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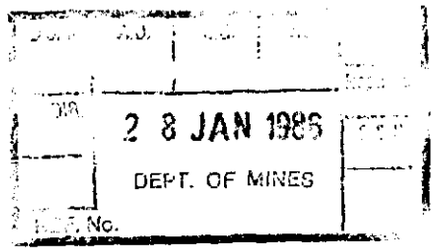


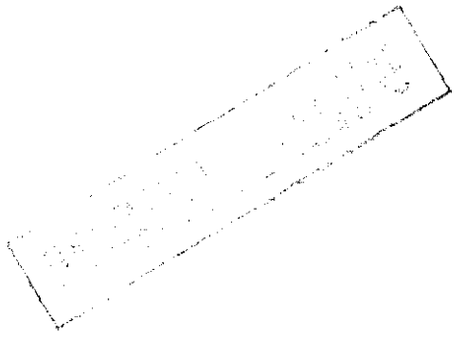

# QUARTERLY REPORT

EL 16/85

Period 30.8.85 - 30.11.85

Queensland Mines Limited
For Pioneer Concrete
(Tasmania) Pty Ltd.

**AMG REFERENCE POINTS ADDED**

001

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CONTENTS

002

1. Exploration Completed

Only an initial reconnaissance programme was completed on the licence during the reporting period. The remainder of the time was spent negotiating with the landowners of the two most promising areas.

The reconnaissance was undertaken by Mr R. Wright, consulting geologist of Devonport. His brief was to visit all known gravel deposits in the region and make a visual estimate of the +20mm clean quartz yield of the gravels. Some samples were taken for analysis. The results of this programme are reported as Appendices 1 and 2.

Negotiations with the owners of the private land known as Tam O'Shanter and Bridwood stations were completed during the quarter.

2. Future Exploration

Two areas, at Tam O'Shanter and Bridwood will be investigated in detail. The programme will include pitting, sizing and analytical work.

3. Financial Statement for period 19.8.85 to 16.12.85

| | |
|---|---|
| Staff Salaries | $707.50 |
| Travel & Accommodation | 475.98 |
| Representation | 26.47 |
| Fuel | 10.64 |
| Exploration Equipment | 28.42 |
| Consumables | 100.41 |
| Publications | 21.81 |
| Freight | 32.65 |
| Drafting | 17.99 |
| Geological Contractors | 1429.72 |
| Assays | 840.48 |
| Lease Costs | 587.50 |
| TOTAL | $4279.57 |

# APPENDIX 1

# QUARTZ GRAVEL SURVEY

## N.E. TASMANIA

by

R.G. WRIGHT

CONSULTING GEOLOGIST



Distribution

J. Noakes - Queensland Mines

Devonport

May, 1985

841006

-005

# QUARTZ GRAVEL SURVEY - N.E. TASMANIA

006

## LIST OF APPENDICES

| | |
|---|---|
| Appendix I | Geological description of gravel deposits located on 1:25,000 topographic sheets. |
| Appendix II | Location plans - 1:100,000 Scale |

## 1. INTRODUCTION

A rapid survey of quartz gravel deposits in the Pipers Brook - Scottsdale region was requested for Pioneer Concrete by Mr. J. S. Noakes, Chief Geologist, Queensland Mines Ltd.

A total of 69 sites were briefly inspected between 16-23.4.85.

## 2. GEOLOGY

Four main types of gravel deposit were identified during the survey:

1. Recent, angular, vein-quartz lag gravels over weathered Mathinna siltstone. These gravels are usually thin and patchy but can reach 2m thickness on scree slopes.

   Gravels of this type are unlikely to be extensive enough to be of interest.

2. Angular to sub-rounded, Recent lag gravels developed over Pleistocene, glacial, pebbly grit sequences. Again these are usually patchy and are derived from the pebble content in the underlying glacial drift. They are unlikely to be of interest to this survey.

3. Poorly sorted, sub-rounded to sub-angular Pleistocene gravels draped like blankets over low hills of Mathinna sediment - generally in areas close to the coast.

   These poorly-sorted gravels contain very little sand or silt content and would give a high yield of clean, coarse, +20mm sized quartz pebbles. They have an irregular distribution and shape and are probably of glacial origin. Their downgrading factor is their thickness which is generally below 1m.

   Their purity and high yield, however, makes them an important source for coarse quartz pebbles.

4. Tertiary fluviatile and braided stream deposits.

   Dissected remnants of limonite-stained and cemented, sub-rounded quartz gravels and silty sands occur E and W of Little Pipers River. These gravels can reach thicknesses of 6-7m and in the past have provided large quantities of road and concrete gravels.

