Larry Erickson

CITY OF PORTLAND
ENVIRONMENTAL SERVICES

Columbia Blvd. Wastewater Treatment Plant, 5001 N. Columbia Blvd., Portland, OR 97203-2098
(503) 823-2400, FAX (503) 823-2409

11 March 1994

Lyle Christensen, DEQ Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland OR 97201-4959

RE: Toxics Calculations

Dear Mr. Christensen,

Thank you for the phone call informing me of the missing toxics removal calculations for the second half of 1993.

At that time, I sent average values for influent and effluent for each chemical species listed on the December 1993 DMR but I forgot to include calculations for their removal percentages.

In double-checking our reporting requirements for my own education, I discovered several errors in the DMR.

1) the DMR does not provide individual lines to report each toxic chemical's removal percentage

   (the DMR has just a single, "generic" line labelled "toxics, percent removal")

2) the DMR does not list cadmium

3) the DMR does not list cyanide

Until the DMR can be corrected, we made up a form that includes on one page the raw lab data and removal calculations. Enclosed is the data and calculations for December 1993.

Please let me know if you wish this reporting format changed in any way. I will use our form until Lucita Valiere (EPA) can correct the DMR.

Please call me at 823-2318 if you have questions.

Sincerely,

Larry Erickson

Larry Erickson
Operations Manager

CITY OF

PORTLAND OREGON

BUREAU OF ENVIRONMENTAL SERVICES

LABORATORY ANALYSIS REPORT

TRYON CREEK TREATMENT PLANT

RESULTS

Parameters	Units	INFLUENT			EFFLUENT		
		Sample Dates			Sample Dates		
		12/13/93	12/14/93	12/15/93	12/13/93	12/14/93	12/15/93
Ag	mg/L	0.01	0.01	0.01	0.01	0.01	0.01
As	mg/L	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cd	mg/L	0.01	0.01	0.01	0.01	0.01	0.01
Cr	mg/L	0.01	0.01	0.01	0.01	0.01	0.01
Cu	mg/L	0.53	0.76	0.05	0.02	0.02	0.01
Hg	mg/L	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Ni	mg/L	0.01	0.01	0.01	0.01	0.01	0.01
Pb	mg/L	0.02	0.03	0.02	0.02	0.02	0.02
Zn	mg/L	0.15	0.10	0.10	0.04	0.04	0.05
CN-	mg/L	0.001	0.001	0.001	0.002	0.010	0.009
Phenols	mg/L	0.025	0.025	0.025	0.025	0.025	0.025

TOXICS REMOVALS CALCULATIONS

Parameters	AVERAGE INFLUENT	AVERAGE EFFLUENT	PERCENT CHANGE
Ag	0.0100	0.0100	0%
As	0.0005	0.0005	0%
Cd	0.0100	0.0100	0%
Cr	0.0100	0.0100	0%
Cu	0.4467	0.0167	96%
Hg	0.0005	0.0005	0%
Ni	0.0100	0.0100	0%
Pb	0.0233	0.0200	14%
Zn	0.1167	0.0433	63%
CN-	0.0010	0.0070	-600%
Phenols	0.0250	0.0250	0%

CITY OF

PORTLAND, OREGON

BUREAU OF ENVIRONMENTAL SERVICES

LABORATORY ANALYSIS REPORT

TRYON CREEK TREATMENT PLANT

RESULTS

Parameters	Units	INFLUENT Sample Dates 12-13-93	12-14-93	12-15-93	EFFLUENT Sample Dates 12-13-93	12-14-93	12-15-93
Ag	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
As	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Ba	mg/L	0.015	0.02	0.04	<0.01	<0.01	<0.01
B	mg/L	0.18	0.14	0.14	0.15	0.16	0.10
Cd	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cr	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cu	mg/L	0.53	0.76	0.05	0.02	0.02	<0.01
Fe	mg/L	1.45	1.93	1.42	0.25	0.23	0.14
Hg	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Ni	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pb	mg/L	<0.02	0.03	<0.02	<0.02	<0.02	<0.02
Mn	mg/L	0.12	0.14	0.095	0.03	0.05	0.05
Zn	mg/L	0.15	0.10	0.10	0.04	0.04	0.05
Mo	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
K	mg/L	9.0	8.5	9.4	9.5	7.1	7.4
CN-	mg/L	<0.0010	<0.0010	<0.001	<0.002	0.0100	0.009
Phenols	mg/L	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025

Reported By: Juan F. Muñiz **Date Reported:** January 14, 1994

CITY OF PORTLAND
ENVIRONMENTAL SERVICES

Columbia Blvd. Wastewater Treatment Plant, 5001 N. Columbia Blvd., Portland, OR 97203-2098
(503) 823-2400, FAX (503) 823-2409

March 11, 1994

Lyle Christensen, DEQ Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland OR 97201-4959

RE: Tryon Creek Total Suspended Solids

Dear Mr. Christensen,

On February 24, we exceeded our daily maximum TSS. Calculated TSS was 9814 lbs. The permit limit is 9382 lbs. The excess was 432 lbs.

