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INTEROFFICE COMMUNICATION

Westlake, Louisiana
March 31, 1971

TO: Mr. J.D. Burns - Saddle Brook

SUBJECT: Environmental Health Report
Continental VCM Plant - April 1971

A. Status of Active Budget Items

1. Plant Effluent System Revisions

The T-2 pit skimmer and pump system are still incomplete. No EDC was removed this month from the T-2 pit. The steam stripper system has been rebuilt except for the instruments destroyed in the December 1970 fire. It will be late April before these instruments are received and installed.

2. Low Pressure Condensate System

The system is operational as of March 31, but several small piping changes still remain. This system should reduce the effluent water temperature by over 15°F and result in a 80 to 90°F plant effluent. The effluent rate should also be reduced from about 350 gpm presently to 300 gpm. The EDC concentration of the effluent should also be reduced by about one-third, due to lower T-2 (EDC separating pit) temperatures and water flow rates. Water analysis results in April should show these changes.

3. Secondary Waste Treatment System

The revised concrete and earth work Basis of Bids has been issued for quotes and the contractor should be selected in April. The instrument and neutralization system Basis of Bids has also been received and will be issued for quotation shortly. Only the sludge pumps remain to be purchased. Estimates by both CED and plant mechanical engineering groups estimate project completion during October 1971.

4. Slop Caustic Collection System

A project is under construction presently which will allow collection of all "slop" NaOH solution presently drained from the two plant flake NaOH dryer vessels. The collected slop caustic will then be utilized by the neutralization system to be installed with the secondary treatment system. This project will eliminate the occasional high plant effluent pH swings caused by dumping the slop caustic rapidly into the plant outfall. The collection system is expected to be complete by late June 1971 and the secondary treatment neutralization system (the prime slop caustic user) should be complete in September 1971.

CCR 000060393

B. Current Developments

1. Analytical Work

Vent stack analyses after March 10 show greatly reduced ethylene concentration (from 1.68% to 0.93%) due to operating changes recently made in the oxy cleanup reactor (R-304). Future analyses should average less than 0.5% ethylene which will reduce our total hydrocarbon gas emission problem by over 70%. CO analyses are averaging about 0.5% which is about one-half of amount estimated before CO analyses were initiated. This will reduce our CO gas emission problems, but not eliminate them. There has been several low COD readings on this month's water analyses which cannot be explained. However, it has been confirmed this month that the standard COD test will show less than 5% of the EDC in the sample. Variation of any measured organics (EDC, VCM, ETCI, or formate) cannot explain the variations in COD results.

Special tests were made this month on extended "BOD bottle test" runs to determine EDC reduction during the BOD test. About a 57% reduction was observed in 2 separate tests which agrees well with previous tests (made in January 1970). Some additional tests will be made to determine if sludge concentration or pH changes can improve this percent EDC reduction. The above tests also showed a COD reduction of over 78% after 10 days and 98% after 15 days. Ultimate BOD tests showed that the BOD (5 day) was 84% of ultimate in one test and 99% of ultimate in a second test. Variation of the biological seed probably caused the large difference and has been a major problem in getting repeatable BOD results.

2. EPA (Environmental Protection Agency) Visit

On March 30, 1971, Mr. James L. Hatheway from EPA's Dallas branch of the Denver EPA Center visited the VCM Plant. He requested considerable data on water effluent conditions, sources of raw water, and expenditures of manpower and capital for water pollution. The form used was the FWQA-120 (Revision 4/70) which has been used by the EPA to gather data for the forthcoming 1899 Refuse Act permit approval. Mr. Hatheway stated that the reason for the visit was to gather data on all plants for future use when the 1899 Refuse Act permits were finally requested. The EPA and state environmental agencies will apparently both have approval powers over these permits. Apparently all plants in the Lake Charles area were being surveyed at this time. No requests or unusual comments on the plant were given by Mr. Hatheway. A xerox copy of his form 120 is attached.