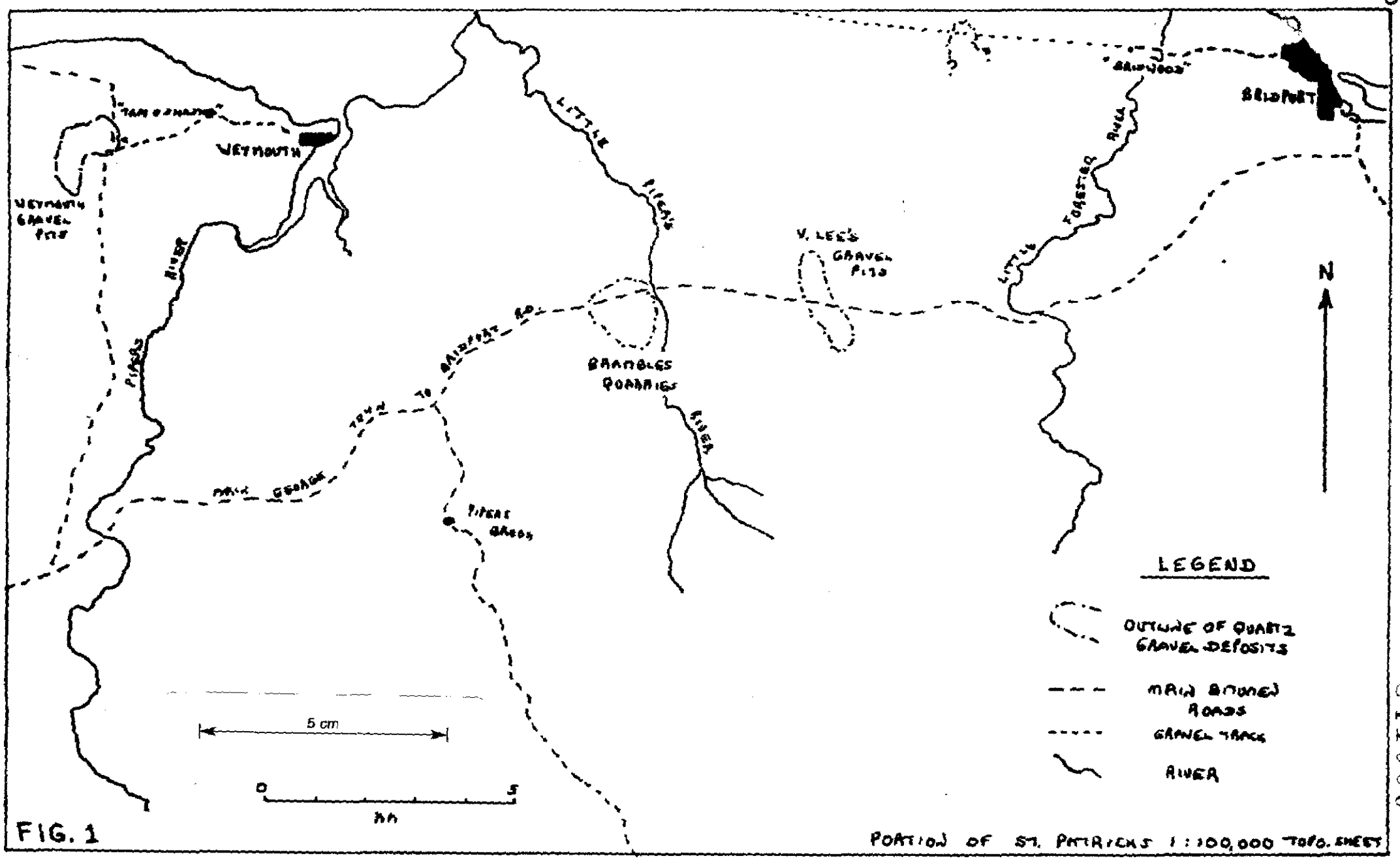



FIG. 1

PORTION OF ST. PATRICKS 1:100,000 TOPO. SHEET

They consist of irregular coarse gravel layers preserved in various cut and fill channel structures. Most of them contain a high percentage of fine sand and silt and selective mining would be required to obtain coarse 20mm+ quartz gravel.

Only the top 0.5-1.0m is leached and free of iron-oxide staining and cement.

Some of these gravels could provide clean quartz pebbles of around +20mm size for blending with the very coarse blanket gravel material.

## 3. LOCATIONS OF INTEREST

Figure 1 shows the location of the main areas of interest. Details of these and the other sites inspected during the survey are provided in Appendix I.

Location maps at 1:100 000 scale are attached as Appendix II.

Further investigation is recommended at the following six localities:

### 3.1 WEYMOUTH

Extensive 1m thick blanket gravel deposits occur along a low NS ridge about 5 km W of Weymouth.

Extensions to the gravel lie to the E of the present pits which are situated on land owned by Mr. G. Nixon of "Tam O'Shanter" station and ?Crown land to the S.

Further details are provided in Appendix I on Weymouth 5045 - Location 1.

### 3.2 BRAMBLES QUARRIES

Tertiary gravels and sands upto 5-6m thick are being worked by Brambles on their M.L. 930P/M situated south of the George Town to Bridport Road.

A large area of thick but iron-stained gravel may occur to the W of the present southern pits.

Refer to Weymouth 5045 - Location 11 for details.

### 3.3 VINCE LEE'S GRAVEL PITS

Gravel pits on Tertiary and Pleistocene-Recent gravels occur E of Little Pipers River.

A NW trending zone of unusual, evenly-sized gravels of around 20mm size and upto 1.5m thickness have been worked in various pits in this area.

Extensions to this zone of gravel may occur to the SE of the present pits.

Details of these areas are given in Bowood 5245 Locations 3 and 4.

3.4 BRIDPORT DISTRICT

A coarse, clean, blanket type gravel deposit was located on "Bridwood" station about 7 km W of Bridport.

This deposit has not been worked apart from gravel used for various station tracks.

Test pits would be needed to determine its full extent and overall thickness.

Details are given in Bridport 5246 - Location 3.

3.5 HALFWAY ROAD AREA

An extensive area of blanket type clean gravels occurs along the eastern slopes of a low hill of Mathinna sediments. The area is situated about 5km S.E. of the old Waterhouse townsite.

The gravels average only 0.5m thick but appear to cover a large area.

Details are provided in Oxberry 5446 - Location 3.

3.6 FORESTER AREA

Numerous Council pits have exploited a zone of sugary quartzite/quartz pebble gravel on top of a NW trending ridge just E of the old Forester townsite (about 16km NE of Scottsdale).

The gravels, which are upto 2m thick, probably continue both NW and SE along the ridge.

Details are provided in Pearly Brook 5445 - Location 3.

## 4. SUMMARY AND CONCLUSIONS

Six localities with potential for coarse, clean quartz gravel were identified in a rapid survey of the Pipers Brook - Scottsdale region.

Further traversing and test pitting would be required to delineate which are the most prospective localities.

R.G. WRIGHT

Consulting Geologist.

# APPENDIX I

Geological description of gravel deposits located on 2:25,000 topographic sheets.

Refer Appendix II for location plans.

# WEYMOUTH 5045

## LOCATION 1

Extensive gravel pits cover a NS ridge situated about 5km W of Weymouth.

The northern pits occur on land owned by Geoff Nixon of "Tam O'Shanter" Station.

The main area to the S was quarried in the past by B.M.G. and is thought to be on Crown Land. No titles are current at present over this area.

A blanket of coarse, poorly sorted quartz pebble gravel upto 2m thick lies over pale brown weathered Mathinna siltstone.

Loose, leached surface gravel has been scraped off the top and sides of the hill - generally to depths of 0.5-1m.

At depth the gravels are variably cemented with haematite-limonite and silica.

The angular to sub-rounded gravels consist of:

| | |
|---|---|
| White vein quartz | 90% |
| Pinkish quartz pebbles (limonite along internal fractures) | 8% |
| Fine - coarse gritty sand | 2% |
| Yield of pebbles greater than 20mm is estimated to be | 30% |

Further reserves of loose surface gravel upto 1m thick are indicated to the east of the present workings. Exploration on hill tops to the south and southwest may also locate further deposits.

## LOCATION 2

Gravels similar to those at location 1 are exposed in a small quarry just E of Lulworth on the Tam O'Shanter 1:25,000 sheet W of Weymouth.

Nearly 3 m of poorly sorted quartz pebble gravel with a 40cm silty sandstone interbed is exposed in the quarry.

Bedrock here is weathered greenish grey Mathinna siltstone.

