



Interoffice Communication

To J.D. Burns
From J.D. Minott
Date November 4, 1971
Subject Environmental Health Report
Continental VCM Plant

A) Status of Active Budget Items

1) Primary Treatment System Revisions

The new roof for the T-252 pit is formed and will be poured shortly. Bricking of the pit should be completed around the end of November 1971. Startup of the steam stripper should be possible by early December 1971. The stripper bottoms line heat exchanger is in the process of being piped up and should be completed this month. The diversion line to the clam shell pit (T-500) from the bottoms cooler will also be completed this month. This will allow the steam stripper effluent to be "clam shell" neutralized which will reduce plant caustic consumption after the stripper is in operation.

Eighty-four hundred gallons of slop EDC were hauled from the plant this month.

2) Secondary Waste Treatment System

Very good weather has allowed good progress this month. One aeration basin has been 80% concreted and the other is about to be paved. The instrument building has been erected, except for the roof. Electrical work is about 60% complete. The in-plant neutralization system is complete except for installation of the pH controller/recorders in the main plant control room. Completion of this project still appears possible by late December 1971.

3) Copper Removal System

All construction work is complete. Some process engineering work on improving the sludge filterability is still in progress. This system is now completely operational whenever needed.

B) Current Developments

1) Analytical Work

Special tests for BOD have been made on EDC in water samples. Results show that EDC does not exert any BOD, but it does degrade to some other compound. Over 90% of the EDC in a BOD (5-day) test disappears during the test. Special tests are being made by Ponca City to determine levels of ethylene glycol and ethylene chlorohydrin

in the effluent water. Other Stauffer VCM plants have indicated that fairly large amounts of these two compounds (about 2000 to 3000 ppm) exert most of the COD and BOD in VCM plant effluents.

Several special plant tests were made to pinpoint the source of cadmium, nickel, and cobalt seen in the plant effluent. These elements apparently come from the caustic/acid wash system effluent and are not a result of water side corrosion of heat exchangers. Further work should identify the exact source later this month.

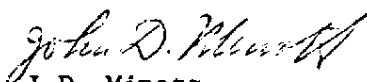
Special assistance was requested of Ponca City R&D to determine the source of the odors coming from the C-500 vent stack. Dr. C. Starks and Mr. G. Setzkorn from Ponca City visited the plant and made several special tests. Their preliminary results indicate that the C-500 vent stack odor is caused by chlorine and that very little HCl or HOCl is present in this vent. The tests show a strong probability that the Draeger tube Cl₂ analysis method is not accurate and that previous Cl₂ analyses are not correct. Additional analyses will be made by the plant to confirm these results. The main source of Cl₂ is apparently the R-304 reactor in the oxy system.

2) Environmental Protection Agency

A phone call from the E.P.A. Dallas office has requested that we be present at an E.P.A. meeting in Lake Charles on November 9 1971. A copy of the letter sent to the Petrochemical Plant by the E.P.A. is attached to this report. The VCM Plant was accidentally left off the list, but this was corrected by the phone request. All other local industries have also been asked to attend, including the other CONOCO plants. This meeting was called to discuss the results of the May 1971 stream sampling by the E.P.A. of the Calcasieu River and nearby streams. The E.P.A. has also asked to take another set of plant effluent samples from the VCM and Ethylene Plants on November 1, 1971, to which we agreed.

3) Publicity Release

A publicity release for the Refinery, Petrochem, and VCM Plants was given to the Lake Charles Rod and Gun Club as CONOCO's entry in their pollution abatement contest. A copy of the report is attached. The contest was open to all Lake Charles area businesses and will be based on the pollution abatement achieved during the past 18 months.


J.D. Minott
Senior Process Engineer

bs

cc: LNV-DOP-RDG-RHG-PLF-GDJ

Attachments

CCR 000060349

C-500 VENT STACK ANALYSES
October 1971

IN PPM BY VOLUME							IN VOLUME %					
Date	EDC	VCM	Et Cl	Draeger Total			CO ₂	CO	O ₂	CH ₄	C ₂ H ₆	C ₂ H ₄
				Other Organics	Cl ₂	Tube Acid as HCl Oxidants						
10/13	3900	540	3200	-	20	3704	1.80	0.68	2.30	0.36	Tr	2.80
10/20	3963	2400	1200	-	12	926	1.53	0.02	1.98	0.02	Tr	0.21
10/27	2179	3770	1200	-	12	928	1.20	0.13	2.70	0.08	Tr	0.82

CCR 000060350

VCM EFFLUENT TREATMENT ANALYSIS
MONTH OF October 19 71

Parameter	10/3/71	10/12/71	10/18/71	10/24/71		
Temperature - °F	98°	-	90°	94°		
pH	12.4	3.72	8.2	3.7		
Acidity M.O.	Nil	Nil	Nil	170		
Acidity Phenolphthalein	Nil	825	Nil	1000		
Alkalinity	3550	Nil	1940	Nil		
Color	40	50	430	60		
Turbidity	>500	100	2000	150		
Flow - gpm	460	193	214	193		
Total Solids	25,278	16,304	26,102	22,166		
Total Dissolved Solids	22,632	15,888	23,624	20,540		
Total Suspended Solids	2,646	416	2,478	1,626		
Total Volatile Solids	2,522	1,668	3,588	3,504		
Chlorides as Cl	4,000	8,200	8,480	9,800		
Sulfates as SO ₄	250	240	280	150		
Ammonia as N	12	85	500	60		
Total PO ₄ as PO ₄	7.0	5.6	9.0	4.8		
Ortho PO ₄ as PO ₄	1.58	1.6	1.8	2.4		
Iron as Fe	9.3	23.0	6.1	20.0		
Copper as Cu	0.28	0.35	0.22	0.30		
Chromium as Cr	0.17	7.70	6.00	9.00		
Zinc as Zn	0.17	2.80	0.50	1.40		
COD	3360	3840	3840	3840		
BOD (5 day)	1436	1600	2250	2600		
Formates	892	690	837	681		
EDC	1524	2024	2050	3063		
VCM	15	21	Nil	Nil		
Ethyl Chloride	6	16	18	25		
Misc. other Organics	265	-	283	297		
Mg	0.02	3.30	20.0	18.0		
Mn	0.92	1.10	0.62	1.40		
Co	3.54	1.30	1.70	1.60		
Ca	5.70	460	200	1250		
Ni	0.66	0.40	0.78	0.79		
Cd	2.00	0.33	0.10	0.13		
Na	-	6000	6500	-		

NOTE:

- 1) High pH readings on 10/3 and 10/18 caused by sewerage excess slop caustic from plant storage tank.
- 2) Starting this month all turbidity samples are reported on a nonfiltered basis as specified in the "Standard Methods" book. Previous results have been on a filtered basis.

CCR 00060351

ENVIRONMENTAL HEALTH PROJECTS - VCM PLANT

January to December 1971

January
1st Quarter

April
2nd Quarter

July
3rd Quarter

October
4th Quarter

