

CELANESE CHEMICAL COMPANY
Chemcel Plant
Bishop, Texas



To: C. W. Harrison

From: W. H. Meyer

WHM-203-78

September 25, 1978

Fourth Quarter 1978 Work Plans
Laboratory

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Fourth Quarter 1978 Work Plans
Laboratory

Attached are the fourth quarter 1978 work plans for the Laboratory as agreed to at our priority meeting. The schedules cover work plans for each chemist in the Special Problems Area, and the Analytical and Quality Assurance Group work plans. It should be noted that product quality problems, low unit efficiencies and other unit problems will reduce time spent on cost reduction (development) projects.

W. H. Meyer
W. H. Meyer

WHM/as
Attached Report

004152

AREAS I, IV, and OXO UNIT

Group Leader - G. D. Boyd

Methanol Oxidation, Formaldehyde Blending
T. A. Jasek

<u>Objective</u>	<u>Plans</u>
Raw Materials Savings	1. Sample for Iron in the air across MO-II and MO-III air filters in the fourth quarter and issue a report in the fourth. Summarize all catalyst contamination data to aid in decision on air scrubbing. Completion of this Objective will be dependent upon time needed for Unit Support. 2. Continue MO Catalyst screening study as needed and samples are available. 3. MO Catalyst Reuse - Issue report finalizing Lab evaluation of catalyst washing by end of fourth quarter.
Raw Materials Savings (Increase Unit Efficiency)	Reduce Methylal in MO Distillation Column - Issue recommendations for Plant Trial and conduct trial during fourth quarter, if feasible.

004153

<u>Objective</u>	<u>Plans</u>
MOB	Maintain daily contact with MO Units and Blending Units and provide Technical support as needed.
MOB	Follow-up on recommendation to install Metalose Addition system downstream of anion beds as required.

Utilities, BOD
S. G. Smith, G. R. Stasney, J. R. White

<u>Objective</u>	<u>Plans</u>
Support Unit Expansion (Cost Reduction)	Anaerobic-Aerobic Laboratory Pilot Study - Study operation and feasibility of two-stage anaerobic-aerobic treatment of Bishop effluent. Plans are to: 1. determine H₂S content of the anaerobic vent gas, 2. implement installation of the Process Controller, 3. determine the anaerobic treatability of aerobic sludge blowdown, 4. anaerobically treat the non-burnable portion of polyol effluent,

004154

ObjectivePlans

5. perform sludge settling tests on aerobic sludge to develop clarifier design criteria,
6. demonstrate an organic loading to the anaerobic filter of 0.75 lb. COD/ft³/day,
7. collect data to determine the need for equalization between the anaerobic and aerobic sections,
8. start-up a Laboratory bench-scale anaerobic filter to develop start-up procedures by the end of the fourth quarter.

Support Unit Expansion
(Cost Reduction)

Aerobic Treatment of Bishop Nylon Unit Effluent - Determine the aerobic treatability of nylon effluent. Plans are to finish the study and issue a report early in the fourth quarter.

MOB

Maintain contact with Utilities and BOD Units and provide technical support as needed.

004155

September 25, 1978

<u>Objective</u>	<u>Plans</u>
Increase Demineralizer Capacity	Evaluate DOW and Rohm and Haas high capacity weak base resins as possible replacement for present Rohm and Haas IR-94.

OSHA Monitoring
J. M. Jackson

<u>Objective</u>	<u>Plans</u>
Define Employee Exposure to Formaldehyde	Complete Area and personnel monitoring in MO II, III, and IV, and the Paraform Unit. Report data by the end of fourth quarter.
Define Employee Exposure to TPP	Obtain area and personnel data. Report data by end of fourth quarter.
Define Employee Exposure to Asbestos	Monitor Maintenance employees during insulation removal, as required.
MOB	Provide emergency monitoring of airborne contaminants, if necessary.