3. Pollution Slide Presentation

A writeup of a slide presentation of the VCM Plant's pollution efforts was completed and is attached to this report. This talk can be used either at the plant or at local clubs or schools as desired. The slides will be retained at the VCM Plant for quick use if required.


John D. Minott
Senior Process Engineer

JDM-BS

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

CCR 000060394

C-500 STACK GAS ANALYSES - MARCH 1971

Date	ppm EDC	ppm VCM	ppm ETCl	ppm Cl ₂	ppm HCl	ppm Misc. Organics	Mole % Ethylene	Mole % CO ₂	Mole % O ₂	Mole % Methane	Mole % CO	Remarks
3/3	1522	2529	4389	14	4657	84	2.95	1.66	1.71	0.20	0.56	
3/10	1528	391	32	17	794	26	1.68	1.41	1.52	0.16	0.46	Total flow 618,000 scfh
3/17	14530	694	5381	35	1200	5585	0.27	1.22	1.92	0.13	0.48	Total flow 728,000 scfh
3/24	2230	940	6480	12	3958	170	0.93	1.50	1.90	0.25	0.57	Special test NH ₃ = 3.3 ppm
3/31	1511	685	5561	27	4780	205	0.64	1.17	3.17	0.08	0.09	

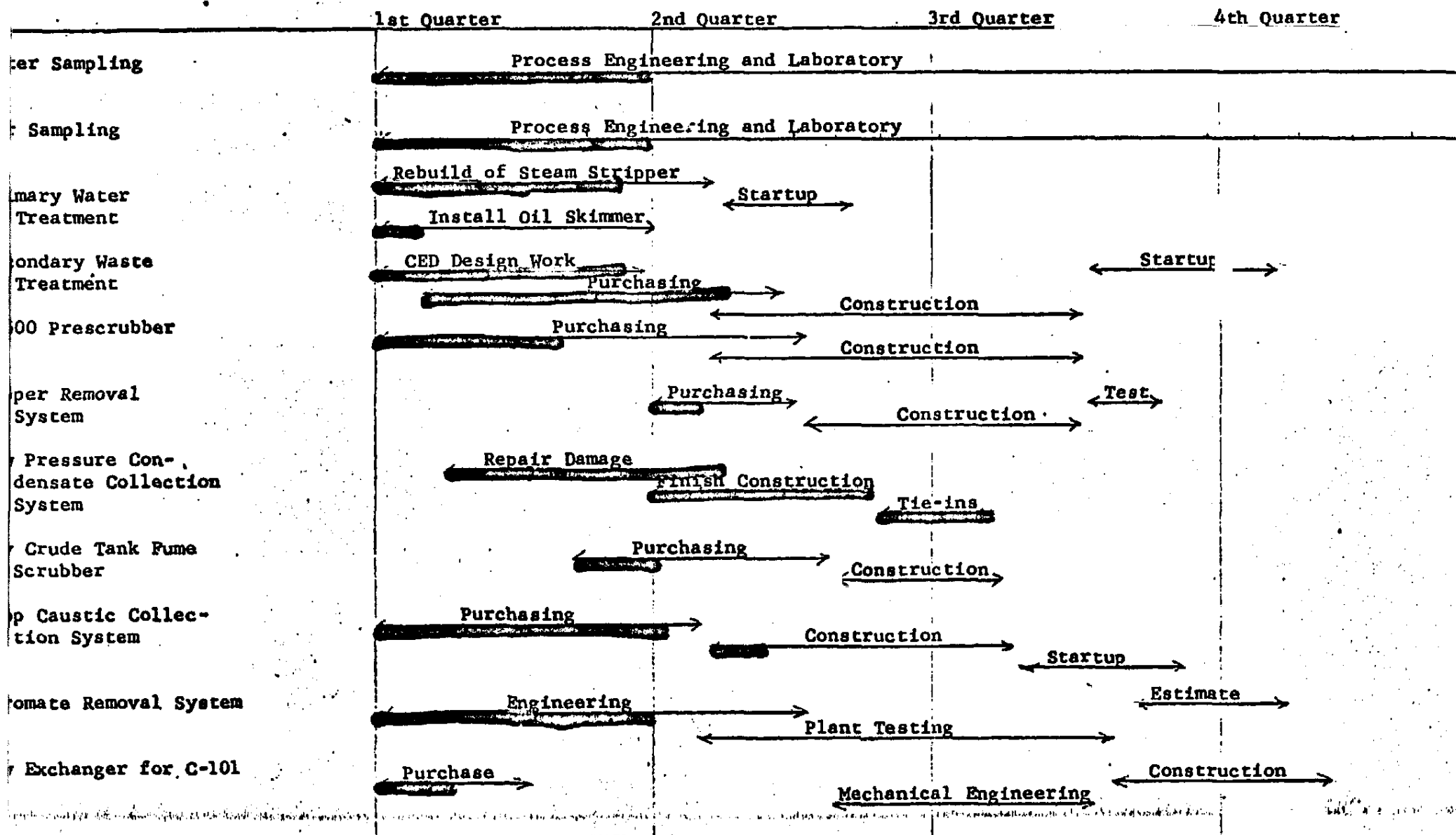
PLANT WATER EFFLUENTS - MARCH 1971 24-Hour Composites

