

CITY OF
BELMONT
WASTEWATER
ANNUAL
REPORT
2018

City of Belmont
WASTEWATER TREATMENT PLANT
PERFORMANCE REPORT 2018
January through December

Responsible Entity: Adrian Miller, City Manager
Person in Charge/Contact: Chuck Flowers, Utilities Director
NPDES Permit: NC0021181

Description of Wastewater Treatment Plant:

The City operates and maintains a 5 million-gallons-per-day (MGD) extended aeration plant. It has an automatic bar screen and grit chamber with an emergency bypass channel, 3,500 gallon caustic tank for pH control, dual train aeration basins and dual train secondary clarifiers. The disinfecting system is comprised of dual vacuum feed chlorinators for use with 1-ton chlorine cylinders. The chlorine contact chamber has a 30 minute detention time for an effluent flow rate of 5 MGD. The plant also de-chlorinates using dual SO₂ cylinders. Sludge is conditioned in one of the two aerobic digesters with combined capacity of 500,000 gallons. The plant also utilizes a 1.5 million gallon sludge holding tank.

Performance:

January to December

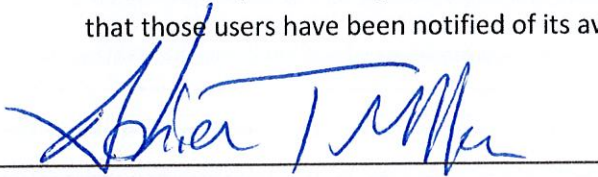
July 2018 (July 22-28) – The TSS for the plant (influent and effluent) was only conducted four times during this week. The samples were collected, but were not ran at the lab.

Notification:

Pursuant to North Carolina House Bill 1160, a copy of this report is on file at City Hall. Inquires may be addressed to Mr. Chuck Flower, Utilities Director, City of Belmont, PO Box 431, Belmont NC 28012, (704)825-0512.

Certification:

I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that his report has been made available to the users or customers of the named system and that those users have been notified of its availability.





Responsible Person

Date

Title: City Manager

Entity: City of Belmont

EFFLUENT

NPDES PERMIT #: NC0021181
FACILITY NAME: City of Belmont WWTP
OPERATOR IN RESPONSIBLE CHARGE:
CERTIFIED LABORATORIES:

DISCHARGE No. 001
SAMPLE PERMIT CLASS: IV
OPERATOR: SANDRA M. CRAFT
GRADE: 4
#127 Shealy Environmental Services, Inc.

YEAR: 2018
MTH: Jan - Dec
COUNTY: GASTON
PHONE: (704) 825-3791

Mail ORIGINAL and ONE COPY to:
 ATTN: CENTRAL FILES
 DIV. OF ENVIRONMENTAL MANAGEMENT
 DEHNH
 P.O. BOX 29535
 RALEIGH, NC 27626-0535

CHECK BOX IF ORC HAS CHANGED: PERSON COLLECTING SAMPLE: Operators
 (SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE
 BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

