

Interoffice Communication

To J.D. Burns
From J.D. Minott
Date February 3, 1972
Subject Environmental Health Report
Continental VCM Plant

A). Status of Active Budget Items

1). Primary Treatment System Revisions

The steam stripper system was started up on January 8, 1972 and has been operating essentially full time since then. EDC levels from its effluent are averaging about 50 ppm. Plant effluent EDC levels have averaged around 500 ppm so long as the stripper is working well. The stripper bottoms cooler was put in service on January 8 also, and has decreased the plant effluent temperature by a few degrees compared to pre-stripper operating data.

14,700 gallons of slop EDC were hauled from the T-2 pit last month. This has essentially emptied the pit and weekly checks are now being made to determine slop EDC production with the steam stripper in service.

2). Secondary Waste Treatment System

The pH control system has been operating well all month with a control of 7 ± 0.5 pH units except for a few short plant upsets. Some 50% caustic solution (about two days operation) was required in addition to the regular slop caustic material. Caustic consumption continues to be lower than originally predicted, but slop caustic generation has also decreased, requiring some use of purchased 50% caustic.

Rainy weather has again delayed completion of the secondary system. All basins are now completed, all underground piping is done, all power and light poles set, plus all underground conduit is installed. Power is connected to the switchgear panel. The main remaining jobs are: fencing, final grading and shelling of roads, some instrument work, pulling wires to the aerators and light poles, and completing the sludge pump piping. The basins are 15% full, due to rainwater, and will be completely filled with plant effluent as soon as the fencing is completed. Probable startup is by February 21, 1972, if the weather remains good.

B). Current Developments

1). Analytical Work

The first set of special effluent water samples were sent to Ponca City R&D for special EPA permit data. Four more sets will be sent in the next two months. Problems on the Cd analysis have prevented making a better Cd balance across the plant, but the Ponca City samples will give this data also. EDC tests on the T-1 pit liquid (scrubbing water from the C-500 vent gas scrubber) show about 500 ppm EDC. This liquid is now the main EDC source in the plant effluent, since the steam stripper is removing almost all in its feed.

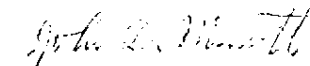
Analysis of the C-500 vent gas is continuing to show that most of the acidity is due to Cl_2 , not HCl or HOCl . The trailer-mounted gas chromatograph unit, which is analyzing the C-500 vent gas, has not been able to measure the low HCl levels and is not sensitive to Cl_2 , so it cannot be used to cross-check the above results.

2). EPA Interim Permit Letter

A preliminary reply to the EPA has been sent to the Legal Department and Saddle Brook for review. A final, revised copy should be mailed out by February 10, 1972. The revised copy will be attached to next month's pollution report. Work is underway to obtain all the data required for the five questions asked in the EPA's original letter (appended to last month's report). Full scale plant tests have been made on the cooling tower, both on low chrome and non-chrome, non-zinc water treatment systems and preliminary results look good. Ponca City R&D has started on the special analysis requested in the EPA letter.

3). C-500 Vent Stack Afterburner

Preliminary work has started on estimating an afterburner for the main plant vent stack. Proposed state air quality regulations require an "afterburner or approved equal device" on all vents containing appreciable ethylene fumes. It is expected that these state regulations will be approved by the federal government around July 1972 and that a plant air quality improvement implementation schedule will be required around January 1973. Two vendors have been contacted for equipment quotes and plant estimating work will start in May 1972. It is expected that a project estimate will be available in July 1972. State regulations will probably require a solution to the C-500 vent problem no later than January 1975.


