



January 12, 2023

Mr. Don Turner  
Environmental Project Officer  
Water Security Agency  
Suite 300 – 2365 Albert Street  
Regina, SK S4P 4K1

Dear Mr. Turner:

RE: Monthly Report: **December 2022**

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In compliance with the City of Regina “Permit to Operate a Sewage Works” # 0050853-07-00 please find attached the monthly report for December 2022.

I trust this meets with your approval, should you have any questions please do not hesitate to contact me directly at (306) 519-9054 or Justin Allan at (306) 551-3180.

Yours truly,

A handwritten signature in blue ink, appearing to read "J. Zimmer", with a long horizontal flourish extending to the right.

Joe Zimmer, P. Eng.  
Manager, Regina Operations  
EPCOR Water Services

# City of Regina - Wastewater Treatment Plant

December 2022

Final Effluent Results

Permit# 00050853-07-00

Date	Flow to Creek	Total Coliform	<i>E. coli</i>	Enterococci	Dissolved Oxygen (Field Test)	Temp. (Field Test)	Chloride (Field Test)	Total Phosphorus	pH @15±1°C	Total Suspended Solids	CBOD	Ammonia Nitrogen	Unionized Ammonia @15±1°C	Total Kjeldahl Nitrogen	Total Nitrogen
	(ML)	(MPN /100mL)			(mg/L)	(°C)	(mg/L)	(mg P/L)	(SU)	(mg/L)	(mg/L)	(mg N/L)	(mg N/L)	(mg N/L)	(mg N/L)
01	62.00	31	2		8.37	15.0	208	0.42	7.24	7.2	3.2	0.49	< 0.030	3.1	9.2
02	62.50	37	4		8.43	14.8		0.48		7.8		1.43		4.2	11.4
03	62.98				8.04	15.1		0.43		7.2		2.04		5.0	12.3
04	64.80				7.92	15.1	205	0.48	7.29	8.6	4.0	2.60	< 0.030	5.4	11.7
05	57.92	38	3		7.81	15.2	208	0.55	7.46	10.6	3.6	1.68	< 0.030	4.9	11.8
06	61.74	23	2	3	7.89	15.1	208	0.56	7.22	10.4	3.7	0.56	< 0.030	3.5	9.9
07	61.39	206	10		8.06	14.7	205	0.60	7.28	11.8	4.2	1.09	< 0.030	3.9	11.4
08	60.37	1,450	166		8.20	14.8	208	0.66	7.32	12.0	4.4	< 0.30	< 0.030	3.2	9.8
09	75.48	55	3		8.46	13.6		0.59		13.7		2.47		5.9	13.2
10	72.59				7.76	13.4		0.73		17.7		3.21		7.1	16.0
11	73.84				8.86	13.8	214	0.78	7.52	18.0	7.5	3.58	0.032	7.8	14.5
12	64.50	271	6		7.54	15.3	218	0.59	7.25	12.6	4.4	0.75	< 0.030	4.1	13.0
13	62.98	210	2	11	8.21	15.4	223	0.53	7.37	10.0	4.1	< 0.30	< 0.030	3.0	13.5
14	62.07	124	4		8.36	15.1	224	0.61	7.30	11.5	4.3	< 0.30	< 0.030	3.1	17.0
15	61.44	192	9		8.38	14.6	224	0.71	7.18	14.6	5.3	< 0.30	< 0.030	3.5	16.2
16	63.55	37	4		7.65	14.8		0.60		11.5		< 0.30		3.2	16.0
17	63.69				7.76	15.0		0.60		13.5		< 0.30		3.2	15.9
18	64.91				7.54	15.1	202	0.62	7.27	13.0	4.5	0.63	< 0.030	4.0	15.9
19	63.78	866	56	5	6.91	14.9	214	0.62	7.23	12.4	3.8	< 0.30	< 0.030	3.0	15.3
20	62.33	1,630	46	13	7.13	14.5	217	0.64	7.08	14.4	3.7	< 0.30	< 0.030	2.6	15.7
21	61.90	345	19		6.78	13.9	214	0.69	7.27	15.2	3.5	< 0.30	< 0.030	2.8	15.8
22	61.92	79	8		6.03	13.5	205	0.69	7.25	15.7	4.4	< 0.30	< 0.030	3.1	13.8
23	63.03	50	1		7.74	14.1		0.52		11.8		< 0.30		2.8	12.5
24	62.90				7.86	13.9		0.82		19.4		< 0.30		3.3	10.6
25	58.80				5.75	14.0	200	0.52	7.22	11.3	3.8	< 0.30	< 0.030	3.5	10.0
26	59.28	32	2	3	7.58	14.5	202	0.55	7.36	11.1	4.2	< 0.30	< 0.030	2.8	11.0
27	61.90	579	11		6.74	14.8	209	0.61	7.46	14.9	4.5	0.75	< 0.030	3.4	10.6
28	63.29	345	20		6.18	14.5	232	0.57	7.27	12.6	3.4	< 0.30	< 0.030	3.0	8.9
29	62.72	649	22		6.24	14.9	240	0.58	7.11	13.7	3.6	< 0.30	< 0.030	3.4	10.0
30	63.28	122	10		5.81	14.7		0.70		16.0		< 0.30		3.7	10.3
31	63.67				7.23	14.8		0.51		12.0		< 0.30		3.1	9.6
Sum	1967.55														
Avg	63.47				7.52	14.6	213	0.60	7.28	13	4	1	0.030	3.8	13
Min	57.92				5.75	13.4	200	0.42	7.08	7.2	3.2	< 0.30	< 0.030	2.6	8.9
Max	75.48		166		8.86	15.4	240	0.82	7.52	19.4	7.5	3.58	0.032	7.8	17.0
Permit Limits			≤1,000					≤0.75		≤15	≤15	≤10	≤1.24		≤14

