



File - E  
American Distillation  
NCR 000 001 651

## HUNTON & WILLIAMS

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WILLIAM D. DANFELLY

FILE NO.: 53766.000003  
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April 20, 1999

VIA HAND DELIVERY



William R. Miller, Esq.  
North Carolina Department of Justice  
114 West Edenton Street  
Post Office Box 629  
Raleigh, North Carolina 27602-0629

Re: American Distillation, Inc.

Dear Bill:

Over the last few weeks, we have come to have a greater understanding about the Hazardous Waste Section's ("HWS") intent to pursue an enforcement action against our client, American Distillation, Inc. ("ADI"). In recent discussions, we understood the Division was willing to consider an Administrative Order on Consent with an appropriate civil penalty. We have consulted with our client and make the following proposal.

A draft Administrative Order on Consent is enclosed. This reflects much of the language which was included in HWS's internal documents recently produced to us in conjunction with other litigation. Those drafts also reflect my understanding of subsequent findings as a result of continuing investigation during that litigation. ADI is willing to make this proposal in recognition of the HWS's view that there were violations of the variance. ADI is committed to communicate

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William R. Miller, Esq.  
April 20, 1999  
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more clearly in the future about its activities regulated by the HWS to demonstrate its commitment to full compliance. Nonetheless, it is important to our client that it is allowed to enter into the Administrative Order on Consent with the statement that there is no admission of liability.

In the draft Administrative Order on Consent, our client is willing to expand the conditions for continued operation. That section of the draft was prepared by guessing about the HWS's priorities. Our client is willing to work with the HWS to satisfy any other concerns.

With respect to the administrative penalty, ADI has proposed a total of \$10,000. Given the absence of any release, the fact that there has been no environmental harm due to the violations, and other factors, ADI submits that a minor penalty is the most which can be justified. In light of the miscommunication between ADI and the HWS on a number of issues, this is the type of problem in another context in which the HWS might consider that no penalty was necessary.

If the HWS is insistent on considering a higher penalty, ADI would like to submit all available tax returns. We understand that those will reflect a business which has not yet turned a profit. That financial information should demonstrate that ability to pay should dictate no penalty for this situation.

You will find enclosed a draft letter, dated April 15, prepared by Will Oliver on ADI's behalf. This is a draft letter related to the Ciba proposal for a variance discussed during meetings in March. (Please note that the percentages of each chemical in the letter will be conformed to the Agreement if this is approved.) Mr. Oliver is meeting in a few weeks with numerous Ciba representatives. They are discussing the procedures by which ADI may pursue an investigation to determine if it is feasible to obtain a Part B Permit for storage and treatment of non-halogenated solvent/hazardous waste. ADI is proposing to proceed with its

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William R. Miller, Esq.

April 20, 1999

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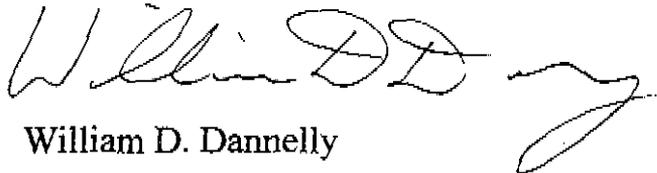
Administrative Order on Consent and variance promptly. We hope the Division will be able to turn its attention to this matter promptly so the matter may be resolved one way or the other prior to the meeting between ADI and Ciba representatives.

Finally, in our conversation today, we discussed the proposal to process the "in-process" Witco material. ADI has tested the first process described in its March 22 letter which is enclosed. Will Oliver advised me today that those tests were very successful.

With best regards, we are

Very truly yours,

HUNTON & WILLIAMS

A handwritten signature in cursive script, appearing to read "William D. Dannelly".

William D. Dannelly

WDD:bhb

Enclosures

cc: Mr. Wilmer Oliver  
Mr. Andrew J. Simmons  
Ms. Linda Culpepper

**North Carolina Department of Environment  
and Natural Resources  
Division of Waste Management  
Hazardous Waste Section**

In Re: **American Distillation, Inc.**  
**NCR 000 001 651**

**ADMINISTRATIVE ORDER ON CONSENT**  
Docket \_\_\_\_\_

1. This Administrative Order by Consent ("Consent Order") is issued under the North Carolina Solid Waste Management Act, N.C.G.S. Chapter 130A, Article 9 (the "Act"), and the North Carolina Hazardous Waste Management Rules, 15A NCAC 13A et seq. (the "Rules"). William L. Meyer, Director, Division of Waste Management ("Division"), Department of Environment and Natural Resources, has been delegated the authority to implement the Act and Rules. American Distillation, Inc. ("ADI") is located in Leland, Brunswick County, North Carolina (the "Site"). Based upon an investigation at the Site, the Division has determined that ADI is in violation of certain requirements of the Act and Rules as set forth in this Consent Order. Without any admission of fact or law, as set forth in the below Statement of Fact and Law, and without any admissions of liability, ADI by its signature below consents to the entry of this Consent Order.

