

SOLUBLE ARSENIC IN WATER SUPPLY.

A study has been made of Baker Creek and the Yellowstone River with respect to Arsenic Content.

The Engineering Dept measured the flow and sampled the water at the following points.

1. Baker Creek 1600 ft upstream of Bow Lake.
2. Overflow from Tailings dam to Baker Creek.
3. Concentrate wash thickener O'Flow.
4. Mine drainage water.
5. Baker creek at 'A' Barker house.
6. Bow Lake overflow to Yellowstone river.
7. Bow Lake to Yellowstone river, leak in dam.
8. Yellowstone River at Highway bridge.
9. Mill waste to Tailings pond, was to an average for 1967 to May 31<sup>st</sup> inclusive.

The Arsenic balance for Bow Lake is as follows.

1. Arsenic in Mill Tailings, 1967 average, 565 lbs As per day.

2. Overflow area to Baker Creek 60.28

3. To Yellowstone River over weir 467.28

4. To Yellowstone River, leak in dam 13.91

541.47 lbs As per day

The Arsenic balance for Baker Creek is as follows.

1. Baker Creek, above dam	24.105 lbs per day	
2. Tailings dam overflow to Baker Creek,	60.280	- - -
3. Concentrate thickener discharge	1.128	- - -
4. Mine drainage	19.239	- - -
	<u>104.752</u>	- - -
5. Baker creek at mouth	<u>155.901</u>	- - -

The Flow balance for Baker Creek is as follows

In to Baker Creek	#1	= 36.35 cfs	sec
	#2	= 0.665	-
	#3	= 0.465	-
	#4	= 0.555	-
Total		<u>38.035</u>	-
Out of Baker Creek	#6	<u>37.80</u>	-
Difference		= .235	-

The Arsenic balance for Baker Creek is as follows:

In to Baker Creek	#1	= 24.105 lbs per day
	#2	= 60.276
	#3	= 1.128
	#4	= 19.240
		<u>104.949</u>

Comments P.T.O.

## Comment

It appears that 25% of the Arsenic in Baker Creek is inherent in the stream itself, as shown by samples taken 1500 ft upstream from the Tailings dam.

A new method has been developed and put into service in the mill, whereby <sup>1%</sup> of the soluble arsenic in the mill waste is precipitated and discharged in solid form. The average lbs. of ~~soluble arsenic~~ <sup>arsenic in solution</sup> per day presently being pumped to Bow Lake is

This compares with average for 1967 till May 31 1968