

91-3249

FINAL REPORT (1990-1991)

E.L. 57/89 (CANN CREEK)

by Vic Threader

for Mineral Holdings Australia Pty. Ltd.

|                      |          |
|----------------------|----------|
| <b>MINES</b>         |          |
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**91-3249.**

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**SEARCHED**

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(TCR89-2952)

### Introduction

The subject area was originally held by Hooker Resources Ltd. to search for silica flour (superfine silica sand) in the area lying between known deposits at Cann Creek held by Mineral Holdings Australia Pty. Ltd. (E.L.43/70, now ML45M/89) and a similar deposit discovered by M.H.A. on Champion Road and now held by M.H.A. (E.L.24/88).

This material is similar to that mined at Corinna and processed M.K. Silica to produce export quality lead crystal glass.

### Location

The area is centred on the junction of Bird and Champion Roads and is 25km due South of Rocky Cape on the Bass Highway and 45 km Southwest of Wynyard by road.

### Geology

Silica flour is thought to occur as fine grained impurities in dolomite and magnesite of the Arthur Lineament. Weathering and erosion of these carbonates subsequently lead to fluvial transport and deposition of silica flour. Deposits in ML45M/89, E.L.57/89 and E.L.24/88 are indicative of <sup>an</sup> ancient watercourse bringing fine silica from magnesite/dolomite which crops out in the north of the lease area (45M/89) in a southwesterly direction. These are the only carbonate rocks in the district and are the obvious choice for source rock; their present elevation at the highest point is 210 M.A.S.L. The Cann Creek silica flour 500m S.W. is 230 M.A.S.L., a further 2km S.W.<sup>is</sup> is also at 230m and the Champion Road deposits occur between 155 and 180 M.A.S.L. a further 1300 in S.W.

The deposits rest on a schist bedrock and, in places, contain rounded quartz pebbles which again indicates transport) and agate like concretions probably caused by recementation.

### Extent of Deposit

The silica flour occurs as several isolated small deposits, which

could be remnants of a previous more widely distributed one. The only known occurrence in the subject area is an exposure in a road cutting (figure 2 of Appendix)

#### Current Investigation

The deposit, as described by Hooker Resources Ltd., measures 250x50x3 m. Foot traverses in the area failed to locate any other deposits nor any extensions to this one. This fact, coupled with an assessment of the the silica flour chemistry and grain size distribution, are no encouragement to further investigation.

#### Quality of Silica Flour

Chemistry: Analysis of three samples were carried out on three size fractions by A.C.I. laboratory (appendix to this report). These were -30#(53 $\mu$ m) -30#(500 $\mu$ m) and +30#. The -500 $\mu$ m fraction more nearly matches the M.K. Silica specification of -250 $\mu$ m+75 $\mu$ m and the following table indicates the chemical purity for this size fraction in the three sample areas (in ppm) compared with specifications for glass sands.

#### Chemical Analysis of Silica Flour (after TCR89-2952

| <u>Sample No.</u> | P.P.M.                         |                  |                                |     |     |                   |    |    |    |    | <u>LoI%</u> |
|-------------------|--------------------------------|------------------|--------------------------------|-----|-----|-------------------|----|----|----|----|-------------|
|                   | Fe <sub>2</sub> O <sub>3</sub> | TiO <sub>2</sub> | Al <sub>2</sub> O <sub>3</sub> | CaO | MgO | Na <sub>2</sub> O | Mn | Cu | Cr | Ni |             |
| SF3               | 820                            | 4500             | 2700                           | 110 | 490 | 120               | -  | -  | 7  | -  | 0.19        |
| SF5               | 20                             | 230              | 490                            | 660 | 480 | 110               | -  | -  | <7 | -  | 0.21        |
| SF8               | 620                            | 5800             | 960                            | 100 | 270 | 150               | -  | -  | <7 | -  | 0.14        |