**STATEMENT OF FACT AND LAW**

2. On December 18, 1980, the Division was authorized to operate the State RCRA Hazardous Waste Management Program under the Act and Rules. William L. Meyer, Division Director, has been delegated those responsibilities.
3. ADI is a facility located at Royster Road, Leland, Brunswick County, North Carolina. ADI is a person as defined in N.C.G.S. 130A-290(a)(22) and 15A NCAC 13A .0102.
4. ADI has constructed and operates a basic distillation and dehydration facility. Both continuous and batch processes are routinely run. The batch unit is capable of multiple processing such as esterification reactions. The target chemicals are low molecular weight organics with emphasis on ethanol. Tolling arrangements with major companies are the preferred objective.
5. 40 CFR Part 262, adopted by reference at 15A NCAC 13A .0107, contains standards and requirements applicable to generators of hazardous waste. 40 CFR Part 264, adopted by reference at 15A NCAC 13A .0109, contains standards and requirements applicable to hazardous waste treatment, storage and disposal facilities. 40 CFR Part 270, adopted by reference at 15A NCAC 13A .0113, contains standards and requirements applicable to facilities obtaining a permit for hazardous waste treatment, storage and disposal.

6. 40 CFR 260.30(b), adopted by reference at 15A NCAC 13A .0003, provides that a variance may be granted by the Director so that materials that are reclaimed and then reused within the original production process in which they are generated are not solid wastes and are, therefore, not subject to the laws and regulations applicable to solid and hazardous wastes.
7. On July 13, 1995, ADI requested that the Division issue a variance for isopropyl alcohol ("IPA") as described in paragraph 6 above. ADI proposed to bring a mixture of approximately 75% of IPA and 25% water on-site, run it through its distillation system, and resell the IPA to the original client for direct reuse.
8. On September 14, 1995, the North Carolina Hazardous Waste Section ("HWS") granted a one year solid waste variance to ADI for the recycling of a mixture of approximately 75% isopropyl alcohol and 25% water under the provisions stated in this correspondence. ADI would use their distillation system to reclaim the isopropyl alcohol and resell it to the original client for direct reuse. Shipments would be separated to allow each client's material to be returned. A waste determination would be made on the solid waste generated from the distillation process to see if it were a hazardous waste. If the waste were hazardous, ADI would ensure the waste would be shipped to a properly permitted hazardous waste treatment/storage/disposal facility. Regardless of its classification, the client would be consulted as to where the waste generated from its material would be sent prior to the waste leaving ADI. At no time would the volume of crude on-site awaiting distillation exceed 50,000 gallons. All materials shipped to and from the facility would be done in accordance with the Department of Transportation requirements. All materials managed on-site would be done in accordance with all local/state/federal fire codes.
9. On February 14, 1996, ADI submitted a request to the HWS for a solid waste variance to reclaim a mixture of 40% ethanol, 50% ethyl ether and 10% water. On February 25, 1996, ADI submitted a request to the HWS for a solid waste variance to reclaim a methyl alcohol mixture. On March 11, 1996, ADI submitted a request to the HWS for a solid waste variance to reclaim a mixture of n-octane and t-butyl alcohol.
10. On March 13, 1996, the HWS conducted a site visit at ADI. The property was said to be a five-acre plot. There was discussion of a railcar unloading area with a fenced in width for two railcars. A pipeline was said to be completed within 90 days to run from the rail unloading area for the isopropyl alcohol mixture which was issued a solid waste variance, and potentially to transfer the ethyl ether to the tank farm. On-site gas chromatography was said to be done on incoming crude.
11. On March 27, 1996, the HWS issued added the reclamation of the proposed methyl alcohol mixture to ADI's solid waste variance for reclaiming the previously approved isopropyl alcohol mixture. The same conditions as cited in paragraph 8 above were stipulated in the approval. The solid waste variance was issued for both the isopropyl and methyl alcohol mixtures for a period of one year. The HWS denied the requests for a

solid waste variance for the mixture of 40% ethanol, 50% ethyl ether and 10% water and mixture of n-octane and t-butyl alcohol.

