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SUMMARY AND MAJOR CONCLUSIONS SINCE THE AUGUST 15, 1967
TECHNICAL ADVISORY COMMITTEE

A. The Stage II retorting program was terminated on August 31, 1967. The conclusions that have been drawn in the period from August 15, 1967 to date are:

1. The principle of improving operability and yield by liquid disengagement was demonstrated successfully in bench scale equipment. Application of this principle was attempted, with considerably less success, in Retort No. 3
2. A maximum of 10% of the total liquid product was disengaged from the bed in Retort No. 3 as compared to more than 50% in the bench scale retort. The desired levels of yield and operability were not achieved.
3. Some improvement in operability was obtained in that the unit operated with 1/4 to 1 inch shale at 500 mass rate with a 54 bayonet distributor for short periods of time. Several of the attempts to operate at this mass rate or at 300 or 400 mass rate failed with clinkers. In some cases, this clinkering was concurrent with high air or recycle rates which were used in an attempt to completely retort the spent shale.
4. Yields were substantially lower than desired primarily because of the inability to clean up the spent shale.
5. Retort No. 3 operating experience indicates that the cyclones are an unnecessary feature of the liquid disengaging system.
6. Recent model studies, in conjunction with Retort No. 3 experience, have indicated some deficiencies in the application of the liquid removal principle in Retort No. 3. These studies indicate that it is desirable to maintain a flooding or superflooding gas velocity in the shale downcomers. The free surface of the shale below the downcomer should be contained in a diverging chute to prevent the local accumulation of oil at this free surface. The elaborate bar configuration used for the disengaging grid appears to be unnecessarily complex. A "shingle" arrangement of slots in the converging chute feeding the downcomer appears to be adequate.
7. Considerable additional work is required to apply this principle successfully in Retort No. 3. Further model work and perhaps some exploratory studies in Retort No. 2 are indicated if this line of research were to be continued.

It is a matter of understatement in this instance.

Indeed, retort #3 indicates that the whole liquid disengaging system as they conceived it was superfluous.

B. The Stage II experimental mining program was terminated on September 15, 1967. The conclusions that have been drawn in the period from August 15, 1967 to date are:

1. The basic assumptions of the preliminary cost study have been substantiated for heading operations in 60 ft wide 40 ft high rooms. However, no conclusions can be drawn on the cost of benching operations due to lack of information, at this time, on the extent of scaling necessary and on the resulting ultimate dimensions of high pillars.

2. The roof and pillars in the mine are competent and stable, indicating that 60 ft wide rooms can be mined safely leaving 40 ft wide 40 ft high rib pillars.

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do the numbers? O.K. But this figures out to a pretty poor recovery of shale

"These conclusions have been prepared to provide rapid, on-the-spot reporting of research currently in progress at Anvil Points. The conclusions drawn by project personnel are tentative and may be subject to change as work progresses."

KIJagel
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