Most of the gravel is variably cemented with haematite-limonite and silica but the top 0.5m is leached and unconsolidated.

The sub-rounded to sub-angular gravels consist of:

| | |
|---|---|
| Vein quartz pebbles | 95% |
| Pale gray Mathinna siltstone pebbles | 1% |
| Gritty sand | 4% |
| Yield of pebbles greater than 20mm is estimated to be | 40% |

The high iron content of the matrix probably downgrades these gravels.

LOCATION 3

Gravel pits, now back-filled, used to be worked west of "Binowee" on property owned by Terry L. Mahnken of Pipers River. Area is held by Mahnken as ML1040P/M of 273 Ha.

Limited exposures show angular to rounded quartz gravel strongly stained with limonite which according to Mahnken was upto 1.5m thick when quarried by Brambles. Yield of 20mm pebbles would be less than 20%.

To the south of the old main pit area the hill tops are capped by lateritized sandstones.

To the south west recently scraped areas show 30-40cm thick surface lag gravels overlying pebbly and gritty clays and sands.

The surface gravels consist of:

| | |
|---|---|
| Rounded grey quartz pebbles | 20% |
| Gritty sand | 60% |
| Silty clay | 20% |
| Yield of pebbles greater than 20mm would be less than | 10% |

LOCATION 4

A very small gravel pit on coarse angular white vein quartz scree over Mathinna siltstone.

Deposit is less than 0.5m thick and has no surface area.

Tracks throughout this locality have much white sand and patches of angular quartz fragments appear to be formed as surface lag concentrations over weathered Mathinna siltstones.

015

Generally these deposits are less than 0.5m thick but in places are upto 2m adjacent to the creeks. Overall are very patchy with little tonnage potential.

Epoch Minerals N.L. has dug numerous test pits alongside the tracks testing for alluvial gold possibilities.

LOCATION 5

A council gravel pit on the southern flank of a low hill E of Pipers Brook Road on property 0263.

Gravels are upto 1m thick in places and show some limonite staining of rounded to sub-rounded pebbles.

Yield of greater than
20mm quartz pebbles would be about 30%

The northern side of the hill shows only gritty sands suggesting that gravel reserves are confined to the south side of the hill. The gravels are restricted to a blanket cover of limited extent.

The area has no interest in the current survey.

LOCATION 6

Three large pit areas situated east of the Bellingham Road and north of the main George Town to Bridport Road.

A blanket of rounded to sub-rounded vein quartz pebbles has been scraped off the tops and sides of three separate hill by the ?Forestry Department.

The poorly sorted gravels are from 0.5-1m thick and at depth are indurated and stained with limonite. Bedrock is weathered pale yellow-white to purple brown Mathinna siltstone.

Most of the available gravel has been removed so relict reserves are limited.

Yield of pebbles greated than 20mm
is estimated to be about 30-40%.

LOCATION 7

A gravel pit situated on the northern flank of an isolted hill just north of the Bridport Road.

Occurs on private property "Blue Gum Park", so was not inspected. From the road it would appear to be identical to the blanket deposits seen at location 6.

LOCATION 8

An area of numerous new gravel pits situated on the western side of Vince Lee's M.L.1019P/M of 1317 Ha.

Just south of Saltwood Road, a small pit exposes a section of 20-30cm thick sands and loamy gravels overlying a 20m wide gravel-filled channel upto 1m thick.

The poorly sorted, angular to sub-rounded gravels consist of:

| | |
|---|---|
| Vein quartz pebbles | 30% |
| Fine grained, silty sandstone - quartzite | 60% |
| Sand matrix | 10% |
| Yield of pebbles greated than 20mm would be about less than | 10% |

The gravels are probably re-worked Recent sediments derived from erosion of nearby Teriary and Pleistocene gravels. The low yield limits their interest.

LOCATION 9

Extensive shallow and deeper pits on impure gritty sands with rare pebble layers. Identical sequence to that seen at Location 8.

Cleanest sand is the top 50cm of white, loose, leached surface material.

At depth the sands are variably cemented with iron oxides.

LOCATION 10

Extensive areas of gravel exposed on a slightly elevated hill.

Gravels here are similar to those seen at Locations 6 and 7 but have suffered more erosion to contribute to the Recent sands to the N.

The loose top 30cm has been scraped up over large areas. At depth below this the gravels are variably cemented with limonite - minor haematite.

Yield of greater than 20mm pebbles would be about 30% as angular white quartz fragments.

LOCATION 11

A new quarry area on the south side of the hill on Brambles Holdings Ltd 114 hectare mineral lease 930 P/M.

A 5-6m thick sequence of limonite-stained, poorly sorted gritty and pebbly sand and clayey sand is exposed in the new pit.

The gravel rich sections of the sequence consist of:

| | |
|---|---|
| Angular to sub-rounded, vein quartz fragments - stained with limonite | 70% |
| Fine grained sandstone - quartzite | 15% |
| Sand and clay matrix | 15% |
| Yield of pebbles greater than 20mm is estimated to be | 30-40% |

A large area of gravel of good thickness may occur to the W of these pits adjacent to a NW line of Mathinna siltstone hills.

The main problem with these gravels would be their high iron content due to the widespread limonite staining. Only the top 0.5-?2m of surface material would be leached enough to be of use.

LOCATION 12

A traverse was run S along a track into the Forest area W of location 11.

Angular white quartz fragments are abundant in sandy loam exposed on the hill and paddocks west of the forest area.

Most of this looks to be surface lag concentrations derived from Mathinna Bed siltstones.

Thickness of this material is probably no mare than about 10 cm.

LOCATION 13

An exposure on the main Bridport Road which shows a 40m wide channel of the ancient Little Pipers River.

Coarse boulder gravel upto 3m thick is exposed in the cutting. The gravel is a restricted relict preserved on the edge of the present river.

LOCATION 14

A deposit of yellow white beach sand exposed on the top of a hill just E of Bellingham. Held by C. & E.J. Coates as ML 40/3055.

The locality has no potential for coarse vein quartz gravel.

# RETREAT 5044

## LOCATION 1

An old gravel pit S of the Bridport Road about 4km W of Pipers River.

A 10-20cm thick surface layer of angular to rounded quartz pebbles lying over thin yellow brown to white sandy clays. These in turn overly deeply weathered Mathinna siltstone.

Only 10% of the pebbles would be greater than 20mm size and the area of gravel appears very restricted.

## LOCATION 2

Track through State Forest reserve SE of Lefroy.

Upto 1m thickness of angular white quartz as scree and lag gravel deposits built up from the underlying Mathinna sediments.

Generally the surface gravels are only 10-20cm thick with yield of about 20-30% of greater than 20mm quartz fragments.