Date	pH	ppm EDC	ppm VCM	ppm ETCl	ppm For- mates	ppm other organics	ppm Total Solids	ppm Susp. Solids	ppm CRO ₄	ppm PO ₄	ppm Cl	ppm Fe	ppm Cu	ppm BOD	ppm COD	Color Apha	Turb- ity J.T.U.	Temp °F	Flow Rate gpm
3/1	1.8	1394	2	56	-	223	10,960	646	6	1.0	6800	3.2	1.7	1147	2000	> 50	12	99	
3/7	2.0	1185	2	38	701	197	8,160	10	6	3.0	2200	1.0	2.5	976	880	25	100	99.7	460
3/15	4.1	1303	32	8	646	131	8,448	60	4.6	1.0	3700	5.0	1.6	-	560	> 30	50	99.7	400
3/21	2.5	1426	nil	nil	684	-	16,400	410	3.0	2.0	8400	8.0	2.1	1008	1680	> 30	40	101.	290
3/28	3.3	962	7.9	6.2	-	189	12,260	682	> 1	> 1	5250	5.0	1.3	-	1160	> 50	40	100.6	340

CCR 000060395

ENVIRONMENTAL HEALTH PROJECTS - VCM PLANT

January to December 1971



96E090000 800



303-233-3611
EXT. 2122

James L. Hatheway

ENVIRONMENTAL PROTECTION AGENCY
WATER QUALITY OFFICE
DIVISION OF FIELD INVESTIGATIONS - DENVER CENTER

Room 414 Bldg. 22
DENVER FEDERAL CENTER
DENVER, COLO. 80225

POST
(Items)

Sanitary
Service
(3)

Noncontact
Cooling
(4)

NAME/TYPE OF DISCHARGE POINT

TYPE OF DISCHARGE

Industrial
(Includes
boiler feed)

Sanitary
Sewage

Noncontact
Cooling

A. PUBLIC SEWER (Give name)

(a) ☐ Publicly owned (b) ☐ Privately owned (c) ☐ Check if service charge

B. SURFACE WATER (Give name)

Bayou Verdone

C. GROUND (Give type)

2. GROUND WATER (Self-supplied, give type)

Wells

3. IF ITEM 8B(5) ABOVE
IS CHECKED, GIVE:

A. SOURCE WATER
TEMP.
70-75 °F

B. WASTE WATER
TEMP.
90-105 °F

C. EFFLUENT VOL.
(gal./day)
350 gpm

D. RECIRCULATION
INVOLVED? (See Instr.)
(1) ☒ YES (2) ☐ NO

If all discharge is to a public sewer, see instructions for "NOTE" following Item 9 before completing the rest of this form.

