GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. Inv 15/66-4

PLANNING

Proposer: J. M. Clark **Depth:** 250m

Location: Loop road north of Red Hut turn off.

Purpose of hole: To test lower horizon near major fault.

Co-ordinates: 214905 **E** 564335 **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: 214916.2 **E** 564312 **N**

R.L. of collar: 134.0 **Inclination of hole:**

Picked up by: L. Thomas **Date:** 12-5-78

SUMMARY

Logged by: J. M. Clark

Results: Scheelite not present

DRILLING

Driller/Contractor: A.D.D.

Date Commenced: 17-4-78 **Date Terminated:** 22-5-78

Casing:	**Size :**	HQ	NQ		
	Depth :	9.0	13.0		
Core:	**Size :**	No Core	NQ	BQ	
	Depth :	9.0	13.0	198.5	

Wedge Runoff:

Wedge Placed: **Depth:**

Proposed by: **Approved by:**

Reason:

Extension:

Final depth: 198.50 m

Reason for termination: Hole in adamellite and quartzite

Condition of hole on completion:

Casing:

Cemented:

Bore hole survey: Single shot surveys

Water:

Comments on drilling conditions: Very broken ground in adamellite and quartzite.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. Inv 15/66-4

Survey method: Single Shot Camera
Final depth: 198.50 m
Casing depth: 13.0 m

Depth surveyed to: 198.5 m
Date surveyed to: 22.5.78
Surveyed by: L. Denby
Checked by: J. Clark

Bearing			Inclination		True vertical Depth (m)	Co-ordinates	
Depth (m)	Grid	Mag.	Read	Corrected		S	E
20		136	0°45'	-89.25	20.0	0.25	0.24
48		137	0°45'	-89.25	47.99	0.61	0.57
78		138	2°	-88.0°	77.97	1.39	1.27
108		139	2°15'	-87.75	107.95	2.28	2.04
138		140	3°30'	-86.5°	137.90	3.58	3.13
168		140	4°	-86	167.83	5.18	4.47
198.5		139	5°	-85	198.21	7.19	6.22

REMARKS:

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. Inv 15/66-4

0.0 - 9.00 m — No Core

9.00 - 18.80 m — Volcanics

Green to dark green medium grained basic volcanics. All joints and fractures have considerable yellowish brown ironstaining along them.

Fractures / m = 6
Recovery = 90%

18.80 - 23.10 m — Actinolite - Biotite Hornfels

Bedded grey achinolite hornfels with lesser amounts of brown biotite hornfels and minor green pyroxene hornfels. minor ironstaining is present on fractures.

At 19.5 m bedding is 56° to core axis.

Fractures / m = 15
Recovery = 90%

23.10 - 38.70 m — Biotite - Pyroxene Hornfels

Bedded purplish brown biotite hornfels with smaller interbeds of green pyroxene hornfels and grey actinolite hornfels. Minor marble is also present, but these beds are slightly iron strained and vuggy.

Core is relatively broken but faulting does not appear to be present.

36.0 - 37.0 Broken core with 50% recovery.

Depth	Bedding / CA
25.4	66
32.0	68
38.5	63

Fractures / m = 20
Recovery = 90%

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. Inv 15/66-4

38.70 - 57.00 m — Bedded Biotite - Calcite - Pyroxene Hornfels

Finely interbedded brown biotite hornfels, white marble, light green pyroxene hornfels and grey actinolite hornfels.

Marble is distinctly more abundant between 49 - 57 m, where there is minor development of grossular rims about the marble beds. Trace scheelite is present at 54.5 m.

Minor broken core is present at 50.9 m.

Depth	Bedding / CA
44 m	64°
53 m	65°

Fractures / m = 6
Recovery = 95%

57.00 - 71.30 m — Actinolite - Pyroxene Hornfels

Finely interbedded grey actinolite hornfels and light green pyroxene hornfels with minor biotite and calcite hornfels. Marble becomes more abundant towards the end of the unit.

60.2 - 60.5 m Broken core. Core is breaking nearly parallel to the core axis (5°-10°).

65.6 - 68.0 m Broken core with only 50% recovery obtained. Calcite coats some fracture surfaces in this interval.

Depth	Bedding / CA
67 m	70°
69 m	64°
70.7 m	74°

Fractures / m = 15
Recovery = 80%

71.30 - 75.30 m — Marble

Grey fine grained marble with small black biotite veinlets and occasional white calcite veinlets.

Bedding is 45° to core axis.

Fractures / m = 3
Recovery = 100%

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. Inv 15/66-4

75.30 - 78.20 m Podded Biotite Pyroxene Calcite Hornfels

This is an intensely disturbed unit. Rounded or elongate calcite fragments are present in a matrix of pyroxene and biotite hornfels. Minor grossular rims the calcite fragments. Small rock fragments are also present.

There appears to be a major fault at 77.0 - 77.2 m where the rock is very broken chloritic and brecciated. Below this, calcite fragments are considerably less abundant.

Fractures /m = 12
Recovery = 98%

78.20 - 103.05 m Biotite Hornfels

Purplish brown biotite hornfels is usually well bedded. Occasional small beds of pyroxene hornfels are present. White coarse grained marble occurs at 86.1 - 86.3 m.

81.3 - 81.6 m Broken core with calcite veining.

87.7 - 88.7 m Pyroxene rims small marble and rock fragments.

89.0 - 90.0 m Sedimentary breccia. Small tabular fragments of pyroxene and biotite hornfels in a matrix of the same rock.

Depth	Bedding / CA	
85	75°	
90.6	70	
96.2	70°	Beds facing up hole.

Fractures / m = 6
Recovery = 98%

103.05 - 144.90 m Bedded Biotite Pyroxene Calcite Hornfels

Finely interbedded purplish brown biotite hornfels, green pyroxene hornfels and marble, with pyroxene and marble rich beds often containing grossular.

104.7 - 106.2 m Calcite - grossular - pyroxene hornfels, containing minor andradite at 105.3 m. Scheelite is not present.

114.3 m Mild tectonic brecciation has resulted in minor podding of pyroxene and grossular in biotite.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. Inv 15/66-4

144.9 m Fault with minor tectonic brecciation (for 1 cm each side) and more widespread micro - faulting.

Depth	Bedding / CA
107	50
112.6	50
121.5	70
129.0	50
130.4	10°
131.4	56°
133.0	Sub - Parallel
134	80°
141	72°

Fractures / m = 4
Recovery = 100%

144.90 - 158.00 m **Marble**

Light grey fine grained marble with black chlorite veinlets and small white calcite veinlets.

The beginning of the unit (144.9 - 145.7 m) is microfractured and contains minor small pyroxene hornfels beds.

147.4 - 148.2 m Coarser grained sugary marble with abundant chlorite and pyrite. Probably a fault at 147.8 m.

157.8 m Minor pyroxene is present at the base of this this unit.

Depth	Bedding / CA
151.7	?65°
154	65

Fractures / m = 4
Recovery = 98%

158.00 - 158.90 m **Aplite**

Coarse grained aplite consisting of quartz, white feldspar and biotite. Core is broken at the beginning of the unit and there is a major fault at the end.

158.8 - 158.9 m Fault breccia consisting of light green pug zone with occasional rock fragments.

Recovery =60%

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. Inv 15/66-4

158.90 - 198.50 m Adamellite / Quartzite

This is a varied unit. Core is very broken and there has been considerable core loss. In the following subdivision nearly full recovery of aplite is assumed.

158.9 - 160.0 m. Grey quartzite.

160.0 - 161.05 m. Coarse grained adamellite consisting of quartz, white feldspars and biotite.

161.05 - 167.00 m. Grey quartzite of which only 30% was recovered.

167.0 - 173.0 m. White medium grained aplite, parts of which have a sugary texture. Many fractures have reddish brown iron oxide coatings. Recovery 95%.

173.0 - 178.4 m. Grey quartzite, parts of which contain muscovite. No core was obtained from 176 - 178.4 m total recovery was 55%.

178.4 - 180.1 m. Medium grained adamellite consisting of quartz, white feldspar and sparsely distributed biotite.

180.1 - 188.1 m. Very broken grey and geenish grey quartzite. Core is brecciated.

188.1 - 191.0 m. Adamellite. White medium grained adamellite consisting of quartz, white feldspars and biotite.

191.0 - 194.0 m. Brecciated adamellite. Soft, sugary, brecciated adamellite containing calcite and clay. There was 50% recovery.

194.0 - 198.5 m. Quartzite rubble and clay, most of which has probably come from further up the hole. Only 10% recovery.

Total Recovery 70%.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. E.L. 15/66 - 3

PLANNING

Proposer: S. Grieve Brown — Depth: 300m

Location: Sarton's block

Purpose of hole: To test for presence of mine series rocks below volcanic cover.

Co-ordinates:	217500	E	564675	N
Inclination:	-90°			Magnetic
Bearing:	-	Grid	-	Target depth:
Target:		E		N
Approved by:	M.C.Rogers			Date: 1/2/74

SURVEY

Survey Co-ords:	217500	E	564675	N
Survey bearing:	-	Grid	-	Magnetic
Surveyed in by:				Date:
Actual Co-ords:	approx 217485.2	E	564678.7	N
R.L. of collar:				Inclination of hole:
Picked up by :				Date:

SUMMARY

Logged by : S. Grieve Brown

Results: No mineralisation encountered

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 28/2/74 — Date terminated: 9/3/74

Casing:	Size :	BX
	Depth :	155.14
Core:	Size :	BQ
	Depth :	281.0

Wedge Runoff:

Wedge placed: Nil — Depth:

Proposed by : — Approved by:

Reason:

Extension: Nil

Reason for termination: Entered granite — Final depth: 281.0m

Condition of hole on completion:

Casing : pulled

Cemented : no

Bore hole survey: Multishot

Water: Nil

Comments on drilling conditions: Moderate to bad, to 218.0m better but still not good below this depth

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H No. E.L. 15/66 - 3

Survey method: Multishot
Final depth : 281.00m
Casing depth : 180.00m

Depth surveyed to: 208m
Date surveyed: 21/10/76
Surveyed by : V.P.
Checked by : S.G.B.

Depth (m)	Bearing		Inclination		True vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected			
24.0		N60° 00'E	1°	89° 00'	24.00	0.21	0.36
48.0		N60° 00'E	1° 15'	88° 45'	47.99	0.47	0.81
72.0		N60° 00'E	2° 45'	87° 15'	71.96	1.05	1.81
102.0		N60° 00'E	4°	86° 00'	101.89	2.10	3.62
132.0		N60° 00'E	4° 07'	85° 53'	131.81	3.18	5.49
150.0		N60° 00'E	5°	-85° 00'	149.74	3.96	6.85
172.0		N60° 00'E	4° 15'	85° 45'	171.68	4.78	8.26
184.0		N60° 00'E	4° 15'	85° 45'	183.66	5.23	9.03
190.0		N60° 00'E	4° 30'	85° 30'	189.64	5.47	9.44
196.0		N60° 00'E	4° 30'	85° 30'	195.62	5.71	9.85
202.0		N65° 00'E	4° 15'	85° 45'	201.60	5.90	10.26
208.0		N62° 00'E	4° 00'	86° 00'	207.59	6.10	10.63

REMARKS:

GEOPEKO LIMITED - KING ISLAND

CORE RECOVERY

D.D.H. No. E.L. 15/66 - 3

INTERVAL (m)	LENGTH (m)	LENGTH RECOVERED (m)	% CORE RECOVERY
0.0 - 152.40	precollored		
154.53	2.13	1.50	70
155.07	0.54	0.51	94
155.50	0.43	0.10	23
157.66	2.16	2.32	107
160.73	3.13	3.09	99
163.78	3.05	3.04	100
165.10	1.32	1.13	86
166.72	1.62	1.83	113
169.16	2.44	2.42	99
169.46	0.30	0.25	83
171.44	1.98	1.95	98
172.82	1.38	0.68	49
173.43	0.61	0.56	92
173.71	0.28	0.30	107
175.13	1.42	1.68	118
175.87	0.74	0.28	38
176.66	0.79	0.77	97
178.92	2.26	1.80	80
181.81	2.89	2.79	97
182.42	0.61	0.47	77
183.79	1.35	1.34	99
184.25	0.46	0.41	89
184.86	0.61	0.63	103
187.99	3.13	3.14	100
191.10	3.11	3.04	98
191.41	0.31	0.24	77
192.63	1.22	1.22	100
193.85	1.22	1.21	99
194.77	0.92	0.80	87
195.53	0.76	0.70	92
196.75	1.22	1.16	95
197.92	1.17	1.20	103
198.81	0.89	0.77	87
199.24	0.43	0.15	35
201.98	2.74	2.46	90
203.30	1.32	0.91	69
204.52	1.22	1.18	97
205.31	0.79	0.92	116
106.27	0.96	0.57	59
207.49	1.22	0.91	75
207.80	0.31	0.27	87
209.40	1.60	1.08	68
209.85	0.45	0.12	27
212.45	2.60	2.42	93

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CORE RECOVERY

D.D.H. No. E.L. 15/66 -3

INTERVAL (m)	LENGTH (m)	LENGTH RECOVERED (m)	% CORE RECOVERY
213.51	1.06	1.08	102
218.00	4.49	4.33	97
221.00	3.00	3.01	100
224.00	3.00	2.94	98
227.00	3.00	2.65	88
230.00	3.00	3.18	106
233,00	3.00	2.67	89
236.00	3.00	2.96	99
239.00	3.00	3.16	105
242.0	3.00	2.38	79
245.00	3.00	3.23	108
248.00	3.00	2.87	96
251.00	3.00	2.78	93
254.00	3.00	2.98	99
257.00	3.00	3.06	102
260.00	3.00	2.94	98
263.00	3.00	3.08	103
266.00	3.00	3.11	104
269.00	3.00	2.78	93
272.00	3.00	1.87	62
275.00	3.00	2.73	91
281.00	6.00	4.94	82
EOH			

GEOPEKO LIMITED - KING ISLAND

ASSAY DATA

D.D.H. No. E.L. 15/66 - 3

Sample No.	DEPTH (METRES)				ELEMENTS			COMMENTS
	From	To	Length	Length Recovered	WO_3	Mo		
				CORE NOT SPLIT				

SPECIFIC GRAVITY

Depth (m):
Rock Type:
S.G. :

Determined by:

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. E.L. 15/66 - 3

0.0 - 152.40 PRECOLLARED

152.40 - 157.81 BIOTITE HORNFELS

This hornfels unit is similar to the biotite hornfels recorded in the mines. There are large amounts of sub rounded redrilled pebbles of volcanics in some of this area but these have fallen down into the drill hole from the percussion drill hole.

At 156.55m there are some small pyroxene bands at 56° LCA which probably reflect bedding.

157.81 - 158.23 PODDED PYROXENE HORNFELS

A small unit of dark green pyroxene hornfels with irregular pods of calcite present through out.

158.23 - 175.14 UPPER VOLCANICS

A greyish coloured finely crystalline unit with an irregular 'blotchy' appearance present through out.

The 'blotchy' appearance is due to irregular zones containing a higher mafic content.

Some small zones of finer grained grey material, possibly biotite quartz hornfels are present here, as follows:- 162.30 - 162.63m
171.44 - 173.74m

175.14 - 185.26 BIOTITE QUARTZ HORNFELS

This unit is essentially of fine grained grey black quartzite with very occasional bands of pyroxene rich material present in some areas. Three minor calcite bands with trace grossularite also occur in this unit, the largest of these is located between 184.05 - 184.25m. No scheelite is present in this unit.
Banding is at 44° LCA at 180.21m
57° LCA at 184.05m

185.26 - 190.81 VOLCANICS

A lighter green-grey unit of finely crystalline volcanics. These are fairly uniform and do not have the prominent blotchy appearance noted in the units of volcanics intersected above this depth.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. E.L. 15/66 - 3

190.81 - 199/24 BIOTITE QUARTZ HORNFELS

This unit is grey black in colour and is similar in appearance to the quartzites encountered east of the Boundary fault at Bold Head.

The core in this unit is fairly heavily sheared and broken.

199.24 - 201.37 VOLCANICS

Grey green volcanics similar to those between 185.28 - 190.81m. Again this unit is quite broken and sheared especially over the last few centimeters.

201.37 - 203.30 BIOTITE QUARTZ HORNFELS

A very broken and sheared unit of biotite quartz hornfels with calcite present as infilling along the fractures.

203.30 - 223.10 VOLCANICS

The first two metres of this unit consists of extremely crushed and broken core and probably represents a fault zone: Calcite is present along some of the fractures.

The unit consists of a dark green spotted volcanic unit with large amounts of brecciated and crushed volcanics and clay present right throughout the unit suggesting proximity to a fault. Possibly a sub vertical fault.

The last 3 metres of this unit are especially weak and chloritized along the fractures.

223.10 - 226.39 MARBLE

A disturbed unit of banded grey brown marble with moderate amounts of grossularite present as fine bands.

The core is broken between 225.63 - 226.09m.
Banding is at 57^{o} LCA at 223.60m
41^{o} LCA at 226.35m

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. E.L. 15/66 - 3

226.39 - 232.81m BANDED BIOTITE PYROXENE CALCITE HORNFELS

A well banded unit consisting of alternating bands of all three components. Initially the calcite bands form the majority of the core but these decrease in importance below 229.0m where they form perhaps at most 10% of the core.

Grossularite garnet is associated with the calcite bands between 226.39 and 229.0m and a very occasional fleck of scheelite is noticeable in this area.
Bedding is at 60^{o} LCA at 226.67m
60^{o} LCA at 228.50m
82^{o} LCA at 231.50m

A small aplite is present between 229.18 - 229.42m.

232.91 - 234.43 APLITE

A small interval of fine grained aplite between 232.81 - 233.29 m there is a large fracture (? fault) sub parallel to the long core axis. This fracture has calcite and clinohumite infilling.

Water return was lost at 233.29m.

234.42 - 236.57m BANDED BIOTITE PYROXENE HORNFELS

This unit consists essentially of a finely banded biotite pyroxene hornfels with minor calcite bands present in it.

The core is extremely broken and weathered through out, the last metre containing large amounts of clay.

236.57 - 243.98 MARBLE

A grey-black barren marble unit. This unit shows original bedding but this is quite disturbed in some areas. The unit is barren of scheelite mineralisation.

Zones of crushed core probably indicative of faulting occur between 239.09 to 240.05 and 240.32 - 241.03m.

Fractures are apparent at 237.50m and 240.87m.
Bedding is at 60^{o} LCA at 241.25
54^{o} LCA at 243.8m

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. E.L. 15/66 - 3

243.98 - 249.36m BIOTITE PYROXENE HORNFELS

This unit is essentially a biotite hornfels with irregular bands of lighter grey green pyroxene hornfels present through out. As with almost all the core in this hole this unit is badly broken and weathered with a number of obvious fractures present as follows.
245.32 - at 20° LCA.
248.40m - at 38° LCA.

249.36 - 257.84 IMPURE MARBLE

This unit is essentially a marble unit with minor pelitic beds present in it.

Between 251.35m - 252.85m the marble unit contain large amounts of grossularite and lesser amounts of pyroxene. There is however no mineralisation associated with this unit.

Bedding is visible through out this unit, initially it is quite disturbed but below about 253.0m it becomes more regular.
Bedding is at 41° LCA at 251.0m
50° LCA at 254.30m
52° LCA at 257.10m
A zone of broken core possibly indicative of a fault occurs at 249.90m.

257.84 - 269.09 BANDED BIOTITE PYROXENE HORNFELS

A sequence of biotite and pyroxene hornfels bands with minor amounts of garnet and calcite present in the last three metres.

Right through out this unit there are breccia zone usually with calcite cement and it is possible that this hole has been drilled sub parallel to the fault recorded below. Leaching is apparent in the last 3 metres.

The unit is completely barren of scheelite mineralisation.
Bedding is at 65° LCA at 259.10m
51° LCA at 263.50m
49° LCA at 269.00m

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. E.L. 15/66 - 3

269.09 - 281.00m EOH

BRECCIATED QUARTZITES

This unit consists of extremely broken quartzites often recemented with clinohumite and minor calcite.

The cement is dominant over the quartzite fragments below about 277m so that the unit looks more like an angular conglomerate in some parts rather than quartzites.

The hole was abandoned at 281.00m since further progress would require extensive cementing.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NO. EL 15/66-2

PLANNING

Proposer: S.G. Brown — Depth:

Location: Tynan's Block

Purpose of hole: To test for presence of mine series below volcanics

Co-ordinates: 214650 E 563900 N
Inclination: -90° Magnetic:
Bearing Grid Target Depth:
Target: E N
Approved by: M.C. Rogers Date: 9/11/73

SURVEY

Survey Co-ords: 214650 E 563900 N
Survey bearing: Grid Magnetic:
Surveyed in by: S.G. Brown Date: 28/11/73
Actual Co-ords: 214 651.54 E 563 903.56 N
R.L. of Collar: Inclination of Hole: -90°
Picked up by: J. Cook Date:

SUMMARY

Logged by: S.G. Brown
Results: Trace scheelite near granite contact.
N.B. precollared to 155.4m as PDH 51.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 28/11/73 Date terminated: 14/12/73

Casing:	Size:	BX
	Depth:	157.58
Core:	Size:	BQ
	Depth:	250.74

Wedge Runoff:
Wedge placed: Nil Depth:
Proposed by: Approved by:
Reason:

Extension: NIL
Reason for termination:

Condition of hole on completion: Final depth: 250.74
Casing: Left in
Cemented: No
Bore hole survey: Multishot camera
Water: Nil

Comments on drilling conditions: Moderate.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. EL 15/66-2

precollared to 206.18m

155.44 - 157.78 BIOTITE HORNFELS

A brown purple biotite hornfels with very minor thin bands of pyroxene rich rock present in it.
Bedding is at 80° LCA at 157.45m.

157.78 - 169.41 BANDED BIOTITE PYROXENE CALCITE HORNFELS

This is a finely banded unit consisting of alternating pelitic and calcareous horizons. Some minor garnet bands occur usually at the contacts of the calcite bands.
from 157.78 - 163.25 the amounts of calcite pyroxene and garnet bands is approximately equal but below 163.25m the calcite dominates.
Bedding is at 77° LCA at 160.5m
68° LCA at 164.5m
This unit is unmineralised.

169.41 - 174.65 PYROXENE HORNFELS

A fine grained light grey green pyroxene rich hornfels with lesser fine bands of brown purple biotite hornfels present throughout.
Some minor calcite bands are present between 171.0m - 171.32m.
Bedding at 171.0m is at 77° LCA.

174.65 - 180.47 APLITE

A fine grained grey pink aplite with minor white feldspars and trace biotite. Some small zenoliths of mine series rocks are present in it as at 179.06m.

180.47 - 182.60 BANDED PYROXENE CALCITE HORNFELS

A finely banded unit initially consisting of alternate bands of calcite and pyroxene rich sediment. Some minor biotite bands are also present throughout this unit.
The last 7cm of this unit are badly crushed and broken.
Bedding is at 71° LCA at 181.50m.

182.60 - 183.49 FAULT ZONE

This unit consists mainly of very crushed and broken aplite with the feldspar showing signs of having altered in part to Kaolin.
The last 20cm of this zone consists of sheared ? biotite hornfels. The lower contact is at 10° LCA.

183.49 - 186.66 MARBLE

A dark grey finely banded recrystalised marble. This unit is completely unaltered with no garnet or pyroxene present in it. Bedding is at 78° LCA at 185.6m.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. EL 15/66-2

186.66 - 187.58 PODDED BIOTITE HORNFELS

A small unit of fine grained brown purple biotite hornfels with irregular fragments and pods of pyroxene rich material present throughout.

187.58 - 190.32 PYROXENE GARNET CALCITE HORNFELS

Initially this disturbed unit contains garnet pyroxene and calcite rich material in almost equal amounts, but below 189.40 pyroxene is dominant and only minor garnet is present.

This unit is barren of scheelite mineralisation.

190.32 - 190.73 BIOTITE HORNFELS

A small unit of slightly disturbed biotite hornfels with minor bands of pyroxene present in it.

190.73 - 196.32 PYROXENE GARNET CALCITE HORNFELS

Similar to the upper part of the zone 186.66 - 190.32 and again unmineralised.

The last 70cm are very broken and puggy possibly due to a minor fault.

196.32 - 203.18 BIOTITE HORNFELS

A finely banded unit of brown purple biotite hornfels with minor thin bands of light grey green pyroxene hornfels present throughout.

A small 7 cm aplite dyke is present between 198.91 - 198.98.

Bedding is at 66^{o} LCA at 198.80m
61^{o} LCA at 201.50m

203.18 - 103.76 PYROXENE GARNET HORNFELS

A disturbed podded unit of pyroxene garnet skarn with lesser amounts of calcite present as pods. No scheelite is present in this unit.

203.76 - 207.77 BIOTITE HORNFELS

A very fine grained brown - purple biotite hornfels with very occasional fine bands of pyroxene hornfels present throughout especially over the last 1.5m where some very minor garnet calcite bands occur.

Bedding is at 69^{o} LCA at 206.8m.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. EL 15/66-2

207.77 - 209.45 PODDED PYROXENE CALCITE HORNFELS

This unit consists of a grey fine grained pyroxene rich matrix with irregular pods of coarsely crystalline calcite present throughout. Some minor garnet is present round the rims of some of the calcite pods.

209.45 - 215.84 BIOTITE HORNFELS

A fine grained biotite hornfels brown - purple in colour with quite large amounts of greyish green pyroxene hornfels present as irregular bands throughout. Some lesser amounts of calcite and garnet are present in the larger pyroxene bands.

bedding is at 71° LCA at 112.5m.

215.84 - 218.74 BIOTITE PYROXENE CALCITE GARNET HORNFELS

A finely banded unit initially rich in biotite but this decreases in importance to 217.06m after which it is only present in very minor amounts.

The banding is irregular and in some cases the garnets appear to grow across the boundaries between the bands.

Bedding is at 71° LCA at 217.0m.

218.74 - 232.55 BIOTITE PYROXENE HORNFELS

Essentially this is a finely banded unit of biotite pyroxene hornfels with irregular areas of garnet and calcite enrichment as follows:

219.43 - 219.89 a small band of disturbed, podded pyroxene garnet hornfels

220.33 - 221.37 a banded unit of biotite pyroxene calcite hornfels with irregular amounts of garnet present at the contacts of the disrupted calcite horizons.