## LOCATION 3

Gravel reserve 0410 on east side of Industry Road.

A small pit on surface lag gravels upto 30cm thick overlying yellow silty clays.

About 40% of the angular white quartz fragments are greater than 20mm size.

## LOCATION 4

Gravel reserve 0330 on the east side of Industry Road.

Surface lag gravels upto 20cm thick have been scraped up over various areas. The gravel has developed over yellow brown clay and much of it at depth is stained with limonite.

About 30% of the quartz pebbles are greater than 20mm.

Gravels are extensive on the hill top but overall too thin to be of interest.

## LOCATION 5

Gravel reserve 0318 east of Dalrymple Road.

Thin, 10-20cm thick lag quartz gravels over yellow brown clay as seen at location 4. Only 10-20% of the gravel would be greater than 20mm. Old pit area now overgrown by trees.

LOCATION 6

Gravel reserve 0320 south of location 5.

Another old pit area with a thin surface lag gravel over pebbly clay as seen at locations 4 and 5.

LOCATION 7

Angular white quartz gravel as cap on top of hill of Mathinna siltstone.

Less than 10cm thick and limonite-haematite stained.

Isolated relict of original lag gravel deposits.

LOCATION 8

Gravel reserve on SE side of Malmaney Sugarloaf. Area not inspected as on private property. Probably lag scree gravels over Mathinna sediments.

LOCATION 9

Gravel reserve 0379 east of pine plantation E of Pipers River.

A small pit has been opened up to collect a 20cm skin of lag, angular white vein quartz developed on the northern slope of an NW Mathinna sediment ridge.

The gravels have developed over a sequence of yellow white and purple brown clay containing scattered white quartz fragments.

The quarts fragments are very iron stained and only 5% of the surface material is greater than 20mm in size.

LOCATION 10

Gravel reserve 0391 west of the Pipers River Road.

Now a barren paddock with a small clump of gum trees.

The old pit area probably was backfilled.

LOCATION 11

Old, overgrown pit adjacent to the main Bridport road.

Contains lateritic gravels and minor limonite stained quartz pebbles.

LOCATION 12

Gravel reserve 0411 south of Industry Road.

Round edge cutting shows angular white quartz fragments and lateritic gravel cemented in a silty, ferruginous matrix. Several large boulders of strongly limonite-cemented gravel contains pieces of white vein quartz upto 30cm long.

LOCATION 13

Old gravel pits between Trooper Track and Industry Road.

Visible from the Bridport Road but not marked onto the 1:25,000 sheet.

Exposures in the pits shows a section of upto 1.9m of pale brown siltstone containing three gravel bands upto15cm thick.

Overlying this limonite-stained and cemented section is 30-40cm of loose, leached lag quartz gravel.

The surface gravels consist of:

| | |
|---|---|
| Angular to sub-rounded vein quartz pebbles | 80% |
| Yellow brown Mathinna silty shale pebbles (usually greater than 20mm size) | 10% |
| Yellow-grey silty matrix | 10% |
| Yield of pebbles greater than 20mm would be about | 30% |

The gravel from this area would have prblems with its high iron content and too many large Mathinna siltstone pebbles.

021

841022

BRIDPORT 5246

LOCATION 1

A water reservoir situated just N of the Sandy Points Road just W of Bridport.

Flat-bedded, grey clayey sands are exposed in the banks of this excavation.

No gravel layers are exposed and only rare angular pebbles were seen in the section.

LOCATION 2

A small scraped area has exposed a coarse white quartz pebble gravel with pebbles upto 20cm long.

Gravels are only 0.50m thick and overlie mottled grey and red brown clay.

The angular to sub-rounded gravels consist of:

| | |
|---|---|
| Quartz pebbles - some with pink iron oxide colouration along internal joints. | 90% |
| Grey, rounded, fine-grained sandstone - quartzite | 1-2% |
| Grey brown silty sand matrix | 8% |

Yield of pebbles greater than 20mm is estimated to be 40-50%

Another quarry marked to the SE was not inspected because the track was too overgrown - may be worth a visit in future.

Extent of this gravel is difficult to judge and would require traverses through the surrounding bush.

LOCATION 3

Several small pits situated 7km W of Bridport on "Bridwood" station managed by Don Barrett.

A low hill is covered with coarse quartz pebble gravel similar to that seen at location 2, SW of Bridport.

The angular to sub-rounded gravels consist of :

022

| | |
|---|---|
| Quartz pebbles - some of which contain iron oxide in thin fractures | 95% |
| Fine grained sandstone-quartzite | Trace |
| Sand matrix | 5% |
| Yield of pebbles greater than 20mm | 60% |

Difficult to judge the overall extent and thickness of these gravels as much timber cover to the south and the deposit has not been extensively worked in the past.

Test pits are needed to outline thickness and extent.

LOCATION 4

A small reservoir dug into weathered yellow brown Mathinna siltstones. Only sparse angular vein quartz float in the surface thin soils.

# BOWOOD 5245

## LOCATION 1

Gravel reserve 0889 situated N of the Bridport Road.

This area contains very thin surface lag gravels of angular quartz over Mathinna sediments.

## LOCATION 2

Gravel reserve 0888 south of the Bridport Road.

The pit on the western edge of the reserve has exposed a coarse pebble gravel lying over deeply weathered Mathinna siltstone.

The gravels which are upto 0.8m thick consist of:

| | |
|---|---|
| Angular to sub-rounded white vein quartz | 40% |
| Pale grey to pale brown fine grained cross-bedded sand-stone-quartzite pebbles (Most are greater than 20mm size). | 50% |
| Gritty sand matrix | 10% |
| Yield of pebbles greater than 20mm size would be about | 50% |
| Most of these would be sandstone quartzite. | |

The surface 0.5m is usually loose and leached but limonite stains and cementing builds up at depth.

Other pits to the E and SE expose much smaller pebble sizes and contain a higher sandy silt matrix content. The proportion of pebbles of greater than 20mm size would only be about 20%.

A small pit on the N boundary of the reserve has exposed a 2.5m thick section of poorly sorted pebbly grits and sands and clayey sands. Only the surface lag gravels over this material contains a concentration of pebbles and 50-60% of these consist of sandstone-quartzite.

Suitable quartz gravels could occur in this area but they may be of limited extent. Other problems are the high proportion of fine grained sandstone-quartzite, the high silt/clay content to the E and limonite staining and cement in the base of the gravel sections.

LOCATION 3

Shallow pits have exposed a sequence of pebbly grits and sands. The loose, leached top 40cm of the grits have been scraped up for road gravel.

