

TR11-151-154

## R. 516

### 28. RENISON LTD: DREADNOUGHT HILL AREA

#### Sample

Renison Ltd submitted a sample made from diamond drill cores from holes S168, S169, S170 and S171 from the Dreadnought Hill Area for concentration tests similar to mill practice. More siderite was suspected in this ore than in the Federal Lode. The sample had the Renison number 3276.

#### Method

The method of treatment is given in the attached flowsheet (fig. 43). All size reduction was carried out in closed circuit, with the screens shown in the flowsheet. In ball milling grinding was done in three minute cycles

Flotation conditions were:—

*No. 1 Flotation (Rougher Sulphide Stage)*: The following reagents were added at 15 second intervals, in the order shown below, with 5 minutes conditioning time.

Sulphuric Acid	0.44 lb/ton
Copper Sulphate	0.84 lb/ton
Potassium Ethyl Xanthate	0.28 lb/ton
Potassium Amyl Xanthate	0.28 lb/ton
M.I.B.C.	0.04 lb/ton

The 2 kg Denver flotation cell was used to float 4 kg of sample in two batches of 2 kg.

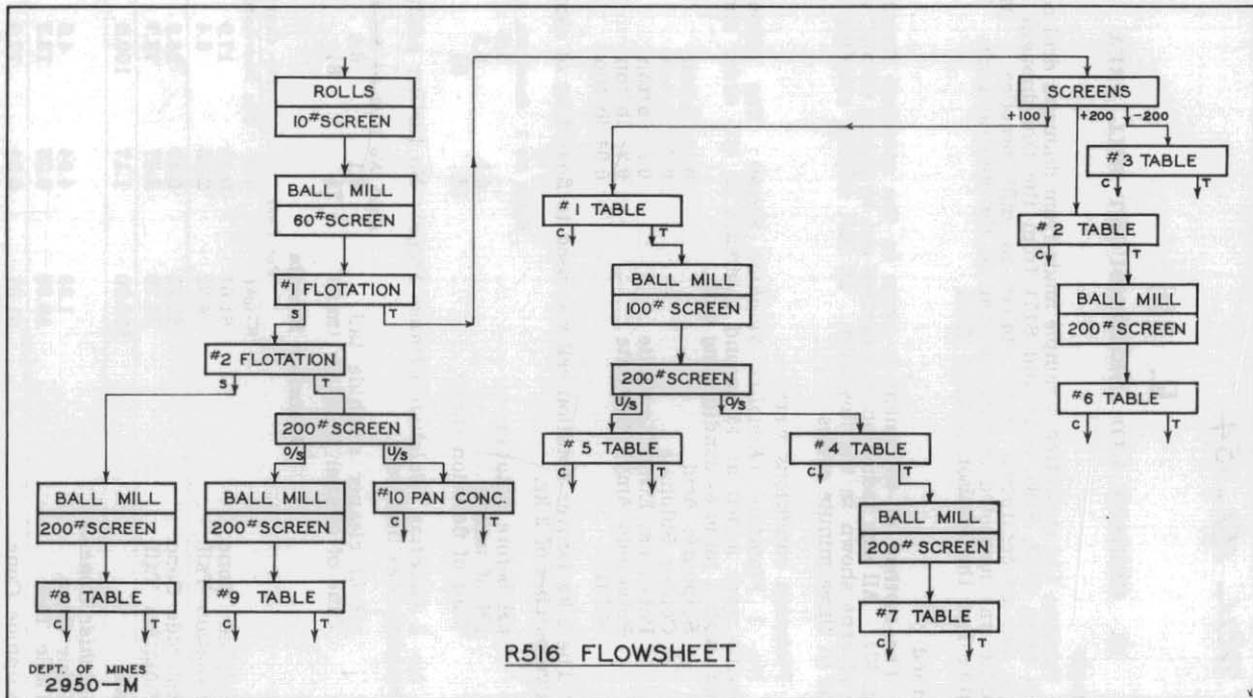
	Batch No 1	Batch No. 2
pH before flotation	.....	5.6
pH of tailing	6.1	6.3
Time of flotation (min)	13	9½

*No. 2 Flotation (Sulphide Cleaner Stage)*: No further addition of reagents was necessary.