MONTH	Operator Arrival Time 2400 clock		Operator Time	ORC on Site? *	DAILY RATE			TEMPERATURE	pH		RESIDUAL CL2	BOD	TOTAL SUSPENDED SOLIDS	AMMONIA - N	FECAL COLIFORM	DISSOLVED OXYGEN	T- NITROGEN (NO2+NO3=TKN)	T-PHOSPHORUS	NO2+NO3	TKN	TOXICITY
	HRS	HRS			MGD	Deg C	MIN S.U.		MAX S.U.	ug/l											
Jan	7	24	1.449	Y	9.7	6.58	7.31	1.76	3.5	5.2	0.090	3.36	11.51	17.40	2.26	17.40	<.50	-			
Feb	7	24	1.702	Y	14.6	6.44	7.43	9.55	4.6	11.3	0.023	13.26	9.98	18.50	1.43	16.50	2.00	PASS			
Mar	7	24	1.586	Y	13.5	6.37	7.36	3.48	4.4	10.2	0.018	9.71	10.12	16.20	2.05	15.75	0.45	-			
Apr	7	24	1.502	Y	17.1	6.60	7.39	10.00	4.3	7.7	0.023	18.03	9.43	21.15	3.03	20.00	1.15	-			
May	7	24	1.716	Y	22.9	6.70	7.30	12.32	5.4	12.5	0.005	31.33	8.19	20.68	3.26	20.20	0.48	PASS			
Jun	7	24	1.657	Y	25.4	6.60	7.30	0.81	1.7	4.8	0.125	10.78	7.55	16.42	2.83	16.42	<.50	-			
Jul	7	24	1.712	Y	26.0	6.70	7.20	3.71	1.0	7.6	0.023	9.88	7.28	20.21	1.88	20.00	0.21	-			
Aug	7	24	1.883	Y	26.4	6.50	7.30	6.22	0.3	6.8	0.037	38.01	7.33	19.75	2.40	19.75	<.50	Pass			
Sep	7	24	2.226	Y	26.2	6.20	7.30	6.84	0.6	4.7	0.168	18.82	7.27	15.15	2.00	14.88	0.28	-			
Oct	7	24	2.198	Y	21.6	6.40	7.70	13.17	1.2	5.9	0.119	22.26	8.39	17.80	2.44	17.60	0.20	-			
Nov	7	24	1.854	Y	15.3	6.50	7.30	6.68	1.5	12.0	0.086	14.67	9.45	18.98	1.47	17.75	1.23	Pass			
Dec	7	24	2.003	Y	12.3	6.60	7.30	12.61	3.6	8.4	0.108	10.53	10.32	17.98	1.80	17.25	0.73	-			
AVERAGE					19.2			7.26	2.7	8.1	0.068	16.72	8.90	18.35	2.24	17.79	0.56				
MINIMUM					9.74	6.20	7.20	0.81	0.3	4.7	0.005	3.36	7.27	15.15	1.43	14.88	<.50				
MAXIMUM					26.4	6.70	7.70	13.17	5.4	12.5	0.168	38.01	11.51	21.15	3.26	20.20	2.00				
Comp.(C)/Grab(G)					G	G	G	G	C	C	C	G	G	C	C	C	C	C	C		
Monthly Limit					5.000			28	30	30		200									

Removal Efficiencies(%)

98% 96%

INFLUENT

NPDES PERMIT #: NC00021181
FACILITY NAME: City of Belmont WWTP
OPERATOR IN RESPONSIBLE CHARGE:
CERTIFIED LABORATORIES:

DISCHARGE No. 001
SAMPLE PERMIT CLASS: IV
OPERATOR IN RESPONSIBLE CHARGE: SANDRA M. CRAFT
GRADE 4
#127 Shealy Environmental Services, Inc.

MONTH: Jan - Dec
COUNTY: GASTON
YEAR: 2018
PHONE: (704) 825-3791

MAIL ORIGINAL AND ONE COPY TO:
 ATTN: CENTRAL FILES
 DIV. OF ENVIRONMENTAL MANAGEMENT
 DENR
 P.O. BOX 29535
 RALEIGH, NC 27626-0535

PERSON COLLECTING SAMPLE: _____ Operators
 (SIGNATURE OF OPERATOR IN RESPONSIBLE CHARGE) DATE
 BY THIS SIGNATURE, I CERTIFY THAT THIS REPORT IS
 ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

