

file LC VCM



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Technical Memorandum

Research Project No. 610-81-804-8

Conoco Inc.
Research and Development Department
Research Services Division
Ponca City, Oklahoma

To Mike Hayes, LCQP

From Ed Sones, RSD

Date May 14, 1981

Subject ANALYSES OF WASTEWATERS FROM THE VCM PLANT 101 OUTFALL

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Summary

The only organic priority pollutants found in the samples in concentrations above 10 ppb were the xylenes which totaled 40 ppb. Other organic priority pollutants indicated to be present in lower concentrations are given in the attached reports^{1,2,3}.

The data for metals and chemical analyses are given in Tables I and II.

Discussion

The samples were delivered to Ponca City on 24 March 1981 by a chartered airplane. Those waters were sampled by LC personnel and shipped in containers provided by this laboratory.

The samples were received still adequately packed in ice and below 4°C. On receipt, the samples were stored in a cold room at 4°C until analyzed. Extraction of the composited sample for concentration of the nonvolatile organic components was performed within five days, and those extracts were preserved under refrigeration until the analyses were performed. Analyses of the extract for organics by GC-MS per Method 625 are reported in these data. Analyses for pesticides per Method 608 are in progress and will be reported separately when available. Analyses of the VOA samples were accomplished the same week as received.

The detection limits for some of the metals in Table I are higher than usual due to the necessity to dilute the samples because of the very high calcium level.

Determinations of the radioactivity parameters will be reported to you as soon as available.

References

1. TSR No. 264-81-839-9 by R. O. Gardner
2. TSR No. 430-81-839-9 by C. B. Herrin
3. TSR No. 435-81-839-9 by C. B. Herrin
4. Research Notebook 4236, page 93.


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TABLE I
DISSOLVED METALS IN VCM 101 OUTFALL

	Concentration in Mg/Liter	
	by ICAP	by AA
Antimony	<25	
Arsenic		0.005
Beryllium	< 0.5	
Cadmium	< 1.5	
Chromium	< 3.0	
Copper	1.9	
Lead	<25	
Mercury		< 0.013
Nickel	< 7.5	
Selenium		< 0.002
Silver	< 3	
Thallium	<50	
Zinc	3.4	
Aluminum	<15	
Barium	8.5	
Boron	< 5	
Cobalt		1.6
Iron	8.8	
Magnesium	26	
Molybdenum	< 5	
Manganese	7.2	
Tin	< 0.0	
Titanium	< 2.5	
Calcium	23000	
Strontium	74	
Vanadium	< 2.5	
Sodium	180	

TABLE II
DETERMINATIONS BY CHEMICAL ANALYSES ON VCM 101 OUTFALL

Parameter	Value
Total phenols	4 ppb
Total cyanides	3 ppb
Chloride	3.5%
Fluoride	8 ppm
Bromide	< 1 ppm
Sulfate	45 ppm
Nitrate	40 ppm
Phosphate	< 1 ppm
Sulfide	< 1 ppm
Sulfite	< 1 ppm
Nitrite	10 ppb
Total nitrogen	43 ppm
Oil and grease	< 1 ppm
Surfactants	0.15 ppm

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