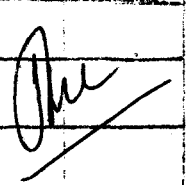


DIAMOND DRILL HOLE SURVEY

ESTMEN - KODAK MULTISHOT CAMERA

D.D.H. No. ENV 15-66/4Date Surveyed 22-5-78Total Depth 198.50mDepth Surveyed to 198.00mCasing Depth 18.00mSurveyed By L. DENBY

Depth	Drift Angle	Mean Drift Angle	Cos Sine	Vert. Depth	True Vert. Depth	Defl.	Drift Direc.	Mean Drift Direc.	Cos Sine	Co-ords.		Sum of Co-ords		
										N/S	E/W	N/S	E/W	
20	20m	0°45'	0°45'	9998 0175	20.08	20.08	35	44	44	7193 6947	.25	.24	.25	.24
28	48m	0°45'	0°45'	9998 0175	27.99	47.99	49	43	43	7114 6820	.36	.33	.61	.57
30	78m	2°	2°	9994 0399	29.99	72.99	1.05	42	42	7431 6691	.78	.70	1.39	1.27
31	108	2°15'	2°15'	9992 0393	29.98	107.98	1.14	41	41	7547 6581	.89	.77	2.28	2.04
330	138	3°30'	3°30'	9984 0507	29.95	137.90	1.70	40	40	7660 6428	1.30	1.09	3.58	3.13
30	168	4°	4°	9976 0698	29.93	167.83	2.09	40	40	7660 6428	1.60	1.34	5.18	4.47
305	198.5	5°	5°	9962 0872	30.38	198.21	2.66	41	41	7547 6581	2.01	1.75	7.19	6.22
												</		



100 H 100

00 H 100 15-00/11

TOTAL DEPTH: 198.50m

CURRENT DEPTH: 19.00m

DEPTH SURVEYED: 198.50m

DATE SURVEYED: 22-5-78

SURVEYED BY: J. DUNN

100 H 100

She 1 of 1

Surveyed by L. DENBY

Casing Depth 96.00m

Depth Surveyed 440.00m

Date Surveyed 31-3-79

Depth	Drift Angle	Mean Drift Angle	Cos.	Vert. Depth	True Vert. Depth	Defl.	Drift Direc.	Mean Drift Direc.	Cos.	Co-ords		Sum of Co-ords	
			Sine						N	E	N	E	
190	4°15'	4°15'	9973 0791	189.49	189.49	14.08	N E 79	N E 79	1908 9816	N 2.69	E 13.82	N 2.69	E 13.82
290	5°	5°	9962 0872	99.62	289.11	8.72	S E 89	S E 89	0175 9998	S 15	E 8.72	N 2.54	E 22.54
340	5°15'	5°15'	9958 0915	49.79	338.90	4.58	S E 63	S E 63	4540 8910	S 2.08	E 4.08	N .46	E 26.62
390	6°	6°	9945 1005	49.73	388.63	5.23	S E 62	S E 62	4695 9829	S 2.46	E 4.62	S 2.08	E 31.24
440	5°15'	5°15'	9958 0915	49.79	438.42	4.58	S E 61	S E 61	4848 8746	S 2.22	E 4.01	S 4.22	E 35.25



DDH ENV 18-7

Total Debt: 440.00

Casing Depth: 96.00m

Depth Summer 440.00m

DATE SURVEYED: 31-3-79

SURVEYED BY: L. DENNIS

GEOPEKO - KING ISLAND

LOG OF D.D.H. No. INV 18/6

PLANNING

PROPOSER: J. M. Clark

DEPTH: 300m

LOCATION:

PURPOSE OF HOLE: Test Mine Series West of major (supposed) fault

CO-ORDS: 216900

E 564600

N

INCLINATION: Vertical

BEARING:

°GRID

°MAG

TARGET:

E

N

SURVEY

SURVEY CO-ORDS:

E

N

SURVEYED BEARING:

°GRID

°MAG

SURVEYED IN BY:

DATE:

ACTUAL CO-ORDS: 216899.3

E 564599.9

N

R.L. OF COLLAR: 118.07

INCLINATION OF HOLE: 90°

PICKED UP BY: W. Davies

DATE: 18/1/79

SUMMARY

LOGGED BY: J. M. Clark

RESULTS: No scheelite. Not assayed

DRILLING

DATE COMMENCED: 6/12/78

DATE TERMINATED: 31/1/79

DRILLER/CONTRACTOR: A.D.D.

CASING:

SIZE: HQ

NQ

DEPTH: 6m

150

CORE:

SIZE: HQ

NQ

BQ

NQ

BQ

DEPTH: 6

51

86.6

150

288

WEDGE PLACED:

DEPTH:

EXTENSION:

FINAL DEPTH: 288.0 m

REASON FOR TERMINATION: In adamellite

CONDITION OF HOLE ON COMPLETION:

CASING:

CEMENTED:

BORE HOLE SURVEY: Single shot camera

WATER:

COMMENTS ON DRILLING CONDITIONS: Badly broken core 81.9 - 90.5 m

98.0 - 1036m.

D.D.H. No. INV 18/6

GEOPEKO - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 18/6

0.0 - 3.00 m

No core.

3.00 - 265.00

UPPER VOLCANICS

Greenish grey, fine grained basic volcanics. Texture is generally uniform with minor intervals containing small feldspar phenocrysts, dark green amygdales, or rock fragments. Spotting (irregularly shaped dark green chlorite rich spots) are unevenly distributed through the unit, but are considerably more abundant below 125 m.

3.0 - 8.0 orange iron-rich clay fillings are present between fractures.

6.4 - 10.5 m Only 1.7 m of core recovered, with most of the loss being between 8.0 - 10.5 m (0.6 m core recovered).

24.5 - 29.0 m Moderately broken core.

34.7 - 39.8 m Some core in this interval has a faint brownish tint.

40.8 - 41.1m Broken core.

55.0 - 62.1m Badly broken core with a crush zone between 55.9 - 59.5 m.

66.5 - 68.5 m Broken core

69.8 - 75.8 m Feldspar porphyry. This unit consists of small, white feldspar phenocrysts (av 2mm diameter) set in a light grey to grey very fine grained matrix. There are noticeably less fractures in this unit (av 4/m) when compared to the basic volcanics.

81.9 - 83.05 m Badly broken core with a crush zone present between 82.5 - 83.05 m.

83.05 - 86.60 m No core.

86.60 - 90.50 m Only pf

86.6 - 98.0 Core is not very broken but is extremely fractured (25° to core axis) with small lengths of re-
mented breccia. Small calcite veinlets and lenses are present. The core in this interval consists of very chlorite
dark green volcanics and green with

GEOPEKO - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 18/6

a brown tint, apparently bedded sediments (20° - 45° to the core axis). At 96.2 m both the fracturing and bedding appear to be present and are different).

98.0 - 103.6 m Crush zone containing fragments of volcanics up to 2cm diameter in a finely crushed matrix.

103.6 - 106.0 m Moderately broken, mildly chloritic volcanics.

120.7 - 129.9 m ?Crush zone. Consists of spaced fragments of up to 4 cm diameter set in a fine grained apparently crushed matrix. The unit is not broken with only 7 fractures/1 (av). Alternately the unit may be an agglomerate with an incompetent matrix.

165.0 - 165.1 m Aplite, fine grained pink aplite with dark green chlorite veinlets throughout.

178.7 - 179.1 m m Aplite. White to light pink, very fine grained aplite. Parts of the vein have small vugs present.

210.3 - 211.1 m Moderately broken core, which appears to be caused by the presence of talc veining along a fracture subparallel to the core axis.

219.8 m Broken core along small talc vein.

222 - 244.3 m Volcanics are strongly agglomeritic, with probable amygdaloids.

234.4 - 235.6 m Sugary fine grained pinkish white aplite. Small zones of broken core are present at both margins of this dyke.

251.5 - 252.3 m grey to light pink aplite containing some slightly weathered zones at the end of the unit.

255.5 - 257.0 m Volcanics are mildly agglomeritic.

264.0 - 256.0 m Colour of core gradually changes from dark green to dark brownish at the aplite boundary.

Recovery = 100% except where listed
Fractures/m = variable 4-10

GEOPEKO - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 18/6

265.00 - 288.00 m

ADAMELLITE

The first three metres of this unit are aplitic and contain brown rock fragments. The unit then changes gradually to nearly adamellite. Light pink orthoclase phenocrysts are present with plagioclase quartz and abundant mafics - biotite and minor hornfels. Small light pink to white aplite veins are present throughout.

Fractures/m = 3

Recovery = 100

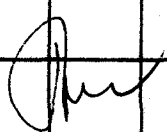
EOH 288.0 m

3 - 6 m	HQ
6 - 51	NQ
51 - 86.6	BQ
86.6 - 150	NQ
150 - 288	BQ

Surveyed by L. DENBY

Date Surveyed 25-1-79

Depth	Drift Angle	Mean Drift Angle	Cos.	Vert. Depth	True Vert. Depth	Defl.	Drift Direc.	Mean Drift Direc.	Cos.	Co-ords		Sum of Co-ords	
			Sine						Sine	N	E	N	E
88m	45'	45'	9999 0131	88.00	88.00	1.15	N E 2	N E 2	9994 0349	1.15	.04	1.15	-.04
188	1'30'	1'30'	9997 0262	99.97	97.97	2.62	39	39	7771 6293	2.04	1.65	3.19	1.69
288m	2'15'	2'15'	9992 0393	99.92	97.99	3.93	80	80	1736 9848	.68	3.87	3.87	5.56


 OK

MAGN

ODN INV 19/6

TOTAL DEPTH: 288.00m

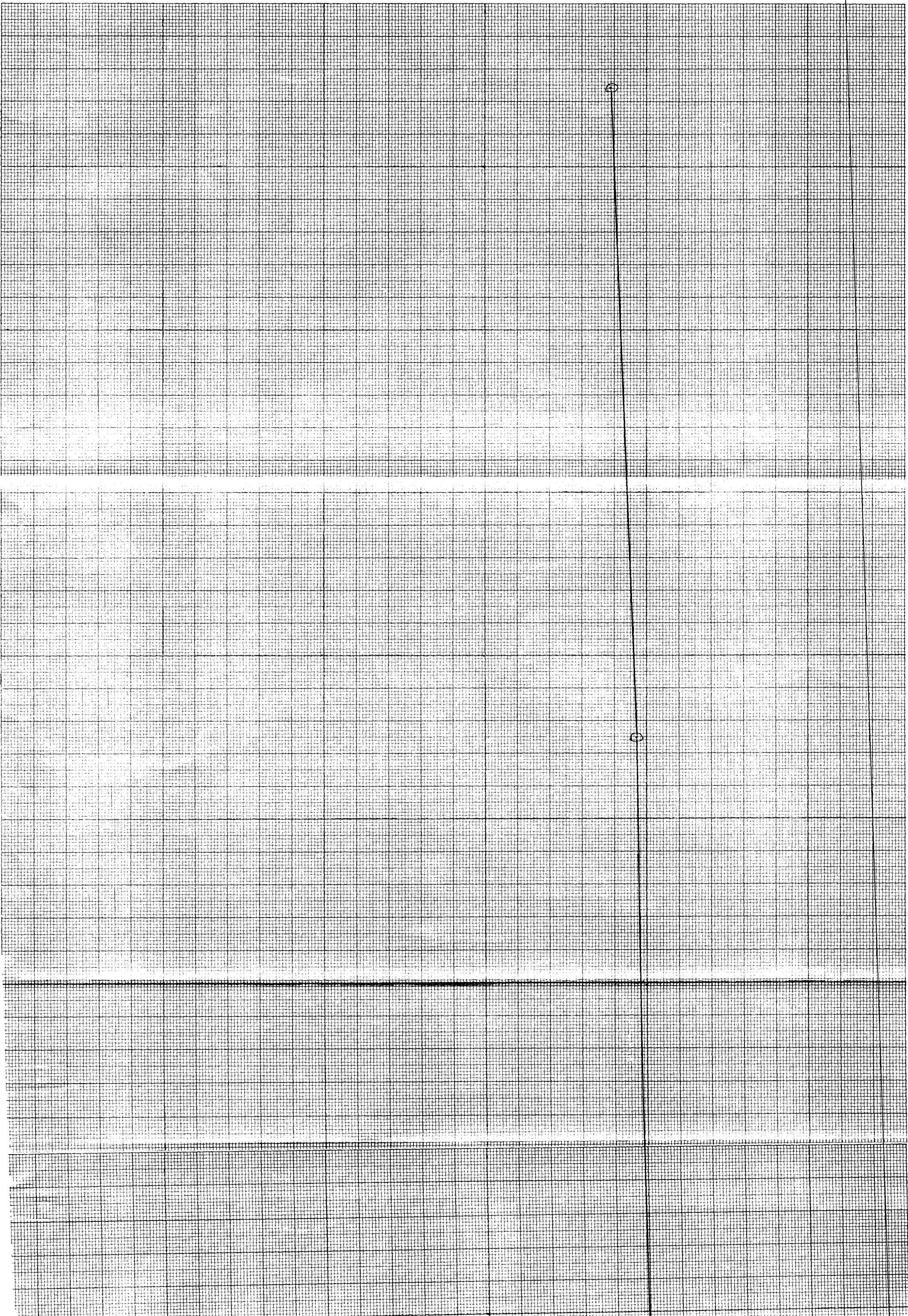
CASING DEPTH: 150.00m

DEPTH SURVEYED: 288.00m

SURVEYED BY: L. OGDEN

DATE SURVEYED: 25-1-79

NORTH CROSS SECTION



GEOPEKO - KING ISLAND

LOG OF D.D.H. No. INV 18/5

PLANNING

PROPOSER: J. M. Clark DEPTH: 200 m

LOCATION: Forestry Block off Loop Road

PURPOSE OF HOLE: Test for ore next to DDH 6/4

CO-ORDS: 216700 E 564,450 N

INCLINATION: -90°

BEARING: °GRID °MAG

TARGET: E N

SURVEY

SURVEY CO-ORDS: 216700 E 564450 N

SURVEYED BEARING: °GRID °MAG

SURVEYED IN BY: B. Davies DATE: 17-8-1978

ACTUAL CO-ORDS: 216695.3 E 564446.3 N

R.L. OF COLLAR: 106.7

INCLINATION OF HOLE: -90°

PICKED UP BY: B. Davies DATE: 23-11-1978

SUMMARY

LOGGED BY: J. M. Clark

RESULTS: No economic intersection.

DRILLING

DATE COMMENCED: 7-11-1978 DATE TERMINATED: 6-12-1978

DRILLER/CONTRACTOR: A.D.D.

CASING:	SIZE:	HQ	NO	
	DEPTH:	6	135.2	
CORE:	SIZE:	HQ	NO	BO
	DEPTH:	6	135.2	341.0

WEDGE PLACED: DEPTH:

EXTENSION:

FINAL DEPTH: 341.0 m

REASON FOR TERMINATION: In adamellite

CONDITION OF HOLE ON COMPLETION:

CASING:

CEMENTED: No

BORE HOLE SURVEY: Singleshot Camera

WATER:

COMMENTS ON DRILLING CONDITIONS: Good

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 18/5

Depth surveyed to: 341.0 m
Date surveyed 5-12-1978
Surveyed by: L. Denby
Checked by: J. Clark

Bearing			Inclination		True vertical Depth (m)	Co-ordinates	
Depth (m)	Grid	Mag.	Read	Corrected		N	E
135		-	0°	90°	135	-	-
203		203°	1°	-89°	202.99	-1.09	-0.46
341		136°	3°	-87°	340.80	-6.29	4.56

REMARKS:

GEOPEKO - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/5

0.0 - 3.0 m

No Core

3.0 - 143.30 m

UPPER VOLCANICS

Fine ^{grained} ~~green~~ greyish green basic volcanics. Small dark coloured fragments are present in small sections of core. Irregular dark brown coloured zones in the volcanics contain abundant sulphides (mainly pyrrhotite with minor pyrite and chalcopyrite) and mica (?muscovite). Some of the dark coloured zones are associated with the quartz veining.

Quartz veining is common. Clear to slightly milky quartz has brecciated the volcanics, and margins of the veins are sharp and blocky. Epidote is often associated with the quartz veins, and fragments of epidote/quartz may have sharp boundaries with both quartz and volcanics. Calcite is also present in some veins.

3.0 - 3.4 m Very weathered aplite.

3.4 - 3.6 m Brownish green slightly weathered volcanic which contains noticeable amounts of muscovite/sericite.

3.6 - 4.4 m Aplite. Medium quartz feldspar rock with minor ?chlorite.

4.5 m Several fine grained disseminated crystals of scheelite in volcanics.

5.6 m Several fine grained disseminated crystals of scheelite in spotted volcanics.

6.5 - 6.7 m Minor muscovite present on joints.

10.0 m Thin veinlet of scheelite.

10.0 - 10.5 m Several tiny scheelite crystals in light coloured, pyrite rich volcanic.

11.7 m Several large crystals of off white scheelite associated with minor quartz veinings. The largest crystal is 3cm x 1cm.

18.4 m Irregularly shaped scheelite crystal in chlorite/epidote filled fracture.

GEOPEKO - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/5

20.0 - 20.5 m Slightly vuggy core which vugs appearing to the result of weathering out of a component. Some pyrite is present.

20.0 - 23.0 m Minor disseminated molybdenite.

23.5 m Small crystal of scheelite in epidote vein.

26.8 - 27.2 m Aplite vein containing quartz feldspar and epidote.

30.85-m Vein containing fine grained scheelite several fine grained to tiny crystals of scheelite are present in volcanics between.

31.0 - 41.5 m Within this section of core there are many irregular dark brown zones which contain abundant pyrrhotite. At 41.0 - 42.5 m aggregates of pyrrhotite reach up to 4mm diameter.

48.6 - 48.7 m Two apparently skeletal crystals of scheelite.

56.0 m A 2cm wide calcite vein containing fine grained scheelite Between 55.9 - 56.6 m the quartz and aplite veins are very calcite rich.

57.4 m White scheelite crystal.

67.0 - 69.3 m Aplite dyke containing medium grainsized quartz, minor chlorite and pyrrhotite in a fine grained matrix of white feldspar.

69.6 - 69.8 m Aplite dyke.

Between 60.0 - 105.0 m quartz veins are relatively scarce. Core is still brecciated and there are fragments of epidote rich material, but here they are more typically surrounded by chlorite rich material. The dark brown sulphide rich zones are present in and near the brecciated areas. Milky white calcite is as common as quartz in veins.

78.6 m Sparsely scattered fine grained scheelite over a length of 8cm, very fine grained scheelite is also present at 83.3 m, 85.4m, 88.1m.

GEOPEKO - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/5

92.9 - 93.0 m Calcite filled breccia zone.

97.0 m Very fine grained sparsely disseminated scheelite in grey alteration product of the typical dark green volcanic.

106.1 - 106.3 m Brown clay-filled breccia zone containing irregularly shaped fragments up to 1cm in diameter. Shearing at 34° to core axis.

106.3 - 106.6 m Aplite

106.6 - 107.0 m Broken mildly chloritic volcanics.

108.0 - 109.7 m Aplite dyke. Light brown and light green (epidote) alteration is abundant.

114.4 - 115.1 m Biotite hornfels with dark purplish brown colour. Many veinlets of chlorite are present and the unit has an overall brecciated appearance.

118.8 - 120.0 m Aplite. Very fine grained and contains abundant epidote.

122.0 - 122.1 m Very fine grained sparsely disseminated scheelite in a greenish grey volcanic.

124.9 m small white scheelite crystal.

125.0 - 125.3 m Fragments of biotite hornfels with volcanics and abundant quartz, aplite and calcite veining.

125.3 - 126.0 m Broken core, with a green clay filled breccia zone being present at 125.5 m.

126.1 m Fine grained sparsely scattered scheelite in volcanics.

138.0 m Fine grained sparsely scattered scheelite in a disturbed volcanic.

140.2 - 140.3 m Calcite vein with broken and recemented volcanics adjacent to it. The vein is at 40° to core axis.

Fractures/m = 4
Recovery = 100%

GEOPEKO - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/5

143.30 - 154.30 m

APLITE

White, medium grained slightly porphyritic aplite. Quartz, ?chlorite, muscovite and pyrite crystals are set in a white fine grained feldspathic matrix. Aggregates of pyrite are sharp sided and may be as large as 1cm diameter.

Fractures/m = 3
Recovery = 100%

154.30 - 226.00 m

UPPER VOLCANICS

Green and greenish grey fine grained basic volcanics, some of which is spotted. Aplite and quartz veins are present but not as common as the previous unit. Some of these veins appear to have caused brecciation of the adjacent volcanics and the margin of the volcanics often have a thin dark brown alteration zone.

154.3 m, 156.0 m small white scheelite crystal and fine veins.

160.4 m Aggregates of molybdenite crystals up to 8mm diameter in a quartz vein.

160.7 - 161.3 m Aplite dyke.

168.2 - 168.6 m Aplite dyke containing abundant epidote and quartz.

171.0 - 171.5 m Volcanics are moderately chloritic.

186.5 m Shear plane at 37° to core axis.

186.5 - 187.0 m Disturbed and sheared zone containing minor biotite hornfels with volcanics and abundant muscovite. A crystal of white scheelite is present at 186.8 m.

187.7 - 191.0 m Volcanics are very chloritic and there are small breccia zones at 188.35 m, 189.6 m, 190.2 m.

Small veins of white to light brown scheelite are present at 192.9 m, 193.5 m, 193.8 m.

GEOPEKO + KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/5

194.1 - 198.6 m Aplite dyke with several short lengths of volcanics. This is a fine grained white aplite with abundant pyrite.

200.0 - 204.0 m Chloritic volcanics with a fragment of dark brown ?biotite hornfels in a quartz vein at 201.8 m.

210.0 m A 6mm diameter white scheelite crystal in a disturbed zone next to a quartz rich aplite vein.

214.5 m Very light brown scheelite crystals in a ruggy fracture in volcanics.

214.6 m A 3cm long scheelite crystal containing pyrite next to a vuggy fracture.

214.9 - 222.0 m Very chloritic spotted volcanics. At 215.0 m there is a small zone of recemented breccia, and between 219.0 - 219.3 m there is broken core with small breccia zones.

221.8 - 223.4 m Aplite dyke with variable grainsize and abundant finely disseminated pyrite. The overall colour in light green due to the presence of epidote, but an altered red mineral is also present. Broken core is present at 222.65 m. Bright green ?manganese staining is present at 223.35 m.

Small crystals of scheelite are present at 223.9 m 224.4 m, 224.45 m in both quartz veins and volcanics.

224.9 - 226.0 m. Massive clear to slightly milky quartz vein.

Fractures/m = 5
Recovery = 100%

226.00 - 302.80 m

UPPER VOLCANICS

Dark green and greenish grey fine grained basic volcanics. Core is moderately chloritic throughout and is commonly spotted (small black ?chloritic rich aggregates) Scheelite is not present in this unit. Small calcite veins are present (average frequency 1 / 5 metres), and calcite films on fractures are common.

GEOPEKO - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/5

230.4 m Shear zone at 32° to core axis.

231.7 m Calcite veined breccia zone at 33° to core axis.

236.9 - 238.5 m Moderately broken core with chlorite filled fractures. At 237.3 - 237.5 m there is a recemented breccia, with a matrix of rock powder and chlorite.

252.1 - 252.4 m Moderately broken core, some fracture surfaces are coated with a dusty blue mineral.

256.2 m Small breccia zone.

258.5 - 262.8 m Slightly broken core with thick veinlets of bright green chlorite along some fractures.

273.85 m Calcite/chlorite vein at 40° to core axis.

278.2 - 726.8m Broken core with minor core loss.

Below 294.0m short sections of core have an agglentic texture.

297.3 m Broken core.

The boundary between volcanics and underlying siltstone is take at the base of an agglomeritic volanic unit.

Fractures/m = 8
Recovery = 99%

302.80 - 308.50 m

?BIOTITE HORNFELS

Fine grained grey and dark brown sediment which could below to either the quartzite or mine series units. Minor pyroxene hornfels is present between 305.3 - 306.3 m, with a trace of ?grossular at 306.0 m.

306.3 - 308.5 m Medium grained biotite - quartz hornfels with minor pyrrhotite on fractures.

308.1 - 308.5 m Very broken core, which close to the adamellite contact, appears to be a recemented breccia.

At 304.6 m bedding is 50° to core axis.

Fractures/m = 10
Recovery = 99%

GEOPEKO - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/5

308.50 - 341.00 m

ADAMELLITE/APLITE

A variable unit containing aplites, fresh-looking adamellites and very altered adamellites.

308.5 - 310.6 m Weathered and altered adamellite containing some vein quartz. One of the feldspars has altered to epidote.