12. On April 2, 1997, ADI's solid waste variance as stated in paragraph 11 above, was extended for ninety days as the HWS evaluated further approval to continue the variance, or to deny the request and require a commercial hazardous waste treatment and storage permit for the reclamation of the isopropyl and methyl alcohol mixtures.
13. On June 20, 1997, the HWS issued a one year solid waste variance to ADI for the reclamation of isopropyl and methyl alcohol mixtures as stated in their correspondence. This variance reflected that a piping system had been constructed to transfer these materials from railcars to ADI's tank farm and distillation process. The tanker unloading area had been paved, but the railcar area did not have a paved/sealed surface. ADI maintained contingency plans for emergency procedures in conjunction with North Brunswick and New Hanover County local response teams. The variance required compliance with existing conditions stated in previous variance approvals in addition to compliance with all applicable local/state/federal health and environmental program regulations including those implemented by the Division of Air Quality, Division of Water Quality, Division of Waste Management, Division of Coastal Management and Occupational Safety and Health Division.
14. On August 7, 1997, the HWS added an isobutyl alcohol mixture to the variance issued on June 20, 1997, and as stated in item 13 above.
15. During a November 24, 1997, site visit at High Rise Service Company, Inc. ("High Rise"), Mr. Larry Perry, Eastern Compliance Unit Supervisor, observed several hundred 55-gallon drums and 85-gallon overpack drums that were not labeled and dated. Still bottoms from ADI were being stored on the High Rise facility.
16. On December 3, 1997, the HWS revoked the solid waste variance issued on June 20, 1997, based on the investigation at High Rise described in paragraph 15 above. ADI was told to submit information to the HWS on the inventory of materials, list of clients, and workplan for managing current material.
17. On December 17, 1997, Mr. Andy Simmons, Mr. Will Oliver and Mr. Larry Rosetti, all with ADI, met with the HWS regarding the revoked solid waste variance. Mr. Oliver stated that the only material processed under the variance was the isopropyl alcohol wastestream. Material was said to be processed to recover 75% of the material. The bottoms were said to be moved to the railcars in hope to work out a system for someone to buy it as a product. After time, ADI said they talked about recovering more isopropyl alcohol. The bottoms were difficult to handle because of a problem with foaming. This was the first time the HWS had been informed about this multi-processing steps ADI intended to utilize to reclaim the isopropyl alcohol.

18. On December 31, 1997, Mr. Will Oliver submitted information requested on the status of the material managed by ADI under the solid waste variance. No material was said to be present directly on the ADI site. ADI indicated that 77,000 gallons of "in-process" and "unprocessed new crude" were being managed at the railroad siding on the High Rise Service property about 300 feet from the site. The stored material was said to be either "in process" material containing 15-25% alcohol, or unprocessed isopropyl alcohol material. The "in process" material will undergo final distillation and dehydration before returning the spent bottoms to Witco for disposal if necessary. No mention was made of materials managed under the solid waste variance being held in drums at High Rise or elsewhere.
19. On October 15, 1998, ADI submitted a request to reinstate the solid waste variance to process isopropyl alcohol, methanol, and isobutyl alcohol.
20. On December 4, 1998, the Division issued a Compliance Order to High Rise and subsequently considered additional information presented during a dispute of that Order. As a result of that information and its own investigation, the Division found no evidence that material subject to ADI's variance had been stored in the warehouse at the High Rise property. At this time, the Division has no information on which to conclude that ADI has violated the Act or the Rules based on storage of material in drums on High Rise's property.
21. On March 22, 1999, ADI submitted a proposal to complete the processing of Witco's isopropyl alcohol referenced in paragraphs 17 and 18 above. Only "in process" material as of December 3, 1997, is the subject of this request. ADI has represented that it has returned to Witco all unprocessed crude isopropyl alcohol which was in its possession on December 3, 1997.
22. On April \_\_\_, 1999, ADI submitted a letter requesting a variance for the processing of an isopropyl alcohol-methanol stream known as "DPP Alcohols," generated by the Colours Division of Ciba Specialty Chemicals and containing the following chemicals in approximately the following concentrations: Ammonia - 0.5%; Cyclohexane - 0.5%; Methanol - 22%; Isopropyl Alcohol - 59%; Tertiary Amyl Alcohol - 5%; and Water - 13%.
23. 40 CFR 261.2(b)(3), adopted by reference at 15A NCAC 13A .0106, states in part that materials are solid waste if they are abandoned by being accumulated, stored, or treated but not recycled) before or in lieu of being abandoned by being disposed of, burned or incinerated.
24. N.C.G.S. 130A-290, defines "storage" as the management of solid waste, either on a temporary basis or for a period of years, in a manner which does not constitute disposal.
25. N.C.G.S. 130A-290 defines "treatment" as any method, technique or process, including neutralization, designed to change the physical, chemical or biological character or

composition of any hazardous waste so as to neutralize such, waste or so as to render such waste nonhazardous, safer for transport, amenable for recovery, amenable for storage or reduced in volume. "Treatment" includes any activity or processing designed to change the physical form or chemical composition of hazardous waste so as to render it nonhazardous.

