

McINTYRE MINES (AUSTRALIA) PTY. LTD.

EXPLORATION LICENCE 17/68 AND CONSOLIDATED LEASE 105M/77.

QUARTERLY REPORT

FOR THE PERIOD

FEBRUARY 4th 1982 TO MAY 3rd 1982.

Cliff H. Whitehead.

4th May, 1982.

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ATTACHMENTS

- Attachment 'A' - Statement of Expenditure - three months to May 3rd 1982
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APPENDICES

- Appendix A - McIntyre Mines Report - "Kara North 266 Zone - Infill Drill Programme And Review Of Reserves".
Appendix B - McIntyre Mines Report - "Kara 1 - Southern Extension - Infill Drill Programme And Review Of Reserves".
Appendix C - McIntyre Mines Report - "Kara 1 - Section Line 5820N- Infill Drill Programme And Revision Of Reserves".
Appendix D - Assay Logs - DDH 317, DDH 318.

PLANS

- | | |
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| Plan 2 - Kara No. 1 - Eastern Ridge - Geology | Scale 1:1000 |
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QUARTERLY REPORT - PERIOD, 4th FEBRUARY 1982 TO MAY 3rd 1982E.L. 17/68 - AND - C.L. 105M/77Introduction And Summary

During the three month period to May 3rd 1982, McIntyre Mines (Australia) Pty. Ltd., as manager of a joint venture with Tasminex N.L. have continued to perform investigations within E.L. 17/68 and its associated mining tenement C.L. 105M/77.

Work during the present quarter has consisted of completing Phase 1 of a Pre - Development Programme, and the initiation of a Phase 11 programme. The latter is a six month programme of investigations scheduled for completion August 1982.

The following studies of the Pre - Development Programme are underway or have been completed, during the quarter in question:-

- Completion of an infill diamond drill programme at four of the main known skarn zones (ie. Kara North 266 Zone, Bobs Bonanza, Kara No. 1 Southern Extension and Kara No. 1 Main Zone).
- The initiation of an exploratory diamond drill programme to investigate possible mineralisation associated with buried skarn zones within E.L. 17/68.
- The completion of metallurgical laboratory test work on various types of oxidised and partially weathered ore.
- The initiation of detailed engineering - production - feasibility studies of the main ore zones at Kara No. 1 and Kara North.

During the quarter ending May 3rd 1982, McIntyre Mines (Australia) Pty. Ltd., have incurred expenditures totalling \$76,703. Of this total \$43,750 are accountable to work in C.L. 105M/77, and \$32,953 to investigations in exploration licence 17/68.

For the initial six month period of the present E.L. 17/68 tenancy, a total expenditure of \$160,803 has been incurred by McIntyre Mines (Australia) Pty. Ltd.

1. INFILL DIAMOND DRILL PROGRAMME.

To increase confidence in categorisation of the tungsten ore reserves at Kara, and to test various extension possibilities of known ore, either up or down dip and along strike, a programme of infill or extension diamond drilling was initiated by McIntyre Mines.

It was the intention to investigate a number of known skarn areas at the Kara properties, namely, Kara North 266 Zone, Bobs Bonanza, Kara No. 1 Southern Extension, Kara No. 1 Main Zone, Eastern Ridge and Western Limb.

During the present quarter, drilling was completed at four of the above skarn zones. The programme was then suspended in order to initiate exploratory drilling in outside, more inaccessible sections of the E.L. prior to the advent of winter.

Overall, the infill drill programme provided successful results at three of the areas drilled. Reserves can now be calculated with a greater degree of confidence and accuracy, and at each of the three locations reserve tonnages and grades were increased and improved respectively.

Table 1, overleaf, itemises details of the completed infill drill programme. A brief resume of results at each skarn zone is summarised below, but more detailed reports of drilling at Kara North 266 Zone, Kara No.1 S. Extension and Kara No. 1 Main Zone, are included as Appendices A, B and C.

A - Kara North 266 Zone

Infill drilling at this location consisted of five diamond drill holes, DDH 303 to 307 between Section Lines 7020N and 7220N - total metres drilled, 316.61m.

Appendix A gives a detailed account of the results, but in summary, drilling proved up dip extensions of ore to the 266 Zone and also strike extensions for 100 metres in a southerly direction.

On the basis of completed drilling, it is now estimated that total geological reserves of fresh and partially weathered ore at the Kara North 266 Zone amount to 378,541 tonnes averaging 1.02% WO_3 .

KARA PROPERTIES - INFILL DIAMOND DRILL PROGRAMME (1982)

<u>HOLE NO.</u>	<u>LOCATION:</u>	<u>DRILL SEC.</u>	<u>COORDINATES</u>		<u>R.L.</u>	<u>INCLINATION</u>	<u>DEPTH DRILLED</u> <u>(METRES)</u>
			<u>NORTH</u>	<u>EAST</u>			
DDH 303	KARA N-266 ZONE	7160N	7161.8	7176.0	456.1	45°W	48.46
DDH 304	KARA N-266 ZONE	7060N	7073.5	7198.6	454.7	55°W	77.11
DDH 305	KARA N-266 ZONE	7120N	7111.0	7166.5	457.6	55°W	38.71
DDH 306	KARA N-266 ZONE	7020N	7024.6	7215.6	448.9	45°W	86.19
DDH 307	KARA N-266 ZONE	7220N	7220.5	7166.3	472.8	55°W	66.14
DDH 308	BOBS BONANZA	5720N	5723.0	7684.8	543.8	65°E	67.97
DDH 309	BOBS BONANZA	5820N	5821.0	7687.1	545.0	60°E	54.56
DDH 310	BOBS BONANZA	5820N	5821.0	7687.1	545.0	83°E	105.11
DDH 311	KARA 1 S.EXT.	5675N	5678.2	7328.8	535.7	70°W	51.22
DDH 312	KARA 1 S.EXT.	5675N	5681.2	7329.2	535.5	55°E	37.49
DDH 313	KARA 1 S.EXT.	5700N	5698.0	7347.8	535.5	45°W	67.65
DDH 314	KARA 1 S.EXT.	5650N	5653.0	7335.2	537.6	55°W	42.98
DDH 315	KARA 1 S.EXT.	5675N	5673.0	7390.6	537.7	60°E	24.99
DDH 316	KARA 1 MAIN ZONE	5820N	5817.0	7355.2	503.7	45°W	91.46

TOTAL METRES DRILLED - 860.04

B - Bobs Bonanza Location

Three diamond drill holes, DDH's 308 to 310, were completed with a total metreage of 227.94 m.

No down dip extensions of the tungsten bearing ore lens in the Upper Skarn Zone were found, and no additional reserves of ore can be expected from this location.

C - Kara No. 1 - Southern Extension

Five holes, DDH 311 to 315, with a total metreage of 224.33 metres were drilled between Section Lines 5650N and 5700N. A comprehensive report on drill results and their effect on the locations ore reserve assessment can be found in Appendix B. A new geological plan and drill sections (scale 1:500) are attached as Plans 4 and 5.

On the basis of this completed drill programme it was calculated that total geological reserves of fresh and partially weathered ore would now total 235,477 tonnes averaging 0.84% WO_3 at the Southern Extension deposit. In addition, it was estimated 319,000 tonnes of geological resources (ie. weathered ore) grading 0.80% WO_3 , would also be present in the area.

D - Kara No. 1 Main Zone

One hole, DDH 316 was drilled along Section Line 5820N. This hole was deemed necessary to intersect and prove ore previously classified as "inferred". It would also provide more accurate information of the skarn zone in the deeper sections of the western synclinal structure.

Successful results were obtained - the ore was recategorised as indicated and an increase in reserves was made within the Section Line oreblock. Please refer to Appendix C.

E - General Comments

With the exception of Bobs Bonanza, the completed infill drill programme programme permitted a more accurate assessment of reserves and in all cases, significant tonnage increases of fresh and partially weathered ore were made. However, until such time that the engineering evaluation of these skarn locations is completed, these additional reserves can only be classified as geological reserves, and not as official mineable reserves.

2. EXPLORATORY DRILLING

As a result of surface exploration activities within outlying sections of the exploration licence area, a number of prospective geologic targets have been delineated, where subsurface, buried skarn bodies are suspected. These targets have been defined as accurately as possible from surface work, but further investigations to assess their possible economic potential must resort to drilling. With this in mind an extensive programme of exploratory diamond drilling has been designed by McIntyre Mines and this work constitutes a portion of Phase 11 of the Pre - Development Programme.

This drilling was initiated during the present quarter. Unfortunately the majority of areas proposed for drilling are poor in access and provide difficult mobility. If conditions deteriorate during the forthcoming winter months, the programme may be temporarily suspended.

Results to date are as follows:-

A - Kara North Magnetite Anomaly

This anomalous zone was clearly defined by ground magnetics, and covers an area comparable in size to the Kara No. 1 deposit. It is in an area masked by Recent sediments and Tertiary basalt located at the alluvial flats of the Companion River east of the Kara North 266 Zone.

Limited drilling had in the past been undertaken along one drill section line (7160N) in the centre of the anomaly (Anzeco DDH 146 and McIntyre Mines DDH 287 and 289). Magnetite skarn was confirmed but lacking any associated scheelite mineralisation.

The present drill programme is designed to investigate the anomaly in a broader sense, targeting for a skarn unit a specific distance from the granite front and adjacent to cupola - like structures of the intrusive.

Two holes - DDH 317 and 318 - have to date been completed. They were collared within the southern extremity of the anomaly and drilled to depths of 80.60 metres and 124.69 metres. Both holes had to be prematurely abandoned due to bad drill conditions prior to the underlying granite being penetrated. The holes confirmed magnetite skarn underlying metamorphosed Gordon Limestone, and both holes showed slight, but narrow inconsistent scheelite mineralisation (see Appendix D - Assay logs DDH 317 and 318).

DDH 320 is at present being drilled on Section Line 7160N along the extreme western contact of the anomaly.

B - Companion Skarn Location

This location is found midway between Kara North and the Kara No. 1 - West Limb skarn. Ground magnetics indicates concealed skarn, and geological interpretation suggests it could exist to the west beneath overturned arenaceous Lower Ordovician and Devonian granite.

DDH 319, drilled to a depth of 99.99 metres confirmed skarn and its disposition, but the skarn was devoid of scheelite mineralisation. One additional hole, collared further to the west in granite is planned for the near future.

3. METALLURGICAL INVESTIGATIONS

During Phase 1 of the Pre - Development Programme, representative bulk samples of "weathered ore" containing varying proportions of scheelite were collected from the Kara No. 1 deposit and submitted to Warman International Laboratories, Sydney, for metallurgical test work. With the exception of a few minor check assay values, the results of these investigations are now complete. The true significance and application of these results has yet to be fully assessed.

Approximately 600,000 tonnes of "weathered ore" averaging 0.70% WO_3 are known to be present at the Kara No. 1 Main Zone and the Southern Extension deposit.

Although mineralised, a portion of the "weathered ore" is completely oxidised and contains no visible mineralisation. The remainder of the weathered ore can contain varying proportions of scheelite, from minor amounts (10% of total tungsten content) to significant amounts (70%). At present, both types of "weathered ore" are classified as a geological resource and not as potential ore reserves.