SECTION III - WASTE TREATMENT FACILITIES COSTS & MANPOWER REQUIREMENTS

10. GIVE APPROXIMATE EXPENDITURES FOR EXISTING WASTE WATER TREATMENT FACILITIES AND/OR IN-PLANT CONTROL SINCE 1948.
(Under type, enter code numbers from Appendix A of instructions which correspond to the most advanced degrees of treatment)

ITEM	(1) TYPE	(2) YEAR PLACED IN OPERATION	(3) ORIGINAL COST IN THOUSANDS
A. ORIGINAL FACILITY	Steam stripper - Neutralization	1968	~ 500,000
B. ADDITIONS/ IMPROVEMENTS (See Instructions)	(1) Two new pits for light & heavy oil separation	1970	100,000
	(2) Continuous Cooling H ₂ O recovery	1970	30,000
	(3) de-aerating separator for organics	1968	70,000
C. UNDER CONSTRUCTION	Secondary treatment - extended aeration activated sludge	1971	750,000

11. LIST NUMBER OF EMPLOYEES IN EACH CATEGORY BELOW WHO SPEND MORE THAN 40% OF THEIR TIME IN WATER POLLUTION CONTROL
WORK. See Appendix B, Instructions for definitions of categories.

PROFESSIONAL/TECHNICAL	NO.	OPERATIONS/MAINTENANCE	NO.	OTHER	NO.
A. SUPERINTENDENT		F. SENIOR OPERATOR/FOREMAN		K. UNSKILLED	1
B. ENGINEER/SAN. ENGR.	1	G. EQUIPMENT OPERATOR	1	L. CLERICAL	
C. CHEMIST		H. INSTRUMENT REPAIRMAN		M.	
D. BIOLOGIST		I. MAINTENANCE MAN		N.	
E. LAB TECHNICAL	1	J. ATTENDANT		O.	

12. EXPENDITURES (thousands of dollars) AND MANPOWER LEVELS FOR WASTE TREATMENT OR CONTROL FOR PAST YEAR AND ESTIMATES FOR
NEXT FIVE CALENDAR YEARS.

ITEM	PAST YEAR (1) 70	YEAR (2) 71	YEAR (3) 72	YEAR (4) 73	YEAR (5) 74	YEAR (6) 75	FIVE YEAR PROJECTED TOTAL (7)
A. FACILITIES AND/OR IN-PLANT CONTROL	750,000	750,000	50,000 - 200,000	100,000	Tertiary (actual costs) 100,000 - 150,000		
B. OPERATION/ MAINTENANCE	unk.	122,000					
C. NUMBER OF PERSONNEL (See Instructions)	4	5-6			?		
D. TOTAL MAN-YEARS	4+	6+					

13. REMARKS

use less than 1000 gpm water
wastewater discharged to same effluent as Petrochemical plants
Secondary treatment under construction s/b complete in Oct.-Nov.
Chromate treatment will cost \$100,000 in 1973 if required by state.
1972 Sludge handling facilities could run from 50,000 - 200,000

1970 - \$50,000 for Lab Costs - will go down in 1971

CCR 000060397

U. S. DEPARTMENT OF THE INTERIOR
FEDERAL WATER QUALITY ADMINISTRATION
WASHINGTON, D. C. 20242

REPORT OF INDUSTRIAL WASTE WATER DISPOSAL for Year ending _____

FOR FWOA USE ONLY

SECTION I - IDENTIFICATION

1. NAME, LOCATION, AND MAILING ADDRESS (Include code)

Continental Oil Co. - VCM Plant
Box 605
Westlake, La. 70669

2. NAME AND MAILING ADDRESS OF COMPANY HEADQUARTERS OR PARENT CORPORATION

Petrochemical Headquarters - Continental Oil Co.
Park - 80 Plaza East
Saddle Brook, N.J. 07662

3. NAME, TITLE, AND SIGNATURE OF OFFICIAL FORWARDING THIS REPORT

Jim Hatheway

TELEPHONE NO.