The quartz pebbles are very evenly sized at about 20mm.

The gravel consists of:

| | |
|---|---|
| Angular to sub-rounded white quartz | 80% |
| Grey sandstone quartzite | 10% |
| Sandy matrix | 10% |
| Yield of pebbles greater than 20mm is estimated to be | 60% |

Overall these gravels could be of interest as they are clean white pebbles at or close to 20mm size. The main problem is their average thickness of only 30-40cm below about 10cm of sandy loam.

Several pits to the north were not inspected but these probably contain the same type of material.

LOCATION 4

Recently worked quarries have opened up evenly sized gravels upto 1.5m thick on the E side of a low hill. The gravels are very similar to those seen at location 3 and possibly indicate that a NW trending zone of even size gravel could be outlined in this area. Hills on trend to the SE may be prospective for this material.

The gravel consists of:

| | |
|---|---|
| Angular to sub-rounded white quartz pebbles | 95% |
| Grey sandstone-quartzite pebbles | 1% |
| Grey sandy loam | 4% |
| Yield of pebbles greater than 20mm is estimated to be | 40-50% |

In some areas the yield of 20mm pebbles drops to 20-30% and in others the iron oxide content is very high. Selective mining would be needed to obtain the purest gravel.

A hill to the SW consists of Tertiary basalt overlying the gravel sequences.

LOCATION 5

A large and deep quarry operated by the Lilydale Council and situated E of the Ferny Hill Road.

The quarry has exposed a limonite-stained 6-7m thick sequence of silty gravels and sands which constitute part of an old 50-60m wide Tertiary drainage system. Bedrock is weathered Mathinna siltstones.

The gravels consist of:

| | |
|---|---|
| Sub-rounded to sub-angular vein quartz pebbles | 50% |
| Rounded fine grained sandstone -quartzite pebbles | 1% |
| Silty to sandy matrix | 49% |
| Yield of pebbles of greater then 20mm size would be | 15-20% |

The gravels are of low interest for this survey because of their low yield and the widespread iron oxide staining and cement.

LOCATION 6

Two old pits expose a section of silty gravels and sands upto 4m thick. This section is identical to that seen to the N at location 5 and is probably part of the same drainage system.

The surface 0.5m is leached and loose material overlying limonite-stained and cemented pebbly sands and silts.

LOCATION 7

A small pit was opened up by the Council in an area of sandy clay and surface gravel according to the owner, Mr. Hirst of "Bowood" station. The site was not inspected.

LOCATION 8

Gravel reserve 0846 situated west of the Scottsdale to Bridport Road.

Gritty sands occur on the top of a low hill. No gravel layers have been intersected in the workings.

LOCATIONS 9, 10, 11 and 12

Small pits on white surface gritty sands. No gravel layers exposed in the workings.

026

LOCATION 13

Roughly bedded, graded pebbly and gritty sands upto 5-6m thick exposed in 2 pits situated west of the Scottsdale to Bridport Road. The grits are variable cemented with limonite at depth.

Two gravel bands upto 50cm thick are exposed in the gritty sand section.

Yield of 20mm quartz pebbles from this material would be only 1-2%.

LOCATION 14

Shallow scrapings for loose surface grits above limonite-haematite cemented grits with minor pebble layers. Material is identical to that seen at location 13 and has similar low potential.

LOCATION 15

This gravel pit was not inspected because the track was heavily overgrown. A visit is recommended in future as a small pit to the NW contained coarse quartz pebble gravels.

C27

## NABOWLA 5244

### LOCATION 1

Locked gates to the Forestry gravel pit prevented an inspection. Would expect to find silty gravels and sands as exposed at locations 5 and 6 on the Bowood 1:25,000 sheet.

### LOCATION 2

Local Council pit on a 2m section of gritty sands.

Only the top 0.5m is clean and loose white grit. Below this the sands are silty and limonite-stained.

### LOCATION 3

Numerous old pits occur both sides of Oak Dene Road.

All of them have exploited the top 0.5-1m of surface white gritty sands. At depth the sands have a yellow silty clay matrix.

### LOCATION 4

A large private pit on "Oakvale" station. Gritty sands are exposed on the top of a low hill. Quarry not inspected due to large Trespassers Prosecuted sign. Road sections suggest a good thickness of pur white gritty sand is present in this area.

### LOCATION 5

Gravel reserve 1005 situated W of Scottsdale.

Shallow pit has exposed 30-40cm of white gritty sand with an occasional quartz pebble. Below 40cm the grits are silty and limonite stained and cemented.

028

841029

WATERHOUSE 5447

LOCATION 1

Gravel reserve 0094 situated E of the Homestead Road.

A small pit has exposed a variable thickness of loose feldspathic gravel overlying weathered Devonian granite.

The locality has no potential for silica gravel.

029

841030

# OXBERRY 5446

## LOCATION 1

Gravel reserve 0030 situated SE of the Waterhouse Road.

Land to the N of the deposit occurs on "Marengo" station managed by Barry Clifford and owned by Martin Demarus.

Land to the south forms part of "Palawan" station.

The gravel occurs as a poorly sorted blanket upto 80cm thick over a low hill of weathered Mathinna siltstone.

The gravels consist of:

| | |
|---|---|
| Sub-rounded to angular white vein quartz pebbles | 95% |
| Rounded pale brown silty sandstone-quartzite (generally larger than 20mm) | 1-2% |
| White silty sand | 3% |
| Yield of 20mm quartz pebbles is estimated to be about | 40-50% |

Some areas of the pit show limonite cementing of the gravels and these zones have been left in place.

Most of the gravel appears to have been removed but extensions are possible to the SE and possible to the NW.

Another gravel pit occurs to the N of "Barooga" station but this was not inspected.

## LOCATION 2

Small quarry on Mathinna siltstones and shales.

## LOCATION 3

Several gravel pits N and S of the Halfway Road. These are located on private properties owned by the following people:

| Property | Owner |
|---|---|
| 0069 | Frank Abraham, "Barooga" Station |
| 0070 | Lyndsay G.Hall, "Halfway" Station |
| 0067 | Lyndsay G.Hall, "Halfway" Station |
| 0068 | Danny Hall, Scottsdale |

A 50cm thick white quartz pebble gravel occurs over a wide area N and S of the Halfway Road. The gravels are developed on the E flank of a low hill of Mathinna siltstones and sandstones. Further E isolated outcrops of Devonian granite are exposed.

030

The gravels consist of:

| | |
|---|---|
| Sub-rounded to angular white vein quartz pebbles. About 5-10% of them show some limonite staining | 95% |
| Pale brown quartzite fragments - usually larger than 20mm | 1-2% |
| Gritty to silty sand matrix | 3% |
| Yield of 20mm pebbles is estimated to be about | 40-50% |

As usual at depth the gravels are variably indurated and stained with iron oxides.

