



Technical Service Report

Report No. 246-81-350-2

To E. L. Sones

From R. O. Gardner

Date April 10, 1981

Subject GCMS ANALYSIS OF LAKE CHARLES REFINERY EFFLUENT WATERS

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Object

To identify and determine toxic pollutants and/or hazardous substances as specified in Tables I-V of the Federal Register, Vol. 45, No. 98, May 19, 1980 pp. 33454 and 33455.

Conclusions

Compounds, specified in the above tables, that were identified include:

	<u>Sample #001</u>	<u>Sample #003</u>
ethylbenzene	1 ppb	ND*
diethyl phthalate	7 ppb	ND
fluoranthene	4 ppb	ND
chrysene	3 ppb	ND
di(2-ethylhexyl) phthalate	6 ppb	2 ppb
benzofluoranthrene	4 ppb	ND

*Not Detected

Table I contains all of the compounds identified in the methylene chloride extracts of the effluent water, sample nos. 001 (a continuous flow treated primary outfall) and 003 (an outfall from intermittent flow storm water holding pond).

Discussion

The quantitative data in this report have been back-calculated and reported on an original-sample basis. Several assumptions have been made. We have assumed 100% extraction efficiencies, no losses in the extraction or Kuderna-Danish concentration steps and equal mass spectrometry response factors.

Distribution CBH MLA

MCD 000002677

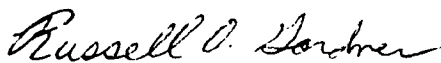
Experimental

Base/neutral and acid extracts provided by the Gas Chromatography Group. One-half mL of the extracted base/neutral and acid concentrates were combined and spiked with 2,2'-difluorobiphenyl (50 ppb level) which served as an internal standard.

The combined extract was analyzed with the Finnigan 4023 GCMS-DS. One μ L of the extracts were GLOB injected onto a 30M SP2100 glass column at 60°C followed by temperature programming to 260°C at 8° per minute. Spectra were collected at 1 second intervals.

References

Files of GCMS Data: G1928A, G1928A, G1929A



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Table I

Lake Charles Refinery Effluent Water

Scan #	Compound	Concentration (ppb)	
		Sample #001	Sample #003
104	ethylbenzene	1	ND
288	pentylcyclohexane	3	6
374	C ₅ -benzene	ND	28
443	branched C ₁₃ H ₂₈	4	5
468	tridecane	9	5
473	C ₆ -benzene	ND	47
482	C ₆ -benzene	ND	13
490	2,2'-difluorobiphenyl (INT. STD)	50	50
547	branched C ₁₄ H ₃₀	12	5
568	tetradecane	55	22
579	C ₆ -benzene	ND	13
630	branched C ₁₅ H ₃₂	24	8
665	pentadecane	40	9
708	nonylcyclohexane	40	ND
717	diethyl phthalate	7	ND
728	branched C ₁₆ H ₃₄	10	ND
757	hexadecane	45	6
804	branched C ₁₇ H ₃₆	33	6
816	dimethylbiphenyl	11	ND
833	dimethylbiphenyl	2	ND
847	heptadecane	48	9
855	2,6,10,14 tetramethylpentadecane	59	11
893	undecylcyclohexane	7	1
935	octadecane	41	7
946	2,6,10,14-tetramethylhexadecane	27	6
1023	nonadecane	34	4
1113	eicosane	29	3
1169	fluoranthene	4	ND
1207	heneicosane	18	1
1217	trimethylphenanthrene	2	ND
1287	methylpyrene	9	ND
1304	docosane	11	1
1385	terphenyl	1	ND
1405	tricosane	3	ND
1504	chrysene	3	ND
1512	tetracosane	6	ND
1625	di(2-ethylhexyl) phthalate	6	2
1634	methylbenzanthracene	4	ND
1940	benzofluoranthrene	4	ND
2008	squalene	15	1

MCD 000002678