004156

<u>Objective</u>	<u>Plans</u>
	are complete. Early fourth quarter completion.
Cost Reduction	Recover BG from V-778 residue. Screen ideas and formulate program by late fourth quarter.
MOB	Maintain daily contract with the unit and provide technical support as needed.

Diacetone Alcohol
P. J. Buras

<u>Objective</u>	<u>Plans</u>
DAA Raw Material Savings	Reduce Acetone losses to Mesityl Oxide by adding water to the reactor feed the first few days after catalyst regeneration. Schedule Plant trial late in fourth quarter.
MOB	Identify an unknown component recently discovered in DAA product at relatively high levels. Determine how to control its production in the unit. Complete in mid fourth quarter.

004157

<u>Objective</u>	<u>Plans</u>
MOB	Qualify Union Carbide Acetone as DAA feed by providing analytical coverage and assisting in the plant trial scheduled in mid October. Complete documentation by mid November.
MOB	Maintain frequent contact with unit and provide technical support as needed.

Esters, Methylal Paraform Formcels[®]
M. E. Harris

<u>Objective</u>	<u>Plans</u>
Energy Conservation	Assist as needed in the second attempt to start up the new Ester Unit Reactor Column (T-343). Simulate T-343 in the Laboratory to determine reflux requirements (minimum energy) and test control concepts. Provide analytical coverage during the next T-343 start up as needed. Complete by Dec. 1.
Cost Reduction, Energy Conservation and MOB	Develop more Laboratory data on the effect of certain metal ion contaminants in the Paraform feed on Paraform

004158

<u>Objective</u>	<u>Plans</u>
	evaporator fouling and Paraform flake quality. This data may lead to ways to minimize Paraform evaporator clean outs (energy and raw material savings), solve problems associated with crude methanol feed to MO (energy conservation) and improve Paraform flake quality in terms of color and lumps (MOB).
Cost Reduction	Assist in obtaining microprocessor control of the Ester Unit by providing Laboratory cross check of the unit analyzer as required.
MOB	Maintain frequent contact with the units and provide technical support as needed.

Methanol Synthesis II
F. R. Dow

<u>Objective</u>	<u>Plans</u>
MOB (Cost Reduction)	Continue the non-routine monitoring of incoming natural gas for composition, BTU, and sulfur concentration.

004159

<u>Objective</u>	<u>Plans</u>
MOB (Crude Methanol composition and purification tower profiles)	Determine the paraffin concentration in Crude Methanol and determine which purifi- cation tower trays have the highest concentrations.
MOB (Inlet and Outlet Sulphur concen- trations in the Sulfur Guard Beds)	Confirmation of the Process Analyzer Sulfur analysis is necessary so that optimum Sulfur removal and steam usage can be attained.
Support the One Column Purification Trial Run (Cost Reduction)	Provide analytical and technical support for One Column Purification Trial Run.
MOB	Maintain daily contact with the Unit and provide technical support as needed.
MOB	Provide Lab support as needed for test of Hydrazine addition to DPG Reformer and Lurgi Converter.

Trimethylolpropane
L. Mayerle

<u>- Objective</u>	<u>Plans</u>
Raw Materials Savings	Reduce Formaldehyde losses in the TMP reaction system. Continue spot deter- minations of the Methanol production in

004160

<u>Objective</u>	<u>Plans</u>
	the reactors. Evaluate the effect of cleaning the reactors during the next shutdown (scheduled for October).
MOB	Maintain contact with unit to provide technical support as needed.