26. 40 CFR 261.3(a), adopted by reference at 15A NCAC 13A .0106, states in part that a solid waste, as defined in Section 261.2, is a hazardous waste if:
  1. It is not excluded from regulations as a hazardous waste under section 261.4(b); and
  2. It meets any of the following criteria:
    - i. It exhibits any of the characteristics of hazardous waste identified in Subpart C.
    - ii. It is listed in Subpart D and has not been excluded from the lists in Subpart D under Sections 260.20 and 260.22 of this Chapter.
27. It is the determination of the Division that ADI did not provide the HWS with accurate information regarding the management of materials subject to a solid waste variance. As a result, the solid waste variances issued to ADI were not valid for the materials managed as described by ADI from the Witco Corporation. Therefore, ADI has treated and stored hazardous waste at its Leland, Brunswick County, North Carolina site, and is subject to all applicable requirements of 40 CFR 262, adopted by reference at 15A NCAC 13A .0107, 40 CFR Part 264, adopted by reference at 15A NCAC 13A .0109, and 40 CFR Part 270, adopted by reference at 15A NCAC 13A .0113.
28. The Division has determined that ADI is in violation of the following standards contained in the Rules. Specifically:
  - A. 40 CFR 262.12, adopted by reference at 15A NCAC 13A.0107, states that a generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number from the Department of Environment and Natural Resources, and a generator must not offer his hazardous waste to transporters or to treatment, storage, or disposal facilities that have not received an EPA identification number.

ADI is in violation of 40 CFR 262.12, adopted by reference at 15A NCAC 13A.0107, in that ADI did not manage an isopropyl alcohol waste stream in compliance with a solid waste variance. As a result, ADI was a large quantity generator of hazardous waste without receiving an appropriate EPA identification number. Specifically, ADI notified the DENR that it was a small quantity

generator of hazardous waste, and should have notified as a large quantity generator due to the volume of hazardous waste managed.

- B. 40 CFR 270.10(a), adopted by reference at 15A NCAC 13A .0113, states that any person who is required to have a permit (including new applicants and permittees with expiring permits) shall complete, sign and submit an application to the Hazardous Waste Section as described in this section and Sections 270.70 through 270.73.

ADI is in violation of 40 CFR 270.10(a), adopted by reference at 15A NCAC 13A .0113, in that ADI did not manage an isopropyl alcohol waste stream in accordance with a solid waste variance and did not complete, sign, and submit a permit application to the Hazardous Waste Section for treatment and storage of hazardous waste.

N.C.G.S. 130A-22(a) authorizes an administrative penalty of up to \$25,000.00 per day for each violation of the hazardous waste provisions of the Act, rules or any order issued pursuant to the hazardous waste provisions of the Act. N.C.G.S. 130A-22(d) sets forth the factors to be considered in determining the administrative penalty which include the degree and extent of the harm caused by the violation and the cost of rectifying the damage. HWS has reviewed these violations and concluded that no actual harm has been caused by the violations, and no cost need be incurred to rectify the damages caused by the violations. Based on analysis of these and other factors, the HWS has set the penalty as set forth below.

14A NCAC 13B .0702 sets forth specific criteria to be considered in addressing the statutory assessment factors which include the type of violation, type of waste involved, duration of the violation, cause of the violation, potential effect on public health and the environment, effectiveness of response measures taken by the violator, damage to private property and the history of non-compliance.

After careful consideration of each of the factors above, penalties are assessed as follows: A. \$5,000.00; B. \$5,000.00. Accordingly, a total penalty is imposed in the amount of \$10,000.00.

29. Based on the findings described in this Consent Order and information provided by or on behalf of ADI, it is appropriate, and the Division agrees that it shall not take any further enforcement action of any kind with respect to alleged violations of the Rules. Nothing in this Agreement shall restrict the right of the Division or any other state or federal agency to inspect and take enforcement action against ADI for any newly discovered or subsequent violations of Article 9 of Chapter 130A of the North Carolina General Statutes, the Solid Waste Management Rules, or the Hazardous Waste Management Rules, codified at 15A NCAC 13B.1600 et. seq. and 15A NCAC 13A .0001, et seq. In

addition, nothing in this Agreement shall restrict the right of the Division or any other state or federal agency to seek injunctive relief to cure any such non-compliance.