Please note that we did not exceed our daily maximum BOD. Calculated BOD was 6022 lbs. Once again, the permit limit is 9382 lbs.

Heavy rains caused record flows into the treatment plant. Total volume for the day was 26.74 MG; plant design is 8.3 MG. Plant flow reached an instantaneous peak flow of 35 MGD. Both volume and maximum rate were considered unofficial records by plant staff.

I decided to maintain secondary treatment as long as possible during the increase in plant flow.

When plant flow rate reached 28 MGD and secondary solids loss became significant, we started bypassing around the secondary treatment process. When plant flow rate reached 35 MGD, I asked the pump station crew to redirect collection system flow away from the plant and to Ankeny pump station.

Please call me at 823-2318 if you have questions.

Sincerely,

Larry Erickson

Larry Erickson
Operations Manager
Tryon Creek Waste Water Treatment Plant

xc: DMR

CITY OF PORTLAND
ENVIRONMENTAL SERVICES

Columbia Blvd. Wastewater Treatment Plant, 5001 N. Columbia Blvd., Portland, OR 97203-2098
(503) 823-2400, FAX (503) 823-2409

11 March 1994

Lyle Christensen, DEQ Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland OR 97201-4959

RE: DMR Corrections

Dear Mr. Christensen,

I would like to point out errors in February's preprinted Discharge Monitoring Report.

For all our preprinted reports November through April, EPA did not use the winter values on page 2 of our NPDES permit.

Based on your advice, I am making corrections on this February DMR and future DMRs until EPA can make corrections on their preprinted forms.

You will find my specific DMR corrections on page 2 of this letter.

Please note that in my previous letters on these same DMR errors, I quoted 9832 lbs for daily max for condition "P" (instantaneous plant flow > 12.45 MGD). The correct value is 9382 lbs. I transposed two digits.

Please call me at 823-2318 if you have questions.

Sincerely,

Larry Erickson

Larry Erickson
Operations Manager
Tryon Creek WWTP

11 March 1994

Lyle Christensen, DEQ Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland OR 97201-4959

Corrections to condition "P" for BOD and TSS:

daily max 9382 lb

Corrections to condition "1" for BOD and TSS:

monthly avg	2077 lb
weekly avg	3115 lb
daily max	4153 lb
monthly avg	30 mg/l
weekly avg	45 mg/l

Corrections to condition "Q" for BOD and TSS:

Strike all "PERMIT REQUIRE", enter "N/A" in all blocks

(this is the wrong place for condition "Q"; "Q" applies only to BOD and TSS percent removal for flows above 9.2 MGD)

Corrections to condition "R" for BOD and TSS percent removal:

Change "R" to "Q"

(this is the correct place for condition "Q"; "Q" applies to BOD and TSS percent removal for flows above 9.2 MGD)

CITY OF PORTLAND
ENVIRONMENTAL SERVICES

Columbia Blvd. Wastewater Treatment Plant, 5001 N. Columbia Blvd., Portland, OR 97203-2098
(503) 823-2400, FAX (503) 823-2409

17 March 1994

Lyle Christensen, DEQ Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland OR 97201-4959

RE: NPDES OR-002689-1

Dear Mr. Christensen,

The NPDES permit for Tryon Creek WWTP requires semi-annual sludge analysis. As you know, we did not submit data for the second half of 1993.

After a review of the files at the Columbia Blvd laboratory, we found data for heavy metals, potassium, total cyanide, and total solids. We did not find data for volatile solids, sludge nitrogen (NH3-N, NO3-N, TKN-N), phosphorus, and pH.

I am including an attachment listing the available data.

I apologize for the incomplete information. I am taking steps to ensure complete sets of data for future semi-annual sludge analyses.

Please call me at 823-2318 if you have questions.

Sincerely,

Larry Erickson

Larry Erickson
Operations Manager
Tryon Creek WWTP

CITY OF PORTLAND
ENVIRONMENTAL SERVICES

Columbia Blvd. Wastewater Treatment Plant, 5001 N. Columbia Blvd., Portland, OR 97203-2098
(503) 823-2400, FAX (503) 823-2409

17 March 1994

Lyle Christensen, DEQ Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland OR 97201-4959

RE: NPDES OR-002689-1

Dear Mr. Christensen,

The NPDES permit requires semi-annual calibration of our influent flow metering. This calibration was performed in February for the first half of calendar 1994.

The Instrument Department determined that the output signals are within 0.5% of the true flow values. I am enclosing a cover letter to that effect from the Instrument Department.

A number of electronic devices cascade to give the output signal. In their physical order, these devices are:

Lake Oswego influent magnetic flow meter
Portland influent magnetic flow meter
2-pen recorder (records separate LO and Ptld flows)
adder/subtracter
chart recorder (records combined LO and Ptld flow)
integrator
counter

I am also enclosing copies of their associated calibration sheets.

Please call me at 823-2318 if you have questions.