***E. coli* Geometric Mean = 7 MPN/100mL, Limit = 200 MPN/100mL**

**Plant Notes:**

Dec 8 - Flow was diverted to the lagoon for future treatment during a SaskPower power outage that also tripped our main breakers. The breakers were reset and the process was restarted with minimal interruption when power was restored.

**WSA Notes:**

Dec 6 - Acute lethality was tested and passed.

# Creek Monthly Report to Water Security Agency

Tuesday, December 13, 2022

Permit# 00050853-07-00

Test Description	Riske's Crossing	Final Effluent	Sidmar Crossing	Wascana above the Qu'Appelle	Qu'Appelle above the Wascana	Lumsden
Dissolved Oxygen (Field Test)	7.63	8.21	9.05	6.84	8.89	7.58
pH (Field Test for Creek Samples)	7.10	7.37	5.48	6.82	7.00	6.74
Temperature (Field Test)	0.7	15.4	6.6	2.7	2.9	2.6
Total Suspended Solids	98.8	10.0	16.4	32.3	10.5	13.0
Carbonaceous Biochemical Oxygen Demand	<2.0	4.1	<2.0	2.0	<2.0	<2.0
Total Phosphorus	0.44	0.53	0.34	0.28	0.06	0.17
Total Kjeldahl Nitrogen	3.2	3.0	2.9	4.8	0.9	2.0
Ammonia Nitrogen	1.70	<0.30	0.51	2.00	<0.30	0.48
Nitrate Nitrogen	0.23	10.4	9.95	10.8	<0.13	4.19
Total Nitrogen	3.4	13.5	12.9	15.7	1.0	6.2
Phenol Alkalinity	0	0	0	0	0	0
Total Alkalinity	246	144	153	196	254	202
Carbonate	0	0	0	0	0	0
Bicarbonate	300	176	187	239	310	247
Chloride (Field Test)	219	223	228	244	35.3	163
Total Coliform	387	210	2,600	613	204	687
<i>E. coli</i>	26	2	1730	37	11	19
Enterococci	20	11	934	46	20	28
Total Hardness*	366	338	350	389	322	347
Calcium*	81	78	81	90	70	78
Magnesium*	40	35	36	40	36	37
Potassium*	13	18	18	20	7.6	14
Sodium*	160	178	177	190	86	150
Sulfate*	190	250	260	280	200	240
Total Dissolved Solids*		943				
Conductivity at 25°C*		1570				
Phenolics*		0.014				
Mercury*		0.000002				
Aluminum*		0.044				
Antimony*		0.0008				
Arsenic*		0.0010				
Barium*		0.050				
Beryllium*		<0.0001				
Boron*		0.27				
Cadmium*		0.00002				
Chromium*		0.0007				
Cobalt*		0.0004				
Copper*		0.026				
Iron*		0.12				
Lead*		0.0012				
Manganese*		0.22				
Molybdenum*		0.015				
Nickel*		0.0022				
Selenium*		0.0045				
Silver*		0.00006				
Strontium*		0.47				
Thallium*		<0.0002				
Uranium*		0.0005				
Vanadium*		0.0007				
Zinc*		0.041				

**Notes:**

\* Tests conducted by an external accredited laboratory.

Results are in mg/L except total coliforms, *E. coli*, enterococci (MPN/100mL), temperature (°C), conductivity (µS/cm) and pH (SU).

**Primary Influent BOD Results (mg/L)**

Dec 1 - 251; Dec 6 - 227; Dec 8 - 226; Dec 13 - 259; Dec 15 - 258; Dec 20 - 265; Dec 22 - 268; Dec 27 - 268; Dec 29 - 244