MONTH	Operator Arrival Time 2400 clock		Operator Time	ORC on Site? *	DAILY RATE			TEMPERATURE	pH		BOD	TOTAL SUSPENDED SOLIDS	AMMONIA - N	T-NITROGEN (NO2+NO3=TKN)	T-PHOSPHORUS	NO2+NO3	TKN
	HRS	HRS			MGD	Deg C	MIN S.U.		MAX S.U.	MG/L							
Jan	7	24	0.806	14.7	6.67	7.30	223.8	183.3	20.000	35.88	4.35	0.88	35.00				
Feb	7	24	1.996	16.7	6.67	7.39	178.5	204.2	15.000	23.15	2.95	0.15	23.00				
Mar	7	24	1.524	17.4	6.59	7.25	179.5	187.5	15.500	27.89	3.40	0.39	27.50				
Apr	7	24	1.451	19.5	6.70	7.42	217.4	272.9	14.500	28.25	3.90	0.25	28.00				
May	7	24	1.683	23.6	6.80	7.40	190.0	205.9	16.400	25.37	3.85	0.37	25.00				
Jun	7	24	1.651	26.3	6.60	7.30	177.0	168.1	13.250	20.70	3.00	0.20	20.50				
Jul	7	24	1.628	26.8	6.50	7.50	167.6	238.0	14.600	23.34	3.80	0.34	23.00				
Aug	7	24	1.804	27.8	6.50	7.20	154.7	262.6	9.750	20.82	2.55	0.32	20.50				
Sep	7	24	1.051	27.6	6.40	7.50	137.6	141.5	13.075	26.62	3.10	0.62	26.00				
Oct	7	24	0.737	24.8	6.40	7.50	135.6	138.8	12.800	22.84	3.60	0.34	22.50				
Nov	7	24	0.562	19.2	6.40	7.70	208.7	150.2	16.500	31.34	3.55	7.84	23.50				
Dec	7	24	0.591	15.9	6.50	7.60	160.0	124.6	13.100	37.63	3.40	0.13	37.50				
AVERAGE			1.290	21.7			177.5	189.8	14.540	26.98	3.45	0.98	26.00				
MINIMUM			0.562	14.7		6.40	135.6	124.6	9.750	20.70	2.55	0.13	20.50				
MAXIMUM			1.996	27.8		6.80	223.8	272.9	20.000	37.63	4.35	7.84	37.50				
Comp.(C) / Grab(G)			G	G		G	C	C	C	C	C	C	C				
Monthly Limit			5.000	---			98%	96%									

Removal Efficiencies(%)

POTW Name : City of Belmont WWTP
 NPDES Permit : # NC0021181

Sample Location : EFFLUENT

YEAR: 2018

Date	EFF Flow	Zn ug/l	Cu ug/l	Cd ug/l	Cr ug/l	Hg ng/l	Ni ug/l	Pb ug/l	Cn mg/l	Ag ug/l	TKN mg/l	Mo ug/l	Se ug/l	As ug/l	T-N mg/l	T-P mg/l
Jan	1,449	74.0	9.1	<.50	<.50	2.01	<.50	<1.0	0.015	<1.0	<.50	<10	<.50	<2.0	17.40	2.26
Feb	1,702										2.00				18.50	1.43
March	1,586										0.45				16.20	2.05
April	1,502	72.0	16.0	<.50	<.50	1.185	<.50	<1.0	<.01	<1.0	1.15	<10	<.50	<2.0	21.15	3.03
May	1,716										0.48				20.68	3.26
June	1,657										<.50				16.42	2.83
July	1,712	71.0	8.4	<.50	<.50	2.48	<.50	<1.0	0.021	<1.0	0.21	<10	<.50	<2.0	20.21	1.88
August	1,883										<.50				19.75	2.40
Sept.	2,226										0.28				15.15	2.00
Oct.	2,198	73.0	14.0	<.50	<.50	3.205	<.50	<1.0	0.024	<1.0	0.20	<10	<.50	<2.0	17.80	2.44
Nov.	1,854										1.23				18.98	1.47
Dec.	2,003										0.73				17.98	1.80
Total	21,488	290.0	47.5			8.88			0.060		6.73				220.20	26.84
Values	12	4	4	4	4	4	4	4	4	4	12	4	4	4	12	12
Avg.	1,791	72.5	11.9	<.50	<.50	2.220	<.50	<1.0	0.015	<1.0	0.561	<10	<.50	<2.0	18.35	2.24
Max	2,226	74.0	16.0	<.50	<.50	3.205	<.50	<1.0	0.024	<1.0	2.00	<10	<.50	<2.0	21.15	3.26
Min	1,449	71.0	8.4	<.50	<.50	1.185	<.50	<1.0	<.01	<1.0	<.50	<10	<.50	<2.0	15.15	1.43

Any Data Below the (PQL) Practical Quantitation Limit will be marked as (<) the reported limit.
 See PQL sheet for limits.