226.61 - 227.51 disturbed pyroxene garnet hornfels with minor calcite.

227.99 - 232.55 banded biotite pyroxene garnet hornfels with minor scheelite.

A calcite filled fault occurs between 227.82 and 227.99m.

A small aplite is present between 228.77 and 229.58.

bedding is at 74° LCA at 220.00m
73° LCA at 224.50m
76° LCA at 229.90m

It should be noted that the contacts of the pyroxene garnet rich zones cut completely across bedding without actually disrupting it in a replacement type of phenomenon.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. EL 15/66-2

232.55 - 250.74 GRASSY GRANITE

Typical Grassy granite with high mafic (biotite) content and large pink feldspar phenocrysts.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H No. E.L. 15/66 - 2

Survey method: Multishot
Final depth : 250.55m
Casing depth : 155.45m

Depth surveyed to: 243.84
Date surveyed: 14/12/73
Surveyed by : V.P.
Checked by : P.V.

Depth (m)	Bearing		Inclination		True vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected			
12.19			1° 15'	88° 45'	12.19		
24.38			1° 15'	88° 45'	24.37		
36.58			1° 22'	88° 38'	36.56		
48.77			2° 15'	87° 45'	48.74		
60.96			2° 30'	87° 30'	60.92		
73.15			2° 45'	87° 15'	73.10		
85.34			3° 15'	86° 45'	85.28		
97.54			3° 07'	86° 53'	97.45		
109.73			3° 22'	86° 38'	109.62		
121.92			3° 30'	86° 30'	121.78		
134.11			3° 22'	86° 38'	133.95		
146.30			3° 30'	86° 30'	146.12		
158.50	160° 00'	S30° oo'E	2° 00'	88° 00'	158.29	3.95	2.28
170.69	159° 00'	S29° 00'E	1° 45'	88° 15'	170.48	4.26	2.47
182.88	161° 30'	S31° 30'E	1° 45'	88° 15'	182.67	4.59	2.66
195.07	159° 00'	S29° 00'E	2° 00'	88° 00'	194.85	4.93	2.88
207.26	161° 00'	S21° 00'E	2° 45'	87° 15'	207.03	5.42	3.09
219.46	157° 30'	S17° 30'E	2° 52'	87° 08'	219.21	6.00	3.29
231.65	162° 00'	S22° 00'E	3° 00'	87° 00'	231.38	6.59	3.54
243.84	163° 00'	S23° oo'E	3° 15'	86° 45'	243.55	7.23	3.79
250.55	163° 00'	S23° 00'E	3° 15'	86° 45'	250.25	7.58	3.98

REMARKS:

Predrilled as percussion hole to 155.45m.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NO. EL 15/66 - 1

PLANNING

Proposer: S.G. Brown — Depth:

Location: Sartoris block

Purpose of hole: To test for mine series rock beneath the upper volcanics.

Co-ordinates: 217100 E 564450 N
Inclination: Magnetic:
Bearing Grid Target Depth:
Target: E N
Approved by: M.C. Rogers Date: 3/11/75

SURVEY

Survey Co-ords: 217115 E 564470 N
Survey bearing: Grid Magnetic:
Surveyed in by: S.G.B. Date:
Actual Co-ords: 217114.20 E 564470.43 N
R.L. of Collar: Inclination of Hole: -90°
Picked up by: J. Cook Date: 3/2/75

SUMMARY

Logged by: S.G. Brown
Results:
Precollared to 158.88m as PDH 48

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 13/11/75 Date terminated: 28/11/75

Casing: Size: BX
Depth: 158.88
Core: Size: BQ
Depth: 284.84

Wedge Runoff:
Wedge placed: Nil Depth:
Proposed by: Approved by:
Reason:

Extension: Nil
Reason for termination: In granite

Condition of hole on completion: Final depth: 284.84
Casing: Pulled
Cemented: No
Bore hole survey: Multishot camera
Water: Nil

Comments on drilling conditions: Moderate to good.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No.EL 15/66-1

158.88 - 162.46 UPPER VOLCANICS

A grey green crystalline volcanic with well developed spotted appearance, a typical upper volcanic rock.

Towards 161.0m the volcanics have a distinctly splotchy appearance similar to that recorded in DDH INV 18/1.

162.46 - 164.97 QUARTZ FELSPAR PORPHYRY

A fine grained black purple siliceous rock with well developed laths of white felspar present throughout.

164.97 - 216.10 UPPER VOLCANICS

A series of medium grey green coloured volcanics with in some areas the splotchy appearance noted above. This appearance is due to sub rounded fragments which appear to have undergone plastic deformation. The unit appears to be fairly uniform and does not appear to have any units bedded pelitic sediments as occur in the western contact area.

A number of faults are apparant in this unit noticeably at 205.13m, where calcite is present in the fault zone, and at 214.20m.

216.10 - 216.31 APLITE

A very small band of aplite very weathered and soft, the felspar appears to have gone to kaolin.

216.31 - 235.89 UPPER VOLCANICS

These rocks are similar to those above but in this area appear to be much more sheared and broken than normal. The shearing increases down the hole to the contact with the granite at 235.89.

235.89 - 240.11 GRANITE

A small tongue of typical Grassy granite intruding the upper volcanics. The last 30cm of this unit are very quartz rich.

240.11 - 259.52 UPPER VOLCANICS

This unit of upper volcanics is much finer grained in appearance and while retaining the overall spotted appearance does not show the same texture as the units above. Between 253.0m - 255.60m the core is extremely broken and sheared below 255.60m the volcanics become lighter grey green in colour.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. EL 15/66-1

259.52 - 266.46 **MINE SERIES**

The core appears to be mine series rocks, consisting of biotite hornfels with minor pods of pyroxene garnet containing very minor scheelite. A small tongue of granite is present between 264.94 - 265.59m.

266.46 - 284.84 **GRASSY GRANITE**

This unit is not uniform as it contains zones of increased silica and also of increased mafics, but on the whole is normal Grassy Granite.

284.84 E.O.H.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 24/2

PLANNING

Proposer: S.G. Brown — Depth: 100m.

Location: Investigator 24, Millers Block.

Purpose of hole: To test extent of mineralisation in PDH 50.

Co-ordinates: 213700 E 561800 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers. Date: 1/10/74

SURVEY

Survey Co-ords: 213700 E 561800 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: 213699.9 E 561800 N

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

Picked up by : V. Powell Date: 25/11/75

SUMMARY

Logged by : S.G. Brown

Results: Scheelite present between 13.96 - 14.28m

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 14/10/74 Date terminated: 23/11/74

Casing:	Size :	HQ	NQ		
	Depth :	12.2	45.8		
Core:	Size :	BQ			
	Depth :	201.78			

Wedge Runoff:

Wedge placed: Nil Depth:

Proposed by : Approved by:

Reason:

Extension: Extended to 201.78m

Reason for termination: below final anticipated depth no mineralisation encountered. Final depth: 201.78m

Condition of hole on completion:

Casing : Nil.

Cemented : No.

Bore hole survey: Multishot camera.

Water: No

Comments on drilling conditions: Good.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 24-2

0 - 10.67m — FRAGMENTAL ROCK

Extremely broken ground consists of what appears to be a very weathered fragmental rock consisting of siliceous fragments in a more clay rich matrix. Some areas of core are in fragments of less than 2cm. This appears to have been a silicified mine series unit possibly calcite or pyroxene hornfels.

10.67 - 13.60m — QUARTZITE (silicified mine series)

A light grey exgremely fine grained quartzite quite broken and disturbed and with heavy weathering along the fractures. A vague remnant banding is visible in the largest piece at approximately 10° L.C.A.

13.60 - 14.28m — QUARTZITE (silicified Mine series)

As above but in this area about 50% of the core is composed of pyrite (marcasite). Some very minor chalcopyrite is present. → marcasite.

Scheelite mineralization is visible in this unit between 13.96m and 14.28m. This scheelite occurs as pure blue fluorescent Mo poor crystals.

14.28 - 15.72m — PYROXENE GARNET SKARN?

An extremely weathered unit in which bands of heavily leached garnets occur in a very clay rich green matrix.

This unit contains good pure blue fluorescent scheelite associated with the garnet veins between 15.07 and 15.72m.

15.72 - 24.72 — MIDDLE VOLCANICS?

This unit is extremely weathered and consists mainly of greenish coloured clay minerals in which are set minor fragments of more resistent and apparently siliceous material. This gives in some places the impression that the unit has been brecciated.

A high core loss occurs in this unit, about 50%.

24.72 - 25.45 — PYROXENE GARNET HORNFELS?

This unit now consist of garnets in a siliceous unit, although from the weathering pattern it would appear that calcite has been present.

The texture of the rock is that of a pyroxene garnet unit. No tungsten mineralization is present although some minor pyrrhotite is discernable.

25.45 - 29.86m — MIDDLE VOLCANICS?

As above very weathered the brecciated nature of the core being more apparent here. The last 60cm contain large amounts of what appears to be a silicified biotite hornfels.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. 24-2

29.86 - 30.84m BIOTITE HORNFELS

A very broken unit of a spotted brown purple coloured rock type. The spotted appearance is due to large numbers of small white feldspar laths set in the biotite rich matrix.

Evidence of shear is apparently shown by quartz veins running at about 30° L.C.A.

30.84 - 32.51m PYROXENE GARNET HORNFELS

A very disturbed, probably originally banded unit consisting of pyroxene and garnet bands with minor calcite and biotite present in it.

Minor blue fluorescing scheelite is present in the last 30cm.

32.51 - 38.63m MARBLE

A fine grained well banded grey recrystalized marble. The banding is apparent due to very dark grey almost black bands which are probably bedding.

35m approximately 20° L.C.A.
36m " 30° "
36.5m " 54° "

The whole core is crisscrossed by irregular veins of secondary calcite. 36.30 - 36.91m lost core, that was recovered is very leached marble.

38.63 - 48.14 SILICIFIED FRAGMENTAL UNIT

A very fine grained grey silica rich unit in which occur irregular shaped pods of calcite with pyroxene and garnet. In some cases these pods are extremely small and whispy.

Minor pure blue fluorescing scheelite is apparent in association with the larger marble pods especially the one at 43.20 - 43.42m.

The last 2 meters contain a larger variety of fragments with some biotite hornfels and pyrrhotite being present in them.

A very narrow aplite vein occurs at 45.72m.

48.14 - 59.03 MARBLE

A grey coloured recrystalized limestone with well developed black spots occurring throughout.

This unit is well banded but these bands occur at various angles to the core axis and in some areas are quite noticeably disrupted. Irregular patches and bands of grossularite are also present expecially in the lower half of the unit. This grossular occur in the marble bands but does not completely replace any one band.

Banding occurs at 15° L.C.A. @ 50m.
parallel L.C.A. @ 50.2m.

2?° L.C.A. @ 51.0m

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. 24-2

48.14 - 59.03 m continued.

28° L.C.A. @ 51.0m.
32° " @ 53m.
65° " @ 54m.
25° " @ 54.2m.

59.03 - 60.54 BIOTITE PYROXENE HORNFELS.

Initially this unit is pyroxene rich but bacomes biotite rich from 59.80m and the core is noticeably broken throughout.

60.54 - 67.71m PODDED PYROXENE GARNET HORNFELS

This is a podded unit in which the ground mass is mainly a green to grey fine grained rock type probably pyroxene rich in which occur irregular pods of garnet and calcite. Minor blue fluorescing scheelite is visible throughout this unit.

Between 65.73 and 66.57m the core is very siliceous and contains quite large amounts of pyrrhotite as irregular pods and veinlets.

67.71 - 69.82 SILICIFIED ZONE

This zone has the texture of marble but is very siliceous and is light grey green in colour. No mineralization is present in this unit.

69.82 - 71.15 MARBLE

This unit appears to be partially silicified marble. The core has a disturbed appearance with marble rich areas irregularly distributed throughout.

71.15 - 74.76m MARBLE

A normal grey-black marble with well developed black spotting. Minor areas of fine grained siliceous material occur throughout this unit and between 71.72 - 72.39m the core is broken and crushed in a possible fault zone.

74.76 - 76.51m SILICIFIED ZONE

A very fine grained light grey coloured unit very rich in silica and containing what appear to be remnant traces of pyroxene hornfels as irregular bands throughout.

76.51 - 78.22m MARBLE

A grey black marble as above with in this area development of minor amounts of pyroxene and garnet especially over the last 80cm. Trace scheelite is present associated with the garnets.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 24-2

78.22m - 103.97m DISTURBED BIOTITE HORNFELS

This is an extremely disturbed and broken unit of brown biotite hornfels containing large amounts of siliceous fragments all of which appear to be stretched and teared out. Some silica rich banding is also apparent.

Broken and leached core is relatively common throughout with chlorite often present on the joints.

The major areas of faulting are as follows:-

79.31 - 80.82m very leached.
83.10 - 83.74m
86.25 - 86.50m fragmental and extremely soft material here.
90.5m - 91.14m
98.00 -103.97m extremely broken core throughout

Bedding at 89m @ 23° L.C.A.
98.5m @ 14° "
100.0m @ 36° "

103.97 - 129.00m BIOTITE HORNFELS

A finely banded brown/purple biotite quartz hornfels. The fine bands are caused by extremely thin units of pyroxene hornfels.

The core is disturbed but not to the same extent as the above unit and badly broken areas are less common.

The amount of pyroxene in the unit increases considerably to 129.0m.

Banding at 108m @ 19° L.C.A.
110m @ 25° "
112m crenulated approx. parallel L.C.A.
126m @ 41° L.C.A.

114.5 @ 36° LCA.
122.0 @ 44° LCA.

129.00 - 129.50 MIDDLE VOLCANICS

A small unit of very chloritic powdery rock unit which is probably a weathered middle volcanic.

129.50 - 139.21 BIOTITE HORNFELS

This unit consists dominantly of a fine brown purple biotite quartz hornfels with lesser areas of silica rich pyroxene hornfels. Quite large amounts of pyrrhotite are present in the siliceous areas.

This unit is fairly disturbed throughout and no uniform banding indicative of bedding is present.

139.21 - 147.20m BIOTITE HORNFELS

Dominantly a fine brown purple biotite hornfels with minor bands of pyroxene hornfels with lesser calcite and garnet present throughout.

From 145.22 - 145.95 a small aplite dyke occurs.

Banding 141.5m @ 65° L.C.A.
144m @ 54° "
146m @ 55° "

147.20 - 157.77m APLITE

An extremely fine grained light white quartz feldspar aplite very lacking in mafics.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 24-2

157.77 - 188.07 BIOTITE PYROXENE HORNFELS

A very finely banded brown/purple biotite quartz hornfels with minor bands of pyroxene hornfels. Alteration to pyroxene hornfels is also apparent along some of thejoints. Lesser amounts of calcite and garnet are present in some of the pyroxene bands which have a slightly 'poddy' appearance.

Some areas of silicification with relatively high associated pyrrhotite content are also present.

From 177.32 the amount of pyroxene bands increases and the amount of calcite and garnet present in these bands also increases, and the core is podded rather than banded.

188.07 - 201.78 BIOTITE HORNFELS

As above but much lower amounts of pyroxene, calcite and garnet.

E.O.H.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 24/2

Survey method : Multishot Camera.
Final depth : 201.78
Casing depth : 57.91

Depth surveyed to : 201.17m
Date surveyed : 23/11/74
Surveyed by : VP. RS.
Checked by : GB.

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		N	E
15.24	-	-	1° 30'	-88° 30'	15.24	-	-
30.48	-	-	1° 52'	-88° 8'	30.47	-	-
45.72	-	-	1° 45'	-88° 15'	45.70	-	-
60.96	46° 30'	38°	2° 00'	-88°	60.94	1.68	1.31
76.20	54° 00'	45° 30'	2° 00'	-88°	76.17	2.07	1.67
91.44	49° 30'	41°	2° 45'	-87° 15'	91.39	2.51	2.08
106.68	65°	56° 30'	3° 00'	-87°	106.61	3.02	2.69
121.92	74°	65° 30	3° 52'	-86° 8'	121.82	3.45	3.57
137.16	75°	66° 30'	4° 22'	-85° 38'	137.02	3.89	4.58
152.40	77° 30'	69°	5° 15'	-84° 45'	152.21	4.38	5.82
167.64	72° 30'	64°	6° 00'	-84°	167.38	4.97	7.15
182.88	74°	65° 30'	6° 15'	-83° 45'	182.53	5.72	8.61
201.17	78° 30'	70°	7°	-83°	200.52	6.50	10.58

REMARKS:

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NO. INV 24/1

PLANNING

Proposer: S. Grieve Brown — **Depth:**

Location: South Millers Block Investigator 24

Purpose of hole: To test mineralization encountered in PDH 50

Co-ordinates: 561800 E — N 213750
Inclination: -90° — **Magnetic:**
Bearing Grid — **Target Depth:**
Target: E — N
Approved by: M. C. R. — **Date:** 10-8-74

SURVEY

Survey Co-ords: 213750 E 561800 N
Survey bearing: Grid — **Magnetic:**
Surveyed in by: S. G. B. — **Date:** 12-8-74
Actual Co-ords: 213747.3 E 561803.1 N
R.L. of Collar: — **Inclination of Hole:** -90°
Picked up by: — **Date:**

SUMMARY

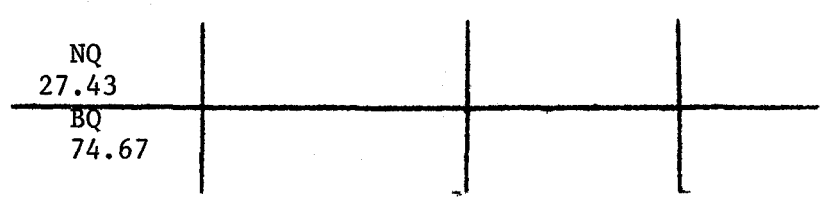
Logged by: S. Grieve Brown
Results: No mineralization encountered.

DRILLING

Driller/Contractor: A. D. D.

Date commenced: 29-8-74 — **Date terminated:** 9-10-74

Casing: Size: NQ
Depth: 27.43
Core: Size: BQ
Depth: 74.67



Wedge Runoff:
Wedge placed: Nil — **Depth:**
Proposed by: — **Approved by:**
Reason:

Extension: Nil
Reason for termination:

Condition of hole on completion: — **Final depth:** 74.67
Casing: left
Cemented: No
Bore hole survey: Multishot
Water: No

Comments on drilling conditions: Bad

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H No. INV 24/1

Survey method: Multishot Camera
Final depth : 79.25
Casing depth : 27.43

Depth surveyed to: 73.15
Date surveyed: 8-10-74
Surveyed by : GB/RS
Checked by :

Depth (m)	Bearing		Inclination		True vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected		N	W
15.24	-	-	1° 00	-89°	15.24	-	-
30.48	339° 30'	331°	1° 00	-89	30.48	0.10	0.05
45.72	347° 30	339	0° 30'	-89° 30	45.72	0.32	0.17
60.96	61° 30'	53°	1° 15'	-88° 45'	60.96	0.49	0.03 E
73.15	84° 30'	76	1° 00	-89°	73.15	0.56	0.17

REMARKS:

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 24/1

0.00 - 16.21 **Weathered Volcanics**

A small unit of grey green weathered volcanics. Some spotting is apparent between 0.0 and 12.0m.

16.21 - 17.98 **Pelitic sediment**

A fine grained grey black sediment with numerous veinlets of quartz present through out. This unit does not look like mine series and may be part of the upper sediment/volcanic sequence.

17.98 - 19.81 **Weakered volcanics**

As above.

19.81 - 34.95 **Pelitic sediments**

These are a sequence of banded units of alternating brown purple and greenish grey colour, rather similar to a banded biotite pyroxene hornfels except that there are elongated silica rich blobs present in some areas.

Bedding is at 20° LCA at 22.20m
33° LCA at 24.60m

Below about 30m the core is more uniform and spotted in appearance than the banded unit above.

34.95 - 44.88 **Volcanics**

This unit is not completely volcanics and contain minor pelitic bands between 38.87 - 40.08m and 43.77 and 44.14m. The volcanics are dark green in colour and their crystaline nature is readily visible in hand specimen. These volcanics appear to be disturbed and broken.

The pelitic units are usually fine grained black quartz rich sediments with a slightly disturbed appearance.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 24/1

44.88 - 63.22 Pelitic sediments

Fine grained black quartz rich sediments with large numbers of ptygmatic quartz veins present through out. The unit has an overall disturbed appearance and distinct zones of brecciation are apparent in some areas (48.16 - 49.01)

Possible bedding is at 39° LCA at 46.42
32° LCA at 56.60

63.22 - 70.71 Volcanics

This appears to be a disturbed finely crystalized volcanic rock type. Initially but below 64.62m it is a normal finely crystaline volcanic.

A small aplite is present between 65.96 - 67.25m.

70.71 - 73.76 Pelitic sediments as above

73.76 - 74.68EOH lost Core

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NO. INV 23/4

PLANNING

Proposer: M. Rogers — **Depth:** 250 metres

Location: Loop Road North of Thorpe's house.

Purpose of hole: Exploration

Co-ordinates:	216 260	E 564 710	N
Inclination:	-90		**Magnetic:**
Bearing	360	**Grid**	**Target Depth:**
Target:		E	N
Approved by:	M.C.R.		**Date:** 1-11-1977

SURVEY

Survey Co-ords:		E	N
Survey bearing:		**Grid**	**Magnetic:**
Surveyed in by:			**Date:**
Actual Co-ords:	216 240.18	E 564 756.34	N
R.L. of Collar:	132.75		**Inclination of Hole:**
Picked up by:	A. Grigulis		**Date:** 30-11-1977

SUMMARY

Logged by: M. Danielson

Results: 222-223 metres, 1 metre at 1.69% WO_3, 0.02% Mo

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 18-11-1977 — **Date terminated:** 7-12-77

Casing:	**Size:**	N		
	Depth:	51m		
Core:	**Size:**	NQ	BQ	
	Depth:		253.3	

Wedge Runoff:

Wedge placed: — **Depth:**

Proposed by: — **Approved by:**

Reason:

Extension: Nil

Reason for termination: Hole in basal quartzites

Condition of hole on completion: — **Final depth:** 253.3 metres

Casing: Nil

Cemented: No

Bore hole survey: Singleshot to E.O.H.

Water:

Comments on drilling conditions:

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 23/4

Survey method: Singleshot Camera
Final depth: 253.3 metres
Casing depth: 51 metres

Depth surveyed to: 253.3 metres
Date surveyed to: 7-12-77
Surveyed by: L. Denby
Checked by: M. Danielson

Bearing			Inclination		True vertical Depth (m)	Co-ordinates	
Depth (m)	Grid	Mag.	Read	Corrected		S	W
100		191	0.75	-89.25	99.99	1.29	0.25 E
200		160	2.75	-87.25	199.87	5.80	1.39
253.3		209	3.0	-87	253.1	8.24	0.04

REMARKS:

GEOPEKO LIMITED - KING ISLAND

ASSAY DATA

D.D.H. No. INV 23/4

Sample No.	DEPTH (METRES)				ELEMENTS			COMMENTS
	From	TO	Length	Length Recovered	WO_3	Mo		
KF 24	98.0	98.5	0.5	0.5	0.10	<0.01		
25	103.0	103.5	"	"	0.06	<0.01		
26	104.5	105.0	"	"	0.11	0.01		
27	110.0	110.5	"	"	0.23	0.02		
28	134.5	135.0	"	"	<0.01	<0.01		
29	199.5	200.0	"	"	0.02	<0.01		
30	210.5	211.0	"	"	<0.01	<0.01		
31	213.0	213.5	"	"	0.10	<0.01		
32	216.0	216.5	"	"	<0.01	<0.01		
33	216.5	217.0	"	"	<0.01	<0.01		
34	217.0	217.5	"	"	<0.01	<0.01		
35	217.5	218.0	"	"	<0.01	<0.01		
36	218.0	218.5	"	"	<0.01	<0.01		
37	218.5	219.0	"	"	<0.01	<0.01		
38	219.0	219.5	"	"	<0.01	<0.01		
39	219.5	220.0	"	"	<0.01	<0.01		
40	220.0	220.5	"	"	<0.01	<0.01		
41	220.5	221.0	"	"	<0.01	<0.01		
42	221.0	221.5	"	"	<0.01	<0.01		
43	221.5	222.0	"	"	0.08	<0.01		
44	222.0	222.5	"	"	1.86	0.03		
KF 45	222.5	223.0	"	"	1.53	0.02		

SPECIFIC GRAVITY

Depth (metres):

Rock Type :

S.G. :

Determined by:

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 23/4

0 - 38.0 — Upper Metavolcanics

Unit is strongly weathered to 16 metres and fresh rock appears below 18 metres.

Grey green massive unit with dominant volcanic texture.

No evidence of any mineralization.

38.0 - 50.0 — Bedded Sediments

Dark grey unit with very similar texture to volcanic unit above but there is abundant strongly developed bedding at approximately 50° to L.A.O.C.

50.0 - 92.5 — Upper Metavolcanics

Pale grey massive completely unmineralized volcanics.

92.5 - 116.1 — Interbedded Biotite Pyroxene Calcite Hornfels

Interbedded grey biotite, green pyroxene and white carbonate. Resembles banded footwall beds in mine area.

Disseminated scheelite

98.15 - 98.30
103.15 - 103.30
104.60 - 104.65
105.0 - 105.05
110.30 - 110.35
110.42 - 110.47
111.51 - 111.53
112.23 - 112.25

116.1 - 130.6 — Middle Volcanics

Very similar to middle volcanics in Bold Head Mine. Dominant volcanic texture, feldspar visible.

130.6 - 139.5 — Banded Marble Garnet Hornfels

Bedded barren grey marble with pale brown grossular garnet. Disseminated scheelite.

134.66 - 134.69
134.92 - 134.95

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 23/4

139.5 - 159.4 Interbedded Biotite Pyroxene Actinolite Hornfels

Barren interbedded silicate hornfels. Minor carbonate in upper part of unit but decreases in amount with depth and is absent by 146 metres.

159.4 - 167.0 Marble

Barren pale green bedded marble.

167.0 - 188.4 Biotite Hornfels

Barren pale brown purplish biotite hornfels. Very minor pyroxene. Unit has 'flaggun' appearance. Below 180 metres there is abundant carbonate veining core is brecciated and may represent fault zone.

