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RELINQUISHMENT REPORT
EXPLORATION LICENCE 26/91
ADAMSFIELD, TASMANIA
FOR

JERVOIS MINING N.L.

October, 1993

93-3508.

SUMMARY

Exploration Licence 26/91 was granted on September 28th 1992 and covers an area of 19 square kilometres in the Adamsfield district of south-central Tasmania.

The target of exploration was alluvial chromite, platinoid group metals and gold, occurring within the extensive Adam River plain. Much of this area was worked earlier in the century for osmiridium.

After a search of the available literature, a forty-hole shallow drilling programme was carried out using a hand-held power auger. Access was by existing tracks and grid lines.

The auger had difficulty penetrating the gravel horizon. The samples (total 116) were collected on plastic sheets, logged, bagged and despatched to Melbourne.

Sixteen selected samples were sized and analysed for chromium and iron and eight for platinoid group metals. Head grades of the samples vary between 1.15 and 47.70 kilograms Cr_2O_3 per cubic metre, while values for platinoid group metals and gold proved of no commercial significance.

In addition, a clay sample from beneath the gravel horizon was evaluated but proved to have little commercial value.

The shortcomings of the drilling method used are admitted, and it is recognised that the potential of the alluvial flats has not been adequately tested for the metals mentioned above. Even so, the chromite values obtained could be of significance.

The difficulty of positioning more suitable testing units (e.g. churn drills, excavators) in such boggy country is considered to be formidable, and some form of small floating dredge might be necessary for proper evaluation.

This, however, is outside the present exploration parameters of Jervois Mining N.L. and it is recommended that the company relinquish the Licence.

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ACCOMPANYING PLANS

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Auger Drill Hole Locations	AD - 1	1:10,000
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Drilling - Lines 1A, 3A		1:100 V
Cross Sections showing Auger	AD - 3	1:2,000 H
Drilling - Lines 2, 4		1:100 V

INTRODUCTION

Jervois Mining N.L. applied under the ETA System for part of ETA 264, covering the Adamsfield area, in August, 1991. Part of this application was considered successful and offered to Jervois, the remainder was offered to Helix Resources N.L.

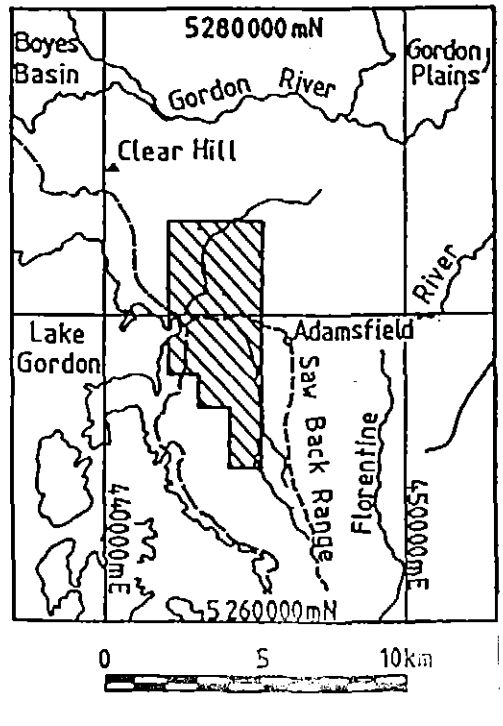
In April, 1992, Objections to the Application were lodged on behalf of The Wilderness Society, Hobart. In July 1992, the warden ruled in favour of Jervois, and in August 1992 he ordered costs against The Wilderness Society.

Previous exploration work by Metals Exploration ltd. was researched, especially in regard to the chromite potential of the alluvials, as well as the osmiridium content. Consideration was also given to the potential of the clay zone beneath the shallow gravels.

Field work was carried out during the year as per the Proposed Programme and Budget of August, 1991 on four of the twelve proposed lines for auger drilling.

The results of this work and conclusions drawn are dealt with in this report.

LOCATION/TENEMENT



The Adamsfield district is situated 90 kilometres WNW of Hobart in south central Tasmania (Queenstown 1:250,000 sheet, Wedge 1:100,000 sheet).

Access is gained by the bitumen Gordon River Road connecting Maydena and Strathgordon, then by the (forestry) Clear Hill Road to the old Adamsfield Track. Under government supervision, Metals Exploration Ltd. upgraded the Adamsfield Track (from Clear Hill Road to Halls Open Pit) and constructed tracks on both sides of the Adams River Plain.

Exploration Licence 26/91 was granted on 28th September, 1992. It covers 19 square kilometres out of an original application area of 38 square kilometres. The tenement lies within the Adamsfield Conservation Area which, in turn, lies within a World Heritage Area.

GEOLOGY

The geology of the Adamsfield district has been well documented both in publications (eg. "Geology and Mineral Resources of Tasmania" GSA 1989 and "The Osmiridium Deposits of the Adamsfield District" G.S. Bull. No. 39, P.B. Nye) and in company reports (Metals Exploration Ltd.).

The economically important rock types include the Cambrian alpine-type ultramafic complex on the eastern side of the area, the Ordovician sediments of Ragged Range, Sawback Range and Football Hill, and the Quaternary alluvial valley fill deposits.

The ultramafics are composed mainly of serpentinite (and serpentinised dunite), interlayered serpentinite and pyroxenite and massive pyroxenite. The distribution is controlled by major north-south faulting.

The Early-Ordovician sediments are part of the Denison Subgroup of the Junee Group. The ranges are formed by the more resistant units:

Siliceous and pebbly sandstone in the Sawback Range;
Siliceous cobble conglomerate in the Ragged Range.

Elsewhere the sediments are mostly quartz sandstone (eg. Football Hill) and fossiliferous calcareous sandstone and mudstone (Marriott Hill). A younger Ordovician limestone underlies much of the western part of the Adams River Plain.

In Tertiary times the Adams River Plain was scoured out leaving a karst topography of the predominantly limestone and calcareous flat lying basement (Ordovician) sediments. In late Tertiary the Adams Falls area must have been blocked by a catastrophic event (eg. by landslide). The resultant Quaternary Lake (covering the Adams River Plain) was filled with fine sediment which is now a glutinous clay.

As the Adams Falls blockage was gradually eroded, streams incised the clay resulting in the deposition of further clays, sands and gravels. The main gravels of this era occur on the eastern side of the Adams River Plain and in the Main Creek area just north of the Adamsfield Track. The gravels are a green cobble wash, the colour having its origins from the ultrabasics to the east.

MINERALISATION

The Adamsfield ultramafic complex is the source of the platinum group metals and chromite in the district. Minor nickel is also associated with the ultrabasics and possibly they contain some gold.

The main platinoid alloy is iridosmine (IrOs) commonly referred to as osmiridium. Only 1 or 2% of platinum is usually present and 5% of ruthenium.

Primary "lode" deposits occur at the head waters of Main Creek in the Halls Open Pit area. Drilling beneath the workings failed to locate economic mineralisation, and it is possible that secondary enrichment produced higher near surface grades. Some nickel sulphide is present in this area partly as millerite and also as heazlewoodite.

In Ordovician times, osmiridium and chromite shed from the ultramafic complex into the terrestrial sediments, especially the conglomerates on Ragged Range and the sandstones of Football Hill. Later re-working of these sediments, and further erosion

of the ultrabasics, have resulted in the formation of the recent (Quaternary) alluvial deposits (eg. the green cobble wash referred to above). About 15,000oz of osmiridium have been produced from the alluvial deposits of the field but no chromite was recovered.

Recent (late 1980's) drilling and pitting by Metals Exploration Ltd. has shown that:

"The exploration potential for these channel deposits is about 5 million tonnes (2.5 million cubic metres) of chromite bearing alluvials at a stripping ratio of about 1:1 and that the total economic contained chromite is 125,000 tonnes if the chromite grade is 2.5 wt%".