John D. Minott
Senior Process Engineer

bs

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

CCR 000060703

C-500 VENT STACK ANALYSES

January 1972

IN PPM BY VOLUME

IN VOLUME %

Date	EDC	VCM	EtCl	Other Organics	Ortho tolidine Cl ₂	Total Acid as HCl	Total Oxidants	Total Chlorides	CO ₂	CO	O ₂	CH ₄	C ₂ H ₆	C ₂ H ₄
1/5/72	-	325	2469	246	2222	3086	1556	3284	1.67	0.46	3.8	0.26	Tr	0.75
1/12/72	7208	2900	2998	11,805	3457	7407	-	2222	1.70	0.55	4.6	0.88	0.03	0.48
1/19/72	10213	2041	12352	3695	938	2790	-	617	1.60	0.47	4.7	0.47	Tr	1.14
1/26/72	7707	466	1714	5851	617	1481	444	667	1.23	0.12	6.9	0.16	Nil	2.21

CCR 000060704

VCM EFFLUENT WATER ANALYSIS
MONTH OF January 19 72

Parameter	1/2/72	1/9/72 *	1/16/72	1/23/72**	1/30/72**	State Regulations
Temperature - °F	80°	86°	90°	91°	80°	96°F Maximum
Flow - gpm	350	285	370	200	150	
pH	7.5	7.0	7.5	7.1	7.4	6.0 to 8.5
Acidity Phenolphthalein	66	35	82.5	17.5	23.5	
Alkalinity, M.O.	1750	1375	1180	725	300	
Color	110	75	35	60	20	
Turbidity	65	400	150	130	220	
Total Solids	16,560	15,596	17,170	24,624	21,988	
Total Dissolved Solids	13,050	14,730	15,130	22,680	20,484	
Total Suspended Solids	3510	866	2040	1944	1514	
Total Volatile Solids	1910	2410	4080	120	1144	
Chlorides as Cl	2400	2600	2200	4300	4300	
Sulfates as SO ₄	160	220	250	250	300	
Ammonia as N	60	72.6	76	61	52.5	
Total PO ₄ as PO ₄	6.0	4.0	3.0	4.8	3.28	
Ortho PO ₄ as PO ₄	2.0	1.0	1.0	0.8	0.05	
COD	3360	2080	2800	3056	2000	
BOD (5 day)	1560	1165	1062			
Formates	672	662	680	741	639	* 12 ppm
EDC	2294	574	1438	535	292	* 31 ppm
VCM	21	2	Tr	17	7	
Ethyl Chloride	14	5	20	8	9	
Ethylene Chlorhydrin	583	553	283	852	444	No TLM data
Misc. other Organics	316	85	282	182	138	
Iron as Fe	33	30	30	16	11.5	
Copper as Cu	0.55	0.30	0.10	0.50	3.1	
Chromium as Cr	11.5	9.0	1.8	1.4	2.7	* 0.05 ppm as Cr O ₄
Zinc as Zn	1.6	2.3	2.6	1.0	1.4	
Mg	14.0	15.0	12.0	13.0	20.0	
Mn	1.2	1.5	0.9	1.35	1.2	
Co	1.0	5.4	1.9	4.7	1.4	
Ca	750	7000	1200	4000	4940	
Ni	2.0	1.2	1.5		5.0	
Na	4200	6600	18000	5300	4100	
Cd	0.15	0.16	0.25	0.12	0.19	

