



DOW CHEMICAL U.S.A.

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LOUISIANA DIVISION ENVIRONMENTAL IMPROVEMENT PROJECTS

This letter addresses the regulatory reasons for doing the Louisiana Division Environmental Improvements Projects and the commitments Dow has made to regulatory agencies concerning each project.

LHC Regulatory Environmental Upgrade

In January, 1983, Dow told the Louisiana Department of Natural Resources (DNR) and the U.S. Environmental Protection Agency (EPA) of our losses of an average of 300 lb/day of benzene to the Mississippi River. These losses exceed 1000 lb/day once or twice per month. This disclosure came in a meeting with the DNR and EPA at our plant site in preparation for now ongoing water permit negotiations. Benzene is not currently addressed in our permit. The spent cell effluent stream which contains about 90% of the benzene losses was not reported in 1980 on a Form 2C to EPA and the DNR when the permit process began.

The State and EPA are both extremely concerned about benzene in the Mississippi River which is the drinking source for approximately 3M people in south Louisiana. We told the State and EPA that we were working on a project to solve this problem. They were interested in timing and stated that we would have to achieve the BAT standard for benzene.

The LHC II slop oil area has been, and is currently by far, the largest area of benzene exposure to plant personnel. Exposure levels are generally below 10 ppm TLV but do on occasion exceed 10 ppm. On most occasions, they are between 5 - 10 ppm. The OSHA standard for benzene exposure is going to be lowered from the current 10 ppm for certain and may well be lowered to 0.5 ppm. The slop oil area consists of open pits and 1950's technology. In general, it is a nasty looking area with high personnel exposure and relatively high atmospheric losses. This area was studied a few years ago to determine atmospheric losses and it was determined that slightly less than 100 tons/year of benzene is lost from this area.

Associated with the slop oil area is an unlined holding pond for settling solids out of the waste water prior to discharging the water. The solids which settle are oily in nature and also contain benzene and toluene. This pond is adjacent to an old disposal area and could provide a hydrolic head to help the movement of wastes off site.

This pond will have to be permitted under the State Solid Waste Management Program and groundwater monitoring will be required. This is undesirable. The permit application for this facility will have to be submitted in mid-1984. It's desirable to have a closure date we can agree to prior to that time.

The pond in LHC III is also an unlined pond for collection of rain water. In addition, this pond is used to hold emulsions when the plant has a process upset. This can result in pure organics being in the pond. This pond was built on top of an old hex tar disposal area. It may serve as a hydro-lic driving force for movement of waste. Work is now ongoing to evaluate the hex disposal area and the future plans will certainly include removing this pond. The permit situation for this pond is identical to the one at LHC II. We will need to commit to a closure date by mid-1984. It is essential to have a tank for rain water and spills and a system to properly handle emulsions.

Chlorinated Methanes Environmental

Current losses of methanol and methyl chloride to the Mississippi River are 700 lb/day and 400 lb/day respectively. The methyl chloride loss alone will exceed any hoped for permit limit for the entire Louisiana Division. This new permit effective date will be July 1, 1984. RCLs are on the top of EPA's and DNR's list to tightly control. We have committed to DNR and EPA to solve the methyl chloride problem. They have said a compliance schedule could possibly be arranged if the July, 1, 1984 date is impossible to meet, provided a good faith effort is being made. The methanol/methyl chloride stripper is the best way to achieve the desired result.

Although the 1300 lb/day dimethylether contained in the spent sulfuric stream is not a priority pollutant, the "BPT" water regulations require that the material be controlled. Again, we are looking at a July, 1984 permit date for this.

Atmospheric venting of organics, especially methyl chloride, is a fairly common practice in the Methanes Plant due to the lack of capacity on their existing THROX unit. During a plant shutdown, at least 12,000 pounds of methyl chloride are vented. This amount can greatly exceed 12,000 pounds if the shutdown is unplanned. Methyl chloride is a one pound reportable under Superfund. In addition, we are averaging about two times per month reporting venting of all vent streams in the plant to the atmosphere because of shutdowns on the existing boiler unit. The last time this occurred, the State DNR came out to inspect. They were informed that another unit was planned to prevent having to vent in the future.

Hazardous Waste Landfill

The existing hazardous waste landfill in the Louisiana Division consists of a series of cat-holes dug about 10' deep and 10' square and then filled with waste and covered. These holes generally have about 8' of groundwater

in the hole when the waste is added. This is a result of the high water table in south Louisiana. This practice is not acceptable by State, Federal or Dow standards.

Work is in progress currently to upgrade the existing landfill so it won't get shut down prior to getting a new landfill permitted. There is no way, however, to retrofit the current landfill to meet State and Federal standards because waste is already in direct contact with the groundwater. This landfill is currently operating under interim status under RCRA but, in my opinion, will not be able to obtain a final permit.

The new State and Federal standards call for good liners, leachate collection systems, leak detection systems and that the landfill be elevated above the water table. The existing landfill meets some of these requirements.

BIOX Reliability Improvements

In order for the Wastewater Treatment Plant to be a reliable plant and not jeopardize production capacity in the Louisiana Division, certain additional changes have to be made. In 1981 following a series of permit violations, the Louisiana Division's management had several meetings with the Louisiana DNR and made commitments to run this Division without violating our water permit.

Greater than 200 permit violations took place from the Waste Treatment Plant alone in the years 1976 - 1981. Since that time, no permit violations have occurred, but production plants have been shut down and rates reduced on several occasions.

Severe problems in May - July, 1983 have led us to the conclusion that three additional things are necessary to make this plant reliable. The first is cooling below 100°F during the summer months. This is the only BIOX plant in Dow that tries to run at these high temperatures (sometimes as high as 130°F). The plant is significantly more stable below 100°F because that is where more species of bacteria live and are healthy. Cooling below 100°F is essential to run this plant at capacity without production cuts. The second thing needed is better equalization in the feed impoundment to reduce the shock effect of toxins to the system. Several production cuts have been a result of toxins to the system which are passed directly to the reactor without any dilution. The third thing needed is to beef up the reliability of the plant's electrical system. Currently, in order to do preventive maintenance on the incoming switchgear, a plant shutdown is required. This can result in a two-week recovery period with lost production.

The Louisiana Division is committed to run without permit excursions. To accomplish this without production losses, the above upgrades of the Waste Treatment Plant are necessary.

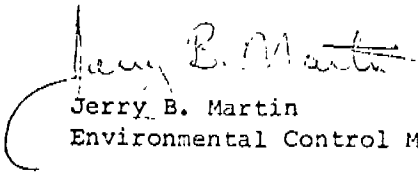
Environmental Upgrade Cellulose

This plant experiences chronic oil losses to the river, high TOD losses to the river, unpermitted runoff from ponds, and has two ponds which require permitting under the Louisiana Solid Waste Program.

The Division was cited on a recent DNR inspection concerning the oil losses. We committed to solving that problem. The high TOD losses will be addressed in our new water permit (July, 1984) which will require a 70 ppm TOD limit on all non-contact water. Using 1983 as an example, the plant would have had 48 permit non-compliances through July at the new limit. We are committed to solve this problem by the time the new permit is effective.

In addition, the plant has two unlined ponds which require permitting in November, 1983. Permitting requires groundwater monitoring. This is undesirable and we would like to enter into a closure agreement with the State in November, 1983 concerning these ponds.

This pretty much covers the regulatory reasons for doing these five projects. Basically, it results from the new "BAT" water rules, the New Orleans drinking water situation and the State of Louisiana aggressively pursuing a Solid Waste Management Program.


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