POTW Name : City of Belmont WWTP
 NPDES Permit : # NC0021181

Sample Location : INFLUENT

YEAR: 2018

Date	INF Flow	RAS Flow	Zn ug/l	Cu ug/l	Cd ug/l	Cr ug/l	Hg mg/l	Ni ug/l	Pb ug/l	Cn mg/l	Ag ug/l	TKN mg/l	Mo ug/l	Se ug/l	As ug/l	T-N mg/l	T-P mg/l
Jan.	0.806	1.338	160.0	20.0	<50	<5.0	<0002	<5.0	<1.0	<01	<1.0	35.00	<10	<5.0	<2.0	35.88	4.35
Feb.	1.996	1.396					<0002					23.00				23.15	2.95
March	1.524	1.256					<0002					27.50				27.89	3.40
April	1.451	1.234	200.0	42.0	<50	5.5	<0002	<5.0	1.4	<01	<1.0	28.00	<10	<5.0	<2.0	28.25	3.90
May	1.683	1.277					<0002					25.00				25.37	3.85
June	1.651	1.256					<0002					20.50				20.70	3.00
July	1.628	1.237	320.0	49.0	<50	14	<0002	5.1	3.6	<01	<1.0	23.00	<10	<5.0	<2.0	23.34	3.80
August	1.804	1.229					<0002					20.50				20.82	2.55
Sept.	1.051	1.228					<0002					26.00				26.62	3.10
Oct.	0.737	1.242	190.0	62.0	<50	<5.0	<0002	<5.0	1.6	<01	<1.0	22.50	<10	<5.0	<2.0	22.84	3.60
Nov.	0.562	1.243					<0002					23.50				31.34	3.55
Dec.	0.591	1.249					<0002					37.50				37.63	3.40
Total	15.483	15.186	870.0	173.0		19.5		5.1	6.6			312.0				323.80	41.45
Values	12	12	4	4	4	4	12	4	4	4	4	12	4	4	4	12	12
Avg.	1.290	1.266	217.5	43.3	<.50	4.9	<.0002	1.3	1.7	<.01	<1.0	26.0	<10	<5.0	<2.0	26.98	3.45
Max	1.996	1.396	320.0	62.0	<.50	14.0	<.0002	5.1	3.6	<.01	<1.0	37.5	<10	<5.0	<2.0	37.63	4.35
Min	0.562	1.228	160.0	20.0	<.50	5.5	<.0002	<5.0	1.4	<.01	<1.0	20.5	<10	<5.0	<2.0	20.70	2.55

Any Data Below the (PQL) Practical Quantitation Limit will be marked as (<) the reported limit.
 See PQL sheet for limits.

POTW Name : City of Belmont WWTP

Sample Location : WEST AERATION BASIN

NPDES Permit : # NC0021181

YEAR: 2018

Date	Flow	MLVSS	Zn ug/l	Cu ug/l	Cd ug/l	Cr ug/l	Hg mg/l	Ni ug/l	Pb ug/l	Cn mg/l	Ag ug/l	TKN mg/l	Mo ug/l	Se ug/l	As ug/l	T-N mg/l	T-P mg/l	NH3 mg/l
Jan.	2.144	3186	3600.0	670.0	2.2	99.0	0.0018	36.0	46.0	<.01	5.8	310.0	10.0	8.1	8.8	319.10	53.50	1.08
Feb.	3.392	3575					0.0046					174.5				186.05	64.00	0.74
March	2.779	3433					0.0040					330.0				177.20	47.00	0.61
April	2.685	3931	5000.0	1100.0	<5.0	210.0	0.0021	52.0	50.0	<.02	11.0	220.0	<100	<50	<20	238.00	39.50	0.29
May	2.961	3531					0.0029					405.0				421.50	79.50	0.99
June	2.907	3285					0.0024					215.0				229.50	43.00	1.11
July	2.865	3154	380.0	76.0	<.50	16.0	<.0002	5.1	5.6	<.01	<1.0	19.0	<10	<5.0	<2.0	26.00	7.55	<.10
August	3.033	2971					0.0039					295.0				310.00	65.00	0.66
Sept.	2.279	2692					0.0002					295.0				307.95	66.00	0.53
Oct.	1.980	3186	6700.0	1300.0	4.7	260.0	0.0049	46.0	130.0	0.01	11.0	205.0	<50	<25	14.0	218.00	50.50	0.53
Nov.	1.805	3515					0.0016					295.0				304.70	77.50	0.78
Dec.	1.840	3535					0.0045					185.0				199.95	36.60	0.41
Total	30.670	39993	15680.0	3146.0	6.9	585.0	0.0329	139.1	231.6	0.010	27.8	2948.5	10.0	8.1	22.8	2937.95	629.65	7.73
Values	12	12	4	4	4	4	12	4	4	4	4	12	4	4	4	12	12	12
Avg.	2.556	3333	3920.0	786.5	1.7	146.3	0.0027	34.8	57.9	0.003	7.0	245.7	2.5	2.0	5.7	244.83	52.47	0.64
Max	3.392	3931	6700.0	1300.0	4.7	260.0	0.0049	52.0	130.0	0.010	11.0	405.0	10.0	8.1	14.0	421.50	79.50	1.11
Min	1.805	2692	380.0	76.0	<.50	16.0	<.0002	5.1	5.6	<.01	<1.0	19.0	<100	<50	<20	26.00	7.55	<.10