### CONDITIONS FOR CONTINUED OPERATION

Based upon the foregoing, ADI is hereby ordered to take the following actions:

1. On or before February 1, 2000, submit payment of one-half of the administrative penalty, by certified check or money order, payable to the Division, and mail to Jill E. Burton, Acting Section Chief, Hazardous Waste Section, Division of Waste Management, P.O. Box 29603, Raleigh, North Carolina 27611-9603. On or before February 1, 2001, submit payment of the balance of the administrative penalty as described herein.
2. ADI shall by July 1, 1999, or as otherwise indicated take the following actions to correct all violations as stated in this Compliance Order and otherwise be in compliance with 40 CFR 262, 263, 265 and 270, adopted by reference at 15A NCAC 13A .0107, .0108, .0110 and .0112 respectively.
  - A. Comply with 40 CFR 262.12, adopted by reference at 15A NCAC 13A .0107. ADI shall not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number from the Department of Environment and Natural Resources for the appropriate hazardous waste management activity, and must not offer its hazardous waste to transporters or to treatment, storage, or disposal facilities that have not received an appropriate EPA identification number.
  - B. Comply with 40 CFR 262.20(a), adopted by reference at 15A NCAC 13 A .0107. ADI shall prepare a hazardous waste manifest in accordance to the instructions included in the appendix to part 262 when transporting, or offering for transportation, hazardous waste for off-site treatment, storage, or disposal.
  - C. Comply with 15A NCAC 13A .0109(a). ADI shall comply with the requirements set forth in this section if the facility treats, stores or disposes of hazardous waste.
  - D. Comply with 40 CFR 270.10(a), adopted by reference at 15A NCAC 13A .0113. If ADI intends to operate as a hazardous waste treatment, storage or disposal facility, ADI shall complete, sign, and submit an application to the HWS as described in this section and Sections 270.70 through 270.73.
  - E. Provide a secure location for the storage of all hazardous materials associated with its processes. As part of that effort, ADI shall construct a secure area within the High Rise warehouse for the storage of its materials. Beginning no later than six (6) months after the effective date of this Consent Order, ADI shall construct a warehouse on property leased or owned by ADI for storage of all materials subject

to variances or hazardous waste permitting requirements. Wastewater transferred by ADI to High Rise for treatment by High Rise consistent with permits issued to High Rise is not subject to the restrictions of this section.

- F. Complete the processing of the "in-process" Witco isopropyl alcohol material on or before November 1, 1999, in accordance with the reinstatement and extension of the variance ("extended Witco variance") referenced in paragraphs 13, 16, and 21 above. The extended Witco variance shall apply to all qualifying materials received by ADI from Witco prior to December 3, 1997, and shall extend to such materials through November 1, 1999. ADI shall comply with all terms of that variance extension as set out in a letter from the HWS dated April \_\_, 1999.
  
- G. The HWS has granted ADI a variance pursuant to its request referenced in paragraph 22 above. ADI shall comply with all the conditions of that variance as set out in a letter from the HWS dated April \_\_, 1999.

**POTENTIAL CONSEQUENCES OF FAILURE TO COMPLY**

ADI is hereby advised that, pursuant to N.C.G.S. 130A-22, each day of continued violation of any requirement of the Act or the Rules constitutes a separate violation for which an additional penalty of up to \$25,000.00 per day may be imposed. If the violation(s) continues, ADI may also be subject to further enforcement.

BY: \_\_\_\_\_  
William L. Meyer, Director  
Division of Waste Management

DATE: \_\_\_\_\_

AMERICAN DISTILLATION, INC.  
1690 NE ROYSTER ROAD  
P.O. BOX 400  
LELAND, NORTH CAROLINA 28451  
(910) 371-0993 FAX (910) 371-2971

DRAFT

State of North Carolina DEHNR  
Division of Waste Management  
P.O. Box 29603  
Raleigh, North Carolina 27611  
Attn: Ms. Linda Culpepper

Reference: Solid waste variance for the processing of an isopropyl alcohol - methanol stream known as "DPP Alcohols" generated by the Colours division of Ciba specialty chemical in Newport, Delaware

Dear Ms. Culpepper,

American Distillation request a variance for the processing of this isopropyl alcohol - methanol stream. This is covered under 40 CFR 260.30(a) and 40 CFR 260.30(b). A typical analysis of the material is:

Ammonia - 0.6%  
Cyclohexane - 0.6  
Methanol - 21  
Isopropyl Alcohol - 57  
Tertiary Amyl Alcohol - 5  
Water - 12

We would like to recycle the material and return the following components to the originating Ciba plant for reuse:

- 1) methanol
- 2) cyclohexane
- 3) tertiary amyl alcohol

The recovered isopropyl alcohol would be either used by ADI as a denaturant in our ethanol blending business or sold as standard industry quality isopropyl alcohol. ADI has consumed (on average) approximately one truck load (5000 gallons) of this quality per month over the last two years (1997 and 1998). The market for this quality IPA is well defined.

The waste would consist of water and a hydrous non hazardous ammonium salt solution. These two items would be sent off site to a permitted disposal facility.

This variance request is for a six month trial period followed by an 18 month extensions if ADI is pursues in, a "Part B Permit" (to the Division satisfaction).