310.6 - 310.9 m Grey quartzite with quartz veins.

310.9 - 312.7 m Medium grained aplite containing quartz, feldspars, epidote, muscovite and pyrite.

312.7 - 313.2 m Clear white quartz vein.

313.2 - 316.7 m Medium grained aplite containing quartz, feldspars, epidote, muscovite and pyrite.

Short sections of core are very sugary and have disintergrated eg 313.3 - 313.4 m, 313.5 - 313.6 m, 315.1 m.

316.7 - 317.8 m Altered adamellite containing quartz minor pink feldspar and green feldspar/epidote.

This unit is relatively broken and short lengths are sandy.

317.3 - 320.8 m Typical adamellite containing pink orthoclase phenocrysts and finer grained quartz, plagioclase, and biotite.

320.8 - 321.5 m Altered adamellite in which orthoclase phenocrysts are colourless to light pink and plagioclase has altered to a light green.

321.5 - 324.2 m Aplite as before but containing some large aggregates of fine grained pyrite.

324.2 - 324.9 m Altered adamellite with abundant epidote and chlorite replacing plagioclase and minor orthoclase.

324.9 - 329.1 m Typical adamellite with pink orthoclase phenocrysts.

GEOPEKO - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/5

329.1 - 331.3 m Adamellite becoming progressively more altered towards lower boundary, until it consists of only quartz, epidote and minor chlorite and pyrite. Minor broken core is present at 331.0 m.

331.3 - 335.2 m Medium grained grey aplite containing quartz, feldspar muscovite, epidote and pyrite.

335.2 - 337.3 m Altered adamellite which is badly broken between 335.4 - 336.0 m. The unit becomes less altered towards its lower boundary (gradual)

337.3 - 341.0 m Typical adamellite with pink orthoclase phonocrysts and smaller crystals of quartz, plagioclase, biotite and minor hornblende.

Fractures/m = variable 3-6
Recovery = 99%

EOH 341.0 m

Date Surveyed 5-12-78

[illegible]

MAG. N. CROSS SECTION

ODM: ENV. 18-5

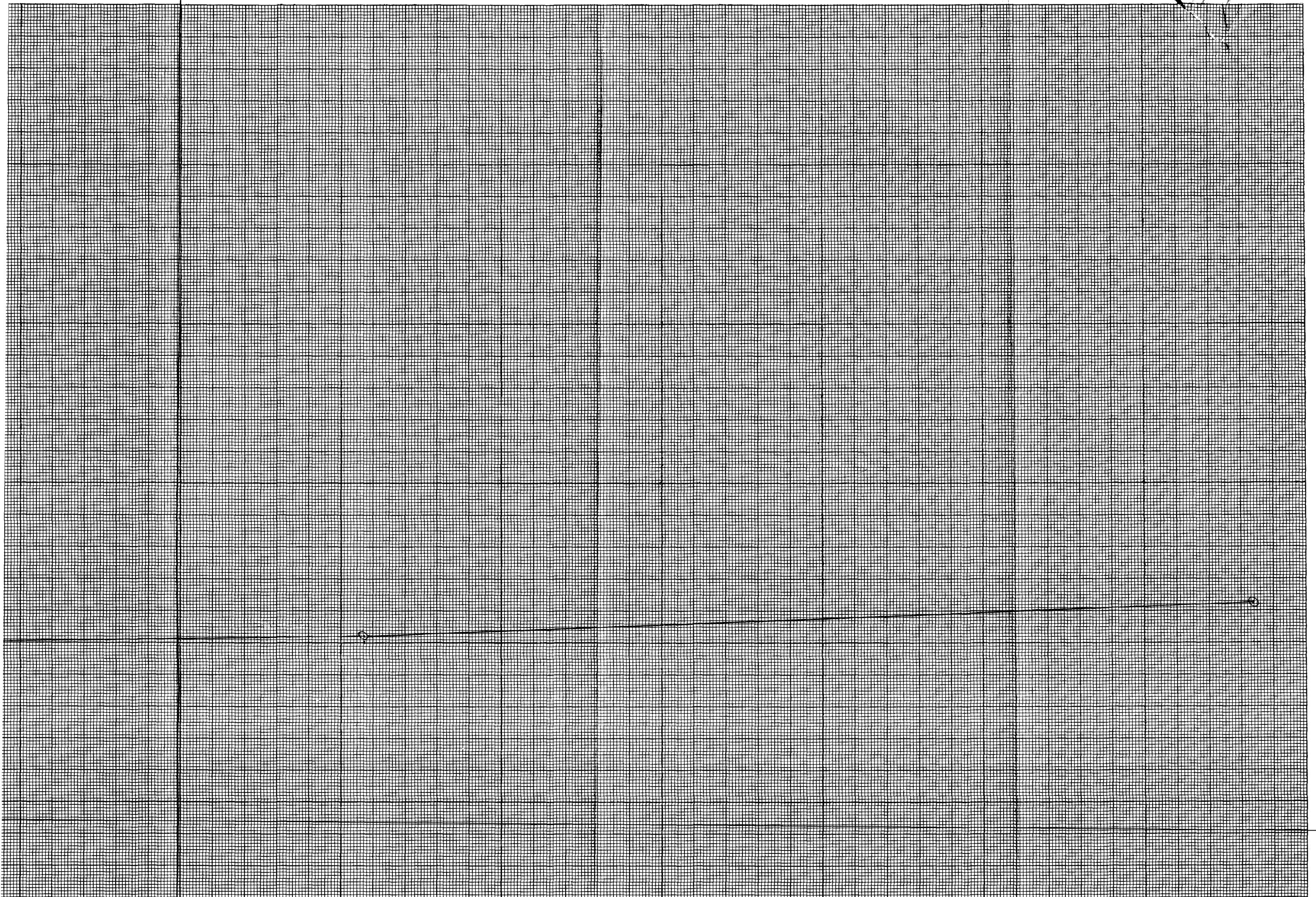
FORM. DRAIN: 341.00m

CROSSING DRAIN: 135.00m

SURVEILLANCE: 341.00m

DATE SURVEYED: 5-12-79

SURVEYED BY: L. Dwyer



GEOPEKO DIVISION - KING ISLAND

Geological Summary Log DDH INV 18/4:

0.00 - 113.30 m	Upper Volcanics
113.30 - 123.20 m	Biotite Hornfels
123.20 m	Fault
123.20 - 269.40 m	Upper Volcanics
269.40 - 301.70 m	Biotite Hornfels
301.70 - 318.50 m	Quartzite
318.50 m	E.O.H.

Assay - Results:

No economical intersection, no core samples assayed.

Date:

4-1-1979



R. Balde'

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 18/4

PLANNING

Proposer: J. Clark

Depth: 275

Location: Sartori's Block

Purpose of hole: Test mine series north of INV 6/4 and near fault.

Co-ordinates: 216570 E 564610 N

Inclination: Vertical

Magnetic:

Bearing: Grid

Target depth:

Target: E N

Approved by:

Date:

SURVEY

Survey Co-ords: E N

Survey bearing Grid Magnetic:

Surveyed in by: Date:

Actual Co-ords: 216539.47 E 567408.70 N

R.L. of collar: 122.85 m Inclination of hole:

Picked up by: L. Thomas Date: 26-5-78

SUMMARY

Logged by: J. M. Clark

Results: No economical intersection.

DRILLING

Driller/Contractor: A.D.D.

Date Commenced: 25-5-78

Date Terminated: 29-6-78

Casing:	Size :	HQ	NQ		
	Depth :	6	72		
Core:	Size :	No Core	NQ	BQ	
	Depth :	6	72	318.5	

Wedge Runoff:

Wedge Placed:

Depth:

Proposed by:

Approved by:

Reason:

Extension:

Final depth: 318.50 m

Reason for termination: Hole in quartzite

Condition of hole on completion:

Casing:

Cemented:

Bore hole survey: Singleshoot to 318.5 m

Water:

Comments on drilling conditions: Good, despite very broken ground
203 - 215 m.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 18/4

Survey method: Singleshot
Final depth: 318.50 m
Casing depth: 72.0 m

Depth surveyed to: 317.0 m
Date surveyed: 28-6-78
Surveyed by: A. Younger
Checked by: J. Clark.

Bearing			Inclination		True vertical Depth (m)	Co-ordinates	
Depth (m)	Grid	Mag.	Read	Corrected		N	E
77		080		-89			
98					97.99		
119		080		-89			
143					142.98	0.43	2.46
167		100		-88.6			
191					190.97	0.23	3.61
215		110		-88.5			
239					238.95	-0.20	4.79
263		112		-87.9			
290					289.92	-0.90	6.52
317		141		-87.3			
318.5					318.39	-1.94	7.36

REMARKS:

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/4

0 - 6.00

NO CORE

6.00 - 113.30 m

UPPER VOLCANICS

Dark green and greyish green basic volcanics. Many short intervals have breccia textures which have been interpreted to be tops and / or bases of lava flows.

0-21 m Minor ironstaining along fractures.

9.3 m Minor shearing at 40° to core axis and tectonia breccia.

19.6 Broken core

40.5 m Broken core which has mild ironstaining.

57.0 - 59.0 m Minor broken core.

57.0 - 61.5 m Some surfaces of broken core are coated with slicken sides and core appears to slightly more chloritic. Minor pyrite is present.

66.9 m 1cm wide crush zone. Minor fine grained sparsely disseminated pyrrhotite is present between 64-70.0 m,

80.1 , 81.0 m broken, recemented core.

82.8 m, 84.2 m, 84.7 m coarse grained chlorite in quartz.

93.0 - 95.0 m Green grey very fine grained volcanic.

97.0 - 102.8 m Brownish grey ?volcanic with quartz - rich bands containing pyrite. Banding is 60° to core axis.

111.2 m Chloritic shear zone which is approx. 1cm wide at 40° to core axis.

112.1 - 113.3 m Grey fine grained volcanics.

Fractures / m = 6.
Recovery = 99%

113.30 - 123.20 m

BIOTITE HORNFELS

Purplish brown and brownish grey biotite hornfels which resemble mine series rocks. Some ?bedding is present (fine bands of quartz - biotite hornfels with coarse grained chlorite and pyrite) at 60° to core axis.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/4

113.3 - 114.0 m The top of unit is composed pyroxene, biotite and quartz with abundant pyrite. Minor disseminated scheelite is present in a band at 113.95 m.

Micro faulting is common throughout.

123.20m ?Fault composed of finely brecciated and powdered rock in a zone of broken core.

Fractures / m = 6.

Recovery = 100%

123.20 - 147.00 m

UPPER VOLCANICS

Greenish grey fine grained basic volcanics. Breccia zones (thought to tops or bases of volcanic flows) are present in this unit, similar to previous Upper Volcanic unit.

123.3 m Quartz vein at 15° to core axis

132.0 - 132.4 m Minor broken core.

140.7 m, 141.6 m - 142.0 m, fractures filled by soft calcite and clay.

147.0 m Finely layered quartz - calcite vein with minor slickensides. Vein is at low angle to core axis.

Fractures / m = 3

Recovery = 100%

147.00 - 178.70 m

HORNFELSED ?SEDIMENT

Very fine grained dark grey ?sediment which belongs to the Upper Volcanic unit. Fine grained pyrite is common, and aggregates are often aligned on the same plane to give the appearance of indistinct banding (commonly 80° to core axis).

150.0 m Light green quartz rich bands at 55° to core axis.

151.0 - 151.1 m Pugh zone containing fragments of rock. ironstaining is present below 151.05 m.
? Fault.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/4

- 161.2 - 161.5 m Light brown quartz rich rock with minor ironstaining doing fractures.
- 166.6 - 166.9 m Broken core with minor pugh zone at 166.78 - 166.8 m. A calcite filled breccia zone is present between 166.8 - 166.9 m.
- 170.5 - 170.8 m 172.0 - 172.3 m. Light brown muscovite - rich rounded features in matrix of dark grey sediment. More than usual pyroxene is present.
- 174.2 - 174.3 m Quartz vein.
- 177.2 - 177.4 m Indistinct banding apparently caused by abundance of muscovite. (banding at 60° to core axis).

Fractures / m = 7
Recovery = 98%

178.70 - 223.10 m

UPPER VOLCANICS

Dark green, often spotted basalt. Except for spotting the rock has an even fine grained texture.

180.1 - 180.2 m Broken core.

185.0 m Broken core.

202.0 - 202.1 m ?Biotite hornfelsed sediment with abundant mica and chlorite. Shearing is 35° to core axis.

202.3 m Small aplite dyke.

202.3 - 203.7 m Mildly brecciated biotite hornfelsed sediment and volcanic, with broken core from 203.0 - 203.2 m. At 203.4 m shearing is 38° to core axis.

203.7 - 204.7 m Recemented breccia consisting of broken purplish brown biotite hornfels with veinlets of dark green chlorite as matrix. At the begining of this section there is a sharp boundary (at 50° to the core axis) between volcanics and biotite hornfels. The base of this section there is a shear plane at 30° to the core axis.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/4

207.6 - 207.8 m, 206.0 - 206.6 m, 206.7 - 207.2 m and
207.6 - 207.8 m Recemented breccias consisting of volcanics
in a soft matrix of powder and small
fragments of volcanics. Small calcite
veinlets are present.

207.8 - 208.1 m Aplite, the lower boundary of which is 42°
to core axis.

209.5 m Shearing and brecciation at 65° to core axis.
211.4 - 214.8 m Major zone of severe brecciation.
Fragment size varies and is held in a matrix
of rock powder and fine fragments. Minor
calcite veining is present.

215.2 - 216.6 m Sugary white - light pink green aplite,
which in places is very soft and crumbly.

214.8 - 223.1 m Even grained volcanic and aplite are both
veined by calcite. The veining is more
intense around the aplite dyke.

217.9 - 218.1 m Broken core.

221.6 - 223.1 m Minor broken core.

Fractures / m = Av 5
Recovery = 99%

223.10 - 228.60 m

APLITE

Fine grained light grey to light pink aplite. Soft
calcite veining is present and where more common has
caused broken core. Minor ironstaining is present on
some fractures.

Fractures / m = 8
Recovery = 99%

228.60 - 236.50 m

UPPER VOLCANICS

Dark green, fine even grained basic volcanic. Spotting (up
to 5mm diameter) is present in the middle of this unit. A
common fracture angle is 30° to core axis.

Fractures / m = 4
Recovery = 100%

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/4

236.50 - 245.00 m

APLITE

Fine to coarse grained aplite with abundant epidote and fuzzy indistinct crystal outlines.

The beginning of the unit (236.5 - 239.0 m) is relatively coarse grained but has been mildly to severely brecciated small fractures filled with rock powder are present.

The remainder of the unit is solid unbrecciated aplite.

Fractures = 10 - 3
Recovery = 100%

245.00 - 269.40 m

UPPER VOLCANICS

Grey to dark green fine to medium grained basic volcanic Ragged black spots are present in the finer grained parts of the unit.

258.60 - 261.5 m Agglomeratic basalt with fragments up to 5 cm across set in a darker green fine grained matrix.

260.0 m Quartz vein at 20° to core axis.

261.5 - 269.4 m Appears to be a hybrid rock between upper volcanics and biotite hornfels. Boundaries are very indistinct but there appears to be lengths and small fragments of biotite hornfels in a basaltic matrix.

266.9 - 267.6 m Sugary light olive aplite, with the colour being due to the presence of epidote and muscovite.

Fractures / m = 3
Recovery = 99%

269.40 - 269.50 m

BIOTITE HORNFELS

Purplish brown biotite hornfels with small wisps of green pyroxene hornfels.

269.50 - 271.70 m

APLITE

Very light green fine medium grained aplite, consisting of quartz, feldspar, muscovite and epidote.

Fractures / m = 2
Recovery = 100%

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/4

271.70 - 301.70 m

BIOTITE HORNFELS

Purplish brown biotite hornfels with many small beds of green pyroxene hornfels and occasional marble beds (averaging thickness in 3 cm). Pink grossular has partially and completely replaced some marble beds.

Minor very fine grained scheelite is present at 274.20 - 274.23 m, 274.93 - 274.98 m and 275.36 m. This is an area of relatively intense grossular development. Minor andradite is present in soft marble at 275.10 - 275.15 m.

278.5 m Calcite chlorite vein at 15° to core axis. Core from 278.5 to 279.3 m has suffered minor micro - faulting.

279.8 m Minor scheelite in marble grossular bed. Minor scheelite is also present at 283.95 m, 298.9 m, 288.0 m, 293.67 - 293.72m, 294.35 m.

NB Rubble at 293.0 m and 296.0 m has fallen down hole from above.

296.55 - 297.61 Spotted greenish grey rock possibly a basic volcanic.

299.05 - 299.10m Minor fine grained scheelite associated with pyrite in a dirty calcite - grossular - chlorite rock.

299.9 - 301.7 m Predominantly light grey marble with small black chlorite veinlets and small light green pyroxene epidote beds. Grossular is not present in this marble rich interval

<u>Depth</u>	<u>Bedding/CA</u>
272.0	72°
281.0	64°
290.0	57°
299.9	64°

Fractures / m = 4
Recovery = 98%

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/4

301.70 - 318.50 m

QUARTZITE

Light grey fine to medium grained quartzite. Abundant pyrite is present as veinlets and as films on fracture surfaces.

Small ?pyroxene - epidote veinlets are present at 301.7 - 301.8 m, 302.6 m and 302.7 m.

Aplite veins are present at 314.7 m (7° to core axis), 315.3 m (55° to core axis) 318.3 m (90° to core axis)

<u>Depth</u>	<u>?Bedding/CA</u>
305.3	56°
310.1	55°
315.6	57°

Fractures / m = 3
Recovery = 100%

EOH 318.50 m.

DIAMOND DRILL HOLE SURVEY

ESTMEN - KODAK MULTISHOT CAMERA

D.D.H. No. INV 18/4
 Total Depth 317 m
 Casing Depth 7.2 m

Date Surveyed 28/6/78
 Depth Surveyed to 317 m
 Surveyed By A Younger

Depth	Drift Angle	Mean Drift Angle	Cos Sine	Vert. Depth	True Vert. Depth	Defl.	Drift Direc.	Mean Drift Direc.	Cos Sine	Co-ords.		Sum of Co-ords	
										N/S	E/W	N/E	E/W
0	0	0	1.0	0	0								
77	1	1	$\frac{.9998}{.0174}$	76.98	76.98	1.34	N 80	$\frac{.1736}{.9949}$	$\frac{.1736}{.9949}$	N 0.23	E 1.32	N 0.23	E 1.32
119	1	1	$\frac{.9998}{.0174}$	118.97	118.97	0.73	N 80	$\frac{.1736}{.9949}$	$\frac{.1736}{.9949}$	N 0.12	E 0.72	N 0.36	E 2.04
167	1.2	1.4	$\frac{.9997}{.0244}$	166.95	166.95	1.17	S 80	$\frac{.1736}{.9949}$	$\frac{.1736}{.9949}$	S 0.20	E 1.15	S 0.16	E 3.19
215	1.5	1.5	$\frac{.9997}{.0262}$	214.93	214.93	1.26	S 70	$\frac{.342}{.9397}$	$\frac{.342}{.9397}$	S 0.43	E 1.18	S 0.27	E 4.37
263	2.1	2.1	$\frac{.9993}{.0366}$	262.9	262.9	1.76	S 68	$\frac{.3746}{.9872}$	$\frac{.3746}{.9872}$	S 0.66	E 1.63	S 0.93	E 6.0
317	2.7	2.7	$\frac{.9989}{.0477}$	316.84	316.84	2.54	S 59	$\frac{.7771}{.6293}$	$\frac{.7771}{.6293}$	S 1.97	E 1.6	S 2.9	E 7.6

Mag N
10

20

20

20

20

20

20

20

INV 18/4

15

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 18/3

PLANNING

Proposer: J. Clark
Location: Sactori's Block

Depth:

Purpose of hole: Exploration

Co-ordinates: 217130 E 564800 N

Inclination: Vertical

Magnetic:

Bearing: Grid

Target depth: 300 m

Target: E N

Approved by: M. C. R.

Date: 1-1-78

SURVEY

Survey Co-ords: E N

Survey bearing Grid

Magnetic:

Surveyed in by: Date:

Actual Co-ords: 564800.5 N 217130.1 E

R.L. of collar: 124.3

Inclination of hole:

Picked up by: L.T.

Date: 10-2-78

SUMMARY

Logged by: J. Clark

Results: No economic intersections

DRILLING

Driller/Contractor: A.D.D.

Date Commenced: 23-2-78

Date Terminated: 3-4-78

Casing: Size : N

Depth : 18m

Core: Size : HQ

NQ

BQ

Depth : 6m 18m

440m

Wedge Runoff:

Wedge Placed:

Depth:

Proposed by:

Approved by:

Reason:

Extension:

Final depth: 440 m

Reason for termination: Intersected quartzites

Condition of hole on completion:

Casing: Nil

Cemented:

Bore hole survey:

Water:

Comments on drilling conditions: Poor through upper volcanics.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 18/3

Survey method: Singleshot Camera

Final depth: 440.0 m

Casing depth: 48.0 m

Depth surveyed to: 440.0 m

Date surveyed to: 10.3.78/3.4.78

Surveyed by: L. Denby

Checked by: A. Younger

Bearing			Inclination		True vertical Depth (m)	Co-ordinates	
Depth (m)	Grid	Mag.	Read	Corrected		S	E
(40)		156	4°15'	-85.75	39.89	2.87	1.20
80		156	4°15'	-85.75	79.78	5.74	2.40
110		132	4°15'	-85.75	109.70	7.23	4.05
170		134	8°45'	-81.25	169.00	13.57	10.62
200		130	12°45'	-77.25	198.26	17.83	15.69
230		130	14°0'	-76.0	227.37	22.50	21.25
260		126	15°0'	-75.0	256.35	27.06	27.53
290		117	16°0'	-74.0	285.19	30.81	34.90
320		120	16°30'	-73.5	313.95	35.07	42.28
350		129	17°0'	-73.0	342.64	40.59	49.10
380		129	17°15'	-72.75	371.29	46.19	56.02
410		131	17°45'	-72.25	399.86	52.19	62.93
440	134	124	18°45'	-71.25	428.27	57.58	70.92

REMARKS:

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/3

0.00 - 280.60m

Volcanics

Dark green, fine grained basic volcanics. There are no small sedimentary beds but in places brecciated volcanics resemble agglomerates.

0 - 6.0 m. Weathered zone consisting of clay and fragments of reddish green to green volcanics. Core is broken.

6.0 - 8.5 m. Red ironstaining is present on fractures of core.

8.5 - 13.0 m Broken Core
18.2 - 21.5 m Broken Core
25.5 - 27.5 m Broken Core
39.0 - 39.7 m Broken Core
44.3 - 47.0 m Broken Core

48 - 52 m. Minor quartz veining, some of which has slightly brecciated the core.

77.4 - 77.5 m. Shear zone in which fragments of up to 1 cm are set in a finer grained loosely consolidated matrix. Boundaries of the zone are 30° to core axis.

80.2 - 82.2 m. Mildly sheared zone with short lengths of more intensely sheared and crushed rock (similar to above).

88.0 - 89.0 m. Mildly sheared zone
91.0 - 91.5 m " " "
96.0 - 96.2 m " " "

113 - 122 m. Volcanics have a lighter colour and may be more andesitic. There are dark green chloritic rich fragments and lenses within this section.

124.5 - 126.7 m. Dark green volcanic with occasional fragment of the lighter green material.

142 - 152.5 m. Broken and badly brecciated core. From 142.5 - 146 m. Fragments have been cemented by soft brown calcite

42.0 - 152.5 m. Broken and badly brecciated core. From 143.5 - 146.0 m fragments have been cemented by soft brown calcite, and one metre of core was lost in this interval. In the remainder of this section finer grained crush material is holding the rock together. The most severely crushed material is 151.0 - 152.3 metres.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. Inv 18/3

152.5 - 164.0 m. Volcanics are irregularly brecciated (mostly likely tectonically) but longer lengths of core has been recovered.

178.8 - 183.5 m. Some broken core between longer lengths.

187.5 - 188 m. Broken core.

187.3 - 189.8 m. Feldspar porphyry. Irregularly shaped phenocrysts of pink feldspar, and light green feldspar rimmed by pink feldspar are set in a dark grey matrix.

200.0 m - 245.0 m. Volcanics are typically spotted.

232.5 - 232.8 m. Shear zone with broken core.

244.80 - 244.84 m. Chlorite - pyroxene rich zone.

245.0 - 280.6 m. The volcanics have an indistinct fragmental texture. Light greenish grey rounded aggregates are present in a darker green (chlorite rich) matrix. In places the matrix is nearly absent. The base of the unit is gradational and is taken as the last position of this ?fragmental texture.

246.0 - 247.0 m. Large (up to 5 cm) orange spots in a coarser grained volcanic.