186.4 - 208.0 Interbedded Biotite Actinolite Hornfels

Mostly barren pale grey bedded silicate hornfels. Minor carbonate interbeds occasionally replaced to garnet hornfels and containing minor disseminated scheelite.

195.80 - 195.83
197.86 - 197.88
199.46 - 199.58
205.07 - 205.10
205.83 - 205.85

208.0 - 216.0 Interbedded Biotite Actinolite Calcite Hornfels

Unit is very similar to preceding ore but now contains more carbonate and increasingly more replaced zones containing scheelite.

210.90 - 210.97
213.31 - 213.39
214.12 - 214.17
215.83 - 215.90
216.29 - 216.37
216.50 - 216.75
219.32 - 219.39
220.00 - 220.07
221.36 - 221.46
221.81 - 222.92

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 23/4

216.0 - 222.92 Marble

Dominantly marble. Contains minor silicate hornfels and some scheelite intersections as recorded above.

222.92 - 253.3 Quartzite

Barren pale grey basal quartzites.

253.3 metres EOH.

DIAMOND DRILL HOLE SURVEY

EASTMEN - KODAK MULTISHOT CAMERA

D.D.H. No. INV 23-4 Date Surveyed 7-12-77

Total Depth 253.30 Depth Surveyed to 253.30

Casing Depth 51.00m Surveyed By L.OENST

	Depth	Drift Angle	Mean Drift Angle	Cos Sine	Vert. Depth	True Vert. Depth	Defl.	Drift Direc.	Mean Drift Direc.	Cos Sine	Co-Ords. N/S	Co-Ords. E/W	Sum of CO-Ords. N/S	Sum of CO-Ords. E/W
* 100	100m	.45	.45	.9999 .0131	99.99	99.99	1.31	S 11 W	S 11 W	9916 1908	S 1.29	W .25	S 1.29	W .25
* 100	200m	2.45	2.45	.9988 .0480	99.88	199.87	4.80	S 20 E	S 20 E	9397 3420	S 4.51	E 1.64	S 5.80	E 1.39
* 53.30	253.30	3.00	3.00	.9986 .0523	53.23	253.10	2.79	S 29 W	S 29 W	9746 4848	S 2.44	W 1.35	S 8.24	E .04

DDH INV 23-4

TOTAL DEPTH: 253.30m

CASING DEPTH: 51.00m

DEPTH SURVEYED: 253.30

DATE SURVEYED: 7.12.77

SURVEYED BY: L. DENBY

ISOM MAGN

CROSS SECTION

ISOM CROSS SECTION

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NO. INV 23-3

PLANNING

Proposer: S.G. Brown — Depth: 100m

Location: Investigator 23 Loop Road.

Purpose of hole: To test mineralisation encountered in BDH 23 (50m W).

Co-ordinates:	216 150	E 564 500	N
Inclination:	-90°		Magnetic:
Bearing		Grid	Target Depth:
Target:		E	N
Approved by:	M.C. Rogers		Date:

SURVEY

Survey Co-ords:	216150	E 564500	N
Survey bearing:		Grid	Magnetic:
Surveyed in by:	J. Cook.		Date:
Actual Co-ords:	approx 216 150	E 564 500	N
R.L. of Collar:			Inclination of Hole:
Picked up by:			Date:

SUMMARY

Logged by: S.G. Brown

Results: No mineralisation intersected.

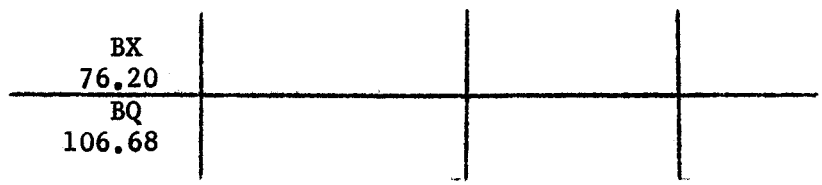
Precollared to 76.20m as PDH 42

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 14/10/73 — Date terminated: 16/10/73

Casing:	Size:	BX
	Depth:	76.20
Core:	Size:	BQ
	Depth:	106.68



Wedge Runoff:

Wedge placed: Nil — Depth:

Proposed by: — Approved by:

Reason:

Extension: Nil

Reason for termination: Below anticipated depth of mineral horizon.

Condition of hole on completion: — Final depth: 106.68

Casing: Nil

Cemented: No

Bore hole survey: Multishot

Water: Nil

Comments on drilling conditions: Moderate to bad.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 23-3

76.20 - 79.35 UPPER SEDIMENTS

A very fine grained dark grey spotted hornfels siltstone of the upper sediment type. The rock appears to be finely siliceous.

79.35 - 84.84 "MINE SERIES"

A sequence of rather atypical mine series rocks consisting of pyroxene hornfels some marble and minor garnet.

Some units of dark grey upper sediments also appear to be inter bedded in this unit and it would appear most likely that the "mine series" rocks are in fact part of the upper sediment sequence where some calcareous material has been deposited during deposition. This may account for the lack of continuity of this unit.

84.84 - 89.78 UPPER SEDIMENTS

A series of grey - black spotted hornfelsed siltstones. This unit shows no distinct bedding as would be expected from "mine series" and in fact appears similar to the upper sediments in the past.

89.78 - 91.93 BIOTITE HORNFELS

This unit which appears to be a biotite hornfels with some minor calcite pods does not appear to be typical mine series. The rock type appears to be more sandy in nature and has a more weathered appearance.

91.93 - 92.80 BANDED CALCAREOUS/PELITIC SEDIMENTS

This unit although similar in appearance to low grade metamorphosed mine series (eg DDH 214) does not appear to belong to that unit.

This is probably a lens of calcareous sediments within the upper pelitic sediments and probably the end of the lens intersected in PDH 23.

92.80 - 94.03 VOLCANICS

Typical dark green crystalline upper volcanics.

94.03 - 98.12 SPOTTED UPPER SEDIMENTS

As above a very fine grained dark grey - black coloured rock with well developed spotting apparent on the core surface.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 23-3

98.12 - 99.36 FAULT ZONE

This fault zone consists of very sheared and broken upper sediments with the fractures infilled with calcite. Minor aplite is also present here.

99.36 - 100.43 UPPER SEDIMENTS

A very dark grey - black fine grained hornfels upper sediment, with well developed spotting present throughout.

100.43 - 101.04 VOLCANICS

A thin unit of very fine grained well crystaline volcanics. Some areas show quite well developed spotting.

101.04 - 103.71 UPPER SEDIMENTS

Initially this unit is typical dark grey upper sediments with quite well developed spotting. As the unit nears the granite contact it becomes much more spotted and much more quartzose. On the lower portion this unit takes on a greenish colour.

103.71 - 106.68 GRANITE/UPPER SEDIMENT MINE

On this area the spotted upper sediments are intruded irregularly by granite. The granite here is extremely weathered and the feldspars kaolinzed.

106.68 E.O.H.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 23/3

Survey method : Multishot camera
Final depth : 106.68
Casing depth : 76.81

Depth surveyed to : 103.63
Date surveyed : 16/10/73
Surveyed by : V.P.
Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		S	E
6.10	113° 45'	103° 45'	1° 7'	-88° 53'	6.10	0.03	0.12
30.48	113° 45'	103° 45'	1° 52'	-88° 8'	30.47	0.22	1.64
60.96	113° 45'	103° 45'	2°	-88 °	60.94	0.47	2.68
91.44	116°	106°	2° 7'	-87° 53'	91.41	0.61	3.74
103.63	117°	107°	2° 45'	-87° 15'	103.59	0.75	4.20

REMARKS: ISG 10°

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 23/2

PLANNING

Proposer: S.G. Brown — Depth: 120m.

Location: Investigator 23, loop road.

Purpose of hole: To test for extension of mineralisation intersected in PDH 23 50m due east.

Co-ordinates: 216250 E 564500 N

Inclination: -90°. Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers. Date: 1/10/73

SURVEY

Survey Co-ords: 216250 E 564500 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook Date:

Actual Co-ords: 216258.45 E 564499.12 N

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

Picked up by : J. Cook. Date:

SUMMARY

Logged by : S.G. Brown

Results: did not encounter mineralisation.

N.B. precollard to 76.20m as PDH 41.

DRILLING

Driller/Contractor: A.D.D

Date commenced: 11/10/73 Date terminated: 13/10/73

Casing:	Size :	BX			
	Depth :	76.20			
Core:	Size :	BQ			
	Depth :	124.05			

Wedge Runoff:

Wedge placed: Nil. Depth:

Proposed by : Approved by:

Reason:

Extension: Nil.

Reason for termination: entered Grassy granite Final depth: 124.05

Condition of hole on completion:

Casing : Nil

Cemented : No.

Bore hole survey: Multishot

Water: No.

Comments on drilling conditions: Good

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 23-2

76.20m - 83.75m — UPPER VOLCANICS

A typical green spotted crystaline upper volcanics with a good crystaline texture throughout.

83.75 - 86.35 — VERY DARK FINE GRAINED UPPER SEDIMENTS

This unit consists of dark grey-black very fine grained hornfelsed upper sediments. The rock would appear to be the hornfelsed equivalent of a very fine siltstone and contains quite a high mica content especially along the cleavage planes.

86.35 - 87.44 — APLITE

A fine grained extremely quartz rich aplite slightly pink in colour possible due to haematite from the upper sediments.

87.44 - 88.62 — FINE GRAINED BLACK UPPER SEDIMENTS

This is the same as the above unit and appears to grade into the volcanics suggesting that the volcanics are perhaps tuffacious in nature.

88.62 - 93.27 — UPPER VOLCANICS

These are grey green in colour becoming coarser down the hole. The whole unit is crystalline in nature. The last 50cm are extremely broken and calcite is apparent on the fractures.

93.27 - 100.36 — VERY DENSE BLACK? HORNFELS.

This would appear to be a hornfelsed upper sediment of a coarser nature than the above units.

Between 96.01 - 100.36 the whole unit is completely brecciated and weathered. Calcite veins are apparent throughout.

100.36 - 103.95 — UPPER SEDIMENTS

Hornfelsed grey black upper sediments often showing the large spots which are commonly recorded in the open cut. The unit has a distinctly slaty appearance due to numerous calcite filled fractures.

103.95 - 104.15 — APLITE

A narrow fine grained grey quartz rich aplite with minor biotite flakes present in it.

104.15 - 115.27 — HORNFELSED UPPER SEDIMENTS

As above this unit contains the large spots which have been recorded in the open cut and are apparent in the weathered members of this series in the Investigator 22 area.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 23-2

104.15 - 115.27m continued.

Below 107.66 the spots become more noticeable and the rock is greyer in colour. Aplites are present ~~below~~ between 113.17 - 113.37 and 113.71 - 114.91m.

115.27 - 116.63 **GRASSY GRANITE**

Typical grassy granite with large pink feldspar laths.

116.63 - 124.05 **APLITE**

A fine grained white quartz feldspar aplite with only minor amounts of biotite present in it.

E.O.H.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 23/2

Survey method : Multishot camera
Final depth : 124.05
Casing depth : 76.20

Depth surveyed to : 100.58
Date surveyed : 14/10/73
Surveyed by : G.B.
Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		S	E
12.19	161° 15'	151° 15'	1°	-89°	12.19	0.19	0.10
30.48	161° 15'	151° 15'	0° 45'	-89° 15'	30.48	0.40	0.22
60.96	161° 15'	151° 15'	0° 30'	-89° 30'	60.96	0.63	0.35
91.44	168°	158°	1° 22'	-88° 38'	91.43	1.53	0.91
100.58	157°	147°	1° 15'	-88° 45'	100.58	1.69	0.99

REMARKS: ISG 10°

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 23/1

PLANNING

Proposer: S.G. Brown — Depth: 120m.

Location: Investigator 23 Loop Road.

Purpose of hole: To test mineralisation due south of PDH 23

Co-ordinates:	216200	E 564440	N
Inclination:	-90°		Magnetic
Bearing:		Grid	Target depth:
Target:		E	N
Approved by:	M.G. Rogers		Date: 1/10/73

SURVEY

Survey Co-ords:	216200	E 564425	N
Survey bearing:		Grid	Magnetic
Surveyed in by:	J. Cook.		Date:
Actual Co-ords:	216197.23	E 564422.64	N
R.L. of collar:			Inclination of hole: -90°.
Picked up by :	J. Cook		Date:

SUMMARY

Logged by : S.G. Brown

Results: No mineralisation recorded in this drill hole.

N.B. precollared to 91.44m as PDH 40.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 6/10/73 — Date terminated: 10/10/73

Casing:	Size :	BX			
	Depth :	91.44			
Core:	Size :	BQ			
	Depth :	123.44			

Wedge Runoff:

Wedge placed: — Depth:

Proposed by : — Approved by:

Reason:

Extension: No.

Reason for termination: Intersected Grassy granite. Final depth: 123.44

Condition of hole on completion:

Casing : Nil

Cemented : No.

Bore hole survey: Multishot

Water: No

Comments on drilling conditions: Moderate.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 23-1

Precollared to 300' .

91.44m - 92.78m HORNFELSED OVERLYING SILTSTONES

This is a biotite hornfels dark grey to black in colour with large dark spots surrounded by grey quartz rich material occuring throughout and making up the bulk of the rock except for the last 20cm where these spots tend to fade into the background and a fine banding at approximately 44° L.C.A. becomes dominant. The contact to the granite is sharp at 50° L.C.A. but at almost 90° to the banding.

Very narrow quartz veins cut this unit at various positions and there appears to be no real regularity to these veins.

92.78 - 94.61m GRASSY GRANITE

The first 23cm of this unit are very quartz rich and mafic poor.

From 93.01 onwards the core is similar to normal grassy granite except that the size of the crystals are much smaller though to 94.61 the size does increase.

The overall colour is a dark grey rock with black spots due to biotite and pink areas of feldspar.

94.61 - 96.85m VOLCANICS (upper)

A dark green rock unit consisting of a finely felted mass of dark green amphibole crystals. Minor light white spots occur throughout.

96.85 - 101.65m HORNFELSED UPPER SILTSTONES

As above. In this unit the spotted appearance becomes rather irregular and blotchy in nature rather than the even distribution which occurs in the first part of the unit.

101.65 - 102.07m APLITE

A fine grained white aplite with a coarser mafic rich core. The central area has well developed feldspars and biotite books.

102.07 - 102.17m HORNFELSED UPPER SILTSTONES

As above a hornfelsed siltstone with well developed spotting apparent in it. Ptegnatic quartz veins are present in some of this core. Typical slaty fracture is also apparent.

102.17 - 102.73m GRASSY GRANITE

This unit is aplite in the last 20cm but is otherwise normal grassy granite.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 23-1

102.73 - 108.39	HORNFELSED UPPER SILTSTONE
	Last metre of this unit very broken and slaty in appearance but otherwise this is a typical spotted hornfelsed upper siltstone very fine grained and dark grey-black in colour.
108.39 - 109.93	FAULT ZONE
	Core is dominantly spotted unit but is very broken and in some units extremely puggy.
109.93 - 110.64	HORNFELSED UPPER SILTSTONE
	A typical spotted upper siltstone with in this area a large amount of silicification apparent as fine irregular veinlets which surround the spots.
110.64 - 123.44	GRASSY GRANITE
	An extremely weathered intersection of grassy granite.

E.O.H.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No.INV 23/1

Survey method : Multishot camera
Final depth : 123.75
Casing depth : 91.44

Depth surveyed to : 109.73
Date surveyed : 10/10/73
Surveyed by : V.P. M.C.
Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		N	E
6.10	46°	36°	1° 37'	-88° 23'	6.10	0.14	0.10
30.48	46°	36°	4° 30'	-85° 30'	30.44	1.69	1.23
60.96	46°	36°	3° 15'	-86° 45'	60.84	3.09	2.24
91.44	46°	36°	2° 45'	-87° 15'	91.28	4.27	3.10
109.73	42°	32°	2° 45'	-87° 15'	109.55	4.95	3.57

REMARKS: ISG 10°

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 22/1

PLANNING

Proposer: S. G. Brown — Depth: 200m

Location: Investigator 22 Meggitts Block.

Purpose of hole: To test mineralisation encountered in Auger drilling at Investigator 22 downdip

Co-ordinates: 214 150 E 563450 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M. C. Rogers. Date:

SURVEY

Survey Co-ords: 214150 E 563450 N

Survey bearing: Grid Magnetic

Surveyed in by: S.G. Brown Date:

Actual Co-ords: 214150.46 E 563449.96 N

R.L. of collar: Inclination of hole:

Picked up by : V. Powell Date: 25/11/75

SUMMARY

Logged by : S.G. Brown

Results: Only very minor mineralisation encountered.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 26/1/75 Date terminated: 15/2/75

Casing:	Size :	HQ	NX		
	Depth :	30.48	30.48		
Core:	Size :	BQ			
	Depth :	208.79			

Wedge Runoff:

Wedge placed; Nil Depth:

Proposed by : Approved by:

Reason;

Extension; Nil

Reason for termination: entered Grassy granite at 201.36m. Final depth: 208.79

Condition of hole on completion:

Casing : Nil

Cemented : No

Bore hole survey: Multishot

Water: No

Comments on drilling conditions: Good

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 22-1

0 - 8.53m — MUD

Some of this is orange brown probably volcanic derived while other areas are grey brown and contain spots of pelitic material weathered sediments.

8.53m - 14.63m — WEATHERED SEDIMENTS

Weathered grey pelitic hornfelses of the upper siltstones. Appears to be of fine grained quartz biotite hornfels.

14.63 - 19.20m — WEATHERED UPPER VOLCANICS

Typical light green well spotted upper volcanics in which the feldspar has been kaolinized.

19.20 - 24.37m — UPPER PELITIC SEDIMENTS.

As before a fine grained biotite quartz hornfels of the hornfelsed upper siltstone sequence.

24.37 - 27.83 — UPPER VOLCANICS

As before but much less weathered here. The last 50cm is very badly broken.

27.83 - 41.15 — UPPER PELITIC HORNFELS

A very fine silty hornfels with well developed spotting present throughout. In some areas the spotting tends to parallel minor fractures.

Bedding is not apparent. A small aplite dyke is present between 39.96 - 40.33 and is very rich in feldspar.

41.15 - 49.72m — UPPER VOLCANICS

As above but much fresher and darker green in colour. Well developed spotted appearance is present in this core.

49.72 - 83.86m — BIOTITE PYROXENE HORNFELS

This is a well bedded unit consisting of fine grained brown/purple biotite hornfels with thinner bands of light green pyroxene hornfels present throughout.

Up to about 65m the biotite is completely dominant with only a few pyroxene rich bands present in it except between 62.10 and 63.20 where there is a pyroxene unit with some minor garnet. Very minor trace scheelite is present in this area.

From 65m the pyroxene bands occupy up to about 30% of the core unit and minor bands of garnet and calcite are also visible.

Banding	61.5m	approximately	55°	L.C.A.
	68.0m	"	63°	"
	72m	"	70°	"
	76m	"	70°	"
	80m	"	71°	"
	83m	"	72°	"

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GEOLOGICAL LOG

D.D.H. No. INV. 22-1

49.72m - 83.86m continued.

Some of the calcite bands are restricted in size and look like pods.

83.86m - 88.72m BANDED BIOTITE PYROXENE CALCITE HORNFELS

Marble is dominant in this unit with biotite and pyroxene making up about 50% of the core. Some garnet bands are also present.

A calcite rich variety of the unit above.
Bedding 72° L.C.A. at 83m.

88.72 - 91.08m BIOTITE PYROXENE HORNFELS

Dominantly a brown purple biotite hornfels with some minor irregular slightly pyroxene rich patches.

91.08 - 93.93m BANDED BIOTITE PYROXENE CALCITE HORNFELS

As above 83.86 - 88.72m
Bedding at 75° L.C.A. at 92m.

93.93m - 97.87m BANDED BIOTITE PYROXENE HORNFELS

A finely banded unit of alternating light green pyroxene and darker blackish biotite bands with occasional white calcite bands also present.

Some garnet is associated with the calcite bands.
Bedding at 94.5m approximately 71° L.C.A.

97.87 - 107.59 IMPURE MARBLE

A finely banded light grey marble with thin bands of pyroxene and biotite hornfels present throughout. The percentage of these impurities decreases towards 107m.

Minor garnet bands are also present in this unit.
Bedding at 99.2m 73° L.C.A.
102m 75° "
105m 76° "

107.59m - 108.49m MIDDLE VOLCANICS

A fine grained light green volcanic with large darker green needles present through it probably ~~astrolite~~ actinolite.

108.49 - 110.30m IMPURE MARBLE (as above).

This area contains rather more pyroxene and garnet rich bands.

110.30 - 112.87m PYROXENE HORNFELS

A very fine grained light green grey pyroxene hornfels with minor grey marble bands.

Bedding at 73° L.C.A. at 111m.

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GEOLOGICAL LOG

D.D.H. No. INV. 22-1

112.87m - 122.21m MARBLE

A pure finely banded recrystalized limestone lightish grey in colour. The fine banding is due to thin pyroxene rich horizons. No garnet is present in this unit.

Bedding at 114m 76° L.C.A.
116m 76° "
118m 75° "
121m 75° "

122.21 - 124.22 PODDED BIOTITE PYROXENE HORNFELS

A disturbed unit consisting of irregular areas of biotite and pyroxene hornfels with small calcite rich pods visible throughout.

124.22 - 127.54 PYROXENE GARNET HORNFELS

A fine grained pyroxene garnet skarn with minor calcite and one large patch of biotite pyroxene hornfels present between 126.30 - 126.68.

At 125m there is a small zone of very leached rock which was initially calcite rich.

Very minor scheelite or molybdenite is visible here.

127.54 - 134.29 PODDED BIOTITE PYROXENE HORNFELS

A fine ~~grained~~ grained blackish green fine grained hornfels with irregular small elongate pods of calcite and pyroxene rich material.

Some remnant bedding is apparent in some parts of this unit but these are disturbed and irregular.

134.29 - 140.17m BANDED BIOTITE PYROXENE HORNFELS

A finely banded unit of biotite and pyroxene hornfels with some areas of podded carbonate rich hornfels present at various positions throughout.

140.17m - 144.17m PODDED BIOTITE PYROXENE HORNFELS

A fine grey green pyroxene hornfels with irregular zones of biotite rich material present through it.

The 'pods' consist of various sizes of angular fragments mainly calcareous in nature.

144.17 - 147.83m PYROXENE GARNET CALCITE HORNFELS

An irregular disturbed unit in which calcite is the dominant constituent with lesser amounts of garnet and pyroxene. The garnet is present both as crystals in the marble and as fine grains in the pyroxene garnet areas.

Minor amounts of biotite are also present.

147.83 - 149.89m APLITE

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GEOLOGICAL LOG

D.D.H. No. INV. 22-1

147.83 - 149.89 continued. A very fine grained white feldspar rich aplite with irregular areas rich in biotite flakes.

149.89 - 151.86m BIOTITE PYROXENE HORNFELS

An initially fine grained finely banded biotite pyroxene hornfels. Some disturbance is apparent through out this unit and the banding is quite disrupted in certain areas.

Some very minor garnet bands are present in this area.

Bedding at 150m approximately 63° L.C.A.

151.86 - 154.48m IMPURE MARBLE

A banded impure marble with quite large amounts of biotite and pyroxene rich hornfels irregularly scattered through it.

Minor garnet is present and in some areas a pyroxene garnet skarn is developed.

Bedding at 153.5m approximately 72° L.C.A.

154.48 - 175.26m BIOTITE PYROXENE HORNFELS

A unit of finely banded biotite pyroxene hornfels. The biotite hornfels is dark purple brown incolour while the pyroxene rich areas are light grey - green in colour.

Some occasional narrow bands of garnet skarn are present in the core and between 163.69 to 165.80m there is an area rich in marble with quite large amounts of pyroxene garnet skarn visible here.

Bedding at	157m	approximately 67°	L.C.A.
	159m	" 68°	"
	163m	" 72°	"
	166.5m	" 67°	"
	169m	" 63°	"
	172m	" 70°	"

175.26 - 187.45m BANDED BIOTITE PYROXENE GARNET HORNFELS

This unit is a continuation of the one above but contains quite a large number of garnet and garnet pyroxene skarn bands with quite high calcite content.

There is however minor visible scheelite or molybdenite in these areas.

187.45 - 201.36m A finely banded biotite, pyroxene hornfels with minor garnet calcite bands as above.

Quite good scheelite is present in these garnet rich areas.

201.36 - 208.79 GRASSY GRANITE

A fresh quartz feldspar biotite granite with some minor aplite present in it.