Any Data Below the (PQL) Practical Quantitation Limit will be marked as (<) the reported limit.

See PQL sheet for limits.

NPPDES PERMIT #:

NC00021181

FACILITY NAME:

City of Belmont WWTP

STREAM:

Catawba River

LOCATION:

US HWY 74 at bridge

UPSTREAM

DATE	Operator Time	TEMPERATURE Deg C	pH MIN S.U.	pH MAX S.U.	DISSOLVED OXYGEN MG/L	FECAL COLIFORM (Geometric mean) #/100mls	Conductivity umhos/cm
Jan	24	8.5	6.25	7.22	11.680	11.8571	72.4
Feb	24	11.9	6.55	6.84	10.825	147.7220	68.8
Mar	24	12.3	6.53	7.17	9.883	20.8272	64.5
Apr	24	16.1	6.60	6.70	10.014	30.6785	62.9
May	24	22.8	6.60	6.90	8.593	91.6618	60.2
Jun	24	27.0	6.50	7.30	7.336	79.7012	50.5
Jul	24	29.2	6.40	6.70	6.737	72.2110	50.8
Aug	24	29.4	6.50	7.05	6.984	125.5204	50.0
Sep	24	27.9	6.30	7.20	6.507	208.3884	53.9
Oct	24	23.6	6.30	7.10	7.792	129.9920	46.2
Nov	24	15.8	6.10	8.20	9.168	315.2795	49.3
Dec	24	11.4	6.50	6.80	10.120	143.0272	53.0
AVERAGE		19.7			8.803	114.7389	56.9
MINIMUM		8.5	6.10	6.70	6.507	11.8571	46.2
MAXIMUM		29.4	6.60	8.20	11.680	315.2795	72.4

MONTH:

Jan - Dec

2018

COUNTY:

Gaston

STREAM:

Catawba River

LOCATION:

1 mile from Effluent discharge

DOWNSTREAM

DATE	Collection Time	TEMPERATURE Deg C	pH MIN S.U.	pH MAX S.U.	DISSOLVED OXYGEN MG/L	FECAL Coliform (Geometric/mean) #/100ML	Conductivity umhos/cm
Jan	24	9.1	6.36	6.96	11.720	6.1196	64.1
Feb	24	12.3	6.52	6.67	10.875	57.9655	63.6
Mar	24	12.2	6.48	7.11	10.285	27.5986	66.7
Apr	24	16.6	6.60	6.70	9.930	12.6458	61.9
May	24	23.6	6.50	6.90	8.340	18.0828	56.0
Jun	24	27.7	6.50	7.30	7.460	49.8015	51.3
Jul	24	29.0	6.40	6.80	6.931	26.7329	52.2
Aug	24	29.5	6.40	6.80	6.842	38.1322	49.2
Sep	24	28.1	6.10	6.80	6.549	99.8132	52.5
Oct	24	23.2	6.30	7.00	7.410	58.9764	50.0
Nov	24	15.8	6.20	7.60	8.790	101.4087	48.4
Dec	24	11.5	6.40	6.90	10.420	111.3478	52.7
AVERAGE		19.9			8.796	50.7188	55.7
MINIMUM		9.1	6.10	6.67	6.549	6.1196	48.4
MAXIMUM		29.5	6.60	7.60	11.720	111.3478	66.7