The gravel layer is thin but extensive and could give a good yield of 20mm quartz pebbles.

# PEARLY BROOK 5445

## LOCATION 1

Quarry reserve 0193 on the W side of the Waterhouse to Scottsdale Road.

Roughly bedded, cross-bedded silty sands similar to those seen in section S of Bridport. Gravel layers upto 30cm thick are present but overall the site has low potential for quartz pebble gravel.

A surface lag gravel layer is upto 50cm thick and contains angular to sub-rounded quartz pebbles.

Yield of 20mm size quartz pebbles would be about 20% from the surface concentrations.

## LOCATION 2

A small roadside quarry on gritty clays produced by in-situ weathering Devonian granite.

## LOCATION 3

Gravel reserve 0156 situated 1km W of the old Forester townsite.

The top and sides of a SE trending ridge of Mathinna siltstone has been extensively scraped for its blanket cover of quartzite gravels by the ?local Council.

The gravels consist of sub-rounded to angular, pale grey to pale brown, evenly-sized sugary quartzite and vein quartz pebbles.

Up to 2m thickness of loose, leached gravel is present on the top of the hill. At depth the gravels are indurated and cemented with limonite.

The gravel consists of:

| | |
|---|---|
| Quartzite and vein quartz pebbles (partly ?feldspathic) | 95% |
| Sandy matrix | 5% |
| Yield of 20mm pebbles is estimated to be | 20-25% |

Further reserves of these gravels could occur to the NW and SE along the trend of the main ridge.

## LOCATIONS 4 and 5

Small roadside pits on coarse white surface sands.

# SCOTTSDALE 5444

## LOCATION 1

A 4 km long NNE trending zone of major gravel pits held under lease by the Ballarat Clay Co. Pty. Ltd. consolidated lease 38M76 of 346 Ha.

Entry to these pits is restricted but examination of the Tasman Highway road cutting suggests that they are probably the usual clean coarse grits seen elsewhere in this district.

## LOCATION 2

A small roadside pit on stratified, poorly sorted pebbly grits and sands at least 2m thick.

Most of the pebbles are 5mm average size but some upto 30mm are present.

Yield of 20mm pebbles probably no more than 1-2%.

## LOCATION 3

Gravel pits on the SW side of Hang Dog Hill. These have exposed yellow-white silty to sandy clays with sporadic pebbles of various lithologies, quartz, quartzite, granite, shale, etc.

The surface lag gravel has been scraped up for use as road metal.

## LOCATION 4

Surface scrapings on western side of a low hill. Gravels are lag, scree concentrations of angular white quartz and sugary sandstone-quartzite.

Thickness of gravel is generally less than 30cm overlying yellow to white sandy clay.

Yield of 20mm size fragments would be 40-50%

Material is not of interest due to its high percentage (30%) of pale brown, siliceous sandstone fragments.

## LOCATION 5

A deep quarry on top of a steep hill situated NW of the Kamona Road.

Poorly sorted, cross-bedded and stratified clean pebbly grits and sands have been worked to a depth of 7-8m below the surface. The grits are very clean with very little silt or clay content. Average grain size would be about 5-10mm.

The material was probably derived during the Pleistocene glaciation from a Devonian granite source.

LOCATION 6

Shallow pits on 10-20cm thick surface grits. No pebbles seen in the exposures.

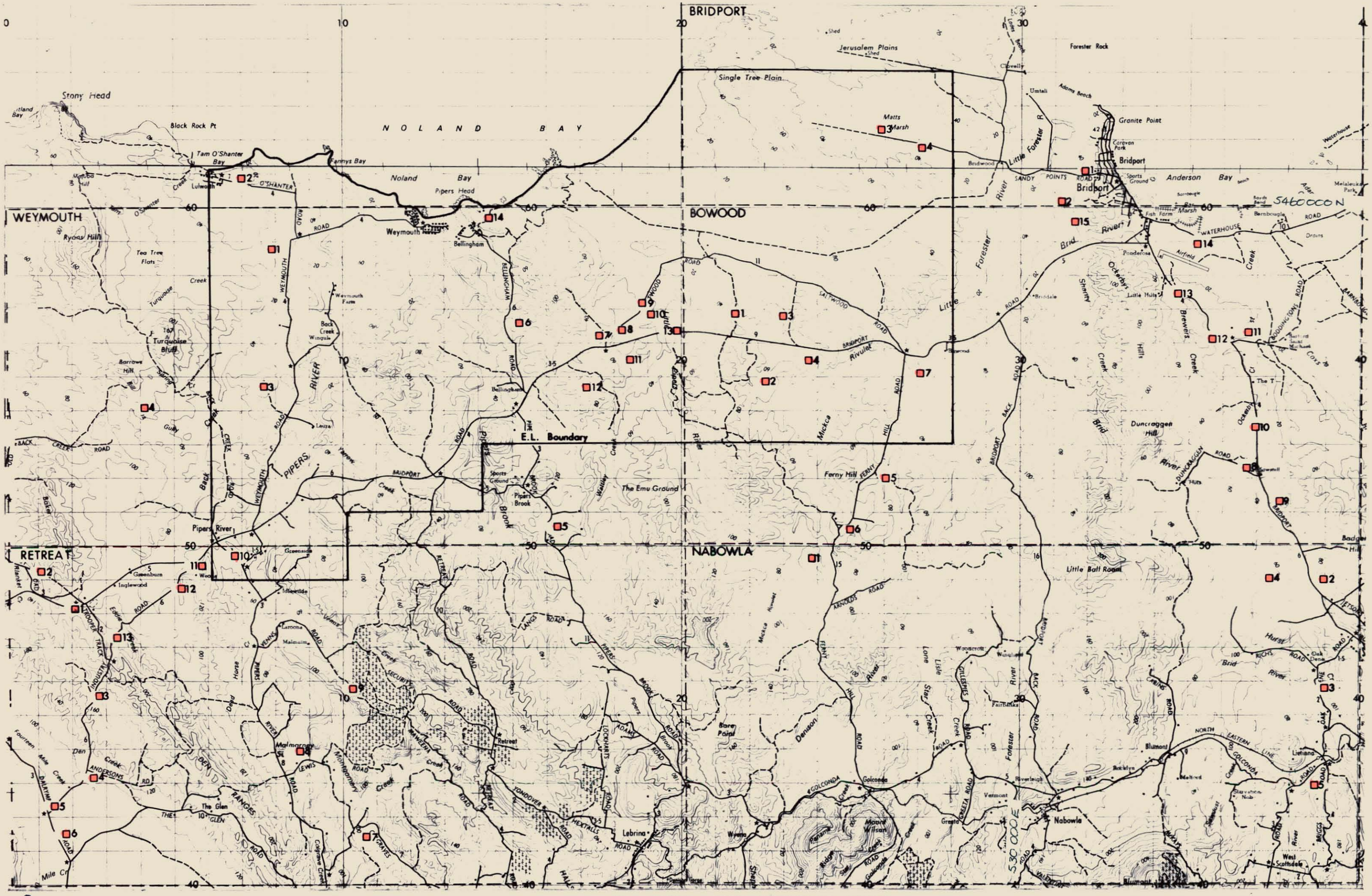
LOCATIONS 7, 8 and 9

Gritty and occasionally pebbly sands worked in small and large pits. Clean, loose surface material has been scraped up by the ?Council. Yield of 20mm pebbles at location 8 would be less than 10%.

