

To G. Aaltonen
Copies To R. Rucker
From Z. Kowal
Subject Arsenic Storage Chambers

Date March 20, 1979
Ref.

At present there are three chambers with available space for dust storage:

1) #9 (in waste)	2 months (utilized now)
2) C2-12	10 months
3) B2-08	3 months
Total:	15 months

B2-08 Chamber should be considered for emergency only. It can be operated independently from chambers in C Shaft area.

We need it in cases when C-line has to be disconnected (break-through delivery drift for new chambers, etc).

C2-12 chamber requires additional 3" diam. hole at south end in order to fill the south end to the back.

New Arsenic Chamber

A new arsenic storage chamber should have storage capacity for four years of arsenic production - to the end of mine life - end of 1983.
Capacity required:

monthly arsenic production - 420 tons
 $420 \times 12 \times 4 = 20,160$ tons

one ton of arsenic occupies 32 cu. ft.
 $20,160 \times 32 = 645,120$ cu. ft; say 650,000 cu. ft.

That would require removal of 56,500 tons of rock.

Chamber location:

- 1) West of #9 chamber;
- 2) Between #9 and C2-12 chambers
- 3) East of C2-12.

First Possibility

Advantage: Safest in regard to distance from #9 chamber which will not be in operation.

Disadvantage: 1) Long distance from waste pass or waste storage stope - 500 ft & 800 ft respectively;
2) 400 ft. of track drifting, 600 ft. of trackless drifting (extraction, draw points, sill).

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Second Possibility

- Advantage:
- 1) Shortest drifts required.
250 ft of track drift, 400 ft. of trackless drift.
 - 2) Shorter haulage distance than first possibility.
400 ft. to WP, 700 ft. to 3-18 stope.

Disadvantage: Small pillar between #9 and C2-12 chambers, approximately 40 ft. on each side.

Third Possibility

- Advantage:
- 1) Shortest waste haulage distance to C3-18, C3-12 stopes
350 to 400 ft, 700 ft. to W.P.
Drifting: 300 ft. track, 500 ft. of trackless.

Disadvantage: C2-12 chamber will be in operation while #10 chamber is being excavated.

Time requirement

#9 Chamber Rockwork - 8 months

Drifting Track	Trackless	Slashing	Subdrift	Raising	LH Blast
609'	641'	5,600 tons	226'	265'	35,000 tons

There was work involved not directly related to the chamber (grizzly and rockbreaker installation, scooptram shop).

The chamber itself is 100 ft. long, 40 ft. wide. It will be in operation for 3 years. The projected amount of arsenic dust in this chamber will be:

to the end of 1978 -	13,771 tons
middle of May/79 -	<u>1,860</u>
	15,631 tons.

Empty volume of #9 chamber was calculated at 471,000 cu. ft.

$$\frac{471,000}{15,631} = 30.13 \text{ Cu. Ft./Ton} \quad \text{corrected factor.}$$

#10 Chamber. Volume of empty space required:

$$\underline{20,160} \times 30.2 = 609,000 \text{ cu. ft.}$$

$$\frac{609,000}{11.5} = 53,000 \text{ tons of rock to be removed.}$$

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#10 Chamber preparation time.

Drifting, raising	3 months
Subdrifting, rock removal -	<u>5.5 months</u> (10,000 tons/month)

Total:	8.5 months, say 9 months
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Bulkheads, pipes	1 month
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Total Time:	10 months
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ZK:jc


Z. Kowal