An on-site study was undertaken at Kara, accurately delineating the two above types of weathered ore. An attempt was then made at classifying ore according to the proportion of scheelite content. A more detailed examination was made of weathered ore containing scheelite in the area between Section Lines 5740N and 5820N, and five bulk samples were built up from existing drill core considered representative of potential ore blocks from specific mining levels. Details of these samples, and the estimated proportion of scheelite versus total tungsten content are shown in Table 2.

These five samples, together with two additional bulk samples of partially weathered ore (Kara 18 and Kara 19) collected from Kara North and the Eastern Ridge, were forwarded to the Warman Laboratories for bench scale tests. The main objective of the test work was to define by beneficiation (grinding, magnetic separation, gravity - flotation concentration of non magnetics) the actual amount of recoverable scheelite, and see if these results compared with the field estimate of scheelite content. Table 3 shows the basic results of these beneficiation tests.

The tungsten recovery values of the "weathered ore " samples show low gravity and rougher flotation concentrates, varying between 10% and 37%, but preliminary assessment would indicate a close correlation to field estimates of scheelite content. As expected, the tungsten recovery values for the partially weathered ore samples were higher - 59% (Kara 19) and 72% (Kara 18).

Additional laboratory test work was carried out on the above samples:-

- sodium carbonate leach tests attempting to formulate a correlation between soluble tungsten values and recoverable scheelite values. For weathered oxidised ore, such a correlation proved disappointing.
- An attempt was also made to correlate gravity plus flotation with ore specific gravity, ore colour and pH of the ore slurry. The results showed that very little, if any, correlation existed.

TABLE NO. 2

DETAILS - SAMPLES OF OXIDISED ORE FOR METALLURGICAL TESTS

<u>Sample No.</u>	<u>Estimate % Scheelite of Total WO₃</u>	<u>Section Lines:</u>	<u>Ore Block Mining Levels</u>	<u>Potential Tonnage (Tonnes)</u>	<u>Calculated Grade</u>	<u>Holes Sampled</u>
Kara 10	36 - 46%	5780N-5820N	490 - 500L	22,000	0.67%	226, 241, 231, 265
Kara 12	17 - 27%	5780N - 5820N	500 - 510L	18,240	0.52%	241, 242, 265, 249
Kara 13	14 - 24%	5780N - 5740N	500 - 510L	17,040	0.58%	241, 242, 261.
Kara 14	11 - 21%	5780N - 5740N(E)	510 - 520L	25,800	0.78%	262, 241, 242, 263
Kara 15	26 - 36%	5780N - 5740N(W)	500 - 510L	15,600	0.85%	244, 243, 261, 239
				<u>98,680</u> tonnes		
Kara 18		Eastern Ridge	375L	?		
Kara 19		Kara N 266 Zone	460L	?		

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TABLE 3

Summary of grades and distributions
of beneficiation test products

	KARA-10		KARA-12		KARA-13		KARA-14	
	grade % WO ₃	dist %						
Concentrates								
gravity	33.0	27.9	24.4	10.5	17.2	7.1	15.9	9.9
flotation	1.6	2.0	1.8	9.3	1.6	3.1	1.43	10.6
(sub total)		<u>29.9</u>		<u>19.8</u>		<u>10.2</u>		<u>20.5</u>
Tailings								
gravity	0.33	9.4	0.49	13.0	0.56	10.8	1.23	19.1
float	0.90	24.9	0.55	16.4	0.63	13.8	0.88	12.6
slimes	1.95	28.1	1.10	34.7	1.67	42.1	1.82	30.2
magnetics	0.10	7.8	0.14	16.1	0.18	23.1	0.23	17.6
(sub total)		70.1		80.2		2.8		79.5
Calc. head	0.67		0.48		0.51		0.76	
assay head	0.59		1.33		0.53		0.93	

	KARA-15		KARA-18		KARA-19	
	grade % WO ₃	dist %	grade % WO ₃	dist %	grade % WO ₃	dist %
Concentrates						
gravity	48.3	31.5	66.2	53.4	23.0	22.2
flotation	1.7	5.2	12.0	17.7	4.1	36.4
(sub total)		<u>36.7</u>		<u>71.1</u>		<u>58.6</u>
Tailings						
gravity	0.79	9.0	0.63	13.0	0.27	7.2
float	0.93	12.9	0.49	5.0	0.32	8.6
slimes	1.57	22.0	1.51	8.5	0.79	18.0
magnetics	0.21	19.4	0.08	2.5	0.16	7.7
(sub total)		63.3		19.0		41.5
calc. head	0.74		1.44		0.75	
assay head	0.89		1.32		0.48	

4. ENGINEERING - PRODUCTION - FEASIBILITY STUDIES

As originally proposed in the Pre - Development Programme, detailed engineering-feasibility studies of the main Kara ore deposits were to be completed. In view of the increased reserves of fresh and partially weathered ore outlined during the recent infill drill programme, the importance of these studies is now of greater proportion.

These investigations, designed to be completed within a 15 to 17 week timeframe, has been contracted to engineering consultants - Golder Associates of Sydney.

The study is basically three phases:-

Phase 1 - A review of the calculated reserves for both Kara No. 1 and the Kara North deposits.

Phase 2 - A mining feasibility study which will examine all mining aspects of the project based on the open pit mining of the two deposits.

Phase 3 - A detailed evaluation of operating and capital costs and cash flow analyses for the project.

Golder Associates initiated work on April 5th 1982.

5. Update Of Kara Plans

The Kara No. 1 and Kara North areas have both recently been resurveyed. This incorporates all new drilling information, and the effects of Tasminex mine operations and will form a basis for the present engineering studies.

New base plans and geological plans have been compiled at the scales of 1:2500, 1:1000 and 1:500. Copies of the geological plans accompany the present report as Plans 1, 2 and 3.

In addition, new geological cross sections spaced at approximately 40 metre intervals have been redrawn for the Kara No. 1 and Kara North 266 orezones. These show all drill information (lithological and assay data), interpretation of geology and ore reserve blocks subdivided into four ore types (fresh, partially weathered, weathered with scheelite and completely weathered).

6. Tasminex N.L. Mining - Depletion Of Reserves

The Kara No. 1 Main Pit area was resurveyed to ascertain the depletion of reserves due to mining by Tasminex N.L. since the last official ore reserve calculation was made by Golder Associates in September 1980.

It was calculated that during the period September 1980 to January 1982, the following tonnage reserves were mined by Tasminex N.L.

	<u>Tonnes</u>	<u>Grade</u>
Indicated fresh and partially weathered ore	72,047	0.67
Inferred fresh and partially weathered ore	3,840	0.80
Weathered ore (some scheelite)	3,760	0.45
Completely weathered ore (no scheelite)	2,880	0.70

7. General

a. Personnel

The following McIntyre Mines (Australia) Pty. Ltd., personnel have been employed during the past quarter:-

Full Time - One geologist, one prospector, one diamond drill operator and one drill helper.

Part Time - One draftsman, one typist.

b) Expenditures

Attachment "A" shows an itemised statement of expenditure incurred by McIntyre Mines for the three month period to May 3rd 1982.

Attachment "B" itemises expenditures for the six month period to May 3rd 1982.



Cliff H. Whitehead.

4th May, 1982.

Attachment "A"STATEMENT OF EXPENDITURE - E.L. 17/68 AND C.L. 105M/77

McIntyre Mines (Australia) Pty. Ltd., as manager of a joint venture with Tasminex N.L. incurred the following expenditures within E.L. 17/68 and C.L. 105M/77, during the three month period to May 3rd, 1982.

	<u>E.L. 17/68</u>	<u>C.L. 105M/77</u>	<u>TOTAL</u>
Office, Rent, Services	5,211	4,787	9,998
Supplies, food, hotel		282	282
Geology	4,978	6,250	11,228
Bulldozing	440	-	440
Metallurgy	-	7,219	7,219
Assays	796	2,749	3,545
Transportation	1,172	4,880	6,052
Environmental	-	1,869	1,869
Engineering - McIntyre	-	7,190	7,190
Diamond Drill - McIntyre	16,829	4,978	21,807
Legal Fees	2,163	2,181	4,344
Insurance	1,364	1,365	2,729
	<hr/>		
Total	32,953	43,750	76,703
	<hr/>		

Total expenditure previously reported = \$2,001,420

Total to date = \$2,078,123



Cliff H. Whitehead,
McIntyre Mines (Australia) Pty. Ltd.

May 4th 1982.

ATTACHMENT "B"STATEMENT OF EXPENDITURE - E.L. 17/68 AND C.L. 105M/77

McIntyre Mines (Australia) Pty. Ltd., as manager of a joint venture with Tasminex N.L. incurred the following expenditure within E.L. 17/68 and C.L. 105M/77 during the six month period to May 3rd 1982.

	<u>E.L. 17/68</u>	<u>C.L. 105M/77</u>	<u>TOTAL</u>
Office, rent, service	6,527	13,562	20,089
Camp - maintenance	-	293	293
Supplies, food, hotel	-	968	968
Geology	8,912	13,716	22,628
Bulldozing	440	-	440
Ground Magnetomtry	-	136	136
Metallurgy	-	20,710	20,710
Geochemistry	1,202	-	1,202
Assays	3,112	4,186	7,298
Transportation	4,383	9,197	13,580
Environmental	-	6,162	6,162
Engineering - McIntyre	-	7,190	7,190
Diamond Drilling - McIntyre	23,072	22,233	45,305
Assessment work	-	320	320
Legal fees	3,191	8,562	11,753
Insurance	1,364	1,365	2,729
Totals	<u>52,203</u>	<u>108,600</u>	<u>160,803</u>



Cliff H. Whitehead,
McIntyre Mines (Australia) Pty. Ltd.

May 4th, 1982.

DEPARTMENT OF MINES - TASMANIA MINERAL INDUSTRY UNPUBLISHED REPORT DATA SHEET		REPORT NUMBER	TCR _____
		<input type="checkbox"/> CF	<input type="checkbox"/> RF
AUTHOR(S): <u>WHITEHEAD C. H.</u>		DATE: <u>4th May, 1982</u>	
TITLE: <u>Quarterly Report - Period February 4th 1982 - May 3rd 1982</u>			
COMPANY(S): <u>McIntyre Mines (Australia) Pty. Ltd.</u> <u>Tasminex N.L.</u>			
FORMAT: No. of Volumes: <u>1</u> Structure: <u>9</u> Pages, <u>2</u> Attachments, <u>4</u> Appendices, and <u>6</u> Plans			
COMPANY REF. (if any): _____			
LICENCE / LEASE: <u>E.L. 17/68</u>			
LOCALITY: <u>SK55-</u>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
	<input type="checkbox"/> 7	<input type="checkbox"/> 8	
Map sheet:	<u>8015 - 1 - Hellyer</u>		
Geographic: (not in title)	<u>Hampshire</u>		
MAPPING - GEOLOGICAL <input checked="" type="checkbox"/> Surface - scale : <u>1:2500, 1:1000, 1:500</u> <input type="checkbox"/> Mine/Underground DRILLING <input checked="" type="checkbox"/> Diamond <input type="checkbox"/> Percussion <input type="checkbox"/> Auger <input type="checkbox"/> Logs <input checked="" type="checkbox"/> Analysis <input type="checkbox"/> Metallic Minerals <input type="checkbox"/> Non-metallic Minerals	GEOPHYSICS GND/AIR <input type="checkbox"/> Magnetic <input type="checkbox"/> Electromagnetic <input type="checkbox"/> Radiometric <input type="checkbox"/> A.P. <input type="checkbox"/> S.P. <input type="checkbox"/> E.P. <input type="checkbox"/> E.I.P./M.I.P <input type="checkbox"/> Resist. <input type="checkbox"/> Gravity <input type="checkbox"/> Seismic - Refraction <input type="checkbox"/> Seismic - Reflection <input type="checkbox"/> On - shore <input type="checkbox"/> Off-shore <input type="checkbox"/> Well-logging	GEOCHEMISTRY <input type="checkbox"/> Stream Sediment <input type="checkbox"/> Soil : _____ <input type="checkbox"/> Rock - chip <input type="checkbox"/> Gossan <input type="checkbox"/> Water : _____ <input type="checkbox"/> Biogeochemistry <input type="checkbox"/> Cu <input type="checkbox"/> Pb <input type="checkbox"/> Zn <input type="checkbox"/> Sn <input type="checkbox"/> W <input type="checkbox"/> Mo <input type="checkbox"/> Rock: <input type="checkbox"/> Maj. <input type="checkbox"/> Tr.	<input type="checkbox"/> PETROLOGY <input type="checkbox"/> ORE GENESIS <input checked="" type="checkbox"/> ORE RESERVES <input checked="" type="checkbox"/> FEASIBILITY STUDY <input checked="" type="checkbox"/> MINERAL PROCESSING <input checked="" type="checkbox"/> MINING <input type="checkbox"/> ENVIRONMENT <input checked="" type="checkbox"/> ENGINEER. GEOLOGY <input type="checkbox"/> INDUST. MINERALS <input type="checkbox"/> CONSTRUCT. MAT. <input type="checkbox"/> FUELS : _____
MINERALS: <u>Tungsten</u>			
MINE / DEPOSIT NAME(S): <u>Kara Tungsten Mine.</u>			
OTHER KEY WORDS: _____			
ANNOTATION: _____			

McINTYRE MINES (AUSTRALIA) PTY. LTD.

KARA NORTH - 266 ZONE

INFILL DRILL PROGRAMME AND REVIEW

OF RESERVES

Burnie,

Cliff H. Whitehead.

KARA NORTH - 266 ZONEIntroduction & Summary

As part of the McIntyre Mines (Australia) Pty. Ltd., Phase 1 - Pre-Development work, an in fill drill programme has recently been completed at the Kara North 266 Zone.

Prior to the present programme, the known Kara N geologic ore reserves totalled 151,000 tonnes with an average grade of 1.26% WO_3 , but these were not considered economically recoverable by either open pit or underground methods (Golder Associates - September 2980). Nevertheless, the deposit appeared a promising target for increased reserves, both laterally and updip from the known oreblock, and with those objectives in mind, a limited diamond drill programme consisting of five holes (DDH 303 to 307) totalling ¹⁰⁰316.61 metres has been completed.

The results of this drilling now permits a more accurate calculation and classification of geological reserves at this deposit.

Over a total strike distance of 320 metres (between drill section lines 6960N and 7280N), it is estimated a total of 378,541 tonnes of fresh and partially weathered ore grading 1.02% WO_3 are present. In addition, 27,700 tonnes of oxidised ore are available at the deposit.

It is believed as a result of the above drill programme, combined with interpretations from geologic mapping and ground magnetics, there is strong potential for additional strike extensions of the known Kara North 266 Zone, both in a north and south direction.

1. Background Information

The Kara North 266 Zone is located outside Consolidated Mining Lease 105M/77, north of the Companion River, some 1400 metres from the Tasminex mill.

Both the Kara North and Kara No. 1 skarns are believed to belong, and be connected, to the same stratigraphic horizon along the western edge of the main Kara synclinerium.

Scheelite in magnetite skarn was first observed in trenches constructed by Anzeco. However three Anzeco core holes drilled and inclined to the east (DDH's 130 to 132) completely failed to intersect any ore bearing mineralisation. Subsequent drilling by McIntyre Mines at the same location (10 holes- total metres 1036.8m) successfully revealed the presence of a small but high grade subsurface block of mineralisation over a strike distance of 160 metres. All these holes were inclined in a westerly direction.

Based on McIntyre Mines drill data, potential ore reserve calculations have been made by two separate independent consultant groups:

- In December 1979, McKee Theiss estimated the presence of 170,000 tonnes of "demonstrated reserves" averaging 1.28% WO_3 . For open pit extraction, with a 60° pit slope, the ore to waste ratio was in the order of 1:6.8
- In September 1980, Golder Associates calculated 151,000 tonnes of "indicated reserves" at a grade of 1.26% WO_3 . However with a flattening of the pit slope to 50°, and a resultant increase of waste to ore, Golder Associates did not consider the 266 Zone to be a viable open pit possibility. In addition they stated that because of the high cost of access development through weathered material, any possible underground operation would be uneconomic.

2. Recent Drill Programme (September to November 1981)

As outlined and proposed in the McIntyre Mines Pre Development Programme (November 1981), additional drilling was justified at the Kara North 266 Zone.

The prime objectives of this programme were to investigate:

- a) possible up dip extensions of known ore to the surface.
- b) a more accurate interpretation of the various levels of oxidation.
- c) possible strike extensions of the deposit, particularly to the south.

With these targets in mind, five additional diamond drill holes were completed. Details of these holes are as follows.

<u>Hole No.</u>	<u>Section Line</u>	<u>Coordinates</u>		<u>R. L.</u>	<u>Inclination</u>	<u>Depth Drilled(m)</u>
		<u>East</u>	<u>North</u>			
303	7160N	397176.0	5427161.8	456.1	45 ⁰ W	48.46
304	7060N	397198.6	5427073.5	454.7	55 ⁰ W	77.11
305	7120N	397166.5	5427111.0	457.6	55 ⁰ W	38.71
306	7020N	397215.6	5427024.6	448.9	45 ⁰ W	86.19
307	7220N	397166.3	5427220.5	472.8	55 ⁰ W	66.14
						316.61m

The results (lithologies and assays) of past and recent drilling are shown on the seven accompanying drill sections. Also indicated on these sections, are interpretations of geology, the position of relevant oxidation levels and potential geological reserves.

Concurrent with the drill programme, geologic mapping and detailed ground magnetic surveys were completed in the general Kara North region. Plan A attached, shows results of geological mapping.

3. Results of Drilling

a) Geologic Interpretation

The 266 orezone belongs to a magnetite skarn which is the metamorphosed - metasomatised representative of a single stratigraphic calcereous - arenaceous unit sandwiched between lower underlying arenaceous sequences to the West and the Gordon Limestone formation to the east.

At this location, the skarn is bordered to the west by a well developed granitic mass, this intrusion forming the western margin of the main Kara synclinorium from Kara North to Kara No. 1. However at the 266 Zone, the skarn is also bordered along its eastern margin by an additional cupola of granite which separates it from a more pronounced magnetite skarn body, known as the "Kara North Magnetite Anomaly". At present it is debatable whether this eastern cupola of granite is either a discordant mass thrusting up into the Kara synclinorium or is actually warped around a minor synclinal structure affecting the Kara 266 Zone sequences.

However, the 266 Zone trends approx N 10° - 15° W, and regionally dips steeply to the east. There are innumerable local structural variations, and even overturning along the western flank.

From geologic and ground magnetic observations, the 266 Zone magnetite skarn can be followed southwards to the Companion skarn, through the Western Limb to Kara No. 1, and also north (although beneath Tertiary basalt cover) to location L. 13.

b) Mineralisation

Tungsten mineralisation of ore grade category is confined to a skarn having a magnetite content in excess of 30%, and quite often it is well developed where magnetite exceeds 60%. There are nevertheless instances where good scheelite is observed in a garnet-diopside-magnetite facies.

Mineralisation could be described as belonging to a lens, or pod-like structure, widest at the centre, and narrowing both in width and grade towards the top and bottom. Along strike for an investigated distance of 240 metres, the ore lens is remarkably consistent, but still shows a variation in width from 4 to 22 metres. The central axis of the lens appears to be tilted slightly to the south, ie in a southern direction, the mineralised lens is more deeply buried. Between drill section lines 7120N and 7160N, the top of the ore lens cuts the present surface - elsewhere it is buried and not exposed.

WO₃ grades are remarkably high and consistent, in fact well above the normal for Kara skarns, averaging approx 1% WO₃. The central sections of the ore lens have the highest tungsten content, the latter decreasing towards the top and bottom of the lens where there is a narrowing and more prominent interfingering with barren skarn.

With the recent drilling a clearer picture of the various levels of oxidation is apparent. Fresh, unoxidised, scheelite bearing ore was found to be nearer the surface than originally thought. The partially weathered zone was quite narrow, there being a rapid demarcation between oxidised and fresh material. Exceptions to this are still common, and complications appear to arise along the western side of the ore zone where strike faulting with associated deep weathering is suspected.

The higher levels of the tungsten mineralised body and the overlying skarn (usually a garnet-diopside variety) are found to be constantly stanniferous, with grades in the order of 0.15% to 0.35% Sn. From mineralogical work to date, the tin content appears to be in the silicate form associated with grossularite garnet, rather than in the cassiterite form.

c) Reserves

Geological reserves of ore at the 266 Zone have been recalculated, and delineated mineralised blocks are diagrammatically shown on the accompanying drill sections.

The delineation is considered conservative and the mineralised zone has been subdivided into three categories - namely, fresh, partially weathered and oxidised material.

A cut-off grade of 0.2% WO_3 was used to define the limit of reserves, and a minimum width of intersection of 3 metres was used in outlining the ore zones. Volume to ore factors used for the various ore types were - fresh ore, 1 cubic metre = 4 tonnes; partially weathered ore 1:3.7; oxidised ore 1:2.

The table shown overleaf summarises the salient points of the new reserve calculations.

Between Sections 6980N and 7260N, the following geological ore reserves have been calculated between the mining levels 365 to 450 R.L.

Geological } Fresh Ore - 354,028 - Grade 1.05% WO_3
Reserves } Partially Wlhd Ore - 24,513 - Grade 0.59% WO_3

Geological
Resources - Oxidised Ore - 27,700 - Grade 0.45% WO_3

Total Reserves - 406,241 tonnes - grade 0.98% WO_3

All the delineated oxidised ore contains significant proportions of scheelite mineralisation. From the vicinity of Section Line 7160N, a bulk sample of mineralised oxidised ore exposed on surface was collected, and submitted to Warman Internations laboratories for metallurgical tests (Sample No. - Kara 19).

Until such time the proposed engineering evaluation of this deposit is completed (scheduled first quarter 1982), the above reserves can only be classified as geological reserves and resources, and not as official mineable reserves.