E.O.H.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 22/1

Survey method : Multishot Camera
Final depth : 208.79m
Casing depth : 30.48m

Depth surveyed to :207.26m
Date surveyed :15.2.75
Surveyed by : BB/IS
Checked by : GB

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		E	N
30.48	105° 15'	96° 15'	1° 15'	-88° 45'	30.47	0.07	0.63
60.96	104° 30'	95° 30'	1°	-89°	60.95	0.13	1.23
91.44	102°	93°	1° 45'	-88° 15'	91.42	0.18	2.05
121.92	111° 30'	102° 30'	2° 22'	-87° 38'	121.88	0.38	3.15
152.40	126° 30'	117° 30'	3° 15'	-86° 45'	152.31	1.01	4.63
182.88	135°	125°	4°	-86°	180.73	2.12	6.36
207.26	144°	135°	4° 15'	-85° 45'	207.05	3.34	7.61

REMARKS:

GEOLOGY - KING ISLAND SCHEELITE

LOG OF D.D.H. No. INV. 21/14

PLANNING PROPOSER: J. Clark DEPTH: 200m

LOCATION: Memetts Block

PURPOSE OF HOLE: Test for Continuation of ore in Inv. 21 sequence

CO-ORDS: 213900 E 562900 N

INCLINATION: -90

BEARING: °GRID °MAG

TARGET: E N

SURVEY SURVEY CO-ORDS: E N

SURVEYED BEARING: °GRID °MAG

SURVEYED IN BY: DATE:

ACTUAL CO-ORDS: 213899.9 E 562899.7 N

R.L. OF COLLAR +141.3

INCLINATION OF HOLE -90°

PICKED UP BY: B Davies DATE: 6/6/79

SUMMARY LOGGED BY: J. Clark

RESULTS: 123.5 - 126.5m, 3m @ 0.57% WO_3

DRILLING DATE COMMENCED: 15/5/79 DATE TERMINATED:

DRILLER/CONTRACTOR:

CASING: SIZE:
DEPTH:

CORE: SIZE:
DEPTH:

WEDGE PLACED: DATE:

EXTENSION:

FINAL DEPTH: 179.0m

REASON FOR TERMINATION: Finished in Granite

CONDITION OF HOLE ON COMPLETION:

CASING:

CEMENTED:

BORE HOLE SURVEY:

WATER:

COMMENTS ON DRILLING CONDITIONS:

GEOLOGY - KING ISLAND SCHEELITE

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV. 21/14

Survey method: Singleshot
Final depth: 179m
Casing depth:

Depth surveyed to: 179m
Date surveyed: 2/6/79
Surveyed by: L. Denby
Checked by: J. Clark

Bearing			Inclination		True vertical Depth (m)	Co-ordinates	
Depth (m)	Grid	Mag.	Read.	Corrected		E	S
79			0	-90	79.00	-	-
179m	148°	138	1	-89	178.98	0.92	1.48

REMARKS:

GEOLOGY - KING ISLAND SCHEELITE

ASSAY DATA

D.D.H. No. INV. 21/14

Sample No.	DEPTH (METRES)				ELEMENTS			COMMENTS
	From	To	Length	Length Recovered	WO_3	Mo		
INV. 251	116.0	116.5	1.0	1.0	<0.01	<0.01		
2	116.5	117.0	"	"	<0.01	<0.01		
3	117.0	117.5	"	"	0.03	<0.01		
4	117.5	118.0	"	"	0.03	<0.01		
5	118.0	118.5	"	"	<0.01	<0.01		
6	118.5	119.0	"	"	<0.01	<0.01		
7	119.0	119.5	"	"	<0.01	<0.01		
8	119.5	120.0	"	"	<0.01	<0.01		
9	120.0	120.5	"	"	<0.01	<0.01		
60	120.5	121.0	"	"	0.25	<0.01		
1	121.0	121.5	"	"	0.72	0.01		
2	121.5	122.0	"	"	0.05	<0.01		
3	122.0	122.5	"	"	0.02	<0.01		
4	122.5	123.0	"	"	<0.01	0.01		
5	123.0	123.5	"	"	0.02	0.02		
6	123.5	124.0	"	"	0.74	0.01		
7	124.0	124.5	"	"	0.50	0.03		
8	124.5	125.0	"	"	0.18	0.01		
9	125.0	125.5	"	"	0.34	<0.01		
70	125.5	126.0	"	"	0.41	0.01		
1	126.0	126.5	"	"	1.27	0.03		
2	126.5	127.0	"	"	<0.01	0.01		
3	127.0	127.5	"	"	<0.01	0.01		
4	127.5	128.0	"	"	<0.01	0.01		

SPECIFIC GRAVITY

Depth (metres);

Rock Type :

S.G. :

Determined by:

GEOLOGY - KING ISLAND SCHEELITE

GEOLOGICAL LOG

D.D.H. No. INV 21/14

0.0 - 7.55 NO CORE

7.55 - 62.20 UPPER VOLCANICS

Light to dark green fine grained basic volcanics. Ironstaining along fractures in abundant down to 35m and below this there are scattered ironstained fractures to 45m.

8.7 - 12.5	Poor recovery (60%) of dark brown clay with small rock fragments.
15.85 - 18.0	Clayey and broken core.
24.3 - 26.0	Dark grey fine grained biotite hornfels
29.0 - 38.0	Dark brown biotite hornfels with minor well bedded pyroxene-rich intenvals. Aplite veins become common towards the base of the unit. Bedding is 60° to core axis.
38.0 - 41.0	Aplite fine grained light pink aplite with clay-rich fractures and short lengths of sediments.
50.7 - 52.3	Brownish grey biotite hornfels with minor interbedded green pyroxene hornfels. Bedding is 65° to core axis.

Fractures/m = 12
Recovery = 98%

62.20 - 98.30 BIOTITE HORNFELS

Purplish brown biotite hornfels with interbedded green pyroxene hornfels and minor marble.

66.5 - 66.8, 67.5 - 67.7m. Mildly broken core the latter being associated with fine aplite veining.
67.7 - 68.3 Fine grained white aplite.
82.1 - 82.2 Veins of clay rich calcite.

At 70.4 bedding is 56° to core axis.
85m 43°
96 54°

Fractures/m = 3
Recovery = 100%

98.30 - 113.90 PYROXENE-BIOTITE HORNFELS

Interbedded green pyroxene hornfels and brown biotite hornfels with marble becoming more abundant towards the end of the unit. Both boundaries of this unit are gradational.

Grossular garnet and less commonly andradite are present within and rimming marble beds. At 101.5m, 101.6m, 101.8m andradite garent beds contain scheelite but are moderately leached and vuggy. Garnet rich beds which do not contain scheelite are leached at 103.4 - 103.5m and 104.15m.

GEOLOGY - KING ISLAND SCHEELITE

GEOLOGICAL LOG

D.D.H. No. INV 21/14

98.3 - 99.1m Fine grained white aplite.

At 100.0 bedding is 56° to core axis.
1 .0 57°

Fractures/m = 4
Recovery = 100%

113.90 - 133.20 MARBLE

White fine grained well bedded marble with beds of pyroxene hornfels and garnet hornfels.

117.4	- 117.55	Bedded pyroxene-grossular hornfels containing fine grained moderately disseminated scheelite
118.6	- 119.0	Pyroxene hornfels with marble beds.
120.9	- 121.4	Bedded garnet hornfels with pyroxene hornfels. Fine grained shceelite is present in the andradite rich beds.
122.25	- 122.8	Clear white quite quartz with some very well formed crystals. Core is moderately broken
122.8	- 123.5	Fine grained white to light pink.
123.5	- 124.2	Bedded garnet hornfels with minor pyroxene hornfels. Abundant fine grained disseminated scheelite is present with andradite garnet
124.2	- 124.9	Fine to medium grained white aplite.
124.9	- 126.45	Pyroxene hornfels with interbedded garnet hornfels containing scheelite. Scheelite rich beds make up about 30% of the unit.

At 118m bedding is 62° to core axis.
129m 55°

Fractures/m = 4
Recovery = 100%

133.20 - 145.50 PYROXENE-CALCITE-BIOTITE HORNFELS

This is a disturbed unit with both bedding and pods present. It consists of pyroxene hornfels which has beds and pods of marble rimmed by grossular. Biotite hornfels is less common, but where present includes light coloured rock fragments rimmed by pyroxene.

Scheelite is not present.

At 141.1m bedding is 58° to core axis.
145.0 52°

Fractures/m = 2
Recovery = 100%

GEOLOGY - KING ISLAND SCHEELITE

GEOLOGICAL LOG

D.D.H. No. INV 21/14

145.50 - 158.40 BIOTITE HORNFELS

Purplish brown biotite hornfels with minor interbedded and lensed pyroxene hornfels and grey actinolite hornfels. Several quartz fragments rimmed by pyroxene are present and minor grossular, rimmed by pyroxene occurs near the start of the unit.

157.45 - 157.6 Fine grained grey/white adamellite.

Fractures/m = 3
Recovery = 100%

158.40 - 179.00 ADAMELLITE

Typical Grassy Adamellite which contains pink orthoclase phenocrysts, quartz, plagioclase, biotite and minor hornblende. Calcite filled veinlet along fractures are occassionally present.

The upper boundary of this unit is slightly fine grained and has a concentation of biotite.

Fractures/m = 2
Recovery = 100%

EOH 179.00m

DIAMOND DRILL HOLE SURVEY

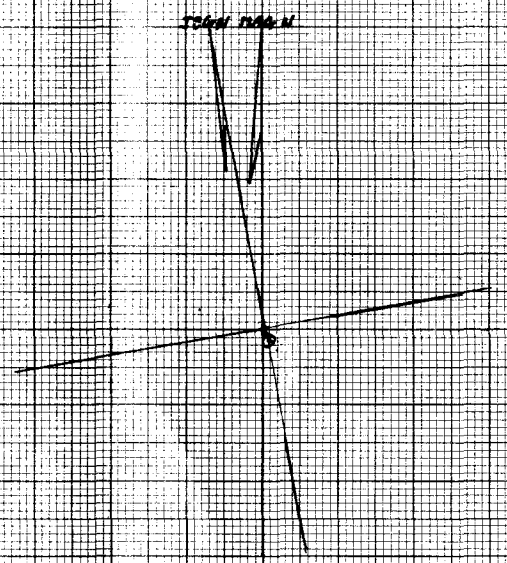
Sheet 1 of 1

Eastman - Kodak SINGLE SHOT Camera

DDH No INV 21-14 Casing Depth _____ Surveyed by L. DENBY

Total Depth 179.00m Depth Surveyed 179.00m Date Surveyed 2-6-79

Depth	Drift Angle	Mean Drift Angle	Cos. / Sine	Vert. Depth	True Vert. Depth	Defl.	Drift Direc.	Mean Drift Direc.	Cos. / Sine	Co-ords N/S	Co-ords E/W	Sum of Co-ords N/S	Sum of Co-ords E/W
			1 / 0						1 / 0				
79m	0	0		79m	79m	0	0	0		0	0	0	0
			9998 / 0175				S E / 42 (mag.)	S E / 42	7431 / 6691				
179m	1°	1°		99.98	178.98	1.75				1.30	1.17	1.30	1.17



DDH INV 21.14

TOWN MAIN: 179.00m

CASING MAIN:

DEPTH SURVEYED: 179.00m

DATE SURVEYED: 2-6-79

SURVEYED BY: L. DENNY

GAF A3 1 mm

GEOLOGY - KING ISLAND SCHEELITE

LOG OF D.D.H. No. INV 21/13

PLANNING

PROPOSER: J. Clark DEPTH: 200m

LOCATION: Merrits Block

PURPOSE OF HOLE: Test for Extension of Ore at Ivestigator 21 Prospect

PROPOSED CO-ORDS: 213850 E 562900 N

INCLINATION: -90

BEARING: °GRID °MAG

TARGET: E N

DEPTH:

CHECKED BY: DATE:

SURVEY

SURVEY CO-ORDS: E N

SURVEYED BEARING: °GRID °MAG

SURVEYED IN BY: DATE:

ACTUAL CO-ORDS: 213849.7 E 562899.2 N

R.L. OF COLLAR: +140.8

INCLINATION OF HOLE: -90°

PICKED UP BY: B. Davies DATE: 4/5/79

SUMMARY

LOGGED BY: J. Clark

RESULTS: 90 - 92m ~~12m~~ 2m @ 0.41% WO_3

DRILLING

DATE COMMENCED: 3.4.79 DATE TERMINATED: 12.5.79

DRILLER/CONTRACTOR: ADD

CASING: SIZE: HQ NQ
DEPTH: 15 57

CORE: SIZE: No Core AQ NQ BQ
DEPTH: 11 11-15 57 176

WEDGE PLACED: DEPTH: PROPOSER:

EXTENSION:

FINAL DEPTH: 176m

REASON FOR TERMINATION: In Adamellite

CONDITION OF HOLE ON COMPLETION:

CASING:

CEMENTED: 38m, 50m, 90m

BORE HOLE SURVEY: Multishot Camera

WATER:

COMMENTS ON DRILLING CONDITIONS: Broken Ground 0-50m needed Cementing.

GEOLOGY - KING ISLAND SCHEELITE

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 21/13

Surveyed method: Multishot Camera
Final depth: 176m
Casing depth: 57.0m

Depth surveyed to: 176m
Date surveyed: 14/5/79
Surveyed by: L. Denby
Checked by: J. Clark

Bearing			Inclination		True Vertical Depth (m)	Co-ordinates	
Depth (m)	Grid	Mag.	Read	Corr.		E	N
22	(181)	171	1°	-89°	22.00	0.00	0.38
64	(181)	171	1°	-89°	63.99	-0.01	-1.11
82	181	171	1° 30'	-88.5°	81.98	-0.02	-1.58
118	175	165	2°	-88°	117.96	+0.09	-2.83
154	175	165	2°	-88°	153.94	+0.20	-4.08
176	174	164	2° 15'	-87.75°	175.92	+0.29	-4.94
EOH	-4.94 - 0.8 =5.7m SO/S						

REMARKS:

GEOLOGY - KING ISLAND SCHEELITE

ASSAY DATA

D.D.H. No. INV 21/13

SAMPLE NO.	DEPTH (METRES)				ELEMENTS			COMMENTS
	From	To	Length	Length Rec.	WO_3	Mo		
INV 275	88.5	89	1.0	1.0	0.01	0.01		
76	89	89.5	"	"	0.01	0.01		
77	89.5	90	"	"	0.24	0.01		
78	90	90.5	"	"	0.36	0.01		
79	90.5	91	"	"	0.61	0.09		
80	91	92.5	"	"	0.13	0.01		
81	91.5	92	"	"	0.55	0.01		
82	92	92.5	"	"	0.01	0.01		
83	92.5	93	"	"	0.01	0.01		

SPECIFIC GRAVITY

Depth (metres):

Rock Type:

S.G.:

Determined by:

GEOLOGY - KING ISLAND SCHEELITE

GEOLOGICAL LOG

D.D.H. No. INV 21/13

0.0 - 11.25m No Core

11.25 - 13.50 APLITE

White, fine grained, mildly sugary aplite. Minor fine grained biotite is present.

12.5 - 12.37m. Broken core consisting of both aplite and fine grained basic volcanics.

Minor orange iron oxide staining is present on fracture surfaces.

Fractures/m = 15 in aplite
Recovery = 80%

13.50 - 27.50 UPPER VOLCANICS

Light green, weathered, fine grained basic volcanics. Thick orange iron-oxide coatings are present on fracture surfaces.

22.0 - 23.0m Sugury, white to brown weathered aplite.
26.0 - 27.0m No core.

Fractures/m = 20
Recovery =

27.50 - 43.40 BIOTITE HORNFELS

Purplish brown fine grained biotite hornfels with minor interbedded light green pyroxene hornfels at 70^{o} to core axis. Core is very broken, and iron-oxide coatings are present on fractures between 27.5 - 35m.

Fractures/m = 20
Recovery =

43.40 - 50.00 BIOTITE/PYROXENE HORNFELS

Purplish brown biotite hornfels with interbedded light green pyroxene hornfels at 66^{o} to core axis. Some of the pyroxene beds have a core of light brown marble, some of which is mildy weathered.

Fractures/m = 8
Recovery = 100%

NB. Hole cemented in preparation for placing casing. When drilling out cement a new hole was started.

GEOLOGY - KING ISLAND SCHEELITE

GEOLOGICAL LOG

D.D.H. No. INV 21/13A

34.20 - 43.40 BIOTITE HORNFELS

Purplish brown fine grained biotite hornfels with minor interbedded light green pyroxene hornfels at 60° to core axis. Core is very broken, especially 35.5 - 39.7m

Fractures/m = 20
Recovery =

43.40 - 81.40 BIOTITE - PYROXENE HORNFELS

Purplish brown biotite hornfels with abundant interbedded green pyroxene hornfels and minor marble. Grossualr garnet is present as rims around, or replacing, marble and traces of scheelite are ocassionally present in garnet-rich beds.

46.85 - 47.0	White, fine grained aplite.
49.3 - 49.6	White fine grained aplite.
49.6	Minor broken core.
52.7 - 52.8	Broken core assocated with weathering of marble beds (now stained brown by iron-oxides).
62.8 - 64.0	Chlorite vein with minor pyrite subparallel to the core axis.
70.5 - 77.0	Short intervals of broken core associated with weathered garnet/marlbe beds.
79.8 - 80.4	Medium grained grey aplite

Bedding is 65° to core axis throughout this unit.

Fractures/m = 6
Recovery =

81.40 - 107.50 MARBLE

Fine grained, white to light grey marble. The top of the unit (81.4 - 89.6m) is quite well bedded with thin black biotite hornfels beds at 58° to core axis. Small beds rich is pyroxene and grossular are also present.

89.6 - 91.05	Bedded garnet hornfels consisting of interbedded andradite garnet hornfels and green pyroxene hornfels. Fine grained moderately disseminated scheelite is present in the garnet beds. Bedding is 55° to core axis.
91.05 - 91.60	Medium grained aplite which is white with dark red staining. Minor biotite and miscovite are present. Several grains of scheelite (8mm diameter) are present around 91.5m.
91.6 - 92.0	Bedded garnet hornfels, similar to above but with more pyroxene hornfels and less garent.
92.0 - 107.0	The remainder of the unit consists of white to light grey unbedded marble with abundant calcite and chlorite veinlets.
107.0 - 107.5	Intraformational breccia consisting of marble fragments and matrix.

Fracutres/m =
Recovery =

GEOLOGY - KING ISLAND SCHEELITE

GEOLOGICAL LOG

D.D.H. No. INV 21/13A

107.50 - 156.0 BIOTITE/PYROXENE HORNFELS

Purplish brown biotite hornfels with irregular lenses of green pyroxene hornfels. The unit is not bedded and there are rock and calcite fragments sparsely scattered throughout.

107.5 - 107.7m Broken, brecciated core with a 1cm thick recemented breccia zone.
112.9 - 113.1m Broken core with a calcite matrix in a zone of recemented breccia.
107.5 - 116.0 Small beds of calcite and grossular are rimmed by pyroxene. Bedding is mildly disturbed but averages 55° to core axis. Fine and medium grained scheelite is present at 115.45m
128.8 - 130.0 Fine grained feldspar porphyry, consisting of rounded feldspar crystals (av. 3mm diameter) in a very fine grained grey matrix.
130.0 - 131.1 Broken core with abundant chlorite veining. Chlorite biotite hornfels is present around a calcite vein at 55° to core axis.
131.1 - 156.0 Small calcite pods (usually rimmed by pyroxene and occasionally grossular) are sparsely distributed.

The boundary with adamellite is sharp.

Fractures/m = 4
recovery = 100%

156.0 - 176.0 ADAMELLITE

Typical Grassy Adamellite with large pink orthoclase phenocrysts in a matrix of coarse grained quartz, plagioclase and biotite. The beginning of the unit is slightly finer grained and has less phenocrysts.

Fractures/m = 3
Recovery = 100%

EOH 176.00m

DIAMOND DRILL HOLE SURVEY

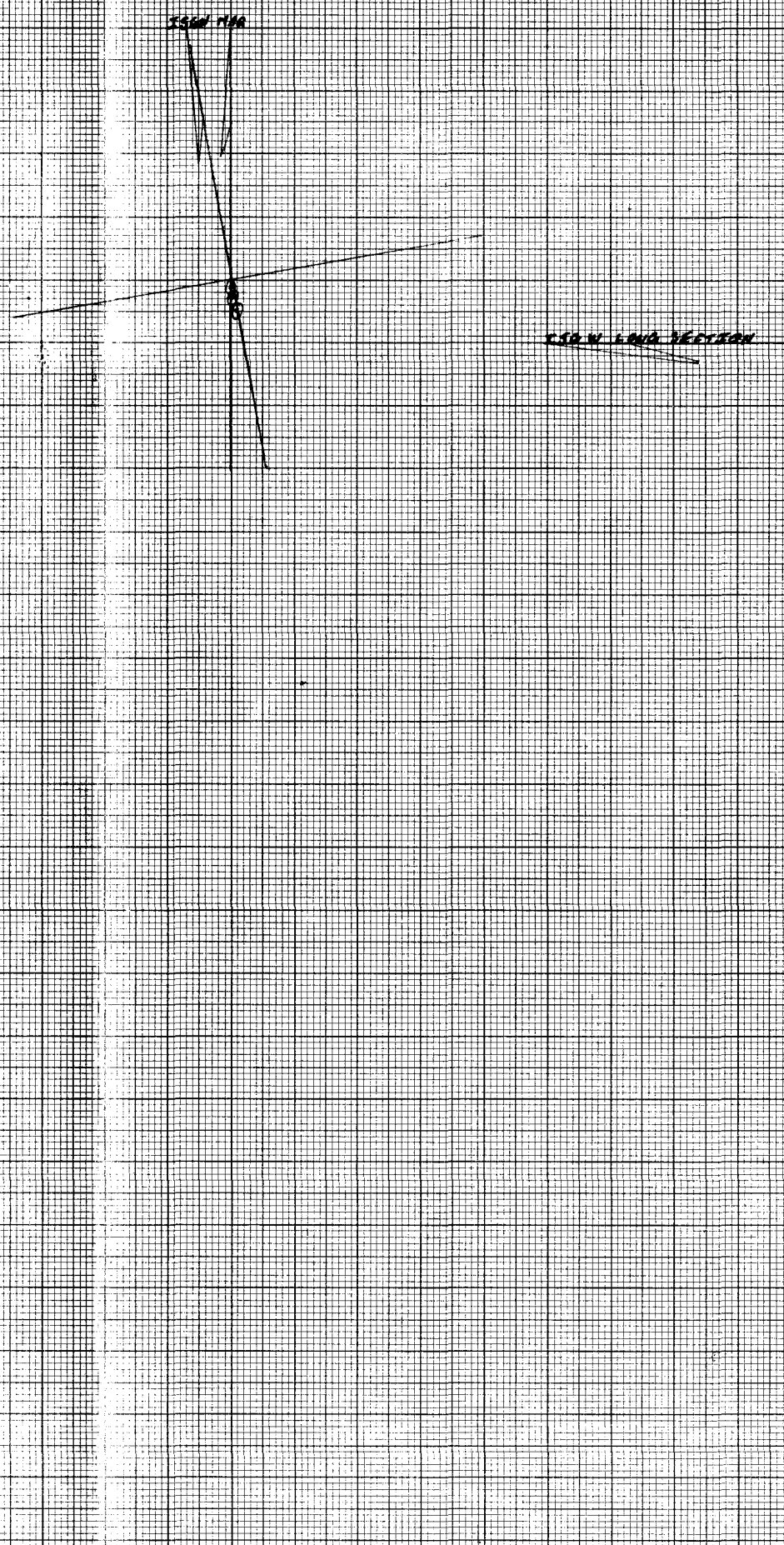
Sheet 1 of 1

Eastman - Kodak MULTI SHOT Camera

DDH No INV 21-13 Casing Depth 57.00m Surveyed by L. DENEY

Total Depth 176.00m Depth Surveyed 176.00m Date Surveyed 14-5-79

Depth	Drift Angle	Mean Drift Angle	Cos. / Sine	Vert. Depth	True Vert. Depth	Defl.	Drift Direc. S E	Mean Drift Direc. S E	Cos. / Sine	Co-ords # / S	Co-ords E / #	Sum of Co-ords # / S	Sum of Co-ords E / #	
22m	1°	1°	9998 / 0175	22.00	22.00	.39	9°	9°	9877 / 1564	.39	.06	.39	.06	
42														
64m	1°	1°	9998 / 0175	21.99	63.99	.74	9°	9°	9877 / 1564	.73	.12	1.12	.19	*
18														
82m	1°30'	1°30'	9997 / 0262	17.99	81.98	.47	9°	9°	9877 / 1564	.46	.07	1.58	.25	
36														
118m	2°	2°	9994 / 0349	35.99	117.97	1.26	15°	15°	9659 / 2588	1.22	.33	2.80	.58	*
36														
154m	2°	2°	9994 / 0349	35.98	153.95	1.26	15°	15°	9659 / 2588	1.22	.33	4.02	.91	
22														
176	2°15'	2°15'	9992 / 0393	21.98	175.93	.86	16°	16°	9613 / 2756	.83	.24	4.85	1.15	*



Plot on
562900 N
new section

OOH TNV 21-13

TOTAL DEPTH: 176.00m

CASING DEPTH: 57.00m

DEPTH SURVEYED: 176.00m

DATE SURVEYED: 14-5-79

SURVEYED BY: L. DENOY

Scale 1:1000

GAF A3 1 mm

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NO. IV 21 - 12

PLANNING

Proposer: S. Grieve Brown **Depth:** 180m

Location: Investigator 21

Purpose of hole: To test C lens horizon.

Co-ordinates: 213710 E 562900 N
Inclination: -90° **Magnetic:**
Bearing Grid **Target Depth:**
Target: E N
Approved by: M.C.Rogers **Date:** 14/4/77

SURVEY

Survey Co-ords: - E N
Survey bearing: - Grid **Magnetic:**
Surveyed in by: **Date:**
Actual Co-ords: 213710.39 E 562895.37 N
R.L. of Collar: **Inclination of Hole:** -90°
Picked up by: R.J.H. **Date:** 17/4/77

SUMMARY

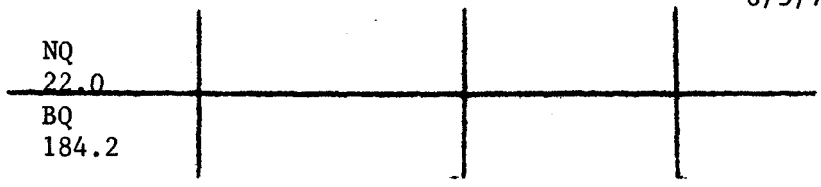
Logged by: S.G. Brown
Results: Sub grade scheelite present in C lens horizon.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 20/4/77 **Date terminated:** 6/5/77

Casing: **Size:** NQ
Depth: 22.0
Core: **Size:** BQ
Depth: 184.2



Wedge Runoff:
Wedge placed: Nil **Depth:**
Proposed by: **Approved by:**
Reason:

Extension: Nil
Reason for termination: Entered Grassy Granite
Condition of hole on completion: **Final depth:** 184.20
Casing: pulled
Cemented: Yes
Bore hole survey: Multishot
Water: No

Comments on drilling conditions: Good

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H No. INV 21 - 12

Survey method: Multishot
Final depth : 184.20
Casing depth : 22.00

Depth surveyed to: 182.00
Date surveyed: 6/5 77
Surveyed by : L.D.
Checked by : R. VdenB.