PREVIOUS EXPLORATION

Osmiridium was discovered in the area by Government Geologist W.H. Twelvetrees in 1909, and in 1920 A.McIntosh Reid, also a Government Geologist, reported the presence of small amounts of osmiridium at the southern end of the Adamsfield field.

In late 1924 a prospecting party discovered osmiridium in the Adams River Valley and in 1925 over 1000 miners' rights had been issued for the field. By 1930 only a few miners remained and mining virtually ceased in the 1940's. In the 1950's Halls Open Pit was excavated. The total recorded production for the field is 15,394oz of osmiridium.

Recent exploration by Metals Exploration Ltd. has involved auger drilling, percussion drilling, "Wacker" drilling, pitting and bulk sampling (sluicing table and jigs).

Initial exploration was directed at the "lode" deposit where erratic results were found. As a result, attention was turned to the alluvial potential of Adams River Plain (including Main Creek Area 2). After reconnaisance auger drilling, an extensive pitting programme (102 pits on a 250 metres by 100 metres grid) was completed. Samples from the pits (which were up to 6 metres deep) were treated through two washing plants with the concentrate despatched for assay.

Metals Exploration Ltd. report:

"Results of the programme were disappointing with the highest pit sample result returning a calculated head grade of 0.39 g/m³ Total P.G.E. One auger hole gave a higher calculated result of 0.80 g/m³ Total P.G.E. Most samples returned calculated head grades of less than 0.01 g/m³ P.G.E. Calculated chromite results indicated grades of up to 5% in some of the gravel areas.

"It is recommended that the shallow gravels (maximum depth 5m) and their extensions that occur along the eastern side of the Plain, and contain the most prospective ground for P.G.E. mineralisation, be initially tested by augering. This will facilitate a rapid assessment of the resource and delineate the zones requiring bulk sampling."

and

"All, bar one, of the higher chromium results lie along the eastern side of the plains".

EXPLORATION PHILOSOPHY

It was considered that Metals Exploration Ltd.'s recommendation above to test the eastern side of Adams River Plain (including the Main Creek Area) by auger drilling was the logical next phase of exploration.

The initial target was the chromite content of the Recent gravels, with osmiridium and gold being considered "sweeteners". Previous exploration paid too little attention to the chromite potential.

The gravels (the green cobble wash) are shallow, generally with a base at less than 3 metres from surface. The coarse nature of these gravels suggested that "Wacker" drilling (narrow diameter) would not be appropriate for testing purposes. A wide-diameter hand-held power auger was therefore recommended for the programme.

WORK COMPLETED

After literature research had been completed and a programme of auger drilling formulated, a Stihl Hand-Held Power Auger was hired from the Mines Department drilling division in Hobart. The drill had a capacity to drill to about 3 metres. It was thoroughly cleaned before use.

The proposed work programme, involving augering on existing gridlines and using existing vehicular access, was approved by the Department of Mines on 26th February, 1993. The drilling programme commenced on 6th March, 1993 and was completed on 14th March, 1993.

Forty holes were completed for a total of sixty-seven metres of drilling. Samples were collected by removing the auger spiral string from the hole and scraping the sample onto plastic sheets spread around and next to the collar. A total of 116 samples were collected. The samples were geologically logged, bagged, and transported to Melbourne. The drill hole logs appear in the appendix.

The drill hole locations were picked up by chain and compass from the existing grid marks. The collar co-ordinates are AMG co-ordinates less the following prefix: 2- or 26- for northings and 44- for eastings.

Sixteen of the samples were selected for screening and sent for assay to AMDEL in Adelaide.

The samples, four from each line, were selected on the basis of their visual chromite content. The size fraction tables appear in the appendix.

One sample of clay was despatched to AMDEL for evaluation - a mineralogical analysis by X-ray diffraction. A second sample was delivered to Commercial Minerals Ltd. in Melbourne.

DISCUSSION

The assay results for chromium and iron appear in the appendix. Assaying was by alkaline fusion followed by measurement of total Cr and Fe by ICP.

The grade calculation tables also appear in the appendix. These tables show the grade of Cr in kilograms per cubic metre for each sample. The conversion to Cr_2O_3 is to multiply these figures by 1.46:

Drill Hole		Depth		$kgCr_2O_3/m^3$
N	E	From	To	
7055	4000	1.75	2.50	30.24
7105	4000	1.40	2.10	32.81
7205	4000	1.80	2.20	28.60
7255	4000	0.70	1.30	14.35
7175	4500	0.50	0.95	14.79
7225	4500	0.65	0.85	28.59
7325	4500	0.10	0.65	34.84
7475	4500	1.70	2.10	8.21
9000	4625	1.30	1.80	11.46
9000	4575	1.10	1.80	47.70
9000	4525	0.10	0.80	1.15
9000	4325	0.65	1.10	20.48
9500	4525	1.75	2.10	3.94
9500	4425	1.75	2.20	34.44
9500	4325	1.60	2.25	8.48
9500	4175	1.40	1.80	26.41

The average of these selected samples gives a head grade of 21.66 kg Cr_2O_3 per m^3. Half of the samples were analysed for platinoids and gold, and these results are also appended.

The method of assay used for the precious metals was Amdel's FA4. A 50g sample weight was fluxed with a nickel based flux, the platinum group metals being collected into a NiS button and analysed by ICP-MS.

Results obtained were very low, the maximum for each element being as follows:-

Pt	Os	Ir	Rh	Au	Ru
ppb	ppb	ppb	ppb	ppb	ppb
13	2	3	2	9	15

It was noted that the Pt values, while low, were consistently higher than those for Os and Ir. As this is not the normal rule at Adamsfield, Amdel was asked to carry out check assays (see appendix). The same general relationship of Pt to Os and Ir was obtained, for which there is no immediate explanation.

Many of the drill holes bottomed in gravel (see drill logs and accompanying Sections) with the drill being unable to penetrate the hard boulders, or the recovery being poor in wet conditions.

The evaluation of the clay sample by AMDEL proved the clay to be of little value, and Commercial Minerals Ltd. confirmed this result.

CONCLUSIONS AND RECOMMENDATIONS

The auger programme was carried out to test the feasibility of using this method of evaluation for the alluvials at Adamsfield.

It was recognised that the method had limitations both in its ability to penetrate coarse gravels and its applicability to water-saturated ground.

Despite these drawbacks, the drilling programme confirmed the presence of significant grades of chromite, although the values for the platinum group metals and gold were disappointingly low.

To adequately test the alluvial flats, some method of traversing the often very boggy ground by suitable testing units would have to be devised.

Alternatively, a small floating test dredge would have to be installed.

As these forms of exploration fall outside the company's present budget parameters at Adamsfield, it is recommended that the Licence be relinquished.

REHABILITATION

Access during the auger drilling programme was by existing tracks and gridlines. All auger holes were backfilled and capped with sods, the area being left virtually undisturbed.

Douglas McKenna and Partners Pty. Ltd.