#### Specifications

|   |     |     |     |     |     |    |     |     |      |      |      |
|---|-----|-----|-----|-----|-----|----|-----|-----|------|------|------|
| * | 20  | 100 | 40  | 400 | 200 | 10 | 0.5 | 0.5 | <0.1 | <0.1 |      |
| + | 120 | 400 | 300 |     |     |    |     |     |      |      | 0.02 |
| § | 300 | 100 |     |     |     |    |     |     |      | 6    |      |

Key to Spec.: \* M.K. Silica - lead crystal glass sand

+ Monier fine glass sand

§ A.C.I. Colourless glass sand

It is apparent from this that the material has unacceptably high levels of virtually all of the contaminants.

Grain Size Distribution: The screen analyses by A.C.I. (appendix) have been plotted along with frequency curves of specifications.

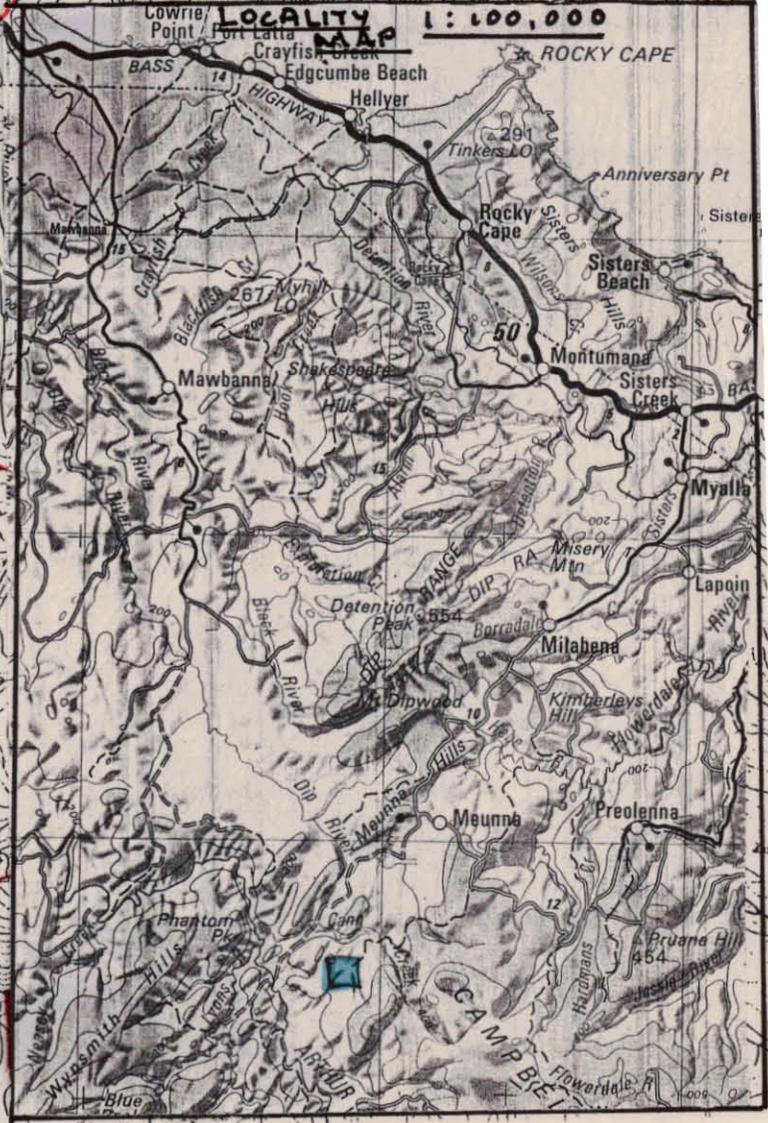
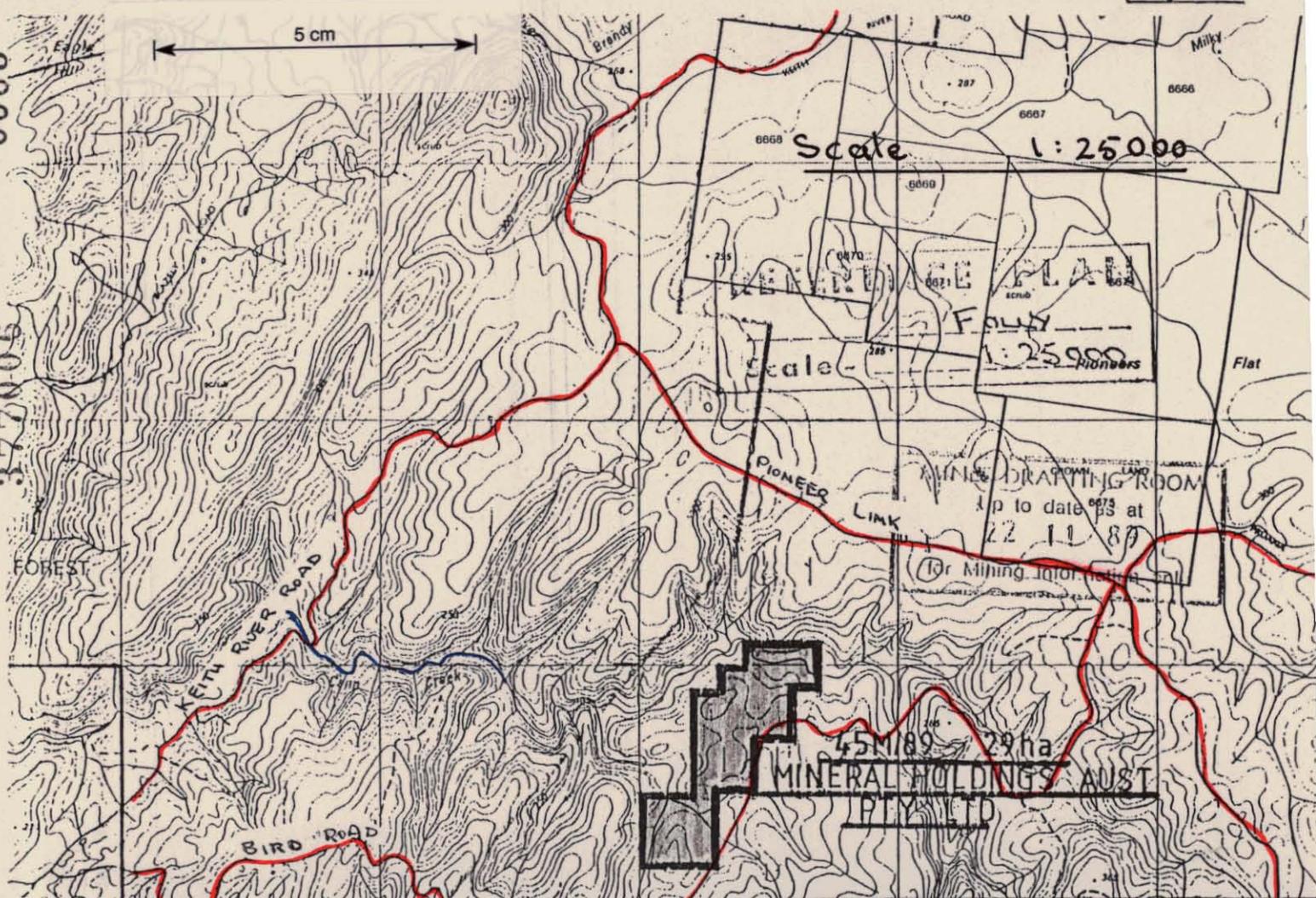
The mean of three analyses contains 52% oversize (+250 $\mu$ m) and 31% undersize (-75 $\mu$ m) i.e. only 17% of the total is of acceptable particle size. This would no doubt increase to some degree depending on the content of composite particles which could be disaggregated. It is unlikely however to be more than 50%.