Sincerely,

Larry Erickson

Larry Erickson
Operations Manager
Tryon Creek WWTP

DATE: March 3, 1994

To: Larry Erickson
OPERATIONS MANANAGER, Tryon Creek WWTP

From: Rick Komraus
INSTRUMENT TECHNICIAN, E/I Department

I have compiled the information concerning the Semi-annual calibration of the influent flow instrumentation. The work orders with instruction are provided as well as our own calibration records. The calibration went very well, all instruments were within the manufacturers recommended tolerances. The total flow is within .5% accuracy over the entire loop. This calibration is listed on our calibration schedule to be performed semi-annually as noted by the designator PS2750, PS2751 & PS2752.

TRYON CREEK PLANT: CITY OF PORTLAND CLACKAMAS COUNTY PERMIT NO. 33409-J (FILE 70735) POPULATION SERVED: 31000

PLANT TYPE: ACTIVATED SLUDGE RECEIVING STREAM: WILLAMETTE RIVER

WASTEWATER TREATMENT PLANT MONITORING REPORT

WASTEWATER TREATMENT PROCESS CONTROL

NUTRIENTS

Date	FLOW		PLANT INFLUENT				PLANT EFFLUENT														ANAEROBIC DIGESTER				AERATION BASIN			Sldg Disp	Flow to	PLANT EFFLUENT			
Mar-94	INF	EFF	pH	BOD	Sus Sol	Temp	pH	DO	BOD	BOD Rem	BOD Dis	TSS	TSS Rem	TSS Dis	CL2 Fed	CL2 Res	Enter Coc/	Wk Enter	Fec Coli /	Wk Fec	Vol. Sol. Red. (%)			73.4	Sus			Pre cip	Off Site	CL2 Str	Total P	TKN	NH3 N	NO3+ NO2-N
																					pH	CO2	Alk	Temp	SVI	Sol	DO						
	mgd	mgd		mg/l	mg/l	oC		mg/l	mg/l	%	lbs	mg/l	%	lbs	lbs	mg/l	100ml	Avg	100ml	G.M.		%	mg/l	oF		mg/l	mg/l	"	mgd	mgd	mg/l	mg/l	mg/l	mg/l
1	11.36	11.34	7.1	170	151	12	7.2	8.0	16	91	1513				120	0.5	2100		8		7.2		3353	99	153	1230	1.3	0.00	0.021	0.00				
2	10.82	10.80	7.2		210		7.1					8	96	721	180	0.5	1100		54					99	150	1282	1.0	0.20	0.020	0.00				
3	10.42	10.41	7.2	150	211		7.1		15	90	1302	6	97	521	180	0.6	1600		5					99	156	1333	1.6	0.15	0.011	0.00				
4	9.80	9.79	7.4	100	104	13	7.1	7.7	7	93	571	8	92	653	210	0.6	540		3					99	163	1317	1.0	0.00	0.011	0.00				
5	9.27	9.27	7.0	120	118	13	7.1	7.6	11	91	850	5	96	387	90	0.8		1748		8				99	167	1425	1.0	0.00	0.000	0.00				
6	8.51	8.50	7.2	135	95	12	7.2	7.1	14	90	992	12	87	851	50	0.4								99	150	1308	1.1	0.00	0.011	0.00				
7	8.30	8.23	7.2	125	105	14	7.4	8.3	12	90	824	10	90	686	50	0.4	1400		180					99	169	1390	1.2	0.00	0.071	0.00				
8	8.13	8.12	7.3	175	163	14	7.4	7.6	16	91	1083	6	96	406	60	0.6	1000		120		7.1		2805	99	161	1392	1.5	0.00	0.014	0.00				
9	8.47	8.46	7.2	195	151	14	7.4	7.3	19	90	1340	6	96	423	60	0.6	1800		10					99	169	1504	1.2	0.05	0.011	0.00				
10	6.58	6.56	7.3	110	127		7.5		11	90	602	7	94	383	50	0.4	900		6					99	172	1432	1.6	0.10	0.020	0.00				
11	8.08	8.06	7.3	180	168	14	7.4	7.4	10	94	672	8	95	538	50	0.4	460		12					99	164	1344	1.2	0.00	0.019	0.00				