Pentaerythritol
R. G. Hilbrich, L. Mayerle

<u>Objective</u>	<u>Plans</u>
Energy Conservation	Support Process Engineering project to recover energy from "A" evaporator steam jet. Continue work in fourth quarter to develop a process for reuse and/or dispose of the resulting condensate. (Hilbrich)
Raw Material Savings	Initiate a study to recover PE from the Virginia Chemical Industries Centrate or from AML. Study will begin in the fourth quarter, 1978 to screen ideas. It is anticipated that the study will continue well into 1979. (Hilbrich)
MOB	Maintain frequent contact with unit and provide technical support as needed. (Hilbrich)

004161

<u>Objective</u>	<u>Plans</u>
Cost Reduction	Remove crystallization inhibitors from "A" Crystallizer feed or T-286 residue to increase efficiency of the "A" Crystallization step. Laboratory work began in mid Sept. Project may carry over into first quarter, 1979. (Mayerle)
MOB	Complete particulates sampling during Tech production to provide data for the air emissions survey. (Mayerle)

Maintenance of Technology
B. C. Kerr

<u>Objective</u>	<u>Plans</u>
MOB (Preparation of technical report abstracts and abstract cards)	Continue program for abstracting technical reports and preparation of abstract cards.
MOB (Issue an up-dated Raw Materials Specification Manual)	1. Incorporate the necessary revisions to proposed Purchase Specifications submitted on the basis of the draft Specification mailed previously. 2. Prepare typed copy and obtain signature approvals from the appropriate Superintendents.

004162)

<u>Objective</u>	<u>Plans</u>
	3. Issue the completed Specifications by November 15.
MOB (Review Plant Process Control and Quality Assurance Procedures)	1. Review Unit Lab sample schedules. 2. Review Unit Lab Analytical Methods. 3. Review Unit sampling points and procedures. 4. Review Main Lab Quality Assurance sampling and analytical procedures. 5. The above reviews will be carried out with consultation with unit and laboratory supervision. 6. Make recommendations, where needed, for revisions in plant procedures.
MOB	Provide technical support, as a Staff Chemist, as needed.

ANALYTICAL and QUALITY ASSURANCE GROUP

Group Leader - A. G. McGehee

<u>Objective</u>	<u>Plans</u>
MOB (Cost Reduction - Support of Lab Projects)	Continue analytical support of Lab Pilot Anerobic/aerobic studies and Rhodium Loss Accountability Program.

004163

Objective	Plans
MOB (Support Plant Operations)	1. Continue Group readiness and ability to contribute to day to day trouble shooting of Plant processer and quality problems. Continue communication efforts through Unit Chemists. 2. Provide analytical support to proposed MS Unit one column purification run.
MOB (Review QC Organization)	Investigate/evaluate various methods of assumption of routine. Complete discriptive write up and solidify plans in late 4th quarter.
Safety	1. Continue emphasis on Laboratory Safety and SNE Group attendance at general safety meetings. 2. Complete vent hood addition and upgrading program. Started 9-78.
MOB (Maintain Analytical Technology)	Continue in process review and update of Chemcel GC Methodology. Eight methods under review. Expect 4 complete by end of 4th quarter.

004164

Objective	Plans
MOB (Training)	1. Fill SNE vacancy (9-15-75) and complete initial training of replacement during 4th quarter. 2. Continue cross section refresher training as work load permits. 3. Complete initial training of newly assigned Instrument Section workforce (50%) while maintaining quality of analysis.
MOB (Support Effective Laboratory Service to Plant)	1. Support Plastics move to their new Laboratory. 2. Complete recommendations on Lab GC Computer replacement project. 3. Review Solutions Preparation work load and unit supply and distribution procedures - Effect streamlined organization and manpower savings. 4. Investigate and finalize plans for Telautograph transmittance of Lab results to Unit operations.
MOB (Maintain Quality of Plant Products)	Maintain legitimate complaint record at ≤ 0.15 % level.

004165

Objective	Plans
MOB (Cost Reduction)	Review QC procedures on minimum of four products and make recommendations during quarter.
MOB (Cost Reduction)	1. Review QC Group organization and make recommendations for improvement by end of 4th quarter. 2. Successfully employ and train permanent QC Secretary - (reports 9-25-78). 3. Transfer routine clerical functions to QC Sec. during quarter. 4. Identify additional routine job functions for assumption by QC Sec. when basic training complete.

004166