#### Conclusion

The deposit is of low quality and limited extent and further investigation is not warranted.

5000  
3700

5 cm



EL 571.89  
1 SKM  
MHA P/L

5445000 N

EL 241.88  
2 SKM  
MINERAL HOLDINGS AUST P/L

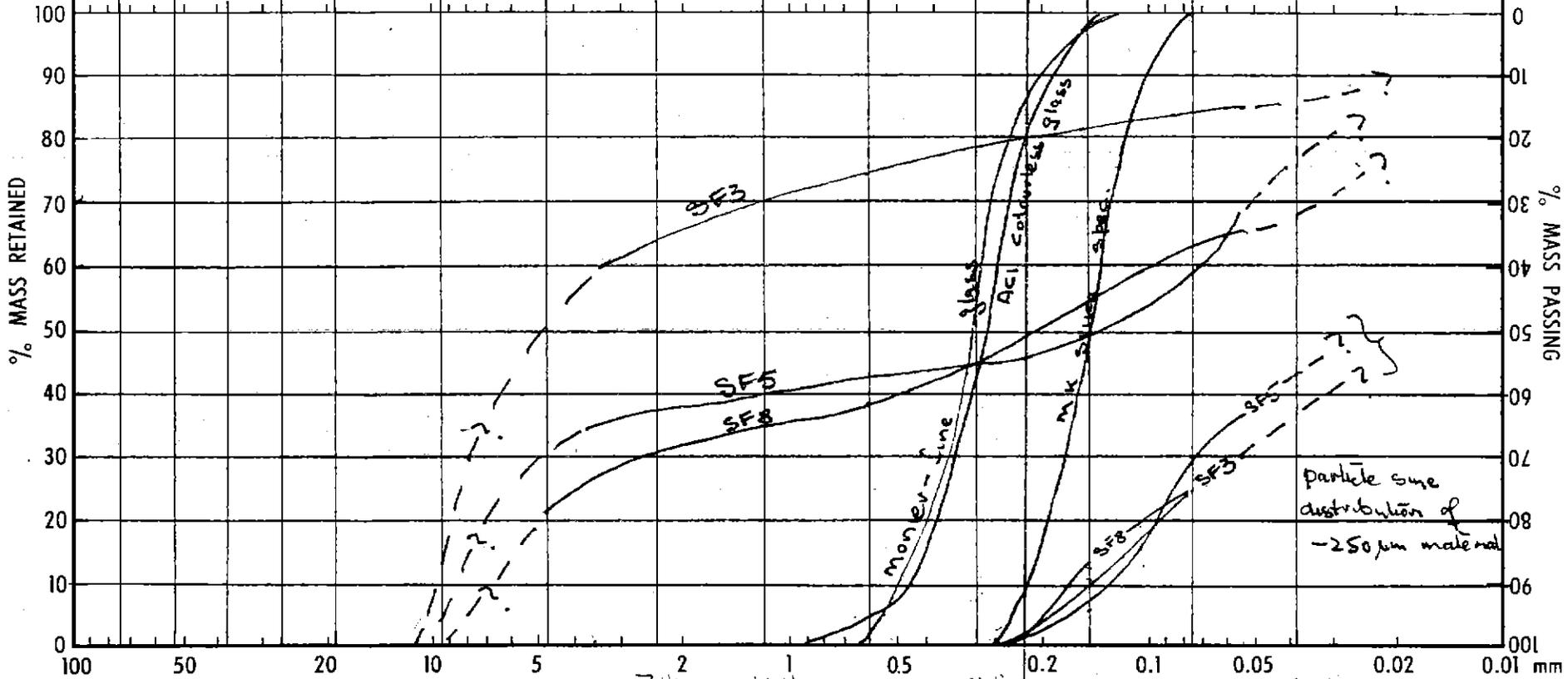
28/10/89

368000 E

369000 E

M 1324

|                                   |                 |  |                |                |        |                              |                     |                               |     |     |          |       |       |                    |
|-----------------------------------|-----------------|--|----------------|----------------|--------|------------------------------|---------------------|-------------------------------|-----|-----|----------|-------|-------|--------------------|
| REFERENCE No.                     | LAB. SERIAL No. | LOCALITY                                       |                |                |        | SEDIMENT ANALYSIS PARAMETERS |                     |                               |     |     |          |       |       |                    |
| ACI Test Report 240 (15 Dec 1988) |                 | EL 23188 Hooker Mining Ltd (T.C.R 89-2952) M = |                |                |        | V =                          | Sk =                | K =                           |     |     |          |       |       |                    |
| COARSE AGGREGATE                  |                 |  | FINE AGGREGATE |                |        |                              | A77-1957 (concrete) |                               |     |     |          |       |       |                    |
| COARSE                            |                 | AGGREGATE                                      |                | FINE AGGREGATE |        | BINDER                       |                     | N.A.A.S.R.A. (road materials) |     |     |          |       |       |                    |
| COBBLE                            | PEBBLE          |  | GRANULE        | S A N D        |        |                              | SILT                |                               |     |     |          |       |       |                    |
|                                   |                 |  |                | V. COARSE      | COARSE | MEDIUM                       | FINE                | V. FINE                       |     |     |          |       |       |                    |
| -6                                | -5              | -4   | -3             | -2             | -1     | 0                            | 2                   | 3                             | 4   | 5   | 6 $\phi$ |       |       |                    |
| 75                                | 53              | 37.5   | 26.5           | 19             | 9.5    | 4.75                         | 2.36                | 1.18                          | 0.6 | 0.3 | 0.15     | 0.075 | 0.038 | Aust. Stand. Sieve |



Samples collected by Hooker Mining Ltd.  
 Spring analysis by ACI  
 Frequency curve plots by Vic Threader & Assoc P/L  
 for  
 Mineral Holdings Aust. P/L Ltd - EL 57/89

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Figure 2

APPENDIX 1

SILICA FLOUR ANALYSIS

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REPORT ON EL 23/88

TASMANIA

SILICA FLOUR

D. SKENE

Hooker Mining Pty Ltd

89-2952

LOCATION

Exploration Licence 23/88 is approximately 60km west southwest of Burnie (Figure 1), in State Forest east of the Arthur River (Figure 2). Access to the area is via logging roads. The terrain is dissected by many small creeks draining into the Arthur River, and is densely vegetated by temperate rain forest. The combination of these two factors and the limited road access make exploration activities very difficult.

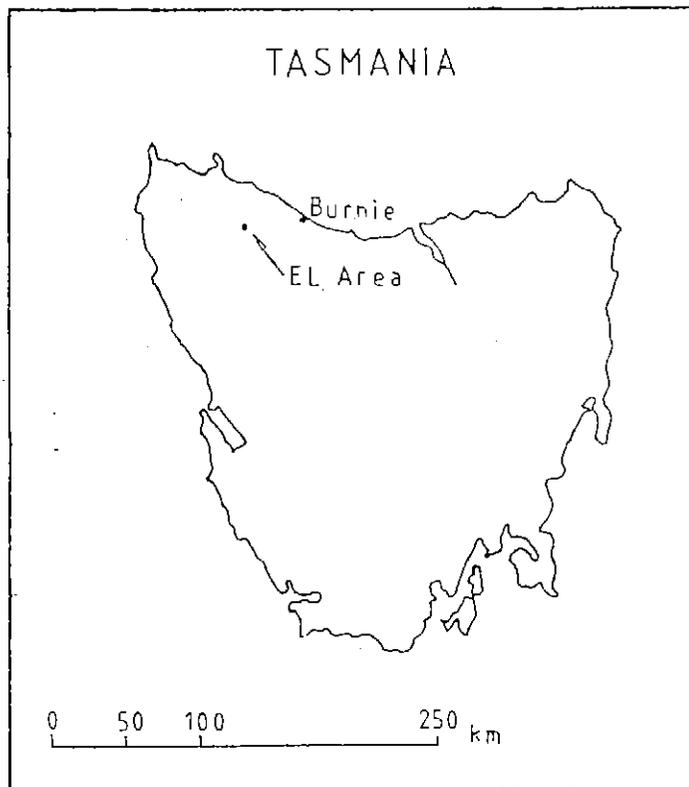
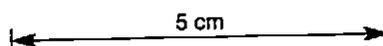


FIGURE 1: Location Map



THE DEPOSIT

The known deposits in and outside the exploration licence are plotted on Figure 2. They occur on high ground at elevations of between 160 and 250m above sea level and are situated in the Arthur lineament. They were found adjacent to roads or in cuttings.

Only one deposit was found in the licence area (Figure 2). Its dimensions cannot be determined accurately without drilling, but it occurs as an irregular block 250m by 50m and approximately 3m thick. The deposit is underlain by Precambrian, slight to moderately metamorphosed phyllites and schists.

The silica flour is generally white to very pale grey in colour with some yellow discolouration. It ranges from a compact, friable, structureless mass to a lumpy conglomerate; the lumps break down to flour in the sieve-shaking process. At depth the silica flour occurs as a matrix surrounding blocky quartzite cobbles and gravel. This fact indicates that the silica flour could possibly originate from the long-term weathering of the Precambrian quartzite. Three samples were collected, two (SF3 and SF8) of which were sent to ACI for full XRF and screen analysis. The analyses are shown in Appendix 1.



CONCLUSION

It is believed that the silica flour deposits in this area have been derived from the same lithologic units. The strike of these units is 035 - 040° and therefore exploration activity has been concentrated within a broad band across the E.L. at 040°. It is unlikely that any other deposits exist outside this preferred area.



0013

# TEST REPORT

CLIENT: Hooker Resources,  
GPO Box 2724,  
SYDNEY, N.S.W. 2001

REPORT NO.: 240

DATE: 15 December 1988

ATTENTION: MR. D. SKENE

CLIENT O/NO.:

## Analysis of Three Silica Flours

### Introduction

Three samples, SF3, SF5 and SF8 received for full XRF and screen analysis.

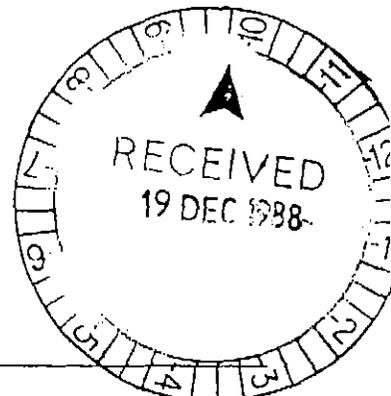
Because of the wide range of particle sizes (1 1/2" down to minus 300 mesh) XRF analysis was carried out on 3 separate fractions of each, viz. -300#, -30# and +30#. (The intermediate -30# samples includes the -300# component).

As discussed, charge will be calculated on the basis 6 XRF's only.

### XRF Analysis

#### SF3

|                                 | <u>-300#</u> | <u>-30#</u> | <u>+30#</u> |
|---------------------------------|--------------|-------------|-------------|
| %Fe <sub>2</sub> O <sub>3</sub> | 0.11         | 0.082       | 0.028       |
| Al <sub>2</sub> O <sub>3</sub>  | 0.34         | 0.27        | 0.097       |
| TiO <sub>2</sub>                | 0.59         | 0.45        | 0.28        |
| Cr <sub>2</sub> O <sub>3</sub>  | 0.001        | 0.001       | <0.001      |
| CaO                             | 0.012        | 0.011       | <0.01       |
| MgO                             | 0.062        | 0.049       | 0.017       |
| Na <sub>2</sub> O               | 0.022        | 0.012       | <0.01       |
| K <sub>2</sub> O                | 0.13         | 0.097       | 0.030       |
| LOI                             | 0.22         | 0.19        | 0.08        |
| SiO <sub>2</sub> (bal.)         | 98.5         | 98.8        | 99.4        |



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GPD Engineering Services

HOOKER RESOURCES

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SF5

|                                 | <u>-300#</u> | <u>-30#</u> | <u>+30#</u> |
|---------------------------------|--------------|-------------|-------------|
| %Fe <sub>2</sub> O <sub>3</sub> | <0.002       | 0.002       | <0.002      |
| Al <sub>2</sub> O <sub>3</sub>  | 0.053        | 0.049       | 0.028       |
| TiO <sub>2</sub>                | 0.034        | 0.023       | 0.032       |
| Cr <sub>2</sub> O <sub>3</sub>  | <0.001       | <0.001      | <0.001      |
| CaO                             | 0.015        | 0.066       | 0.012       |
| MgO                             | 0.022        | 0.048       | 0.011       |
| Na <sub>2</sub> O               | <0.01        | 0.011       | <0.01       |
| K <sub>2</sub> O                | <0.01        | <0.01       | <0.01       |
| LOI                             | 0.11         | 0.21        | 0.09        |
| SiO <sub>2</sub> (bal.)         | 99.7         | 99.6        | 99.8        |

SF8

|                                 | <u>-300#</u> | <u>-30#</u> | <u>+30#</u> |
|---------------------------------|--------------|-------------|-------------|
| %Fe <sub>2</sub> O <sub>3</sub> | 0.088        | 0.062       | 0.023       |
| Al <sub>2</sub> O <sub>3</sub>  | 0.11         | 0.096       | 0.052       |
| TiO <sub>2</sub>                | 0.81         | 0.58        | 0.42        |
| Cr <sub>2</sub> O <sub>3</sub>  | <0.001       | <0.001      | <0.001      |
| CaO                             | <0.01        | 0.010       | <0.01       |
| MgO                             | 0.034        | 0.027       | 0.013       |
| Na <sub>2</sub> O               | 0.011        | 0.015       | <0.01       |
| K <sub>2</sub> O                | <0.01        | <0.01       | <0.01       |
| LOI                             | 0.15         | 0.14        | 0.09        |
| SiO <sub>2</sub> (bal.)         | 98.8         | 99.0        | 99.4        |

Screen Analysis

|       | mm   | SF3  | Cum.<br>mass<br>% | SF5  | Cum.<br>mass<br>% | SF8  | Cum.<br>mass<br>% |
|-------|------|------|-------------------|------|-------------------|------|-------------------|
| 8 +5# | 3340 | 62.2 | 62                | 34.0 | 34                | 21.3 | 21                |
| +30#  | 500  | 11.8 | 74                | 8.8  | 43                | 17.5 | 39                |
| +60#  | 250  | 4.7  | 79.0              | 3.2  | 46.0              | 10.4 | 49.0              |
| +100# | 150  | 2.6  | 81.12             | 4.0  | 50.7              | 6.4  | 56.13             |
| +150# | 105  | 1.4  | 83.14             | 5.3  | 53.17             | 3.5  | 59.19             |
| +200# | 76   | 1.1  | 84.24             | 6.8  | 60.30             | 2.9  | 62.25             |
| +300# | 53   | 1.2  | 85.30             | 8.7  | 69.46             | 3.7  | 66.32             |
| -300# |      | 15.0 | 100.00            | 29.2 | 100.00            | 34.3 | 100.00            |

Comments

In relation to the screen analyses, some of the lumps were partly conglomerates and hence were broken down in the sieve shaking process. However most of the larger lumps were moderately solid and could not be classed as conglomerates. In particular, SF5 larger lumps of quartzite were quite hard.

*L. MacKenzie*