Douglas McKenna & Partners Pty. Ltd.
October, 1993

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APPENDIX
Auger Drill Hole Logs

AUGER DRILL HOLE LOGS

LINE 1A (444000mE)

N AMG m	E m	Sample Depth From	To	Description	Mineralisation (visual estimate)
70005	4000	0 -	0.10	Soil and grass	
		0.10-	0.65	Brown clayey gravel to 5mm, some sand, damp	?3% Cr_2O_3
-1		0.65-	1.35	Green/brown clayey coarse sand, damp	
		1.35-	1.75	Green/brown clayey coarse sand and gravel to 1.55m then pale green/brown clay	visible Cr_2O_3
		1.75-	2.25	Pale green/brown then grey clay	
70055	4000	0 -	0.10	Soil and grass	
		0.10-	0.70	Pale grey/green fine sand minor coarse, damp	Trace Cr_2O_3
-2		0.70-	1.15	Pale grey/green fine sand to 0.9m then black humus and clay, damp	
		1.15-	1.75	Pale grey/green fine clayey sand, damp	2-3% Cr_2O_3
		1.75-	2.50	Pale grey/green fine sand sl. clayey with coarse gravel to 30mm at base to 2.40m then pale grey/green clay, wet	5% Cr_2O_3
70105	4000	0 -	0.10	Soil and grass	
		0.10-	0.70	Pale grey/green fine sand sl. clayey, damp	3% Cr_2O_3
-3		0.70-	1.40	Minor grey/green fine sand, mostly black clay and humus, damp	
		1.40-	2.10	Dark grey clay to 1.70m then gravel from fine sand to cobbles 50mm, wet, hard	3-5% Cr_2O_3
70155	4000	0 -	0.15	Soil and grass	Trace
		0.15-	0.70	Fine pale grey sand minor black clay, damp	Cr_2O_3
-4		0.70-	1.30	Black clay minor humus	
		1.30-	1.90	Minor black clay then pale grey fine sandy clay, damp	1-2% Cr_2O_3
		1.90-	2.45	Pale grey/green fine sandy clay with coarse gravel to 40mm, from 2.35m, hard, wet	1-2% Cr_2O_3
70205	4000	0 -	0.10	Grass and soil	
		0.10-	0.70	Pale grey fine clayey sand to 0.55m then black clay and humus, damp	1% Cr_2O_3
-5		0.70-	1.35	Dark grey/black clay, damp	
		1.35-	1.80	Dark grey/black fine sl. sandy clay to 1.60m then pale grey/brown medium fine sand, damp	3% Cr_2O_3

	1.80-2.20	Light brown clayey medium/ coarse sand, some coarse gravel to 80mm, bottomed in gravel, wet	2-3% $Cr_2 O_3$
70255 4000	0 - 0.10	Soil and grass	
	0.10-0.70	Pale grey/light brown sl. clayey fine to medium sand to 0.55m then black clay	Trace $Cr_2 O_3$
-6	0.70-1.30	Minor dark grey sl. sandy clay then medium grey/brown clayey fine to medium sand, some gravel at base, bottomed in gravel	5% $Cr_2 O_3$
70305 4000	0 - 0.10	Soil and grass	
	0.10-0.70	Medium/pale grey minor brown sl. clayey medium sand, some humus	2% $Cr_2 O_3$
-7	0.70-1.40	Pale grey coarse sand then black humus/clay then grey and brown clay then pale grey fine sandy clay, damp	2-3% $Cr_2 O_3$ at top
	1.40-2.05	Pale grey fine sandy clay to 1.60m then pale grey clayey fine sand to medium grained at base with minor gravel, bottomed in gravel, wet	
70355 4000	0 - 0.10	Soil and grass	
	0.10-0.70	Pale grey/green fine/medium clayey sand, some black humus/clay	1% $Cr_2 O_3$
-8	0.70-1.45	Black clay minor humus minor dark grey sl. sandy clay, damp	
	1.45-1.80	Pale grey clay some fine sandy clay, damp	Trace $Cr_2 O_3$
	1.80-2.50	Pale grey clay some gravel on top of hard basement (no recovery 2.30-2.50m), wet	
70405 4000	0 - 0.10	Soil and grass	
	0.10-0.65	Light brown medium sand lesser black clay	
-9	0.65-1.10	Light brown fine clayey sand	Trace $Cr_2 O_3$
	1.10-1.75	Pale grey clayey medium sand to coarse gravel to 60mm	1% $Cr_2 O_3$
	1.75-2.50	Pale grey/white minor light brown/pale green sticky clay (with gravel contamination)	
70455 4000	0 - 0.10	Soil and grass	
	0.10-0.70	Pale/medium grey clay sl. sandy	
	0.70-1.40	Dark grey/black clay sl. sandy	
-10	1.40-2.05	Pale grey minor light brown clay	
	2.05-2.70	Pale grey sticky clay	

70505 4000	0 - 0.10	Soil and grass	
	0.10-0.70	Dark grey/black sl. sandy clay, humus	
	0.70-1.30	Black, brown, pale grey clayey fine to medium sand, minor gravel to 10mm at base, bottomed on hard basement	

LINE 3A (444500mE)

N AMG m	E m	Sample Depth From	To	Description	Mineralisation (visual estimate)
70125	4500	0 -	0.10	Black humus	
		0.10-	0.70	Black soil to 0.20m then medium grey clayey to pale grey fine sand, hard at base	Trace Cr_2O_3
70175	4500	0 -	0.15	Soil, humus, grass	
		0.15-	0.50	Grey/brown clayey sand, damp	Trace Cr_2O_3
		0.50-	0.95	Grey/brown/black sl. clayey sand, wet, hard boulders at base	Trace Cr_2O_3
70225	4500	0 -	0.10	Soil, humus, grass	
		0.10-	0.65	Grey brown clayey sand, damp	
		0.65-	0.85	Grey sand minor clay, wet, boulders at base	5% Cr_2O_3
70275	4500	0 -	0.10	Soil, humus, grass	
		0.10-	0.65	Light brown, black sandy clay	
		0.65-	1.45	Light brown sandy clay to 1.25m then grey sand with minor gravel, boulders at base, damp	
70325	4500	0 -	0.10	Soil, humus, grass	
		0.10-	0.65	Light brown, grey sandy gravel to 0.40m then grey sl. clayey sand, damp	5% Cr_2O_3
		0.65-	1.35	Light brown sticky clay minor sand to 1.10m, then grey medium/fine clayey sand, coarser at base, cobbles at bottom, wet	1% Cr_2O_3
70375	4500	0 -	0.10	Soil, humus, grass	
		0.10-	0.60	Pale grey/green clayey fine sand to 0.40m then black peaty soil, damp	5% Cr_2O_3 at top
		0.60-	1.10	Dark grey clay to 1.00m, then grey/green sand and gravel to 40mm, wet	
70425	4500	0 -	0.20	Grass and soil (swamp)	
		0.20-	0.65	Khaki clay, black humus, damp	
		0.65-	1.15	Khaki clay, gravel at base, damp	

70475	4500	0 - 0.15	Grass and soil	
		0.15-0.65	Soil to 0.40m then brown sandy clay	
		0.65-1.15	Light brown/grey fine clayey sand	
		1.15-1.70	Light brown/grey fine clayey sand to 1.40m then dark brown/ black clay, damp	
		1.70-2.10	Dark brown/black clay to 1.90m then grey sandy gravel to 15mm, wet at base	2-3% Cr_2O_3
70525	4500	0 - 0.10	Soil and grass	
		0.10-0.65	Peaty soil to 0.25m then brown sandy clay	
		0.65-1.35	Brown sl. clayey sand to medium gravel to 25mm, pink limestone basement at bottom	

LINE 2 (269500mN)

N AMG m	E m	Sample Depth From	To	Description	Mineralisation (visual estimate)
9500	4625	0 -	0.10	Soil and grass	
		0.10-	0.65	Light/dark brown fine sand and gravel to 20mm, minor dark brown clay, damp	2-3% Cr_2O_3
		0.65-	1.25	Dark grey/brown sl. clayey sand and gravel to 20mm to 1.05m then black humus clay, wet	
		1.25-	1.70	Black sticky clay, humus with trace fine sand, wet	
9500	4575	0 -	0.10	Soil and grass	
		0.10-	0.65	Pale grey/green sl. clayey fine minor medium sand, minor black humus, damp	2% Cr_2O_3
		0.65-	1.25	Pale grey/green medium sand to 0.80m then black sticky clay, humus, wet	
		1.25-	1.70	Black sticky clay minor humus, wet	
9500	4525	0 -	0.10	Soil and grass	
		0.10-	0.65	Trace grey sand then brown/black clay	
		0.65-	1.25	Grey/brown clay, damp	
		1.25-	1.75	Black clay, damp	
		1.75-	2.10	Pale grey/green fine clayey sand with gravel at base, hard, wet	3-5% Cr_2O_3
9500	4475	0 -	0.10	Soil and grass	
		0.10-	0.65	Black/brown clayey humus then mixed with pale grey sand	2-3% Cr_2O_3
		0.65-	1.25	Pale grey/brown sl. sandy clay and black clay, damp	