255.9 - 257.5 m. There are more fractures than usual and most are coated with a fine layer of brown clay.

263.2 - 263.6 m. Feldspar porphyry. Well formed to rounded white felspar crystals in a dark grey matrix.

Recovery: (Except for interval 142.0 - 152.5 m)
= 100%

Fractures / m averages 6.

280.60 - 306.20

Biotite Hornfels

Purplish brown biotite hornfels which contains small beds of pyroxene, chlorite and calcite towards the end of the unit. Bedding is indistinct elsewhere in the core.

280.6 - 282.5 m. Light green coloured rock, apparently sedimentary, which appears to be transitional between the volcanics and biotite hornfels.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/3

282.5 - 283.9 m. Pyroxene - chlorite - calcite - almandine which contains a 4 cm width of sparsely disseminated fine grained scheelite.

283.9 - 284.1 m Marble

286.7 - 287.2 m Fine grained, white to cream coloured aplite.

289 - 290.3 m Aplite

292.0 - 292.4 m Feldspar porphyry. White often well formed orthoclase crystals in a fine grained grey matrix.

293.8 - 294.3 m. Aplite. There are many smaller aplite veinlets also occurring in the unit.

293.5 - 293.8 m, 294.3 - 296.3 m Spotted biotite hornfels.

From 299 m small beds of marble (some of which contain grossular) which are rimmed by pyroxene are present with a frequency of 1/metre, oriented at 75° to core axis.

Fractures / m = 6
Recovery = 99%

306.20 - 311.30 m

Biotite - Pyroxene Hornfels

Purplish brown biotite hornfels is the most abundant rock type. It is interbedded with light green pyroxene hornfels, grossular - pyroxene hornfels and small beds of marble, at 40 - 70° to core axis. Micro faulting is common most of the fractures being filled with dark green chlorite.

309.6 - 309.8 m. Recemented fault breccia containing fragments of biotite and pyroxene hornfels cemented by a finer grained matrix. The fault is probably 20° to core axis.

Fractures / m = 12
recovery = 99%

311.30 - 327.90 m

Volcanics

Dark greenish grey, fine to medium grained basic volcanic. The beginning of the unit (311.3 - 316.5 m) appears to be more weathered than the remainder, has a lighter colour overall and contains small dark brown spots. 325.0 - 327.0 m. Small black spots with fuzzy outlines in volcanics.

324.8 - 325.3 m. Mildly broken core.

Fractures / m = 5
Recovery = 97%

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/3

327.90 - 350.90 m

Bedded Pyroxene - Biotite Calcite Hornfels

Finely bedded light green pyroxene hornfels, purplish brown biotite hornfels, marble and grossular calcite pyroxene beds are oriented at 53° to core Axis. Many of the small marble beds contain and are rimmed by grossular, and some of these beds appear to be almost completely replaced to give grossular - pyroxene - calcite beds.

329.6 - 329.8 m. Coarse grained aplite. / Marble is most abundant in the beginning of the unit and gradually becomes less towards the end.

338 - 350 m. Some of the grossular - pyroxene calcite beds, (1cm thick), contain very fine grained disseminated scheelite (approx. frequency - 2/metres). At 340.05 m there is a coarser crystal containing both powellite and scheelite.

Fractures / m = 4
Recovery = 99%

350.90 - 361.10 m

Pyroxene - calcite - Biotite Hornfels

Finely interbedded green pyroxene hornfels, light green to grey marble with lesser amounts of brown biotite hornfels. This unit is noticeably different from the preceeding unit because of the complete absence of garnet.

Bedding is 52° to 55° to core axis.
Brecciated core is present at 358.3 - 358.4 m
358.9 - 359.0 m, and 358.5 - 358.6 (lens intense).

Fractures / m = 4
Recovery = 99%

361.10 - 367.20 m

Marble

Light grey marble with black chlorite along bedding planes and in veinlets cross cutting bedding. Small white calcite veinlets are also present.

Bedding is 44° to core axis.

Fractures / m = 2
Recovery = 99%

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/3

367.20 - 368.60

?Biotite Hornfels

Brown and grey rock with an indistinct spotted texture. There is no evidence of bedding.

Fractures / m = 4
Recovery = 99%

368.60 - 380.50 m

Feldspar Porphyry

White, often angular, orthoclase crystals are set in a fine grained grey matrix.

Fractures / m = 5
Recovery = 97%

380.50 - 381.50 m

Biotite - Pyroxene Hornfels

Bedded purplish brown biotite hornfels and green pyroxene hornfels both contain wisps of calcite.

Bedding is 60° to core axis

Fractures / m = 10
Recovery = 95%

381.50 - 387.30 m

Aplite

Fine to coarse grained white aplite with abundant biotite and lesser amounts of hornblende. Quartz crystals are as large as 5 mm but usually smaller.

Fractures / m = 6
Recovery = 98%

387.30 - 415.90 m

Biotite - Pyroxene Hornfels

Finely interbedded purplish brown biotite hornfels and green pyroxene hornfels with white or light green marble.

408.7 - 409.1 m. Aplite.

415.8 - 415.9 m. Minor grossular garnet in pyroxene hornfels. There are two 1 cm layer which contain sparsely disseminated scheelite in this 10 cm section.

Bedding is 45° to core axis at 392 m
Bedding is 70° to core axis at 414 m

Fractures / m = 5
Recovery = 100%

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18/3

415.90 - 440.00

Quartzite

Dark grey to very light grey quartzite with many diffusely bounded white randomly oriented quartzite lenses throughout.

416.1 - 416.2 m, 416.4 - 416.5 m, Aplite.

418.9 - 419.1 m, Dark green chlorite, white feldspar and abundant pyrite in a large vein.

424.8 - 424.9 m. Grey fine grained ?layer containing quartz, chlorite, pyrite and minor disseminated scheelite.

427.6 - 428.1 m. Broken core.

430.8 - 430.9 m. Quartz and pyroxene layer containing disseminated scheelite.

Pyrite films are common on joint surfaces.

Fractures / m	=	3
Recovery	=	99%

EOH 440.0 m.

GEOPEKO DIVISION - KING ISLAND

Geological Summary Log DDH INV 18/2:

0.00 - 71.19 m	Meta volcanics
71.19 - 271.86 m	Mine series
271.86 - 295.00 m	Quartzite
295.00 m	E.O.H.

Assay - Results:

262.5 - 264.0 m 1.5@ 0.68% WO₃

Further results see Assay data sheet.

Date:

4-1-1979



R. Balde'

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NO. INV 18/2

PLANNING

Proposer: M. Rogers

Depth: 250 metres

Location: Sartori's Block Loop Road

Purpose of hole: Exploration

Co-ordinates: E
Inclination:
Bearing Grid
Target: E
Approved by: M.C.R.

N
Magnetic:
Target Depth:
N
Date: 1-10-77

SURVEY

Survey Co-ords: E
Survey bearing: Grid
Surveyed in by: 564.41 760.07
Actual Co-ords: 216 ~~454.56~~ E 564 ~~868.33~~
R.L. of Collar: 130.79
Picked up by: A.P. Stewart

N
Magnetic:
Date:
N
Inclination of Hole:
Date: 25-11-77

SUMMARY

Logged by: D. Cowan
Results: 262.5 - 264.0 metres 1.5 @ 0.68% WO₃

DRILLING

Driller/Contractor: A.D.D

Date commenced: 11-10-77

Date terminated: 16.11.77

Casing: Size: H
Depth: 20
Core: Size: NQ
Depth: 20

BQ
295

Wedge Runoff:

Wedge placed:
Proposed by:
Reason:

Depth:
Approved by:

Extension: Nil
Reason for termination: Hole in quartzite

Condition of hole on completion:

Final depth: 295.0 m

Casing: Nil
Cemented: No

Bore hole survey: Singleshot to 295.0 metres
Water: Nil

Comments on drilling conditions:

NEW CO-ORDS.		18/2
564	760.07	
216	564.41	
RL	130.79	

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H No. INV. 18-2

Survey method: Single Shot

Final depth : 295.00 m

Casing depth : 18.00 m

Depth surveyed to: 295.00

Date surveyed: 16-11-77

Surveyed by : L. Denby

Checked by : D. Cowan

Depth (m)	Bearing		Inclination		True vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected		S	E/W
100	195	185	3.00	-87.00	99.86	5.21	0.46E
142	176	166	5.25	-84.75	141.68	8.94	0.47W
193	174	164	5.25	-84.75	192.47	13.43	1.76
244	180	170	5.25	-84.75	243.26	18.03	2.57
295	163	153	5.00	-85.00	294.07	21.99	4.59

REMARKS:

GEOPEKO LIMITED - KING ISLAND

ASSAY DATA

D.D.H. No. INV. 18-2

Sample No.	DEPTH (METRES)				ELEMENTS				COMMENTS
	From	To	Length	Length Recovered	WO ₃	Mo			
KF 0006	74.00	74.50	0.5	0.5	<0.01	<0.01			
7	141.00	141.50	"	"	<0.01	0.01			
8	225.00	225.50	"	"	0.05	"			
9	233.50	234.00	"	"	<0.01	"			
10	236.50	237.00	"	"	<0.01	"			
11	237.50	238.00	"	"	<0.01	"			
12	238.00	238.50	"	"	<0.01	"			
13	242.00	242.50	"	"	0.42	0.02			
14	243.50	244.00	"	"	<0.01	<0.01			
15	244.50	245.00	"	"	<0.01	"			
16	247.50	248.00	"	"	<0.01	"			
17	248.50	249.00	"	"	<0.01	"			
18	260.00	260.50	"	"	<0.01	"			
19	262.50	263.00	"	"	1.40	0.02			
20	263.00	263.50	"	"	0.38	0.02			
21	263.50	264.00	"	"	0.27	0.02			
22	264.00	264.50	"	"	0.03	<0.01			
KF 0023	264.50	265.00	"	"	<0.01	0.01			

SPECIFIC GRAVITY

Depth (m):

Rock Type:

S.G. :

Determined by:

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG INV 18-2

D.D.H. No. INV 18-2

0 - 71.19

Metavolcanics

A diverse sequence of altered metavolcanics.

Between 0 - 9.68 the sequence is moderately weathered. Sheared and broken ground occurs between:

51.66 - 52.32
52.90 - 53.00
53.86 - 54.26
57.60 - 59.00
60.91 - 61.40
70.02 - 70.41

Very minor scheelite occurs on a joint plane at 18.66 metres.

71.19 - 144.80

Biotite Hornfels

A fairly uniform sequence of biotite hornfels, incorporating some intervals of pyroxene - biotite hornfels.

Bedding:

70° LCA at 73.87
62° LCA at 79.70
64° LCA at 91.48
70° LCA at 98.20
65° LCA at 100.17
44° LCA at 118.45
58° LCA at 124.14
55° LCA at 143.50

Sheared and broken ground occurs between:

83.40 - 83.67
90.17 - 90.61
91.58 - 91.92

Two small intervals containing sub-grade scheelite mineralization occur between:

74.14 - 74.39 associated with andradite skarn and 141.01 - 141.27 where it is associated with a grossular - rich rock. Molybdenum associated with a quartz vein occurs at 127.61.

144.80 - 151.11

Pyroxene skarn → C.g. Volcanic

This skarn is devoid of scheelite mineralization and contains increasing felspar towards its base.

151.11 - 167.71

Quartzite Volcanic

A very uniform greyish quartzite with no bedding visible.

18/2

14.8 - 15.11 Pyroxene Slam?

* Pyroxenite? consisting
of pyrox & either altered
feldspar or zoisite. Minor
zoisite, grossular present
& minor pyrrhotite, calcite
veins.

15.11 - 16.71m Quartzite?

like fine grained albino &
altered rock

209.209.9m Fault?

Basalt as mentioned in log
203.58 - 206.26m

Spotted b/w rather than g.
could be a fault zone.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18-2

167.71 - 201.52

Biotite Hornfels

A weakly bedded unit. Very minor scheelite mineralization occurs at 168.21 metres, associated with a calcite vein.

Quartz vein occur between:

172.53 - 172.80

179.27 - 179.50

189.13 - 189.27

192.15 - 192.42

195.51 - 195.77

A minor aplite dyke occurs between 178.66 - 179.07 metres. molybdenum associated with a calcite vein occurs at 184.40 metres.

Bedding:

56° LCA at 184.57

55° LCA at 185.74

51° LCA at 200.41

201.52 - 209.31

Quartzite *Spotted with iron*

A uniform greyish quartzite. Calcite veins give the rock the appearance of a fault breccia between 203.58 - 206.26. This interval is also more biotite rich.

209.31 - 210.90

Biotite Hornfels

210.90 - 212.91

Aplite

A quartz - rich aplite dyke. *to white*

212.91 - 226.62

Biotite hornfels

The whole interval is very brecciated, but the fragments are often cemented together with calcite.

Sub - grade scheelite mineralization occurs between

225.09 - 225.33

and 225.50 - 225.53

Bedding:

40° LCA at 224.08

32° LCA at 225.00

36° LCA at 225.81

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18-2

226.62 - 241.52

Siliceous Pyroxene Hornfels

The unit shows patchy development of grossular garnet also sub - grade scheelite is associated with grossular or calcite rich intervals. It occurs between:

233.90 - 234.00
236.70 - 236.74
237.91 - 237.98
238.23 - 238.31

The unit shows strong, but irregular banding between 239.20 - 241.52.

Bedding 30° LCA at 239.81

241.52 - 249.46

Alternating biotite hornfels/ pyroxene hornfels/ siliceous hornfels. Minor calcite hornfels also occur.

Bedding:

55° LCA at 244.78
55° LCA at 245.15
63° LCA at 245.64
60° LCA at 247.34

Scheelite mineralization (sub - grade) occurs between:

242.44 - 242.51
243.66 - 243.73
244.88 - 244.94
247.61 - 247.66
248.76 - 248.86

It is associated with disturbed or calcite - rich intervals.

249.46 - 257.67

Biotite Hornfels

A moderately well - banded unit of biotite hornfels.

Bedding:

58° LCA at 251.45
60° LCA at 252.41
66° LCA at 253.68

257.67 - 271.86

Alternating biotite hornfels/marble/garnet - pyroxene skarn.

Scheelite, associated with the skarns, occurs between 260.15 - 260.40 (sub - grade)

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18-2

262.50 - 261.61 (sub - grade)
262.83 - 262.98 (sub - grade)
263.17 - 263.50 (probable ore - grade)
263.67 - 263.71 (sub - grade)
263.96 - 264.08 (Probable ore - grade)

This represents a total of 1.00 metres. Unreplaced marble bands account for a further 4.00 metres.

Bedding:

68° LCA at 262.11
64° LCA at 263.13
66° LCA at 265.23
66° LCA at 267.04

271.86 - 295.00 EOH

Quartzite

A uniform grey quartzite.

Bedding 75° LCA at 292.11.

[illegible]

D.O.H INV 18-2

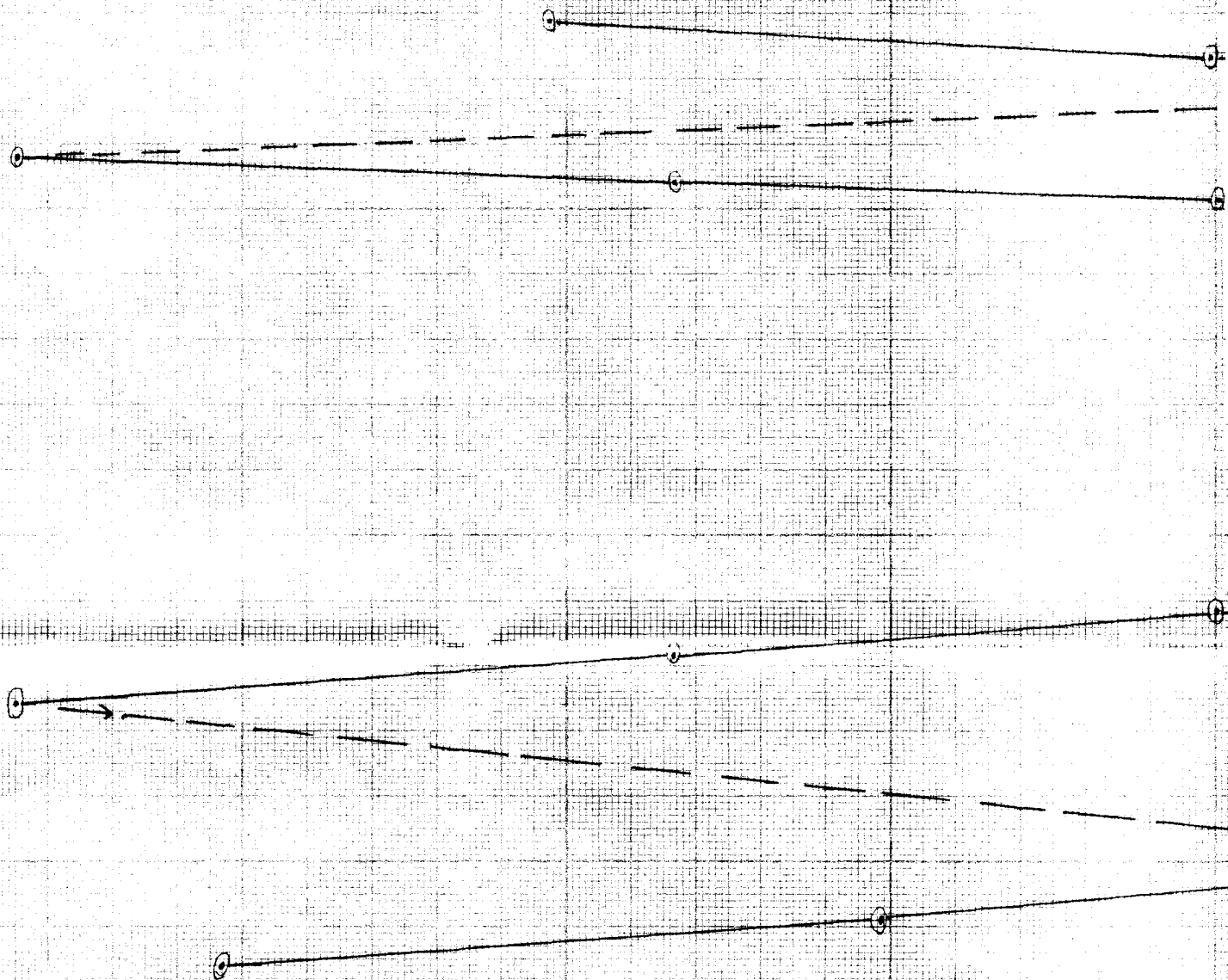
TOTAL DEPTH: 295.00M

CASING DEPTH: 18.00M

DEPTH SURVEYED: 295.00M

DATE SURVEYED: 10.11.77

SURVEYED BY: L. DENNY



ISA. MAG. N.

ISA. W. LONG SECTION

ISA. N. CROSS SECTION

CROSS SECTION

LONG SECTION



GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NO. ~~D-200/18~~

INV 18/1A.

PLANNING

Proposer: S. G. Brown

Depth: 300 m

Location: Investigator

Purpose of hole: To test for possible ore west of the Investigator
18 fault zone.

Co-ordinates: 216 595.5 E 564445.0

N

Inclination: -90°

Magnetic:

Bearing

Grid

Target Depth:

Target:

E

N

Approved by: M.C.R.

Date: 1-6-77

SURVEY

Survey Co-ords:

E

N

Survey bearing:

Grid

Magnetic:

Surveyed in by:

Date:

Actual Co-ords: 216 594.2 E 564 443.1

N

R.L. of Collar: 98.8

Inclination of Hole:

Picked up by: J. Cook

Date: 15-9-77

SUMMARY

Logged by:

Results:

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 26-7-77

Date terminated: 10-10-77

Casing:	Size:	HQ	NQ	
	Depth:	3	130	

Core:	Size:	NQ	BQ	HQ
	Depth:	130	250	3

Wedge Runoff:

Wedge placed:

Depth:

Proposed by:

Approved by:

Reason:

Extension:

Nil

Reason for termination:

Hole in granite

Condition of hole on completion:

Final depth: 250.0 m

Casing:

No

Cemented:

No

Bore hole survey:

Multishot to 250 m

Water:

No

Comments on drilling conditions:

Hole INV 18/1 abandoned in Fault Zone at 119 m.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H No. INV. 18/1A

Survey method: Multishot Camera

Final depth : 250.0 m

Casing depth : 118.0 m

Depth surveyed to: 250.0

Date surveyed: 10.10.77

Surveyed by : L. Denby

Checked by : G. Brown

Depth (m)	Bearing		Inclination		True vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected		N	W
60		356	0.75	-89.25	60.00	0.78	0.06
120		356	0.75	-89.25	120.00	1.56	0.12
160		231	1.25	-88.75	159.99	1.20	0.47
220		252	1.25	-88.75	219.97	0.88	1.19
250		277	1.25	-88.75	249.97	0.71	1.89

REMARKS:

GEOPEKO LIMITED -

ASSAY DATA

D.D.H. No. INV 18/1A

Sample No.		DEPTH (METRES)				ELEMENTS			COMMENTS
		From	To	Length	Length Recovered	W _O ₃	Mo		
KF	1	191.0	191.5	0.5	0.5	2.06	0.01		
	2	191.5	192.0	"	"	0.44	0.01		
	3	192.0	192.5	"	"	0.64	"		
	4	192.5	193.0	"	"	0.01	"		
	5	193.0	193.5	"	"	0.02	"		

SPECIFIC GRAVITY

Determined by:

Depth (m):

Rock Type:

S.G. :

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. DDH INV 18/1A

00 -

Upper Metavolcanics

Massive grey, strongly spotted, dominantly tremolite actinolite volcanics.

50 - 54 m. Pale grey to white unit. Volcanic texture remains but abundant feldspar development appears as a 'granitised volcanic'.

73.7 - 81.0. Pale grey to white unit as above.

88.6 - 92.1. Pale grey to white unit as above.

Fault 64 - 70.8. Only 4.6 metres core recovery. Strongly developed pug zone and carbonate and clay recemented breccia.

71.2 - 74.0. Core is moderately broken but probably not a fault.

A one centimetre diameter grain of coarse scheelite at 87.5 metres.

Fault Unit is essentially nothing more than a clay recemented breccia between

96.5 - 97.0

103.0 - 108.0

109.5 - 111.0

112.4 - 117.5

Finer grained, massive but lens spotted volcanics between

131.0 - 136.0 m

137.8 - 149.5 m

Scheelite vein 0.5 cm wide 123.6 m. Specks of scheelite at 130.2 m.

Below 161 metres moderate white feldspar developed but volcanics retain their overall black spotted appearance.

Aplite 169.5 - 183.8 containing very coarse (0.5 cm) white feldspars between 172 - 175 metres.

Major mineralization in hole occurs between 191.3 and 193.1 metres in a disturbed volcanic unit. The scheelite is most evident in small (10 cm long) intraformational breccia zones as blobs of coarse scheelite.

Quartz vein (barren) 193.2 - 193.6

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. DDH INV 18/1A

APLITE 196.0 - 250.0

Medium grained, very strongly crystalline. No mineralization.

250.0 m E.O.H.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NO. INV 18 -1

PLANNING

Proposer: S.G. Brown

Depth: 300m

Location: Investigator 18

Purpose of hole: To test for possible ore west of the Investigator 18

Co-ordinates: 216598.0 E 564450.0

Inclination: -90°

Bearing - Grid -

Target: - E -

Approved by: M.C. Rogers

N

Magnetic:

Target Depth:

N

Date: 1/6/77

SURVEY

Survey Co-ords: E

Survey bearing: Grid

Surveyed in by:

Actual Co-ords: 216594.55 E 564442.97

R.L. of Collar: 98.79

Picked up by: A. Grigulis

N

Magnetic:

Date:

N

Inclination of Hole: -90°

Date: 7/10/77

SUMMARY

Logged by: S.G. Brown

Results: Abandoned at 122.0m - see DDH INV 18/1A

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 26/7/77

Date terminated: 6/9/77

Casing: Size: HQ
Depth: 2.0

NQ
22.0

Core: Size: NQ
Depth: 2.0

NQ
22.0

BQ
122.0

Wedge Runoff:

Wedge placed: Nil

Proposed by:

Reason:

Depth:

Approved by:

Extension: Nil

Reason for termination: Abandoned bad ground.

