

Summary - Pennebaker Report (Oct, 1967)

#1 one body

2400' long 1100' wide 50-150' thick

undiluted "assumed one"

33,685,529 3.581 Pb 6.361 Zn 10.242 Pb+Zn 1.230 <sup>oz</sup>/<sub>ton</sub> Ag

additional possible  
nil

internal waste.

1,738,219 0.690 1.248 0.348

#3 one body

2300' long 1000' wide 50-150' thick

23,301,661 2.922 Pb 5.236 Zn 8.158 Pb+Zn 1.131 <sup>oz</sup>/<sub>ton</sub> Ag

additional possible

2,553,914 2.812 5.093 7.905 0.893

internal waste

2,683,167 0.927 1.476 0.522

#2 one body

1200' long 1000' wide

undiluted assumed one

5,159,335 3.144 Pb 4.844 Zn 7.988 Pb+Zn 1.462 <sup>oz</sup>/<sub>ton</sub> Ag

additional possible

635,558 2.776 5.794 8.570 1.120

internal waste nil

total undiluted

62,146,525 3.460 Pb 5.814 Zn 9.274 Pb+Zn 1.212 <sup>oz</sup>/<sub>ton</sub> Ag

Total diluted by 30% internal waste

63,472,410 3.405 5.721 9.126 1.196

Pennebaker's  
reserve estimate notes:

019989

based on DDH's on corners of 253' square grid  
cutoff 5% Pb+Zn  
tonnage factor 8.5 cuft/short ton

sections planimetrical

#1 zone extends to Faro Fault  
#3 beyond that fault

using:

1 oz/short ton = 34.2759 g/tonne  
1 short dry ton = 0.9072 tonnes

Conversion to metric tonnes

|                                | tonnes     | Ag g/tonne |
|--------------------------------|------------|------------|
| #1 assumed possible            | 30,559,511 | 42.2       |
| int. waste                     | 1,576,912  | 11.9       |
| #3 assumed possible            | 2,113,926  | 38.8       |
| int. waste                     | 2,597,465  | 17.9       |
| #2 assumed possible            | 4,680,549  | 50.11      |
| int. waste                     | 576,578    | 38.4       |
| total undiluted                | 57,286,527 | 41.5       |
| total diluted by 30% int waste | 57,582,651 | 41.0       |

Dome Hand calc shows about  $2.45 \times 10^6$  tonnes in the southwest part of Zone 3 - down dip tail - this has to be taken out to come even close to the Rennelaker calc.

(Feb 1967) Parsons Zone 1 including part of Zone 3  $41 \times 10^6$  tons stripping ratio 4.8/1  
ore tonnage factor 3.10 tons/cuyd.  
calcn method polygonal. ore limits from x sects

(Apr 1967) Ford's Old Pit basal on about the same orebody also polygonal but using ore limits at 141' beyond DDH's tonnage factor was 3.18 tons/cuyd.

4205 - 3575 benches

| Parsons                | Old Pit       |                        |               |
|------------------------|---------------|------------------------|---------------|
| tons x 10 <sup>3</sup> | strip (yd/yd) | tons x 10 <sup>3</sup> | strip (yd/yd) |
| 38,917                 | 5.1/1         | 33,573                 | 6.3/1         |

partly due to larger vol of ore in Parsons calcn but curiously there is more waste in Old Pit!

1969 ore losses in the upper benches 4240 - 4065 total loss 944,500 compared to Old's predictions

big losses on 4170 benches (seems to be due to the feather edge)

1970 open pit including all fill in drilling to 1970  
45° pit slopes 3.18 tons/cuyd. rectangular projection method (sectional?)

|        |      |    |     |     |
|--------|------|----|-----|-----|
| Zone 1 | tons | 35 | 487 | 019 |
| 3      | tons | 22 | 271 | 792 |

57,758,811

stripping ratio overall 6.6/1 (yd/yd)