Depth (m)	Bearing		Inclination		True vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected			
30.0	296°	286°	-4° 30'	-4° 30'	29.91	0.73	1.59
60.0	250°	240°	-4° 30'	-4° 30'	59.82	1.11	3.70
90.0	196°	186°	-5° 45'	-5° 45'	89.70	3.44	4.93
120.00	197°	187°	-6° 45'	-6° 45'	119.52	6.75	5.25
150.00	189°	179°	-8° 00'	-8° 00'	149.24	10.84	5.29
182.00	186°	176°	-9° 13'	-9° 13'	180.86	15.80	5.16

REMARKS:

GEOPEKO LIMITED - KING ISLAND

CORE RECOVERY

D.D.H. No. INV 21- 12

INTERVAL (m)	LENGTH (m)	LENGTH RECOVERED (m)	% CORE RECOVERY
0.0 - 5.5	5.5	0.4	7
8.5	3.0	0.90	30
11.5	3.0	0.76	25
15.00	3.50	0.98	28
16.0	1.0	0.08	8
19.0	3.0	0.73	24
22.0	3.0	2.86	95
25.8	3.80	2.60	68
28.8	3.0	2.98	99
31.8	3.0	2.93	98
34.8	3.0	2.92	97
37.8	3.0	2.78	93
40.8	3.0	2.85	95
43.8	3.0	2.97	99
46.8	3.0	3.01	100
49.8	3.0	2.85	95
52.8	3.0	2.94	98
55.8	3.0	3.0	100
58.8	3.0	2.65	88
61.8	3.0	3.27	109
63.0	1.20	1.20	100
64.8	1.80	1.82	101
67.8	3.0	2.98	99
70.8	3.0	3.06	102
73.8	3.0	2.88	96
76.8	3.0	3.0	100
79.8	3.0	2.91	97
82.8	3.0	2.95	98
85.8	3.0	2.98	99
88.8	3.0	2.98	99
91.5	2.7	2.74	101
94.7	3.2	3.22	101
97.8	3.10	3.10	100
100.8	3.00	3.01	100
103.8	3.00	3.06	102
106.8	3.00	2.92	97
109.8	3.00	3.05	102
112.8	3.00	3.01	100
115.8	3.0	2.99	100
118.8	3.0	3.08	103
121.8	3.0	3.05	102
124.8	3.0	2.96	99
127.8	3.0	2.92	98

GEOPEKO LIMITED - KING ISLAND

CORE RECOVERY

D.D.H. No. INV 21 -12

INTERVAL (m)	LENGTH (m)	LENGTH RECOVERED (m)	% CORE RECOVERY
130.8	3.0	2.94	98
133.8	3.0	2.97	99
136.8	3.0	2.96	99
139.8	3.0	3.0	100
142.8	3.00	3.01	100
145.8	3.0	2.99	100
148.8	3.0	2.98	99
151.5	2.7	2.65	98
154.5	3.0	2.96	99
155.8	1.3	1.28	98
157.8	2.0	1.90	95
160.8	3.0	3.0	100
163.8	3.0	3.03	101
166.8	3.0	2.82	94
169.8	3.0	3.16	105
172.8	3.0	2.95	98
175.8	3.0	3.05	102
178.8	3.0	2.98	99
181.8	3.0	3.03	101
184.2	2.4	2.43	101
E .O.H.			

GEOPEKO LIMITED - KING ISLAND

ASSAY DATA

D.D.H. No. INV 21 - 12

Sample No.	DEPTH (METRES)				ELEMENTS			COMMENTS
	From	To	Length	Length Recovered	WO_3	Mo		
				NOT ASSAYED				

SPECIFIC GRAVITY

Depth (m):
Rock Type:
S.G. :

Determined by:

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21 - 12

0.0 - 15.0 WEATHERED ROCK AND CLAY

Below about 11.5m the rock chips are in part fairly fresh and ore identifiable as a banded biotite pyroxene hornfels with minor garnet present in some of the fragments.

15.0 - 24.74 BANDED BIOTITE PYROXENE HORNFELS

This is a continuation of the unit present in the weathered zone and consists of an irregularly banded unit of biotite pyroxene hornfels with occasional bands of grossularite and andradite. These garnet bands are concentrated between 18.46m and 18.70m and contain moderate scheelite. The total width of all the beds in this area is 5cm.
Bedding is at 67^{o} LCA at 18.50m
70^{o} LCA at 22.16m

24.74 - 32.31 BANDED IMPURE MARBLE

This unit consists of a grey black coloured marble with irregular bands of white recrystalized marble present throughout. The banded nature of the unit is further emphasised by the irregular bands of pyroxene and garnet which also occur in this unit. The garnet is dominantly grossularite and shceelite is not present in this unit.
Bedding is at 66^{o} LCA at 25.62m
58^{o} LCA at 59.22m
61^{o} LCA at 31.95m

32.31 - 46.97 MARBLE

A grey black disturbed pure marble. Initially this shows some minor banding but below about 36.0m this is fairly rare. Below 44.0m minor pods and fragments are apparent through out and these increase is number to the end of this unit. The pods are mainly calcite but some pyrrhotite ones are also present.

Between 36.41 - 37.81m there is a small band of dark brown/purple middle volcanics with minor feldspar laths apparent throughout. This unit is fairly broken and both contacts show weathering.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21 - 12

46.97 - 48.09 DISTURBED BIOTITE PYROXENE HORNFELS

This unit is most irregular in appearance with whisps and pods of material present through out. Some minor calcite is present both in the matrix and as pods.

48.09 - 50.19 PODDED BIOTITE HORNFELS

This unit is essentially a brown purple biotite hornfels with a few very minor pods present through out.

50.19 - 58.30 DISTURBED BIOTITE PYROXENE HORNFELS (minor garnet)

This unit is very irregular in appearance with strings and blotches of biotite and pyroxene hornfels, all intermixed with lesser amounts of garnet and some trace calcite.

The garnet is mainly grossularite and there is no scheelite present in this unit.

A couple of calcite filled faults are apparent in this unit as follows:
50.48m - 22° LCA
52.21m - 29 LCA

Below 56.20m there is only a very minor amount of garnet in this unit which is much less disturbed here.

58.30 - 64.57 BIOTITE HORNFELS

A fine grained black/purple biotite hornfels. Initially this unit has well developed spots but these cease to be present below about 59.0m.

A small leached zone is present at 64.37 where there appears to have been a small band of calcite.

This unit tends to grade into that underlying it.

64.57 - 100.11 PODDED BIOTITE PYROXENE HORNFELS

This unit consists essentially of a disturbed biotite pyroxene hornfels with irregular numbers of pods of various sizes scattered through out.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21 - 12

The pods vary in nature from siliceous to carbonate and in size from less than 1mm to 6cm. The calcite is usually present in the larger pods.

Some irregular banding is present in various parts of this unit and probably reflects zones of less disturbance of an originally bedded unit. At 76.80m there are some cavitites where calcite pods have been leached out.

A number of fractures or faults occur as follows:
66.41m 14° LCA calcite filled fracture
69.70m 3° LCA calcite filled fracture
76.48m 15° LCA calcite filled fracture
87.20m approx. 55° LCA. fault.
94.48m 80° LCA fault pug.

A small aplite is present between 82.74 - 82.90m.

100.11 - 102.68m CALCITE PYROXENE GARNET HORNFELS

The first 0.7m of this unit ore essentially a disturbed pyroxene garnet hornfels but below this the unit consists of white recrystalized marble with large numbers of garnet crystals present through out. Pyroxene is present in the lower part of this unit as well as the calcite and garnet but this is less noticeable.

Trace scheelite is present through out this unit as small finely disseminated specks.

102.68 - 104.74m MIDDLE VOLCANICS

A small unit of finely crystaline middle volcanics. The last 30cm of this unit show alteration due to the interaction between the calcite and the volcanic bands. Such alteration is not present at the top contact.

104.74 - 133.45 PODDED PYROXENE GARNET CALCITE HORNFELS

This unit commences as a pyroxene garnet rich unit with minor calcite but the calcite content increases to 133.45m where the unit is essentially a disturbed marble with minor pyroxene and garnet.

Very minor trace scheelite is present as very occasional blue fluorescing specks which occur through out this unit between 104.74 - 132.0m. Below this part small zones which contain minor scheelite are present.

Very minor amounts of molybdenite and native bismuth are present at 109.92m associated with one of the few zones of andradite garnet in this unit.

133.45 - 152.59 MARBLE

This is a dark grey - black unit of barren marble. There is present in this unit some areas with a relatively heavy pyrrhotite content as at 140.06m .

A number of broken zones possibly indicating faults are present as follows:
139.50m at 90° LCA fault pug
142.28 at 72° LCA fault pug
144.79m at 77° LCA fracture.
151.46m at 80° LCA fault pug.

Between 139.47 - 139.94 there is a small unit of fine grained dense black biotite hornfels.

Some minor bedding is apparant in this unit at
61° LCA at 145.73m
67° LCA at 149.40m

152.59 - 154.64m MIXED ZONE

This consists of irregular amounts of quartzite and granite (aplite) intermixed and with some digestion of the quartzite into the granite.

The core is badly broken in this area.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21 -12

154.64 - 162.35m QUARTZITES

Dark grey well spotted quartzites with no apparent bedding.

Pyrite is well developed along the joints.

The spotting tends to decrease towards the lower contact.

162.35 - 170.92m GRASSY GRANITE

A fairly typical unit of Grassy granodiorite with the usual well developed feldspar laths present through out.

At 168.04m there is a small patch of more mafic granite with pyrite and minor molybdenite.

170.92 - 180.95 QUARTZITES

As before a spotted grey block unit of quartzites with very occasional siltstone rich areas present in it.

The last 44cm of this unit are well spotted biotite rich quartzite with some sub-rounded blebs in it. Pyrrhotite is also present as quite large fragments.

180.95 - 184.20 GRASSY GRANITE
EOH

As before typical Grassy granodiorite.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NO. INV21/11

PLANNING

Proposer: S.G. Brown — Depth: 200m

Location: Investigator 21, Merritts Block.

Purpose of hole: To test for possible mineralisation in 'C' lens.

Co-ordinates:	213820	E	563100	N
Inclination:	-90°			Magnetic:
Bearing	-	Grid	-	Target Depth:
Target:		E		N
Approved by:	M.J. Danielson			Date: 25/2/77

SURVEY

Survey Co-ords:		E		N
Survey bearing:		Grid		Magnetic:
Surveyed in by:				Date:
Actual Co-ords:	213 821.0	E	563 100.8	N
R.L. of Collar:				Inclination of Hole: VERT.
Picked up by:	R.J.H			Date: 3/4/77

SUMMARY

Logged by: S. Grieve Brown

Results: Miner scheelite adjacent to the granite contact.

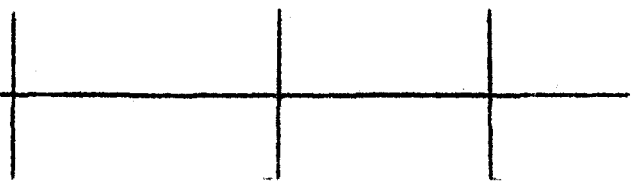
DRILLING

Driller/Contractor: A.D.D.

Date commenced: 13/3/77 — Date terminated: 17/3/77

Casing: Size: NXTT
Depth: 25m

Core: Size: BQ
Depth: 173m



Wedge Runoff:
Wedge placed: Nil — Depth:
Proposed by: - — Approved by:
Reason:

Extension: Nil

Reason for termination: entered granite at 153.67m.

Condition of hole on completion: — Final depth: 173.0m
Casing: pulled
Cemented: yes

Bore hole survey: Multishot

Water: No

Comments on drilling conditions: Good

GEOPEKO LIMITED - KING ISLAND

CORE RECOVERY

D.D.H. No. INV 21/11

INTERVAL (m)	LENGTH (m)	LENGTH RECOVERED (m)	% CORE RECOVERY
o.o - 15.0	15.0	0.93	6%
15.0 - 18.5	3.5	2.47	71%
18.5 - 21.5	3.0	2.26	75%
21.5 - 24.5	3.0	3.11	104%
24.5 - 25.0	0.5	0.50	100%
25.0 - 28.8	3.8	3.32	87%
28.8 - 32.0	3.2	1.96 dropped core	61%
32.0 - 34.5	2.5	2.37	95%
34.5 - 37.8	3.3	2.89	88%
37.8 - 39.8	2.0	2.29	115%
39.8 - 41.0	1.2	1.15	96%
41.0 - 44.0	3.0	2.98	99%
44.0 - 47.0	3.0	2.87	96%
47.0 - 47.3	0.3	0.25	83%
47.3 - 48.2	0.9	0.87	97%
48.2 - 50.0	1.8	1.84	102%
50.0 - 53.0	3.0	2.82	94%
53.0 - 56.0	3.0	3.11	104%
56.0 - 59.0	3.0	3.10	103%
59.0 - 62.0	3.0	3.0	100%
62.0 - 65.0	3.0	3.05	102%
65.0 - 68.0	3.0	2.94	98%
68.0 - 71.0	3.0	2.97	99%
71.0 - 74.0	3.0	2.97	99%
74.0 - 77.0	3.0	3.00	100%
77.0 - 80.0	3.0	2.99	100%
80.0 - 83.0	3.0	2.93	98%
83.0 - 86.0	3.0	2.99	100%
86.0 - 89.0	3.0	2.99	100%
89.0 - 92.0	3.0	3.01	100%
92.0 - 95.0	3.0	2.98	99%
95.0 - 98.0	3.0	3.02	101%
98.0 - 101.0	3.0	3.00	100%
101.0 - 102.2	1.2	1.23	103%
102.2 - 103.5	1.3	1.32	102%
103.5 - 107.0	3.5	3.45	99%
107.0 - 110.0	3.0	3.02	101%
110.0 - 113.0	3.0	3.02	101%
113.0 - 116.0	3.0	2.9	99%
116.0 - 119.0	3.0	3.04	101%
119.0 - 122.0	3.0	3.00	100%
122.0 - 125.0	3.0	2.99	100%
125.0 - 128.0	3.0	2.96	99%
128.0 - 131.0	3.0	3.03	101%
131.0 - 134.0	3.0	3.00	100%
134.0 - 137.0	3.0	3.02	101%

GEOPEKO LIMITED - KING ISLAND

CORE RECOVERY

D.D.H. No. INV 21/11

INTERVAL (m)	LENGTH (m)	LENGTH RECOVERED (m)	% CORE RECOVERY
137.0 - 140.0	3.0	2.96	99%
140.0 - 143.0	3.0	2.96	99%
143.0 - 146.0	3.0	3.04	101%
146.0 - 149.0	3.0	2.96	99%
149.0 - 152.0	3.0	3.01	100%
152.0 - 155.0	3.0	2.95	98%
155.0 - 158.0	3.0	3.02	101%
158.0 - 161.0	3.0	2.97	99%
161.0 - 164.0	3.0	3.04	101%
164.0 - 167.0	3.0	2.99	100%
167.0 - 170.0	3.0	3.05	102%
170.0 - 173.0	3.0	2.98	99%
E.O.H.			

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 21/11

Survey method : Multishot
Final depth : 173m
Casing depth : 25m

Depth surveyed to :173m
Date surveyed :18/3/77
Surveyed by : LD
Checked by : VP

Depth (m)	Bearing		Inclination		True vertical Depth (m)	Co-ordinates	
	Grid	Mag.	Read	Corrected		S	E
30	-	S30° 00'E	1° 00'	-89° 00'	30.00	0.33	0.22
60	-	S27° 00'E	2° 30'	-87° 30'	60.00	1.10	0.59
90	-	S25° 00'E	2° 30'	-87° 30'	90.00	2.25	1.06
120	-	S19° 00'E	4° 30'	-85° 30'	119.91	4.12	1.75
150	-	S 5° 00'E	5° 15'	-84° 45'	149.78	6.69	2.49
173 EOH	-	S 8° 15'E	5° 15'	-84° 45'	172.71	8.70	2.86

REMARKS:

GEOPEKO LIMITED - KING ISLAND

ASSAY DATA

D.D.H. No. INV. 21-11

Sample No.	DEPTH (METRES)				ELEMENTS			COMMENTS
	From	To	Length	Length Recovered	WO_3	Mo		
			NOT ASSAYED					

SPECIFIC GRAVITY

Determined by:

Depth (m):
Rock Type:
S.G. :

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21/11

0.0 - 15.0m — CLAY AND SOIL

Very weathered bright yellow clay and mud very low recovery.

15.0 - 32.30 — BANDED BIOTITE PYROXENE HORNFELS

Essentially this is a fine grained brown purple biotite hornfels with increasing amounts of pyroxene calcite and garnet present as disturbed bands or rafts. They are not so podded in appearance as the material in the mines and appear to be more elongate such as those occuring in Bold Head N55 drive adjacent to No.2 fault.

Between 21.89 - 22.41m there are three small (1 cm) bands of garnet and calcite rich material which contain minor blue fluorescing scheelite as finely dessemated specks.

A further small (3 cm) band of garnet rich material containing scheelite occurs at 27.8m. The core in this unit is quite broken to about 21.5m below which the ground conditions improve.

Bedding is at 64^{o} LCA at 18.35m
64^{o} LCA at 22.10m
67^{o} LCA at 25.0m
78^{o} LCA at 27.7m
76^{o} LCA at 32.10m

32.30 - 47.44 — MIDDLE VOLCANICS

This unit is a light grey green spotted actinolite rich rock type with a small unit of biotite pyroxene hornfels occuring between 41.75m - 42.92m.

Zones of chlorite rich material occur within this unit often adjacent to zones of faulting.

Possible faults are located at 34.50m, 36.74m, where a noticable pug is present, 43.50m where a large amount of chlorite is visible, and at 46.13 where a fault with calcite infilling occurs at 17^{o} LCA.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21/11

47.44 - 57.52 BANDED BIOTITE PYROXENE HORNFELS

This is similar to the unit between 15.0 - 32.30m and contains similar rafts and bands of pyroxene and garnet rich material with lesser calcite rich ones.

The amount of pyroxene and garnet increases until by 57.52m the biotite makes up only about 20% of the core.

Minor scheelite is present in three of the garnet rich bands at 52.68m, 53.24m and 56.26m.

Bedding is not only indicated by the larger bands but also by fine lamellae within the biotite rich portions of the unit.
Bedding is at 65^{o} LCA at 52.08m
70^{o} LCA at 57.40m

57.52 - 61.13 BANDED BIOTITE PYROXENE GARNET CALCITE HORNFELS

In this unit which is a continuation of the above pyroxene bands are dominant with the other bands making up about 60% of the core.

The reason for separation this unit is because of the sharp increase in carbonate content in this area and because the core is transitional to the impure marble below.

The unit contains only trace scheelite associated with the garnet bands.
Bedding is at 63^{o} LCA at 59.28m.

61.13 - 65.02 IMPURE MARBLE

This is essentially a finely banded carbonate rich unit with narrow interbeds of pelitic material now indicated by narrow pyroxene and biotite rich bands. Only very minor garnet is present in this unit and scheelite mineralisation is not apparent.
Bedding is at 72^{o} LCA at 63.60m.

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GEOLOGICAL LOG

D.D.H. No. INV 21/11

65.02 - 68.06 BANDED BIOTITE PYROXENE HORNFELS

A fine grained unit of brown purple biotite hornfels with large amounts of grey green pyroxene rich bands present throughout. Minor garnet and calcite bands are also present. The unit is barren of scheelite mineralisation. Bedding is at 63° LCA at 67.39m.

68.06 - 79.85 IMPURE MARBLE

Again this is essentially a carbonate rich unit with minor pelitic interbeds. The carbonate is of two types, a fine grained grey variety and a coursely recrystalised white variety which shows some signs of remobilisation.

The pelitic interbeds are now represented by biotite and pyroxene hornfels bands with the pyroxene hornfels bands being dominant. Minor garnet bands are present in this unit and trace scheelite occurs in one band at 70.46m.

The last metre of this unit consists of finely banded pyroxene hornfels with minor amounts of biotite and garnet.
Bedding is at 62° LCA at 71.10
67° LCA at 74.05
61° LCA at 77.39m

79.85 - 79.94 FAULT ZONE

A small zone of crushed and breccated core with large amounts of calcite cement. This fault appears subparallel to bedding.

79.94 - 84.87 MARBLE

This unit differs from the above in that it is a pure marble with only very minor pelitic material present.

The marble is a dirty grey black marble similar to the 'B' lens marble at Bold Head and with the same well developed bedding in some areas. Between 81.58 - 82.20 there is a zone of grey crystaline feldspathic material with pyrrhotite blebs present throughout. This is probably an altered aplite.

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GEOLOGICAL LOG

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Below about 82.80m the core is very disturbed and bedding is no longer apparent in this unit.

Bedding is at 68° LCA at 80.23m
75° LCA at 81.20m
65° LCA at 82.60m

84.87 - 91.11 DISTURBED BIOTITE PYROXENE HORNFELS

Initially this unit is a fairly typical slightly podded unit consisting of a biotite and pyroxene groundmass which is irregular in colour and composition.

Below 88.60m however the pyroxene becomes more apparent as irregular bands of varying thickness which increase rapidly in both size and number until 89.52 they are dominant over the biotite which decreases in amount towards 91.11m at which point the unit grades into the one below.

91.11 - 96.34 DISTURBED PYROXENE GARNET HORNFELS

This unit is a disturbed banded unit of biotite pyroxene garnet hornfels within which occur irregular calcite pods.

Pyroxene and garnet are dominant with lesser calcite and minor biotite. Only trace scheelite is present in this unit.
The bedding appears to be at about 50° LCA at 43.9m

96.34 - 98.00 BANDED BIOTITE PYROXENE GARNET HORNFELS

A unit of biotite hornfels with irregular bands of pyroxene garnet and calcite present in it. Some irregular pods of calcite are also present here. The unit is barren of scheelite.
Bedding is at 65° LCA at 96.8m.
This small unit is gradational between the one above and the one below.

98.0 - 130.89 BIOTITE PYROXENE HORNFELS

This is essentially a biotite hornfels in which occur irregular patches and bands of pyroxene hornfels. A number of small angular fragments and pods, both siliceous and calcareous, occur through out.

Small clinohumite filled fractures are apparent at 105.42m at 7° LCA
111.95m at 10° LCA

A small (3cm) band of pyroxene rich hornfels containing trace scheelite occurs at 115.90m.

Below 126.25m the number of calcite pods increases as does their size. Garnet becomes apparent both as rims to the calcite pods and as part of the pyroxene rich bands.

Scheelite is present associated with some of these garnet rich zone as follows.
126.25 - 126.38m minor scheelite in a garnet pyroxene band.
129.96 - 130.26m trace scheelite in garnet associated with calcite pods.

130.89 - 132.90 PYROXENE GARNET HORNFELS

This unit initially contains quite a large amount of biotite hornfels but below 131.16m this decreases in amount to form only a minor portion of the unit.

The unit as a whole consists of darkish grey green pyroxene hornfels with large bands of garnet present in it. Scheelite is present in trace amounts in the garnet rich areas. Between 131.66m - 131.78m good grade scheelite is present. This scheelite is the blue fluorescing molybdenum poor variety.

The unit is vaguely banded at about 67° LCA at 132.0m.

132.90 - 138.8 DISTURBED PYROXENE BIOTITE HORNFELS

This unit consists mainly of a dull grey pyroxene groundmass with minor amounts of brown purple biotite hornfels present as irregular blotches and disturbed bands.

This unit is further distinguished by the presence of irregular amounts of pyrrhotite which occurs as irregular aggregates in the more siliceous zones.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21/11

138.8 - 145.45 BANDED BIOTITE PYROXENE HORNFELS"

This is a finely banded unit of brown purple biotite hornfels and grey green pyroxene hornfels with minor amounts of garnet which is associated with the pyroxene rich areas.

Trace scheelite occurs in two of these garnet rich areas. 141.40 - 141.53 and 142.35 - 142.37.

Occasional bands of calcite are present in this unit which grades into the one below.
Bedding is at 63° LCA at 139.67m
57° LCA at 141.76m
58° LCA at 143.41m
57° LCA at 145.38m

145.45 - 150.62 BANDED BIOTITE PYROXENE CALCITE HORNFELS

This is a continuation of the above unit with an increase in the calcite content to about 20% of the total core.

Minor garnet is associated with the calcite bands and trace scheelite occurs in a large percentage of the garnet rich areas.
Bedding is at 61° LCA at 146.40m
72° LCA at 149.07m

150.62 - 153.67 BANDED PYROXENE GARNET HORNFELS

This unit is gradational from the above one and initially contains minor biotite rich bands. Scheelite is present in most of the garnet rich areas and would be ore grade (≈1%) between 153.40m - 153.62m where it is associated with a high pyrrhotite content.

Some small molybdenite rosettes occur at about 152.84m in a garnet rich bands.
Bedding is at 67° LCA at 151.8m.

153.67 - 173.00 GRASSY GRANITE EOH

Typical Grassy Granite with large pink feldspar phenocrysts and large amounts of biotite

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

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'bookes' present through out.

The first 23cm is very quartz rich and some chalcopyrite and pyrrhotite are present in this zone at 153.74m.

This unit is barren of scheelite mineralisation.

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LOG OF D.D.H. No. INV 21/10

PLANNING

Proposer: S.G. Brown — Depth: 200m

Location: Investigator 21 563000N line.

Purpose of hole: To test for mineralisation in the calcite garnet hornfels.

Co-ordinates: 213725 E 563000 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers Date:

SURVEY

Survey Co-ords: 213725 E 563000 N

Survey bearing: Grid Magnetic

Surveyed in by: Date:

Actual Co-ords: 213725.35 E 562999.9 N

R.L. of collar: Inclination of hole:

Picked up by : V. Powell Date: 25/11/75

SUMMARY

Logged by : S.G. Brown

Results: Minor mineralisation encountered between 101.0 - 107.0m.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 18/8/75 Date terminated: 4/9/75

Casing:	Size :	HQ	NQ		
	Depth :	28.0	45.0		
Core:	Size :	HQ	NQ	BQ	
	Depth :	27.0	45.0	177.6	

Wedge Runoff:

Wedge placed: Nil Depth:

Proposed by : Approved by:

Reason:

Extension: Nil.