Condition of hole on completion:

Final depth: 122.0

Casing: Left

Cemented: No

Bore hole survey: No

Water: Minor

Comments on drilling conditions: Bad below 92.0m

GEOPEKO LIMITED - KING ISLAND

CORE RECOVERY

D.D.H. No. INV 18 -1

INTERVAL (m)	LENGTH (m)	LENGTH RECOVERED (m)	% CORE RECOVERY
0.00 - 3.0	3.0	2.09	70
6.5	3.5	2.35	67
7.7	1.2	1.32	110
8.3	0.6	0.50	83
9.7	1.4	1.34	96
10.7	1.0	0.97	97
12.0	1.3	1.33	102
14.0	2.0	1.44	72
17.0	3.0	2.47	82
19.0	2.0	1.56	78
20.0	1.0	0.79	79
23.0	3.0	2.43	81
24.5	1.5	1.36	91
26.0	1.5	1.16	77
29.0	3.0	3.09	103
30.0	1.0	0.87	87
32.0	2.0	1.62	81
35.0	3.0	3.02	101
36.8	1.8	1.63	91
38.0	1.2	1.23	103
41.0	3.0	2.98	99
42.7	1.70	1.73	102
44.0	1.30	1.32	102
47.0	3.00	2.49	83
50.0	3.00	2.98	99
53.0	3.00	3.00	100
56.0	3.00	2.82	94
59.0	3.00	2.99	100
62.1	3.10	2.86	92
65.0	2.90	2.86	99
68.5	3.50	3.51	100
71.0	2.50	1.61	64
74.0	3.00	1.83	61
77.0	3.00	3.05	102
80.0	3.00	3.02	101
83.0	3.00	2.98	99
86.0	3.00	2.97	99
89.0	3.00	3.03	101
92.0	3.00	3.00	100
95.0	3.00	2.87	96
98.0	3.00	2.93	98
101.0	3.00	3.00	100
104.0	3.00	2.98	99

GEOPERO LIMITED - KING ISLAND

CORE RECOVERY

D.D.H. No. INV 18 -1

INTERVAL (m)	LENGTH (m)	LENGTH RECOVERED (m)	% CORE RECOVERY
104.0 - 107.0	3.00	2.99	100
110.0	3.00	2.97	99
113.0	3.00	2.98	99
116.0	3.00	2.83	94
117.0	1.00	0.85	85
119.0	2.00	2.93	98
120.0	1.0	0.89	89
122.0	2.00	1.61	80

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18-1

0.00 - 36.71

UPPER VOLCANICS

This unit consists of fairly typical dark grey green volcanics with in some areas a well developed spotted appearance.

These volcanics appear to be slightly more disturbed than normal with some of the zones having a 'curdled' appearance similar to that occurring in DDH INV 6 - 4.

Weathering is apparent along the joints down to about 23.5m after which the core is essentially fresh rock.

A small feldspar porphyry dyke is present between 23.39m - 23.91m.

A small amount of scheelite is apparent in a narrow 5m veinlet at 36.25m.

36.71 - 46.44

APLITE

A very fine grained mafic poor aplite. This aplite is feldspar rich and contains noticeable amounts of pyrite both in the matrix and also as veinlets and joint coatings.

This unit contains no scheelite mineralisation.

46.44 - 70.79

VOLCANICS

This is a continuation of the unit between the surface and 36.71m.

Initially the core continues to be solid but this slowly deteriorates with small breccia zones present until about the 68.0m mark. Between 68.0m and 70.79m the core is extremely broken and shattered. This broken zone is characterized by large amounts of chlorite along the joint planes.

A small very fine grained aplite is present between 50.15 - 50.54m.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 18 - 1

70.79 - 71.66

APLITE

A small unit of feldspar rich aplite similar to that between 36.71m. - 46.44m.

The core is broken and sheared here.

71.66 - 112.75

VOLCANICS

The volcanics are again similar to those between 0.0 - 36.71m and the core is quite solid between 71.66m to about 92.0m below which it becomes increasingly brecciated as the fault zone is approached.

A zone of badly broken ground occurs between 80.0m - 83.05m.

Scheelite is present in trace amounts at 83.48m associated with a small veinlet and at 84.61m where the core is more disturbed than usual.

Small quartz veins are located between 87.24 - 87.45m, 89.18 - 89.24, 93.70 - 93.78m, and 107.13 - 107.16m. Molybdenite is present in these quartz veins adjacent to their contacts with the volcanic rocks, and there appears to be a preference for the molybdenite to be richer on the lower contact rather than the upper contact of these veins.

Below 92.0m the core is badly broken and some areas of extremely broken ground also occur. There is large amounts of chlorite on all the joints and calcite and pyrite are present in the most broken areas. These may be minor faults related to the main ore.

112.75 - 121

BRECCIA ZONE

A zone of extremely crushed and broken volcanics with large amounts of pug present between the fragments.

This fault may relate to the large photo linear which follows the adjacent creek.

121.0 - 122.0
EOH

VOLCANICS

Fairly typical upper volcanics quite broken but not brecciated as the zone above.

DIAMOND DRILL HOLE SURVEY

EASTMEN - KODAK MULTISHOT CAMERA

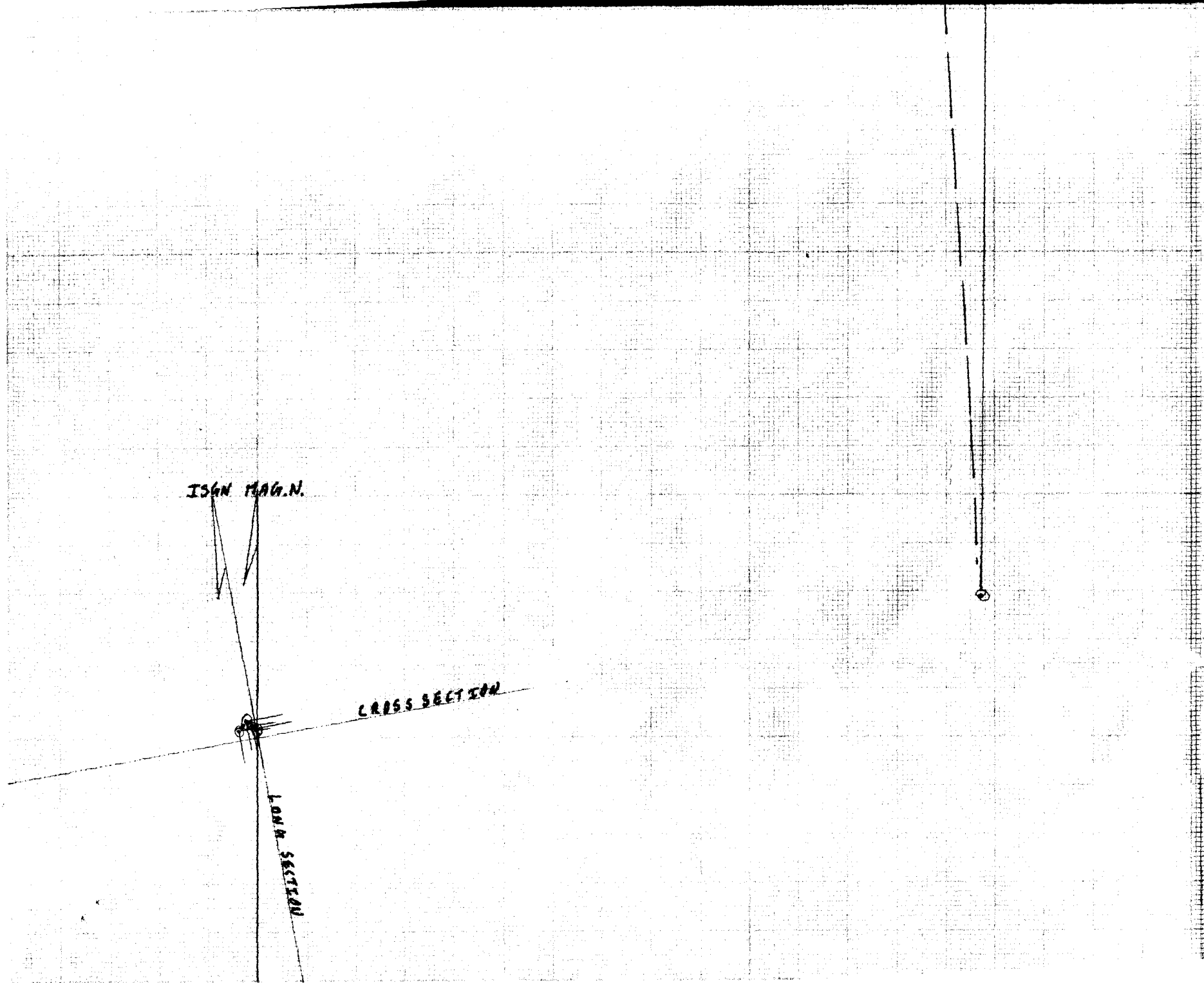
D.D.H. No. INV 18/1ADate Surveyed 10-10-77Total Depth 250.00mDepth Surveyed to 250.00mCasing Depth 118.00mSurveyed By L. DENBY

Depth	Drift Angle	Mean Drift Angle	Cos Sine	Vert. Depth	True Vert. Depth	Defl.	Drift Direc.	Mean Drift Direc.	Cos Sine	Co-Ords.		Sum of CO-Ords.	
										N/S	E/W	N/S	E/W
30	30m	.45	.45	<u>9999</u> 0131	30.08	30.08	.39	N 4 W	N 4 W	<u>9976</u> 0698	N .39	.03	.39 .03
1 * 30	60m	.45	.45	<u>9999</u> 0131	30.08	60.08	.39	N 4 W	N 4 W	<u>9976</u> 0698	N .39	.03	.78 .06
30	90m	.45	.45	<u>9999</u> 0131	30.08	90.08	.39	N 4 W	N 4 W	<u>9976</u> 0698	N .39	.03	1.17 .09
* 30	120m	.45	.45	<u>9999</u> 0131	30.08	120.08	.39	N 4 W	N 4 W	<u>9976</u> 0698	N .39	.03	1.56 .12
10	130m	.45	.45	<u>9999</u> 0131	10.08	130.08	.13	S 22 W	S 22 W	<u>9272</u> 7746	S .12	.05	1.44 .17
1 * 30	160m	1.15	1.15	<u>9999</u> 0218	29.99	159.99	.39	S 51 W	S 51 W	<u>6292</u> 7771	S .24	.30	1.20 .47
30	190m	1.15	1.15	<u>9999</u> 0218	29.99	189.98	.39	S 65 W	S 65 W	<u>4226</u> 9063	S .16	.35	1.04 .82
3 * 30	220m	1.15	1.15	<u>9999</u> 0218	29.99	219.97	.39	S 72 W	S 72 W	<u>3090</u> 9511	S .12	.37	.88 1.19
15	235m	1.30	1.30	<u>9997</u> 0262	15.00	234.97	.39	S 75 W	S 75 W	<u>2588</u> 9659	S .10	.38	.78 1.57
2 * 15	250m	1.15	1.15	<u>9999</u> 0218	15.08	249.97	.33	S 77 W	S 77 W	<u>2250</u> 9744	S .07	.32	.71 1.89

ISGN MAG.N.

CROSS SECTION

LONG SECTION



DDH INV 18/1A

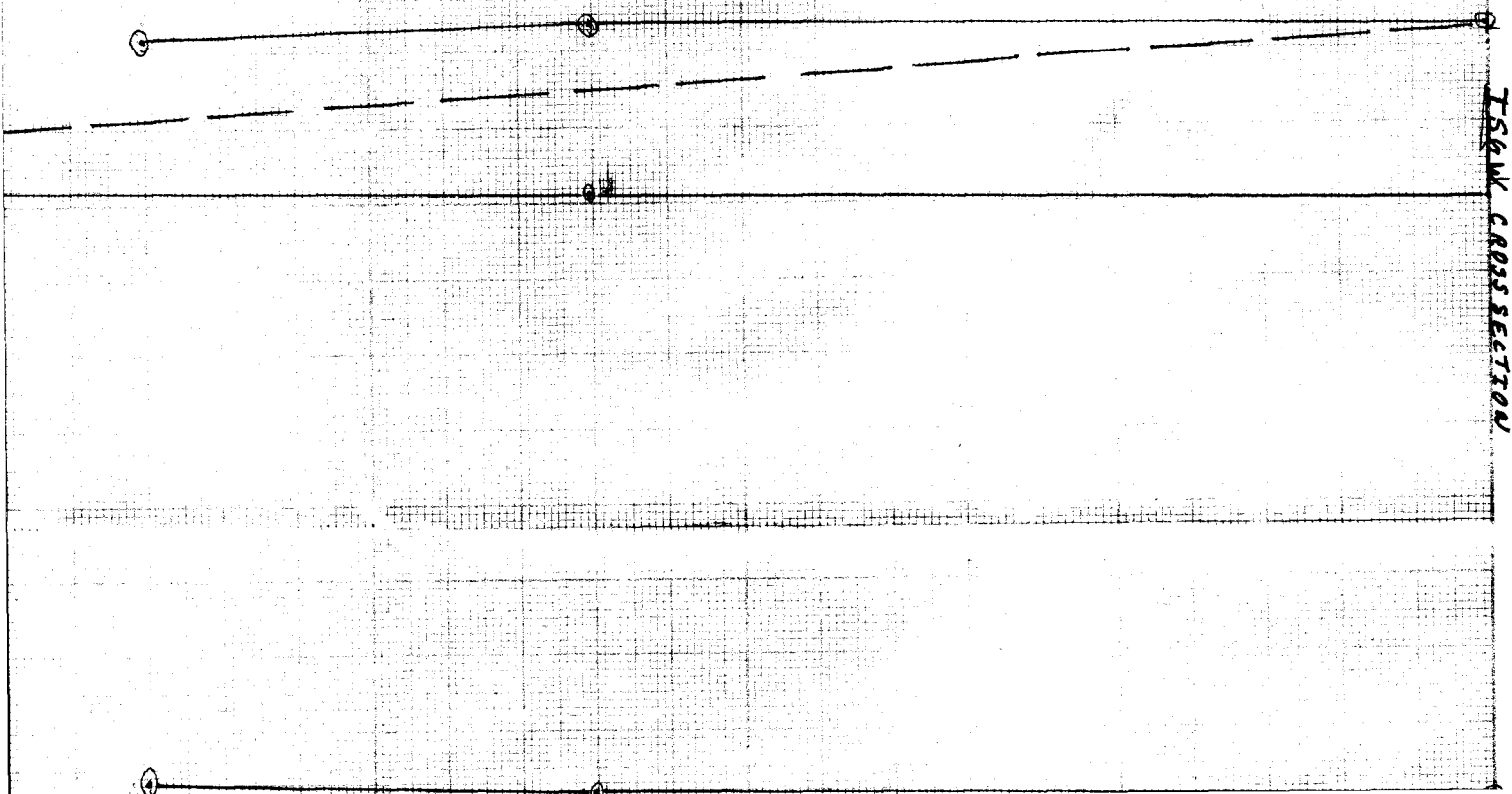
TOTAL DEPTH: 250.00m

CASING DEPTH: 118.00m

DEPTH SURVEYED: ^{250.00}
~~118.00~~

DATE SURVEYED 10-10-77

SURVEYED BY: L. DENOT



INV 6-4 (INV 18).

Investigator 6 - Forestry Block

216 645.53E 564 437.99N

7-2-72

15-4-72

336.20m

16-4-72

S.G.B.

SAMPLE No.	DISTANCE		LENGTH SAMPLED	LENGTH REC'D.	ASSAYS		
	FROM	TO					
	0.0	0.75	0.75	0			
	0.75	1.90	1.15	1.00			
	1.90	4.00	2.10	2.00			
	4.00	39.01	35.01	32.56			
A 5501	23.50	24.00	0.50	0.50	0.02	<0.01	
02	24.50	25.00	0.50	0.50	0.01	<0.01	
03	25.00	25.50	0.50	0.50	0.01	<0.01	
07	24.00	24.50	0.50	0.50	0.01	0.01	
	32.60	33.10	0.50	0.50	Not split as xtals of scheelite in veins		
A 5504	36.90	37.40	0.50	0.50	0.19	<0.01	

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
NO CORE		
VOLCANIC RUBBLE	Fairly large chips and fragments of iron stained volcanics, where a fresh surface is exposed, these rocks are fine grained.	
VOLCANICS	These are well fractured and have clay in these fractures. The amount of weathering varies but is highest where the aplite veins and fragments occur possibly due to alteration of rock by the aplite. Over all the rocks here are dark green in colour and have a finely speckled appearance.	
VOLCANICS - VARIABLE SEQUENCE	This unit consists of a whole mixture of types of volcanic rock ranging from very mica rich to fine grained green volcanics with silica 'spots' in it. Quite large amounts of quartz is present along with some Aplite: The aplite, as at 24.15m is often in blocks set in itself. The whole core has a brecciated appearance throughout with pieces of all the types of volcanics occurring in some areas. Even the quartz veins have a broken and shattered appearance. The core is mineralized along the fractures and also in the quartz and aplite veins. Pyrite is common on the fracture planes while the quartz has also Molybdenum and Chaleopyrite in it. Molybdenum is also associated with the aplite and with some of the fractures. From 34.50m these types of material are cut by veins or fingers of a feldspar porphyry. This rock has a fine grained matrix with various sizes of milky white feldspars set in it. These feldspars show zoning and inclusions. Both pyrite and Molybdenum are present on fractures here but in smaller quantities than before. The highest Molybdenum is seen at approximately 25m as a coating on a fracture plane, while at 37.20m a vein containing coarse crystals of very pure blue fluorescing	

DRILL LOG

DRILL HOLE No. 16-4

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
APLITE DYKE	Scheelite occurs. At approximately 33.0m there is a 3 inch (7.7cm) area in which a good concentration of scheelite speckles occur. Some minor specks of scheelite are to be seen occasionally throughout this unit and even more rarely hair line veins.	
	Light grey green and spotted in appearance. The texture appears to be sugary and there is quite a high content of mafic minerals. Small amounts of sulphides are present in this core both Molybdenum and chalcopyrite being visible here.	
VOLCANICS VERY MUCH DISTURBED & BROKEN	These volcanics are similar in types to the unit up to 39.0m except that they appear to be more broken and have a higher content of quartz in them as veins. There also appears to be a decrease in the amount of mica rich volcanic rock present here. The last small unit of feldspar porphyry is at approximately 44.90m. At 48.50m - 48.90m there is a large breccia zone with large angular fragments of volcanics set in a cement of quartz with some calcite.	
	From 52.18m - 52.58m the core is very chlorite rich and is cut by a series of calcite veins. At 58.20 - 58.45 there is a small aplite vein contact at approximately 52° LCA i.e. the same angle as the joints and contacts; where visible.	
	Units of a light green rock with apparently fluid textures are present in this area becoming more common towards the 70m point.	
	Quite large amounts of calcite are present in the ground mass of some of the volcanics which may account for the existence of flecks of scheelite in this area. The calcite forming an adequate environment for scheelite formation.	
	Mineralisation present is molybdenum, scheelite and pyrite. An area of approximately 10cm at 64.40 has quite a high concentration of	

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DRILL LOG

DRILL HOLE No. 16-4

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
	scheelite dispersed throughout it, while at 66.60 there is veins of quartz containing quite high Molybdenum. Some amounts of Aplite continue to occur as at 85.40m where a 20 cm vein occurs but usually they are only 3-4 cm wide. From 105.50m to 114.85m the volcanics are much more broken and contain much higher amounts of calcite and quartz in them as well as aplitic material. Quite a large amount of pyrite is present in some of the veins in this part of the series.	
BIOTITE HORNFELS	A fine grained dark purple-black coloured rock. Some small bands of greenish coloured mica rich rock are present in this unit. T.S. This has a high quartz content and a large amount of biotite as small laths.	
MUCH DISTURBED VOLCANICS	As above these are disturbed and broken quite badly with large numbers of angular fragments and large amounts of quartz as a matrix round these fragments in the most broken up zones. Calcite is apparent on a number of joint planes along with dull pyrite. The amount of brecciation here is less than from 105.50m to 114.85m but is still quite high.	
BIOTITE HORNFELS	This unit of Biotite Hornfels is invaded by quite a large amount of aplite. No. scheelite was seen in this unit while Molybdenum and pyrite were also lacking. The aplite cuts this unit in a whole series of veins of varying sizes.	
VOLCANICS MUCH DISTURBED	These are similar to the other units of this type except that they are more broken and mixed up here. A series of fault pugs occur at 127.56, 130.45m, 134m, 142.65 and 157.35m. There is a much higher content of quartz in the breccia zones and calcite remains minor	

GEOPEKO LIMITED, KING ISLAND

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DRILL LOG

I6-4

UNIT

GEOLOGICAL DESCRIPTION

TEMPERATURE

in these areas from 146.70m the calcite content in the ground mass of these volcanics increases to quite a noticable amount and at the same time the scheelite content which was low and scattered previously becomes, while still low, more noticable both in the ground mass and in some of the quartz veins. Quite high pyrrhotite is present throughout and forms bands at 152.50, 153.10 and 153.90m.

BIOTITE HORNFELS

This hornfels is a very fine grained dark coloured rock. It appears to have a high quartz content and a medium biotite content set in this matrix. Small amounts of pyrite occur all along the joints in this rock and some appears to be disseminated throughout.

VOLCANICS MUCH
DISTURBED

These are in the main disturbed and broken with some more or less homogeneous units occurring throughout. Quite large amounts of quartz are as usual association with the disturbed areas. Scheelite is found mainly as a few ~~spots~~ scattered throughout this unit but some crystals do occur with the quartz veins. The more uniform volcanics being almost barren. The brecciation is almost confined to the more micaceous volcanics.

APLITE DYKES

A light grey green even grained rock giving a sugary appearance on the broken surfaces. There is quite a high content of mafics and pyrite is visible throughout. The lower contact is quartz rich and contains a "fafted" block of volcanics.

SAMPLE No.	DISTANCE		LENGTH SAMPLED	LENGTH REC'D.	ASSAYS			
	FROM	TO						
	177.98	193.30	15.32	15.32				
A 5523	187.70	188.20	0.50	0.50	1.28	<0.01		
5524	190.00	190.50	0.50	0.50	0.10	<0.01		
	193.30	203.07	9.73	9.73				
5525	193.00	193.50	0.50	0.50	0.07	<0.01		
5526	193.50	194.00	0.50	0.50	0.02	<0.01		
5527	194.00	194.50	0.50	0.50	1.07	<0.01		
5528	194.50	195.00	0.50	0.50	0.02	<0.01		
5529	195.00	195.50	0.50	0.50	0.60	<0.01		
5530	195.50	196.00	0.50	0.50	2.05	<0.01		
5531	196.00	196.50	0.50	0.50	0.10	<0.01		
5532	196.50	197.00	0.50	0.50	0.78	<0.01		
5533	197.00	197.50	0.50	0.50	0.03	<0.01		
5534	197.50	198.00	0.50	0.50	0.08	<0.01		
5535	198.00	198.50	0.50	0.50	0.95	<0.01	8m at 0	
5536	198.50	199.00	0.50	0.50	0.34	<0.01		
5537	199.00	199.50	0.50	0.50	0.77	<0.01		
5538	199.50	200.00	0.50	0.50	0.54	<0.01		
5539	200.00	200.50	0.50	0.50	0.03	<0.01		
5540	200.50	201.00	0.50	0.50	0.29	<0.01		
5541	201.00	201.50	0.50	0.50	0.15	<0.01		
5542	201.50	202.00	0.50	0.50	0.50	<0.01		
5543	202.00	202.50	0.50	0.50	0.01	<0.01		
5544	202.50	203.10	0.60	0.60	0.04	<0.01		
	203.07	209.80	6.73	6.73				

DRILL LOG

DRILL HOLE No. 16-4

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
VOLCANICS - DISTURBED	These are not quite so disturbed as the preceding volcanic units and is much more uniform in type than they were. There are however a couple of small areas of Biotite Hornfels with quartz veins and scheelite at 187.82 and 190.14m.	
MIXTURE OF VOL- CANICS & HORNFELS	The Hornfels dominates here with only minor areas of volcanics present throughout. The hornfels are usually biotite Hornfels and the volcanics are usually homogeneous and not broken and disturbed as in the rest of the hole. The whole unit is cut by veins of quartz and small amounts of calcite and this gives a very disturbed and mixed up appearance to the unit when taken as a whole. The hornfels are very fine grained dark grey and fairly massive with only a few joints present mainly at the upper end of this section. Scheelite occurs here not only as veins and crystals associated with the quartz veins but also dispersed throughout the ground mass especially in the more calcitic areas.	
APLITE T.S. AT 207.65m	A fine grained grey to white aplite dyke. The rock being essentially quartz feldspar with very minor ferromagnesians present. The core in this case is very good with hardly any fractures at all. Quite large (up to 2 cm) masses of pyrite can be seen in this unit.	

