E. I. du Pont de Nemours & Co.
Explosives Department
Wilmington 98, Delaware.

DPW-55-4-15

SR/H--866

- #2. R. J. Christl
- #3. H. Worthington - V. R. Thayer
- #4. L. C. Peery - SRP
- #5. L. S. Danser - SRP
- #6. M. H. Wahl - SRL
- #7. W FILE

TO: J. B. TINKER

FROM: R. J. CHRISTL

April 14, 1955.

This document contains 3 pages
No. 1 of 7 copies Series A

200 AREA WEEKLY REPORT

SOLVENT EXTRACTION PLANTS

200-F Area - Operations Status

221 Building - The first cycle operated 99.% of the time at an average first cycle feed rate of 4.4 batches per day.

- a. Dissolving. Favorable results are being obtained with larger dissolver cuts designed to prove the adequacy of the two dissolver systems for six batch operation. Handling of buckets containing 320 slugs has been extended to a full dissolver charge.
- b. Waste Evaporation. Very little foaming has been experienced with the high and low activity waste evaporators.
- c. Solvent Extraction. The TBP content has been increased from 30.0 to 31.5% and a further increase to 32.0% is planned. The extractant to feed flow ratio is being decreased correspondingly and the feed rate will be increased as soon as equilibrium is reached.

The 1DU water scrub test is being continued. Acidity of the 1EU has been unexplainably erratic. Rough feed control on the 1D bank, control of the water scrub and change in solvent composition may be contributory.

Contamination spread during repairs to the No. 1 furnace has been largely cleaned up. Furnace repairs have permitted faster movement of material through the mechanical line. Long drying time of the alcohol washed peroxide lake is being investigated.

Operation during the last week has been generally satisfactory. Evidence of pot distortion has been detected and is discussed below.

222 F&E - Shielded Solvent Filters

Quotations are being obtained on filters with the shield cast around the filter tank. The fabrication of these units has been discussed with the vendor and found to be feasible.

Date 4/14/55
DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

DOES NOT CONTAIN
UNCLASSIFIED CONTROLLED
NUCLEAR INFORMATION

Classification Cancelled/Changed
TO UNCLASSIFIED
By Authority of

Reviewing Official
C. J. Benick, AED Class Officer
2/4/89

Name	Title	Date
1. <i>[Signature]</i>	ADD	1/23/89
2. <i>[Signature]</i>	AED CO	2/4/89

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

221-F&H - Additional Freight Elevator at North End of Building

Engineering reports that it is feasible to chip concrete from the building to obtain level unloading of the elevator at the first level. Under the original plans there would have been a three-foot difference in elevation between platform and floor. The incremental cost is being estimated.

241-H - Additional Waste Storage

As previously reported, the design for the new waste tanks included an undesirable low spot in the waste transfer lines. The Engineering Department is studying alternative routings of waste lines to avoid pocketing. Currently the routing that appears the most satisfactory appears to be one that circles existing waste storage tanks to the East with a 1-1/2% upward slope from the pump pit to the new waste tanks. The pump tanks would be the low point in the system and the encasement for these waste lines would be below grade at all points. A simplified diversion box at the East end of the pump pit is required to give maximum flexibility in routing waste from any one of the four pump tanks to any one of the four waste storage tanks. In addition, stub outs to the North and West of the pump pit for future waste tanks will be included in the study. To reduce cost, precast concrete pipe is being considered for the waste line encasements.

221-F "A" Line - Denitrator Pot Distortion

Distortion of two denitrator pots has been noticed recently. It is described as a sagging of the bottom and appears to be confined to a circular area about 12" in diameter at the center of the pot. The depth of sag is about 1/2" to 1".

The cause of the sag is not known, however, it appears most likely to be the result of overheating. Some time ago furnace stack temperatures were raised from 550°F. to 650°F. in an effort to shorten the denitrator time cycle. Stack temperatures have now been dropped back to 550°F. and frequent checks will be made to determine if the sag increases. If not, incremental increases in stack temperature will be made in an attempt to determine maximum allowable heat input.

In the meantime, it seems desirable to consider the purchase of spare pots over and above the single "experimental" pot being provided on the "A" line expansion to cover the contingency of pot failure. (The three spare pots originally provided are being used in the expansion program). The possibility of providing deeper pots as spares for any of these installed is being studied. This would require revisions to the furnaces and agitator shaft if any of the three currently operating pots were replaced.

221-H "B" Line - Additional Tankage

The Engineering Department has been requested to design and install two new resin column feed tanks in "H" Area to relieve an existing bottleneck caused by the use of the present feed tanks for the dual purpose of feed adjustment and column feed. The new gravity feed tanks will also preclude the loss of production in the event of failure of one of the submerged pumps in the present feed tanks. Engineering has also been requested to provide duplicate elution facilities and one new product run tank and one new recycle hold tank

J. B. Tinker

-3-

4/14/55

to improve flexibility of operation of the columns. Preliminary drawings of the feed tank installation have been made, and were taken to the plant for review with Operations this week. It is expected that design for the entire job will be completed about the middle of May. The work is being charged directly to Project 8980.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

RJC/blt