Reason for termination: Granite from 162.35m. Final depth: 177.6m

Condition of hole on completion:

Casing : Pulled

Cemented : No

Bore hole survey: Multishot Camera

Water: No

Comments on drilling conditions: Good

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 21/10

Survey method : Multishot camera
Final depth : 177.6m
Casing depth : 45m

Depth surveyed to : 174m
Date surveyed : 4.9.75
Surveyed by : VP
Checked by : GB

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		S	E
24.00	178° 30'	168° 30'	1° 15'	-88° 45'	24.00	0.47	0.09
60.00	176°	166°	1° 30'	-88° 30'	60.00	1.32	0.27
90.00	175°	165°	2°	-88°	90.00	2.32	0.45
120.00	181°	171°	3° 45'	-86° 15'	119.97	3.74	0.76
150.00	185°	175°	4° 30'	-85° 30'	149.90	5.87	0.96
174.00	175°	165°	5°	-85°	173.82	7.90	1.47

REMARKS:

E.

GEOPEKO LIMITED - King Island.

ASSAY DATA

D.D.H. No. INV 21/10

SAMPLE No.	DEPTH (METRES) From	To	Length	Length Recovered	ELEMENTS WO_3	Mo	Bi	COMMENTS
A 5301	93.5	94.0	0.5	0.5	<0.01	<0.01	<150ppm	
2	94.0	94.5	0.5	0.5	<0.01	<0.01	<150	
3	94.5	95.0	0.5	0.5	<0.01	0.05	<150	
4	95.0	95.5	0.5	0.5	<0.01	<0.01	<150	
5	95.5	96.0	0.5	0.5	<0.01	<0.01	<150	
6	96.0	96.5	0.5	0.5	<0.01	<0.01	<150	
7	96.5	97.0	0.5	0.5	<0.01	0.05	<150	
8	97.0	97.5	0.5	0.5	<0.01	<0.01	<150	
9	97.5	98.0	0.5	0.5	<0.01	<0.01	<150	
10	98.0	98.5	0.5	0.5	<0.01	<0.01	<150	
11	98.5	99.0	0.5	0.5	<0.01	<0.01	<150	
12	99.0	99.5	0.5	0.5	<0.01	<0.01	<150	
13	99.5	100.0	0.5	0.5	<0.01	<0.01	<150	
14	100.0	100.5	0.5	0.5	<0.01	<0.01	<150	
15	100.5	101.0	0.5	0.5	<0.01	<0.01	<150	
16	101.0	101.5	0.5	0.5	<0.01	<0.01	<150	
17	101.5	102.0	0.5	0.5	0.05	<0.01	<150	
18	102.0	102.5	0.5	0.5	0.12	<0.01	<150	
19	102.5	103.0	0.5	0.5	0.96	0.18	<150	
20	103.0	103.5	0.5	0.5	0.18	0.01	<150	
21	103.5	104.0	0.5	0.5	0.05	<0.01	<150	
22	104.0	104.5	0.5	0.5	0.18	0.06	450	
23	104.5	105.0	0.5	0.5	0.19	0.01	<150	
24	105.0	105.5	0.5	0.5	0.12	0.16	750	
25	105.5	106.0	0.5	0.5	0.03	<0.01	<150	< 0.01
26	106.0	106.5	0.5	0.5	0.03	<0.01	<150	
27	106.5	107.0	0.5	0.5	0.11	<0.01	900	
28	107.0	107.5	0.5	0.5	<0.01	<0.01	250	
29	107.5	108.0	0.5	0.5	0.02	<0.01	<150	
30	108.0	108.5	0.5	0.5	<0.01	<0.01	1250	
31	108.5	109.0	0.5	0.5	<0.01	<0.01	<150	
32	109.0	109.5	0.5	0.5	<0.01	<0.01	<150	
33	109.5	110.0	0.5	0.5	<0.01	<0.01	<150	

SPECIFIC GRAVITY

Determined by:

Depth (m) :
Rock Type :
S.G. :

GEOPEKO LIMITED - King Island

ASSAY DATA

D.D.H. No.INV 21/10

SAMPLE No.	DEPTH (METRES) From	To	Length	Length Recovered	ELEMENTS WO_3	Mo		COMMENTS
A5334	110.0	110.5	0.5	0.5	<0.01	<0.01	<150	
35	110.5	111.0	0.5	0.5	<0.01	<0.01	<150	
36	111.0	111.5	0.5	0.5	0.02	<0.01	<150	
37	111.5	112.0	0.5	0.5	<0.01	<0.01	1500	
38	112.0	112.5	0.5	0.5	<0.01	<0.01	<150	
39	112.5	113.0	0.5	0.5	<0.01	<0.01	<150	
40	113.0	113.5	0.5	0.5	<0.01	<0.01	<150	
41	113.5	114.0	0.5	0.5	<0.01	<0.01	<150	
42	114.0	114.5	0.5	0.5	<0.01	<0.01	<150	
43	114.5	115.0	0.5	0.5	<0.01	<0.01	<150	
44	115.0	115.5	0.5	0.5	<0.01	<0.01	<150	
45	115.5	116.0	0.5	0.5	<0.01	<0.01	<150	
46	116.0	116.5	0.5	0.5	<0.01	<0.01	<150	
47	116.5	117.0	0.5	0.5	0.01	<0.01	<150	
48	117.0	117.5	0.5	0.5	<0.01	<0.01	<150	
49	117.5	118.0	0.5	0.5	<0.01	<0.01	<150	
50	118.0	118.5	0.5	0.5	<0.01	<0.01	<150	
51	118.5	119.0	0.5	0.5	<0.01	<0.01	<150	
52	119.0	119.5	0.5	0.5	<0.01	<0.01	<150	
53	119.5	120.0	0.5	0.5	<0.01	<0.01	<150	
54	120.0	120.5	0.5	0.5	<0.01	<0.01	<150	
55	120.5	121.0	0.5	0.5	0.01	<0.01	<150	
56	121.0	121.5	0.5	0.5	<0.01	<0.01	<150	
57	121.5	122.0	0.5	0.5	<0.01	<0.01	<150	
58	122.0	122.5	0.5	0.5	<0.01	<0.01	<150	
59	122.5	123.0	0.5	0.5	<0.01	<0.01	<150	
60	123.0	123.5	0.5	0.5	0.15	<0.01	<150	
61	123.5	124.0	0.5	0.5	<0.01	<0.01	<150	
62	124.0	124.5	0.5	0.5	<0.01	<0.01	<150	
63	124.5	125.0	0.5	0.5	0.05	<0.01	<150	
64	125.0	125.5	0.5	0.5	0.08	0.04	<150	
65	125.5	126.0	0.5	0.5	<0.01	<0.01	<150	
66	126.0	126.5	0.5	0.5	<0.01	<0.01	<150	

SPECIFIC GRAVITY

Determined by:

Depth (m) :
Rock Type :
S.G. :

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21/10

0 - 11.0m — MUD

A bright orange mud, weathered mine series.

11.0m - 17.45m — BIOTITE PYROXENE HORNFELS

A very weathered unit of biotite pyroxene hornfels. The pyroxene is light grey in colour while the biotite is a deep purple brown.

This unit has very poor recovery and grades into mud at the top.

The unit is well banded at about 60° L.C.A. and probably contained some minor calcite rich horizons.

17.45m - 21.0m — LOWER VOLCANICS

A small unit of weathered volcanics green brown in colour. Only about 1 metre of core was recovered here the bottom portion being mainly mud.

21.0m - 28.72m — PYROXENE GARNET CALCITE HORNFELS

About 5 metres of core recovered here.

The unit is slightly disturbed banded unit in which marble was probably dominant with lesser amounts of garnet and pyroxene.

The core is broken and leached throughout.

Minor scheelite is present throughout this unit.

28.72m - 39.52m — MARBLE

A grey black unreplaced marble. This unit is quite disturbed and the original banding has been completely disrupted below 36.80m.

Banding is present at 60° L.C.A. at 33.6m
65° L.C.A. at 36.2m.

The upper banded portion of this unit is sugary in texture and quite firable.

Between 31.52m - 31.57m there is a small felspar porphyry dyke.

39.52m - 94.54m — DISTURBED BIOTITE PYROXENE HORNFELS

This unit consists of a banded biotite pyroxene hornfels with minor irregular pods of pyroxene and calcite present throughout.

The first 3 metres contains larger amounts

of calcite and some minor garnet and is probably the lateral equivelant of the pgch in DDH INV 21/1 which occurs overlaying the podded bh.

The 3 metres above 94.54 are much richer in calcite and lower in biotite than the rest of this unit. Some garnet is present in this zone.

Bedding is at 52° L.C.A. at 45.5m
63° " at 65.6m
58° " at 70.1m
63° " at 79.9m
67° " at 91.0m.

Very minor scheelite mineralisation is present between 49.0m - 50.0m associated with garnet.

Minor scheelite also occurs at 68.45m, 76.79m, and at 84.75m.

94.54 - 125.45m PYROXENE GARNET CALCITE HORNFELS

A podded unit of pyroxene garnet calcite hornfels in which the calcite is the dominant unit both in the ground mass and in the pods.

Between 122.6m and 123.9m there are small units of very silica rich breccia present in the pgch.

Minor scheelite is present throughout usually associated with the garnet rich areas while molybdenite also occurs.

Scheelite is highest between 100.0m - 109.6m. While molybdenite is best seen between 94.0m - 100.0m. Minor bismuth is visible especially between 108.0m - 112.0m.

125.45m - 128.33m MARBLE

A dark grey - black marble with moderate pyroxene and garnet in the first metre.

This is a banded unit with banding at 67° L.C.A. at 127.0m.

128.33m - 132.36m SPOTTED HORNFELS

A dark green - black spotted quartz rich hornfels with minor banding present in it. This unit is cut by large numbers of fractures with chlorite present on the fracture planes.

This rock is more like the hornfelsed spotted siltstones rather than normal mine series type rocks.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV21/10

132.36m - 142.80m MARBLE

A dark grey banded marble with some minor disturbance visible in the core. No pyroxene and garnet are present in this unit and it is unmineralised. Banding at 140m is 56° L.C.A.

142.80m - 162.35m QUARTZITES

A series of grey brown spotted quartz biotite hornfels with some minor banding present in this unit. Banding at 154.50m is 62° L.C.A. Between 142.8m and 143.60m zoisite is present as about 40% of the core.

162.35m - 177.60m E.O.H. GRANITE

A grey white granite with quite large amounts of biotite present in some large feldspar crystals are present in this unit.

This unit is barren of mineralisation.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 21/9

PLANNING

Proposer: S.G. Brown — Depth: 215m

Location: Investigator 21 Brook's Block

Purpose of hole: To determine Stratigraphic sequence below the horizons intersected in DDH INV 21 - 2.

Co-ordinates: E 563000 N

Inclination: Vert. Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M. C. Rogers. Date: 25/4/74

SURVEY

Survey Co-ords: 213600 E E 563000 N N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: 213600.41 E 563000.07 N

R.L. of collar: Inclination of hole: Vert.

Picked up by : Date:

SUMMARY

Logged by : S.G. Brown

Results: Hole intersected lime rich Mine series to 108.31m before entering quartzites. No mineralisation.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 6/8/74 Date terminated: 26/8/74

Casing:	Size :	HQ	NQ		
	Depth :	24.07	45.72		
Core:	Size :	HQ	NQ	BQ	
	Depth :	24.07	45.72	152.40	

Wedge Runoff:

Wedge placed: Nil. Depth:

Proposed by : Approved by:

Reason:

Extension: Nil.

Reason for termination: Entered quartzite at 108.31m. Final depth: 152.40

Condition of hole on completion:

Casing : removed

Cemented : No

Bore hole survey: Surveyed to 152m

Water: Some water losses in weathered zone.

Comments on drilling conditions: Good.

GEOPEKO LIMITED - INVESTIGATOR 21

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV. 21-9

Survey method : Multishot camera
Final depth : 152.40 metres.
Casing depth : 76.20 metres.

Depth surveyed to : 152.40m.
Date surveyed : 26/8/74
Surveyed by : G. L. Buckland.
Checked by : G. L. Buckland.

DEPTH (m)	Bearing		Inclination		True Vertical Depth	Co-oridinates	
	Grid	Mag.	Read	Corrected		E S	N E
18.29	175°	166°	0°45'	-89°15'	18.29	0.20	0.05
30.48	175°	166°	0°45'	-89°15'	30.48	0.35	0.09
42.67	175°	166°	0°45'	-89°15'	42.67	0.51	0.12
60.96	175°	166°	1°	-89°	60.96	0.82	0.20
79.25	175°	166°	1°15'	-88°45'	79.25	1.13	0.27
91.44	175°	166°	1°45'	-88°15'	91.44	1.46	0.36
109.73	164°	155°	1°15'	-88°45'	109.72	1.87	0.46
121.92	175°30'	166°30'	1°30'	-88°30'	121.91	2.23	0.54
140.21	174°30'	165°30'	2°	-88°	140.19	2.81	0.64
152.40	185°	176°	2°15'	-87°45'	152.37	3.29	0.68

REMARKS

GEOPEKO LIMITED -

GEOLOGICAL LOG

D.D.H. NO.INV 21-9

0 - 3.00 MUD AND CLAY

Yellow brown mud and clay derived from weathered mine series.

3.00 - 18.16 PODDED BIOTITE HORNFELS

This unit is well weathered and a large percentage of the core is clay. The rock type consists of a groundmass of fine biotite and quartz in which patches of lightish grey pyroxene rich material occur. Fragments of marble occurs to some extent throughout this unit and in most cases these are weathered out leaving large voids.

18.16 - 38.74 PODDED BIOTITE HORNFELS

This is perhaps a rather inaccurate name for the unit as is quite a large number of cases the fragments are extremely angular, rather than rounded. The fragments consist mainly of marble and frequently show good banding in them. In some areas these marble fragments have been leached out leaving voids.

Silicfication of the rocks is apparent in two areas. 28.25 - 29.27 and 99.8'- 121' .

Between 28.25 - 29.27 the silica is present in the groundmass and the core has a 'blotchy' grey appearance. Fragments of marble are still present in this area and some minor brecciation is apparent in the core.

Between the silicfication is more uniform and contact rims are present round the marble fragments in which garnet crystals are developed.

There is an apparent increase in the number of fragments in the siliceous areas although this is probably due to the grey colour of the groundmass which allows the darker biotite and pyroxene rich fragments to stand out rather than merging with the background.

38.74 - 81.50 PODDED CALCITE GARNET HORNFELS

The unit is composed of varying amounts of calcite and grossular garnet with lesser pyroxene.

The calcite forms the majority of the ground mass with the pyroxene present in quite large amounts in some areas. The podded appearance is due to large fragments of calcite, some rounded, set in this matrix often with well developed crystals of grossular garnet present at their margins.

This unit becomes higher calcite and lower in pyroxene towards metres and the garnets become longer and better formed to this point.

GEOPEKO LIMITED -

GEOLOGICAL LOG

D.D.H. NO. INV. 21-9

Four small bands (large pods?) occur with in this unit.

Between 47.10 - 47.28 and 58.57 - 58.69 they consist of biotite pyroxene hornfels while between 63.67 - 63.81 and 70.11 - 70.28 they are of marble.

81.50 - 81.83 **MARBLE**

A banded grey black spotted marble with a very finely spotted appearance.
Banding is at 50° LCA.

81.83 - 83.61 **BRECCIA ZONE**

The first metre of core is mainly pyroxene and silica with minor garnet, and after about 82.30m the core is extremely broken and sheared.
From 82.30 onwards the core consists of marble fragments in a very oiliceous matrix.

83.61 - 84.12 **BIOTITE HORNFELS**

A very dark black coloured fine grained biotite quartz hornfels containing noticeable amounts of pyrrhotrite as irregular aggregates.
This biotite hornfels is completely different in both colour and texture to that found in the three orebodies and also to that in the mineralized areas of Investigator 21 and it is possible that this unit has been much less affected by metamorphic effects.

84.12 - 90.71 **MARBLE**

A medium grained grey black marble containing angular to rounded fragments of very fine grained marble.
Between 86.23 - 86.91 the core is badly broken and the fractures are coated with chlorite.

90.71 - 94.79 **BIOTITE HORNFELS**

As above fine black biotite hornfels rich in pyrite. Some areas here banding at about 63° LCA joints are at 94.50 30° LCA 60° LCA.
The whole unit is badly broken and has chlorite on the joints.
Some marble bands occur between 92.85 - 93.13
94.16 - 94.41

GEOPEKO LIMITED -

GEOLOGICAL LOG

D.D.H. No. INV. 21-9

94.79 - 108.31 **MARBLE**

Dark grey recrystalized marble some banding apparant at about 99 metres 60° LCA

Between 103.65 - 104.55 a zone of badly broken and sheared marble occurs with quite large amounts of chlorite on the joints.

108.31 - 111.10 **CONTACT ZONE**

A very mixed up zone of marble and quartzite all of which has been heavily silicified. One area of banding at about 109.50 gives an angle of 42° LCA.

Some very minor pure blue scheelite is present at about 101.88 in this unit.

This ore lookes rather similar to some holes drilled through No. 3 fault in Dolphin.

111.10 - 152.40 **QUARTZITE SEQUENCE**

A varying sequence of quartzite. From 111.10 - 114.11 the quartzite is fine grained and black in colour in the main with livo grey patches present in it.
From 114.11 - 115.29 the quartzite is badly broken and is mexed with aplite fragments all recemented by silica.
From 115.29 - 132.45 the quartzites are grey in colour and some areas of high silicification are visable. Jointing is common and have minor calcite on them in some cases -

60° LCA @ 127.30 metres.
46° " @ 122.00 "
40° " @ 131.50 "

From 132.45 - 152.40 the quartzites are well spotted with dark spots in a grey matrix which is medium grained and quartzite rich.

A small aplite dyke occurs between 149.20 - 150.58. Overall this unit is similar to the Bold Head Quartzites.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 21/8

PLANNING

Proposer: S.G. Brown — Depth: 180m

Location: Investigator 21, Merritts Block

Purpose of hole: To test mineral zone 50m east of DDH INV 21/2.

Co-ordinates: 213950 E 563000 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C.Rogers Date: 4/1/74

SURVEY

Survey Co-ords: 213950 E 563000 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: E N

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

Picked up by : Date:

SUMMARY

Logged by : S. G. Brown

Results: Only minor mineralisation encountered here.

N.B. pre collared as percussion hole 55

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 20/3/74 Date terminated: 9/4/74

Casing: Size : NQ

Depth : 89.91

Core: Size : BQ

Depth : 175.87

Wedge Runoff:

Wedge placed: Nil. Depth:

Proposed by : Approved by:

Reason:

Extension: Nil.

Reason for termination: Intersected Grassy granit Final depth: 175.87

Condition of hole on completion:

Casing : Nil

Cemented : No.

Bore hole survey: Multishot

Water: No.

Comments on drilling conditions: Moderate.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. INV. 21-8

89.92 - 105.46m BIOTITE PYROXENE HORNFELS

A finely banded unit of biotite pyroxene hornfels containing minor bands rich in calcite and garnet which sometime attain an almost podded appearance.

The biotite hornfels is the normal brown purple colour usually associated with the mine series rocks and forms the majority of the unit.

The pyroxene hornfels form broad bands on either side of the calcite garnet horizons.

Bedding is at 57° L.C.A. at 93.3m
67° " at 96.0m
67° " at 100.0m.
72° " at 102.0m.

105.64 - 106.38m BANDED PYROXENE GARNET HORNFELS

This is in effect a more garnet rich portion of the above unit.

Bedding dips 64° to L.C.A.

This unit is badly broken.

106.38 - 112.17m BIOTITE HORNFELS

An extremely fine grained very dark brown biotite quartz hornfels. Minor amounts of pyroxene rich hornfels are present with this unit but banding is not present.

This unit is badly brecciated and 1.7m is lost between 111.56 - 114.60m.

112.17 - 115.82 BIOTITE PYROXENE GARNET HORNFELS

The recovery here is extremely low and it is thought that originally calcite bands were present which have been subsequently leached out.

Very minor scheelite and molybdenite is present in the garnet rich horizons here.

115.82 - 116.59 APLITE

A very white mafic poor aplite.

116.59 - 117.80 VUG

Some small garnet bands were recovered and this is interpreted as a unit similar to that between 112.17 - 115.82m.

Traces of scheelite and molybdenite are present in the garnet bands.

117.80 - 122.22m BIOTITE PYROXENE HORNFELS

A finely banded unit with biotite the dominant member. The pyroxene bands are narrow and only extremely minor calcite is present here.

Banding at 66° L.C.A. at 120m.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 21-8

122.22 - 123.75 MARBLE

A banded impure marble with thin bands of pyroxene hornfels present in it. Extremely minor garnet is also present here.

Banding at 59° L.C.A. at 121.90m.

123.75 - 128.32 VUG

Approximately 1 metre recovered here. The core recovered is garnet skarn with gaps between the garnet crystals where calcite has been leached out. This was possibly a marble horizon with minor mineralized garnet bands, as some scheelite and molybdenite is apparent in the core.

128.32 - 128.93 BIOTITE HORNFELS

A typical brown purple biotite hornfels.

128.93 - 131.23m MIDDLE VOLCANICS

A fine grained unit of green crystaline middle volcanics.

131.23 - 134.11 GARNET SKARN

A good garnet calcite skarn with minor pyroxene present throughout moderate scheelite and molybdenite are visible in the core especially towards 134.11m.

134.11 - 142.95m MARBLE

A medium grey finely banded marble, the banding being due to dark impurties.

Banding is at 62° L.C.A. at 135.5m.
59° " at 137.5m.
68° " at 139.4m

142.95 - 147.48 PODDED MARBLE

Below about 142.95m some minor spotting becomes apparent in the core. The spots are calcite rich but otherwise the core remains similar to the above marble unit.

147.48 - 148.28 PODDED BIOTITE HORNFELS

A narrow band of podded biotite hornfels in which the matrix is normal brown/purple biotite hornfels and the pods are calcite rich.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. INV. 21/8

148.28 - 151.87 PODDED PYROXENE HORNFELS

A fine grained light grey green pyroxene hornfels matrix in which occur large irregular pods of calcite. The pods are frequently elongate and angular in the smaller ones and more rounded in the larger pods. In some cases garnet rims are apparent on these pods. Towards 151.87 the core becomes more garnet rich.

151.87 - 152.76 BANDED BIOTITE PYROXENE GARNET HORNFELS

This is a finely banded unit in which the pyroxene and garnet bands predominate although biotite bands form perhaps about 20% of the core.

Banding at 45° L.C.A. at 152.05m. This banding is frequently distorted.

152.76 - 157.89 PODDED BIOTITE HORNFELS

This unit consists of a biotite hornfels with irregular patches of pyroxene rich material.

Irregular pods of calcite and minor garnet occur in this unit.

157.89 - 161.85 BRECCIATED BIOTITE HORNFELS

A completely broken biotite hornfels recemented by calcite in the upper part and by silica in the lower.

This zone of brecciation is probably due to the proximity of the granite.

161.85 - 164.90 APLITIC GRANITE

From 161.85 - 162.92 the granite has been weathered and ~~kaolinited~~ silicified and is recovered as sugary rubble. Below this depth the core is more aplitic and probably quartz rich.

164.90 - 165.51 BIOTITE HORNFELS

Extremely broken biotite hornfels as above.

165.51 - 175.87 GRASSY GRANITE

An extremely weathered and fractured intersection of grassy granite.

E.O.H. 175.87m.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No.INV 21/7

PLANNING

Proposer: S.G. Brown — Depth: 160m.

Location: Investigator 21 Marritts Block.

Purpose of hole: To test for northern extension encountered in DDH INV 21/1 and 21/2.

Co-ordinates: 213850 E 563050 N

Inclination: -90°. Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers. Date: 4/1/74

SURVEY

Survey Co-ords: 563050 N E 213850 E

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: 213858.45 E 563046.18 N

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

Picked up by : J. Cook. Date:

SUMMARY

Logged by : S.G. Brown

Results: Did not intersect any mineralisation.

N.B. precollared as PDH 34.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 18.2.74 Date terminated: 23.2.74

Casing: Size : NQ

Depth : 99.36

Core: Size : BQ

Depth : 171.90

Wedge Runoff:

Wedge placed: Nil. Depth:

Proposed by : Approved by:

Reason:

Extension: Nil.

Reason for termination: Entered Grassy granite. Final depth: 171.90

Condition of hole on completion:

Casing : Nil.

Cemented : No.

Bore hole survey: Multishot

Water: No.

Comments on drilling conditions: Bad.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. INV. 21-7

85.65m - 92.57m BANDED PYROXENE CALCITE HORNFELS

The dominant rock type in this unit is the calcite hornfels band between which minor pyroxene bands occur. The garnet occurs as occasional bands in the marble units. The unit is effectively a banded impure limestone which has been metamorphosed.

Bedding at 67° L.C.A. at 87.23m.
76° " at 91.20m.

92.57 - 102.10 MARBLE

Between 92.57 and 94.34m the core is bery broken and soft with only rubble being recovered in some areas. The marble is dark grey - blue in colour and appears to be unbanded. It does however have a pronounced spotted appearance. The last metre of this unit is a podded calcite hornfels.

102.10 - 102.35 PODDED BIOTITE HORNFELS

A small unit of biotite hornfels with minor calcite pods in it.

102.35 - 111.40 BIOTITE PYROXENE GARNET HORNFELS

Initially this unit was probably banded but large numbers of calcite pods are now present in it and the banding has been almost completely disrupted especially in the pyroxene garnet areas.

The last 1.5m of this unit show a finely banded appearance but even here the bands are badly disrupted.

111.40 - 138.49 BIOTITE HORNFELS

From 111.40 - 115.98 the core is extremely broken and has a large number of fine silica veins running through it. Overall the unit consists of brown purple biotite hornfels with some minor irregular pyroxene rich patches scattered through out.

Irregular minor pods of calcite are present throughout and in some cases larger silica fragments occur.

Where the fragments are calcite they often contain garnet and have a wide diffuse rim of pyroxene hornfels.

138.49 - 143.21 BIOTITE PYROXENE HORNFELS

Still dominantly a biotite hornfels this unit contains minor fine pyroxene rich bands rather than the diffuse patches occuring above.

Minor irregular fragments are still visible here.

Banding is at 65° L.C.A. at 139.9m.
62° " at 142.5m.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 21-7

143.21 - 145.08 BIOTITE HORNFELS

This is a biotite hornfels with dispersed pyroxene occuring as patches rather than discrete bands.

145.08 - 146.76 BANDED BIOTITE HORNFELS

The banding is due to extremely fine pyroxene bands and this unit contains minor amounts of pods throughout.