The material will remain on the ADI processing site at all times unless in legal transit to Ciba, to a permitted disposal site or to an isopropyl alcohol customer.

The "Division" will be kept informed of the processing technique with changes approved in advance.

The proposed column process is basically a batch distillation system employing an ammonia scrubber, a continuous distillation, molecular sieve dehydration unit, and a possible carbon filtration system. A simple process flow diagram (PFD) is attached as an addendum.

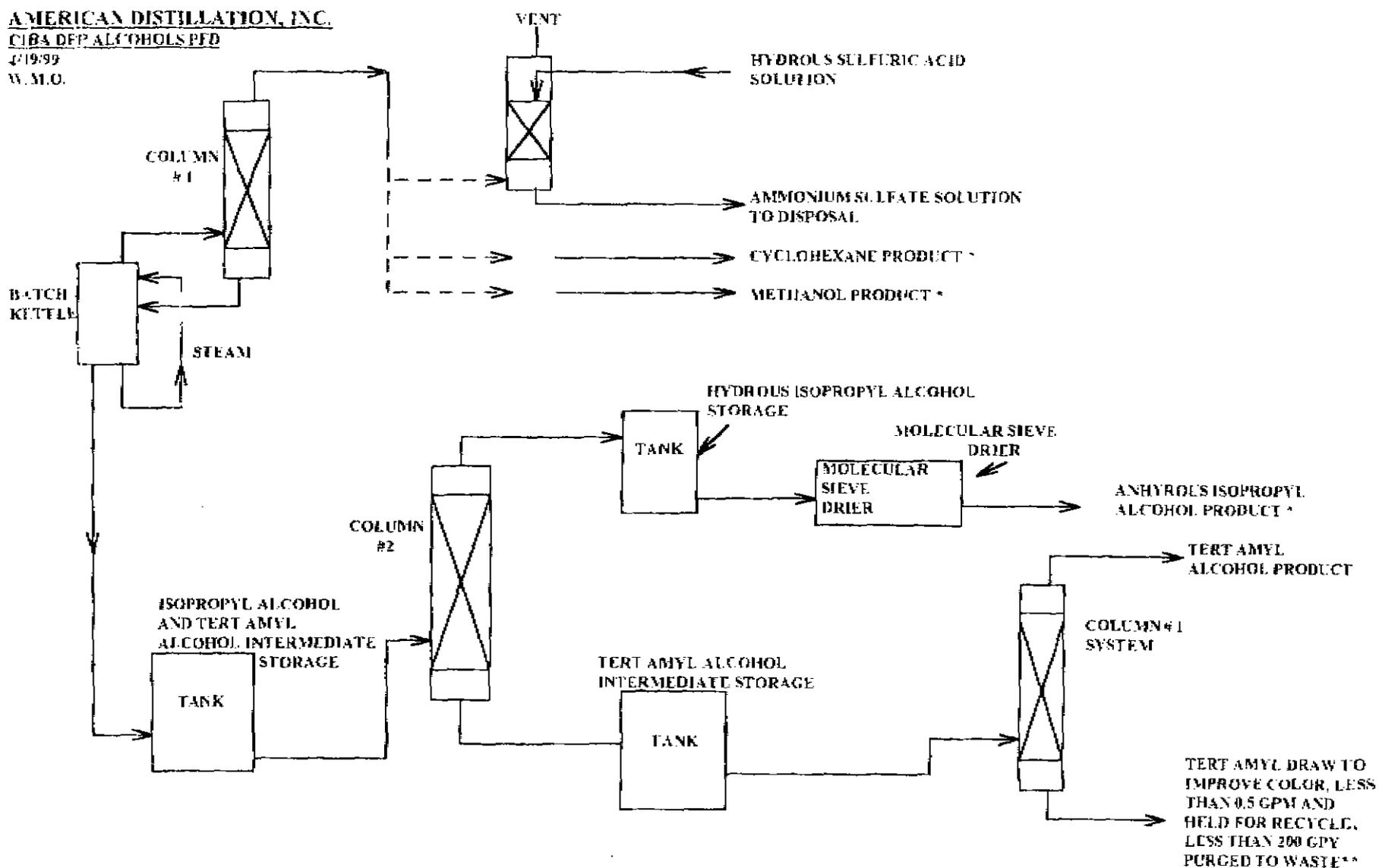
Your consideration of this proposal is appreciated. I will provide any additional information that you need.

Sincerely,

Will Oliver  
American Distillation, Inc.

c. c.     A. J. Simmons  
          William Dannelly, Esq.  
          Hugh Croom  
          Larry Rosetti  
          Brian Stillman - Ciba Colours Division

AMERICAN DISTILLATION, INC.  
CIBA DFP ALCOHOLS PFD  
4/19/99  
W.M.O.