034

# APPENDIX 2

Location plans -
1:100,000 scale




KEY

1:25,000 AREAS

SAMPLE LOCATIONS

5 cm

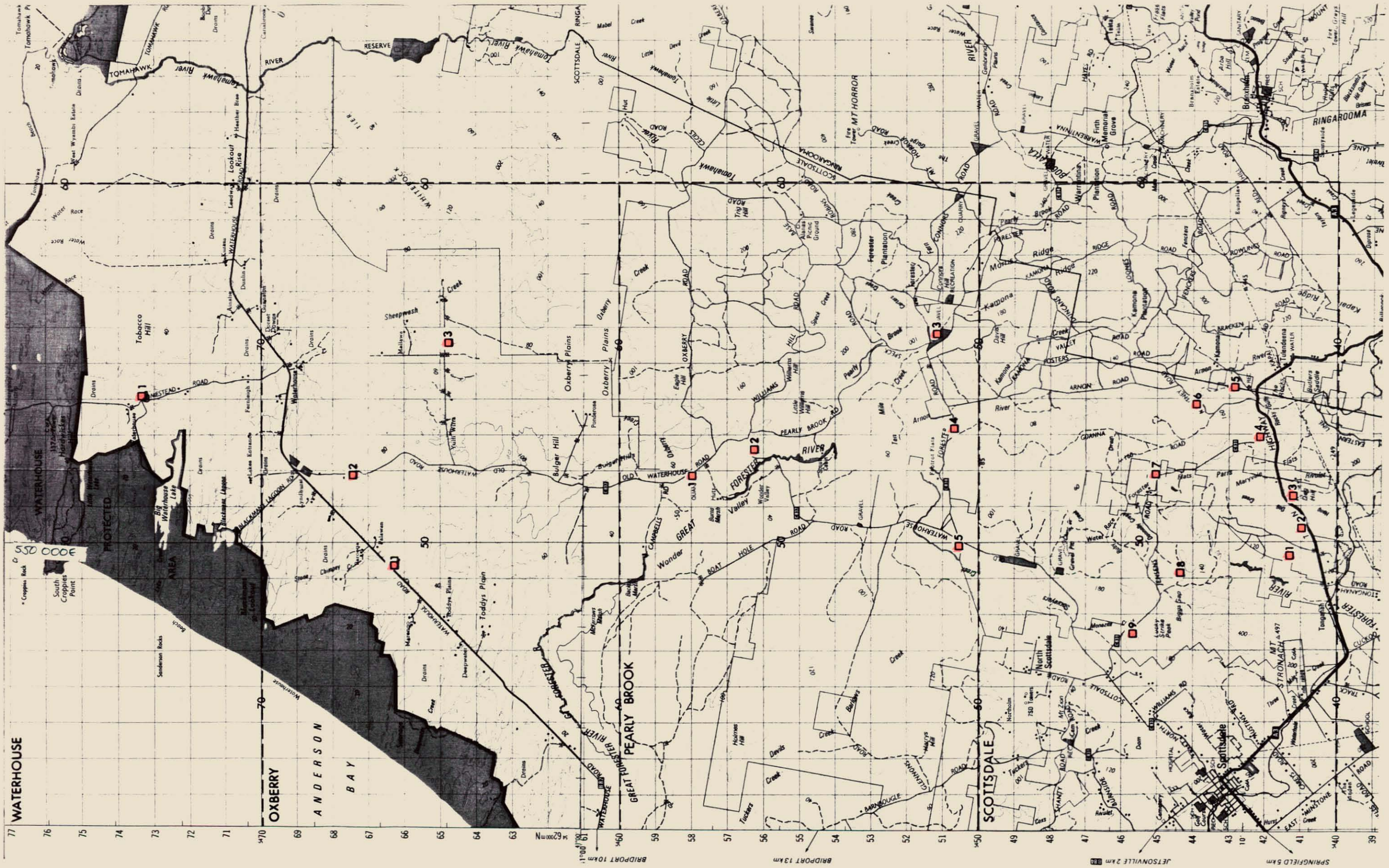
E.L. 16/85 AND ADJACENT AREAS

SAMPLE LOCATIONS

SCALE: 1:100,000

AMG REFERENCE POINTS ADDED

841036 FIGURE 1




AMG REFERENCE POINTS ADDED

E.L. 16/85

SAMPLE LOCATIONS

(AREAS TO EAST)

SCALE: 1:100,000

841037

FIGURE 2

# APPENDIX 3

038

841039

Appendix III

MEMO TO: J.S. NOAKES

FROM: R.G. WRIGHT

SUBJECT: QUARTZ GRAVEL SAMPLES SENT TO ANALABS - BURNIE

DATE: 4th June, 1985.

## N.E Tasmania

The following ten samples were collected from the six main sites mentioned in my May 1985 report:

NE1 Quartz pebbles of +20mm size from the quarry just E of the old Forester townsite.

NE2 Grey and white quartz pebbles of +20mm size from the quarry on Halfway Road - adjacent to the letterbox for "Coonawarra" Station.

NE3 Samples of +20mm size sandstone-quartzite pebbles. Same site as NE2.

NE4 Samples of +20mm size quartz pebbles near gate on EW fence -7km W of Bridport on "Bridwood" station.

NE5 Quartz pebbles adjacent to 1 inch screen on Vince Lee's pits S of the main George Town to Bridport Road.

NE6 Samples of +1 inch sandstone - quartzite pebbles. Same site as NE5.

NE7 White, partly iron-stained quartz pebbles of +20mm size. Downhill from limonite-stained quarry face in the southern Brambles pits.

NE8 Samples of +20mm size sandstone-quartzite. Same site as NE7.

