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Texas City, Texas

April 21, 1967

VCM Tanker Study

G. T. Ryan

P. S. Bonham - St. Louis

W. W. Latimer/F. Grissom

W. T. Anderson

The following memo summarizes the data required to decide if tankering of VCM is economically feasible.

Two modes of transport will be evaluated and compared:

1. 100% by tanker from Dow to terminal storage at New Haven. 100% trucking from the terminal to the Springfield plant and outside customers.
2. 100% by tank car from Dow to the Springfield plant and outside customers.

The following volumes will be used in the study. All data are in millions of pounds.

Year	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>
Volume thru the Terminal	200	230	250	250
Volume to Springfield	85-100%	85-100%	85-100%	85-100%
Volume to Outside Customers	0-15%	0-15%	0-15%	0-15%

The following data is required for the Terminal operation - W. T. Anderson.

Total fixed and variable cost data for unloading the tanker, for storage of the VCM, and for loading tank truck and possibly some tank cars. The cost must include sampling and laboratory testing costs if these are required.

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There are several alternates to be evaluated. They are

1. Type of storage: Material will arrive refrigerated. Material can be stored either refrigerated or under pressure.
2. Storage requirements (2 possible alternates)
 - a. 22 tanker arrivals per year require 35M lbs. of usable storage
 - b. 44 tanker arrivals per year require 20M lbs. of usable storage.

Do not at this time impose upon the terminal operation any restrictions that will raise the cost to Monsanto. For example, do not state we must have a certain number of tanks for quality control reasons. It may be a very real requirement. If we insist upon it, we need to know how much this requirement adds to our cost. After knowing this, the requirement may decrease in significance.

The following data is required for the Springfield plant operation - W. W. Latimer.

New capital requirements for each system. The timing of the capital expenditure if the expenditure can be programmed to match the yearly increase in forecasted throughput. Any capital write-offs that must be made if one system is adopted rather than the other.

Fixed and variable costs required to operate each system.

The two systems are

1. 100% tank truck deliveries from New Haven. New Haven will always have a minimum inventory of 5M lbs. Therefore, the inventory at Springfield need only cover the variability of the truck delivery system.
2. 100% tank car deliveries from Dow. The minimum inventory requirements at Springfield must cover the variability of the tank car operation between

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Dow and Springfield. Do not assume the service will be as good as the service presently available from the Texas City plant. Do not assume tank cars can be used for storage. If tank cars must be used for storage this must be known so the cost of the tank car fleet operation will include this added cost.

The following data is required from F. S. Bonham's group.

The tank car freight rate between Dow and Springfield. We need a projection on how this rate will change between 1970 and 1985.

The fixed and variable cost for operating the VCM tank car fleet. The fleet size may have to include cars that will be used for storage at the Springfield plant. These cost data should take into account the stepwise addition of cars to the fleet as the volumes delivered are increased. The method of financing the additions to the fleet must be stated in order to calculate the effects of the flow of funds to Monsanto via depreciation.

The cost to Monsanto if the tank cars presently in use are disposed of should we go to 100% tanker operation.

With the above data, we at Texas City will make a cash flow analysis of the difference in the money expenditures and money savings of the two systems. From this data we will be able to state the tankering costs that can be justified under several ROI criteria.

We would like to begin this final phase of the study no later than May 15, and hopefully by May 22 have a preliminary report on the results of the study.

C. W. Spinn

/pf

XXED NO. 37-59
Equip.

PLANT NO. SPRINGFIELD

EQUIPMENT Air Compressor

PURCHASED FROM Penn. Pump & Compressor

MAKER Same

MAKER'S NO. 6896

NEW OR
S. H. New ESTIMATED LIFE 15 YRS.

DESCRIPTION Air Compressor, size 6" x 7", Class 3ATC, Max. RPM 365,

working pressure 150 lbs. Motor #16-3168.

Job: 1-4813-80

10HP 1160 RPM 550V 3 Phase 60 cycle 10.5 AMP #1545951

Flame 326

PERIOD CHARGE 13.70 8.15

FACTOR CHARGE 4233.69
2.518.96

USE REVERSE SIDE OF CARD FOR RECORDING TRANSFER OR OTHER DISPOSITION OF EQUIPMENT

MONSANTO CHEMICAL COMPANY
MACHINERY AND EQUIPMENT

EQUIPT. NO. 89788

DEPT. NO. 82-902

LOCATION Inert Gas Hse. BLDG. 80-23

DATE 12/48 ORDER NO. 8-61069

PURCHASE PRICE 1423.00 REQ. NO. C47D-16

FREIGHT 44.61 AUTH. NO. 2788

EQUIPT. COST 1467.61 INST. COST 228.78

Per 7104

253.01

XXED NO. 37-58

Equip. SPRINGFIELD

PLANT NO.

EQUIPMENT Gas Compressor

PURCHASED FROM Penn. Pump & Compressor Co.

MAKER Same

MAKER'S NO. Ser. 6886

NEW OR
S. H. New ESTIMATED LIFE 15 YRS.

DESCRIPTION Penn. Gas Compressor, single stage, double acting, straight
line, Class 3AC, size 5 x 3, Max. RPM 250, wkg. pressure
50 lbs.

Job: 1-4506-80

Driven by 16-2440

10HP 1160 RPM 550V 3 Phase 60 cycle 10.5 AMP 6000 (169383)

Flame 326

USE REVERSE SIDE OF CARD FOR RECORDING TRANSFER OR OTHER DISPOSITION OF EQUIPMENT

EQUIPT. NO. 910.30

DEPT. NO. 80-28

LOCATION Pump House BLDG. 82

DATE 12-48 ORDER NO. T-60470

PURCHASE PRICE 1001.00 REQ. NO. C47E-17

FREIGHT 7.03 AUTH. NO. 2788

EQUIPT. COST 1009.00 INST. COST 321.10

1330.

West

88

253.01

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MACHINERY AND EQUIPMENT