\* TO POSSIBLE REDISTILLATION TO IMPROVE PURITY

TERT AMYL DRAW TO IMPROVE COLOR, LESS THAN 0.5 GPM AND HELD FOR RECYCLE, LESS THAN 200 GPY PURGED TO WASTE\*\*

AMERICAN DISTILLATION, INC.  
1690 NE ROYSTER ROAD  
P.O. BOX 400  
LELAND, NORTH CAROLINA 28451  
(910) 371-0993 FAX (910) 371-2971

①

March 22, 1999

Linda Culpepper  
NCDENR  
Hazardous Waste Section

Subject - Proposed recovery of the Witco isopropyl alcohol

Dear Linda,

I have calculated the processing time necessary to recover this material utilizing the vapor phase molecular sieve that I mentioned in our meeting on 3/16/99. It is extensive and would tie-up the unit a large amount of the time.

I would like to propose the following process with two different options.

First - Add n-butyl alcohol to the crude as it is added to the distillation kettle. N-butyl eliminates the foaming problem and azeotropes 35% water; upon condensing, most of the water phase separates and can be decanted. The n-butyl will be refluxed back to the vessel to remove more water. After all the water is removed, propylene glycol is added as a higher boiler and acceptable solvent for the "quats". The n-butyl is then distilled and added to the next batch.

The water will be collected and fed to distillation to remove and recover the alcohols. The n-butyl is not consumed and is re-used in each batch.

This technique has now been performed in our laboratory. At least two additional test runs will be conducted by 4-1-99.

Second - Propylene glycol is added to the kettle (about 800 gallons). The crude IPA is fed slowly into the kettle with all water and isopropyl alcohol taken overhead as a distillate and held for distillation and dehydration. The excess propylene glycol controls foaming and permits complete removal of the IPA and water.

The excess propylene glycol will be stripped overhead and the desired quats / glycol bottoms collected for marketing. This should represent about 10 per cent of the existing crude or 5,000 - 7,000 gallons. If necessary, this could be disposed of at a cost of about \$1.50 per gallon. A preliminary lab test has been completed and the results look favorable. This will also be completed by 4-1-99.

The second technique is the preferred procedure since only propylene glycol is added. Propylene glycol is an acceptable solvent in fabric softener formulations.

The collected water streams are accumulated for final alcohol removal. The remaining water will be collected. The technique I discussed for handling the water at the High Rise water plant (HRS) is not recommended. The technique of returning the cooling tower blow down to HRS is not operational at this time and probably won't be for this project. Final approval to tie-in HRS to the POTW has not been finalized as of this date. I thought this was in place, but it's not. Therefore, the NPDES is still active and would require blow down or collection for disposal outside.

There is an excellent possibility that Witco will take back the distilled water for disposal; if not, Four Seasons in Greensboro would charge about \$ 25 / gallon to dispose of it. If both the quats and water were disposed of in this manner, the cost to ADI would be about \$15,000, the revenue from the IPA should be about \$20,000 and would give at least a break-even on the actual disposal. If Witco takes the water, it would be positive; successful marketing of the quats would significantly improve this.

The recommended process flow diagram (PFD) is included as an addendum.

I will keep you informed of the progress. Let me know if you need additional information.

