FILE No.....

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Will Swerdloff

S-E-SC
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H. H. Illingworth (3)
(cc: HHB, CVE, HCB, HIS, JES-2)

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Cameron Meadows Plant Pollution Control

We have made an investigation of the pollution aspects of the proposed cooling water supply and disposal methods for the planned Cameron Meadows Gasoline Plant. The method considered is that described in the report "Developmental Proposal, Cooling Water Supply - Cameron Meadows Plant" dated December 23, 1957 by A. P. Lobrecht, and the letter by John E. Shannon dated December 30, 1957.

It is planned to open up the Magnolia canal from the Stark's canal to the plant site. About 7,600 GPM of water will be pumped to cool an ammonia refrigerant condenser. The water enters the condenser at 90 F and discharges at 106.25 F. The water probably will receive shot treatments of chlorine before it enters the condenser at about thirty minute intervals. The warmed water will flow to the Gulf of Mexico through a canal, and, according to present plans, discharged over a concrete spillway-type outfall at the beach.

It is anticipated that the water supply to the plant will be fresh water most of the time. An examination of the U.S.G.S. topography maps of Cameron Parish indicates that about 200 square miles of marsh probably are included in the drainage area of the Magnolia canal and connected canals. The average annual rainfall of 55 inches corresponds to about 800 cubic feet of water per second being drained out of this 200 square mile area. The average monthly rainfall of 4.56 inches varies from 3 to 6 inches corresponding to a range of 530 to 1430 cubic feet per second drainage. Our water requirements at the Cameron Meadows Gasoline Plant amount to only 16 cubic feet per second so we should not disturb the water flow in the marsh very much. Harold Emery's calculations show that only 1½-inch head is required to flow 16 cubic feet per second from the intersection of the Magnolia and Stark canals to the Cameron Meadows plant 5⅝ miles to the south. It is doubtful if our operations will lower marsh water levels near the plant more than 3/4 inch.

Since the canals are connected mainly to the Calcasieu lake, and also to Sabine Lake, we may expect some inflow of salt water through the canals when southerly winds raise the water levels in these estuaries. Although our operations would tend to increase the salt content of the canal waters in the area, it seems probable that the increase will be imperceptible and ascribed to natural conditions.

Our chief concern with salt water pollution of the fresh water marshlands should be with our outfall arrangements into the Gulf. Both from the Louisiana Stream Control Commission and from other sources we have learned

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that cutting the sand bank along the shore often starts an opening through which the ocean eventually breaks. Fresh water marshes in many places along the coast have been changed to salt marshes in this way. In the opinion of several people experienced in this sort of thing the concrete outfall proposed in the District's report will allow wave action to wash around it, making an opening for salt water to come up into the plant and possibly into the marsh.

Mr. Ken Bigham, Director of the Louisiana Stream Control Commission, informs us that he will recommend approval of our disposal system as planned. He says he does not like it but if the land owners give us permission he has very little authority in the matter. If we should injure the land owners' property in the future and they should request his help he will act against us. He does not favor a canal or ditch through the sand bank that protects the fresh water marsh from sea water. He recommended a pipe to carry the water into the Gulf. Other reports indicate this pipe should not break the bank at the beach but possibly be supported on piers out past the low tide line.

Another alternative would be to allow the disposal water to pass into the Gulf through some four natural channels shown on the U.S.G.S. topography map. They start about one mile southwest of the plant and continue for some two miles along the coast toward Smith's Bayou. The use of already existing natural drainage channels might protect us in case of accusations of salt water damage due to our canal.

Although Hurricane Audrey brought such salt water into the marsh and temporarily ruined the muskrat trapping business it should recover in about three years. The people in this area are very sensitive to anything affecting the trapping business. The 40-mile long levee east of Sabine Lake protects this area. When Magnolia Pipe Line Company built the pipeline across to Beaumont the swamp buggies used made some new trails in the marsh. This disturbed the muskrat trails along which the trappers set their traps and reduced the catch. Magnolia paid about $5,000 damages to two people on account of this. The Right-of-Way and Claims Department has estimated that damages on the order of $100,000 could be involved if our alteration of the sand banks caused the marsh to be flooded with salt water.

The question of treating our cooling water with chlorine was not discussed with Mr. Ken Bigham. The chlorine residuals necessary to keep our condenser tubes clean will kill fish but possibly this will be accepted by the Stream Control Commission.

Ovid Baker

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for Will Swardloff

OB/da