		1.25-1.90	Pale grey/brown sandy clay with coarse gravel to 50mm at base, wet, hard bottom	1-2% Cr_2O_3
9500	4425	0 - 0.10	Soil and grass	
		0.10-0.65	Black, dark grey clay and humus	
		0.65-1.30	Black clay, damp	
		1.30-1.75	Black, dark brown/grey sticky clay to 1.55m then light brown sandy gravel to 30mm, wet	5% Cr_2O_3
		1.75-2.20	Light brown/grey poorly sorted gravel to 50mm, some coarse sand, sl. clayey, wet	+5% Cr_2O_3
9500	4375	0 - 0.10	Soil and grass	
		0.10-0.65	Light/dark brown clay then medium brown clayey medium sand	
		0.65-1.20	Medium brown sl. clayey coarse sand minor light gravel to 10mm, damp to wet	2% Cr_2O_3
		1.20-1.50	Pale grey/brown clayey sand minor light gravel to 10mm, wet	2% Cr_2O_3
9500	4325	0 - 0.10	Soil and grass	
		0.10-0.65	Black humus, pale grey/brown clay	
		0.65-1.20	Pale grey/brown sl. sandy clay minor humus	Trace Cr_2O_3
		1.20-1.60	Pale grey sandy clay	3-5% Cr_2O_3
		1.60-2.25	Pale grey/brown/green clayey sandy gravel to 80mm, bottomed on hard gravel	5% Cr_2O_3
9500	4275	0 - 0.10	Soil and grass	
		0.10-0.65	Soil and black humus	
		0.65-1.30	Black, dark grey clay, damp	
		1.30-1.70	Pale grey, light brown sl. sandy clay, hard bottom, wet	1-2% Cr_2O_3
9500	4225	0 - 0.15	Soil and grass	
		0.15-0.65	Black lesser brown soil, humus, clay	
		0.65-1.35	Brown clayey fine to coarse (3mm) sand, damp	Trace Cr_2O_3
		1.35-1.85	Brown coarse sand and gravel to 40mm to 1.75m then pale glutinous clay, wet	2-3% Cr_2O_3
9500	4175	0 - 0.15	Soil and grass	
		0.15-0.70	Black soil, humus, clay	
		0.70-1.40	Black clay to 1.05m then pale grey/brown clayey fine to medium sand	3% Cr_2O_3
		1.40-1.80	Light brown/grey sl. clayey sandy gravel to 40mm, wet	2-3% Cr_2O_3
9500	4125	0 - 0.20	Soil and grass	
		0.20-0.70	Black, dark brown, soil, humus, clay	

	0.70-1.20	Minor black clay then light brown medium to fine clayey sand, damp	2-3% Cr_2O_3
	1.20-1.55	Pale grey/brown sl. clayey medium fine sand, hard bottom	5% Cr_2O_3

LINE 4 (269000mN)

N AMG m	E m	Sample Depth From	To	Description	Mineralisation (visual estimate)
9000	4625	0 -	0.10	Soil and grass	
		0.10-	0.80	Black humus minor clay	
		0.80-	1.30	Gradual transition from above to green clayey fine sand, damp	1-2% Cr_2O_3
		1.30-	1.80	Grey/green sl. clayey fine to coarse sand, minor gravel to 20mm	2-3% Cr_2O_3
		1.80-	1.90	No sample return in gravel	
9000	4575	0 -	0.10	Soil and grass	
		0.10-	0.70	Light brown/grey clay	
		0.70-	1.10	Light brown/grey clay, damp	
		1.10-	1.80	Pale grey/green/brown coarse sandy gravel to 80mm, wet	5% Cr_2O_3
		1.80-	1.90	Pale grey sticky clay	Trace Cr_2O_3
9000	4525	0 -	0.10	Soil and grass	
		0.10-	0.80	Pale grey minor brown clay then pale grey sandy clay	
		0.80-	1.25	Minor pale grey sandy clay then clayey fine sand to 1.15m then medium to coarse sand, hard gravel base, damp	2-3% Cr_2O_3
9000	4475	0 -	0.10	Soil and grass	
		0.10-	0.75	Black soil and clay to 0.55m then pale grey clay	
		0.75-	1.20	Pale grey/brown clay to 1.10m then pale grey medium sand, hard bottom	
9000	4425	0 -	0.10	Soil and grass	
		0.10-	0.75	Minor black clay then pale grey fine sl. clayey sand	1-2% Cr_2O_3
		0.75-	1.25	Pale grey fine to medium sand some dark grey/brown clay horizons, hard basement	1-2% Cr_2O_3
9000	4375	0 -	0.10	Soil and grass	
		0.10-	0.70	Black minor dark brown humus, clay	
		0.70-	1.30	Minor dark brown clay then pale grey/brown fine to medium sand, hard basement	

9000	4325	0 - 0.10	Soil and grass	
		0.10-0.65	Medium brown clay to 0.55m then brown fine sand	Trace $Cr_2 O_3$
		0.65-1.10	Light/medium brown sl. clayey sand with 100mm gravel at base	3% $Cr_2 O_3$
		1.10-2.40	Pale grey plasticine clay	
9000	4275	0 - 0.10	Soil and grass	
		0.10-0.70	Black soil then grey/brown clayey sand with minor 30mm gravel at base	
		0.70-1.10	Coarse gravel to 50mm to 0.80m then pale grey plasticine clay, wet	
9000	4225	0 - 0.30	Grass and humus	
		0.30-0.70	Black humus and clay minor coarse sand at base	
		0.70-1.05	Minor pale grey/brown clay then light brown/grey clayey fine sand to coarse gravel to 50mm, wet	
		1.05-1.20	Pale grey clay	

APPENDIX

Size Fraction Tables

ADAMSFIELD

SAMPLES FOR INITIAL TESTING

SIZE FRACTIONS

SAMPLE NO.	7055N 4000E 1.75-2.50	7255N 4000E 0.70-1.30	7225N 4500E 0.65-0.85	7325N 4500E 0.10-0.65	9000N 4575E 1.10-1.80	9000N 4325E 0.65-1.10	9500N 4425E 1.75-2.20	9500N 4325E 1.60-2.25
WEIGHT (g)	6835	6745	3299	6531	13277	7969	4964	8014
VOLUME (ml)	5450	5450	2150	4850	9100	5800	3750	6150
FRACTION WEIGHTS(g)								
+6.4mm	754	150	156	1044	3171	1024	1870	3252
-6.4+3.2mm	314	94	236	332	1189	1337	539	1199
-3.2+1.0mm	1144	250	142	412	1882	1384	894	1274
UNDERSIZE	4582	6172	2742	4686	6978	4192	1623	2235
TOTAL WEIGHT	6794	6666	3276	6474	13220	7937	4926	7960
LOOSE S.G.	1.25	1.24	1.53	1.35	1.46	1.37	1.32	1.30

AV. LOOSE S.G. = 1.35

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ADAMSFIELD

FURTHER SAMPLES FOR TESTING

SIZE FRACTIONS

SAMPLE NO.	7105N 4000E 1.40-2.10	7205N 4000E 1.80-2.20	7175N 4500E 0.50-0.95	7475N 4500E 1.70-2.10	9000N 4625E 1.30-1.80	9000N 4525E 0.10-0.80	9500N 4175E 1.40-1.80	9500N 4525E 1.75-2.10
WEIGHT (g)	8284	9240	4916	4187	7049	6905	4137	3667
VOLUME (ml)	6950	6600	5000	3350	6750	5650	3250	3050
FRACTION WEIGHTS(g)								
+6.4mm	1544	1454	38	132	144	0	1359	160
-6.4mm	6730	7790	4871	4050	6884	6910	2773	3507
TOTAL WEIGHT	8274	9244	4909	4182	7028	6910	4132	3667
LOOSE S.G.	1.19	1.40	0.98	1.25	1.04	1.22	1.27	1.20

AV. LOOSE S.G. = 1.19

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APPENDIX

AMDEL Assay Results and Evaluation of Clay

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ANALYTICAL SERVICES

968026

Amdel Laboratories Limited
Brown Street, Thebarton, 5031
Telephone: (08) 416 5300 Facsimile: (08) 234 0321

Mr Anthony Jannink
Douglas McKenna & Partners Pty Ltd
Box 1778Q GPO
MELBOURNE
VIC 3001

F I N A L A N A L Y S I S R E P O R T

Your Order No: Our Job Number : 3AD1329

Samples received : 07-APR-1993 Results reported : 22-APR-1993
No. of samples : 16
Report comprises a cover sheet and pages I1

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source.