12	7.65	7.65	7.0		147		7.3					8	95	510	50	0.5		1112		27				99	207	1374	1.4	0.00	0.000	0.00				
13	7.62	7.61	7.3	165	153		7.4		13	92	825	6	96	381	60	0.4								99	182	1382	1.3	0.00	0.010	0.00				
14	7.60	7.57	7.4	165	148		7.5		13	92	820	6	96	379	60	0.6	320		13					98	187	1372	1.0	0.00	0.033	0.00				
15	6.89	6.87	7.4	195	138	14	7.4	7.0	13	93	745	4	97	229	30	0.6	260		106		7.1		3078	99	160	1435	1.0	0.05	0.018	0.00				
16	7.93	7.91	7.6	165	156		7.5		12	93	792	6	96	396	60	0.6	1600		22					99	203	1363	0.8	0.15	0.020	0.00				
17	7.70	7.68	7.3	135	136	14	7.4	7.3	11	92	704	5	96	320	60	0.6	220		16					99	180	1399	1.3	0.00	0.022	0.00				
18	8.45	8.44	7.0	115	152		7.4		13	89	915	7	95	492	200	0.6	400		7					99	211	1554	2.4	0.50	0.014	0.00				
19	7.53	7.53	7.2	120	120	14	7.3	7.2	10	92	628	4	97	251	60	0.3		560		20				99	196	1426	2.5	0.00	0.000	0.00				
20	7.72	7.70	7.1	130	141	14	7.3	7.2	13	90	835	7	95	450	50	0.4						40		99	178	1450	3.3	0.35	0.017	0.00				
21	8.81	8.73	7.5	100	100	15	7.4	7.9	12	88	874	6	94	437	30	0.6	390		10					99	180	1482	3.3	0.25	0.075	0.00				
22	8.83	8.81	7.2	155	156	14	7.4	7.4	9	94	661	6	96	441	50	0.6	340		10					99	168	1427	2.2	0.20	0.019	0.00				
23	9.20	9.18	7.3	105	114	13	7.3	7.6	10	90	766	9	92	689	50	0.6	800		5			38		98	178	1424	3.1	0.10	0.020	0.00				
24	8.24	8.22	7.2	115	115	13	7.3	8.0	9	92	617	6	95	411	40	0.6	250		64					98	156	1384	1.8	0.00	0.020	0.00				
25	8.08	8.08	7.3	145	131	14	7.3	7.2	9	94	606	6	95	404	30	0.6	290		2					98	158	1406	2.4	0.00	0.000	0.00				
26	7.57	7.57	7.2	125	137		7.3		10	92	631	4	97	253	40	0.5		414		9				99	184	1490	1.1	0.00		0.00				
27	7.77	7.75	7.3	145	150		7.3		19	87	1229	5	97	323	40	0.4						40		99	173	1323	1.4	0.00	0.016	0.00				
28	7.19	7.17	7.4	125	154		7.3		13	90	777	8	95	478	80	0.5	1000		12					99	169	1314	1.4	0.00	0.024	0.00				
29	7.35	7.33	7.4	180	153		7.4		13	93	795	6	96	367	80	0.6	1300		28		7.0		3187	99	157	1366	1.3	0.00	0.018	0.00				
30	7.80	7.78	7.4	130	179		7.7		14	89	908	7	96	454	50	0.5	3400		120			40		99	194	1469	1.3	0.45	0.022	0.00				
31	7.94	7.92	7.4	120	120	14	7.3	7.5	13	89	859	5	96	330	90	0.5	230		92					99	182	1348	1.0	0.10	0.020	0.00				
Max	11.36	11.34	7.6	195	211	15	7.7	8.3	19	94	1513	12	97	851	210	0.8	3400	1748	180	27	7.2	40	3353	99	211	1554	3.3	0.50	0.075	0.00	0.00	0.00	0.00	0.00
Min	6.58	6.56	7.0	100	95	12	7.1	7.0	7	87	571	4	87	229	30	0.3	220	414	2	8	7.0	38	2805	98	150	1230	0.8	0.00	0.000	0.00	0.00	0.00	0.00	0.00
Avg	8.31	8.29		141	142	14		7.5	12	91	853	7	95	452	75	0.5	943	959	18	16	7.1	40	3106	99	173	1392	1.6	0.09	0.019	0.00	#####	#####	#####	######
Sum	257.61	257.04													2310													2.65	0.575	0.00				

