

June 13, 1974

Publication No. 74-e30

WA-34-1017

Memo to: Howard Bunten

From: Dan Glantz

Subject: Oaksdale Sewage Treatment Lagoon Study

On May 1, 1974, the writer conducted an efficiency study of the Oaksdale Lagoon. Eight samples of influent and effluent were composited commencing at 0900 and ending at 1600. The coliform samples taken during this time were the victims of a transportation foul up and were rendered useless. Subsequently, returning from Millwood on May 23, 1974, I detoured thru Oaksdale and secured another coliform sample.

The weather was cool and overcast during my visit, with occasional rain showers. It had been this way for several days prior and this contributed to an above normal flow. Storm runoff was estimated at about 30% of the volume. The system was new in 1967. It is well fenced and secured and gives a good appearance. The two lagoons are arranged in series and I was informed that, except during the periods of heavy rain, there is no runoff.

Effluent is clear except for some green algae. Lab data confirms a good performance except for very high coliform content.  $Cl_2$  residual is low and an increase in the application should improve the coliform count, although the high pH will continue to hamper its effectiveness.

DG:jmh

STP Survey Report Form

Efficiency Study

City Oaksdale Plant Type 2 Lagoons Pop. Served 600 Design 600  
 Receiving Water Pine Creek Perennial X Intermittent \_\_\_\_\_  
 Capacity \_\_\_\_\_  
 Date 5-1-74 Survey Period 0900-1600 hrs. Survey Personnel D. Glantz  
 Comp. Sampling Frequency Hourly Sampling Alequot 800 ml (adj to flow)  
 Weather Conditions (24 hr) Cool, Cloud Are facilities provided for complete by-  
 pass of raw sewage? \_\_\_\_\_ Yes X No/Frequency of bypass \_\_\_\_\_  
 Reason for bypass \_\_\_\_\_ Is bypass chlorinated? \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_  
 Was DOE Notified? \_\_\_\_\_ Discharge - Intermittent \_\_\_\_\_ Continuous \_\_\_\_\_

Plant Operation

Total flow 270,000 GPD How measured Thru 12" pipe (3" water Depth)  
 Maximum flow 350,000 GPD Time of Max. 0900-1000  
 Minimum flow 100,000 GPD Time of Min. 1200  
 Pre Cl<sub>2</sub> None #/day \_\_\_\_\_ Post Cl<sub>2</sub> 3 to 4 #/day \_\_\_\_\_

Field Results

Influent

Effluent

<u>8 Determinations</u>	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	11.0	9.0		10.0	13.5	12.0		13.0
pH (Units)	7.2	6.8		7.0	9.4	9.3		9.4
Conductivity (µmhos/cm <sup>2</sup> )	610	500		545	550	410		475
Settleable Solids (mls/l)	4.0	1.0	2.5	2.5	2.0	0.4	1.1	0.8

Laboratory Results on Composites

	<u>Influent</u>	<u>Effluent</u>	<u>% Reduction</u>
Laboratory No.	<u>74-1429</u>	<u>1430</u>	
5-Day BOD ppm	<u>&lt;40</u>	<u>&lt;20</u>	<u>50%</u>
COD ppm	<u>48</u>	<u>44</u>	<u>8</u>
T.S. ppm	<u>365</u>	<u>313</u>	<u>14</u>
T.N.V.S. ppm	<u>243</u>	<u>193</u>	<u>21</u>
T.S.S. ppm	<u>36</u>	<u>13</u>	<u>64</u>
N.V.S.S. ppm	<u>4</u>	<u>2</u>	<u>50</u>
pH (Units)	<u>7.3</u>	<u>9.3</u>	
Conductivity (µmhos/cm <sup>2</sup> )	<u>610</u>	<u>510</u>	
Turbidity (JTU's)	<u>10</u>	<u>6</u>	

Laboratory Bacteriological Results

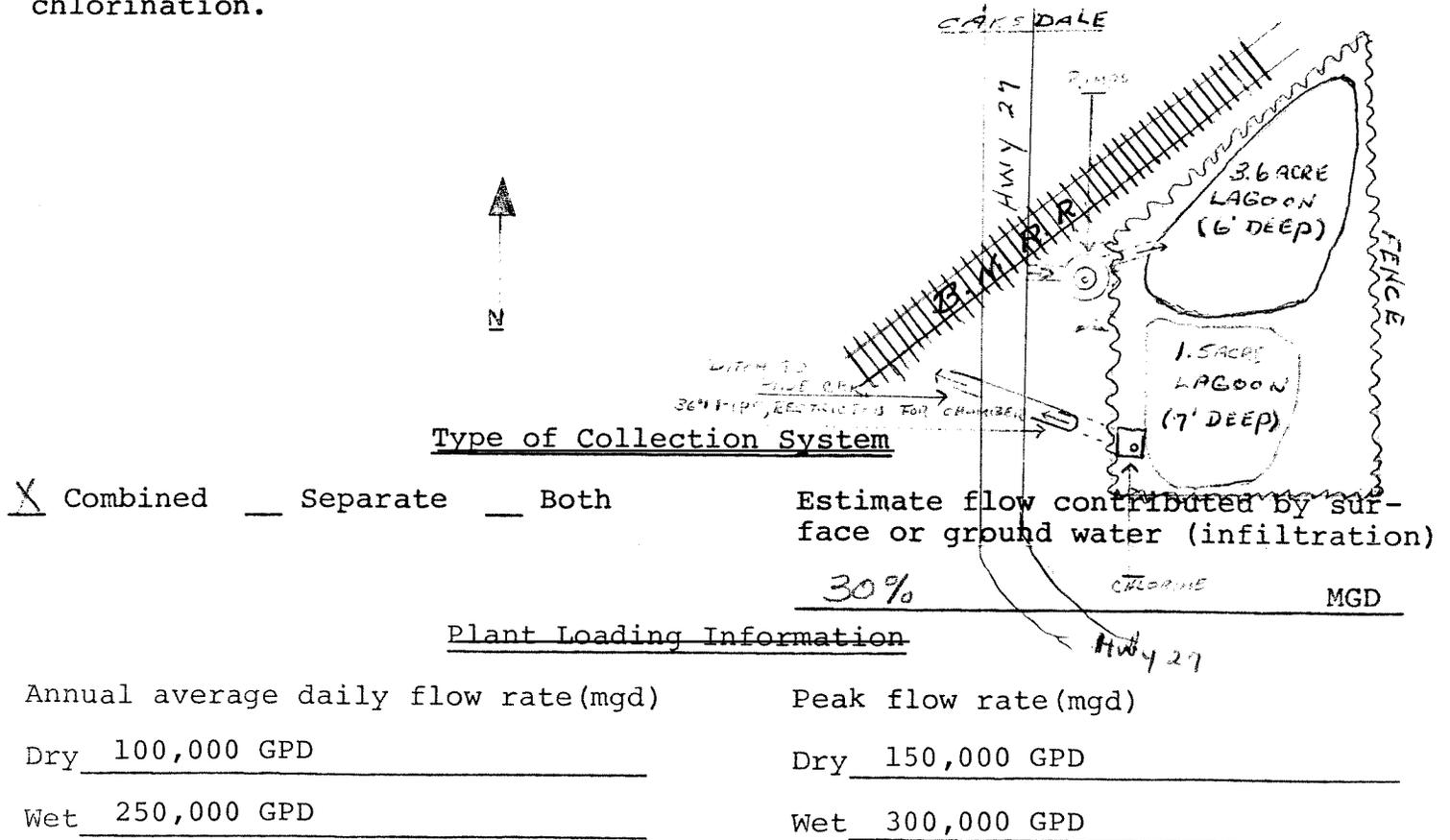
Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl <sub>2</sub> Residual
		Total Coliform	Fecal Coliform	Fecal Strep	
74-1897	1000	>40,000	>4,000		15" = .05 3 Min = .05

Additional Laboratory Results

NO <sub>3</sub> -N ppm -	2.40
NO <sub>2</sub> -N ppm -	.20
NH <sub>3</sub> -N ppm -	.35
T. Kjeldahl-N ppm -	1.9
O-PO <sub>4</sub> -P ppm -	1.08
T-PO <sub>4</sub> -P ppm -	1.78

Operator's Name Bruce Ebert (Clerk) Phone No. 285-4271  
Dean Henderson 285-5182

Furnish a flow diagram with sequence and relative size and points of chlorination.



COMMENTS: Operator states no runoff from lagoon except during long, rainy periods.

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

DATA SUMMARY

ORIGINAL TO:  
D. GLANTZ.....  
COPIES TO:  
.....  
.....  
LAB FILES .....

Source OAKESDALE LAGOON

Collected By D. GLANTZ

Date Collected 5-1-74

Goal, Pro./Obj. \_\_\_\_\_

Log Number:	74-1429	30	31	32	33	34	35			STORET
Station:	INF	EFF	1400	1500	(NO TIME)					
pH	7.3	9.3								00403
Turbidity (JTU)	10.	6.								00070
Conductivity (umhos/cm)@25C	610.	510.								00095
COD	48	44								00340
BOD (5 day)	<40	<20								00310
Total Coliform (Col./100ml)	—	—	—*	—*	—*	—*	—*	} see data summary for 5/2/74		31504
Fecal Coliform (Col./100ml)			—*	—*	—*	—*	—*			31616
NO3-N (Filtered)		2.40								00620
NO2-N (Filtered)		.20								00615
NH3-N (Unfiltered)		.35								00610
T. Kjeldahl-N (Unfiltered)		1.9								00625
O-PO4-P (Filtered)		1.08								00671
Total Phos.-P (Unfiltered)		1.78								00665
Total Solids	365	313								00500
Total Non Vol. Solids	243	193								
Total Suspended Solids	36	13								00530
Total Sus. Non Vol. Solids	4	2								

Note: All results are in PPM unless otherwise specified. ND is "None Detected"  
Convert those marked with a \* to PPB (PPM X 10<sup>3</sup>) prior to entry into STORET

\* ARRIVED TOO LATE

Summary By J. Stephen D. Roll Date 5-13-74



5/1/70

OAKSDALE LAGOONS

EFFLUENT

INFLUENT						EFFLUENT					
TIME	TEMP	PH	COND	SS	FLOW	TEMP	PH	COND	SS	CL <sub>2</sub>	COLIF
7:45	10°	7	610	4.0	0	13	9.4	550	.8	15"=.01	✓
9:00	10°	7	560		3	13	9.4	525		3'=.015	✓
10:00	9°	7	510			12	9.3	510		15"=.01	✓
11:00	10°	7	540	1.0	0"	13	9.2	475		3'=.01	✓
13:00	10.5°	6.8	510			12	9.4	460	2.0		✓
14:00	11°	6.9	550			13.5	9.4	410		15"=.03	✓
15:00	11°	7.0	500		3"	13.5	9.4	475		15"=.02	✓
16:00	11°	7.0	525			13	9.3	450	.4	3'=.02	✓

Green  
algae  
and  
live  
critters

DEAN ANDERSON - OPERATOR 285-5182  
 MARSHALL MILLER - MAYOR  
 BRUCE EBERT - CLERK 285-4271