Note:
If you have any enquiries please contact Miss Anne Reed quoting the above job number.

Approved Signatory:

John Waters
Laboratory Manager - Adelaide

Report Codes:
N.A. - Not Analysed.
L.N.R. - Listed But Not Received.
I.S. - Insufficent Sample.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

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Analysis code IC4E Report 3AD1329 Page 11

NATA Certificate Results in %

Sample	Cr	Fe
7055N-4000E +1-3.2mm	0.415	4.54
7055N-4000E -1mm	2.36	3.68
7255N-4000E +1-3.2mm	1.44	10.00
7255N-4000E -1mm	0.810	2.00
7225N-4500E +1-3.2mm	2.22	2.74
7225N-4500E -1mm	1.42	1.08
7325N-4500E +1-3.2mm	10.8	7.15
7325N-4500E -1mm	1.52	1.64
9000N-4575E +1-3.2mm	2.08	5.35
9000N-4575E -1mm	3.70	4.84
9000N-4325E +1-3.2mm	1.88	0.990
9000N-4325E -1mm	1.32	0.800
9500N-4425E +1-3.2mm	2.16	3.24
9500N-4425E -1mm	4.26	4.12
9500N-4325E +1-3.2mm	0.910	3.74
9500N-4325E -1mm	1.08	3.46
Detn limit	(0.005)	(0.005)

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ANALYTICAL SERVICES

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Amdel Laboratories Limited
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Telephone: (08) 416 5300 Facsimile: (08) 234 0321

Mr Anthony Jannink
Douglas McKenna & Partners Pty Ltd
Box 1778Q GPO
MELBOURNE
VIC 3001

F I N A L A N A L Y S I S R E P O R T

Your Order No: Our Job Number : 3AD2728

Samples received : 03-AUG-1993 Results reported : 19-AUG-1993
No. of samples : 8
Report comprises a cover sheet and pages I1

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source.

Note:
If you have any enquiries please contact Miss Anne Reed quoting the above job number.

Approved Signatory:

John Waters
Laboratory Manager - Adelaide

Report Codes:
N.A. - Not Analysed.
L.N.R. - Listed But Not Received.
I.S. - Insufficent Sample.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

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Analysis code IC 17 Report 3AD2728 Page I1

NATA Certificate

Sample	Fe	Cr
7105N 4000E 1.4-2.1	8.00	2.32
7205N 4000E 1.8-2.2	6.20	1.66
7175N 4500E 0.5-0.95	1.14	1.04
7475N 4500E 1.7-2.1	0.860	0.465
9000N 4625E 1.3-1.8	2.46	0.770
9000N 4525E 0.1-0.8	3.88	0.065
9500N 4175E 1.4-1.8	3.98	2.12
9500N 4525E 1.75-2.1	1.56	0.235
Detn limit	(0.005)	(0.005)
Units	%	%

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ANALYTICAL SERVICES

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Amdel Laboratories Limited
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Mr Anthony Jannink
Douglas McKenna & Partners Pty Ltd
Box 1778Q GPO
MELBOURNE
VIC 3001

F I N A L A N A L Y S I S R E P O R T

Your Order No: Our Job Number : 3AD3121

Samples received : 31-AUG-1993 Results reported : 14-SEP-1993
No. of samples : 8
Report comprises a cover sheet and pages 1 to 1

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source.

Note:
If you have any enquiries please contact Miss Anne Reed quoting the above job number.

Approved Signatory:

John Waters
Laboratory Manager - Adelaide

Report Codes:
N.A. - Not Analysed.
L.N.R. - Listed But Not Received.
I.S. - Insufficent Sample.

Distribution Codes:
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EM - Electronic Media
MM - Magnetic Media

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ANALYTICAL REPORT

Job: 3AD3121
O/N:

Sample	Pt	Os	Ir	Rh	Au	Ru
9500N 4425E	10	2	2	2	1	15
9500N 4175E	12	2	2	2	2	7
9000N 4575E	13	2	2	2	9	10
7325N 4500E	3	2	1	1	1	5
7225N 4500E	5	2	2	1	<1	6
7205N 4000E	4	2	2	2	<1	6
7105N 4000E	9	2	3	2	1	8
7055N 4000E	4	<2	2	2	1	7
Units	ppb	ppb	ppb	ppb	ppb	ppb
DL	1	2	1	1	1	1
Scheme	FA4	FA4	FA4	FA4	FA4	FA4

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ANALYTICAL SERVICES

9680 32

Amdel Laboratories Limited
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Mr Anthony Jannink
Douglas McKenna & Partners Pty Ltd
Box 1778Q GPO
MELBOURNE
VIC 3001

CHECK ANALYSIS REPORT

Your Order No: Our Job Number : 3AD3121A

Samples received : 27-SEP-1993 Results reported : 27-SEP-1993
No. of samples : 10
Report comprises a cover sheet and pages 1 to 1

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source.

Note: As per your request, we have checked "Os Ir & Pt" on above samples. The following values are check values. We acknowledge "Pt" is still greater than "Os Ir" but the above data has been obtained by refiring the original material & remeasuring using ICP MS. The standard SARM7 is also reported for your information. We are confident that on the samples submitted, the "Pt" is higher than the "Os Ir". Our standard charges apply to this work. Should you desire, we are happy to have an alternate laboratory also analyse these samples.

Note:
If you have any enquiries please contact Mr Trevor Francis quoting the above job number.

Approved Signatory:

John Waters
Laboratory Manager - Adelaide

Report Codes:
N.A. - Not Analysed.
L.N.R. - Listed But Not Received.
I.S. - Insufficent Sample.

Distribution Codes:
CC - Carbon Copy
EM - Electronic Media
MM - Magnetic Media

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968033

ANALYTICAL REPORT

Job: 3AD3121A
O/N:

Sample	Pt	Os	Ir	Rh	Au	Ru
9500N 4425E	7	4	4	2	<1	12
9500N 4175E	14	2	2	1	<1	6
9000N 4575E	15	2	2	2	6	8
7325N 4500E	2	<2	1	1	<1	5
7225N 4500E	3	<2	1	1	<1	5
7205N 4000E	5	2	2	1	<1	5
7105N 4000E	8	2	2	1	<1	6
7055N 4000E	6	2	1	2	<1	6
STD SARM7	3925	70	70	235	155	420
STD SARM7 EXPECTED	3740	65	75	240	310	430
Units	ppb	ppb	ppb	ppb	ppb	ppb
DL	1	2	1	1	1	1
Scheme	FA4	FA4	FA4	FA4	FA4	FA4

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Amdel Limited
A.C.N. 008 127 802

MATERIALS SERVICES
Certified to AS 3901 / ISO 9001

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TORRENSVILLE SA 5031

Telephone: (08) 372 2700
Facsimile: (08) 379 6623

968034

QUALITY SYSTEM
NATA
CERTIFIED

13 April 1993

Douglas McKenna & Partners Pty Ltd
GPO Box 1778Q
MELBOURNE VIC 3001

Attention Mr Alan Alexander

REPORT L498/93

CLIENT REFERENCE	Letter of 19 March 1993.
TITLE	Evaluation of Clay.
SAMPLE IDENTIFICATION	7455N 4000E, 2.1 – 2.7m.
WORK REQUESTED	Mineralogical analysis by X-ray diffraction.
Investigating Officers:	Robert J Allen and Michael Till.