PLANT EFFLUENT PERMIT STANDARDS: pH 6.0-9.0; Fecal Coli 200/100 CL2 Res. 1.0 (Daily Max)

*Sus Sol 20/ 30 mg/l Sus Sol Discharged 1384/ 2077 lbs

*BOD 20/ 30 mg/l BOD Discharged 1384/ 2077 lbs

*May 1 - October 31 / November 1 - April 30

Remarks: (Improvements, Operational Changes, Weed Control Programs, Etc.)

Influent BOD5 is a Blended Sample Sludge Hauled to Columbia Blvd WTP

I certify that I am familiar with the information contained in this report and that to the best of my knowledge such information is true and complete.

Name and Title: Larry K. Erickson
Operations Manager

Signature Larry K. Erickson

All Test Data Subject to Variability of Test

Page 1

Date Mar-94	Plant Effluent Nutrients				Flow		Weather		
					Portland	Lake Oswego	Temperature		Precip
	Total P mg/l	NH3-N mg/l	NO3+ NO2-N mg/l	TKN mg/l	mgd	mgd	Max o F	Min o F	"
1					4.94	6.42	69	49	0.00
2					4.81	6.01	57	51	0.20
3					4.60	5.82	69	51	0.15
4					4.29	5.51	63	44	0.00
5					4.10	5.17	57	33	0.00
6					3.88	4.63	62	33	0.00
7					3.56	4.74	64	33	0.00
8					3.72	4.41	65	41	0.00
9					4.04	4.43	70	40	0.05
10					3.35	3.23	63	44	0.10
11					3.91	4.17	64	36	0.00
12					3.56	4.09	73	37	0.00
13					3.56	4.06	73	43	0.00
14					3.49	4.11	76	39	0.00
15					3.15	3.74	65	39	0.05
16					3.82	4.11	59	46	0.15
17					3.57	4.13	55	44	0.00
18					3.84	4.61	55	38	0.50
19					3.21	4.32	59	38	0.00
20					3.41	4.31	54	39	0.35
21					3.93	4.88	54	37	0.25
22					4.15	4.68	51	37	0.20
23					4.47	4.73	57	35	0.10
24					3.80	4.44	66	44	0.00
25					3.83	4.25	70	41	0.00
26					3.43	4.14	78	39	0.00
27					3.60	4.17	83	42	0.00
28					3.26	3.93	81	41	0.00
29					3.33	4.02	81	41	0.00
30					3.65	4.15	68	51	0.45
31					3.32	4.62	59	49	0.10
Max	0.00	0.00	0.00	0.00	4.94	6.42	83	51	0.50
Min	0.00	0.00	0.00	0.00	3.15	3.23	51	33	0.00
Avg	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	3.79	4.52	65	41	0.09
Sum					117.58	140.03			2.65

Page 2

PRIMARY TREATMENT

Date Mar-94	INFLUENT Flow mgd	Susp Sol. mg/l	Susp Sol. lbs	BOD5 mg/l	BOD5 lbs	Pop Equiv	Temp oC	pH	EFFLUENT Susp Sol. mg/l	Susp Sol. lbs	BOD5 mg/l	BOD5 lbs	Det Time hrs	No. Basins On
1	11.36	151	14306	170	16106	94742	12	7.1					2.0	4
2	10.82	210	18950	160	14438	84931		7.2					2.1	4
3	10.42	211	18336	150	13035	76679		7.2					2.2	4
4	9.80	104	8500	100	8173	48078	13	7.4					2.3	4
5	9.27	118	9123	120	9277	54573	13	7.0					2.4	4
6	8.51	95	6742	135	9581	56361	12	7.2					2.7	4
7	8.30	105	7268	125	8653	50899	14	7.2					2.7	4
8	8.13	163	11052	175	11866	69798	14	7.3					2.8	4
9	8.47	151	10667	195	13775	81028	14	7.2					2.7	4
10	6.58	127	6969	110	6036	35509		7.3					3.4	4
11	8.08	168	11321	180	12130	71351	14	7.3					2.8	4
12	7.65	147	9379	130	8294	48789		7.0					3.0	4
13	7.62	153	9723	165	10486	61682		7.3					3.0	4
14	7.60	148	9381	165	10458	61520		7.4					3.0	4
15	6.89	138	7930	195	11205	65913	14	7.4					3.3	4
16	7.93	156	10317	165	10912	64191		7.6					2.9	4
17	7.70	136	8734	135	8669	50997	14	7.3					2.9	4
18	8.45	152	10712	115	8104	47673		7.0					2.7	4
19	7.53	120	7536	120	7536	44330	14	7.2					3.0	4
20	7.72	141	9078	130	8370	49235	14	7.1					2.9	4
21	8.81	100	7348	100	7348	43221	15	7.5					2.6	4
22	8.83	156	11488	155	11415	67144	14	7.2					2.6	4
23	9.20	114	8747	105	8056	47391	13	7.3					2.5	4
24	8.24	115	7903	115	7903	46488	13	7.2					2.7	4
25	8.08	131	8828	145	9771	57477	14	7.3					2.8	4
26	7.57	137	8649	125	7892	46422		7.2					3.0	4
27	7.77	150	9720	145	9396	55272		7.3					2.9	4
28	7.19	154	9235	125	7496	44092		7.4					3.1	4
29	7.35	153	9379	180	11034	64905		7.4					3.1	4
30	7.80	179	11644	130	8457	49746		7.4					2.9	4
31	7.94	120	7946	120	7946	46743	14	7.4					2.8	4
Max	11.36	211	18950	195	16106	94742	15	7.6	0	0	0	0	3.4	4
Min	6.58	95	6742	100	6036	35509	12	7.0	0	0	0	0	2.0	4
Avg	8.31	142	9900	141	9801	57651	14		######	######	#####	######	2.8	4
Sum	257.61		306912		303820									

