PLAINTIFF'S EXHIBIT
EXX 153

Baton Rouge, Louisiana
Petroleum Products Laboratory
June 29, 1955

4-18 air Pollution - Maps

REVIEW OF AIR ANALYSES PERFORMED BY KEM-TECH LABORATORIES

Since April, 1953, Kem-Tech Laboratories have been making periodic surveys of atmospheric contamination in the refinery. Spot checks have been made twice each month at five points within the refinery. For comparison a sample has been taken in an outlying part of the city each time the refinery points were checked. Analyses made include a dust count and tests for concentrations of free chlorine, chlorides, ammonium compounds, sulfates, hydrogen sulfide and sulfur dioxide.

Data obtained between April, 1953, and December, 1954, are summarized in the attached tabulation and charts. The charts are constructed to show the relation between wind direction and concentration of contaminants. A circular graph has been used for each sample location. Points are plotted along radial lines indicating wind direction. The direction of the wind is toward the center of the plot. Concentrations of contaminant are indicated by distances from the center, which is zero. The continuous line on each plot marks the average concentration for each wind direction.

The following conclusions may be drawn from the data:

1. There is no health hazard. All concentrations of contaminants have been well within accepted standards (see tabulation).

2. Dust concentrations are not seriously high. The average dust count for the period covered is 9.1 million particles per cubic meter. Dust counts at a control point (3154 North Boulevard) averaged 5.5 MM particles per cu. meter. These compare with typical figures of 149 for congested municipal areas, 63.5 for urban residential areas and [illegible] for industrial locations (1). The highest value found in the refinery was 46; the next highest figure was 22.

3. Dusts from outside sources are heavier than dusts originating in the refinery. It will be noted that in most cases the "average" lines are skewed on the side away from the refinery. This indicates that more dust originates outside the refinery than inside.

4. Chloride and chlorine concentrations are usually negligible. The single high values for chlorides at each point were found on one day. They are attributed by Kem-Tech to salt spray driven inland by strong gulf winds, then driven back over this area by a cold front. There are occasional high values for chlorine, most of which point in the general direction of Ethyl.

(1) From Industrial Dusts, Decker and Hatch.

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5. Sulfur Dioxide concentrations are generally low. However, there is some indication of occasional high values from the direction of Gulf States and Consolidated.

6. Hydrogen sulfide concentrations are negligible and show no correlation with wind direction.

WOA:SCR

cc: DOS DMC RDP JSW RN RWW

Contaminant	Found in Refy. Atmosphere April, 1953 - Dec., 1954 Max.	Ave.	Control Point 3161 N. Blvd. Ave.	MAC(1)	Con
Dust Count (Million Particles/m.^{3})	46(2)	9.1	5.5		140 63. 70
Dust Fall, Tons/sq. mi./mo.(3)	55(4)	23	-		92. 35.
Ammonia (As NH_4+), mg./m.^{3}	.25	0.022(5)	0.0	100 ppm as NH_3	
Chlorides, mg./m.^{3}	2.5	0.075	0.0	-	0.0
Chlorine, ppm.	1.2	0.054	0.0	1	0.0 0.0 0.0
H_2S, ppm.(6)	0.20	0.056	<0.050	20	-
SO_2, ppm.(6)	8.8	0.019	0.0	10	0.0 0.5

(1) Maximum Allowable Concentration (8 hour day, 5 day week).
(2) One value. Next highest, 22.
(3) Figures for period Nov. 9 to Nov. 29, 1954. Previous data questionable.
(4) High value in Northwest Corner, adjacent to Solvay.
(5) Equivalent to 0.0003 ppm. as NH_3.
(6) 1954 only. Analytical methods changed at about Jan. 1, 1954.

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