ weighted average grade 94.5% $CaCO_3$, 0.38% Mg.

Total Measured and Indicated resource: 1.04 million tonnes @ 94.5% $CaCO_3$, 0.38% Mg

(b) Material grading ≥ 90% $CaCO_3$, no Mg cutoff

Note: intersection widths are used to calculate weighting multipliers; True width calculated by hand measurement of cross-sections.

PROFILE 700N

Intersection width (m)	Grade % $CaCO_3$	% Mg	Weighting Multiplier
18	92.5	0.78	0.1525
10	94.5	0.70	0.0847
12	95.0	0.39	0.1017
24	93.2	0.87	0.2034
20	93.5	0.62	0.1695
14	94.1	0.39	0.1186
10	92.2	0.47	0.0847
10	89.9	0.52	0.0847
Total true width	weighted average		
99.5	93.2	0.63	

PROFILE 500N

Intersection width (m)	Grade %$CaCO_3$	% Mg	Weighting Multiplier
20	92.7	0.64	0.1563
18	95.5	0.44	0.1406
30	94.5	0.76	0.2344
18	94.0	0.74	0.1406
10	93.7	0.56	0.0781
8	92.3	0.58	0.0625
24	90.6	0.64	0.1875
Total true width	weighted average		
106.5	93.4	0.64	

PROFILE 600N

Intersection width (m)	Grade %$CaCO_3$	% Mg	Weighting Multiplier
12	91.4	0.78	0.1071
22	94.0	0.35	0.1964
30	90.5	0.34	0.2679
10	91.3	0.51	0.0893
16	92.1	0.92	0.1429
8	92.5	0.32	0.0714
8	94.1	0.28	0.0714
6	93.1	0.32	0.0536
Total true width	weighted average		
95.0	92.1	0.48	

Σ 90, no Mg cutoff

True width (m)	Grade %CaCO3	% Mg	Weighting Multiplier
106.5	93.4	0.64	0.3538
95.0	92.1	0.48	0.3156
99.5	93.2	0.63	0.3306
Average	Weighted average		
100.3	92.9	0.59	

Therefore tonnage of limestone grading ≥ 90% $CaCO_3$, no Mg cutoff:

Measured Resource:

Length: 258 m (drilled strike length + 50 m each side)
Width: 100 m
Depth: 50 m
Density: 2.7 t/m^3

= 3 483 000 t @ 92.9% $CaCO_3$, 0.59% Mg

Indicated Resource

Length: 150 m
Width: 100 m
Depth: 50 m
Density: 2.7 t/m^3

= 2 025 000 t @ 92.9% $CaCO_3$, 0.59% Mg

Total Measured and Indicated Resource: 5.5 million tonnes @ 92.9% CaCO3 / 0.59% Mg

(2) IN SITU RESOURCES — COARSE-FRACTION DATA

Upper Zone A

PDH No.	*True Width (m)*	*Weighting Multiplier*	*% $CaCO_3$*	*% Mg*
1B	16	0.2936	94.9	0.40
2	18.5	0.3394	94.1	0.32
3B	20	0.3670	94.8	0.42
Average	18.2		94.6	0.38

Lower Zone A

PDH No.	*True Width (m)*	*Weighting Multiplier*	*% $CaCO_3$*	*% Mg*
5	18.5	0.4805	94.9	0.28
6	20	0.5195	94.4	0.37
Average	19.25		94.6	0.33

Upper Zone A

Measured Resource:

Length: 258 m (drilled strike length + 50 m each side)
Width: 18.2 m
Depth: 50 m
Density: 2.7 t/m^3

= 633 906 t @ 94.6% $CaCO_3$, 0.38% Mg

Indicated Resource

Length: 150 m (drilled strike length + 50 m each side)
Width: 18 m
Depth: 50 m
Density: 2.7 t/m^3

= 364 500 t @ 94.6% $CaCO_3$, 0.38% Mg

Lower Zone A

Measured Resource:

Length: 185 m
Width: 19.25 m
Depth: 50 m
Density: 2.7 t/m^3

= 480 769 t @ 94.6% $CaCO_3$, 0.33% Mg

Indicated Resource:

Length: 90 m
Width: 20 m
Depth: 50 m
Density: 2.7 t/m^3

= 243 000 t @ 94.6% $CaCO_3$, 0.33% Mg

Therefore:

Total Measured Resource: 1 114 675 t @ 94.6% $CaCO_3$, 0.36% Mg;
Total Indicated Resource: 607 500 t @ 94.6% $CaCO_3$, 0.36% Mg

Total Measured and Indicated resource: 1.72 million tonnes @ 94.6% $CaCO_3$, 0.36% Mg

APPENDIX 5

Difference between whole and coarse fraction analyses

Reg No.	*% $CaCO_3$ Residual [inc (dec)]*	*% Mg Residual [inc (dec)]*
PDH 1B		
920905	(5.7)	0.18
920906	4.8	0.06
920907	22.5	0.02
920908	(1.0)	0.00
920909	(0.5)	0.12
920910	(1.3)	(0.02)
920911	(0.7)	0.01
920912	(1.1)	(0.14)
920913	(1.3)	(0.06)
920914	(0.6)	(0.10)
920915	(0.7)	(0.13)
920916	0.0	(0.21)
920917	0.6	(0.10)
920918	(0.1)	(0.01)
920919	(1.5)	(0.08)
920920	0.4	(0.22)
920921	(1.3)	(0.24)
920922	(0.1)	(0.06)
920923	(0.2)	(0.15)
920924	0.7	(0.15)
920925	0.0	(0.15)
920926	(1.3)	(0.05)
920927	0.3	(0.08)
920928	5.0	0.21
920929	0.3	(0.28)
920930	(1.0)	(0.25)
920931	(1.8)	(0.16)
920932	(1.0)	(0.12)
920933	(1.7)	(0.04)
920934	0.2	(0.23)
920935	1.4	(0.41)
920936	0.6	(0.14)
920937	(0.9)	(0.17)

Reg No.	% $CaCO_3$ Residual [inc (dec)]	% Mg Residual [inc (dec)]
920938	(0.7)	(0.07)
920939	(1.3)	(0.04)
920940	(2.1)	0.08
mean =	2.04	0.12
PDH 2		
920799	3.5	0.18
920800	0.9	0.00
920801	0.2	(0.02)
920802	1.5	(0.59)
920803	0.9	(0.02)
920804	(2.6)	(0.01)
920805	1.8	(0.02)
920806	0.0	(0.22)
920807	0.5	0.01
920808	0.7	(0.06)
920809	0.3	(0.14)
920810	0.7	(0.20
920811	(0.7)	0.02
920812	0.9	0.02
920813	(0.7)	0.02
920814	(0.7)	(0.02)
920815	(0.1)	0.02
920816	0.8	0.00
920817	(0.7)	0.03
920818	(0.9)	(0.02)
920819	2.2	(0.09)
920820	5.0	(0.03)
920821	-	-
920822	3.4	0.00
920823	3.5	(0.15)
920824	2.2	(0.05)
920825	3.5	(0.03)
920826	2.7	(0.02)
920827	4.1	(0.01)
920828	4.1	(0.03)
920829	3.0	0.00
920830	4.2	0.02

Reg No.	% $CaCO_3$ Residual [inc (dec)]	% Mg Residual [inc (dec)]
920831	4.4	0.0
920832	3.2	(0.02)
920833	2.3	(0.05)
920834	7.6	(0.06)
920835	2.2	(0.01)
920836	3.0	(0.01)
920837	5.0	(0.01)
920838	2.2	(0.07)
920839	(5.8)	0.02
mean =	2.13	0.06

PDH 3B

920872	0.01	0.42
920873	(0.3)	(0.24)
920874	(1.6)	(0.29)
920875	(0.3)	(0.26)
920876	(1.9)	0.0
920877	(2.5)	0.1
920878	0.5	(0.11)
920879	0.9	(0.36)
920880	(0.8)	0.24
920881	(1.7)	0.02
920882	(1.3)	(0.21)
920883	0.7	(0.28)
920884	(0.4)	0.18
920885	(2.9)	0.18
920886	(0.3)	(0.2)
920887	0.6	(0.06)
920888	(0.2)	0.19
920889	(1.6)	(0.49)
920890	0.6	(0.26)
920891	2.3	(0.1)
920892	3.9	(0.72)
920893	(1.1)	(0.06)
920894	(1.2)	(0.14)
920895	0.1	(0.18)
920896	(1.0)	0.01