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SECONDARY EFFLUENT

Date Mar-94	Flow mgd	Susp Sol. mg/l	Susp Sol. lbs	BOD5 mg/l	BOD5 lbs	Secondary Clarifier FCSS mg/l	Secondary Clarifier FCSS lbs	Secondary Clarifier SBD ft	Secondary Clarifier RSSS mg/l	Secondary Clarifier Ovr-flow Rate gpd / ft2	pH	No. Basins On
1	11.34			11	1040	1447	21965	1.8		752		2
2	10.80	9	811	11	991	1107	16804	1.6	1582	716		2
3	10.41	7	608	8	695	1486	22557	1.8		690		2
4	9.79	9	735	8	653	1020	15484	1.5		649		2
5	9.27	10	773	9	696	1843	27977	2.2		615		2
6	8.50	3	213	11	780	2055	31195	2.1		564		2
7	8.23	10	686	10	686	1328	20159	1.6		546		2
8	8.12	6	406	9	609	1472	22345	1.6		538		2
9	8.46	9	635	13	917	2430	36887	2.2		561		2
10	6.56	10	547	9	492	1749	26550	2.1		435		2
11	8.06	7	471	8	538	1433	21753	1.8		535		2
12	7.65	9	574	13	829	1979	30041	2.4		507		2
13	7.61	6	381	10	635	2189	33229	2.3		505		2
14	7.57	6	379	9	568	2580	39164	2.3		502		2
15	6.87	4	229	10	573	1865	28311	2.1		456		2
16	7.91	7	462	10	660	1311	19901	1.6		525		2
17	7.68	8	512	10	640	1526	23165	1.7		509		2
18	8.44	8	563	9	633	1999	30345	2.8		559		2
19	7.53	6	377	8	502	1630	24743	2.3		499		2
20	7.70	9	578	12	771	2211	33563	2.9		511		2
21	8.73	8	583	10	728	1621	24607	2.2		579		2
22	8.81	7	514	10	735	1938	29419	1.9		584		2
23	9.18	8	612	10	766	1592	24167	2.1		609		2
24	8.22	6	411	10	686	1563	23726	1.9		545		2
25	8.08	8	539	12	809	1660	25199	2.1		536		2
26	7.57	6	379	12	758	2080	31574	2.6		502		2
27	7.75	8	517	13	841	2694	40895	2.6		514		2
28	7.17	16	956	24	1434	1632	24774	2.1		475		2
29	7.33	6	367	13	795	1872	28417	2.2		486		2
30	7.78	13	843	18	1168	1723	26155	2.0		516		2
31	7.92	9	594	15	991	1946	29540	1.8		525		2
Max	11.34	16	956	24	1434	2694	40895	2.9	1582	752		2
Min	6.56	3	213	8	492	1020	15484	1.5	1582	435		2
Avg	8.29	8	542	11	762	1774	26923	2.1	1582	550		2
Sum	257.04											

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PLANT EFFLUENT

Date Mar-94	Flow mgd	Susp Sol. mg/l	Susp Sol. lbs	Susp Sol. % Rem	BOD5 mg/l	BOD5 lbs	BOD5 % Rem	Cl2 Cntc Time hrs	Cl2 Feed lbs/day	Cl2 Res mg/l	DO mg/l	pH	Flow to Cl2 Str mgd
1	11.34		0		16	1513	91	1.5	120	0.5	8.0	7.2	0.00
2	10.80	8	721	96	8	721	95	1.6	180	0.5		7.1	0.00
3	10.41	6	521	97	15	1302	90	1.6	180	0.6		7.1	0.00
4	9.79	8	653	92	7	571	93	1.7	210	0.6	7.7	7.1	0.00
5	9.27	5	387	96	11	850	91	1.8	90	0.8	7.6	7.1	0.00
6	8.50	12	851	87	14	992	90	2.0	50	0.4	7.1	7.2	0.00
7	8.23	10	686	90	12	824	90	2.0	50	0.4	8.3	7.4	0.00
8	8.12	6	406	96	16	1083	91	2.1	60	0.6	7.6	7.4	0.00
9	8.46	6	423	96	19	1340	90	2.0	60	0.6	7.3	7.4	0.00
10	6.56	7	383	94	11	602	90	2.6	50	0.4		7.5	0.00
11	8.06	8	538	95	10	672	94	2.1	50	0.4	7.4	7.4	0.00
12	7.65	8	510	95	14	893	89	2.2	50	0.5		7.3	0.00
13	7.61	6	381	96	13	825	92	2.2	60	0.4		7.4	0.00
14	7.57	6	379	96	13	820	92	2.2	60	0.6		7.5	0.00
15	6.87	4	229	97	13	745	93	2.4	30	0.6	7.0	7.4	0.00
16	7.91	6	396	96	12	792	93	2.1	60	0.6		7.5	0.00
17	7.68	5	320	96	11	704	92	2.2	60	0.6	7.3	7.4	0.00
18	8.44	7	492	95	13	915	89	2.0	200	0.6		7.4	0.00
19	7.53	4	251	97	10	628	92	2.2	60	0.3	7.2	7.3	0.00
20	7.70	7	450	95	13	835	90	2.2	50	0.4	7.2	7.3	0.00
21	8.73	6	437	94	12	874	88	1.9	30	0.6	7.9	7.4	0.00
22	8.81	6	441	96	9	661	94	1.9	50	0.6	7.4	7.4	0.00
23	9.18	9	689	92	10	766	90	1.8	50	0.6	7.6	7.3	0.00
24	8.22	6	411	95	9	617	92	2.0	40	0.6	8.0	7.3	0.00
25	8.08	6	404	95	9	606	94	2.1	30	0.6	7.2	7.3	0.00
26	7.57	4	253	97	10	631	92	2.2	40	0.5		7.3	0.00
27	7.75	5	323	97	19	1229	87	2.2	40	0.4		7.3	0.00
28	7.17	8	478	95	13	777	90	2.3	80	0.5		7.3	0.00
29	7.33	6	367	96	13	795	93	2.3	80	0.6		7.4	0.00
30	7.78	7	454	96	14	908	89	2.2	50	0.5		7.7	0.00
31	7.92	5	330	96	13	859	89	2.1	90	0.5	7.5	7.3	0.00
Max	11.34	12	851	97	19	1513	95	2.6	210	0.8	8.3	7.7	0.00
Min	6.56	4	0	87	7	571	87	1.5	30	0.3	7.0	7.1	0.00
Avg	8.29	7	438	95	12	850	91	2.1	75	0.5	7.5		0.00
Sum	257.04		0			0			2310				0.00

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AERATORS

Date Mar-94	Flow MGD	Return Flow	MLSS mg/l	MLSS lbs	SVI	F/M	SRT days	Solids Invnty lbs	DO mg/l	Det Time hrs	No. Basins On
1	12.01	0.66	1230	14908	153		4.06	36873	1.3	2.9	2
2	11.44	0.63	1282	15538	150		4.58	32342	1.0	3.0	2
3	10.98	0.56	1333	16156	156		8.16	38713	1.6	3.2	2
4	10.36	0.56	1317	15962	163		2.06	31446	1.0	3.4	2
5	9.76	0.49	1425	17271	167			45248	1.0	3.6	2
6	8.91	0.40	1308	15853	150		7.36	47048	1.1	3.9	2
7	8.74	0.45	1390	16847	169		3.73	37006	1.2	4.0	2
8	8.54	0.41	1392	16871	161		3.56	39216	1.5	4.1	2
9	8.88	0.42	1504	18228	169		13.97	55116	1.2	3.9	2
10	6.96	0.39	1432	17356	172		5.99	43906	1.6	5.0	2
11	8.48	0.40	1344	16289	164		3.19	38042	1.2	4.1	2
12	8.00	0.35	1374	16653	207			46694	1.4	4.4	2
13	7.97	0.35	1382	16750	182		8.08	49979	1.3	4.4	2
14	8.00	0.41	1372	16629	187		2.47	55793	1.0	4.4	2
15	7.23	0.35	1435	17392	160		7.15	45703	1.0	4.8	2
16	8.31	0.39	1363	16520	203		4.63	36421	0.8	4.2	2
17	8.08	0.39	1399	16956	180		4.08	40121	1.3	4.3	2
18	8.98	0.53	1554	18834	211		9.21	49179	2.4	3.9	2
19	7.95	0.42	1426	17283	196			42027	2.5	4.4	2
20	8.11	0.40	1450	17574	178		9.07	51137	3.3	4.3	2
21	9.36	0.55	1482	17962	180		4.39	42569	3.3	3.7	2
22	9.37	0.55	1427	17295	168		5.50	46714	2.2	3.7	2
23	9.71	0.52	1424	17259	178		4.52	41425	3.1	3.6	2
24	8.71	0.48	1384	16774	156		6.14	40500	1.8	4.0	2
25	8.53	0.45	1406	17041	158			42240	2.4	4.1	2
26	8.07	0.50	1490	18059	184			49633	1.1	4.3	2
27	8.18	0.42	1323	16035	173		10.69	56930	1.4	4.3	2
28	7.54	0.36	1314	15926	169		6.59	40699	1.4	4.6	2
29	7.79	0.44	1366	16556	157		5.57	44973	1.3	4.5	2
30	8.21	0.42	1469	17804	194		5.37	43959	1.3	4.2	2
31	8.34	0.41	1348	16338	182		5.93	45878	1.0	4.2	2
Max	12.01	0.66	1554	18834	211	0.00	14.0	56930	3.3	5	2
Min	6.96	0.35	1230	14908	150	0.00	2.1	31446	0.8	3	2
Avg	8.76	0.45	1392	16868	173	#DIV/0!	5.9	43791	1.6	4	2
Sum	271.57										

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	ANAEROBIC Digester No. 1								DIGESTION Digester No. 2				
Date Mar-94	vol / ft3 /day lbs	Alk mg/l	Vol Acids mg/l	pH	Tmp oF	CO2 %	Heat in oF	Exch out oF	Tot Sol %	Vol Sol %	Vol Ctnt %	Tmp oF	Gal Haul
1		3353	78	7.2	99		100	106				74	6000
2					99		100	106				74	6000
3					99		100	103	5.91	3.16	53.50	77	0
4					99		100	105				75	0
5					99		100	105				76	0
6	0.11				99		100	106				75	0
7					99		101	106				76	6000
8		2805	68	7.1	99		100	105				76	0
9					99		100	105				77	6000
10					99		100	106				77	6000
11					99		100	100				77	0
12					99		101	106				77	0
13					99		100	104				77	0
14	0.12				98		100	105	5.84	3.07	52.60	77	6000
15		3078	56	7.1	99		100	105				78	6000
16					99		100	100				77	6000
17					99		100	105				77	6000
18					99		100	105				77	0
19					99		100	105				76	0
20					99	40	100	105				77	6000
21	0.12				99		100	105	5.92	3.09	52.20	76	0
22					99		100	104				76	6000
23					98	38	98	104				73	6000
24					98		100	105				75	6000
25					98		100	105				76	0
26					99		101	106				77	0
27					99	40	100	105				76	6000
28	0.10				99		101	106	5.98	3.12	52.20	78	6000
29		3187	155	7.0	99		101	106				80	0
30					99	40	101	106				79	6000
31					99		100	105	6.32	3.35	53.00	81	6000
Max	0.12	3353	155	7.2	99	40	101	106	6.32	3.35	53.5	81	6000
Min	0.10	2805	56	7.0	98	38	98	100	5.84	3.07	52.2	73	0
Avg	0.11	3106	89	7.1	99	40	100	105	5.99	3.16	52.7	77	3290
Sum													102000

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SLUDGE PROCESSING

Date	Thickened Primary Sludge				WAS			Gravity Belt			TWAS		
Mar-94	Flow	Tot Sol	Vol Sol	Vol Content	Flow	Susp. Sols		Capture	Filtrate	Poly	Total Sols.		Gal
	gal	%	%	%	mgd	mg/l	lbs	%	mg/l	lbs	%	lbs	Hauled
1	14800				0.070	15530	9083				7.07	8768	14870
2	13420				0.065	11740	6349				6.81	8076	14220
3	11710				0.037	13747	4226				6.59	5842	10630
4	13980				0.094	18760	14640				6.04	5385	10690
5	14060				0.000		0					0	0
6	13700	6.61	4.42	66.8	0.038	17300	5540				8.30	7407	10700
7	15940				0.058	19000	9241				6.58	35796	65230
8	21720				0.066	19390	10623				6.66	7537	13570
9	16900				0.024	17630	3521				6.49	2863	5290
10	10910				0.046	18280	6952				6.76	7814	13860
11	12060				0.069	19688	11404				6.66	10565	19020
12	13300				0.000		0					0	0
13	12860				0.045	15610	5802				6.68	5426	9740
14	13040	6.09	5.16	84.8	0.148	18000	22252				6.50	14577	26890
15	12410				0.041	18000	6164				6.50	6424	11850
16	12160				0.045	19900	7468				5.37	6270	14000
17	16130				0.052	21950	9525				8.61	11460	15960
18	16900				0.041	14230	4847				7.22	8526	14160
19	16540				0.000		0					0	0
20	15950				0.037	16670	5187				6.10	5454	10720
21	16450	4.80	4.14	86.2	0.061	18120	9253				6.30	39496	75170
22	16670				0.050	19430	8055				7.01	7659	13100
23	13730				0.055	18380	8468				7.00	8395	14380
24	15400				0.045	16490	6189				6.33	7391	14000
25	15600				0.000		0					0	0
26	12400												
27	12100				0.046	13050	5001				6.04	4841	9610
28	13750	4.86	4.14	85.2	0.053	13000	5700				5.50	8064	17580
29	17080				0.064	14470	7714				5.56	8342	17990
30	16000				0.050	18380	7740				6.19	8017	15530
31	14600				0.045	19728	7404				5.43	6340	14000
Max	21720	6.61	5.16	86.2	.148	21950	22252	0.00	0		8.61	39496	75170
Min	10910	4.80	4.14	66.8	.000	11740	0	0.00	0		5.37	0	0
Avg	14589	5.59	4.46	80.8	.048	17172	6945	#DIV/0!	######		6.55	8558	15759
Sum	452270				1.445		208348					256736	472760

MONTHLY REPORT SUMMARY

Mar-94

PRIMARY TREATMENT

	Influent mg/l	Influent lbs/day	Effluent mg/l	Effluent lbs/day	Rem %
S S	142	9900	######	######	######
BOD5	141	9801	######	######	######

Detent Time hrs	Population Equivalent	Flow mgd	Precip "
2.8	57651	8.31	2.65

SECONDARY TREATMENT

	Influent mg/l	Influent lbs/day	Effluent mg/l	Effluent lbs/day	Rem %
S S	142	9900	7	438	95
BOD5	141	9801	12	850	91

F/M	SVI	SRT days	MLSS mg/l
######	173	5.9	1392

RAS Flow mgd	CL2 Res mg/l	CL2 Feed lbs/day
0.45	0.5	75

WAS Flow mgd	Aerator Detention Time hrs	Aerator DO mg/l
.048	4.0	1.6

ANAEROBIC DIGESTION

Primary Feed Sludge

Flow gal/day	Total Solids %	Volatile Content %
14589	5.59	80.8

Detention Time days	Loading lbs VS / ft3 /day
25	0.11

Secondary

Total Solids %	Volatile Content %	Vol Sol Reduct %
5.99	52.7	73.4

Sludge Process

Total Solids (TWS) %	Capture %	Filtrate Solids mg/l
6.55	######	######

	Sludge Hauled gal/day	lbs /day	lbs/mo
Digst	3290	1645	49345
TWS	15759	8608	258255
Total	19049	10253	307600