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DOW CHEMICAL U.S.A.
Texas Division
CHLOR-ALKALI DEVELOPMENT
Status Summary

PLAINTIFF'S EXHIBIT

DOW-723

January-February-March, 1972

DISPOSAL OF ASBESTOS FROM CHLORINE CELL CATHODE WASHING OPERATIONS - Problem 493

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Purpose

Devise a feasible system for removal of bulk asbestos from the cathode wash water and for elimination of fibers from the effluent waste.

Procedure

A supply of feed slurry was obtained from the existing facilities at the Dow Industrial Service site. This material was diluted or concentrated to 0.10% solids to agree with the expected feed concentration from washing facilities being designed. The prepared feed was then put through a test apparatus fabricated from four inch diameter by six feet high Plexiglass tubing and measurements made of the flow rates and concentration of the underflow and overflow. Measurements were made both with and without a flocculating agent, Purofloc A-23.

Data

Feed Conc. %	Underflow Conc. %	GPM/Ft.^{2}	Diameter for 1500 gpm	Solids in 1500 gpm - Lbs/Hr.
.063	.466	2.02	30.8'	475
.088	.311	2.14	29.7'	660
.100	.322	2.14	29.7'	750
.028*	1.00	6.60	17.0'	280

*Using Purifloc A-23 at a rate of 10 ml of a 0.2% solution to 5 gallons of slurry.

Discussion

The settling rates of the solids have increased considerably from the time the initial test was made on the D.I.S. slurries. This is confirmed by the fact that D.I.S. was having to use less vacuum trucks to remove the same amount of solids. The only differences discovered in the operation are the amount of cathodes requiring acidizing, from a high of 30 percent to less than 5 percent and the continuous 24 hour per day operation of the washer instead of the previous 16 hours per day.

In the last run using Purifloc, the settling rate was so great that the operation of the test apparatus became difficult. The continuous removal of solids was hindered causing difficulty in maintaining a consistent feed slurry.

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Conclusion

This data indicates a thickener of 20 to 30 feet in diameter could be feasible. However, the problem needs more study in a more suitable test device.

Future Work

An order has been placed with the Denver Equipment Company for a Laboratory thickener which is a three feet diameter by three feet deep thickener complete with overflow launder and rake assembly with slurry pump on the underflow. This equipment is scheduled for shipment on April 18th.

Preliminary arrangements have been made with the Komline-Sanderson Company to rent a pilot plant size vacuum filter. Plans are to use this equipment at the D.I.S. site and obtain data on actual continuous basis.

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