1973 Pit (Jan 1973)

including 1971 & 1972 drilling

lots of detail editing & systematizing / comparing to production records

log grade (2CB) pyritic zones delineated taking  $4.3 \times 10^6$  tons from the 1970 estimate of #3 zone

high strip ratio kicked out  $1.5 \times 10^6$  more from zone 3 pit

$45^\circ$  slopes 3.18 tons/cu yd. — rectangular method

|        |            |                   |
|--------|------------|-------------------|
| Zone 1 | 23 950 410 |                   |
| Zone 3 | 16 480 360 | <del>221000</del> |
|        | <hr/>      |                   |
|        | 40 430 770 |                   |

strip ratio 7.1/1

losses due to delimitation of the Dyke between zone 1 & 3 by DD in 1973

|        |           |
|--------|-----------|
|        | tons      |
| Zone 1 | 1,369,960 |
| Zone 3 | 770,990   |
|        | <hr/>     |
|        | 2,160,950 |

Zone 2 pit - 1974 based on 23 DDH tot 3565' (calc by Laurich-Kennedy)

3,424,003 tons  
5.2 / 1 strip ratio

Laurich-Kennedy 1974 Pit

1973 pit design with 1973 ddh's added in

|               | tons       |       |
|---------------|------------|-------|
| Zones 1 and 3 | 34,660,508 | 8.3/1 |
| 2             | 3,392,236  | 5.3/1 |
|               | 38,052,744 | 8.0/1 |

1975 Reserve calcs based on the Laurich-Kennedy Pit and 1/1/75 pit status

| <u>by CANAC</u> | tons       |               |                 |                |
|-----------------|------------|---------------|-----------------|----------------|
|                 | in LK pit  | out of LK Pit | Total of in/out |                |
| Zone 1          | 15,538,576 | 605,800       | 16,144,376      | 3.18 tons/cuyd |
| Zone 3          | 16,770,217 | 2,554,358     | 19,324,575      |                |
|                 | 32,308,793 | 3,160,158     | 35,468,951      |                |

| <u>by Pennabaker</u> | in LK      | out LK    | total      |                 |
|----------------------|------------|-----------|------------|-----------------|
| Zone 1               | 15,245,076 | 1,663,075 | 16,908,151 | 3.18 tons/cuyd. |
| Zone 3               | 9,032,207  | 5,993,363 | 25,025,570 |                 |
|                      | 34,277,283 | 7,656,438 | 41,933,721 |                 |

Why the big difference in Zone 3 !!!

Attempted rationalization of Zone 1 by Devitt in Dec 1975

|                                  |            |
|----------------------------------|------------|
| 1975 CANAC Estimate of remaining | 15,538,576 |
| Milled before Jan 1, 75          | 13,799,034 |
| Stockpiled before Jan 1, 75      | 2,427,010  |
|                                  | <hr/>      |
|                                  | 31,764,620 |

|                                    |                    |
|------------------------------------|--------------------|
| OLKs estimate reduced by hindsight |                    |
| <hr/>                              |                    |
| 33,572,900                         |                    |
| - 944,500                          | upper benches loss |
| 2,160,950                          | dike loss          |
| <hr/>                              |                    |
| 30,467,450                         |                    |

|                                 |  |
|---------------------------------|--|
| Reuelakers reduced by hindsight |  |
| <hr/>                           |  |
| 33,685,529                      |  |
| - 944,500                       |  |
| - 2,160,950                     |  |
| <hr/>                           |  |
| 30,580,079                      |  |

|                                                  |  |
|--------------------------------------------------|--|
| Reuelakers of total tonnage reduced by hindsight |  |
| <hr/>                                            |  |
| 342,649,290                                      |  |
| - 944,500                                        |  |
| - 2,160,950                                      |  |
| <hr/>                                            |  |
| 31,159,479                                       |  |

Jan 1 1983 ore reserves - Purkis Nov 19 1982

MINE RESERVES

F.3 model & May 1981 pit design

4% cutoff

grades down 5%

trans phase NA down -15% all others -5%

| tonnes     | Pb   | Zn   | Ag       |
|------------|------|------|----------|
| 25,200,000 | 2.9% | 4.3% | 36.1 g/t |

GEOLOGICAL RESERVES

F.3 no reductions

| tonnes     | Pb   | Zn   | Ag       |
|------------|------|------|----------|
| 33,000,000 | 3.0% | 4.6% | 35.7 g/t |

CRUSHER pile

22,000

2.2

3.8

33

oxide pile

1,383,000

2.9

4.7

37.6