NE9 White and some greyish quartz pebbles of +20mm size from the northern pit at the Weymouth deposit.

NE10 Sample of silty sandstone-quartzite pebbles. Same site as NE9.

039

# ANALABS

841040

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Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

## ANALYTICAL REPORT No. 999.0 08 3102

**THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA**

Queensland Mines Ltd.,
FCA House
8th Floor, 50 Margaret St.,
Sydney N.S.W. 2000

| ORDER No. | PROJECT |
|---|---|
| | |

| DATE RECEIVED | RESULTS REQUIRED |
|---|---|
| 28.5.85 | URGENT |

| No. OF PAGES OF RESULTS | DATE REPORTED | No. OF COPIES | TOTAL No. OF SAMPLES |
|---|---|---|---|
| | | 3 | |

| STATE OF SAMPLES | PRE-TREATMENT | | | | | | | | ANALYSIS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REFER BELOW | SAMPLE NUMBERS | DRY | CRUSH | SPLIT | PULVERISE | SIEVE | OTHER SEE REMARKS | NONE | REFER TO ANALYSIS SECTION | PREPARATION | METHOD |
| RO | NE 1-10 | 1 | 2 | | | | 1 | | Ti02 Al203 Fe203<br>MnO MgO CaO Na20<br>K20 P205 Zr02<br>Si02 LOI | | 408 |
| | | | | | | | | | Cd Bi Pb Cr Co | | 101 |

RESULTS TO

As Above
Attn: J.S. Noakes

RESULTS TO

REMARKS

1. Wash

| STATE OF SAMPLES | | ANALYSIS — PREPARATION | | | | ANALYSIS — METHOD | |
|---|---|---|---|---|---|---|---|
| whole core | WC | perchloric acid | A1 | cold acid | CA | atomic absorbtion | AAS |
| split core | SC | hydrochloric acid | A2 | specific sulphide | SS | x-ray fluorescence | XRF |
| cutting | CU | nitric acid | A3 | other mixed acids | Mx | spectrophotometry | SPEC |
| rock | RO | aqua regio | A4 | alkaline attack | AA | colorimetry | COL |
| soil | SO | nitric-perchloric | A5 | volatilization | VO | chromatography | CHR |
| pulp | PU | HF mixture | A6 | ignition | IG | titration | TTN |
| water | WA | HF under pressure | A7 | pressed powder (XRF | PP | other chemicals means | CHEM |
| tissue | TI | fusion | A8 | glass fusion (XRF) | GF | miscelloneous | MISC |
| stream sediment | SS | | | | | fluorescence | FLUOR |
| heavy mine | HM | | | | | inductively coupled plasmo | ICP |

AUTHORISED OFFICER

# ANALABS

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841041

C.O

# ANALYTICAL DATA

| SAMPLE PREFIX | REPORT NUMBER | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 999.0 08 3102 | 17.6.85 | | 1 OF 2 |

| TUBE No. | SAMPLE No. | Na2O | MgO | Al2O3 | SiO2% | P2O5% | K2O | CaO | TiO2 | Cr |
|---|---|---|---|---|---|---|---|---|---|---|
| 23 | NE 01 | 50 | 40 | 250 | 99.8 | X | X | 60 | 350 | 5 |
| 24 | NE 02 | 50 | 40 | 950 | 99.7 | X | 50 | 100 | 150 | 15 |
| 25 | NE 03 | 730 | 770 | 44000 | 92.7 | 0.009 | 9200 | 130 | 5000 | 25 |
| 1 | NE 04 | 40 | 50 | 950 | 99.6 | X | 40 | 80 | 150 | 15 |
| 2 | NE 05 | 40 | 50 | 250 | 99.8 | X | 10 | 60 | 350 | 5 |
| 3 | NE 06 | 100 | 120 | 950 | 99.3 | X | 160 | 100 | 2500 | 10 |
| 4 | NE 07 | 40 | 40 | 250 | 99.8 | X | 10 | 60 | 200 | X |
| 5 | NE 08 | 70 | 380 | 2700 | 99.0 | X | 600 | 120 | 2350 | 15 |
| 6 | NE 09 | 30 | 30 | 50 | 99.9 | X | X | 60 | 150 | X |
| 7 | NE 10 | 120 | 990 | 16500 | 97.0 | X | 3300 | 150 | 1950 | 15 |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
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| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |
| 22 | | | | | | | | | | |
| 23 | DETECTION | 10 | 10 | 50 | 0.1 | 0.007 | 10 | 10 | 50 | 5 |
| 24 | DIGESTION | | | | | | | | | |
| 25 | METHOD | 103 | 103 | 103 | 408 | 402 | 103 | 103 | 103 | 103 |

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

# ANALABS

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841042

## ANALYTICAL DATA

| SAMPLE PREFIX | REPORT NUMBER | REPORT DATE | CLIENT ORDER No. | PAGE |
|---|---|---|---|---|
| | 999.0 08 3102 | 17.6.85 | | 2 OF 2 |

| TUBE No. | SAMPLE No. | MnO | Fe2O3 | Co | ZrO2 | Cd | Pb | Bi | LOI% | |
|---|---|---|---|---|---|---|---|---|---|---|
| 23 | NE 01 | 80 | 240 | X | 90 | X | X | X | 0.12 | |
| 24 | NE 02 | 80 | 210 | X | 7 | X | X | X | 0.11 | |
| 25 | NE 03 | 120 | 2600 | X | 500 | X | 10 | X | 0.98 | |
| 1 | NE 04 | 70 | 510 | X | 10 | X | X | X | 0.19 | |
| 2 | NE 05 | 50 | 130 | X | 30 | X | X | X | 0.13 | |
| 3 | NE 06 | 50 | 340 | X | 470 | X | X | X | 0.20 | |
| 4 | NE 07 | 60 | 140 | X | 10 | X | X | X | 0.12 | |
| 5 | NE 08 | 50 | 640 | X | 420 | X | X | X | 0.23 | |
| 6 | NE 09 | 60 | 140 | X | 10 | X | X | X | 0.08 | |
| 7 | NE 10 | 40 | 970 | X | 65 | X | X | X | 0.59 | |
| 8 | | | | | | | | | | |
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| 21 | | | | | | | | | | |
| 22 | | | | | | | | | | |
| 23 | DETECTION | 10 | 10 | 5 | 7 | 0.5 | 5 | 5 | 0.01 | |
| 24 | DIGESTION | | | | | | | | | |
| 25 | METHOD | 103 | 103 | 103 | 401 | 103 | 103 | 103 | 408 | |

Results in ppm unless otherwise specified
T = *element present*; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER