

TR11-162-164

R. 520

13. CORNWALL COAL CO. N.L.: ROYAL GEORGE MINE:  
TAILINGS

**Samples**

The Cornwall Coal Co., in its investigation of the Royal George property sampled the tailing dams and submitted the samples for tin assay.

From these samples composites were made and sized, the fractions being assayed for tin.

In addition, a composite was made of all the original samples. A complete sizing was done on this and also a panning test to indicate likely tin recovery

In making up the composites, equal weights of the individual samples were taken.

**Composites**

| Composite No. | Made up from Samples |               | No. of Samples in Composite |
|---------------|----------------------|---------------|-----------------------------|
|               | Registered Nos.      | Cornwall Nos. |                             |
| 1 .. .. .     | 661367-661371        | SD/1 -SD/5    | 5                           |
| 2 .. .. .     | 661372-661376        | SD/6 -SD/10   | 5                           |
| 3 .. .. .     | 661377-661381        | SD/11-SD/15   | 5                           |
| 4 .. .. .     | 661382-661386        | SD/16-SD/20   | 5                           |
| 5 .. .. .     | 661387-661391        | SD/21-SD/25   | 5                           |
| 6 .. .. .     | 661392-661396        | SD/26-SD/30   | 5                           |
| 7 .. .. .     | 661397-661399        | SD/31-SD/33   | 3                           |
| 8 .. .. .     | 661367-661399        | SD/1 -SD/33   | 33                          |

*Composite No. 8*

As a guide to procedure in examining the other composites a sizing analysis, which is given in Appendix 1, was done on this composite. From this, the screens for sizing the other composites were fixed. These were 100 mesh and 200 mesh with the minus 200 mesh being cyclosized. As material finer than C.S. 3 contains no recoverable tin, only the Cyclosizer Fractions 1, 2 and 3 were assayed.

The composite was panned to recover as a 7.3 per cent tin concentrate, only 5.8 per cent of the tin. This indicated for the dams as a whole no worthwhile tin recovery.

*Composites 1 to 7*

To see if there was any section of the dam richer in recoverable tin than the whole, these composites were sized as indicated above and the fractions assayed for tin.

## SIZING AND ASSAYS

| Composite No. | Total<br>Per Cent<br>Tin | +100     |      | -100+200 |      |           | -200+C.S. 3 |      |           |      |
|---------------|--------------------------|----------|------|----------|------|-----------|-------------|------|-----------|------|
|               |                          | Per Cent |      | Per Cent |      |           | Per Cent    |      |           |      |
|               |                          | Weight   | Tin  | Weight   | Tin  | Tin Dist. | Weight      | Tin  | Tin Dist. |      |
| 1 .. .. .     | 0.26                     | 56.5     | 0.16 | 34.8     | 26.5 | 0.22      | 22.4        | 13.6 | 0.53      | 27.7 |
| 2 .. .. .     | 0.25                     | 51.7     | 0.15 | 31.0     | 16.8 | 0.26      | 17.5        | 19.7 | 0.32      | 25.2 |
| 3 .. .. .     | 0.24                     | 45.6     | 0.14 | 26.6     | 17.9 | 0.13      | 9.7         | 20.1 | 0.40      | 33.5 |
| 4 .. .. .     | 0.28                     | 35.8     | 0.13 | 16.6     | 21.7 | 0.12      | 9.3         | 24.2 | 0.45      | 38.9 |
| 5 .. .. .     | 0.33                     | 31.6     | 0.13 | 12.4     | 13.4 | 0.14      | 5.7         | 21.4 | 0.39      | 25.3 |
| 6 .. .. .     | 0.22                     | 40.8     | 0.12 | 22.2     | 22.2 | 0.11      | 11.1        | 19.5 | 0.38      | 33.7 |
| 7 .. .. .     | 0.27                     | 14.5     | 0.06 | 1.9      | 20.9 | 0.24      | 18.6        | 33.0 | 0.32      | 39.1 |

**Conclusions**

From the above, while there is a size of particle spread over the dam, there is a uniform distribution of tin; nowhere is there any concentration of tin.

There is little recoverable tin in the plus 200 mesh fractions as these assay mainly 0.1 to 0.2 per cent tin. It could be expected that this tin is present in composite grains which would require grinding to liberate it.

Where there is approximately 0.4 per cent tin in the finest fraction, where also composite tin can be expected, this is the tin most difficult and costly to recover. As there is only about one-third of the tin in this fraction, for the whole tailing dam retreatment does not seem worthwhile.

## Appendix 1—Sizing of Composite No. 8

| Fraction<br>Mesh B.S.S. | Per Cent |             |
|-------------------------|----------|-------------|
|                         | Weight   | Cum. Weight |
| + 22 .....              | 1.0      | 1.0         |
| 36 .....                | 2.8      | 3.8         |
| 44 .....                | 3.4      | 7.2         |
| 52 .....                | 1.1      | 8.3         |
| 60 .....                | 11.8     | 20.1        |
| 72 .....                | 8.0      | 28.1        |
| 85 .....                | 9.3      | 37.4        |
| 100 .....               | 5.5      | 42.9        |
| 120 .....               | 7.1      | 50.0        |
| 150 .....               | 5.6      | 55.6        |
| 170 .....               | 4.0      | 59.6        |
| 200 .....               | 2.4      | 62.0        |
| C.S. 1 .....            | 7.9      | 69.9        |
| C.S. 2 .....            | 5.7      | 75.6        |
| C.S. 3 .....            | 6.4      | 82.0        |
| C.S. 4 .....            | 5.2      | 87.2        |
| C.S. 5 .....            | 2.1      | 89.3        |
| Overflow .....          | 10.7     | 100.0       |
| Composite .....         | 100.0    | ....        |