.52%

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DIPLOMA HOLE No. 16-4

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
VOLCANICS	These have a very spotted appearance with dark green spots set in a fine grey green matrix and the unit is fairly uniform. The contact to the Aplite is in appearance like a breccia and has a small amount of scheelite present in a vein.	
RECEMENTED BRECCIA ZONE?	This area is a mixture of aplites and quartz. The aplites appear to be present mainly as fragments and the quartz provides the "cementing" agent.	
MIXTURE OF VOLCANICS AND HORNFELS	The volcanics are dominant in this unit with only small amounts of what appear to be Biotite Hornfels present. Some scheelite is present as fine veins throughout but at the areas of hornfels there are some course crystals of pure scheelite with no molybdenum, as shown by the blue fluorescence under U.V. light. The contacts between the volcanics and the hornfels have no regular appearance and there are quite a large number of various sized quartz veins present throughout so that the whole area has the appearance of being very disturbed and broken. The amount of hornfels increases away from the collar.	
APLITE DYKE	This dyke is quite course grained and consists of grey quartz and whitish feldspars. The ferromagnesians are small in comparison to these.	
MIXTURE OF VOLCANICS AND HORNFELS	The volcanics and the hornfels are in about even amounts here. The volcanics are fine grained and fairly light green in colour while the hornfels are brownish in colour and fine grained.	

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DIAMOND DRILL

SAMPLE No.	DISTANCE		LENGTH SAMPLED	LENGTH REC'D.	ASSAYS			
	FROM	TO						
A 5547	227.50	228.00	0.50	0.50	1.32			
A 5548	228.00	228.50	0.50	0.50	1.24			
	228.53	234.96	6.43	6.43				
	234.96	241.60	6.44	6.44				
	241.60	246.10	4.50	4.50				
A 5550	243.70	244.20	0.50	0.50	0.05	0.01		
A 5551	244.20	244.70	0.50	0.50	0.01	0.01		
A 5552	244.70	245.20	0.50	0.50	0.02	0.01		
A 5553	245.20	245.70	0.50	0.50	0.40	0.01	0.39	W ₃ by
A 5554	245.70	246.20	0.50	0.50	0.01	0.01	0.00	uranomet

LOG

DRILL HOLE No. 16-4

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
T.S. at 225.42 I 6-4-2	Scheelite is again dispersed throughout the unit with coarse crystalline blue scheelite in the hornfels areas. Some fairly minor amounts of quartz are also present mainly as veins.	
BIOTITE ACTINOLITE HORNFELS T.S. at 233m T.S. I 6-4/3	This rock is very fine grained light grey in colour and shows quite good banding in some areas. The core has a large number of fracture planes in it at 20° LCA while the banding is at 45° LCA, small amounts of calcite are present in this core but these are very rare. Scheelite mineralization is very low and occurs only as a very few specks of pure scheelite, molybdenum is not apparent in this unit. Pyrite is present in the joint planes.	
OLDER VOLCANICS. MASSIVE.	The junction between this unit and the above hornfels is marked by a 17cm wide pure white quartz vein.	
T.S. at 235.63m T.S. I 6-4/4 T.S. at 239.88m T.S. I 6-4/5	These volcanics are very uniform in appearance throughout, the only major variation apparent being a change in grain size with the finer part further from the collar. The rocks are grey green in colour and have a set of darker spots present through them. Some calcite and quartz are apparent as small veins and fracture fillings in this unit but there is no evidence of any of major disturbance that seems to have affected the younger volcanics overlying the hornfels.	
BIOTITE HORNFELS AND OLDER VOLCANICS	The Biotite Pyroxene Hornfels dominates over the older volcanics in this unit and minor amounts of Scheelite (blue variety) is present here both as coarse crystals and as finely disseminated scheelite in the ground mass. The calcite content is fairly low being mainly present as veins. At 243.50 metres there is an occurrence of scheelite which occurs as	

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DRILL LOG

DRILL HOLE No. 16-4

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
Aplite	circular ring in a concentric orientation rather similar in appearance to Liesegang rings. The last 40 cm of this unit are almost quartzite in appearance with this being greatest at the Aplite contact.	
	This is a grey white sugary textured granular aplite with large pyrite aggregates present. This unit is much more fractured and broken than the normal aplite and also contains a much higher mica content in the aplite. It is much less competent and has grey green clay pug on these fractures. This unit has a low dark mineral content throughout. The last 46cm of this unit are much finer and more uniform slightly green stained Aplite.	
Mixed Zone Of Volcanics, Hornfels and Quartz and Feldspar Rich Aplite	The first 3.5 metres are grey green in colour with dark spots through out. A fairly soft rock with calcite and quartz veins cutting it. Some parts of this look volcanic in nature but have been disturbed early in their history.	
	From this unit to 267.80m there is a grey white micaceous aplite with at 267m an area of very broken ground probably a fault pug which has an area of white quartz with what appears to be water channels in it.	
	From 267.80 - 268.35m The core is a fault zone with quartz and calcite cement holding fragments of the aplite together. These fragments are soft and broken.	
	From 268.35 - 269.64m The core is as above but with more quartz very little calcite and much larger units of aplite which are not so badly broken up.	
	From 269.64m - 272.08m The core is volcanics hornfels with towards the bottom a very disturbed core with fluid textures.	

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UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
Aplite	272.08 - 273.70 Zone of Aplite much darker grey than usual and with good felspar content. The last 50cm of this unit being a quartz rich rock with a volcanic appearance.	
	A light creamy grey aplite with a sugary texture throughout. Pyrite is common throughout usually as large aggregates which often have a crystalline outline to them, pyrite is also present as occasional veins with good cubic crystals present in them. Molybdenum is not apparent in this core and no traces of scheelite were seen under the U.V. lamp.	
	This unit of aplite appears to be much more micaceous in nature and has a higher joint fracture frequency than previously. All in all it is a much less competent rock type and has a very high mica pug on the joints. As in the case of aplite from 246.10 - 263.46m.	
	From 296.00m approximately the aplite becomes less fractured and has a lower content of micaceous matter in it. The joints are less chloritic but some of the feldspars still appear to be completely kaolinized.	

GEOPEKO LIMITED

D.D.H. No.: INV. 6/4-3

Location:

Investigator 6 Anomaly 4

Purpose of Hole:

To intersect Anomaly 4 Eye 1 at depth

Hole Proposed by: S. Grieve Brown Date 12/10/72

Surveyed in by: S. Grieve Brown Date 14/10/72

Proposed: 4950 W E 500 N

Surveyed: 4950 W E 500 N

Actual from
which Drilled: 218,174.16 E 564,583.26 N

Reduced Level
of Collar:

Bearing:- 360° Mine Grid Magnetic

Inclination:- -60° degrees

Target;
depth: ft.

Planned depth: ft.

Actual Depth: 143.26 metres ~~ft.~~

Date Commenced: 18/10/72

Date Completed: 11/12/72

Wedges Placed:

Extensions
(if any) Nil.

Checked: S. Grieve Brown

Summary Result:

77.88 m - 91.87 m (B lens Marble) unreplaced.

Remarks:

Very bad ground conditions throughout
this hole.

Surveyed to 51.81 m hole collapsed below
this point.

DRILL LOG

DDH: INV. 6/4-3.

0 - 9.75 ROTARY DRILLED.

Weathered volcanics, clay and soil.

VOLCANICS. 9.75

To 19.35 The core here is broken and shattered and consists of dense fine grained spotted volcanics. The fractures run in all directions and are very irregular. The joints are well weathered and have quite heavy ironstaining present on them.

From 19.35 to 36.78 metres. The core consists of quite large unbroken sticks which are of a fine grained grey green rock with quite noticable spotting. This spotting becomes more distinct in some areas.

From 36.78 - 50.90 metres. The core is very broken and in places the spotting is quite intense.

50.90 - 75.50 metres. More uniform Volcanics much less broken than above and with less spotting apparent in the core.

PYROXENE GARNET SKARN. 75.50 - 76.35

The unit starts in contact with the volcanics and becomes less skarnified as it goes to 76.35 metres.

The Garnet occurs as discontinuous bands and patches through out this unit but the % is greater towards 75.50 metres.

At 75.91 metres quite noticable amounts of molybdenum can be seen in the garnet bands. Small amounts of scheelite are also present in these bands.

BIOTITE HORNFELS. 76.35 - 78.88

This is a dark purple black rock type with some small bands of pyroxene in it. Occasional pods of garnet occur in this band probably as replacement of original calcite pods.

fracture 48° at 79.79 m

banding 68° at 78.11m.

MARBLE. 77.88 - 80.60

A light grey-white marble which appears to be rextalized and disturbed but not replaced. Small veins of possibly remobilized calcite transect this area.

No garnet is present here and scheelite is not apparent.

APLITE. 80.60 - 81.68

A fine grained Aplitic dyke with some zones containing large pink feldspar crystals, almost Grassy granite texture. The central portion of this dyke is very sugary and much broken.

MARBLE. 81.68 - 83.04

As above.

83.04 - 83.27

Very Broken zone which contains Biotite and Pyroxene Hornfels as well as a small amount of garnet.

MARBLE. 83.27 - 91.87

As above except that in some places banding is apparent in the rock, this is probably original bedding.
at 86.76 metres approximately 47° LCA.
at 90.50 metres approximately 31° LCA.

Puggy material occurs at 85.03 - 85.36
87.41 - 87.65
90.87 - 91.15

BIOTITE PYROXENE GARNET HORNFELS. 91.87 - 93.56

This unit is dominantly Biotite Hornfels with bands of calcite present through out, these bands have rims of garnet round them and around the garnet, rims of pyroxene.

The Biotite Hornfels itself has a fragmental nature in the ground mass with quite large (up to 0.5 cm) angular fragments being present. Banding approximately 56° LCA at 92.78 metres. Scheelite present in very minor amounts in some calcite bands.

BIOTITE HORNFELS. 93.56 - 97.58

This unit consists of a dark purple-black coloured rock type with grey coloured wispy splotches apparent in some areas. This wispy appearance of the core is almost parallel to the banding in the unit above 59° LCA at 94.97 metres.

Very occasional calcite ovoids are present in this unit but no scheelite is associated with them.

Some areas of this biotite hornfels are much coarser than others and in this unit the wispy grey streaks are not apparent. At 95.36 a small pod of grey "liver" quartzite is present, this appears to grade into the biotite hornfels in one direction while in the other the contact is sharp.

OLDER VOLCANICS. 97.58 - 101.28

The contact at 97.58 metres has a narrow zone (3cm) with contact effects and this cuts the core at 24° LCA. The volcanics are grey green in colour and become coarser towards the lower contact. A crystalline texture is visible through out these volcanics and a spotted appearance develops in the coarser parts.

The last metre of this core is badly broken and puggy material is present on the joints.

BIOTITE HORNFELS. 101.28 - 122.22

As from 93.56 to 97.58 Above. The wispy grey splotches are now much more apparent in the core and can be seen to have a size variation from pin spots up to 0.5 cm. in diameter. The smaller ones are quite sharp while the larger ones are hazy in appearance. In this unit two zones of Biotite Hornfels with quite large amounts of calcite nodules occur at 115.36 - 117.58 and from 121.30 - 121.92. These calcite pods have been partially replaced by garnet and have minor pyroxene rims in some cases. No scheelite is present in this unit. These areas may be unreplaced equivalents of the P.G.H. in the pit.

MARBLE. 122.22 - 122.35

With very minor garnet present here.

BIOTITE HORNFELS. 122.35 - 122.88

Very dark purple in colour with a streaky appearance which is parallel to cleavage at approximately 69° LCA.

GARNET SKARN. 122.88 - 123.75

This contains minor calcite and minor pyroxene. The garnet here is grossular and while molybdenum is present in this unit only two specks of scheelite are apparent.

CALCITE GARNET. 123.75 - 126.80

Only 20cm. recovered here a very soft calcite rich material with fine grossular garnets present in it and no scheelite, this is probably the equivalent horizon to what in the mine is the upper orebody in C lens.

GARNET CALCITE. 126.80 - 128.17

Only 66cm. recovered. There are a few chips of dark biotite pyroxene hornfels at the start of this unit which may be the remains of a thin band of this material between these two units.

This unit has a much higher Calcite content than the one above and is soft and water washed in nature. No scheelite is present here.

BANDED FOOTWALL BEDS ? 128.17 - 133.41 approx.

Only 26cm. recovered, consisting mainly of garnet with calcite in small amounts, and appears very washed out.

BIOTITE PYROXENE HORNFELS. 133.41 - 135.20

1.30 metres recovered. Very soft puggy broken dark green material, clay like in nature. This core has been very severely sheared.

QUARTZITE SEQUENCE. 135.20 - 143.26

Dominantly fine grey "liver" quartzites with in some cases quite well developed spotting present in them. A few minor areas appear to be slightly biotite rich and the whole unit has very blocky fracturing through out.

From 140.33 - 141.97 metres there is an aplite dyke cutting the quartzites, the contacts are regular at 38° LCA.

E.O.H. 143.76 metres.

DIAMOND DRILL HOLE NO. INV 6/4-2

LOCATION: INVESTIGATOR 6 ANOMALY 4.

CO-ORDINATES: 5300W 1150N 218100.026E 564795.672N

R.L.: 122.459m

DATE COMMENCED: 2/10/72

DATE COMPLETED: 8/10/72

FINAL DEPTH: 53.03m

DATE SURVEYED: NOT SURVEYED

LOGGED BY: S.G. BROWN.

SAMPLE No.	DISTANCE		LENGTH SAMPLED	LENGTH REC'D	ASSAY	
	FROM	TO				
	0	0.3048'	0.30	0.30		
	0.30	2.43	2.13	2.13		
	2.43	7.62	5.19	5.19		
	7.62	8.22	0.60	0.26		
	8.22	14.02	5.80	0.60		
	14.02	16.46	2.44	0.47		
	16.46	17.07	2.61	0.00		
	17.07	24.30	7.23	7.23		
	24.30	25.13	0.83	0.83		

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
TOP SOIL	Dark chestnut brown soil high in humus & with a good sand content.	
SOIL	Orange brown in colour with a high content of weathered rock possibly volcanics.	
SOIL	Orange brown soil very high in clay content and very sloppy.	
WEATHERED MINE SERIES SOIL GARNET	Very weathered rock of mine series type with garnet & green hornfels. Orange brown soil and clay. These are all that remain of what to all appearances must have been a banded carbonate rich unit. The garnets are red pink in colour.	
NO CORE		
BIOTITE PYROX- ENE HORNFELS BANDED	A finely banded unit consisting of alternating bands of black biotite rich material with light grey green pyroxene containing units. The rock is fine grained and the bands tend to be rather irregular in continuity but have a regular distribution. The dip of these bands varies greatly throughout the unit. 18.59M - 76° LCA, 19.45m - 78° LCA 20.31m - 76° LCA, 21.40m - 66° LCA 21.89m - 61° LCA, 22.86m - 73° LCA 23.94m - 90° LCA Minor bands of garnets are present in this unit and visible molybdenum is associated with these bands throughout here	
OLDER VOLCANICS	Grey green to brown in colour with a spotted appearance throughout. This unit appears to be dominantly actinolite hornfels and biotite and is very uniform and even grained.	

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GEOLOGICAL DESCRIPTION

GARNET
PYROXENE
HORNFELS

This unit is probably only a wider band in the Pyroxene Biotite Hornfels above. This is light purplish green coloured rock with remnant banding present here & there. This banding is disturbed & varies in direction throughout. Calcite is present at 25.50m and minor scheelite is present throughout.

BANDED BIOTITE
PYROXENE HORN-
FELS.

As above, here again molybdenum is quite considerable in the garnet areas and calcite is extremely rare. Banding is again at varying angles to the core axis.

26.00m - 90° LCA and here it is also 70° LCA.

27.40m - 65° LCA 28.46m - 60° LCA

31.61m - 61° LCA

A zone of brecciated Biotite hornfels occurs at 28.65m - 28.94m. The breakage appears to have occurred in gelatinous conditions.

DISTURBED
BIOTITE
HORNFELS

This unit contains patches of calcite (ovoids?) & pyroxene as well as some of garnets. Later veins of calcite are present cutting this unit at varying angles.

In some areas small rafts of darker biotite rich material are seen in the ground mass and irregular banding is present throughout. This unit probably is a disturbed portion of the Banded Biotite Hornfels above.

DISTURBED
BIOTITE
HORNFELS/
QUARTZITE

The dominant rock type here is a Biotite hornfels with minor amounts of pyroxene & garnet present in it. About 25% of this unit is made up of grey quartzite. The junction of these units is irregular & interfingered. Some banding is apparent at 39.50m where there are a series of fine pink bends in the quartzite. These are at about 80° LCA



DIAMOND DRILL HOLE NO. INV. 6/4-1

LOCATION: INVESTIGATOR 6. ANOMALY 4.

CO-ORDINATES: ^{MINE GRID.} 5300W 900W / ^{ISG.} 218088.214E 564720.584N

R.L.: 128.076m

DATE COMMENCED: 19/9/72

DATE COMPLETED: 29/9/72

FINAL DEPTH: 122.53m

DATE SURVEYED: 29/9/72

LOGGED BY: G. S. BROWN.

[illegible]

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
LAND SOIL & WEATHERED VOL- CANICS	The first 30.48m were drilled with a roller bit as the ground was known to be clay with floaters over volcanics from Gemco drilling.	
VOLCANICS	These volcanics vary in colour and texture throughout the sequence and show differing weathering rates which seems to be related to the coarseness of the crystals, the coarser grained volcanics being more heavily weathered. The weathering is also very high at the contact with the mine series rocks. Throughout this unit a fairly uniform fracture is developed at 60° LCA though some fractures at other angles do occur. There are very few veins present in this unit and it is completely barren of scheelite mineralisation. The overall colour of the volcanics is grey to grey/green though the weathered units often have a brown staining and are often quite badly broken.	
GARNETS	Recovery very low <20% within this unit. Only pink to brown coloured garnet chips were recovered and these had some minor scheelite present in them. The lack of chips of other rock types together with the high weathering noted in the base of the overlying volcanics suggests that if calcite had originally been present in this unit it would have been dissolved and not present. If marble or calcite had been present the rock unit would have resembled the footwall beds of the Mine area.	
BASIC VOLCANICS	(?) A darkish grey green massive structureless rock unit. Coarse to medium grained in appearance with quite high chlorite content present in some areas. The whole unit is badly broken and soft and the recovery is low.	
MARBLE	This is a light grey to dark grey disturbed unreplaced marble. Recovery is very poor between 48.16 and 52.12 with only 20cm	

[illegible]

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
MARBLE	being cored. Some minor garnet development is visible at the lower contact but only minimal scheelite is apparent in the last 10cm, associated with garnet near the contact to the Biotite Hornfels. Only 2 real joints are apparent at 40° L.C.A. the rest of the core being broken and pitted by solution. This is probably due to the volcanics which overly this region being impemiable and channeling the water through the top of the mine series.	
DISTURBED BIOTITE HORNFELS	A fairly hard fine grained rock varying in colour from dark purple/black to black. Spotting is apparent in the more purple coloured unit (57.55m - 58.83m) with the spots being up to 25mm in size. Towards the top of this unit is a zone of blobs whisps and fragments of various types. The fragments are mainly a light green colour and appear to grade into the matrix with a halo type effect. The blobs and whisps are of two types, calcite and white quartz rich material. This unit extends from 55.23m to 56.08m with most of the disturbance at the upper end. The last 46cm of this unit consists of what appears to be faulted material recemented with quartz and calcite, the calcite becoming dominant to the junction with the banded footwall type beds. The fracture pattern is irregular throughout with only a few well developed joints being apparent at 56.00m and 49° L.C.A. 58.87m " 35° L.C.A. Calcite present on the joint	
CALCITE GARNET HORNFELS	This unit varies greatly throughout its length but marble and pink garnets generally make up about 90% of the rock altogether. The unit is initially fairly uniformly banded but this banding becomes more disturbed towards 67.41m. The banding varies in its angle to core axis but is generally 60° - 70°. 62m - 73° L.C.A. 65.57m - 60° L.C.A. 67.15m - 67° L.C.A.	

[illegible]

LL LOG

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
BIOTITE PYROXENE CALCITE HORNFELS	Pyroxene, light green in colour, is also present in this unit and is usually associated with the garnet rich areas. Some minor Biotite Hornfels also occurs in the unit especially towards the lower end. Only minimal scheelite is found in this unit with a few crystals at 64.09m and 66.67m. This unit in part resembles the banded footwall beds in No. 1 orebody and grades into the underlying unit.	
	The two dominant rock types in this unit are a disturbed Biotite Pyroxene Hornfels and a disturbed, remobilized, unreplaced grey white marble. The Biotite Pyroxene Hornfels is purple/brown in colour with minor areas of light green to grey bands occurring through it. This unit probably correlates with the Gemco rock types D and E obtained in the area of Anomaly 4 peak 3. Garnets are present and are usually found in the marble or, if in the Biotite Pyroxene hornfels, in the light grey/green bands associated with minor calcite. Banding is present throughout but this varies from area to area and is usually very disturbed and contorted. Evidence of very minor faulting is apparent at 73.42m. Variations in grain size and texture are apparent in the Biotite Pyroxene hornfels parts of this unit and quite often blebs or fragments may be seen. Some minor pyrite is also present at 71.48m. Almost no scheelite mineralisation is present in	
	this unit. Banding 68.16m - 60° LCA	
	71.32m - 74° LCA, Joint	
	- 40° LCA. 72.25m the bedding varies from almost parallel LCA to almost perpendicular LCA in a 20cm area. This unit grades into the underlying one.	
	From 74.91m there is only minimal marble or calcite present in the core and the unit consists mainly of Biotite Pyroxene hornfels disturbed and re-	
	mobilized with two quite large amounts of	
DISTURBED BIOTITE PYROXENE HORNFELS		

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DIAMOND [

[illegible]

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
	garnets present at 75.40 to 75.92m and 79.52m to 79.90m. The garnets are again associated with the light green pyroxene rich areas and minimal calcite. The rest of the unit consists of very disturbed bands of dark purple/brown and green rock all inter-mixed with each other and only occasionally is any true banding visible in this unit e.g. at 80.14m - 60° LCA, which is parallel to cleavage. A great deal of this core is composed of large wispy contorted units of light grey/green pyroxene and calcite set in a matrix of dark green and purple/brown biotite pyroxene hornfels. T.S.	
BIOTITE HORNFELS	This is a uniform purple black almost un-banded unit of Biotite hornfels. The whole unit is distinguished by patches of alteration where the rock has been bleached light grey-white in colour. These altered areas are centered on fractures in the core which have a coarser grained grey green infilling present in them. The core does not break along these recemented fractures but irregularly. Halos of alteration can be seen extending from the fractures into the Biotite hornfels and in a few cases calcite is found associated with these halos and occasionally the fractures.	
QUARTZ HORNFELS (?)	This is a fine grained (bleached?) white quartz rich banded hornfels similar in colour to the bleached units in the Biotite Hornfels above and may be this type of alteration carried out to a much higher degree. The banding is quite evident in this unit though the angle does vary throughout and some quite disturbed units are present - 51° LCA at 87.44 m. Areas with bleached garnets and very minor scheelite also occur in this unit.	

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LOG

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
'QUARTZ' HORNFELS/ BIOTITE HORNFELS	Here the quartz hornfels contains quite large amounts of Biotite hornfels which occurs as uniform Biotite hornfels bands. Banding is still present in the lighter coloured material - 41° at 89.47m. No garnet is present in this unit.	
DISTURBED ZONE	This consists of a mixture of the white 'quartz' hornfels with some Biotite hornfels and quite large amounts of a garnet pyroxene hornfels (similar in appearance to B lens in 20/B but probably not related). From 91.68 - 92.21m there is a zone rich in marble with quite large amounts of sulphides mainly pyrrhotite and quite large amounts of garnets. Minor scheelite is present in this unit associated with the garnet.	
UNREPLACED MARBLE	This marble is light blue/grey/white in colour, the white recrystallized marble occurring as veins and zones within the blue grey marble. This marble is disturbed and remobilized but not replaced, it appears to all intents to be a pure marble with only a few centimeteres of garnet skarn occurring at either end. No scheelite mineralization is present in the marble.	
QUARTZITE SEQUENCE	A sequence of highly variable quartzite generally well broken and fractured. The dominant rock type is a fine grained grey (liver) quartzite which has in some areas occasional spots. Zones of dark brown/purple mica rock occur in the first 50cm of this unit and these are similar to the Biotite hornfels in the mine series. To 98.30m the core consists of a light grey quartzite quite well fractured and containing some narrow veins and occasional spots. From 98.30m to 98.50m there is a narrow zone of shaley material rich in pyrite veins and dark grey in colour. From 98.50m - 99.30m the core is a dark grey fine	

[illegible]

DRILL LOG

UNIT

GEOLOGICAL DESCRIPTION

FRACTURING

grained rock with pink=purple 'splotches' and a large number of quite large grey spots. From 99.30 - 110.36m the core consists of a light grey to yellow coloured quartzite. The colour varies depending on the coarseness of the grain size with the finer units being more yellow in colour. An aplite vein occurs at 100.18m but this is only 10cm wide. Some banding occurs at 104.50m at approx 54° LCA while at 105.00m the angle is approx 42° LCA. From 110.36m to 112.98m the core consists of a dary grey slightly hornfelsed rock type which has in areas quite a high content of pyrite and is also heavily spotted in some zones. From 112.98m to 114.97m the core is a light grey green fine grained quartzite the last 20cm of which are disturbed and broken and the last 7cm contain quite a large number of spots. At 113.35m there occurs a 5cm vein of very felspar rich pegmatite similar to that found just west of the pit. From 114.97m to 116.64m a dary grey spotted rock occurs. These spots show some orientation to veining and appear to be slightly disturbed. Pyrite is quite common in the veins. Aplite veins occur at 115.00m and 115.90m but these only obtain a width of about 5cm. From 116.64 to 122.53 (E.O.H.) the core consists mainly of a yellow grey fine grained quartzite often with a blotchy appearance. Some small amounts of the darker grey rock are also present as at 118.84 to 119.52m.

DIAMOND DRILL HOLE NO. DDH I6-2

LOCATION: Investigator 6 Eastern Section

CO-ORDINATES: 3,300W 400N (401.1N 3298.4W)

R.L.: 348'

DATE COMMENCED: 13th December, 1970

DATE COMPLETED: 7th January, 1971

FINAL DEPTH: 520' (158.5m)

DATE SURVEYED: 5th December, 1970

LOGGED BY: J.J. Gresham

218 671.96

564 476.50

STATION		LENGTH		REMARKS
FROM	TO	SAMPLED	REC'D.	

DDH

0 305' 3.05 nil

3.05 6.10 3.05 2.40

6.10 33.80 27.70 27.70

UNIT

GEOLOGICAL DESCRIPTION

NO-CORE

BIOTITE HORNFELS

A very broken sequence of very fine grained massive light green-grey biotite hornfels. Rock is strongly jointed with joints filled with limonite. When rock is broken it is generally grey in colour very fine grained and siliceous and minute grains of biotite.

Similar in nature to the above. Dominant joints appears to be 0° - 10° , 30° , 45° , 60° . Bedding to core angle is 65° at 8.0m. There is a chloritic zone around 9.0m and again at 11.5m. Bedding is noted at 12.0m, 15.20m

and 15.8m. In places the rock may contain small amounts of tremolite and actinolite. After 20.0m. rock is more massive and generally darker green to grey in colour. Bedding is well exhibited at 20.8m and 23.0m. There is a fault with associated breccia from 24.5m-25.0m. Core is still very broken and jointed with limonite filling the joints planes.

Rock is generally fairly rich in chlorite and the chlorite content appears to increase in depth with the rock becoming greener and more basic in appearance. The rock is always biotite rich, no actinolite was noted and the sequence is non-magnetic. There is a vugh at 33.4m with pyrite. The contact to the biotite-pyroxene garnet hornfels appears to be fairly gradational.

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DL-1

DEPTH (M)

LENGTH
SAMPLED

LENGTH
RECORDED

DEPTH

33.80

40.50(132.8) 6.70

6.70

40.50

41.60

1.10

1.10

41.60

44.80

0.35

0.35

41.95

44.80

2.85

2.85

44.80

45.10

0.3

nil

45.10

76.50

31.40

31.40

A4349

50.1

50.6

0.5

0.5

MINERALOGICAL DESCRIPTION

BIOTITE PYROXENE GARNET HORNFELS

Green rock similar to the preceding sequence of biotite hornfels but containing pyroxene as well as biotite. Initially the rock contains very small calcite fragments but they become larger down the hole, the largest being 10cm often the fragments are partially replaced by garnet (grossularite and andradite) and have green-pyroxene rich?reaction rims. There is a 15cm fine grained skarn band at 35.7m but it does not carry scheelite mineralisation. The sequence carries no scheelite mineralisation. Contact with hornfels is very abrupt.

GREY BIOTITE- HORNFELS

A very fine grained grey, dense, massive rock with the rock becoming browner toward the bottom of the sequence.

PYROXENE rich SKARN

A narrow band of green, pyroxene rich, very fine grained banded skarn.

BROWN BIOTITE- HORNFELS

Initially a coarse grained massive biotite hornfel but rock becomes greyer and finer grained with depth. There are some very pale green siliceous bands at 43.60m.

LOST CORE ON CONTACT

MARBLE (C LENS)

A compact grey to white marble. in the first 1.2m there are green pyroxene bands with associated grossularite and andradite. Between 46.3m and 48.1 and 49.3 marble is white with associated blebs and bands of andradite garnet. The core here is very soft. After 49.3 the marble is generally greyish in colour with some bands of garnet. Between 50.3 and 50.6m there is a band of skarn richly mineralised with scheelite. The rock continues to be banded after this with varying amounts of pyroxene, grossularite and andradite bands.

DATE	TIME	TO	LENGTH SAMPLED	DEPTH RECD.	REMARKS
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4310 ~~A3410~~	68.2	68.9	0.7	0.7	
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	76.5(241)	80.60	4.10	4.10	
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A4311	76.5	77.0	0.5	0.5	
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A4312	77.0	77.5	0.5	0.5	
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A4313	77.5	78.2	0.7	0.7	
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GEOLOGICAL DESCRIPTION

The rock continues to be banded after this with varying amounts of pyroxene, grossularite and andradite bands. There is a 25cm horizon of biotite hornfels at 52.2m. Between 54.0 and 55.6m there are bands and blebs of andradite garnet with very sparse scheelite at 55.0m and 55.2m. Between 55.6 and 56.6 marble is grey and banded and after 56.6 is whiter with occasional bands of biotite and pyroxene hornfels and bands and blebs of andradite garnet. After 60.0m rock is generally grey in colour and often has bands of biotite-pyroxene hornfels with associated grossularite and andradite. The frequency of these bands increases with depth down the hole toward the bottom of the sequence skarn bands are common especially between 72.0 and 74.5m where there is also an abundance of biotite hornfels bands. This rock has the appearance of a banded footwall but the dominance of marble places it still in the marble horizon. There is very minor scheelite mineralisation associated with some of the skarn bands i.e. 66.2, 66.6. The end of the sequence is very soft and crumbly..

BIOTITE HORNFELS

Near the contact the rock is disturbed and contains pyroxene hornfels and some garnet patches. From 76.8-77.1 there is a andradite skarn band mineralised with scheelite. After this the rock is a laminated biotite hornfel consisting of dark brown and light grey-green thin laminations. There are small 2-5cm aplite dykes at 77.6m, (small amount of molybdenum) 77.9m, 78.6m. Between 78.0-78.3 there is another skarn band of very sparsely mineralised with scheelite. Between 79.9-81.1 there are calcite and pyroxene bands. Other very minor skarn and aplite bands-concordant with the bedding appear throughout.

80.60 83.30 2.70

83.30 84.60(277.6) 1.30 1.30

B

84.6 85.1 0.5 0.5

Al

85.1 86.5 1.4 1.4

BI

86.5 86.9 0.4 0.4

API

A4314 86.9 87.4 0.5 0.5

PART
BIO

BASIC DYKE

*See map
in log*

Coarsely porphyritic dark grey basic dyke similar to the one mapped in the footwall beds of the open cut. The upper contact displays disruption of the biotite hornfels and the dyke is fine grained. The buld of the dyke consists of large (up to 1.5cm) phenocrysts of subhedral feldspars sometimes with reaction rim. Also there are ovoids, often indistinct, of quartz. Near the bottom of the dyke 83.7m there is a fragment of aplitic material which has a merging contact with the dyke. At 82.8 the dyke merges gradually into aplitic material and the last 50.cm is aplite.

BIOTITE HORNFELS

Similar to preceding section but more massive and uniform. Laminated in nature.

APLITE

A very fine grained grey to white aplite dyke. Thr rock is essentially quartz - with very minor ferromognesion. The core is extremely broken.

BIOTITE HORNFELS

A finely laminated grey and brown biotite hornfel. Core is fairly massive and compact.

APLITE

Very fine grained to white aplite. Exactly the same in nature to the previous dyke. Contacts are concordant with the bedding.

PARTLY REPLACED
BIOTITE HORNFELS

A banded rock with biotite hornfels and very fine grained bands of skarn. There is minor scheelite from 86.9-87.0 and calcite at 87.4. There is evidence of mobility within the rock and micro-faulting is common.

WINDY ISLAND.

			LENGTH SAMPLED	
A4316	87.9	88.5	0.6	0.6
A4317	88.5	84.1	0.6	0.6

89.1 93.30 4.20 4.20

93.30 113.0 9.70

GEOLOGICAL DESCRIPTION

PYROXENE SKARN

From a very disturbed contact with the preceding sequence, the contact containing calcite and minor dispersed scheelite mineralisation, the rock becomes a massive structurless, pyroxene rich fine grained skarn. It is generally unmineralised but carries minor scheelite in places. The lower contact is also disturbed and carries calcite and minor pyrohotite.

BIOTITE HORNFELS

A laminated pale green-brown-grey rock similar in nature to the preceding sequences of biotite hornfels. Between 89.4 and 90.0 there are fragments of a pale grey-green limey fine grained rock. Generally the sequence is uniformly bedded although there are minor kinks and folds and in places some degree of brecciation. Towards the end of the sequence the rock shows a greater degree of fracture and disturbance and there are numerous quartz veins. There is a skarn band with one speck of scheelite at 90.60m.

BASIC VOLCANICS

A sequence of highly variable ~~sham~~ dark green to grey basic, ferromagnesium rich rocks. Initially (up to 94.3) the rock is porphyritic in nature with "voids and blebs" of quartz up to 5mm in diameter. After this the rock is a soft, greenish coarsely crystalline rock with a blotchy appearance. There appear to be clusters of biotite. After 96.0m there is an increase in the leucocratic content (feldspar) of the rock. After 101.0m the rock is darker and carries abundant large (2-4mm) illdefined crystals of feldspar(?).

At 109.5m there is a gradational change from the preceding rock type to a pale grey fine grained rock with occasional large (1-2mm) aggregations of dark black ferromagnesium mineral. It is felt that this sequence is a fine grained variety of the preceding sequence and belongs to the volcanic unit. The rock is matted around 111m and is very mica rich in places. The sequence appears to be non-magnetic.

STATION DATA

LENGTH
SAMPLED

NO. OF
REDS

NO. OF
GREENS

113.0

128.1

15.1

15.1

128.1

158.5

30.4

30.4

GEOLOGICAL DESCRIPTION

BANDED HORNFELS

A sequence of banded brown and grey biotite hornfels with greenish pyroxene (?) rich bands, calcite and garnet bands. There is a 7cm aplite at 114m. The sequence is generally uniformly bedded. Although there are occasional minor folds and kinks and some micaceous faulting is also noted. Between 119m and 120.5m the rock is a more massive brown biotite hornfels. Quartz, calcite and pyrite veining is common throughout. The number of skarn and calcite bands increase notably after 121.70m and occasional specks of scheelite are noted at 121.8, 122.5, 123.1, 126.7. The rock also shows a greater degree of disturbance, brecciation and disruption towards the end of the sequence and to some degree a greater degree of replacement. There is abundant chalcopryite at 127.8m. Contact with quartzites is abrupt.

QUARTZITE SEQUENCE

A sequence of grey massive quartzites often carrying abundant quartz veins. There is an aplite between 129.5 and 130.3m. Between 134.7 and 135.2 rock has a matted texture. Between 136.6 and 137.2 and 138.4-143.3 rock is a pale green aphanitic quartzite. There is a 15cm aplite at 136.4m. The pale green rock is more intensely jointed. At 143.8 there are two narrow bands (5-6cm) of porphyroidal rock. Between 144.5 and 148.0 the rock is more intensely broken and there is a possible fault at 146.0m and again at 147.2m. The rock is again paler in places (i.e. 154.8-156.4). There is a large (.5m) aplite between 150.6-151.1, and small <5cm aplite veins at 153.9m, 154.4m, and 158m. The quartzites are generally well fractured and jointed and display no sedimentary structures.

END OF HOLE.

DIAMOND DRILL HOLE NO I6-1

LOCATION: Investigator 6 Eastern Section

CO-ORDINATES: 3300W, 750N, 3312.8W, 745.3N

R.L.: 305.1

DATE COMMENCED: 18th November, 1970

DATE COMPLETED: 3rd December, 1970

FINAL DEPTH: 496 Feet (151.18m).

DATE SURVEYED: 3rd December, 1970

LOGGED BY: J.J. Gresham.

218 618-92 E. 564 580-94
622

nil

18.24

21.34(70')

2.90

1.00

21.34

24.69

3.35

3.35

23.69

24.91(81.7)

1.22

nil

LITHOLOGICAL DESCRIPTION

CLAY OVERBURDEN

0-4.88 Cored with NMS barrel
Basically a yellow brown compact clay
although there is a variety of colours
from grey, green, white-to yellow brown.
Some charcoal fragments were noted in the
uppermost metre of the hole.

CLAY OVERBURDEN

Creamy coloured clay grading to a dark grey
clay. At the end of the sequence there are
two rock chips of grey massive biotite
hornfels.

No core recovered - Driller changed to B.Q.
equipment at 4.88m.

BIOTITE HORNFELS

Initially oxidised laminated rock. Then
semi-oxidised and desilicified grey, biotite
hornfels. Rock then grades into a more
massive unweathered sequence of laminated
biotite hornfels. The rock is constituted of
bands < 0.5cm of brown biotite hornfels and
banded light-grey to dark-grey hornfelsic
rock. Micro faulting and disruption of the
biotite bands are noted.

Bedding - core axis angle is variable but
generally between 60° - 80° .

BIOTITE HORNFELS, of a similar nature to the
previous section. Between 23.70 and 24.30
there is a zone of finely laminated grey-
green very fine grained siliceous rock with
laminations - core axis angle of 30° . Bedding
to core - axis angle in the hornfels is
much higher (60° - 80°). Within the laminated
rock at 23.80 there is a band of pink
grossularite.

CLAY ZONE, possible fault zone.

STATION 1000 - ISLAND.

DATE		LENGTH SAMPLED	LENGTH REC'D	REMARKS
24.91	31.09(102)	6.18	6.18	
31.09	38.83	2.76	2.76	
33.83	36.58	2.75	2.00	
36.58	46.50	9.92	9.92	

LITHOLOGICAL DESCRIPTION

DISTURBED MARBLE
LENS

A highly disturbed and remobilized marble horizon. Remnants of a finely laminated limestone can be seen in places. At 27.33 there is 35cm of massive brown biotite hornfels and thinner bands at 30.58m and 30.78m. Throughout there are bands, wisps, and concentrations of pink grossularite - no scheelite mineralisation.

BANDED CALCITE-
BIOTITE-HORNFELS
HORIZON

A banded calcite, biotite hornfels, and minor pyroxene hornfels sequence. Associated with the calcite bands are intermittent bands of grossularite and andradite crystals. Banding to core axis angle is generally between 40° - 60° although in places folding can be seen in the core, i.e. 31.80m.

Fault breccia at 33.20 and the rock immediately below this is weathered.

As above but core is very broken and rubbly and this section may be strongly faulted. Definite breccia occurs at 34.60m and elsewhere the rock is strongly broken and joints are infilled with calcite.

More compact calcite-hornfels - Biotite Hornfels Horizon. Zones of small scale mobilisation are noted and a small fault occurs at 38.40m. A small fault breccia occurs at 39.00m. Between 40.00m and 41.30m there are abundant calcite veins in the biotite hornfels. The rock is quite strongly broken in this area. Between 42.00m and 45.20m the rock is predominately limestone, remobilized to some degree although bedding can be seen in places and bedding to core axis angle is 62° at 45.00m. There are patches of garnet and hornfels throughout. The last metre of the section is predominately biotite hornfels with minor calcite and skarn bands. Some folding noted

[illegible]

GENERAL DESCRIPTION

Limestone initially thin 20cm band of fine grained skarn with molybdenum and scheelite mineralisation into biotite hornfels.

BIOTITE HORNFELS

Laminated biotite hornfels, green grey in colour grading to brown hornfels. Rock is well bedded and displays little variation in core axis bedding angle (50°-60°). Joints are generally filled with calcite and there are minor skarn bands at 47.70m, 48.00m and 53.20m, 53.80m. Rock is strongly jointed in places with the joints generally paralleling the bedding plans. Minor faulting is noted in places.

BANDED HORNFELS

A laminated biotite-pyroxene hornfels with some garnet bands and very minor scheelite at 60.20m.

BASIC VOLCANIC

Medium to coarse grained, massive, structurless rock. Grey-green on surface but when broken rock is very dark, micaceous and basic in appearance. There are grossularite veins in the fires ½ metre. Minor quartz veining.

DISTURBED BASIC VOLCANICS

A similar sort of rock but is full of quartz flecks, wisps, "collocrysts" and veins. Very minor sulphide mineralisation. This may be a remobilised portion of the enclosing rock unit.

BASIC VOLCANICS

Dark green very basic in appearance often displaying felty texture common of volcanics. The rock is rather structurless but has a spotted appearance in places from the clusters of biotite. This rock being very basic maybe the source of the nickel anomaly in the area. Large faults with associated breccia and slickensiding is noted. at 68.5m 69.4m

Colour, composition and texture of the rock is highly variable and in places shows varying degrees of disturbance. the unit is non-magnetic.

W03 Mo

73.95 77.12(253) 3.17 3.17

77.12 77.80(255.3) 0.68 0.68

77.80 83.50

A4296	83.50	84.00	0.5	0.5	0.04	LO.01
4297	84.00	84.50	0.5	0.5	0.05	0.011
4398	84.50	85.0	0.5	0.5	0.05	0.014
4299	85.00	85.50	0.5	0.5	0.04	LO.01
43.00	85.50	86.00	0.5	0.5	0.34	0.025
43.01	86.00	86.50	0.5	0.5	0.07	0.016
4302	86.50	87.00	0.5	0.5	0.07	0.048
4303	87.00	87.60	0.6	0.5	0.04	LO.01

87.60 88.90(291.7) 1.20 1.20

11/10/2005

W03 Mo

73.95 77.12(253) 3.17 3.17

77.12 77.80(255.3) 0.68 0.68

77.80 83.50

A4296	83.50	84.00	0.5	0.5	0.04	LO.01
4297	84.00	84.50	0.5	0.5	0.05	0.011
4398	84.50	85.0	0.5	0.5	0.05	0.014
4299	85.00	85.50	0.5	0.5	0.04	LO.01
43.00	85.50	86.00	0.5	0.5	0.34	0.025
43.01	86.00	86.50	0.5	0.5	0.07	0.016
4302	86.50	87.00	0.5	0.5	0.07	0.048
4303	87.00	87.60	0.6	0.5	0.04	LO.01

87.60 88.90(291.7) 1.20 1.20

OFFICE

70

RECEIVED
JAN 1961

100

88.90

91.00

1.10

1.10

91.00

93.88

2.88

2.88

93.88

151.18

57.30

55.70

GENERAL DESCRIPTION

BIOTITE HORNFELS SKARN BANDS

Basically biotite hornfels with minor skarn bands and "blebs". Minor calcite is associated with the skarn. Initially the rock is disturbed but becomes more uniformly bedded and towards the end of the sequence with bedding to core angles of 60° . Skarn occurrence diminishes with depth. Contact with limestone is very broken and sheared maybe a fault contact.

LIMESTONE

Initially a bedded grey limestone with bedding to core angles of 70° . This has associated pyrite and calcite veins. Rock becomes progressively more disturbed with depth. With some degree of brecciation the last 50cm is white-cream recrystallised marble. Contact with quartzites is very broken.

QUARTZITE SEQUENCE

A sequence of highly variable quartzites generally very broken and fractured. The dominant rock type is a grey fine grained quartzite occasionally spotted. There are zones of dark grey non siliceous mica rock very similar to biotite hornfels. Between 95.5 and 96 rock is very fine grained very siliceous and "blotches" in appearance. There are pink-purple "blotches" in a light green rock. The rock is spotted at 97.0m. Between 99.0m and 110.0m the rock is very fine grained, light green in colour with irregular patches and "blotches" of pink material. Between 100.10m and 100.50m there is a pink quartz rock aplite with a 35° contact to the core axis. Core is less intensely broken after 102 metres. Between 106m and 107m there is a fine grained green rock with pink patches and at 107.8m a 10cm band of dark grey biotite rich rock with blebs and crystals of quartz. At 108m the rock is spotted. Between 109 and 110m rock displays some degree of bedding. Between 110m and 110.5m rock is spotted. Pyrite is common in veins and in joints.

QUARTZITE SEQUENCE

Patches of spotted rock and highly micaceous rock occur throughout the sequence. Between 112.5-115.5 rock has a greenish appearance there is a 40cm dark grey porphyritic horizon at 113.5 metres with quartz phenocrysts. At 113.5 there are perfect pyrite cubes disseminated throughout the core. From 115.5m to 117.3 rock is very micaceous, dark grey and generally spotted in nature. Between 118.0m and 124.6 rock is intensely fractured and broken. Between 117.60 and 119.20 rock is greenish and very fine grained with occasional pink patches. Between 122.6 and 123.5 there is a very large massive milky quartz vein. Rock is spotted at 124.0m. Rock is moderately intensely broken from 124.6-133.6. Between 127.20-129.70 rock is generally greenish in colour with occasional pink blotches and between 130-131 rock more massive and grey in colour. At 132.2 rock is greenish in colour again. Rock is spotted and very micaceous at 125.7-125.8m. Between 133.5m and 142.0m rock is very intensely broken and fractured. After 133.5m rock is generally grey in colour although there are green patches at 141.1m and 142.30m with associated green colouring. One metre of core was lost between 138.3 and 139.3m. From 143m to the end of the hole the rock is much more massive and less intensely fractured. Generally it is a light grey colour but between 146.7 and 148.10m rock is a light cream pale green colour. 60cm of core was lost over the last metre of the hole. Generally the rock is fine-medium grained with no structure. There is minor development of spotted rock in places.

END OF HOLE.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 3 - 6

PLANNING

Proposer: S.G. Brown Depth: 120m
Location: Investigator 3. Perry's Block west.

Purpose of hole: To test mineralisation encountered in Percussion Drill hole 21A.

Co-ordinates: 215716 E 564460 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers. Date: 10/10/73

SURVEY

Survey Co-ords: 215716 E 564460 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: 215715.94 E 564465.31 N

R.L. of collar: Inclination of hole: -90°

Picked up by : J. Cook. Date:

SUMMARY

Logged by : S. G. Brown.

Results: Only minor scheelite recorded in this hole.

N.B. Hole precollared as PDH 45

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 29/10/73

Date terminated: 1/11/73

Casing: Size : NQ
Depth : 44.19

Core: Size : BQ
Depth : 122.53

Wedge Runoff:

Wedge placed: Nil.

Depth:

Proposed by :

Approved by:

Reason:

Extension: Nil

Reason for termination: Entered Grassy granite Final depth: 122.53m

Condition of hole on completion:

Casing : Pulled

Cemented : No

Bore hole survey: Multishot

Water: Nil

Comments on drilling conditions: Moderate to good.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 3-6

Predrilled to 44.19m

44.19 - 44.39m

CALCITE GARNET SKARN

A small band of calcite garnet rock similar to the chips at the end of P.D.H. 45.

44.39 - 45.59m

BIOTITE HORNFELS

By comparison to the usual biotite hornfels this is a coarser grained unit than usual, it has a more spotted appearance than usual as well, in this area.

45.59 - 46.63m

BANDED BIOTITE PYROXENE CALCITE GARNET HORNFELS

The relative amounts of these bands vary over the length of this intersection but the calcite and garnet are the most common units. Some scheelite is present in the garnet bands where ~~with~~ ^{both} grossular and andradite garnets are present.

Banding at approximately 80° L.C.A.

46.63 - 60.66

~~FINELY~~ BANDED BIOTITE PYROXENE HORNFELS

This unit is slightly higher coloured than usually with the pyroxene hornfels being light grey green in colour and the biotite hornfels a very dark grey brown colour. The colours darker slowly down the sequence but never become the colours normal in the mine area.

Banding is at approximately 80° L.C.A. initially decreasing to 74° L.C.A. The last 1.30m of this unit are extremely broken.

Aplites are present in quite large numbers here occurring as follows -

49.02 - 49.22 almost pegmatitic, very feldspar rich.

?
50.14 - 50.19 very fine grained quartz feldspar rich.

51.25 - 52.41 contains coarse quartz and feldspar in patches almost pegmatitic in small areas.

52.60 - 53.26

AS ABOVE.

55.03 - 55.62

Now more grey than pink here, lesser feldspar and higher quartz and biotite.

56.28 - 57.69

A pink fine grained feldspar rich aplite with some of the feldspars weathered to kaolin almost, very soft and broken in some areas.

60.66 - 62.79m

Vug . No core.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 3-6

62.79m - 66.20m

MARBLE

A very finely banded well crystalline blue - green calcite hornfels.

Banding at 62° L.C.A.

Quite a considerable number of veins occur in this unit including some very carbonaceous areas.

66.20 - 71.90

PODDED BIOTITE HORNFELS

The overall appearance of this unit is one of a black - purple biotite hornfels with minor to trace pods of calcite pyroxene and garnet.

These pods are unevenly dispersed throughout the area and often the areas low in pods have a blotchy appearance due to an irregular pyroxene distribution.

71.90 - 75.35

APLITE

A fine grained grey aplite of fairly coarse texture with a moderate biotite content present in it.

75.35 - 87.25

BIOTITE HORNFELS

Initially over the first couple of metres this unit is podded as above but below this it becomes much more uniform with minor bands present through it. Some zones rich in pyroxene occur at various positions in this unit but these never become major and the overall picture is one of a uniform purple brown biotite hornfels with minor banding at approximately 62° L.C.A.

87.25 - 91.21

APLITE

Almost identical to that above.

91.21 - 91.96

BIOTITE HORNFELS

A uniform black biotite hornfels with occasional pods of calcite present in it. This unit is badly broken.

91.96 - 93.31

PYROXENE HORNFELS

This unit consists dominantly of a grey green pyroxene hornfels with minor garnet (grossular) and calcite present in it especially at either end of the unit. In the first metre the pyroxene hornfels is very badly shattered and puggy. In the last 40cm minor amounts of biotite hornfels are apparent and minor disturbed banding occurs also.

93.31 - 95.55

BIOTITE PYROXENE HORNFELS

The dominant rock type here is biotite hornfels but about 20% of the unit is made up of pyroxene hornfels. The whole unit is very disturbed and has an overall 'blotchy' appearance.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 3-6

95.55 - 100.23

BIOTITE PYROXENE GARNET CALCITE HORNFELS

A banded unit in which the normal biotite pyroxene hornfels dominates but with large irregular disturbed garnet and calcite rich areas in it.

The garnet areas usually contain minor pyroxene and show disturbed relic bedding.

Only very minor scheelite is present in these garnet rich zone.

Bedding is at: 76° L.C.A. at 96.8m.

100.23 - 109.72m

BIOTITE PYROXENE HORNFELS

An extremely finely banded unit of pyroxene biotite hornfels with minor bands of calcite garnet hornfels present between 104.72 - 105.36 and between 107.54 - 109.72m.

Very fine spotting is apparent in the pyroxene rich areas.

Bedding is at 76° L.C.A. at 102.0m
67° " at 103.80m
72° " at 106.0m
71° " at 109.0m

109.72 - 111.07

BIOTITE PYROXENE GARNET HORNFELS

This is a continuation of the above unit in which the garnet content has increased quite considerably to about 30% of the core. Only trace scheelite is apparent here.

110.07 - 115.34

BIOTITE PYROXENE HORNFELS

A finely banded unit as between 100.23 and 109.72m.

Bedding at 113.0m approximately 71° L.C.A.
115.3m " 56° "

115.34 - 117.01

GRANITE

A typical grassy granite intersection with the biotite altered to chlorite in some areas.

Some evidence of shearing is present throughout.

117.01 - 122.53 ~~60m~~ BIOTITE PYROXENE HORNFELS WITH MINOR CALCITE AND GRANITE

This unit is in effect a continuation of the above biotite pyroxene units with thin beds of calcite and garnet present throughout.

The dips in this area have been disturbed due to the proximity to the granite.

Bedding at 118.0m approximately 45° L.C.A.
119.4m " 35° "
122.0m " 44° "

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 3/6/

Survey method : Multishot camera
Final depth : 122.53
Casing depth : 44.20

Depth surveyed to : 73.15
Date surveyed : 1/11/73
Surveyed by : V.P.
Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected		N	W
6.10	358° 15'	348° 15'	00° 52'	-89° 8'	6.10	0.09	0.02
30.48	358° 15'	348° 15'	1°	-89°	30.48	0.51	0.11
60.96	359°	349°	1° 45'	-88° 15'	60.96	1.54	0.25
73.15	321°	311°	1° 15'	-88° 45'	73.15	1.78	0.40

REMARKS:

ISG 10°

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 3/5

PLANNING

Proposer: S.G. Brown

Depth:

Location:

Purpose of hole: To test mineralisation encountered in PDH 21A 50m north of this hole.

Co-ordinates: 215666 E 564510 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers Date:

SURVEY

Survey Co-ords: 215666 E 564510 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date: 9/9/73

Actual Co-ords: 215 666.22 E 564510.79 N

R.L. of collar: Inclination of hole: -90°

Picked up by : J. Cook. Date:

SUMMARY

Logged by : S.G. Brown

Results: Intersected minor subgrade mineralisation.

N.B. precollared as PDH 44.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 25/10/73

Date terminated: 28/10/73

Casing: Size :

Depth : BX
74.68

Core: Size :

Depth : BQ
126.95

Wedge Runoff:

Wedge placed:

Depth:

Proposed by :

Approved by:

Reason:

Extension:

Reason for termination: Below mineral horizon. Final depth: 126.95

Condition of hole on completion:

Casing : Nil

Cemented : No

Bore hole survey: Multishot Camera.

Water: Nil

Comments on drilling conditions: Good.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 3/5

74.86 - 76.58

BIOTITE PYROXENE HORNFELS

This unit is purple - brown to grey green in colour, with very irregular distribution of the green pyroxene in a biotite hornfels ground mass. The pyroxene rich areas occur both as irregular bands and also as fine spots with calcite cores in them.

76.58 - 84.04

BIOTITE HORNFELS

This unit is dominantly a grey-purple-brown coloured biotite quartz hornfels with irregular patches of more grey-green pyroxene rich hornfels present in some areas.

Some minor amounts of calcite are present as small pods in this unit.

84.04 - 86.71

APLITE

A fine grained grey aplite composed of quartz feldspar and books of biotite. This is a finely even grained unit with only very minor areas with large feldspars.

86.71 - 96.59

BIOTITE HORNFELS

As above.

96.59 - 98.83

PYROXENE GARNET HORNFELS

Light green pyroxene hornfels with honey brown grossular garnets. Some areas of calcite (pods) are also present here while from 97.67 - 98.06 there is a band of biotite hornfels similar to the above.

98.83 - 103.30

BIOTITE PYROXENE HORNFELS

This is an originally finely banded unit with a very much disturbed appearance due to fragmentation and disturbance of the banding.

The brown biotite hornfels is here probably slightly dominant over the light grey green pyroxene hornfels though some areas of almost pure pyroxene hornfels are present here, banding at 75° LCA.

Minor pyrite and chalcopyrite are present as blebs in some of this core.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 3/5

103.30 - 105.67

PYROXENE GARNET CALCITE HORNFELS

This unit is rather irregular in the distribution of these minerals with different areas having different minerals dominant in them.

There is a small 10cm unit of banded biotite pyroxene hornfels here.

The pyroxene is a very pale green colour while the garnet is a pale pink coloured grossular garnet.

105.67 - 119.25

BANDED BIOTITE PYROXENE HORNFELS

This is a very finely banded unit comprised mainly of very fine dark brown biotite hornfels bands set in a pale grey green pyroxene hornfels matrix.

Some minor bands of calcite and garnet occur especially between 114 - 115m.

The core is very broken from 114.45 - 115.62m and quite large numbers of calcite veins are present in this area. These veins are irregular and are presumably fillings along fractures.

Banding is at 75° LCA to 60° LCA throughout this unit, it varies in quite short distances of 50cm in cases and this is partially due to the disturbances which affected the fine beds causing them to break and fragment. The last 50cm have a high content of pyrrhotite and pyrite.

119.25 - 120.86

MIDDLE VOLCANICS

A light grey green fairly finely crystalline and spotted middle volcanics. Quite large amounts of sulphides (pyrrhotite) are present in this unit.

120.86 - 126.95

BIOTITE PYROXENE GARNET CALCITE HORNFELS

This is a banded unit consisting of the above rock types and it is considered impractical to further sub divide it as the bands are too narrow to be correlatable from hole to hole. The biotite is dominantly purple-black in colour and is probably the dominant unit making up about 30% of the rock with grey white marble bands as a close second. The grossular garnet and the pyroxene are minor. Banding 65° LCA.

E.O.H.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 3/4

PLANNING

Proposer: S.G. Brown
Location: Investigator 3.

Depth: 150m

Purpose of hole: To test mineralisation encountered in PDH 21A, 50m west of this hole.

Co-ordinates: 215616 E 564460 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers. Date:

SURVEY

Survey Co-ords: 215616 E 564460 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: 215617.38 E 564459.14 N

R.L. of collar: Inclination of hole: -90°

Picked up by : J. Cook. Date:

SUMMARY

Logged by : S.G. Brown

Results: Only minor mineralisation encountered.

N.B. precollared to 79.29m as PDH 43.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 17/10/73

Date terminated: 23/10/73

Casing: Size :

BX

Depth : 78.94

Core: Size :

BQ

Depth : 145.67

Wedge Runoff:

Wedge placed: Nil

Depth:

Proposed by :

Approved by:

Reason:

Extension: Nil.

Reason for termination: Entered Grassy granite at Final depth: 141.26m.

145.67

Condition of hole on completion:

Casing : No.

Cemented : No

Bore hole survey: Multishot /

Water: No.

Comments on drilling conditions:

Good.

79.29 - 98.07

BIOTITE HORNFELS

This unit consists of a grey/purple/black rock type very fine grained with quite a high proportion of quartz, it is a well hornfelsed unit.

Some minor amounts of pyroxene banding occur in various areas while from 84.50 - 85.37 the core is for the first 41cm very pyroxene rich with a largely fragmental appearance and then becomes biotite hornfels with minor podding of pyroxene and calcite present in it.

The greyer bands in this unit tend to be very irregular both in frequency and in direction. Most of the contacts to what pyroxene beds present are irregular and at varying angles to the core axis, at 82.76m 67°, fractures at 42° LCA.

98.07 - 99.90

BIOTITE PYROXENE GARNET HORNFELS

This is a banded unit consisting mainly of garnet and pyroxene with lesser amounts of biotite and minor bands of calcite. The junctions between the various parts of this unit are very irregular and in some areas the garnets appear as little clusters of garnet in pyroxene back ground.

The garnets are pink (grossular) and the pyroxene here is a light grey green coloured unit. Banding irregular 81 - 90° LCA.

99.90 - 103.80

BIOTITE PYROXENE HORNFELS

This unit shows quite considerable banding, which in this area, has been quite badly broken and disturbed so that banded fragments appear at a variety of angles to the core axis and some areas are almost unbanded but more mixed up in appearance. The last metre of this unit is not so disturbed and is much more biotite rich with only very minor pyroxene present in these areas.

103.80 - 106.27

PYROXENE GARNET HORNFELS

This unit contains minor biotite and calcite bands but overall is dominantly a banded unit of light grey green pyroxene with pink brown grossular garnets.

Banding while present at about 78° LCA tends to be lost in the more massive pyroxene garnet areas. Minor mineralisation is present in this unit between 105.19 and 106.23m.

106.27 - 108.16

BIOTITE HORNFELS

This unit is similar to 79.29 - 98.07m and is a grey/purple/black coloured unit. Here the rock shows slightly more fine banding of pyroxene hornfels but this is extremely fine, 67° LCA. Some very minor pods of ore are apparant in this unit.

108.16 - 116.84

FINELY BANDED BIOTITE PYROXENE HORNFELS

This is an extremely finely banded unit, of grey - grey green-light grey-black in colour consisting of very fine alternating bands of biotite and pyroxene rich hornfels.

To a lesser extent bands of pink grossular garnet are present as quite large bands throughout but these are not nearly as common as the pyroxene biotite units. Very minor calcite is present in bands at about 145.50 - 155.50m. Banding is at 67° LCA.

116.84 - 118.06

BANDED PYROXENE GARNET HORNFELS

Here the garnet and pyroxene are completely dominant to the biotite but otherwise this unit is similar to the above with fine banding still apparent in the pyroxene rich areas. Quite large amounts of calcite are apparent in the garnet rich areas of this unit. Banding at 69° LCA.

121.06 - 123.04

GRASSY GRANITE

The normal grey-black-pink grassy granite.

123.04 - 137.42

BANDED BIOTITE PYROXENE HORNFELS

As above consists of bands of black-purple biotite hornfels with numerous bands of grey-green pyroxene hornfels interspersed. Lesser bands of garnet and calcite also occur in this unit but the garnets are grossular and no mineralisation is apparent in this core except between 136.93 - 136.97 where andradite garnets and good scheelite are apparent in a calcite band. Banding 77° LCA at 137.02,
70° LCA at 134.56m
65° LCA at 130.69m.

137.42 - 139.71

VOLCANICS

A light grey-green spotted volcanic with a finely crystalline nature to it.

139.71 - 140.88

BANDED BIOTITE HORNFELS

This unit is dominantly black-purple bh with only minor banding present in it. These appear to be due to minor pyroxene.

140.88 - 141.14

SKARN

An andradite garnet skarn with minor calcite and with black tourmaline needles present in it. Scheelite is present in moderate-large amounts over the 26cm of the skarn.

141.14 - 141.26

BANDED BIOTITE HORNFELS

As above.

141.26 - 145.67

GRASSY GRANITE

145.67

E.O.H.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 3/4

Survey method : Multishot camera
Final depth : 145.39
Casing depth : 79.25

Depth surveyed to : 143.26
Date surveyed : 24/10/73
Surveyed by : M.C.
Checked by :

Depth (m)	Bearing		Inclination		True vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected		N	E
6.10	26° 15'	16° 15'	3°	-87°	6.09	0.31	0.09
30.48	26° 15'	16° 15'	2° 30'	-87° 30'	30.44	1.33	0.39
60.96	26° 15'	16° 15'	3° 07'	-86° 53'	60.89	2.87	0.84
91.44	26° 30'	16° 30'	4° 22'	-85° 38'	91.30	5.25	1.52
121.92	29°	19°	3° 52'	-86° 08'	121.70	7.30	2.09
143.26	30°	20°	3° 00'	-87°	143.01	8.43	2.47

REMARKS TSG 10°

DIAMOND DRILL HOLE NO. INV.3-3

LOCATION: **Investigator 3**

CO-ORDINATES: **215 820E 564 435N**

R.L.: **122.606**

DATE COMMENCED: **21-6-72**

DATE COMPLETED:

FINAL DEPTH: **182.46m**

DATE SURVEYED:

LOGGED BY: **S.G.B.**

RILL LOG

DRILL HOLE No. INV.3-3

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
Soil and Clay	This unit starts as a dark brown (chocolate coloured) soil with an increasing amount of green in it as one proceeds down the hole. The last 0.4m is an orange brown colour.	
Clay & Rock Bands	This unit has bands of hornfels well weathered with in between some areas which have weathered completely to clay. This weathering would appear to have occurred in situ as the core angle of the bedded hornfels bands is 75° LCA which is about what is expected in this hole.	
Banded Biotite Pyroxene Hornfels	This unit is very broken and good core is very rare. However where it is recovered the rock is a fine grained grey coloured rock finely if irregularly banded, no calcite being present in the recovered parts. No scheelite or garnet was encountered. Bedding angle 68° LCA.	
Volcanics	From 13.56 - 14.33 these are light grey unbanded fine grained rocks. In a fresh surface they can be seen to comprise a mass of crystals in a felted aggregate. This zone shows a gradual increase in crystal size to 14.33m.	
	At 14.33m the volcanics have large crystals and large red spots due to weathering giving iron staining. This large grained unit is very fractured and broken and has been recovered as blocks of up to 6cm in size.	
	To 25.8m the volcanics are hard and fine grained grey green in colour with dark spots very uniform and with few fractures present in this area.	
	From 25.80m - 36.23m. The volcanics are very soft and easily broken with only about 60% recovery over this unit. The unit appears to have quite a high permeability as a flow in excess of 6,000 gallons per hour has been encountered and is holding up quite well.	
	From 36.23 - 40.89. The volcanics are again hard and grey fine grained spotted rocks with very	

RILL LOG

DRILL HOLE No. INV.3-3

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
	occasional units of the softer material present here.	
Biotite Pyroxene Hornfels	This unit is marked by wide bands of alternating Biotite rich and Pyroxene rich units. In this hole there is a much higher number of garnet bands present but the mineralization is still very low and only minor scheelite occurs. The garnet bands are concentrated in the upper part of this unit. The pyroxene bands are light grey green in colour. The banding in this unit is much more irregular than in the other holes. Some bands of high pyrrhotite with some chalcopyrite are present here.	
Pyroxene Garnet Hornfels	This unit is quite well banded in some areas but is much more disturbed than in the other holes. From 49.33m - 51.48m the core is generally light green with disseminated scheelite in it, the garnet here is very irregular in its occurrence. From 51.48 - 56.08m the unit is much more uniformly banded than above but some areas of disturbance still occur. The Scheelite is here concentrate with the garnets in the bands and very little is disseminated else where.	
Aplite	The aplite is light creamy white in colour very fine grained with quite large amounts of black needles of Tourmaline throughout. Small amounts of Pyroxene garnet hornfels occur in this aplite	
Pyroxene Garnet Hornfels Inclusion	noticably at 56.70 (20cm) and 57.61 - 58.16 where a contact between pyroxene garnet hornfels and a biotite hornfels occurs at 57.96m. Some minor scheelite occurs in the Pyroxene Garnet Hornfels.	
Biotite Hornfels	A dark brown purple coloured rock unit with light white-grey irregular spots present along with some areas relatively rich in pyrrhotite.	

DRILL LOG

DRILL HOLE No. INV.3-3

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
Banded Biotite Pyroxene Hornfels	This unit varies down the hole the first 23cm have some fine garnet bands in them. Down to about 64.31m the fine bands are disturbed to a minor extent but after this point they become very regular and compare very well with that found in hole Inv.3-1. and Inv.3-2. A small sill of aplite occurs at 61.06 but apart from this there is little else intruded into this unit.	
Aplite	A creamy pink coloured aplite with quite large amounts of fine black needles of tourmaline as well as small books of black biotite which tend to have an uneven distribution. Some areas have quite large pinkish feldspar crystals and in these areas the amount of biotite is relatively low. This unit has conformable contacts relatively undisturbed and is sill-like in nature at least in this core.	
Finely Banded Biotite Pyroxene Hornfels	As the lower part of the unit above 61.16 to 70.46m. The first metre is cut by narrow aplite veins sometimes ptegnatic in character, there are 4 of these veins in all. The last 34cm is much more finely banded than the rest and becomes lighter in colour towards the granite-aplite contact.	
Aplitic Granite	Essentially a variable aplitic rock as above but the lower half of it tends to look like Grassy granite.	
Marble Unreplaced	A light grey to green coloured finely banded rock recrystalized but unreplaced. Some disturbance has gone on throughout this unit and the whole unit looks slightly more altered than in the other holes. No garnet or scheelite is visible in this unit. Banding at 55° LCA at 83.50m.	

UNIT

GEOLOGICAL DESCRIPTION

CORRELATION

Disturbed Partially
Replaced Pyroxene
Biotite Hornfels

This unit is very disturbed and contains calcite ovoids and fragments through out. This appears to be the equivalent of the P.G.H. in the mine and is the down dip extension of the Biotite hornfels and Disturbed Banded Pyroxene Hornfels underlying the upper Marble band in Hole 3-1. The replacement is most common in the lower part of this unit from 102.87m where the replacement is almost 40% of the core this replacement is very disturbed Garnet Pyroxene Hornfels almost indistinguishable from the P.G.H. in the mine area.

The upper part of this unit is usually black purple except where the area of tilloidal looking rock occur in which areas it is a light grey with darker biotite hornfels fragments and calcite fragments present in it. These parts have a very disturbed appearance over all. Some small areas of very minor scheelite occur in this upper portion.

Banded Biotite
Calcite Garnet
Hornfels

Initially this unit is dark black in colour for the most part and contains up to 20% bands of garnet and calcite. The garnet here far out weighs the calcite content though the percentages of each varies quite a bit. From about 118.00m the garnet content decreases while the calcite content increases quite considerably down the hole. In some parts of this unit the calcite occurs as ovoids but these are rare. Some disturbance is noticable but generally the unit is uniformly banded at 67° LCA. Pyrite and pyrrhotite are quite common in this unit mainly on the fractures.

Older Volcanics

A light grey spotted uniform rock. A fresh surface shows quite good crystal development. From 128.40 - 128.73m there is what appears to be a very well hornfelsed Quartz Biotite Hornfels.

Banded Biotite
Calcite Hornfels

This rock is composed of black and grey bands at an angle of 65° LCA for the most part. Some of

[illegible]

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
	the biotite rich units are dark purple in colour and fairly uniform in texture. The calcite units vary greatly in character ranging from very fine grained to quite coarse grained and from white to dark grey. Some small amounts of garnets are found in association with the calcite bands in this area but only minimal scheelite occurs.	
Marble	This is a grey white marble impure, recrystallized but unreplaced. Some areas have amounts of biotite hornfels present but these are very very low and relatively rare. The marble has been cut by a large number of irregular calcite veins due to some mobilization of the carbonate.	
Biotite Hornfels	A grey brown fine grained uniform rock with no mineralization, some very narrow quartz veins through it. These have some minor alteration present in them.	
Grassy Granite	Very dark, almost black, and full of biotite. The quartz and feldspar vary in size here and some zoning is visible in the large feldspar grains. The lower junction is gradational to biotite hornfels with quite large blocks up to 2cm occurring in the granite dyke.	
Biotite Quartz Hornfels	A grey brown fine grained rock with the proportions of biotite and quartz varying over the unit. These variations are apparent in the degree of darkness in the colour with the high biotite content units being purple brown in colour. One very minor band of garnet (>4cm) occurs at 158.93m but apart from this the unit is pretty uniform with banding at 73° LCA.	
Aplite Dyke	This is a grey yellow rock with quite high feldspar content through out while tourmaline occurs as small needles in some areas. The rock is very uniformly grained and fairly dense, fractures are not common and apparently without any regular direction.	

[illegible]

45

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
Biotite Quartz Hornfels	As above a fairly uniform rock unit except between 164.44 - 165.25 where the core is very disturbed in a manner similar to that which is found in the P.G.H. unit in the mine. However in this case there is no garnet or other mineralization associated with it and it is made up of the Biotite Quartz units. A few small aplite dykes occur in this area at 166.58 - 166.81m, 171.91m and 173.83 - 174.18m. These units appear to be conformable as their angle to core axis at the junctions is 58° LCA. Some of these dykes are very granitic in nature. END OF HOLE 182.46m	

DIAMOND DRILL HOLE NO. **INV.3-2**

LOCATION: **Investigator 3**

CO-ORDINATES: **215 757.07 E 564 560.12 W**

R.L.: **127.496m**

DATE COMMENCED: **14-6-72**

DATE COMPLETED: **19-6-72**

FINAL DEPTH: **45.77m**

DATE SURVEYED: **No surveying**

LOGGED BY: **S.G.B.**

SAMPLE NO.	DISTANCE		LENGTH SAMPLED	LENGTH REC'D.	ASSAYS		
	FROM	TO			WO ₃	Mo	
	0	4.87	4.87	3.5			
	4.87	7.16	2.29	1.18			
	7.16	13.90	6.74	6.04			
A 5029	9.50	10.50	1.00	0.95	0.03	<0.01	
A 5030	10.50	11.50	1.00	0.98	0.02	<0.01	
A 5031	11.50	12.50	1.00	1.00	0.05	<0.01	
	13.90	15.40	1.50	1.50			
	15.40	22.92	7.52	7.04			
A 5032	16.00	17.00	1.00	0.83	0.04	<0.01	
A 5033	17.00	18.00	1.00	0.72	0.03	<0.01	
A 5034	18.00	19.00	1.00	0.72	0.12	<0.21	
A 5035	19.00	20.00	1.00	0.73	0.16	<0.01	
A 5036	20.00	21.00	1.00	0.75	0.07	<0.01	
A 5037	21.00	22.00	1.00	0.70	0.07	<0.01	
A 5038	22.00	23.00	1.00	0.96	0.08	<0.01	

WELL LOG

DRILL HOLE No. INV.3-2

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
Soil Clay and Weathered Rock Chip	Brownish grey clay with minor very weathered rock chips some very minor amounts of scheelite. A thin 2" rich brown band of soil lies at the top of this unit.	
Very Broken Rock Chip Biotite Pyroxene Hornfels	This unit is very broken and weathered but consists of alternating bands of dark black-purple biotite hornfels and light grey pyroxene actinolite hornfels with a few minor bands of garnet rich material present there is very little calcite present here. The biotite hornfels is dominant and there is only minor scheelite present in the garnet rich areas.	
Biotite Pyroxene Hornfels	As above but much less broken in nature. bedding at 13m approximately 66° " at 7.30 " 75° cleavage at 13m approximately 69° " at 7.30 " 75°	
Biotite Hornfels	A fine grained purple-black uniform rock unbanded and with some spots in places. Pyrrhotite is present both in the ground mass and also as distinct spots and gash veins.	
Pyroxene Garnet Hornfels	Finely banded footwall beds? This rock is a finely banded pyroxene hornfels with quite large amounts of biotite hornfels and zones of garnets. Some garnet areas have quite a high content of scheelite usually the yellow Powellite-Scheelite mix. Very little calcite appears present in these rocks. From 17.68 - 18.29 i.e. 0.61m there is very little recovery only a few garnet rich chips about 10cm in all.	
Aplite Dyke	From 22.16 - 22.61 there is a band of Aplite running sill-like through this series. Bedding 76° at 20m 62° at 21m Cleavage 76° at 20m 62° at 21m	

UNIT

GEOLOGICAL DESCRIPTION

STRUCTURE

Finely Banded
Biotite Pyroxene
Hornfels

This is a very uniformly banded unit with wide dark purple-black bands of biotite hornfels alternating with jade green finer bands of pyroxene hornfels. This banding is uniform and at an angle of 70° LCA. Both scheelite and garnet are missing in this unit but some small Aplite sills occur conformable to the bedding at 26.21m, 30.63m and 31.03m. All these sills are less than 15cm wide and consist of a fine grey aplite with high feldspar content and some tourmaline noticable as fine needles. Some top and bottom set structures are present in the bed junctions and these suggest that the beds are right way up and that some reworking of the deposits must have taken place during deposition.