Sincerely,

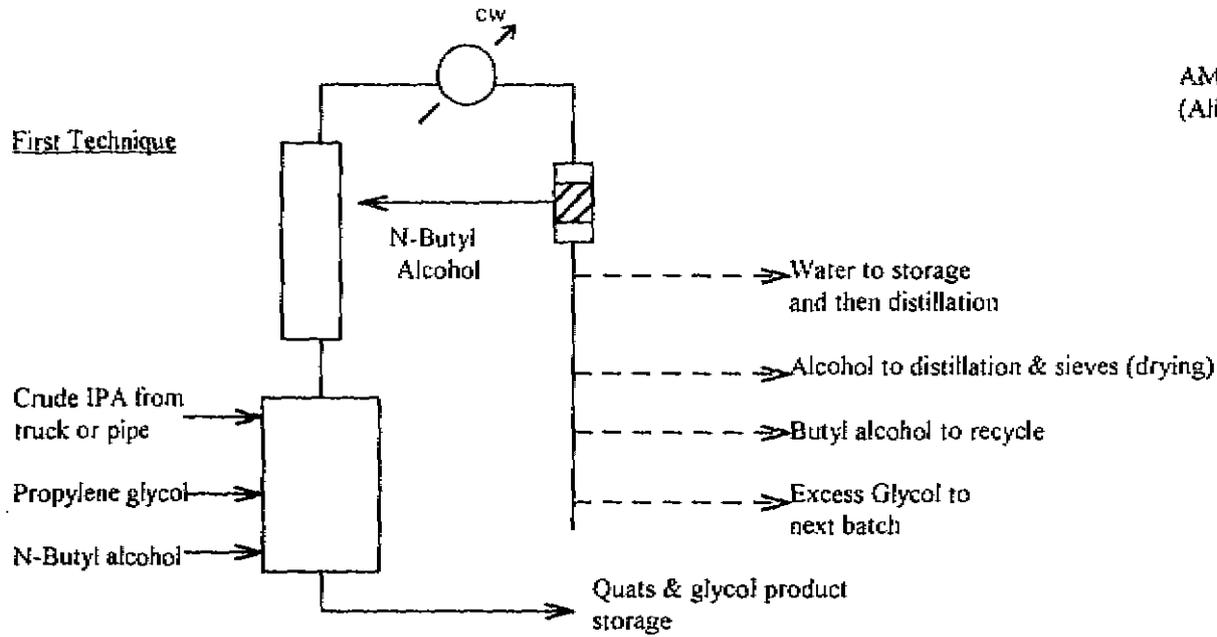
*Will Oliver*

Will Oliver

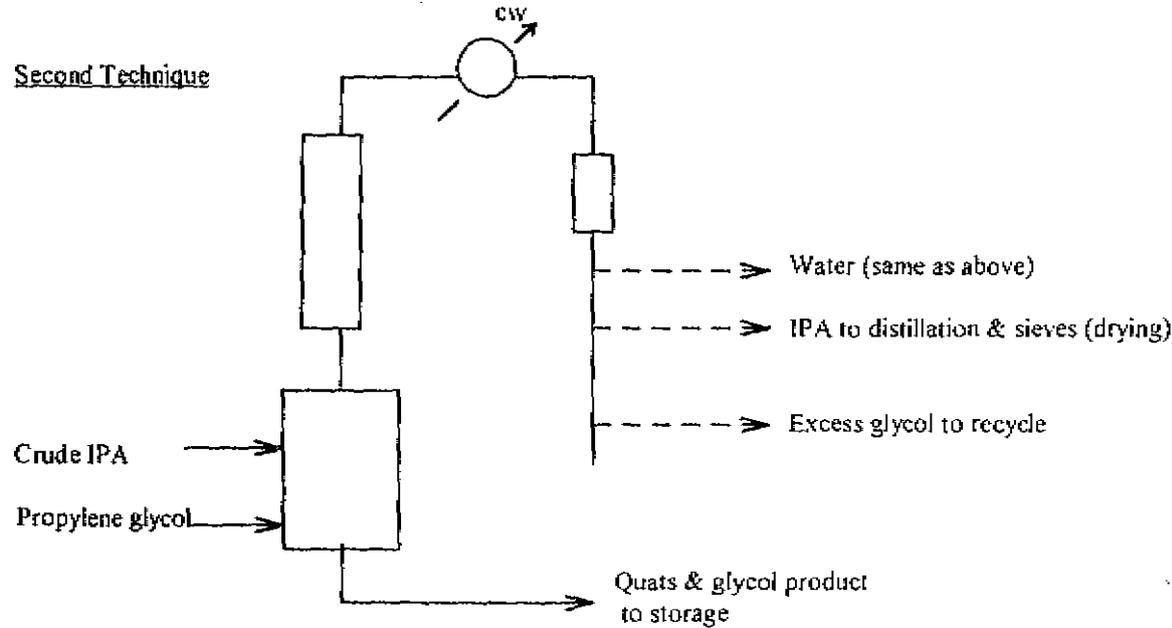
c.c.     Andy Simmons  
          Hugh Croom  
          Larry Rosetti

AMERICAN DISTILLATION, INC.  
(All equipment existing)

First Technique



Second Technique

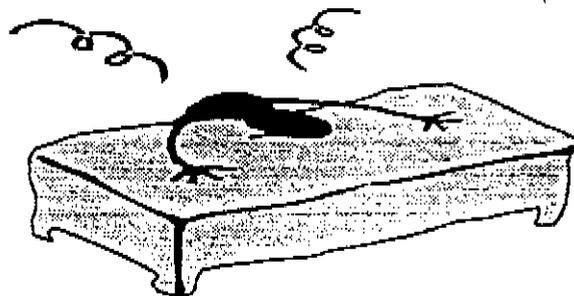


# AMERICAN DISTILLATION, INC.

P.O. BOX 400

1690 NE ROYSTER ROAD

LELAND, N.C. 28451



# FAX

Date: 3-24-99

Number of pages including cover sheet: 4

To:

Linda Culpepper

Phone:

Fax phone:

CC:

From:

~~VICTORIA SMITH~~

Will Oliver

Phone: 910-371-0993

Fax phone: 910-371-2971

REMARKS:

Urgent

For your review

Reply ASAP

Please comment

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