DEPARTMENT 246 - OPERATING INSTRUCTIONS

SECTION VI - DETAILS OF OPERATION OF THE STILL OPERATOR

A. Intermediate Storage Tank

1. Synopsis

The Intermediate storage tank is provided for storage of Crude 1142 between chlorination and distillation. It also provides aging time that improves the stability of Aroclor. Air is blown from the continuous blow tank through the intermediate storage, through a brink tank and to the drowning jet.

2. Equipment

a) Intermediate storage tank (Item 424).
b) Intermediate storage transfer pump (Item 425).

3. Equipment Function

a) The function of the storage tank is to provide storage between #9 chlorinator and distillation and allow aging time for Crude 1142.

b) The function of the transfer pump is to feed crude to the continuous blow tank, and to circulate the crude back into the top of the tank to keep Ferric Chloride in suspension.

4. Control Loops, Interlocks and Alarms

a) Control Loops

1) Level (LIA-18)
The function of this loop is to indicate the level of crude in the storage tank, and activate an alarm if the level reaches 90%. The level is indicated on the panel board and at the bottom of the tank on the north side. Both are 0 - 100% scales.

b) Interlocks

There are no interlocks on this tank system.

c) Alarms

1) High level - if the level reaches 90% an alarm will sound and the window marked "Hi level Int Stg Tk" will light on the annunciator.

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A. Intermediate Storage Tank (continued)

5. Start Up Instructions

a) Check that water is on the drowning jet.
b) Check that steam is on the plate coils on the tank, and the temp. is approx. 180 Deg. C.
c) The tank level should be at least 50%.
d) Start the transfer pump with all valves closed except for circulating, by-passing the orifice in the circulating line.
e) Open valve to feed stills when needed.

6. Normal Operation

During normal operations the following conditions should exist.

a) Plate coil temp. 180 Deg. C.
b) Circulating valve open and by-passing orifice in circ. line.
c) Tank level between 50 and 70%.

7. Shutdown Instructions

a) Emergency

1) Shut off transfer pump and close valve on bottom of tank.
2) Shut steam off plate coil.

b & c) Normal - short time or long time.
None - Neither the pump or the heat will be shut off except in an emergency or to clean the tank.

d) Electrical Power Failure

If the power fails no special problems will occur in this system.

When the power is restored do the following to start-up:

1) Check that water is on the drowning jet.

2) Start the circulating pump for the intermediate storage.

8. General Information

a) Ferric Chloride settles out in this tank making it necessary to clean the tank every 7 - 12 months.
b) Keep the level above 50%. The longer crude stays in the tank the better it is on stability.
c) Keep the circulating pump running all the time by-passing the orifice in the circ. line. This helps to keep ferric chloride in suspension so it feeds to the still with the crude.
d) A conservation vent (vacuum and pressure) is located on top the tank.

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A. Intermediate Storage Tank (continued)

9. Critical Control Points

Control Point	Expected Reading	Deviation Limit & Effect	Correction
Level	50-70%	45% Min. A high level is needed for aging crude in the tank, this helps stability. 90% Max.	If the level is low, slow up the still. If the level is high speed up the still.

10. Other Control Points

Control Point	Expected Reading	Deviation Limit & Effect	Correction
a) Temperature	170 - 180 Deg. C.	150 Deg. C. Min. - High temp. helps stability.	If the temp. drops below 150 check the supply pressure and the trap for the heating band on the tank.
b) Specific Gravity	1.384 - 1.389 @ 25 Deg. C.	1.382 - 1.390 - Deviation outside this limit will cause the finished goods storage to be out of specs on sp. gr.	The continuous chlorinators will have to make the necessary correction.

11. Trouble Shooting

Symptom	Problem	Cause	Possible Solution
1. Level gauge drops 5% suddenly.	1. Excessive pressure on tank	1. Ferric Chloride building up on level indicator.	1. Notify supervision - tank will have to be cleaned out.
		2. Air line to the brink tank plugging.	2. Notify supervision - line will be taken apart for cleaning.

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SECTION VI - DETAILS OF OPERATION OF THE STILL OPERATOR

A. Intermediate Storage Tank (continued)

11. Trouble Shooting (continued)

Symptom	Problem	Cause	Possible Solution
2. Still will not feed.	1. No crude getting to pump.	1. Ferric Chloride building up around outlet to pump.	1. Notify supervision-tank will have to be cleaned out.
		2. Pump trouble.	2. Have pump repaired-take pressure gauge readings first to help determine the problem.

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