Banding at 146.0m approximately 62° L.C.A.

146.76 - 149.23 PODDED BIOTITE HORNFELS

This unit consists of a groundmass of fine grained biotite hornfels with a very large number of small patches of pyroxene hornfels and large numbers of small angular pods.

149.53 - 150.42 PODDED PYROXENE HORNFELS

As above but with a groundmass of pyroxene hornfels rather than biotite hornfels.

150.42 - 153.60 PODDED BIOTITE PYROXENE HORNFELS

Essentially a biotite groundmass with large numbers of calcite pods set in it. The pyroxene rich zones around these pods however are so large as to fill almost 40% of the core.

All the above 3 units are parts of the same horizon.

153.60 - 155.05 APLITE

This is really a feldspar dyke with minor quartz and no mafics.

155.05 - 155.92 PYROXENE GARNET HORNFELS

A fine grained pyroxene garnet hornfels with minor amounts of biotite in the area.

The unit is disturbed although minor relic bedding is apparent in some areas.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 21-7

155.92 - 157.67m DISTURBED BIOTITE PYROXENE HORNFELS

An originally finely banded biotite pyroxene hornfels in which the fine biotite bands have been far the most part tossed out and deformed.

157.67 - 161.62m BIOTITE PYROXENE GARNET HORNFELS

A banded unit with pyroxene and garnet dominant over biotite. The pyroxene garnet areas are quite large up to 70cm and contain minor calcite.

161.62 - 163.83m BANDED BIOTITE PYROXENE HORNFELS

A finely banded unit with pyroxene forming the majority of the unit and the biotite occuring as fine bands.

Bedding at 73° L.C.A. at 162.8m.

163.83 - 171.90 GRASSY GRANITE

A good intersection of fresh grassy granite.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 21/7

Survey method : Multishot camera
Final depth : 172.21
Casing depth : 83.82

Depth surveyed to : 164.59
Date surveyed : 23/2/74
Surveyed by : V.P.
Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		S	E
6.10	159° 45'	149° 45'	1° 15'	-88° 45'	6.10	0.12	0.07
30.48	159° 45'	149° 45'	3° 22'	-86° 38'	30.46	1.78	1.04
60.96	159° 45'	149° 45'	3° 45'	-86° 15'	60.90	3.50	2.04
91.44	161° 30'	151° 30'	4°	-86°	91.30	5.42	2.98
121.92	158°	148°	5° 15'	-84° 45'	121.69	7.47	4.24
152.40	165°	155°	6° 00'	-84°	152.00	10.17	5.81
164.59	168°	158°	6° 15'	-83° 45'	164.12	11.43	6.34

REMARKS: ISG 10°

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 21/6

PLANNING

Proposer: S.G. Brown — Depth: 130m

Location: Investigator 21 Merritts Block.

Purpose of hole: Totest for northern extension of mineralisation, in INV 21/1 and 21/2

Co-ordinates: 213900 E 563050 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers. Date: 4/1/74

SURVEY

Survey Co-ords: 213900 E 563050 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: 213900.38 E 563048.52 N

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

Picked up by : J. Cook. Date: 14/3/74

SUMMARY

Logged by : S.G. Brown.

Results: No mineralisation recorded.

N.B. precollared as PDH 57.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 16/1/74 Date terminated: 19/1/74

Casing: Size : NQ

Depth : 101.0

Core: Size : BQ

Depth : 131.95

Wedge Runoff:

Wedge placed: Nil. Depth:

Proposed by : Approved by:

Reason:

Extension: Nil.

Reason for termination: In biotite hornfels below mineralised horizon. Final depth: 131.95

Condition of hole on completion:

Casing : Pulled.

Cemented : No

Bore hole survey: Multishot

Water: No

Comments on drilling conditions: Good.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. INV. 21-6

101.95 - 104.76m. BANDED PYROXENE CALCITE HORNFELS

A finely banded unit in which the calcite horizons are dominant and minor fine pyroxene hornfels bands are apparent in it. The whole unit is derived from a banded impure limestone.

Banding is at 68° L.C.A. at 103.0m
72° " at 104.5m

104.76 - 105.08 PYROXENE GARNET CALCITE HORNFELS

This is essentially the same as the above unit with about 50% of the calcite replaced by garnet.

105.08 - 105.61 BIOTITE HORNFELS

Initially this unit contains minor bands of pyroxene and calcite.

It is a transition unit to the underlying marble. Bedding at 105.5m approximately 75° L.C.A.

105.61 - 108.61 MARBLE

A blue grey coloured recrystalized limestone showing the usual dark spotted appearance and also the dark banding previously noticed in this unit.

108.61 - 109.43 MIDDLE VOLCANICS

A narrow unit of light green well crystallized middle volcanics.

109.43 - 114.26 MARBLE

As above but the banding is much less noticeable than in the upper portion of this unit.

114.26 - 115.99 PODDED CALCITE HORNFELS

This is a transitional unit to the podded biotite hornfels below and contains large amounts of calcite in the groundmass. The pods consist mainly of calcite and pyroxene.

115.99 - 116.68 PODDED BIOTITE HORNFELS

This unit consists of a fine grained brown purple biotite hornfels in which are set numerous pods of calcite of irregular size and shape. No garnet is present in this unit.

116.68 - 118.53 PODDED PYROXENE HORNFELS

The groundmass of this unit is essentially pyroxene hornfels with a large content of biotite hornfels also present. Large calcite pods are present in the unit with garnet being present over the first 20cm.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 21-6

118.53 - 120.40m. **IMPURE MARBLE**

A light grey green rock unit with a large amount of calcite in the groundmass. The rest of the material appears to be pyroxene.

120.40 - 121.56 **PODDED BIOTITE PYROXENE HORNFELS**

A disturbed unit of biotite pyroxene hornfels with large irregular ovoids of calcite often with garnet rims present on them.

121.56 - 125.02 **PYROXENE GARNET HORNFELS**

This is a disturbed podded unit with some relic bedding apparent in it. The pods are dominantly calcite and are often rimmed with garnets.

Scheelite is present only as traces.

125.02 - 126.82 **BIOTITE PYROXENE HORNFELS**

A banded biotite pyroxene unit with very fine calcite and garnet bands present in it. These bands are irregular and disturbed and decrease in number away from 125m.

Banding at 62° L.C.A. at 125.60m.

126.82 - 131.95 **BIOTITE HORNFELS**

A fine grained biotite hornfels with small irregular patches of pyroxene hornfels present in it. The unit is unbanded and contains very minor calcite pods throughout.

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 21/5

PLANNING

Proposer: S.G. Brown — Depth: 125m.

Location: Investigator 21 Merritts Block.

Purpose of hole: To follow up mineralisation intersected in PDH 33 and DDH's INV 21/1, 21/2, and 21/4.

Co-ordinates: 562950 N ℄ 213900E

Inclination: -90°. Magnetic

Bearing: Grid Target depth: 120m

Target: E N

Approved by: M.C.Rogers. Date: 4/1/74

SURVEY

Survey Co-ords: 562950 N ℄ 213900 E

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date: 14/3/74

Actual Co-ords: 213900.49 E 562950.28 N

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

Picked up by : J. Cook Date: 14/3/74

SUMMARY

Logged by : S.G. Brown

Results: 117.90 - 119.40m 2m @ 0.42% WO_3 and 0.08% MO.

N.B. Precollared as PDH 56.

DRILLING

Driller/Contractor: A.D.D.

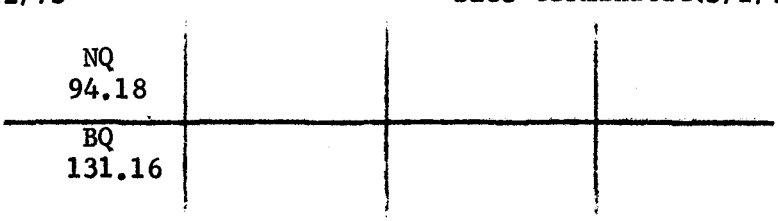
Date commenced: 15/12/73 Date terminated: 3/1/74

Casing: Size : NQ

Depth : 94.18

Core: Size : BQ

Depth : 131.16



Wedge Runoff:

Wedge placed: Nil. Depth:

Proposed by : Approved by:

Reason:

Extension: Nil

Reason for termination: Entered podded Bh underlying mineralised horizon. Final depth:

Condition of hole on completion:

Casing : Nil

Cemented : No

Bore hole survey: Multishot

Water: No

Comments on drilling conditions: Good.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV. 21-5

Precollared to 94.08 metres.

94.08m - 95.68 BIOTITE PYROXENE HORNFELS

This is a banded unit mainly of black purple biotite hornfels with small bands of pyroxene hornfels present in it except from 94.46 - 94.81 where the light grey green pyroxene hornfels dominates.
Bedding 95.0m approximately 60° L.C.A.

95.68 - 96.21 APLITE

A fine grained grey aplite rich in quartz and feldspar with small flakes of biotite mica present in it throughout.

96.21 - 97.83 PYROXENE HORNFELS

A light grey green very fine grained pyroxene hornfels. No banding is apparent in this unit but angular fragments of biotite hornfels occur in some areas.

97.83 - 99.57 BIOTITE HORNFELS

A black purple fine grained biotite hornfels. The last 32 cm of this unit consist of grey green pyroxene hornfels and red brown grossular garnet. The last 20cm appear to have been leached by water moving through the rocks in this area.

99.57 - 103.13 APLITE

A very light liver grey coloured quartz rich aplite with quite large amounts of kaolinized feldspar present in it. No mica is visible but quite large amounts of pyrite are present throughout.

103.13 - 108.20 BIOTITE PYROXENE HORNFELS

A finely banded unit dominatly of purple brown biotite hornfels with light grey pyroxene hornfels beds throughout. Minor calcite bands occur but these are most common in the first two metres. Only very minor garnet occurs in these samples.
Banding is at 62° L.C.A. at 106m.

108.20 - 113.89 MARBLE

This is a banded impure marble. The bands are of varying colour from grey to green and pink but almost all are very calcite rich only minor bands of garnet and pyroxene are present here.
Quite large amounts of carbon are visible in the grey marble bands and often occur as enriched narrow bands round the other marble bands probably due to expulsion from these bands.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. NO. INV. 21-5

113.39 - 115.52 MIDDLE VOLCANICS

A light grey green uniform crystaline middle volcanics. The contacts of this unit are finer grained a possible 'chilled' margin.

115.52 - 117.40 MARBLE

An impure marble as above but in this case there are distinct bands of biotite and pyroxene hornfels present in the unit although these remain minor.

117.40 - 119.31 SKARN

This is a banded unit consisting mainly of andradite and calcite skarn with thin bands of pyroxene hornfels occuring throughout.

The scheelite is seen to occur in the garnet rich bands as does the molybdenum.

Molybdenum is most common at about 118.70m.

119.31 - 119.52 BIOTITE PYROXENE HORNFELS

A very small amount of banded biotite pyroxene hornfels.

119.52 - 120.08 APLITE

A fine grained grey aplite with some red iron staining in some areas. Chlorite appears to be the dominant mafic.

120.08 - 120.34 BIOTITE HORNFELS

A uniform dark purple brown unit of biotite hornfels.

120.34 - 126.75 MARBLE

A uniform well crystaline hornfelsed limestone with quite large amounts of carbonaceous matter in it.

The darker black material forms spots and bands throughout this unit above 123m banding at 122m approximately 56° L.C.A.

Below 123m the banding is not present and at the lower contact of the marble some disturbance is visible in the core.

126.75 - 129.70 PODDED CALCITE HORNFELS

A podded unit in which the groundmass is rich in calcite and the pods are either calcite or pyroxene hornfels. In addition to the pods minor spots of recrystalized calcite are also present.

129.70 - 131.16m PODDED BIOTITE HORNFELS

A podded biotite hornfels similar to that intersected near the bottom of D.D.H. INV. 21-1.

E.O.H.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 21/5

Survey method : Multishot camera

Final depth : 131.06

Casing depth : 94.49

Depth surveyed to : 118.87

Date surveyed : 20/12/73

Surveyed by : V.P. P.V.

Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		S	E
6.10	159°45'	149° 45'	1° 22'	-88° 38'	6.10	0.10	0.06
30.48	159°45'	149° 45'	5°	-85°	30.43	1.94	1.13
60.96	159°45'	149° 45'	5° 45'	-84° 15'	60.50	4.58	2.67
91.44	159°45'	149° 45'	5° 45'	-84° 15'	90.00	7.13	4.16
118.87	161°	151°	5 °45'	-84° 15'	117.30	9.51	5.57

REMARKS: ISG 10°

GEOPEKO LIMITED - KING ISLAND

ASSAY DATA

D.D.H. No. INV 21/5

SAMPLE No.	DEPTH (METRES) From	To	Length	Length Recovered	ELEMENTS WO_3	Mo	COMMENTS
A5234	117.40	117.90	0.50	0.50	0.28	0.04	
5235	117.90	118.40	0.50	0.50	0.62	0.01	117.40 - 119.40
5236	118.40	118.90	0.50	0.50	0.62	0.22	2m @ 0.42% WO_3 0.08% Mo
5237	118.90	119.40	0.50	0.50	0.15	0.04	

SPECIFIC GRAVITY

Determined by:

Depth (m) :
Rock Type :
S.G. :

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. NoINV 21/4

PLANNING

Proposer: S.G. Brown — Depth: 110m.

Location: Investigator 21 Merritts Block.

Purpose of hole: To test mineralised horizon S.E. of DDH INV 21/2

Co-ordinates: 213900 E 562950 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers. Date:

SURVEY

Survey Co-ords: 213900 E 562950 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: 213 900.49 E 562950.28 N

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

Picked up by : J. Cook. Date:

SUMMARY

Logged by : S.G. Brown

Results: 87.6m - 92.10m 4.5m @ 0.40% WO_3, 0.14% Mo

N.B. precollared to 70.10m as PDH 36.

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 3/10/73 Date terminated: 5/10/73

Casing: Size : BX

Depth : 70.41

Core: Size : BQ

Depth : 105.45

Wedge Runoff:

Wedge placed: Nil. Depth:

Proposed by : Approved by:

Reason:

Extension: Nil.

Reason for termination: Entered podded Biotite hornfels below mineral horizon. Final depth: 105.45m

Condition of hole on completion:

Casing :

Cemented :

Bore hole survey: Multishot Camera 105.45m

Water: No.

Comments on drilling conditions: Good.

GEOPEKO LIMITED - KING ISLAND

ASSAY DATA

D.D.H. No. INV 21/4

SAMPLE No.	DEPTH (METRES) From	To	Length	Length Recovered	ELEMENTS WO_3	Mo	COMMENTS
5251	84.60	85.10			0.07	0.01	
2	85.10	85.60			0.03	0.01	
3	85.60	86.10			0.02	0.01	
4	86.10	86.60			0.32	0.03	
5	86.60	87.10			0.04	0.01	
6	87.10	87.60			0.05	0.01	
7	87.60	88.10			0.27	0.05	
8	88.10	88.60			1.12	0.75	
9	88.60	89.10			0.07	0.04	
60	89.10	89.60			0.19	0.03	
61	89.60	90.10			0.60	0.13	87.6 - 92.1, 4.5m @ 0.40% WO_3 0.14% Mo.
2	90.10	90.60			0.19	0.04	
3	90.60	91.10			0.30	0.13	
4	91.10	91.60			0.36	0.03	
5	91.60	92.10			0.45	0.05	

SPECIFIC GRAVITY

Determined by:

Depth (m) :
Rock Type :
S.G. :

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21/4

Precollared to 70.10 metres as Scout hole 36.

70.10m - 72.74m — MIDDLE VOLCANICS

A grey green fine crystalline volcanic rock very uniform in nature, normal middle volcanics.

72.74m - 76.90m — CALCITE, PYROXENE GARNET HORNFELS

A well banded unit in which the calcite and garnet are dominant. From 74.01 - 75.08 there is no core recovered due to vugs and immediatly above and below this vugs the core is quite leached and only garnet and pyroxene remains. From 76.11 - 76.56 the core has bands of garnet skarn present in it minor molybdenum occuring in these bands.

Banding is at 67° LCA.

76.90m - 80.91m — BIOTITE PYROXENE HORNFELS

A fairly banded unit of alternating black and grey colour due to the biotite and pyroxene rich units. Some minor calcite is present throughout with increasing amounts in the last metre.

Banding is at 67° LCA and minor pyrite occurs along the fracture faces which are parallel to the banding.

80.91m - 84.59 — MARBLE

A well banded grey black marble. An impure marble with minor bands of biotite and pyroxene hornfels. Banding is many and irregular throughout.

84.59m - 86.53m — CALCITE GARNET PYROXENE HORNFELS

This is a banded unit , the first 41cm being mainly pure white calcite with large amounts of andradite garnets growing in it. Minor scheelite mineralisation occurs disseminated throughout with the garnets.

From 85.00 - 85.49 the core is a normal banded unit with minor scheelite.

From 85.49 - 86.12 the core while banded is garnet poor and is almost pure marble. The last part of the core is again the normal banded unit with minor scheelite associated with the garnets.

86.53m - 87.56m — VOLCANICS

These volcanics vary throughout and look like dyke material.

From 87.56 - 87.81 the core is fine grained and verydark green in colour.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21/4

From 87.81 - 88.21 the core is almost white in colour and well spotted becoming darker to 88.21 after which it becomes dark and spotted with large green amphiboles present in it.

From 87.40 - 87.56 the core is while still spotted becomes lighter and is very rich in pyrrhotite which forms a zone of about 2cm at the contact.

87.56m - 88.09m SKARN

An impure andradite skarn unit with bands of pyroxene present in this unit. Scheelite mineralisation is apparent under the ultra violet light but appears to be subgrade.

88.09m - 88.95m APLITE

The first 15cm of this unit are almost pure quartz with quite large amounts of molybdenum present in it. The next 21cm consist of a mixture of aplite and skarn with large crystals of yellow fluorescing scheelite present in it at the lower end of this unit a band (2cm) very rich in molybdenum occurs. The lower part of the aplite unit is normal aplite.

88.95m - 91.22m SKARN

An impure banded skarn with good andradite garnet throughout as wide bands. Mineralisation is associated with these bands. 60° LCA. Some zones of this skarn especially at about 90 metres are rich in molybdenum.

91.22m - 91.65m APLITE

A grey white aplite fine grained and with minor mafics present in it.

91.65m - 92.14m SKARN

As above, well banded with more pyroxene present here.

92.14m - 93.11m BIOTITE PYROXENE HORNFELS

Banded biotite pyroxene hornfels with biotite dominant here.

Banding 58° LCA. Joints are filled with puggy calcite. The last 30cm core very broken and have calcite filling in the fractures.

GEOPEKO LIMITED - KING ISLAND

GEOLOGICAL LOG

D.D.H. No. INV 21/4

93.11m - 101.51m	MARBLE A grey block well crystallized marble.
101.51m - 103.01m	PODDED CALCITE HORNFELS This is a grey fine grained limestone horizon in which occur minor bands of biotite and a very high number of fragments and pods some of limestone and some of pyroxene and silica rich material.
103.01m - 104.75m	PODDED PYROXENE BIOTITE HORNFELS Initially pyroxene is dominant but the lower ½ is much richer in biotite. The unit has a very disrupted appearance and has a high % of pods throughout.
104.75m - 105.45m	PODDED BIOTITE HORNFELS A fine grained biotite rich matrix purple black in colour in which are set irregular shaped pods of marble, pyroxene and garnet.

E.O.H.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 21/4

Survey method : Multishot camera
Final depth : 105.46
Casing depth : 70.41

Depth surveyed to : 100.58
Date surveyed : 5/10/73
Surveyed by : G.B.
Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected			
30.48	188° 45'	178° 45'	3° 00'	-87°	30.46	1.59	0.03
60.96	188° 45'	178° 45'	4° 00'	-86°	60.87	3.72	0.08
91.44	189°	179°	6° 30'	-83° 30'	91.18	5.10	0.11
100.58	190°	180°	6° 45'	-83° 15'	100.27	5.80	0.49

REMARKS:

ISG 10°

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No.INV 21/3

PLANNING

Proposer: S. G. Brown — Depth: 150m

Location: Investigator 21

Purpose of hole: To test extension of mineralisation encountered in DDH INV 21/1 and 21/2.

Co-ordinates: 214000 E 563100 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers Date:

SURVEY

Survey Co-ords: 214000 E 563100 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date: 10/9/73

Actual Co-ords: 213998.90 E 563099.20 N

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

Picked up by : J. Cook. Date:

SUMMARY

Logged by : S.G. Brown

Results: 116 = 116.5m 0.5m @ 0.12% WO_3
131.3 - 132.3 1.0m @ 0.07% WO_3

DRILLING

Driller/Contractor: A.D.D.

Date commenced: 14/9/73 Date terminated: 19/9/73

Casing: Size : BX
Depth : 78.33

Core: Size : BQ
Depth : 163.37

Wedge Runoff:

Wedge placed: Nil Depth:

Proposed by : Approved by:

Reason:

Extension: Nil.

Reason for termination: Below mineralised horizon Final depth: 163.37

Condition of hole on completion:

Casing : Nil

Cemented : No

Bore hole survey: Multishot

Water: Nil

Comments on drilling conditions: Good.

GEOPEKO LIMITED - KING ISLAND

ASSAY DATA

D.D.H. No. INV 21/3

SAMPLE No.	DEPTH (METRES)				ELEMENTS			COMMENTS
	From	To	Length	Length Recovered	WO_3	Mo		
5266	116.00	116.50	0.5m	0.5m	0.12	0.02		
67	131.30	131.80	0.5m	0.5m	0.13	0.02		
68	131.80	132.30	0.5m	0.5m	0.01	0.01		

SPECIFIC GRAVITY

Depth (m) :
Rock Type :
S.G. :

Determined by:

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GEOLOGICAL LOG

D.D.H. No.21 - 3

Hole Precollared to 79.25 metres.

79.25 - 88.13m. BIOTITE PYROXENE HORNFELS

The dominant unit in this rock type is the fine grained biotite rich ground mass in which occur bands, and pods elongated almost to bands, of calcite and garnet usually with a broaded zone of pyroxene rich altered hornfels between them and the normal biotite hornfels.

Some areas are light grey green in colour and while still retaining the overall appearance have been silicified as at 81.68 - 82.20 and
87.37 - 87.91 metres.
the lower one having its banding badly disturbed.
Banding is at 72° LCA throughout.

88.13 - 92.23 MIDDLE VOLCANICS

Fine grained light grey green crystaline volcania showing minor spotting throughout.

92.23 95.91 BIOTITE PYROXENE HORNFELS

As above but here the banding is more regular a 76% LCA. There is a high %age of pyroxene rich bands present throughout this area especially to the 95.91 metre mark.

95.91 - 96.45 APLITE

A light grey-white mafic poor aplite upper contact broken, lower contact 60 LCA.

96.45-106.10 BIOTITE PYROXENE HORNFELS

As above but with quite large amounts of light green pyroxene and some silicafied areas present throughout it. Minor garnet and calcite bands are present in this unit. Banding at 67° LCA.

106.10 - 111.52 PYROXENE CALCITE HORNFELS WITH GROSSULAR GARNETS

This is a well banded unit with about 50% of the total being calcite. At first pyroxene is dominant over garnet but towards 11.52 metres the garnet becomes the dominant mineral over pyroxene.
Banding is at 67° LCA.

GEOPEKO LIMITED -

GEOLOGICAL LOG

D.D.H. No. 21 - 3

111.52 - 115.12 MIDDLE VOLCANICS

Grey green crystaline volcanic, normal middle volcanic type with tendency to larger crystals in the centre.

115.12 - 116.08 CALCITE PYROXENE GARNET HORNFELS

As from 106.10 - 111.52 metres with some increase in the garnet contact.

116.08 - 116.53 GARNET SKARN MINOR SCHEELITE

This is still banded but here the garnet is dominant and only minor calcite and pyroxene.

116.53 - 118.82 CALCITE PYROXENE GARNET HORNFELS

A finely banded unit of the above mineral types with calcite dominant as from 106.10 - 111.52.

118.82 - 121 29 BIOTITE PYROXENE HORNFELS

A finely banded unit with the pyroxene dominant over the biotite some minor garnet is present in this unit. Some disturbance of the banding and bedding is noticable in areas overall bedding 56° LCA.

121.29 - 126.80 CALCITE PYROXENE HORNFELS

Calcite is by far the dominant mineral here occuring as quite wide bands separated by narrow green bands of pyroxene rich material. Only very minor garnet is present in this unit. Banding at 74° LCA.

126.80 - 128.77 MIDDLE VOLCANICS

A fine grained dark grey green uniform rock very chlorite rich and very broken.

128.77 - 131.24 CALCITE PYROXENE HORNFELS

As above.

131.34 - 132.18 SKARN

An impure skarn of andradite garnet and calcite with bands of biotite and pyroxene present in it, scheelite is minor throughout.

GEOPEKO LIMITED -

GEOLOGICAL LOG

D.D.H. No. 21 - 3

132.18 - 133.38 CALCITE PYROXENE GARNET HORNFELS

A well banded unit with bands of white green and red - brown as well as minor dark biotite rich bands present in it. Banding at 58° LCA.

133.38 - 137.90 MARBLE

Intially a light grey green colour becoming grey-black towards 137.90 banding is apparent throughout and in some areas minor pyroxene is present in it.

137.90 - 139.42 DYKE

At first this is a dark green fine ground dyke but towards the lower contact it becomes white and spotted in appearance.

139.42 - 146.96 MARBLE

Dark grey-black in colour with irregular appearance due to the irregular distribution of the dark bands.

146.96 - 148.07 PYROXENE CALCITE HORNFELS

This unit has a grey green appearance overall and has quite high amounts of calcite present in the fines. This unit has a slightly podded appearance.

148.07 - 149.61 BIOTITE CALCITE HORNFELS

As above this unit has a high content of calcite throughout and contains irregular calcite pods. This unit has fine irregular bands of brownish biotite rich material present in them.

149.61 - 150.70 PYROXENE BIOTITE HORNFELS

This is a banded unit with pyroxene dominant over biotite.

150.70 - 152.65 PYROXENE GARNET HORNFELS MINOR SCHEELITE.

An irregular slightly poddy unit red brown-dark green in colour with minor calcite and minor scheelite present in this groundmass.