John A Lackey
Acting Manager
Materials Services

1. INTRODUCTION

Mr Alan Alexander of Douglas McKenna and Partners Pty Limited, submitted to Amdel Limited for characterisation a sample of clay material.

It was agreed that in the first instance the mineralogical composition of the sample should be established by X–ray powder diffraction.

2. PROCEDURE

The clay was moist as received, and was dried to constant weight at 65°C. It was found to contain 34.4% moisture.

The dried sample was crushed to about –5mm by pestle and mortar and a sub–sample for X–ray diffraction was separated by riffling.

Portion of the crushed material was powdered finely and used to prepare an X–ray diffractometer trace which was interpreted by reference to Standard data available at Amdel.

A second portion of the finely powdered sample was weighed and dispersed in water with the aid of dispersants and an electric blender. It was then allowed to settle to yield a –2μm size fraction by the pipette sedimentation method. The resulting –2μm dispersion was examined by plummet balance to determine its solids content, and was then used to produce oriented clay preparations on ceramic plates. Two plates were prepared, both being saturated with magnesium ions, and one in addition being treated with glycerol. When air–dry, these were examined using the X–ray diffractometer. An additional diagnostic examination was carried out on the glycerol–free plate after addition of formamide.

3. RESULTS and DISCUSSION

The results are shown in Table 1, which shows:

- the bulk mineralogy to give a general idea of the overall composition and proportions
- the mineralogy of the –2μm fraction to provide more detailed information on the clay–type minerals

The proportion of the sample found to separate into the -2μm size fraction, as determined by the plummet balance, was 42%. This figure relates only to the pre-treatment and dispersion conditions used.

The clay fraction of this sample contains predominantly fine muscovite mica and halloysite clay. The latter is similar to kaolinite in chemical composition, but tubular, rather than platy in crystal form.

Halloysite appears to find limited use in ceramics and refractories, and in special cases as a petroleum cracking catalyst and paper filler.

In the -2μm fraction the high proportion of mica and significant content of fine quartz would probably limit the commercial possibilities of this material still further.

dt:3

TABLE 1: MINERALOGICAL COMPOSITION OF CLAY SAMPLE

	Estimated* Content
Bulk Mineralogy	
Muscovite (mica)	Dominant
Quartz	Sub–dominant
Halloysite	Sub–dominant
Chlorite	Trace
Yield of –2μm material	42%
–2μm Mineralogy	
Muscovite/illite	Co–dominant
Halloysite	Co–dominant
Quartz	Accessory
Chlorite	Trace

*** Semi–quantitative estimates – explanation:**

Dominant	Used for the component apparently most abundant, regardless of its probable percentage level.
Co–dominant	Used for two (or more) predominating components, both or all of which are judged to be present in roughly equal amounts.
Sub–dominant	The next most abundant component(s) providing its percentage level is judged above about 20.
Accessory	Components judged to be present between the levels of roughly 5 and 20%.
Trace	Components judged to be below about 5%.

Amdel Limited
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FACSIMILE MESSAGE:

Date 7/4/93 Number of Pages 2 including cover sheet

To MR. ALAN ALEXANDER

Company DOUGLAS MCKENNA & PARTNERS

City/Country MELBOURNE / VICTORIA

Fax Number (03) 670 3691

From R.J. ALLEN Materials Services

MESSAGE:

Alan,

The results of Xray diffraction study of your clay are now to hand. Sorry for delay.

Bulk Mineralogy	Estimated Content*
MUSCOVITE (MICA)	DOMINANT
QUARTZ	SUBDOMINANT
HALLOYSITE	SUBDOMINANT
CHLORITE	TRACE
Yield of -2μm 'Clay'	42%
-2μm Mineralogy	
MUSCOVITE ('illite')	CODOMINANT
HALLOYSITE	CODOMINANT
QUARTZ	ACCESSORY
CHLORITE	TRACE - ACCESSORY

Thus the 'clay fraction of this sample contains fine mica (muscovite) as well as HALLOYSITE clay (similar to KAOLINITE but TUBULAR - rather than PLATY crystal form)

* SUBDOMINANT > 20%; ACCESSORY 5-20%; TRACE < 5%

1 of 2

Halloysite appears to find limited use in ceramics and refractories, and in isolated cases as petroleum-cracking catalyst and paper filler.

The high proportion of mica in the -2 μm fraction would probably limit the commercial prospects of this material still further. It is conceivable that it might be suitable for some ceramic and filler applications, but does not offer the broad range of possibilities of kaolinite or bentonite.

Yours faithfully

Bob Allen.

APPENDIX

Grade Calculation Tables

GRADE CALCULATIONS-INITIAL TESTING

	Wt.(gms)	%Cr	gms Cr
7055N 4000E (1.75-2.50)			
-1mm	4582g	2.36%	108.14g
+1mm-3.2mm	1144g	0.415%	4.75g
-3.2mm	5726g	1.97%	112.89g
+3.2mm	1068g	-	-
Total	6794g	1.66%	112.89g
Vol. 5450ml i.e. 20.71kg/m³			
7255N 4000E (0.70-1.30)			
-1mm	6172g	0.810%	49.99g
+1mm-3.2mm	250g	1.44%	3.60g
-3.2mm	6422g	0.83%	53.59g
+3.2mm	244g	-	-
Total	6666g	0.80%	53.59g
Vol. 5450ml i.e. 9.83kg/m³			
7225N 4500E (0.65-0.85)			
-1mm	2742g	1.42%	38.94g
+1mm-3.2mm	142g	2.22%	3.15g
-3.2mm	2884g	1.46%	42.09g
+3.2mm	392g	-	-
Total	3276g	1.28%	42.09g
Vol. 2150ml i.e. 19.58kg/m³			
7325N 4500E (0.10-0.65)			
-1mm	4686g	1.52%	71.23g
+1mm-3.2mm	412g	10.8%	44.50g
-3.2mm	5098g	2.27%	115.73g
+3.2mm	1376g	-	-
Total	6474g	1.79%	115.73g
Vol. 4850ml i.e. 23.86kg/m³			
9000N 4575E (1.10-1.80)			
-1mm	6978g	3.70%	258.19g
+1mm-3.2mm	1882g	2.08%	39.15g
-3.2mm	8860g	3.36%	297.34g
+3.2mm	4360g	-	-
Total	13220g	2.25%	297.34g
Vol. 9100ml i.e. 32.67 kg/m³			
9000N 4325E (0.65-1.10)			
-1mm	4192g	1.32%	55.33g
+1mm-3.2mm	1384g	1.88%	26.02g
-3.2mm	5576g	1.46%	81.35g
+3.2mm	2361g	-	-
Total	7937g	1.02%	81.35g
Vol. 5800ml i.e. 14.03 kg/m³			

GRADE CALCULATIONS-INITIAL TESTING (Cont.)

		Wt.(gms)	%Cr	gms Cr
9500N	4425E (1.75-2.20)			
	-1mm	1623g	4.26%	69.14g
	+1mm-3.2mm	894g	2.16%	19.31g
	-3.2mm	2517g	3.51%	88.45g
	+3.2mm	2409g	-	-
	Total	4926g	1.80%	88.45g
	Vol. 3750ml i.e. 23.59 kg/m³			
9500N	4325E (1.60-2.25)			
	-1mm	2235g	1.08%	24.14g
	+1mm-3.2mm	1274g	0.910%	11.59g
	-3.2mm	3509g	1.02%	35.73g
	+3.2mm	4451g	-	-
	Total	7960g	0.45%	35.73g
	Vol. 6150ml i.e. 5.81kg/m³			

Average of 8 samples 18.76kg/m³

GRADE CALCULATIONS - FURTHER TESTING

		Wt.(gms)	%Cr	gms Cr
7105N	4000E (1.40-2.10)			
	+6.4mm	1544g	-	-
	-6.4mm	6730g	2.32%	156.14g
	Total	8274g	1.89%	156.14g
	Vol. 6950ml i.e. 22.47kg/m³			
7205N	4000E (1.80-2.20)			
	+6.4mm	1454g	-	-
	-6.4mm	7790g	1.66%	129.31g
	Total	9244g	1.40%	129.31g
	Vol. 6600ml i.e. 19.59kg/m³			
7175N	4500E (0.50-0.95)			
	+6.4mm	38g	-	-
	-6.4mm	4871g	1.04%	50.66g
	Total	4909g	1.03%	50.66g
	Vol. 5000ml i.e. 10.13kg/m³			
7475N	4500E (1.70-2.10)			
	+6.4mm	132g	-	-
	-6.4mm	4050g	0.465%	18.83g
	Total	4182g	0.45%	18.83g
	Vol. 3350ml i.e. 5.62kg/m³			
9000N	4625E (1.30-1.80)			
	+6.4mm	144g	-	-
	-6.4mm	6884g	0.770%	53.01g
	Total	7028g	0.75%	53.01g
	Vol.6750ml i.e. 7.85kg/m³			
9000N	4525E (0.10-0.80)			
	+6.4mm	-	-	-
	-6.4mm	6910g	0.065%	4.49g
	Total	6910g	0.065%	4.49g
	Vol. 5650ml i.e. 0.79 kg/m³			
9500N	4175E (1.40-1.80)			
	+6.4mm	1359g	-	-
	-6.4mm	2773g	2.12%	58.79g
	Total	4132g	1.42%	58.79g
	Vol. 3250ml i.e. 18.09kg/m³			

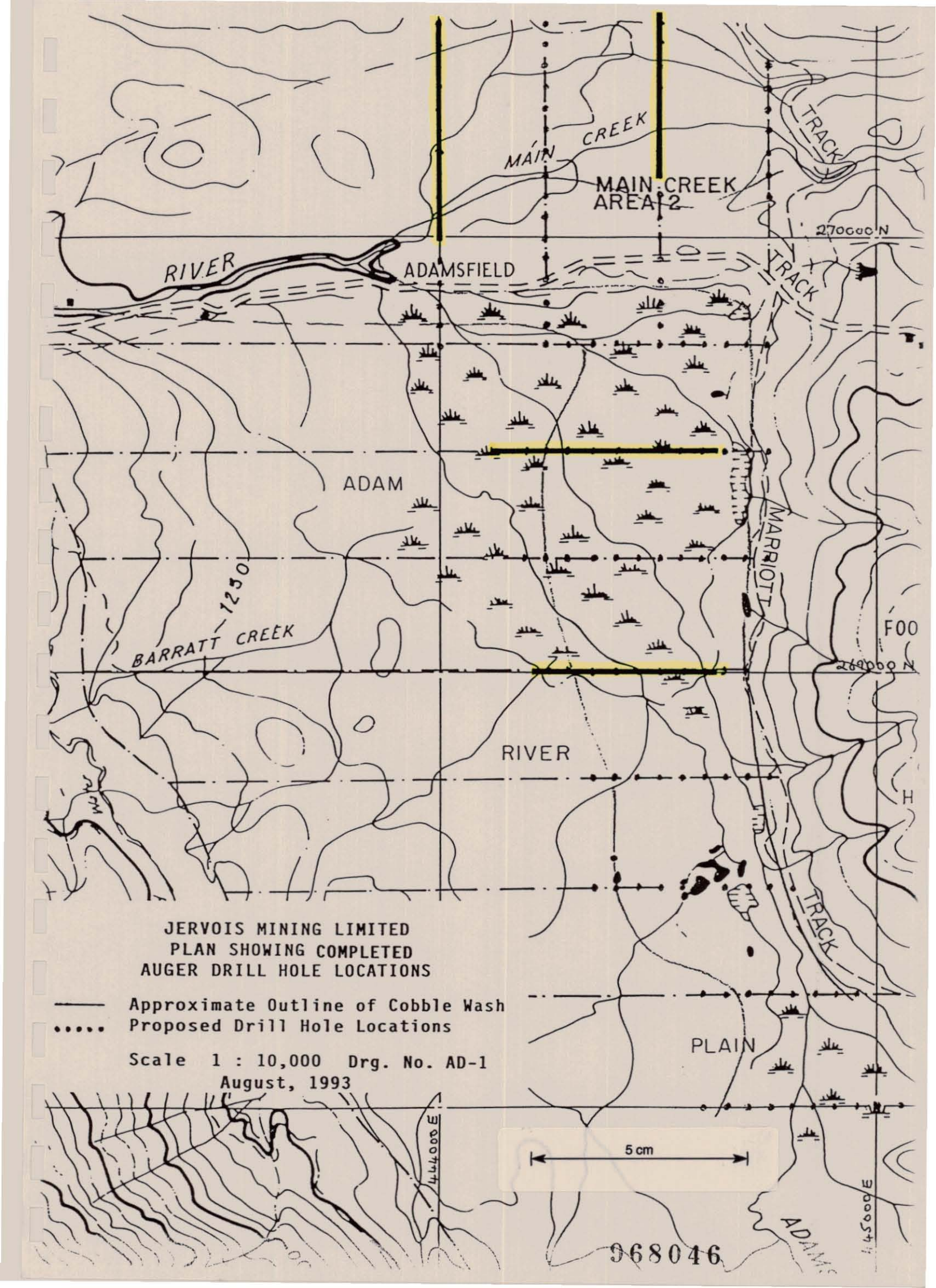
GRADE CALCULATIONS - FURTHER TESTING
(Cont.)

		Wt.(gms)	%Cr	gms Cr
9500N	4525E (1.75-2.10)			
	+6.4mm	160g	-	-
	-6.4mm	3507g	0.235%	8.24g
	Total	3667g	0.22%	8.24g

Vol. 3050ml i.e. 2.70kg/m^3

Average of 7 samples 12.35kg/m^3 (excluding 9000N 4525E [0.10-0.80])

ACCOMPANYING PLANS



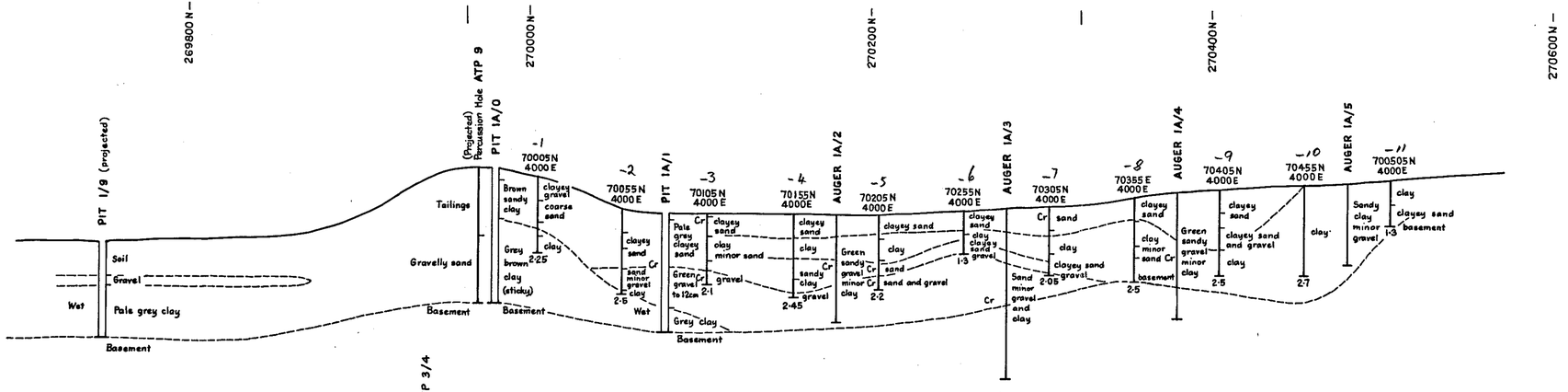
JERVOIS MINING LIMITED
PLAN SHOWING COMPLETED
AUGER DRILL HOLE LOCATIONS

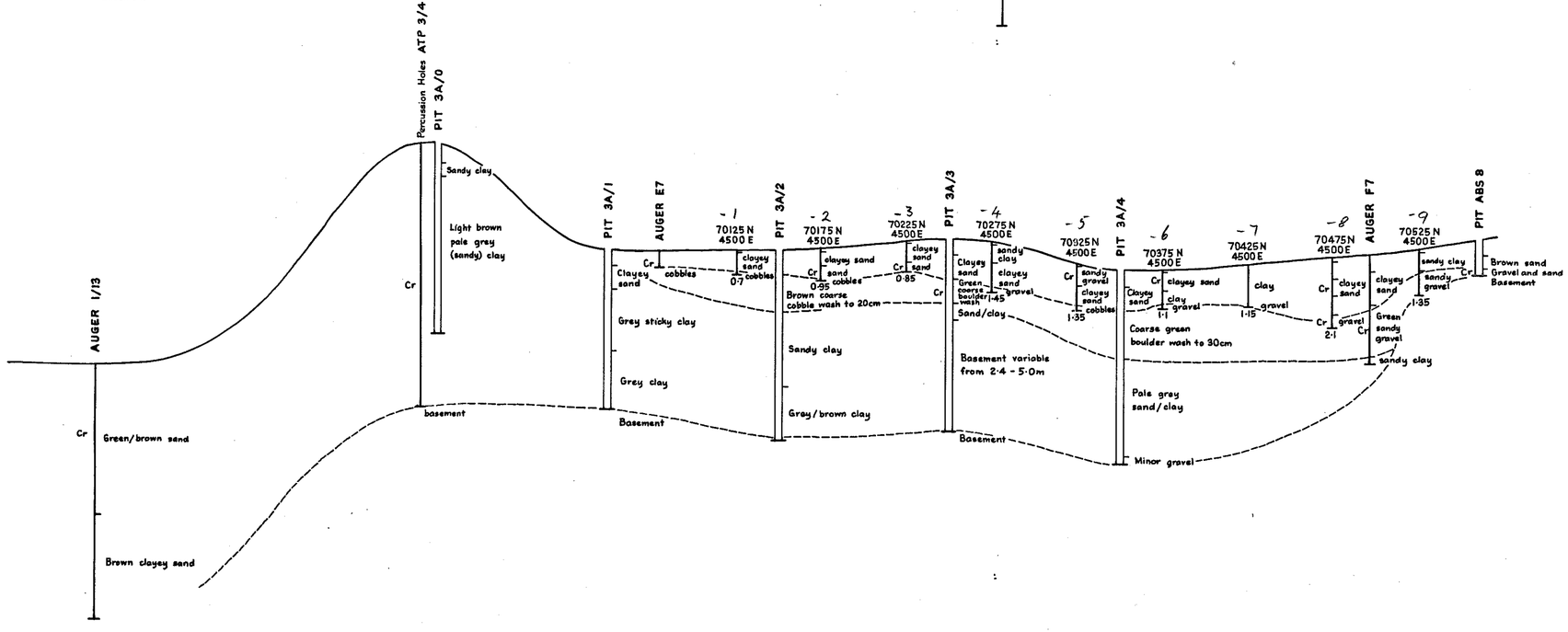
—— Approximate Outline of Cobble Wash
..... Proposed Drill Hole Locations

Scale 1 : 10,000 Drg. No. AD-1
August, 1993

968046

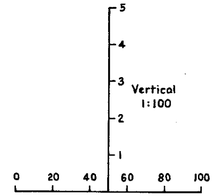
968047

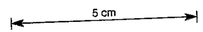




LINE 1A
444000 m E

LINE 3A
444500 m E





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CROSS-SECTIONS SHOWING AUGER DRILLING

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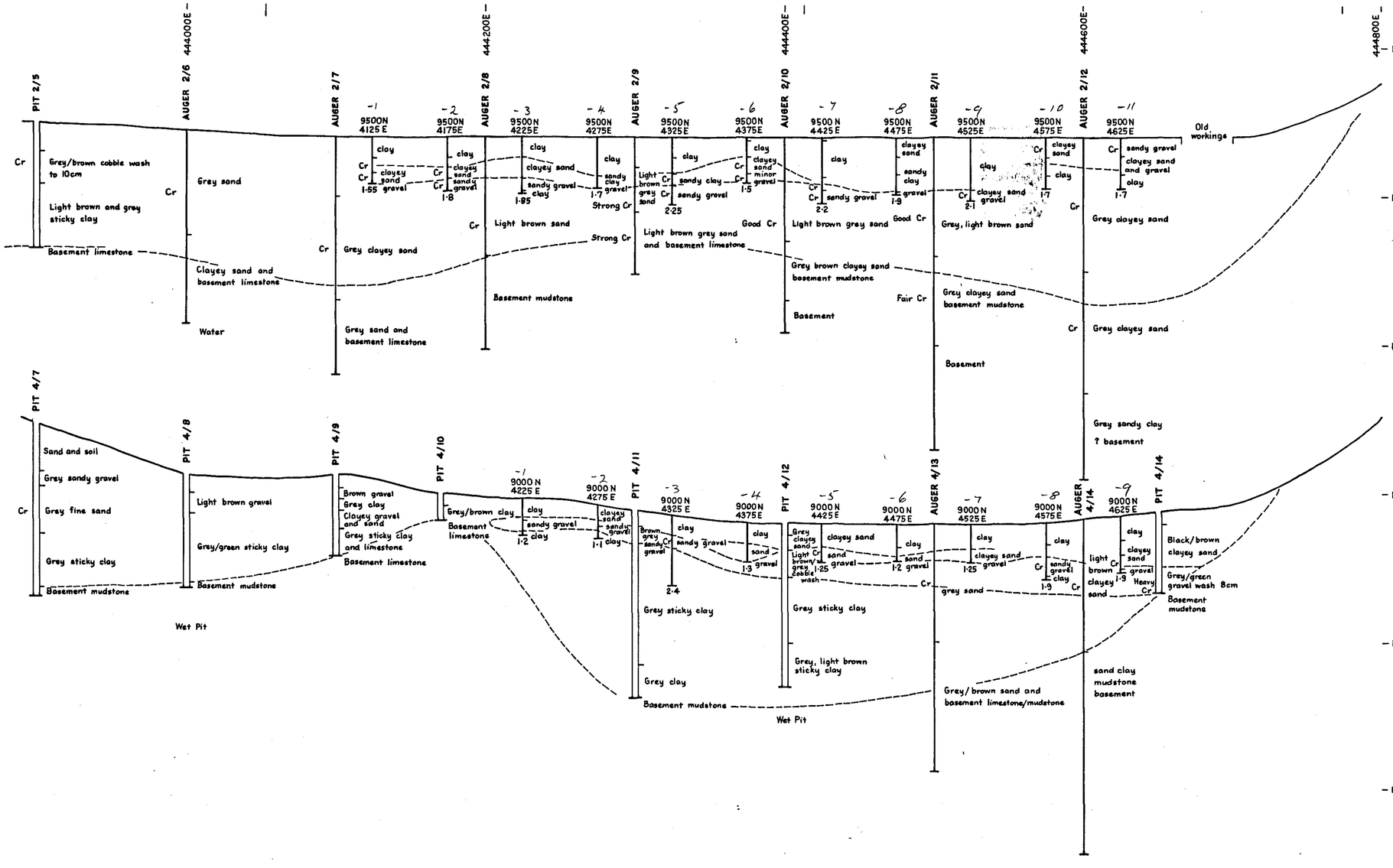
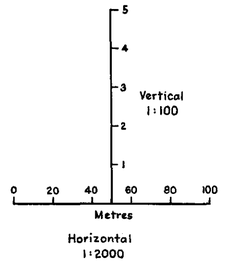


LINE 2
269500 m N

LINE 4
269000 m N



5 cm

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CROSS-SECTIONS
SHOWING
AUGER DRILLING

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Scale 1:2000 H, 1:100 V. Date Aug '93. Drg. No. AD-3