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October 13, 1986

VISTA

Mr. H. J. Neeld
Conoco Inc.
P O Box 2197
Houston, TX 77252

Dear Mr. Neeld:

Re: Groundwater Control Capital Projects

Per your request, listed below are the ongoing and budgeted projects at the Lake Charles VCM Plant which will prevent groundwater contamination. Although groundwater control is not necessarily the sole justification of all of these projects, it is a significant factor in each of them. As evidenced by this list, a substantial amount of capital expenditures (over \$3,000M) will have been spent in FY 1986 and 1987 on groundwater control at the VCM Plant. This amounts to about 45% of the projected total plant capital expenditure of \$6,911M for those two years.

1) Acid Neutralization Tanks Replacement \$1,906M

The existing in-ground brick lined concrete Incinerator Acid Neutralization Tanks (T-981, 982) and the Wastewater Neutralization Tanks (T-500) will be replaced with two below grade Furan tanks inside a concrete containment vault. The new tanks will be equipped with integral caustic trim neutralization chambers to replace the existing caustic trim neutralization tanks (also in-ground). Also, included is installation of piping in trenches for the collection system for the new tanks, and new piping for the discharges of the new tanks replacing a portion of the existing underground sewer piping.

The AFE has been approved and mechanical design is in progress. Project completion is expected in 4th Quarter FY 1987.

2) T-405 (Heavy Ends Storage Tank) Replacement \$136M

The on-ground Heavy Ends Storage Tank, T-405, is being replaced with an above ground cone bottom tank installed on an impervious base. In addition, the

Heavy Ends Loading Pump, P-452, is being relocated near T-405 and provided with impervious containment curbing.

The new tank is nearly completed and will be put in service in early November per requirements of a Compliance Order issued by the Louisiana DEQ on April 2, 1986.

3) T-450 Bottom Replacement \$75M

The existing bottom of the Dry Crude EDC Storage Tank, T-450, is being replaced due to a leak which occurred in January 1986 as a result of soilside corrosion. Both the existing bottom and the previous bottom (underneath) have been removed and a new bottom installed. Removing the old bottoms is necessary to allow future installation of cathodic protection in the tank farm, as Cathodic protection does not function properly on dual bottom tanks.

The project installation is nearly complete and should be completed by the end of October.

4) Closed Process Sewer Underground \$150M(Capital)
Piping Replacement \$115M(Expense)

The existing underground Closed Process Sewer (CPS) piping will be replaced with a solid Kynar piping system installed in the existing plant process drainage trenches for secondary containment. Also, included are the installation of three clearing lines for use during distillation column washes, and construction of a Mobile Recovery Pot to be used for clearing offsites equipment.

The existing Furan underground piping system cracked and developed leaks under normal operating stresses such as thermal expansion, and has not been operational since the beginning of the last VCM Plant turnaround in August, 1985.

The project has been AFE'd. Repairs of the process trenches to provide proper containment are in progress (\$115M expense). It is targeted to complete the project such that the system can be used during the upcoming turnaround in early 1987.

5) Laboratory Sink Drainage System \$18M

This project involved rerouting the Laboratory drainage collection tank pumpout line to T-110, the Steam Stripper Feed Tank; instead of the previous routing to the LCCP sanitary sewer system.

This project was completed in the 4th Quarter FY 1986.

6) Storage Tanks Cathodic Protection \$52M

Cathodic protection will be provided for twelve storage tanks to protect against leaks in tank bottoms from soilside corrosion. The four EDC tanks, Light Ends Tank, three caustic tanks, and the four incinerator acid tanks will be included in this system.

This project has been AFE'd recently. Projected installation is 2nd Quarter FY 1987.

7) Secondary Containment for Pumps \$10M(Expense)

Concrete containment curbing was installed for ten pumps in non-paved areas. Eight of these pumps are located in the tank farm area; two in the T-500/T-2 area. This project was completed in the 4th Quarter FY 1986.

Total Groundwater Control Related FY86 Capital - \$2,337M.
% of Total FY86 Capital - 72.5%

FY 1987 Budget Projects

1) T-2 Replacement \$155M(Capital)
\$ 20M(Expense)

The Process Runoff Settling Tank, T-2, will be replaced with a Furan tank installed inside the existing in-ground brick lined concrete T-2 which will be used as a concrete containment vault. The new vessel will be equipped with pumps, piping, and instrumentation necessary to transfer the collected runoff to the steam stripper feed system.

The project is budgeted for 1st Quarter FY 1987 with installation projected for 4th Quarter FY 1987. Expeditious replacement of T-2 and/or taking the existing T-2 out of service is part of a commitment made with the Louisiana DEQ.

2) Heavy Ends Containment

\$125M

Containment for the EDC Tars Still Area, the Vinyl Chloride Tars Still Area, the Incinerator By-product Liquid Feed Pumps (P-902 A&B) Area, and the Tars Trailer Loading Area will be provided by installing 6in.x6in. curbs around each area. A chemical resistant coating will be applied to the concrete, and a resistant material will be used to replace existing expansion joints in the concrete.

This project is budgeted for 1st Quarter FY 1987 with installation projected for April 1987.

3) T-450 Conversion

\$ 50M

The Dry EDC Crude Storage Tank, T-450, will be modified to spare the Wet EDC Crude Storage Tank, T-453, and the Pure EDC Crude Storage Tank, T-451.

This project will reduce the potential for groundwater contamination by allowing more frequent inspection of the EDC Storage Tanks.

Currently, neither T-451 or T-453 can be taken out of service outside of turnaround. Consequently, the frequency of inspection is dictated by the run time between turnarounds. By modifying T-450 to spare T-453 and T-451, both tanks can be inspected outside of turnaround. This modification will reduce the potential for groundwater contamination from undetected tank bottom leaks and reduce the turnaround workload. By having a spare for T-451 and T-453, sudden unexpected repairs can be made without a plant shutdown. Furthermore, reduced repair costs and increased operating flexibility are expected.

This project will be submitted for AFE approval in the First Quarter Fiscal Year 1987 with project completion expected two months after AFE approval. The timing is dictated partially by the turnaround which is tentatively scheduled for January 1987, as some of the work can only be done during the turnaround. Also, expeditious installation of this project is required to allow T-451 and T-453 to be inspected as soon as possible.

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4) Heavy End Storage Tank, T-452, \$270M
Base and Bottom Replacement

The soil base of the existing T-452 will be replaced with an impervious base. Also, if inspection in January 1987 (after the new T-405 is put in service and T-452 emptied and cleaned) show T-452 bottom to be leaking, a new bottom or tank will be installed. If a new bottom or tank is required, secondary containment for the area surrounding T-452 will also be required per the recent hazardous waste regulations promulgated in July 1986.

The project is budgeted for 2nd Quarter FY 1987. The Louisiana DEQ Compliance Order issued in April 1986 for T-405 and T-452 requires the new base to be completed by June 18, 1987. An extension may need to be obtained if secondary containment and a new tank become necessary.

5) Tank Bottoms Replacement - Phase II \$150M

The bottoms of the Pure EDC Storage Tank, T-451, and the Wet EDC Storage Tank, T-453 will be replaced. These tanks presently have two bottoms each due to previous replacements of tank bottoms by installing the new bottom over the old bottom in lieu of removing and replacing the old bottom (similar to T-450). Both bottoms will be removed and a new bottom installed such that the cathodic protection system being installed will be effective for these tanks.

This project is presently budgeted for 2nd Quarter FY 1987 AFE. One tank will probably be done in the 2nd or 3rd Quarter and the other in the 3rd or 4th Quarter.

Total Groundwater Control Related FY87 Capital - \$750M
% of Total FY87 Capital - 20.3%

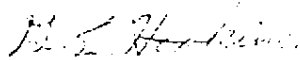
It is expected that additional funds will be budgeted in FY 1988 and 1989 to continue the plant (and Vista) overall program of inspecting all the plant tank bottoms over the next few years. The main ones remaining after FY 1987 will probably be the Light Ends Tank (T-402), the Slops Tank (T-460), and the three caustic tanks, T-421, T-422, and T-423). The four Incinerator acid tanks have

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rubber liners so the metal bottoms cannot be inspected without removing the liner. The liners for three of these tanks were inspected and repaired as needed in FY 1986. The liner for T-960B will be replaced in early FY 1987. At that time, the metal bottom can be inspected also. After T-960B is placed back in service, the liner of the remaining acid tank, T-960A, will be inspected.

Besides the capital and expense projects already mentioned, there are a number of small projects and administrative measures that have been implemented during the past year to improve groundwater control.

Sincerely,



G. E. Hopkins
Chief Process Engineer
Vista VCM Plant

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cc: RAC-PEM-WPS-SVC (VCM)
JAD-MGH-ERT (LCCP)
WLM-TGG (Houston)