152.65 - 154.08 BIOTITE PYROXENE HORNFELS

This is a well banded unit with this bands of calcite and garnet also present. Banding at 76° LCA.
Minor pyrrhotite is also present in this unit. The calcite

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GEOLOGICAL LOG

D.D.H. No. 21 - 3

and garnet bands decrease down the hole to 154.08 metres
A small 4m aplite is present at 153.77 metres.

154.08 - 163.37 **PODDED BIOTITE HORNFELS**

E.O.H.

Initially the pods are more bands and are quite infrquent but from about 156.50 metres onwards, pods of pyroxene garnet and calcite occur with increasing frequency.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 21/3

Survey method : Multishot camera
Final depth : 189.89
Casing depth : 79.26

Depth surveyed to : 188.98
Date surveyed : 2/10/73
Surveyed by : V.P. M.C.
Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		S	E
6.10	146° 30'	136° 30'	1° 15'	-88° 45'	6.10	-.10	0.09
30.48	146° 30'	136° 30'	0° 45'	-89° 15'	30.47	0.33	0.31
60.96	146° 30'	136° 30'	2° 00'	-88°	60.94	1.10	1.04
91.44	148°	138°	3° 00'	-87°	91.39	1.55	1.49
121.92	164°	154°	3° 30'	-86° 30'	121.82	3.00	2.43
152.40	164° 45'	154° 45'	4° 30'	-85° 30'	152.22	4.96	3.38
188.98	165°	155°	5° 30'	-84° 30'	188.65	7.92	4.77

REMARKS: ISG 10°

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 21/2

PLANNING

Proposer: S.G. Brown — Depth: 200m

Location: Investigator 21

Purpose of hole: To test mineralisation encountered in DDH INV 21/1 50m west.

Co-ordinates: 213900 E 563000 N

Inclination: -90° Magnetic

Bearing: Grid Target depth:

Target: E N

Approved by: M.C. Rogers Date:

SURVEY

Survey Co-ords: 213900 E 563000 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: 213899.43 E 562998.64 N

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

Picked up by : J. Cook. Date:

SUMMARY

Logged by : S.G. Brown

Results: 110.30 - 113.30 3m @ 0.52% WO_3 0.17% Mo.

DRILLING

Driller/Contractor: A.D.D.

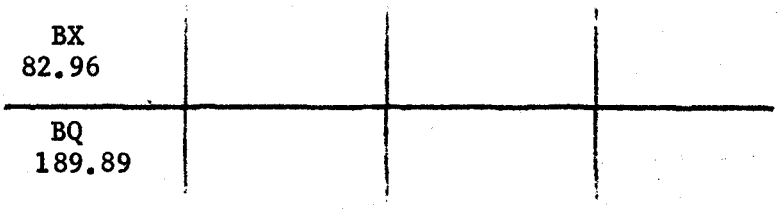
Date commenced: 4/9/73 Date terminated: 2/10/73

Casing: Size : BX

Depth : 82.96

Core: Size : BQ

Depth : 189.89



Wedge Runoff:

Wedge placed: Nil Depth:

Proposed by : Approved by:

Reason:

Extension: extended from 139.29

Reason for termination: entered Grassy granite Final depth: 189.89

Condition of hole on completion:

Casing- : No

Cemented : No

Bore hole survey: Multishot 189.89

Water: Nil

Comments on drilling conditions: Good

DIAMOND DRILL HOLE ASSAY SHEET

Hole No.: INV. 21-2

Logged By : S.G.B.

Sample No.	~~FOOTAGES~~ METRES			ASSAYS		L X A	REMARKS
	From	To	Length	WO_3	Mo		
A 5166	110.30	110.80	0.5	0.26	0.01		
7	110.80	111.30	"	0.34	0.23		
8	111.30	111.80	"	0.44	0.37		
9	111.80	112.30	"	0.60	0.33		
70	112.30	112.80	"	0.65	0.11		
A 5171	112.80	113.30	"	0.95	0.10		

DIAMOND DRILL LOG DDH INV. 21-2

Diamond drilling commenced at 80.16 metres.

80.16 - 88.70 BIOTITE PYROXENE HORNFELS

A well banded fine grained purple brown / light green coloured rock unit containing minor bands of garnet and calcite. Some of the calcite garnet areas are pods rather than bands. Banding 64° LCA.

Core tends to fracture parallel to banding but fractures are very uncommon.

Minor mineralization occurs at 81.79 m and 82.95 m.

88.70 - 90.69 PYROXENE GARNET HORNFELS

This unit consists of fine grained pyroxene hornfels with minor calcite and garnet bands interspersed throughout.

The overall colour is light grey green and there is a noticeable increase in the amount of grossular garnet present in this unit as quite wide bands.

Banding still at 65° LCA.

90.69 - 93.39 CALCITE PYROXENE GARNET HORNFELS

A grey crystalline marble with dark black spots throughout. Thin bands of pyroxene and garnet occur in this unit at about 68° LCA and fracturing where present tends to follow banding.

93.39 - 96.91 MIDDLE VOLCANICS

This is a medium to dark green rock unit, quite well crystalline and with a tendancy to have larger crystals in the centre of the unit.

96.91 - 99.08 CALCITE PYROXENE GARNET HORNFELS

As above.

In this part the pyroxene and garnet content is higher. The colour of these are lighter with the garnet almost honey brown in colour, however the marble remains a grey spotted recrystalized type.

Banding at 59° LCA.

99.08 - 102.86 BIOTITE PYROXENE HORNFELS

This is an extremely fine grained purple brown - light grey green unit and the pyroxene appears to be slightly larger in amount than the biotite. Almost no calcite or garnet is present in this unit.

Banding approximately 61° LCA.

102.86 - 110.33 MARBLE

This is impure and consists of a black-grey marble with very minor bands of pyroxene and garnet. The marble is a grey white recrystalized limestone with a large amount of black spots present throughout especially in the first 2 metres.

Banding throughout is wavy and irregular but tends to be approximately 67° LCA.

From 108.56 - 109.09 m a small basic dyke is present.

110.33 - 113.38 SKARN

A calcite garnet pyroxene hornfels with garnet (andradite) dominant in this unit often as well shaped crystals. Both scheelite and molybdenum are present in noticeable quantities both just about 0.3 - 0.4%.

113.38 - 113.84 APLITE

A white aplite feldspar rich becoming almost pegmatitic to 113.84 m with a much higher content of mafics mainly. biotite present here.

113.84 - 114.45 BIOTITE PYROXENE HORNFELS

Consists of bands of light grey pyroxene rich hornfels and darker purple bands of biotite hornfels.

Very finely banded, some minor ~~granite~~ garnet bands initially.

Banding at approximately 59°.

114.45 - 116.84 MARBLE

A very uniform grey black recrystallized marble with only faint banding throughout it. The overall appearance is of a salt and pepper texture.

116.84 - 117.44 DYKE

A small dark green dyke coarser crystaline towards 117.44 m. Both junctions of this dyke are soft and puggy and are parallel to the banding in the marble at about 56° LCA.

117.44 - 121.92 MARBLE

As above, but less banding apparent.

121.92 - 123.97 PYROXENE CALCITE HORNFELS (PODS)

A dark green groundmass rich in calcite is the dominant factor in this unit, small calcite pods are present in it giving it a similar textural appearance to the PGh in the pit, though only minimal garnet is present here.

Minor pyrite is present both as aggregates in the matrix and also as filling along fracture planes, a trace of chalcopyrite is found associated with the pyrite.

123.97 - 124.77 PODDED BIOTITE HORNFELS

Similar in appearance to the above unit except that the matrix is brown-purple biotite hornfels, corresponds to 40 cm in hole INV. 21-1 102.80 - 103.20 m.

124.77 - 133.74 PYROXENE GARNET HORNFELS

This unit is a light grey green - red brown colour, with large patches of white due to the pods of calcite which occur throughout the unit.

In appearance this unit is rather similar to the PGh in the pit but retains a more banded appearance than the pit rocks. Approximately 69° LCA.

133.74 - 135.74 BIOTITE PYROXENE HORNFELS

The dominant unit here is a fine grained black purple biotite hornfels in which occur bands of calcite, rich in pyrite, pyrrhotite and minor chalcopyrite with garnets.

These bands are irregular and cut the rock at a variety of angles and are quite contorted in shape.

135.74 - 144.29 PODDED BIOTITE HORNFELS

A fine grained biotite hornfels with minor calcite pods. Quite large areas of this rock type are grey green in colour probably pyroxene rich while some areas are silicified, a quartz vein occurs at 139.55 - 139.65 m.

144.29 - 146.85 APLITE

An irregular coloured and blotchy looking aplite with an overall fine grained mafic poor appearance but with some small areas mafic rich. In 3 other areas the aplite is replaced by large crystals of slightly pink feldspar.

The upper contact is at 17° LCA while the lower contact is much more diffuse but at about the same angle.

146.85 - 148.61 BIOTITE HORNFELS

This small unit has only minor pods present in it but is essentially the same as the podded biotite hornfels.

Some minor disseminated chalcopyrite occurs in patches of this unit.

148.61 - 149.10 APLITE

This aplite has small 2 cm mafic rich zones at its contact to the biotite hornfels but is otherwise very fine grained and composed of quartz and feldspar with only minor mafics, contacts are at 45° LCA.

149.10 - 150.50 PODDED BIOTITE HORNFELS

As above this unit has the grey green patches throughout but in this case the larger pods are of aplite and are very irregular in shape.

150.50 - 152.01 APLITE

As from 148.61 - 149.10 again with zones of large pegmatite sized feldspars and quartz.

152.01 - 165.20 PODDED BIOTITE HORNFELS

As above except that the pods are the normal calcite garnet pyroxene type.

In this unit quite considerable numbers of veinlets of calcite occur in irregular directions.

From 164.19 - 164.38 m there is an area of broken biotite hornfels recemented by calcite, possible fault zone.

165.20 - 170.36 BANDED BIOTITE HORNFELS

A very finely banded biotite hornfels with minor pods of calcite present in it. The light grey green coloured patches still occur throughout.

Banding at 167.66 m approximately 64° LCA.
170.26 m approximately 64° LCA.

170.36 - 171.50 GRASSY GRANITE

The contacts of this unit are not parallel to banding in the biotite hornfels.

Only the centre portion of this unit is truely Grassy granite the upper portion being quartz rich while the lowest portion is very rich in mafics.

171.50 - 171.91 BANDED BIOTITE HORNFELS

As above.

171.91 - 182.05 PODDED BIOTITE HORNFELS

This unit is the typical podded biotite hornfels with irregular areas and streaks of grey green pyroxene rich material and quite large irregular calcite garnet pyroxene pods.

Minor pyrrhotite and even less minor scheelite occurs usually associated with these pods.

182.05 - 189.89 GRASSY GRANITE

The normal pink granodiorite with large pink feldspar crystals visible in a matrix of quartz and biotite.

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 21/2

Survey method : Multishot camera
Final depth : 163.37m
Casing depth : 82.30m

Depth surveyed to : 155.45m
Date surveyed : 20/9/73
Surveyed by : V.P. M.D.
Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		N	E
47.72	23°	13°	1°	-99°	45.71	0.78	0.02
94.49	13°	3°	2°	-98°	94.45	2.44	0.37
124.97	74°	64°	1°	-99°	124.92	2.86	0.90
155.45	119°	109°	00° 30'	-99° 30'	155.40	2.80	1.17

REMARKS: ISG 10°

GEOPEKO LIMITED - KING ISLAND

LOG OF D.D.H. No. INV 21/1

PLANNING

Proposer: S.G. Brown — Depth:

Location: Investigator 21

Purpose of hole: To test Anomalous valves obtained PDH 7, 14 and 33.

Co-ordinates: 213842 E 563000 N

Inclination: -90°. Magnetic

Bearing: Grid Target depth:87m.

Target: E N

Approved by: M.C. Rogers. Date:

SURVEY

Survey Co-ords: 213842 E 563000 N

Survey bearing: Grid Magnetic

Surveyed in by: J. Cook. Date:

Actual Co-ords: 213842.15 E 562999.81 N

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

Picked up by : J. Cook. Date:

SUMMARY

Logged by : S.G. Brown.

Results: 87.8 - 91.8m 4m @ 0.53% WO_3 0.13% MO
or 88.80 - 91.80 3m @ 0.61% WO_3 00.17%MO

DRILLING

Driller/Contractor: A.D.D.

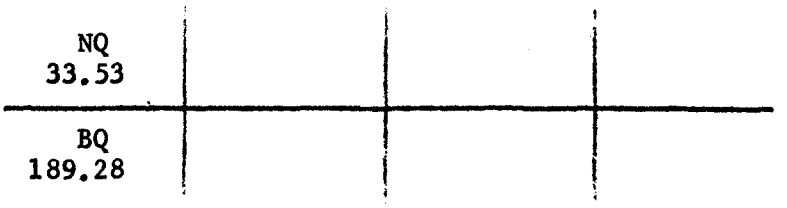
Date commenced: 25/8/73 Date terminated:27/9/73

Casing: Size : NQ

Depth : 33.53

Core: Size : BQ

Depth : 189.28



Wedge Runoff:

Wedge placed: NIL. Depth:

Proposed by : Approved by:

Reason:

Extension: from 137.16 - 189.28

Reason for termination: Entered Grassy Granite at 174.06m Final depth: 189.28

Condition of hole on completion:

Casing : Nil

Cemented : No.

Bore hole survey: Multishot

Water: Nil.

Comments on drilling conditions: Good.

0 - 11.11 No recovery.

11.11 - 12.80 **UPPER VOLCANICS**

These volcanics are light green to grey in colour and show good crystaline texture throughout. Weathering is apparent throughout.

12.80 - 22.26 **SILTSTONES**

Light grey clay rich siltstones with well developed spotting present here, some small bands of non spotted and less clay rich material also occur but these are not common.

From about 19.50 - 21.49 m the core is quite broken and has clay filled fractures at 10° LCA.

Minor fine bands are present and these with a noticeable elongation in the spots make an angle of 55° LCA, throughout this unit the spots stand out as the harder part of the core with the matrix being very soft and hydroscopic to quite a large degree.

22.26 - 23.93 **HORNFELSED SEDIMENT**

A fine grained grey rock type of pelitic sediment originally. For the first 20 cm there are dark spots present as above but these die out quite rapidly. The rock however remains soft and easily scrapped.

From 22.90 - 23.90 m the core is very broken and recovery is about 40% over this area. Some fragments are of a dark green crystaline volcanic rock (upper volcanics) and this is probably the junction between the overlying country rock - volcanic sequence and the true mine series rocks.

23.93 - 27.73 **BIOTITE QUARTZ HORNFELS**

A fine grained grey-black biotite quartz rich hornfels, this is however not typical mine series biotite hornfels and is probably a quartz rich variety of it. There is

present in this unit minor fine disseminated sulphides (pyrite) which occur in some of the bands. The banding present in this unit is at 60° LCA throughout.

Some spotting similar to that seen in some ENV. 3 core occurs in this unit. These spots are light grey in colour and are quite diffuse.

27.73 - 28.56 APLITE

A fine grained white-pink aplite rich in feldspar. Quite large amounts of mafic material is present in this aplite as small blebs of mica rich material. Minor banding is visible at about 60° LCA while the lower contact has an angle of 57° LCA.

28.56 - 41.06 BIOTITE HORNFELS

At first this is a very pure purple black biotite hornfels but the amount of pyroxene bands increase towards 41.06 m though the overall % does not reach more than about 20%.

The bands often have a central unit of calcite and garnet or garnet and pyroxene with a wider rim of pyroxene surrounding them.

The banding is at an angle of 56° LCA while the dominant fracture angle is much lower at about 37° LCA.

Some very minor pyrite is present in this unit usually as small wisps in the biotite hornfels. In one case a small cubic crystal of pyrite is present at 39.74 m.

The last 10 cm of this unit appears to be slightly gradational to the overlying middle volcanics.
(Two bands of aplite are present in this biotite hornfels at 29.88 - 30.04 m and 31.20 - 31.51 m.)

41.06 - 48.44 MIDDLE VOLCANICS

A light grey green finely crystaline volcanic with quite well developed spotting, apparent in places. Small amounts of pyrrhotite is apparent on some of the fracture zones.

48.44 - 55.13 BIOTITE HORNFELS

Minor pyroxene bands present in this unit increasing in number at the lower end of this unit. The biotite hornfels is a fine grained dark black-purple coloured unit with some lighter parts in it. The pyroxene bands are much darker green than normal and have wider grey pyroxene-biotite bands on either side of them. Minor calcite and garnet occur with these pyroxene bands and in some cases quite good pyrrhotite occurs in them.

An aplite occurs from 51.21 - 51.57 m.

55.13 - 68.72 BIOTITE PYROXENE HORNFELS

This consists of black biotite hornfels with a large number of green-grey pyroxene rich bands occurring throughout it. The distribution is not regular and some areas are relatively pyroxene poor over a distance up to 50 cm.

Bands of pure grey-white marble also occur within this unit and grossular rich bands also occur within the pyroxene areas. Garnet and calcite make up about 10 - 15% of this unit.

A very small band of aplite occurs from 59.93 - 59.98 m.

The junction between the pyroxene and biotite bands are whispy and irregular but the overall appearance is of banding at 67° LCA.

68.72 - 72.14 PYROXENE GARNET HORNFELS

A light green and red brown coloured rock with minor limestone bands present in it. Some areas of biotite hornfels occur but these are minor. No mineralization is apparent here.

72.14 - 75.05 VOLCANICS

A very fine grained densly crystaline dark grey-green volcanic.

75.05 - 79.70 CALCITE PYROXENE GARNET HORNFELS

This unit is extremely well banded and the calcite bands are by far the most common bands up to about 50% of the whole unit, though not evenly distributed throughout. The pyroxene and garnet often have associated calcite and in the case of the pyroxene can fine biotite bands are sometimes present. Mineralization nil.

Banding dips at 65° LCA. The overall appearance may be taken as similar to a banded footwall unit with a bit less garnet.

79.70 - 82.45 BANDED BIOTITE PYROXENE HORNFELS

In this unit biotite is dominant and the pyroxene is a pale green to grey colour. Banding is at about 70° LCA. Pyrite mineralization is noticeable on the bedding planes.

82.45 - 87.80 MARBLE

Marble with minor pyroxene and garnet bands present in it.

The grey-black sugary textured recrystalized limestone forms by far the dominant part of this unit, with the largest PGM unit being 85.38 - 85.77 m. The garnets are greocular and the pyroxene is the dark green variety.

No mineralization occurs in this unit.

Bedding 68° LCA.

87.80 - 92.08 SKARNIFIED CALCITE GARNET PYROXENE HORNFELS

This unit consists of bands of garnet (andradite) rich skarn with smaller bands of biotite pyroxene hornfels and minor calcite bands. Calcite is present in the garnet rich bands along with pyroxene and good scheelite and molybdenum. The overall appearance is much greener in colour than the skarn in the pit due to a higher pyroxene content and a much lower garnet content. Only minor biotite bands are present in this unit.

92.08 - 92.78 BIOTITE PYROXENE HORNFELS

Finely banded biotite pyroxene hornfels consisting of bands of light grey pyroxene rich hornfels and darker black bands of biotite hornfels. Banding 65° LCA.

92.78 - 95.46 MARBLE

Grey white recrystalized marble. This is a very pure marble here and contains carbon rich stringers throughout as in the pit.

Banding occurs at 65° in the first couple of metres and at 85° for about 1 m, 94 - 95 m.

95.46 - 96.12 BASIC DYKE

Very narrow basic dyke. This unit has fine grained margins and a coarser central zone typically chilled margin appearance.

96.12 - 99.50 MARBLE

Crystaline marble as above.

99.50 - 103.20 PYROXENE CALCITE HORNFELS (PCHS)

With pods of calcite present in it. Similar texture to PCH in pit but here the garnet is only present in very minor amounts.

The rock is fine grained and dark green in colour and contains varying amounts of calcite in the matrix as well as in the 'nodules'. The pods are irregular sub rounded shapes and are often rimmed with dark garnets.

Minor pyrite is present occasionally in the pods and also as fillings along the few fracture planes apparent in this unit of core.

The last 47 cm of this unit are biotite rich rather than pyroxene rich but still has the poddy nature.

103.20 - 106.35 PYROXENE HORNFELS

A very fine grained and finely banded grey-green colour rock unit. The whole unit appears to have been silicified and whisps and blebs of cherty looking quartz are apparent throughout this unit.

The banded appearance is due to biotite rich bands, along with the elongated stringers of cherty material and coarser crystaline amphiboles which occur in this unit. Quite a high content of pyrrhotite occurs in this unit both as blebs and associated with the whispy cherty bands.

The last 1 m of this unit contains large pods of calcite often with garnet [illegible], as well as a much higher content of garnet throughout.

Patchy trace scheelite is present in this last metre.

106.35 - 109.52 PYROXENE GARNET HORNFELS WITH CALCITE PODS

This unit is grey green - red brown in colour with large white patches and bands due to pods of calcite which occur throughout. This is rather similar to the PGH in the pit except that it has a more regular banded appearance and less mineralization than the pit material.

The banding is however irregular.

109.52 - 112.61 BANDED BIOTITE PYROXENE HORNFELS

The biotite, a fine grained purple-black unit is dominant here with thin bands of pyroxene often with garnet and calcite present in it. The banding is irregular and minor sulphides are present in the garnet bands.

112.61 - 156.97 PODDED BIOTITE HORNFELS

The overall appearance of this unit is of a fine grained biotite hornfels with minor pyroxene and minor calcite pods. As the unit progresses grey irregular ? pyroxene rich patches occur through it and small fragments of pyroxene and garnet rock occur set in the

biotite matrix. Often these small angular rafts contain quite large amounts of pyrrhotite with lesser pyrite and chalcopyrite.

In some areas the lighter grey irregular patches instead of being large tend to be small and whispy and show banding at almost a right angle to the occasional minor garnet calcite bands. e.g. at 140.95 m where the banding is at 52° LCA while the garnet bands are at 48° LCA.

Minor Aplite bands occur as at 115.74 - 116.39 m
118.36 - 118.41 m.

From 143.03 - 143.40 m there is a small unit of podded pyroxene garnet hornfels with large amounts of calcite present and a small faulted area occurs below this for about 10 - 12 cm.

In this area from 142.39 m to 145.01 m the hornfels has veins of sulphide mainly pyrite with minor pyrrhotite and chalcopyrite. These veins have on either side zones of pyroxene rich hornfels.

From 145.94 - 146.25 m the core is grey green in colour and very siliceous in nature.

From 147 metres approximately, the amount of pods in the biotite hornfels matrix increases while the amount of grey irregular patches stays roughly similar.

From 154.95 - 155.42 m a podded pyroxene garnet unit occurs.

156.97 - 159.45 **PODDED PYROXENE HORNFELS**

This unit is silicified and also has quite considerable amounts of garnet in it. In some areas the garnet forms a rim round the calcite pods.

From 157.66 - 158.13 m there is a very dark black biotite rich zone with only minor podding present in it.

Very minor mineralisation occurs in some of the garnet rich areas.

159.45 - 162.33 BIOTITE HORNFELS

A very uniform fine grained dark green-black biotite hornfels devoid of pods and fragments except for one large 4 cm pod of calcite 5 cm from the end of the unit.

Faint banding at 45° LCA is noticeable in this core and minor pyrite is present on the fracture planes.

162.33 - 167.84 PYROXENE GARNET CALCITE HORNFELS

This is made up of the 3 minerals in varying proportions with various members dominant in different areas, however the overall appearance is similar to the PGh in the pit and it is here classed as a single unit.

Minor mineralization occurs throughout, usually associated with pods of limestone often with minor andradite garnet associated with them.

167.84 - 172.29 BANDED PYROXENE HORNFELS

This unit is a finely banded light green-grey coloured fine grained hornfels with minor areas of biotite and garnet rich hornfels present throughout.

The finely banded unit is broken up into rafts or blocks in some areas and gives a very chaotic distribution of these smaller units.

The overall appearance is of banding at approximately 53° LCA.

172.29 - 173.33 BIOTITE PYROXENE HORNFELS

Very irregular and disturbed. In this unit the biotite is dominant over the pyroxene and the overall colour is very dark black with the grey green pyroxene irregularly distributed throughout.

173.33 - 174.06 CONTACT ZONE TO GRASSY GRANITE

From 173.33 - 173.76 m the core is pure quartz after which the rock becomes quartz and feldspar to 174.00 m, from there to 174.06 m the core is biotite rich.

174.06 - 189.28 GRASSY GRANITE

A normal biotite quartz feldspar granodiorite.

DIAMOND DRILL HOLE ASSAY SHEET

Hole No.: **INV. 21-1**

Logged By : **S.G.B.**

Sample No.	METRES			ASSAYS		L X A	REMARKS
	From	To	Length	WO_3	Mo		
A 5154	87.80	88.30	0.5	0.26	<0.01		
5	88.30	88.80	"	0.31	0.06		
6	88.80	89.30	"	0.39	0.05		
7	89.30	89.80	"	0.43	0.36		
8	89.80	90.30	"	0.50	0.05		
9	90.30	90.80	"	0.76	0.17		
60	90.80	91.30	"	0.96	0.17		
1	91.30	91.80	"	0.62	0.20		
A 5162	91.80	92.30	"	0.15	0.04		

GEOPEKO LIMITED - KING ISLAND

SUMMARY BORE HOLE SURVEY DATA

D.D.H. No. INV 21/1

Survey method : Multishot camera
Final depth : 189.28m
Casing depth : 33.53m

Depth surveyed to : 188.98m
Date surveyed : 27/9/73
Surveyed by : V.P. G.B.
Checked by :

DEPTH (m)	Bearing		Inclination		True Vertical Depth (m)	Co-oridinates	
	Grid	Mag.	Read	Corrected		N	E
24.38	73°	63°	4°	-86°	24.33	0.77	1.51
60.96	102° 30'	92° 30'	2° 22'	-87° 38'	60.86	1.34	3.19
91.44	146°	136°	3° 45'	-86° 15'	91.29	0.43	4.59
121.92	149°30'	139° 30'	5°	-85°	121.69	1.28	6.03
152.40	154°	144°	6°	-84 °	152.01	3.75	7.93
188.98	156°30'	146° 30'	7°	-83°	188.32	7.37	10.25

REMARKS: ISG 10°