303-233-3611
ext 2122

4. DATE OF REPORT

3/29/71

5A. PRINCIPAL PRODUCTS OR PROCESSES OF THIS PLANT

Vinyl Chloride monomer

5B. S.I.C. CODE(S)

PRIMARY

OTHER

(1)

(2)

(3)

6. PLANT OPERATION

A. ☒ YEAR-ROUND

If seasonal operation give month:

B. ☐ SEASONAL

FROM

(1)

TO

(2)

C. HOURS PER WEEK

168

D. NO. WEEKS WORKED

1 SHIFT

2 SHIFTS

3 SHIFTS

(1)

(2)

(3)

E. NUMBER OF PRODUCTION EMPLOYEES

(1)

10-19

(2)

20-49

(3)

50-99

(4)

100-499

(5)

500-1000

(6)

OVER 1000

SECTION II - WATER SOURCES AND WASTE DISCHARGE POINTS

7. WATER INTAKE

NAME/TYPE OF SOURCE

A. PUBLIC WATER SYSTEM (Give name)

(a) ☐ Publicly owned

(b) ☐ Privately owned

B. SURFACE WATER (Self-supplied, give name)

C. GROUND WATER (Self-supplied, give type)

Wells

PURPOSE (Check items)

Process

Boiler

Feed

Sanitary

Service

Noncontact

Cooling

(1)

(2)

(3)

(4)

8. WASTE DISCHARGE

NAME/TYPE OF DISCHARGE POINT

A. PUBLIC SEWER (Give name)

(a) ☐ Publicly owned

(b) ☐ Privately owned

(c) ☐ Check if service charge

B. SURFACE WATER (Give name)

C. GROUND (Give type)

TYPE OF DISCHARGE

Industrial (Includes boiler feed)

Sanitary Sewage

Noncontact Cooling

Treated

Not Treated

Treated

Not Treated

Noncontact Cooling

(1)

(2)

(3)

(4)

(5)

9. IF ITEM 8B(5) ABOVE IS CHECKED, GIVE:

A. SOURCE WATER TEMP. 70-75 °F

B. WASTE WATER TEMP. 90-105 °F

C. EFFLUENT VOL. (gal./day) 350 gpm

D. RECIRCULATION INVOLVED? (See instr.) (1) ☒ YES (2) ☐ NO

If all discharge is to a public sewer, see instructions for "NOTE" following Item 9 before completing the rest of this form.

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	(2) Continuous Cooling H ₂ O recovery	1970	30,000
	(3) denitrification separator for organics	1968	70,000
C. UNDER CONSTRUCTION	Sewage treatment - extended aeration Activated Sludge	1971	750,000

11. LIST NUMBER OF EMPLOYEES IN EACH CATEGORY BELOW WHO SPEND MORE THAN 40% OF THEIR TIME IN WATER POLLUTION CONTROL WORK. See Appendix B, Instructions for definitions of categories.

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B. ENGINEER/SAN. ENGR.	1	G. EQUIPMENT OPERATOR	1	L. CLERICAL	
C. ASSISTANT		H. INSTRUMENT REPAIRMAN		M.	
D. GEOLOGIST		I. MAINTENANCE MAN		N.	
E. LAB TECHNICAL	1	J. ATTENDANT		O.	

12. EXPENDITURES (thousands of dollars) AND MANPOWER LEVELS FOR WASTE TREATMENT OR CONTROL FOR PAST YEAR AND ESTIMATES FOR NEXT FIVE CALENDAR YEARS.

ITEM	PAST YEAR (1)	YEAR (2)	YEAR (3)	YEAR (4)	YEAR (5)	YEAR (6)	FIVE YEAR PROJECTED TOTAL (7)
A. FACILITIES AND/OR IN-PLANT	700,000	700,000	50,000 -			750,000	

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