Cliff Whitehead.

KARA NORTH - 266 ZONE

GEOLOGICAL ORE RESERVES AND RESOURCES

<u>Drill Sec.</u>	<u>Ore Type</u>						<u>Total</u>	
	<u>Fresh</u>		<u>Partially Wthed</u>		<u>Oxidised</u>		<u>Tonnes</u>	<u>%WO₃</u>
	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>		
7260N	10,080	0.28	-	-	-	-	10,080	0.28
7220N	99,600	0.87	12,950	0.63	-	-	112,550	0.84
7160N	100,000	1.31	5,550	0.25	10,900	0.81	116,450	1.21
7120N	42,500	0.87	6,013	0.69	16,800	0.22	65,313	0.69
7060N	40,248	0.62	-	-	-	-	40,248	0.62
7020N	52,000	1.60	-	-	-	-	52,000	1.60
6980N	9,600	0.49	-	-	-	-	9,600	0.49
	354,028	1.05	24,513	0.56	27,700	0.45	406,241	0.98%

Geological Reserves:-

378,541 Tonnes at 1.02% WO₃

Geological Resources:-

27,700 Tonnes at 0.45% WO₃

McINTYRE MINES (AUSTRALIA) PTY. LTD.

KARA 1 - SOUTHERN EXTENSION

INFILL DRILL PROGRAMME

AND REVIEW OF RESERVES

C. H. WHITEHEAD.
BURNIE.

9th MARCH, 1982.

KARA 1 - SOUTHERN EXTENSIONIntroduction and Summary

As part of the McIntyre Mines (Australia) Pty. Ltd., Phase 1 - Pre Development work, an infill drill programme has been completed (December 1981 - January 1982) at the Kara 1 - Southern Extension orezone.

The programme was designed to investigate the potential of additional reserves of fresh and partially weathered ore along the western margin of the orezone and to enable a more precise delineation of the various ore types and levels of oxidation.

Over a strike distance of 130 metres (drill sections 5620N to 5750N), the indicated geological reserves of fresh and partially weathered ore as calculated by Golder Associates in September 1980, totalled 116,000 tonnes grading 0.80% WO_3 .

On the basis of the recently completed drill programme, it is now calculated that geologic reserves of fresh and partially weathered ore would total 235,477 tonnes averaging 0.84% WO_3 . In addition it is estimated a total of 319,000 tonnes of geologic resources (weathered ore) grading 0.80% WO_3 , are present within the same area.

1. Background Information

The Kara No.1 Southern Extension skarn is located between Section Lines 5620N and 5750N, that is, adjacent and south of the Tasminex N.L. treatment plant.

Although it is geologically connected to the main Kara No. 1 skarn to the north, the Southern Extension deposit has, over the years, been classified separately - primarily because of its high proportion of weathered ore, rather than scheelite bearing material.

Of historic interest, the Southern Extension deposit was the first area to be seriously investigated at the Kara properties. These examinations were initially undertaken by Tasminex N.L. (trenching, percussion and diamond drilling), followed by a series of Anzeco exploratory diamond drill and auger holes, and finally a limited amount of infill diamond drilling by McIntyre Mines.

All these investigations showed a near or on-surface deposit of high grade tungsteniferous material, but unfortunately, one of a highly weathered nature with little scheelite content and not amenable to treatment by conventional gravity and flotation methods.

In September 1980, Golder Associates calculated the following reserves at the Southern Extension deposit between Section Lines 5620N and 5750N.

GEOLOGIC RESERVES:-

	<u>Tonnes</u>	<u>%WO₃</u>
Fresh Ore	19,000	0.76%
Partially Weathered Ore	97,000	0.81%
	<hr/>	<hr/>
Total =	116,000	0.80%
	<hr/>	<hr/>

GEOLOGIC RESOURCES:-

Weathered Ore-Some scheelite	130,000	0.75%
Weathered Ore-No Scheelite	242,000	0.75%
	<hr/>	<hr/>
Total =	372,000	0.75%
	<hr/>	<hr/>

2. Recent Drill Programme

As proposed in the McIntyre Mines Pre Development Programme (November 1980), additional infill drilling was justified at the Southern Extension deposit.

The following objectives were to be investigated:-

- geologically along the western margin of the deposit, there appeared to be potential for additional reserves of fresh or partially weathered scheelite bearing ore.
- If the latter could be proved they would be mined as part of the future proposed open pit operation for Kara No. 1, and consequently a more accurate delineation of their western and southern extent was required.
- The core library of past drilling at the Southern Extension deposit is very limited and certainly insufficient to permit a present day classification of the various ore types. It was hoped additional drilling would help clarify this situation and in addition provide suitable samples for any further metallurgical studies.

With the above intentions in mind, five new diamond drill holes were planned, and completed during the period December 1981 - January 1982. Details of these holes are as follows:-

<u>HOLE NO.</u>	<u>SECTION</u> <u>LINE</u>	<u>COORDINATES</u>		<u>R.L.</u>	<u>INCLINATION</u>	<u>DEPTH</u> <u>DRILLED(m)</u>
		<u>NORTH</u>	<u>EAST</u>			
311	5675N	5678.2	7328.8	535.7	70°W	51.22
312	5675N	5681.2	7329.2	535.5	55°E	37.49
313	5700N	5698.0	7347.8	535.3	45°W	67.65
314	5650N	5653.0	7335.2	537.6	55°W	42.98
315	5675N	5673.0	7355.2	537.7	60°E	24.99
Total Metres =						<u>224.33m</u>

The attached plan A shows the above drill sites, plus past drilling data, trenches, and an interpretation of surface geology.

In conformity with other Kara property drill section lines, new section lines covering the Southern Extension deposit have been drawn in an east-west direction.

These are shown on Plan B, and indicate drill lithologies and assays, an interpretation of the tungsten bearing ore zone, plus a breakdown into various ore types and their potential reserve blocks.

3. Results Of Drilling

a) Geological Interpretation

The deposit in question is the southern continuation of the main Kara No.1 skarn. At both these locations, skarn type rocks are bordered to the east and west, and underlain at subsurface by a granitic body. The latter occurs in a saucer form, with its western border steeply inclined, and slightly overturned to the west, and its eastern margin gently dipping. In a N - S direction, the central axis of the "saucer" is tilted or plunges north at approx 15 - 20°, ie. the overlying thickness of skarn becomes thinner in a southerly direction.

Whether the overlying skarnified Ordovician rocks are warped conformably with the granite, is still debatable. Arenaceous rocks (sandstones and conglomerates) border the granite to the west, but are not evident to the east. A straight-forward synclinal structure affecting metamorphosed Ordovician sediments now appears less likely.

b) Mineralisation

Regardless of doubts to the local geological interpretation, a clearer understanding of the form of tungsten mineralisation within the skarn is now believed to be more apparent.

Mineralisation occurs in a well defined body of skarn some 10 to 18 metres distant from the granite front; ie it conformably overlies and follows the underlying granite. The lower margin of the mineralised body is clear cut and well defined and separated from granite by a zone of skarns barren of tungsten mineralisation, plus a unit of inconsistent quartz epidote at the granite contact. The upper limit of mineralisation is not clearly defined, unless one uses a cut-off of approx 0.40% WO_3 .

The thickness of mineralisation would be estimated at between 10 and 12 metres, but narrows considerably east of grid coordinate 7400E. Along the western edge of the Southern Extension deposit, the thickness of ore grade material

increases, in some cases twofold, due to the effect of warping by granite, and the obvious influence of mineralisation from both an east and west direction.

The central 2 - 3 metres of the warped body show WO_3 grades between 1% and 4%, but overall the Southern Extension deposit averages approx 0.80% WO_3 .

A better understanding of the various oxidation levels can now be made. Reserves of fresh and partially weathered ore containing scheelite bearing mineralisation are found along the western half of the deposit, but are not found south of section line 5675N due to the steadily rising granite contact towards the present surface.

c) Reserves

Geological reserves and resources of ore at the Southern Extension deposit have been recalculated, and the delineated mineralised blocks are shown on the new E - 'W drill sections (Plan B and C) and itemised in Table 1.

The mineralised zone is subdivided into four ore types - namely, fresh, partially weathered, weathered with some scheelite, and weathered with no scheelite. The latter two ore types are classified as resources, as no scheelite content is considered economically recoverable by conventional treatment. Reserves of fresh and partially weathered ore are considered as geological reserves and not official mineable reserves.

A cut-off grade of 0.2% WO_3 was used to define the limit of reserves. Volume to ore factors used for the various ore types were - fresh ore, 1 cubic metre = 4 tonnes; partially weathered ore 1:3.7; weathered ore 1:2.0.

Geological reserves of fresh and partially weathered ore are now increased from those calculated by Golder Associates (September 1980). This increase is primarily a result of fresh ore being found slightly further to the west and an extension of partially weathered ore as far south as 5675N.

Additional minor tonnages of geological resources could probably be proved along the eastern margin of the Southern Extension deposit. Because of the anticipated weathered nature of this material this area was not investigated during the present study, except for drilling hole DDH 315.

TABLE NO. 1

KARA NO. 1 - SOUTHERN EXTENSION - RESERVES SECTIONS 5620N - 5750N

<u>SECTION</u>	<u>GEOLOGICAL RESERVES</u>				<u>GEOLOGICAL RESOURCES</u>				
	<u>FRESH ORE</u>		<u>PARTIALLY WEATHERED ORE</u>		<u>WEATHERED ORE</u>				
	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>	<u>+ 20% SCHEELITE</u>		<u>NO SCHEELITE</u>		
<u>LINE</u>	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>	
5620N	Nil		Nil		Nil		18,950	0.76	
5650N	Nil		Nil		20,020	0.66	27,748	1.21	
5675N	30,400	0.81	30,155	1.30	14,176	1.22	33,800	0.79	
5700N	63,088	0.69	20,350	0.47	37,702	0.69	39,330	0.54	
5730N	22,200	0.56	34,503	1.12	58,876	0.83	31,388	1.00	
5750N	24,180	0.91	10,601	0.85	25,785	0.58	11,325	0.55	
Totals	<u>139,868</u>	<u>0.73</u>	<u>95,609</u>	<u>1.01</u>	<u>156,559</u>	<u>0.77</u>	<u>162,541</u>	<u>0.82</u>	
<u>GEOLOGICAL RESERVES - 235,477</u>				<u>0.84%</u>	<u>GEOLOGICAL RESOURCES 319,100</u>				<u>0.80%</u>
Golder Assoc.									
Reserves (Sept. 1980)				116,000	0.80%	372,000			0.75%

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McINTYRE MINES (AUSTRALIA) PTY. LTD.

KARA NO. 1 - SECTION LINE 5820N

INFILL DRILL PROGRAMME

AND REVISION OF RESERVES

C. H. Whitehead.

15th March, 1982.

KARA NO. 1 ORE ZONE - INFILL DRILL PROGRAMME

As part of the infill diamond drill programme - Phase 1, Pre-Development work - one hole (DDH 316) was drilled on Section Line 5820N at the Kara No. 1 orezone.