Unreplaced Marble

A light grey almost white marble with fine dark bands in it. These bands are impure marble and have a core angle of 72° LCA. This unit is quite coarsely crystalline and has variations in the grain size in bands at 72° LCA suggesting they are due to the original bedding. There is no garnet or scheelite present in this unit. To 30.93m this unit is graditional from the one above and contains some minor bands of impure marble with some amounts of biotite and pyroxene present in them. At 29.56 - 30.06 there is an occurance of a coarse grained grey "Aplite" similar to that found at 45m in hole Inv.3-1 and it is possibly the lateral extension of this unit, a similar but smaller unit occurs at 30.84 - 31.02.

45.77m END OF HOLE

DIAMOND DRILL HOLE NO. INV.3-1

LOCATION: **Investigator 3**

CO-ORDINATES: **215 775.11E 564 525.30N**

R.L.: **126.084m**

DATE COMMENCED: **19-5-72**

DATE COMPLETED: **13-6-72**

FINAL DEPTH: **150.45m**

DATE SURVEYED:

LOGGED BY: **S.G.B.**

[illegible]

DRILL 3

DRILL HOLE No. INV.3-1

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
Banded and Spotted Biotite Hornfels	This unit consists of dominantly a grey rock with dark spots and minor fine grained grey "siltstone" like units. Throughout this unit the spotted members contain a large % of a faintly fluorescent mineral giving a yellow colour under U.V. In T.S. the rock is seen to consist of dominantly quartz and biotite with pyrite as the dominant mafic member. There also appears to be a light green interstitial mineral which appears chloritic.	
	150.45m END OF HOLE	

[illegible]

RILL LOG

DRILL HOLE No. INV.3-1

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
Aplite	Light grey white aplite with needles of tourmaline in the rock. Quite high amounts of feldspar are present in this unit and the initial 2m appears similar to the Quartz Feldspar Breccia. From 60.65 - 60.85m there is a small patch of banded Biotite Hornfels.	
Biotite Hornfels	This rock is dominantly brownish purple in colour but often contains lighter grey green areas in it which are probably pyroxene rich. At about 68.40m there are some small pellet like pieces in this rock. The dominant feature of this rock is its uniformity. At 69.66 - 69.86 there is a small Aplite vein light white in colour.	
Banded Biotite Pyroxene Hornfels	Finely banded Biotite Pyroxene Hornfels with bands of calcite and garnet present in varying amounts through out. The first 7 metres are very irregularly banded and appear to be transitional to the Biotite Hornfels above. Calcite increases in importance down the hole and in some areas becomes dominant. Garnet content remains low and irregular throughout. Minor scheelite found associated with the garnet bands at 85.00m, 87.16m, 89.51m, 90.04m, and 90.38m. Very minor scheelite at 97.06 and 98.72. The rock has alternating bands of Biotite rich black rock, fine grained and with a uniform texture, and light grey green Pyroxene rich hornfels also fine grained. The core cleavage is parallel to banding at approximately 63° L.C.A.	
Marble	Dark grey fine grained unreplaced marble, no scheelite visible at all here. Some disturbance is present in this unit but not very much compared to the mine area.	
Biotite Hornfels and Altered Marble	This appears to be a transitional zone between the marble and the fine grained spotted Biotite Hornfels. Some scheelite is apparent at 122.74m. This is blue Mo poor scheelite.	

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
	The replacement of the calcite by garnet appears to have been almost complete.	
Banded Biotite Pyroxene Hornfels	Banded Biotite Pyroxene Hornfels unmineralized with occasional small bands of garnet present in it. This rock has alternating bands of blackish biotite hornfels and a dark green pyroxene hornfels with very occasional aplite veins in it as at 44.23 - 44.70	
Aplite	Fine grained light grey-white coloured aplite with quite a high content of white feldspar crystals. Tourmaline needles are also present.	
Banded Biotite Pyroxene Hornfels	As before	
Quartz Feldspar Breccia	Large amounts of quartz and feldspars in large crystals with large amounts of green chloritic material present. Tourmaline is again quite common as dark black needles.	
Fault Zone ?	Recovery very poor here and appears to be of various types of hornfels and aplite	

SAMPLE No.	DISTANCE		LENGTH SAMPLED	LENGTH REC'D.	ASSAYS			
	FROM	TO			WO ₃	Mo		
	0.0	3.048	3.048	3.00				
	3.048	6.26	3.11	2.50				
	6.26	14.33	8.07	8.00				
	14.33	24.38	10.05	8.60				
A 5005	18.00	18.50	0.50	0.50	0.04	<.01		
A 5006	18.50	19.00	0.50	0.35	0.05	<.01		
A 5007	19.00	19.50	0.50	0.47	0.02	<.01		
A 5008	19.50	20.00	0.50	0.45	0.02	<.01		
A 5009	20.00	20.50	0.50	0.12	0.10	<.01		
A 5010	20.50	21.00	0.50	0.37	0.02	<.01		
A 5011	21.00	21.50	0.50	0.37	0.06	<.01		
A 5012	21.50	22.00	0.50	0.50	0.02	<.01		
	24.35	26.06	1.71	1.66				
	26.06	32.74	6.68	6.41				
A 5013	26.00	26.50	0.50	0.50	0.04	<.01		
A 5014	26.50	27.00	0.50	0.50	0.03	<.01		
A 5015	27.00	27.50	0.50	0.50	0.04	<.01		

RILL LOG

DRILL HOLE No. INV.3-1

UNIT	GEOLOGICAL DESCRIPTION	FRACTURING
Soil & Clay	Initial a brown organic rich clay grades through orange and yellow to a greenish colour at about 1m depth. The last metre has a high content of volcanic chips well weathered.	
Weathered Volcanics	A large amount of well broken volcanics heavily iron stained and very well weathered.	
Volcanics	These volcanics are very crystalline in appearance being made up of an aggregate of felted crystals. Initially the rock is weathered and iron stained and is a dark green colour overall. From 9.14m onwards the rock becomes more competent and the fractures are filled with a chloritic pug. The rock becomes greyer in colour towards the end. Occasional fine quartz veins are present in this unit.	
Biotite Pyroxene Hornfels	This unit consists of alternating bands of light grey and dark brown-black material with narrow bands of red brown garnets apparent in places. The black biotite rich variety is dominant with the grey bands present as minor units. Garnet bands are present with small amounts of calcite and scheelite present in them. It appears that the garnet has replaced the calcite bands very nearly completely.	
Biotite Hornfels	This is a dark black fine grained hard biotite hornfels with darker often rimmed spots present. Very uniform in texture in the groundmass some pyrrhotite is present in this unit but it is apparently unbanded.	
Pyroxene Garnet Hornfels	Finely banded Pyroxene hornfels with bands of pink garnet often with scheelite present in small quantities. The core is banded pale green and white and is not heavily fractured.	

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LOG OF D.D.H. No. INV 2/3

PLANNING

Proposer: J. Clark

Depth: 300 m

Location: Red Hut Road

Purpose of hole: To test lower horizon in Investigator 2 area.

Co-ordinates: 213700 E 562626 N

Inclination: Vertical

Magnetic:

Bearing: Grid

Target depth:

Target: E N

Approved by:

Date:

SURVEY

Survey Co-ords: 213684 E 562582.4

N N.B. Hole Shifted south to
firmer ground.

Survey bearing Grid

Magnetic:

Surveyed in by:

Date:

Actual Co-ords: E N

R.L. of collar: 129.0

Inclination of hole:

Picked up by: L. T.

Date: 13-4-78

SUMMARY

Logged by: J. Clark

Results: No economic intersection

DRILLING

Driller/Contractor: A.D.D.

Date Commenced: 3-4-78

Date Terminated: 11-4-78

Casing: Size : NQ

Depth : 24.0 m

Core: Size : No core

NQ

BQ

Depth : 15.0 m

24.0

120.5 m

Wedge Runoff:

Wedge Placed:

Depth:

Proposed by:

Approved by:

Reason:

Extension:

Final depth: 120.5 m

Reason for termination: Intersected granite.

Condition of hole on completion:

Casing:

Cemented:

Bore hole survey:

Water:

Comments on drilling conditions: Good.

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SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 2/3

Survey method: Singleshot Camera
Final depth: 120.5 m
Casing depth: 24.00 m

Depth surveyed to: 120.5 m
Date surveyed to: 13.4.78
Surveyed by: L. Denby
Checked by: J. Clark

Bearing			Inclination		True vertical Depth (m)	Co-ordinates	
Depth (m)	Grid	Mag.	Read	Corrected		S	E
30		170	1°45'	-88.25	29.99	0.16	0.90
60		170	1°45	-88.25	59.98	0.32	1.80
90		167	2°45	-87.25	89.95	0.64	3.20
120.5		167	3°45	-86.25	120.38	1.09	5.14
N.B.	Grid North is 10° Mn						

REMARKS:

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ASSAY DATA

D.D.H. No. INV 2/3

Sample No.	DEPTH (METRES)				ELEMENTS			COMMENTS
	From	TO	Length	Length Recovered	WO ₃	Mo		
KF 51	71	72	1.0	1.0	<0.01	<0.01		
52	72	73	"	"	<0.01	<0.01		
53	73	74	"	"	<0.01	<0.01		
54	74	75	"	"	<0.01	<0.01		
55	75	76	"	"	<0.01	<0.01		
56	76	77	"	"	<0.01	<0.01		
KF 57	94	95	"	"	<0.01	<0.01		
58	95	96	"	"	<0.01	<0.01		
59	96	97	"	"	<0.01	<0.01		
60	97	98	"	"	<0.01	<0.01		

SPECIFIC GRAVITY

Depth (metres):

Rock Type :

S.G. :

Determined by:

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GEOLOGICAL LOG

D.D.H. No. INV 2/3

0 - 15 m

No Core

15.00 - 23.50 m

Volcanic

Greyish green basic volcanic belonging to the middle volcanics unit. Light brown iron oxide staining along fractures is common, and green and brown clays are also present.

Fractures / m = 11
Recovery = 75%

23.50 - 49.20 m

Biotite - Pyroxene Hornfels

Finely interbedded biotite hornfels with lesser amount of pyroxene hornfels and variable amounts of marble. Minor grossular is associated with marble, and is most abundant between 32.0 - 42.0 metres.

Minor disseminated scheelite is present in pyroxene hornfels at 23.7 m and 24.1 m. Small grossular - pyroxene calcite beds contain scheelite at 27.5 m, 36.4 m, 39.9 m, 41.0 m, 41.7 m.

43.7 - 43.9 m. Aplite.

Bedding is 65° to core axis.

Fractures / = 10
Recovery = 99%

49.20 - 62.60 m

Marble

White to grey fine grained marble with irregular black chlorite filled veinlets and white calcite veinlets throughout.

58.7 - 58.8 m. Possibly a fault. Soft calcite, pyroxene and grossular contain minor disseminated scheelite.

59.4 - 59.9 m. Fractures coated with soft green clay containing well formed pyrite crystals.

62.6 m. Soft green clay coatings on joints possibly representing a faulted contact between marble and the underlying unit.

Bedding is 63° to core axis.
Fractures / m = 5
Recovery = 99%

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GEOLOGICAL LOG

D.D.H. No. INV 2/3

62.60 - 63.80 m

Biotite Hornfels

Purplish brown biotite hornfels with small irregular lenses of green pyroxene hornfels. Small quartz fragments are present throughout.

The lower contact of this unit is sharp.

Fractures / m = 9

Recovery = 99%

63.30 - 66.4 m

Marble

Fine grained grey and light green marble with black chlorite often along bedding (67°).

Fractures / m = 4

Recovery = 99%

66.40 - 77.30m

Podded Biotite - Pyroxene Hornfels

About equal amounts of purplish brown biotite hornfels and green pyroxene hornfels are present together with small beds of marble.

The podded nature of this unit is given by small rock, quartz and calcite fragments, and also by the rounded shape of some pyroxene hornfels development around small rock and calcite fragments.

Pyroxene hornfels is most abundant between 92.0 - 95.5 m where there is also moderate development of grossular. Scheelite is sparsely and irregularly distributed in this section.

91.5 m. Soft calcite filling along fractures.

Fractures / m = 7

Recovery = 98%

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GEOLOGICAL LOG

D.D.H. No. INV 2/3

77.30 - 83.90 m

Biotite Hornfels

Purplish brown biotite hornfels with abundant small light coloured spots.

Pyroxene with minor soft, calcite and sparsely disseminated scheelite is present at 81.6 m.

Fractures / m = 8
Recovery = 99%

83.90 - 103.40 m

Podded Pyroxene - Biotite Hornfels

Light green pyroxene hornfels and purplish brown biotite hornfels. Pods are composed of small white quartz fragments and larger calcite fragments, and irregular pyroxene development in biotite rich sections of core.

Pyroxene is most abundant from 92.3 - 99.7 m and here there is moderate development of grossular rimming and apparently completely replacing calcite pods. Minor disseminated scheelite is present in grossular rich zones at 93.7 m, 95.7 m, 96.0 m and 96.3 - 96.5 m.

Aplite dykes are present at 91.8 - 92.0, 98.0 - 98.1, 98.2 - 98.4, 98.8 - 98.9 metres.

At the top of the unit (83.9 - 88.0 m) some calcite fragments have weathered away to leave ougs, or have been replaced by soft calcite.

Fractures / m = 4
Recovery = 100%

103.40 - 120.50 m

Adamellite

Typical Grassy Adamellite. Large white orthoclase crystals are present with smaller very light green plagioclase, colourless quartz and abundant hornblende and biotite.

Fractures / m = 2
Recovery = 100%

EOH 120.50 m

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 2/2/

PLANNING

Proposer: S.G. Brown
Location: Investigator 2, Millers Block.

Depth: 90m

Purpose of hole: To test mineralisation encountered in Percussion Drill hole 5.

Co-ordinates: 213780 E 562675 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers Date: 10/10/73

SURVEY

Survey Co-ords: 213780 E 562675 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: 213786.68 E 562673.25 N

R.L. of collar: Inclination of hole: -90°

Picked up by : J. Cook. Date:

Logged by : S.G. Brown

SUMMARY

Results: Only minor scheelite recorded between 50.89 - 51.91m
N.B. Hole precollared as PDH 47.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 9/11/73

Date terminated: 12/11/73

Casing: Size :

BX
47.24

Depth :

Core: Size :

BQ
92.30

Depth :

Wedge Runoff:

Wedge placed: Nil.

Depth:

Proposed by :

Approved by:

Reason:

Extension: Nil.

Reason for termination: Intersected Grassy granite Final depth: 92.30m

Condition of hole on completion:

Casing : Pulled.

Cemented : No.

Bore hole survey: Multishot camera.

Water: Nil.

Comments on drilling conditions: Good.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 2 - 2

Precollared to 45.72 metres.

45.72m - 49.11m

BIOTITE HORNFELS

A fine grained purple black biotite quartz hornfels with relatively high content of pyrite on the joints.

49.11 - 50.89

PODDED BIOTITE HORNFELS

A small unit of disturbed and podded biotite hornfels. The pods are usually calcite and have a rim of light grey - green pyroxene hornfels.

50.89 - 51.91

PYROXENE GARNET SKARN

A disturbed banded unit with minor amounts of biotite hornfels present in the general pyroxene calcite garnet matrix.

Some minor scheelite is visible in this unit under the U.V. lamp.

51.91 - 54.94

BIOTITE PYROXENE GARNET HORNFELS

A disturbed banded unit in which the biotite and pyroxene hornfels are dominant, lesser bands of garnet are present. The contacts between the biotite and pyroxene hornfels are normally regular while the garnet contacts are contorted.

at 53.20m banding is 76° L.C.A.

At 54.04m a calcite filled fault is apparent at 22° L.C.A.

54.94 - 59.42

BANDED PYROXENE GARNET CALCITE HORNFELS

This is a finely banded unit consisting of alternating bands of pyroxene and calcite hornfels with numerous thinner garnet bands interspersed. Occasional biotite hornfels bands also occur. Minor scheelite is apparent in the garnet rich bands.

Banding is at 74° L.C.A. at 56.90m.
70° " at 59.0m.

59.42 - 63.47

BIOTITE PYROXENE HORNFELS

This is an extremely finely banded unit consisting of alternating bands of fine grained biotite and pyroxene hornfels.

Only extremely rare bands of calcite with minor associated garnet are apparent in this unit.

The banding reflects original bedding.
Bedding is at 71° L.C.A. at 60m.

and at 68° L.C.A. at 62.0m.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 2-2

63.47 - 71.51

BIOTITE HORNFELS

A fine grained brown purple biotite quartz hornfels containing very minor bands of pyroxene rich hornfels.

Occasional very thin calcite rich bands also occur.

The banding reflects original bedding and is at 47° L.C.A. at 65.5m

71° " at 66.5m

69° " at 70.5m

The core is badly broken between 68.30m and 69.70m and contains calcite along the fractures.

71.51 - 82.75

MARBLE

A typical grey white spotted marble with well developed banding present in some areas.

A distinct fault breccia is present at 77.65 - 77.92m.

Below 79.90m as one approaches the granite the banding becomes disturbed.

Banding at 74.80m approximately 71° L.C.A.

76.50m " 61° "

79.0m " 56° "

The last 10cm of core at the granite contact are garnet skarn.

82.75 - 92.30
E.O.H.

GRASSY GRANITE

Typical biotite quartz feldspar granite containing large pink feldspar laths.

Aplites are present between 85.06 - 85.34 and 85.75 - 86.13 metres.

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SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 2/2

Survey method : Multishot camera

Depth surveyed to : 91.44

Final depth : 92.32

Date surveyed : 11/11/73

Casing depth : 45.72

Surveyed by : V.P.

Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected		S	W
6.10	217° 30'	207° 30'	1°	-89°	6.10	0.09	0.05
30.48	217° 30'	207° 30'	0° 52'	-89° 8'	30.48	0.42	0.22
60.96	217°	207°	1° 07'	-88° 53'	60.96	0.90	0.49
91.44	200°	190°	2° 00'	-88°	91.42	1.91	0.75

REMARKS: ISG 10°

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LOG OF D.D.H. No. INV 2/1

PLANNING

Proposer: **S.G. Brown**

Depth:

Location: **Investigator 2**

Purpose of hole: **To test extent of mineralisation encountered in PEM 3. 50m south of this hole.**

Co-ordinates: **213780** E **362573** N

Inclination: **-90°** Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: **M.C. Rogers.** Date:

SURVEY

Survey Co-ords: **213780** E **362573** N

Survey bearing: Grid Magnetic

Surveyed in by: **J. Cook.** Date:

Actual Co-ords: **213780.52** E **362574.13** N

R.L. of collar: Inclination of hole: **-90°**

Picked up by : **J. Cook** Date:

SUMMARY

Logged by : **S.G. Brown**

Results: **N.B. predrilled as PEM 46.**

DRILLING

Driller/Contractor: **A.D.D.**

Date commenced: **2/11/73**

Date terminated: **7/11/73**

Casing: Size : **2X**
Depth : **46.63**

Core: Size : **BQ**
Depth : **89.10**

Wedge Runoff:

Wedge placed: **No.**

Depth:

Proposed by :

Approved by:

Reason:

Extension: **No.**

Reason for termination: **entered Grassy granite** Final depth: **89.10**

Condition of hole on completion: **at 79.00m**

Casing : **18.25m left in hole.**

Cemented : **No.**

Bore hole survey: **Multishot camera.**

Water: **Nil.**

Comments on drilling conditions: **Good,**

DIAMOND DRILL LOG - INV. 2-1 Precollared to 45.72m

45.72 - 54.12

MIDDLE VOLCANICS

A fine grained well crystalline green-black volcanic.

The last 1 metre has minor amounts of pyroxene and biotite hornfels pods present in it.

54.12 - 59.86

BIOTITE HORNFELS

A fine grained black quartz rich biotite hornfels with quite a high pyrite content on the fractures.

59.86 - 65.20

PODDED BIOTITE HORNFELS

The ground mass of this unit is a fine grained black-purple biotite quartz hornfels in which occur pyroxene and garnet rich pods, minor calcite pods are also present in the garnet pods. The pyroxene is very fine grained and finely banded often concentrically round the centre of the pods while the garnet is pale pink grossular. Minor mineralisation occurs in this unit.

The amount and number of pods increases from 59.86 - 65.20.

65.70 - 66.65

PYROXENE GARNET CALCITE HORNFELS

This is a banded unit in which the pyroxene and garnet are dominant so that the overall colour is of light green with red brown-brown coloured areas rich in garnet. Minor calcite beds are present with lesser black biotite also apparent.

Banding is irregular and veins from almost 90° LCA to 77° LCA.

66.65 - 68.62

PODDED BIOTITE HORNFELS

In this unit the biotite hornfels is brown-purple in colour and fine grained. The pods here differ from the unit above in that the boundaries of these pods are not sharp and tend to be gradational to the biotite hornfels.

68.62 - 69.96

PYROXENE GARNET HORNFELS

The dominant rock type here is the pyroxene hornfels, a light grey green colour with lesser red-brown garnet present in it.

Some banding is apparent in this unit.

69.96 - 70.92

BIOTITE PYROXENE HORNFELS

A very irregular unit with very patchy pyroxene-biotite units. These grade into one another.

70.92 - 75.44

PYROXENE GARNET SKARN

This unit is a banded unit consisting of grey green very light coloured fine pyroxene hornfels and dark brown garnet skarn. The garnets here are both andradite and grossular and scheelite and molybdenum are present in some of the garnet bands here.

This unit appears to be similar to the skarn encountered at INV. 21.

75.44 - 78.30

BIOTITE PYROXENE HORNFELS

In this unit the pyroxene hornfels is dominant with minor bh being present as bands throughout. The pyroxene hornfels is a very fine grained grey green coloured rock unit while the bh is a lightish brown in colour. Minor garnet bands are present in the pyroxene hornfels. Banding occurs at 66° LCA.

78.30 - 79.09

BIOTITE HORNFELS

Essentially a brown-black biotite hornfels with minor pyroxene bands present in it. Quite large amounts of pyrite and pyrrhotite are seen to occur in it in fact occasional bands are composed almost entirely of pyrite. Some granite bands occur in this unit especially close to 79.09m.

79.09 - 89.10

GRASSY GRANITE

The first 40cm of this rock are distinct from the normal granite and constitute a contact zone. The first 10cm are feldspar quartz rich, biotite poor while the next 30cm are enriched in mafics.

From 89.50m the rock becomes a typical Grassy Granite with large feldspar laths present in it.

89.10

E.O.H.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 2/1

Survey method : Multishot camera

Final depth : 89.00

Casing depth : 45.72

Depth surveyed to : 88.39

Date surveyed : 6/11/73

Surveyed by : V.P.

Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected		S	W
6.10	211°	201°	0° 45'	-89° 15'	6.10	0.07	0.03
30.48	211°	201°	1° 45'	-88° 15'	30.48	0.77	0.29
60.96	206° 30'	196° 30'	2°	-88°	60.95	1.82	0.66
88.39	191° 30'	181° 30'	2° 45'	-87° 15'	88.36	2.95	0.68

REMARKS: ISG 10°