Reg No.	% $CaCO_3$ Residual [inc (dec)]	% Mg Residual [inc (dec)]
920897	(1.6)	0.03
920898	(2.1)	(0.03)
920899	(0.9)	0.02
920900	(1.6)	0.08
920901	(0.8)	0.02
920902	0.0	0.03
920903	(1.7)	0.02
mean =	1.08	0.16

PDH 4

920955	(0.4)	(0.08)
920956	(1.4)	(0.28)
920957	(0.4)	(0.16)
920958	(1.1)	(0.03)
920959	(4.0)	(0.08)
920960	(1.5)	(0.09)
920961	0.9	(0.28)
920962	0.1	(0.23)
920963	0.4	(0.09)
920964	(0.3)	(0.29)
920965	(0.4)	(0.14)
920966	(0.3)	(0.11)
920967	1.2	(0.02)
920968	0.6	(0.02)
920969	(0.7)	(0.06)
920970	(0.4)	(0.10)
920971	(2.2)	(0.02)
920972	0.0	(0.06)
920973	(0.7)	(0.04)
920974	(1.1)	(0.02)
920975	(0.3)	0.38
920976	(0.2)	0.05
920977	(0.1)	0.05
920978	(0.3)	(0.03)
920979	1.1	(0.04)
920980	1.4	(0.02)
920981	0.8	0.00

Reg No.	% $CaCO_3$ Residual [inc (dec)]	% Mg Residual [inc (dec)]
920982	0.6	(0.06)
920983	0.0	0.10
920984	0.1	0.04
920985	1.8	0.04
920986	-	-
mean =	0.8	0.10

PDH 5

921007	(2.7)	(0.01)
921008	5.0	(0.02)
921009	(2.4)	0.61
921010	(3.0)	(0.14)
921011	0.9	(0.19)
921012	1.8	(0.36)
921013	3.8	(0.69)
921014	0.7	(0.02)
921015	(1.9)	0.13
921016	0.8	(0.08)
921017	4.6	0.05
921018	(2.3)	(0.04)
921019	2.2	(0.15)
921020	1.6	(0.02)
921021	1.0	0.00
921022	1.6	0.00
921023	2.1	(0.01)
921024	0.6	(0.05)
921025	2.6	(0.03)
921026	2.0	(0.04)
921027	2.1	(0.01)
921028	1.7	0.00
921029	0.7	0.03
921030	(0.3)	(0.03)
921031	0.3	(0.09)
921032	0.7	(0.09)
921033	(0.1)	0.02
921034	(0.9)	(0.01)
921035	1.5	0.00

Reg No.		*% $CaCO_3$ Residual [inc (dec)]*	*% Mg Residual [inc (dec)]*
921036		1.1	0.03
921037		-	-
921038		-	-
	mean =	1.77	0.10

PDH 6

921057		0.2	0.05
921058		(0.7)	(0.09)
921059		0.5	(0.14)
921060		(1.4)	0.03
921061		(2.4)	(0.01)
921062		(1.4)	(0.03)
921063		(0.8)	0.03
921064		0.5	(0.19)
921065		(1.2)	0.07
921066		0.4	(0.13)
921067		(0.3)	0.00
921068		(1.2)	(0.15)
921069		(0.1)	(0.09)
921070		(0.2)	(0.04)
921071		0.5	(0.07)
921072		0.0	(0.10)
921073		(1.4)	(0.09)
921074		3.2	(0.03)
921075		2.0	0.04
921076		0.6	0.01
921077		1.3	(0.07)
921078		3.3	(0.08)
921079		1.9	(0.10)
921080		(0.2)	(0.06)
921081		1.3	(0.05)
921082		0.0	(0.01)
921083		(2.9)	0.02
921084		0.0	(0.16)
921085		(0.9)	(0.13)
921086		0.1	(0.04)
	mean =	1.03	0.07