During the September 1980 Golder Associate ore reserve review, it was considered by "lack of drill information" to classify a certain portion (21,000 tonnes) of the section line ore block in the inferred category. To upgrade this ore to the indicated category, one additional hole was required and recommended.

With this in mind, DDH 316 was collared, inclined 45° W and drilled to a depth of 91.46 metres. The main intentions were to intersect and prove the inferred ore and also to obtain more accurate information of ore in the deeper sections of the western synclinal structure.

The accompanying plan of Section Line 5820N shows the results of DDH 316 and interpretation of ore types and blocks. The ore zone was proved, and it is now felt all previous inferred ore can now be reclassified as indicated. It should also be noted that although the extent of weathered ore was slightly deeper than previously interpreted, the grades of fresh ore were remarkably high.

On recalculation of geologic reserves for this section line, (Table No. 1) indicated reserves of fresh and partially weathered ore are now estimated to total 224,480 tonnes grading 0.74% WO_3 . This compares with a total of 178,000 tonnes (0.71%) of indicated and inferred ore calculated by Golder Associates in September, 1980.

A revision of geologic resources (weathered ore) also shows a slight increase to 64,440 tonnes averaging 0.49% WO_3 (Golders - 53,000 tonnes 0.41% WO_3).

The western portion of the Section Line 5820N profile shows the effect of Tasminex mining since September, 1980, and the depletion of reserves.

C. H. Whitehead.

TABLE NO. 1

KARA NO. 1 - SECTION LINE 5820N

A. GEOLOGIC RESERVES

	<u>INDICATED FRESH ORE</u>		<u>INFERRED FRESH ORE</u>		<u>INDICATED PART WTHED</u>		<u>TOTAL</u>	
	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>
GOLDERS -	92,000	0.67	21,000	0.69	65,000	0.76	178,000	0.71
REVISED -	120,960	0.73	Nil	Nil	103,520	0.76	224,480	0.74

B. GEOLOGIC RESOURCES

	<u>WEATHERED ORE (SOME SCHEELITE)</u>		<u>WEATHERED ORE (NO SCHEELITE)</u>		<u>TOTAL</u>	
	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>	<u>Tonnes</u>	<u>%WO₃</u>
GOLDERS -	34,000	0.48	19,000	0.28	53,000	0.41
REVISED -	30,960	0.67	33,480	0.32	64,440	0.49

797037

FREP HYDUL JOB N° AC-4539+60/82

1/2 CORE

LIBRARY

D.D.H.

797039

317.

(REC) NECESSARY, CONSIDER 30% EXCEPT AS NOTED MAGNETITE ANOMALY.

(WX) WEATHERING, CONSIDER FRESH ROCK EXCEPT AS NOTED, WX INDICATES CLAYEY, LIMONITIC MATERIAL 8/3.

KPRA-NORTH.

SECTION:

ASSAY

AVE:

AVE:

SAMP NO.	REC WX	INTERVAL	LGTH	PPM			AVE:			AVE:					
				NO ₂	Ag	Sn	INVL	LGTH SM-%	WT AR AV.	INVL	LGTH SM-%	WT AR AV.			
0317															
24	CORE	520-530	1-0	640	2	260									
25	"	530-540	1-0	240	2	310									
26	"	540-550	1-0	980	2	310									
27	"	550-560	1-0	50	2	250									
28	"	560-570	1-0	50	2	250									
29	"	570-580	1-0	9400	1	1400									
30	"	580-590	1-0	120	1	450									
31	"	590-600	1-0	140											
32	"	600-610	1-0	20											
33	"	610-620	1-0	10											
34	"	620-630	1-0	15											
35	"	630-640	1-0	25											
36	"	640-650	1-0	50											
37	"	650-660	1-0	15											
38	"	660-670	1-0	X											
39	"	670-680	1-0	80											
40	"	680-690	1-0	480											
41	"	690-700	1-0	35											
42	"	700-710	1-0	20											
43	"	710-720	1-0	150											
44	"	720-730	1-0	60											
45	"	730-740	1-0	25											
46	"	740-750	1-0	25											
47	"	750-760	1-0	45											
48	"	760-770	1-0	65											
49	"	770-780	1-0	390											

INVL	CORE LGTH	WIDTH	AVE	INVL	CORE LGTH	WIDTH	AVE	INVL	CORE LGTH	WIDTH	AVE	INVL	CORE LGTH	WIDTH	AVE

COMMENT

PROJECT

FREP

THICK. 400 11

12 CORE.

LIBRARY

D.D.H.

797041

318

(REC) RECOVERY, CONSIDER 30% EXCEPT AS NOTED

MAR. NORTH.
MAG. ANOMALY.

(WX) WEATHERING, CONSIDER FRESH ROCK EXCEPT AS NOTED. WX INDICATES CLAYEY, LIMONITIC MATERIAL 1/2.

SECTION :				ASSAY				AVE:				AVE:				
SAMP NO.	REC WX	INTERVAL	LGTH		Ppm W03				INVL	LGTH SM-%	WT AR	AV.	INVL	LGTH SM-%	WT AR	AV.
D218. 1	CORE	29.87-31.0	1.13		860											
2	"	31.0-32.0	1.0		780											
3	"	32.0-33.0	1.0		620											
4	"	33.0-34.0	1.0		2800											
5	"	34.0-35.0	1.0		460											
6	"	35.0-39.0	4.0		430											
7	"	39.0-40.0	1.0		110											
8	"	40.0-41.0	1.0		110											
9	"	41.0-42.0	1.0		80											
10	"	42.0-43.0	1.0		5200											
11	"	43.0-44.0	1.0		415											
12	"	44.0-45.0	1.0		620											
13	"	45.0-46.0	1.0		840											
14	"	46.0-47.0	1.0		1150											
15	"	47.0-48.0	1.0		30											
16	"	48.0-49.0	1.0		580											
17	"	49.0-50.0	1.0		1000											
18	"	50.0-51.0	1.0		95											
19	"	51.0-52.0	1.0		10											
20	"	52.0-53.0	1.0		20											
21	"	53.0-54.0	1.0		25											
22	"	54.0-55.0	1.0		30											
23	"	55.0-56.0	1.0		25											
24	"	56.0-57.0	1.0		280											
25	"	57.0-58.0	1.0		80											
26	"	58.0-59.0	1.0		190											
INVL	CORE LGTH	WIDTH	AVE	INVL	CORE LGTH	WIDTH	AVE	INVL	CORE LGTH	WIDTH	AVE	INVL	CORE LGTH	WIDTH	AVE	

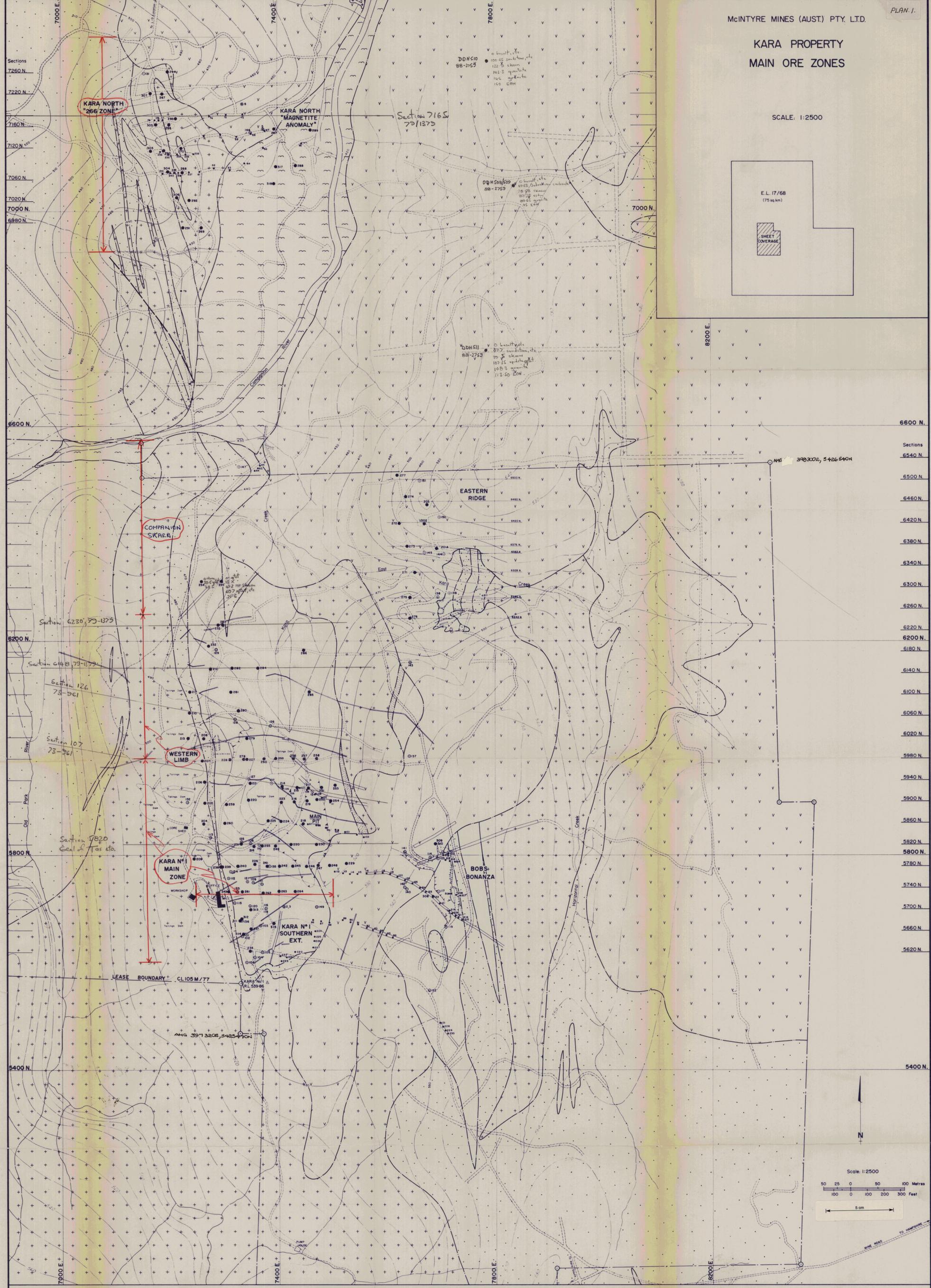
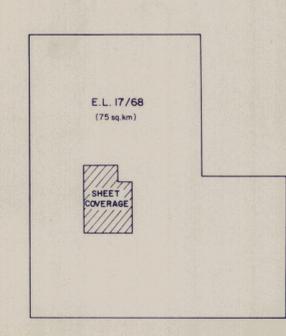
COMMENT