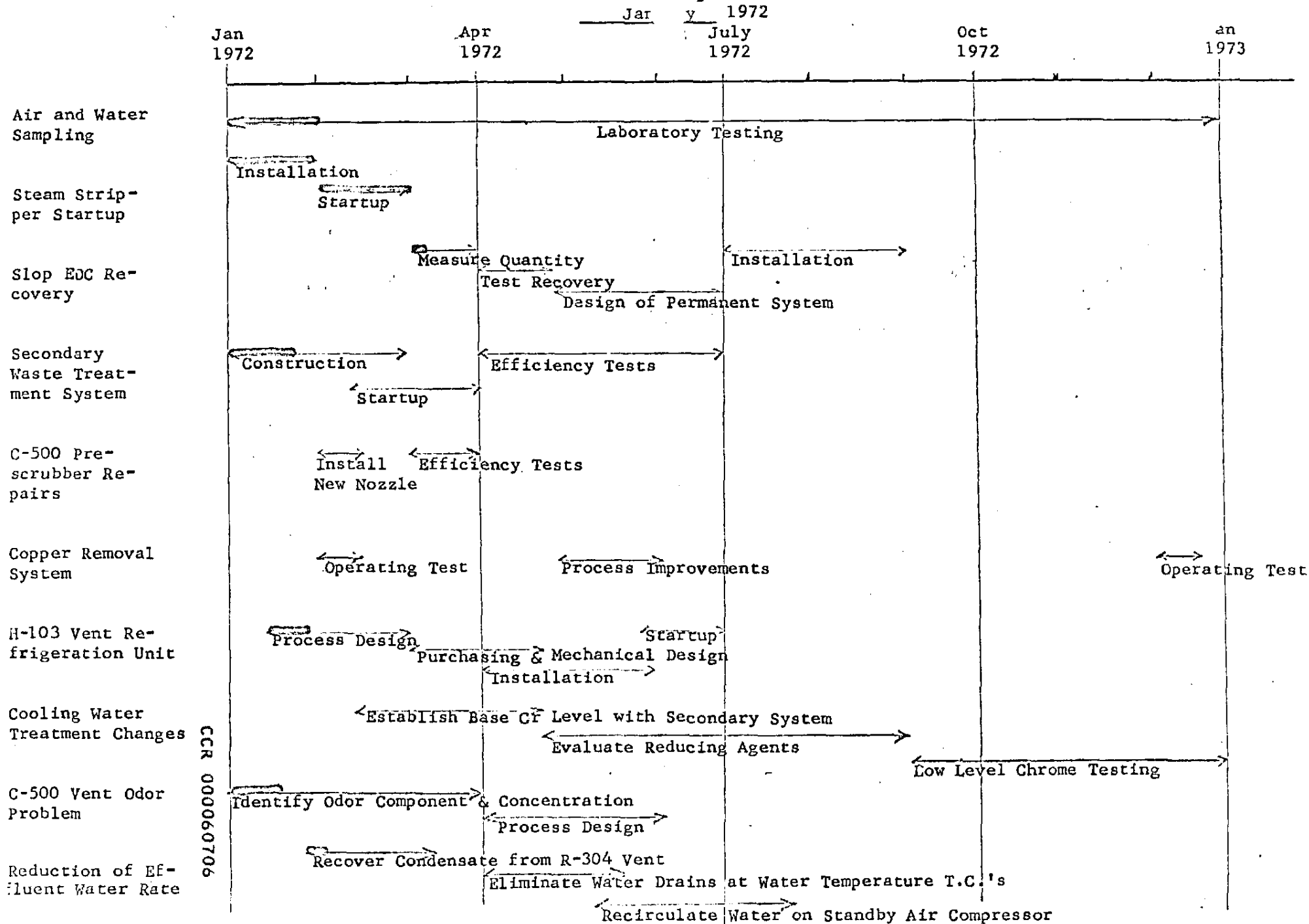
Notes: 1). * Steam stripper started up just before this sample was taken.

2). ** These two samples were taken during low and no chrome cooling tower tests, 1/23/72 during a low chrome test and 1/30/72 during a no chrome, no zinc test.

* Represents TLM/10

CCR 000060705

Environmental Project Schedule

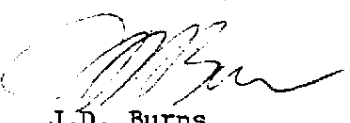


CCR 000060706

Interoffice Communication

To Distribution Below
From J.D. Burns
Date February 28, 1972
Subject Environmental Health Reports

For those of you who publish monthly environmental health reports, it may be useful to include graphs of key measurements of pollutants in both air and water effluents.


J.D. Burns
jm

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