	Batch No 1	Batch No. 2
pH of cleaner sulphide tail	7.1	6.8
Time of cleaner flotation (min)	7½	8½

#### Flotation Results

	Per Cent		Per Cent Tin Distribution
	Weight	Tin	
2 Sulphide Conc.	61.01	0.34	17.9
2 Flotation Tail.	4.21	2.33	8.4
1 Sulphide Conc.	65.22	0.47	26.3
1 Flotation Tail.	34.78	2.47	73.7
Head	100.00	1.17	100.0
<i>2 Sulphide Conc.—</i>			
8 Table Conc.	1.33	4.04	4.6
8 Table Tail.	59.68	0.26	13.3
2 Sulphide Conc.	61.01	0.34	17.9



<i>2 Flotation Tail.—</i>			
9 Table Conc. ....	0.08	13.8	0.95
9 Table Tail. ....	0.91	1.98	1.54
<b>2 Flotation Tail. plus 200 mesh</b>	<b>0.99</b>	<b>2.94</b>	<b>2.49</b>
10 Pan Conc. ....	0.06	27.2	1.40
10 Pan Tail. ....	3.16	1.67	4.51
<b>2 Flotation Tail. minus 200 mesh</b>	<b>3.22</b>	<b>2.15</b>	<b>5.91</b>
<b>2 Flotation Tail</b>	<b>4.21</b>	<b>2.33</b>	<b>8.4</b>

**Gravity Concentrates**

	<i>Per Cent</i>		<i>Per Cent Tin Distribution</i>
	<i>Weight</i>	<i>Tin</i>	
<i>Primary—</i>			
1 Table Conc. ....	0.38	30.8	10.0
2 Table Conc. ....	0.41	52.7	18.5
3 Table Conc. ....	0.55	64.7	30.5
<b>Total</b>	<b>1.34</b>	<b>51.4</b>	<b>59.0</b>
<i>Secondary—</i>			
4 Table Conc. ....	0.06	7.90	0.41
5 Table Conc. ....	0.13	13.5	1.50
6 Table Conc. ....	0.09	10.9	0.84
<b>Total</b>	<b>0.28</b>	<b>11.5</b>	<b>2.75</b>
<i>Tertiary—</i>			
7 Table Conc. ....	0.03	3.91	0.10
<b>Total from 1 Flotation Tail.</b>	<b>1.65</b>	<b>43.8</b>	<b>61.85</b>
<i>Concentrate Summary—</i>			
<b>From 1 Flotation Tail.</b>	<b>1.65</b>	<b>43.8</b>	<b>61.85</b>
<i>From 2 Flotation Tail—</i>			
9 Table Conc. ....	0.08	13.8	0.95
10 Pan Conc. ....	0.06	27.2	1.40
<b>Total</b>	<b>0.14</b>	<b>19.5</b>	<b>2.35</b>
<i>From 2 Flotation Sulphide—</i>			
8 Table Conc. ....	1.33	4.04	4.60
<b>Total Conc.</b>	<b>3.12</b>	<b>25.8</b>	<b>68.8</b>

## Final Tailings

	<i>Weight</i>	<i>Per Cent Tin</i>	<i>Per Cent Tin Distribution</i>
Primary—			
3 Table Tail. ....	19.13	0.55	9.02
Secondary—			
5 Table Tail. ....	4.97	0.31	1.32
6 Table Tail. ....	7.74	0.16	1.06
Tertiary—			
7 Table Tail. ....	1.29	0.41	0.45
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Total from 1 Flotation Tail. ....	33.13	0.42	11.85
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Tailing Summary—			
From 1 Flotation Tail ....	33.13	0.42	11.85
From 2 Flotation Tail.—			
9 Table Tail. ....	0.91	1.98	1.54
10 Table Tail ....	3.16	1.67	4.52
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Total ....	4.07	1.74	6.06
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2 Flotation Conc.—			
8 Table Tail. ....	59.68	0.26	13.29
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Final Residue ....	96.88	0.38	31.2