PROJECT

McINTYRE MINES (AUST) PTY. LTD

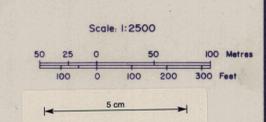
KARA PROPERTY MAIN ORE ZONES

SCALE: 1:2500

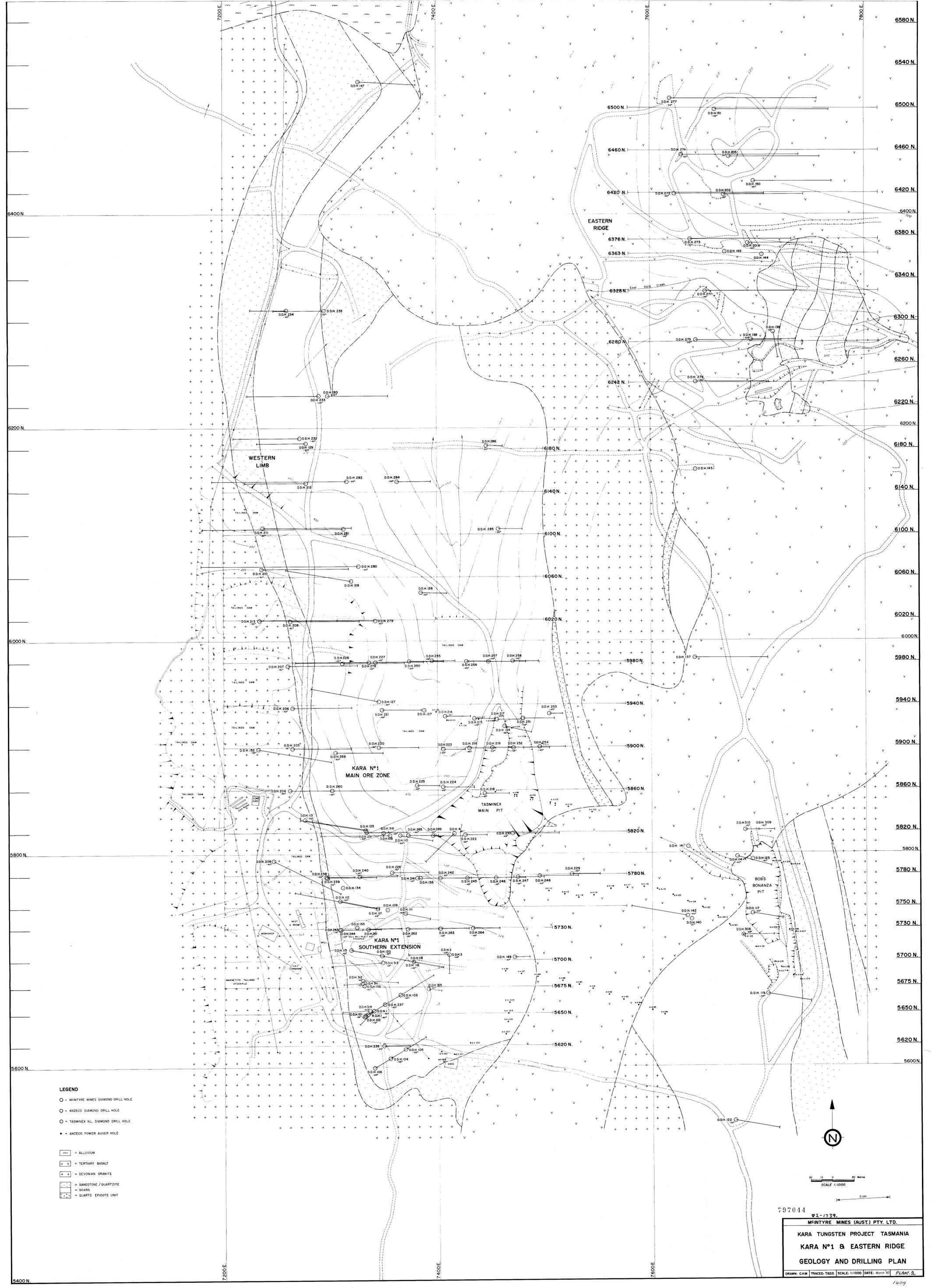


- REFERENCE:
- McIntyre Diamond Drill Hole
 - Anzaco Diamond Drill Hole
 - ⊙ Tasmanex Diamond Drill Hole
 - Auger Hole
 - Trench

- GEOLOGY LEGEND:
- ALLUVIUM
 - TERTIARY BASALT
 - DEVONIAN GRANITE
 - SANDSTONE / QUARTZITE / CONGLOMERATE unit
 - SKARN
 - QUARTZ EPIDOTE unit



AMG REFERENCE POINTS ADDED

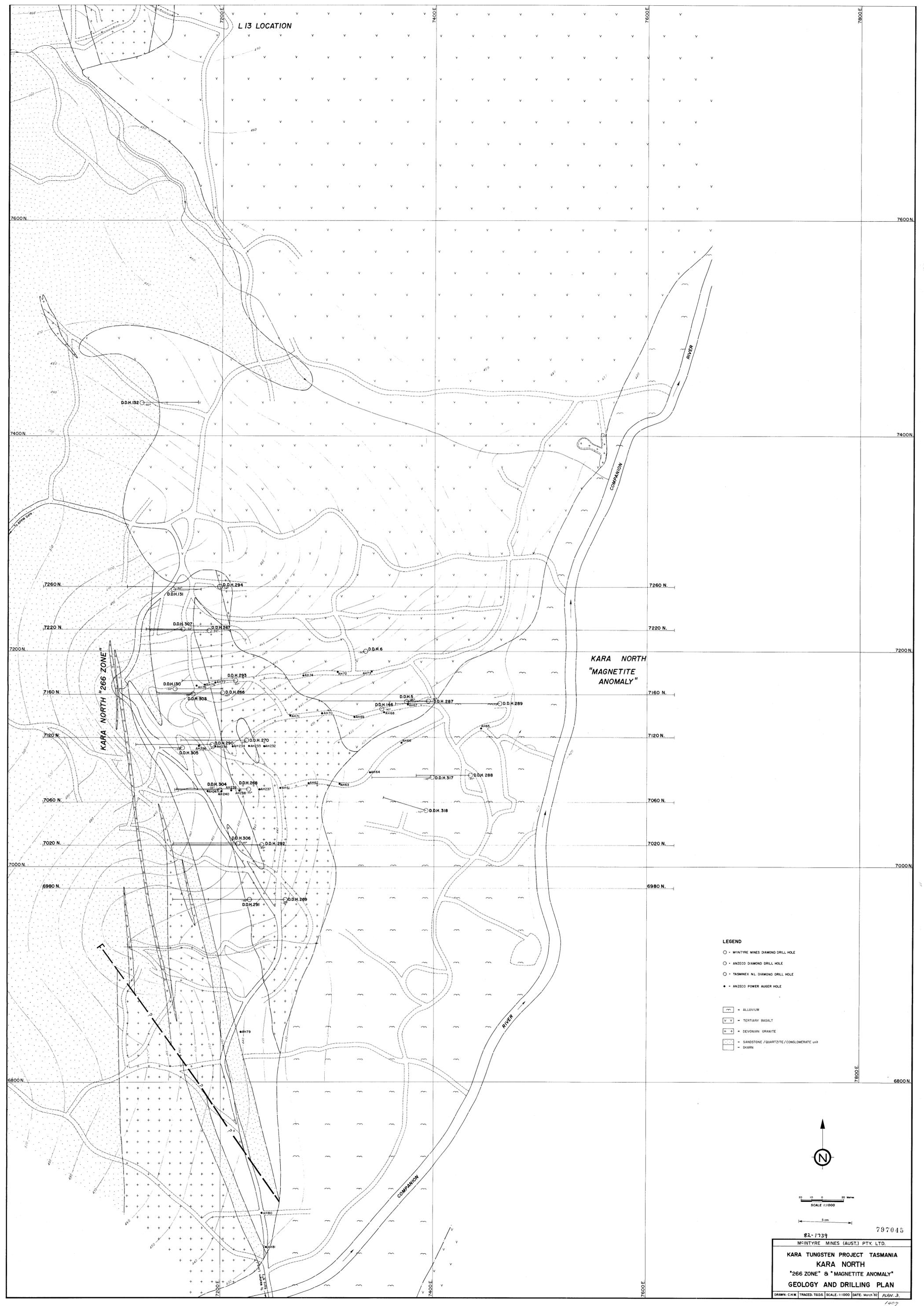


- LEGEND**
- - MCINTYRE MINES DIAMOND DRILL HOLE
 - - ANZECO DIAMOND DRILL HOLE
 - - TASMINEX N.L. DIAMOND DRILL HOLE
 - - ANZECO POWER AUGER HOLE
 - = ALLUVIUM
 - v = TERTIARY BASALT
 - + = DEVONIAN GRANITE
 - = SANDSTONE / QUARTZITE
 - = SKARN
 - = QUARTZ EPIDOTE UNIT



SCALE 1:1000
5 cm

797044
2-1739
MCINTYRE MINES (AUST.) PTY. LTD.
KARA TUNGSTEN PROJECT TASMANIA
KARA N°1 & EASTERN RIDGE
GEOLOGY AND DRILLING PLAN
DRAWN: CHW TRACED: YBDS SCALE: 1:1000 DATE: March '89 PLAN: 2



L13 LOCATION

KARA NORTH "266 ZONE"

KARA NORTH
"MAGNETITE ANOMALY"

- LEGEND**
- - MCINTYRE MINES DIAMOND DRILL HOLE
 - - ANZECO DIAMOND DRILL HOLE
 - - TASMINEX NL DIAMOND DRILL HOLE
 - - ANZECO POWER AUGER HOLE
- [Symbol] - ALLUVIUM
 - [Symbol] - TERTIARY BASALT
 - [Symbol] - DEVONIAN GRANITE
 - [Symbol] - SANDSTONE / QUARTZITE / CONGLOMERATE UNIT
 - [Symbol] - SKARN



20 10 0 10 20 METRES
SCALE 1:1000

5 cm

82-1739 797045

MCINTYRE MINES (AUST.) PTY. LTD.

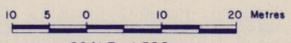
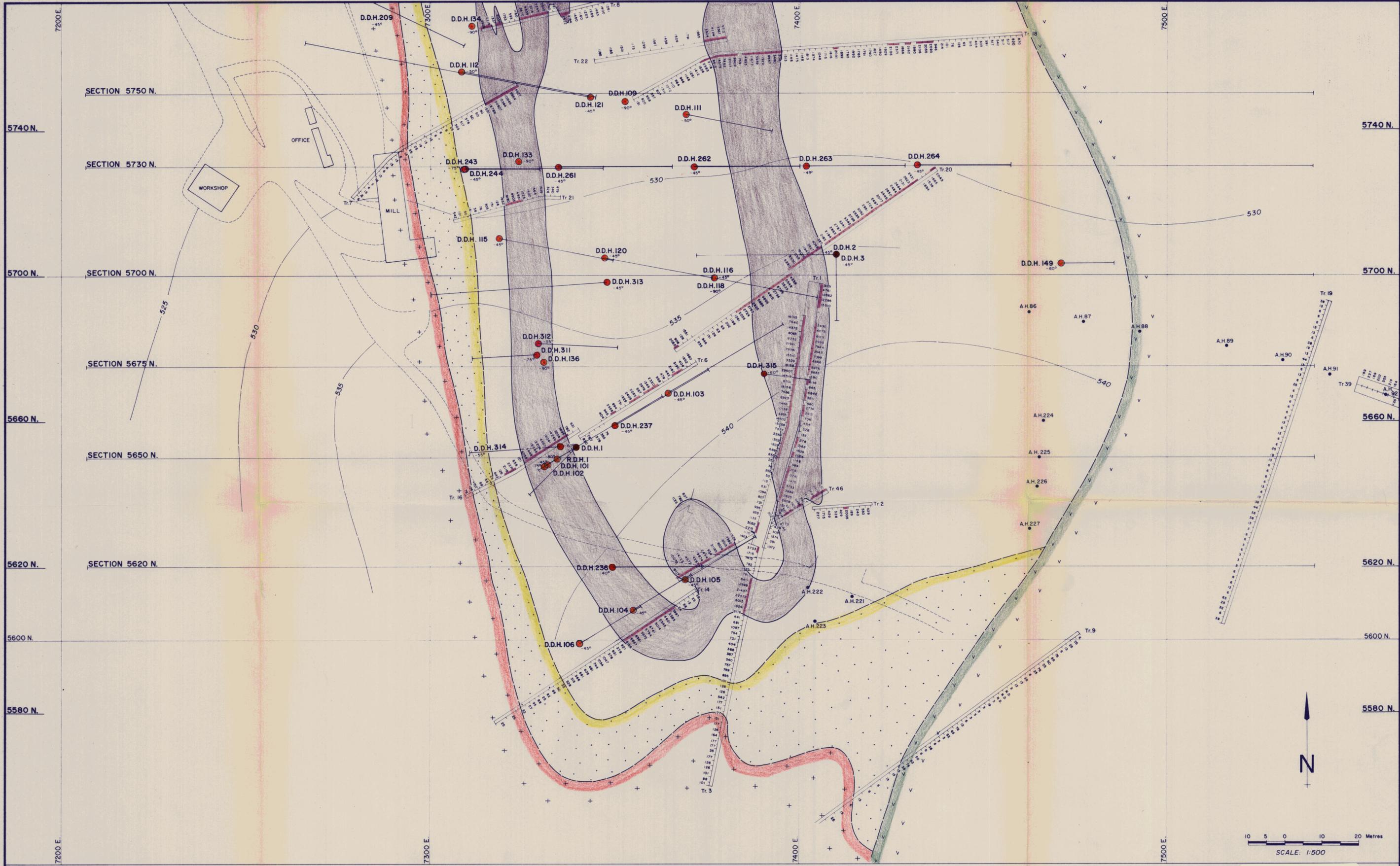
KARA TUNGSTEN PROJECT TASMANIA

KARA NORTH

"266 ZONE" & "MAGNETITE ANOMALY"

GEOLOGY AND DRILLING PLAN

DRAWN: C.H.W. TRACED: T.G.B.S. SCALE: 1:1000 DATE: March 82 PLAN: 3.



SCALE: 1:500
5 cm



- GEOLOGY LEGEND**
- Tertiary Basalt
 - Granite
 - Sandstone / Quartzite
 - Barren Skarn
 - WO₃ Ore Zone

- REFERENCE:**
- McIntyre diamond drill hole
 - Anzeco diamond drill hole
 - Tasminex diamond drill hole
 - Anzeco auger hole
 - Anzeco trench
 - WO₃ Assays

82-1739. 797046

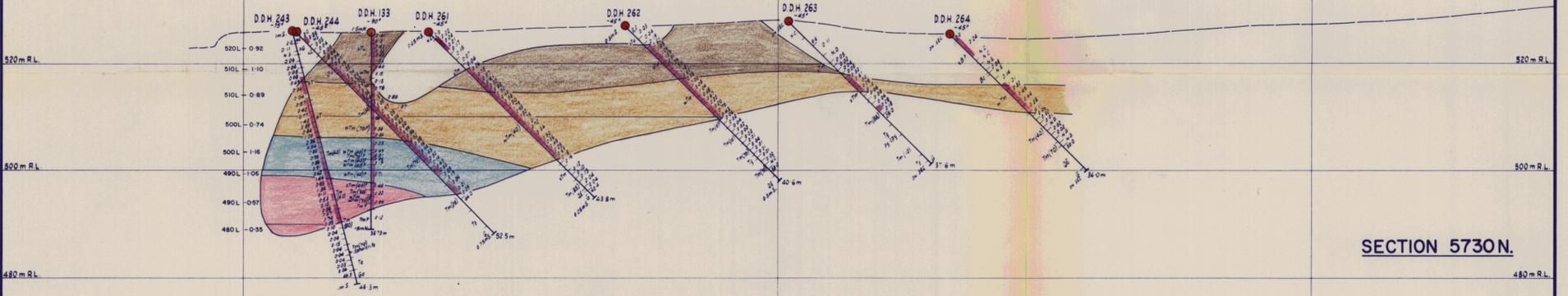
McINTYRE MINES (AUST.) PTY. LTD.

KARA N°1
SOUTHERN EXTENSION
GEOLOGY PLAN

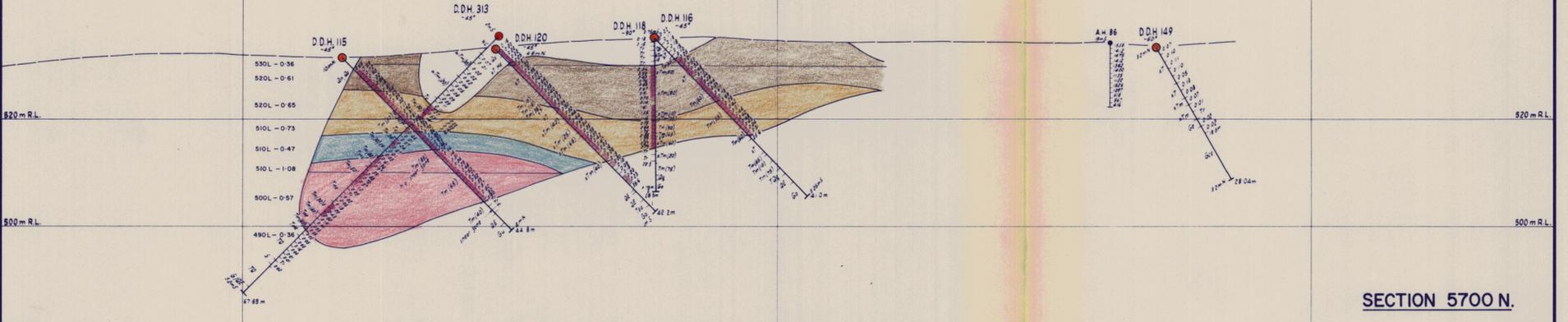
DRAWN: C.H.W.	SCALE: 1:500	PLAN: 4.
TRACED: T.G.D.S.	DATE: February 1982	

WEST

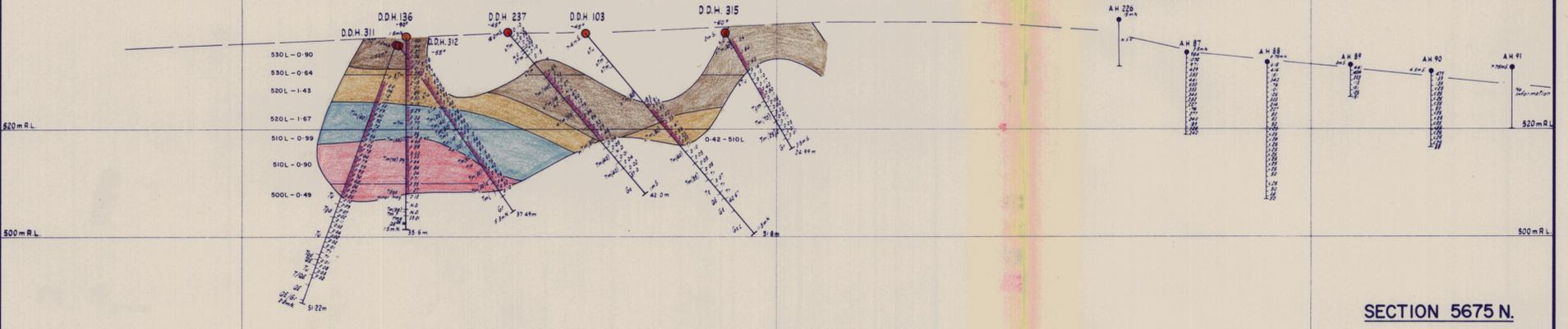
EAST



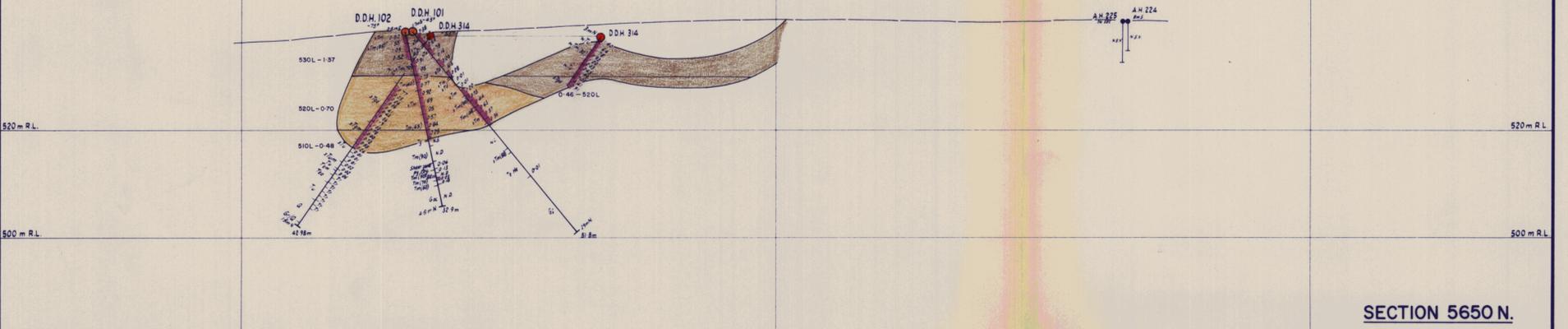
SECTION 5730N.



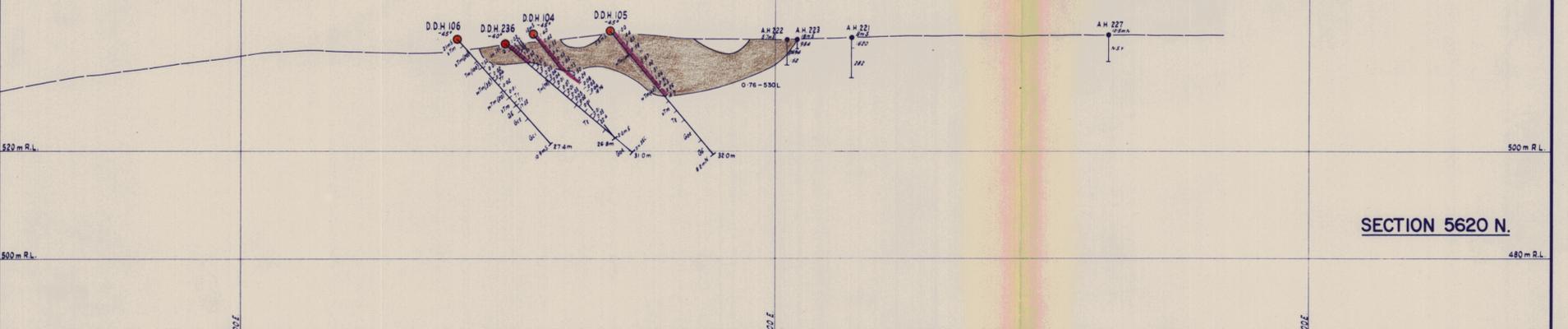
SECTION 5700N.



SECTION 5675N.



SECTION 5650N.



SECTION 5620N.

ROCK TYPE

Q ALLUVIUM SERIES
n - clay, s - sand, g - gravel

B BASALT SERIES
b - basalt, s - fine-grained siliclastic
c - conglomerate, f - buff tuffaceous
v - fossiliferous

S SEDIMENTARY SERIES
Rock units readily distinguished
M - millstone, C - conglomerate,
S - sandstone, L - limestone

(h) chloritic, (d) diopside, (v) vesicularity,
(*) brecciated, (s) stylolitic, (2) massive,
(b) bedded

T SKARN SERIES
Mineralogy
u - undivided
h - chlorite
l - calcite
d - diopside
s - quartz
e - epidote
a - amphibole
M - Magnetite

TO - Quartzite rock, uncertain derivation
k - siliceous sandstone, sedimentary texture
q - quartzite, no remnant feature
(h) epidote, (d) diopside, (l) calcite
k - hornblende

NOTE: Rock type, dominant mineralogy and related features of rock unit shown by suffix; eg. Tq - quartzite, Td - brecciated diopside skarn, Tqg - quartzite, Suv - brecciated limestone

QE QUARTZ - EPIDOTE ROCK
Quartz mosaic with interstitial epidote, associated with granite skarn contact zone. Probably late-stage feature of intrusion history.

G GRANITE
g - porphyritic
p - pegmatite
u - undivided
q - quartz rich
e - epidote altered
s - epidote

GRAIN SIZE
(F) Fine (medium) coarse, shown by subscripts eg. Tqs - fine-grained sandstone
Tm - medium-grained quartzite skarn
Gc - coarse-grained granite

MINERALS
Fl - fluorite, Py - pyrite, Md - malachite,
Mg - magnetite, Cpy - chlorophyllite
Mk - malachite, Ch - chlorophyllite

ORE TYPES

F = FRESH
Y = PARTIALLY WEATHERED
X = WEATHERED (some scheelite)
W = WEATHERED (no scheelite)

REFERENCE:

● McIntyre diamond drill hole
○ Anzeco diamond drill hole
● Tasminex diamond drill hole
○ Anzeco auger hole

500L-1-01 - Mine level with average %WO₃

10 5 0 10 20 Metres
SCALE: 1:500

5 cm

82-1739, 797047

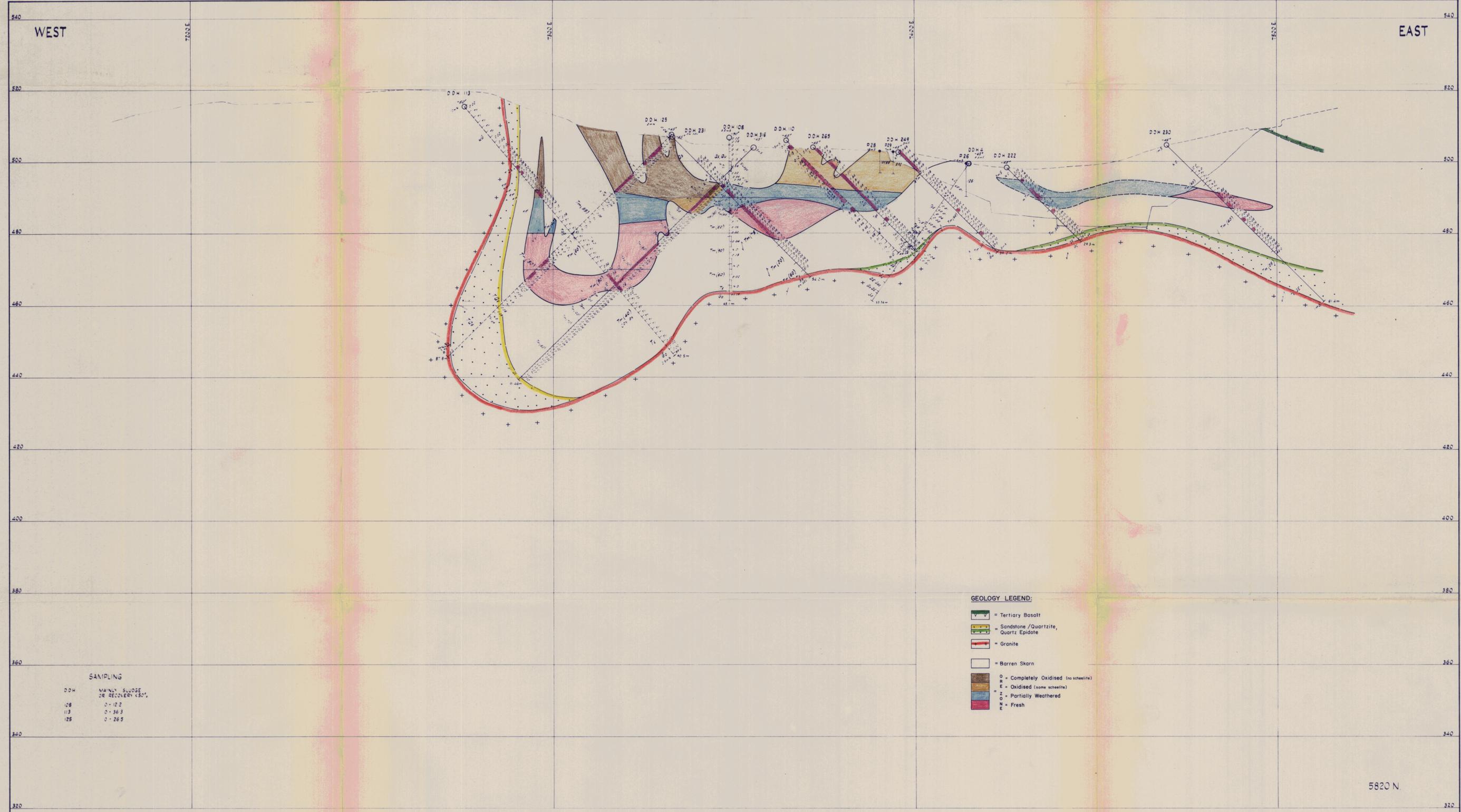
McINTYRE MINES (AUST.) PTY. LTD.

KARA N°1

SOUTHERN EXTENSION

CROSS SECTIONS WITH ORE BLOCKS

DRAWN: C.H.W. SCALE: 1:500 PLAN: 5.
TRACED: T.G.D.S. DATE: February 1982



GEOLOGY LEGEND:

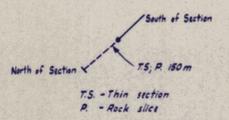
- = Tertiary Basalt
- = Sandstone / Quartzite, Quartz Epidote
- = Granite
- = Barren Skarn
- = Completely Oxidised (no scheelite)
- = Oxidised (some scheelite)
- = Partially Weathered
- = Fresh

SAMPLING

DDH	MAINLY SLUDGE OR RECOVERY %
113	0 - 12.2
25	0 - 36.3
265	0 - 26.5

5820 N.

PETROGRAPHY DESCRIPTION



GRADE CLASSIFICATION

% WO₃

< 0.05	
> 0.05 - < 0.10	
> 0.10 - < 0.20	
> 0.20 - < 0.40	
> 0.40	

N.C.	No core
N.S.	No sample
N.D.	Not detected
N.S.V.	No significant values
Tr.	Trace

ROCK WEATHERING

- [X] EXTREMELY WEATHERED;**
Fully decomposed, rock substance can be remoulded, original texture still evident. Cut readily with knife.
- [W] WEATHERED;**
Mainly decomposed, staining extends throughout rock substance, original colour of fresh rock not recognisable. Resistant to knife.
- [Y] SLIGHTLY WEATHERED;**
Minor decomposition, usually in local patches, partial staining, colour and texture of rock recognisable. Rock condition generally sound, unpenetrable by knife.
- [F] FRESH;**
Rock substance unaffected by weathering.

ROCK TYPE

- [Q] ALLUVIUM SERIES**
n - clay, s - sand, c - gravel
- [B] BASALT SERIES**
b - basalt, s - fine-grained siliciclastic
c - conglomerate, t - tuff, tuffaceous
v - fossil alluvium
- [S] SEDIMENTARY SERIES**
Rock units readily distinguished
M - siltstone, C - conglomerate,
S - sandstone, L - limestone
(h) chloritic, (d) diagenetic (v) vesicularity,
(r) brecciated, (y) stylolitic, (m) massive,
(b) bedded
- [T] SKARN SERIES**
Mineralogy
u - undivided
g - garnet
d - diopside
e - epidote
a - amphibole
TR - Marble
h - chlorite
l - calcite
q - quartz
m - magnetite, percent indicated
- [GR] QUARTZ - EPIDOTE ROCK;**
Quartz mosaic with interstitial epidote, associated with granite/skarn contact zone. Probably late-stage feature of intrusion history.
- [G] GRANITE,**
a - biotitic
p - pegmatite
u - undivided
s - quartz rich
e - quartz altered
j - albite

NOTE: Rock type dominant mineralogy and related features of rock unit shown by suffix, e.g. Tgd - garnet diopside skarn, Tdq - quartzite, Slr - brecciated limestone.

- SYMBOLS**
- Vein
 - Joint, cleavage, structural foliation
 - Banding bedding, compositional foliation
 - Boundary of weathering
 - Established
 - Inferred
 - Concealed
 - Geological boundary
- GRAIN SIZE**
- (f) fine (m) medium (c) coarse; shown by subscript e.g. S_{fg} - fine-grained sandstone, T_{mg} - medium-grained garnet skarn, G_c - coarse-grained granite.
- MINERALS**
- FL - Fluorite, PY - pyrite, MO - malachite, HE - hematite, CPY - chalcopyrite, MA - malachite, CH - chrysocolla.



82-1739

M'INTYRE MINES (AUST.) PTY. LTD.

KARA TUNGSTEN PROJECT, TASMANIA

KARA N° 1

ASSAY & GEOLOGY SECTION 5820 N.

WO₃ DISTRIBUTION 797048

NO.	BY	DATE	DESCRIPTION	DESIGNED: R.G.B.	DRAWN: T.G.O.S.	CHECKED:	DATE: July 1979	PROJECT No: 21081	SCALE 1:500	PLAN No. PLAN 6.	REVISION
1	R.G.B.	Feb '80	Compile all data								
2	C.H.W.	March '82	D.D.H. 316 addition								