



# MSD METROPOLITAN SEWERAGE DISTRICT BUNCOMBE COUNTY, NORTH CAROLINA

2028 Riverside Drive  
Asheville, NC 28804  
Telephone: 828.254.9646  
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M. Jerry VeHaun, Chairman  
E. Glenn Kelly, Vice-Chairman  
Jackie W. Bryson, Sec./Treasurer  
Matt Ashley

Thomas E. Hartye, General Manager

William Clarke, General Counsel

Don Collins  
Ellen Frost  
Esther Manheimer  
Chris Pelly  
Robert Pressley  
Al P. Root  
Gwen Wisler

August 31, 2018

System Performance Annual Report  
North Carolina Division of Water Quality  
1617 Mail Service Center  
Raleigh, NC 27699-1617

Dear Sirs;

Please find the three (3) enclosed copies of the System Performance Annual Report for the Metropolitan Sewerage District of Buncombe County, as required in the General Statute 143-215.1C. Public notification was published subsequent to the mailing of this letter on August 31, 2018, in the Asheville Citizen-Times. Reference was made in the article to the viewing of the report on our web site, [www.msdbc.org](http://www.msdbc.org), written request to the MSD, or by requesting by phone for a printed copy. An abbreviated report is also available to our customers. Please feel free to call me if you need additional information.

Respectfully,

Metropolitan Sewerage District of Buncombe County, NC

By,

Thomas E. Hartye, P.E.  
General Manager MSD

CC: Ms. Linda Wiggs

# System Performance Annual Report

## Fiscal Year 2018 (July '17 thru June '18)

### **I. General Information**

Metropolitan Sewerage District of Buncombe County, NC  
2028 Riverside Drive, William H. Mull Building  
Asheville, North Carolina 28804

General Manager	Thomas E. Hartye, P.E.	(828) 254-9646
Director of Wastewater Reclamation Facility (WRF)	Peter Weed (ORC)	(828) 225-8204
Operations Manager (WRF)	Roger Edwards (ORC-Backup)	(828) 225-8224
Director of Technical Services (Collection System)	Ken Stines (ORC)	(828) 225-8244
Director of Construction (Collection System)	Mike Stamey, P.E. (ORC-Backup)	(828) 225-8262

#### **Permit Numbers:**

- NPDES Permit # NC0024911
- General Storm water Permit # NCG110000 COC # NCG110158
- Air Quality (WNCRAPCA) Title V Permit # 11-772-18
- Collection System # WQCS00004

### **II. Description of Facilities**

#### **A. Collection System- System Services Division**

In the fiscal year of 2018 (FY18), the Metropolitan Sewerage District provided wastewater service to over 55,000 customers with an estimated population of 130,000. This large service area spans the French Broad River and Swannanoa River Valleys covering about 180 square miles of land. Pipes conveying the wastewater from homes and businesses form an extensive collection system operated and maintained by our System Services Division. With over 1,027 miles of public sanitary sewer lines, 30 pump stations and approximately 30,230 manhole access points; significant manpower and equipment is required. Pipes vary in size from 66" diameter large interceptors down to 6" serving residential communities. Most of the piping within the District is between 50 and 100 years old and requires continual upkeep and/or replacement.

## **B. Water Reclamation Facility (WRF)**

The Water Reclamation Facility (WRF) is rated at 40 million gallons per day (MGD) capacity serving most of Buncombe County (Asheville, Biltmore Forest, Black Mountain, Montreat, Weaverville, Woodfin and part of northern Henderson County). In FY18 an average flow of 20.8 million gallons per day were treated with the majority coming from residences. For the year, 7.6 billion gallons were treated with more than one-third coming from Infiltration & Inflow (I&I). That's the industry term for groundwater seeping in from cracks in pipes and manholes or rainwater entering through manhole lids and unauthorized Storm Water connections. The District has been aggressively working to abate this problem.

The design of our wastewater treatment system is called "attached growth" relying heavily on 152 rotating biological contactors (RBC's) to do the bulk of treatment. These RBC's provide over 400 acres (about 2.5 acres per unit) of surface area for microorganisms to grow upon. As the backbone of treatment these microorganisms do the heavy lifting providing the return of clean, safe water back to the French Broad River; our receiving stream. MSD's facility is believed to be the largest RBC plant in the world. A detailed listing of our treatment system components is as follows;

### **Preliminary Treatment Components**

- IDI Barscreens (2 units) w/screenings compactor and screw conveyer
- Influent Pumps (3 units) - 35 MGD rated capacity each
- Aerated Grit Chambers (3 units) with grease removal

### **Primary Treatment Components**

- Primary Microscreens (7 units) - presently decommissioned

### **Secondary Treatment Components**

- 1<sup>st</sup> Stage RBC's (44 units)
- 2<sup>nd</sup> Stage RBC's (72 units)
- 3<sup>rd</sup> Stage RBC's ( 36 units)
- Intermediate Pumps (3 units) - pump water to clarifier from 3<sup>rd</sup> RBC stage
- Intermediate Clarifier (4 cells - total volume 2 MG)
- Microfiltration with Aqua Aerobics Systems AquaDisk system (16 Units)

### **Disinfection Components**

- Sodium Hypochlorite solution - average feed 1,000 gallons/day at 6.5% solution strength with dechlorination of effluent prior to exiting the treatment facility

### **Residuals Handling Components**

- Gravity Thickeners (2 units) - 100 foot diameter each
- 2.5 meter Belt Filter Presses (2 units)
- Anaerobic Digesters (decommissioned) - 100 foot diameter each (2)
- Fluidized Bed Incinerator (40DT/day rated)

### **Energy Management Components**

- 4 Megawatts in Diesel Generators (full back-up/emergency power supply)
- 850 Kilowatt Hydro Turbines (3 units) - induction units using the French Broad River to generate power.

### **Automation Components**

- SCADA systems employed throughout facility provide fully automated control of WRF

#### **Sludge/Biosolids Management Plan**

- MSD utilizes a fluidized bed incinerator as its primary sludge management option while maintaining an arrangement with the Buncombe County landfill (lined) for emergencies. Presently the facility is managing over 20 Dry Ton's (DT's) per day of residuals; however the designed capacity is 40DT's per day. Sludge produced thru normal biological processes in the plant is thickened to a consistency of 2% to 5% dry solids content and then pumped to belt filter presses. These presses dewater the biosolids to about a 21% dry cake suitable for incineration. Hot gases generated by the process are then piped through a scrubber to remove harmful pollutants before entering the atmosphere. The byproduct residual ash is then delivered to the on-site lagoon for long term containment.

### **III. Improvements to Facilities**

#### **A. Collection System Improvements**

MSD assumed ownership and maintenance of the various local public collection systems in 1990, and since that time MSD has undertaken an aggressive program to correct existing known collection system problems. Between 1990 and 2018, over 1,217,200 linear feet (or 230 miles) of pipe have been replaced and over \$374 million has been re-invested in plant and collection system rehabilitation projects. However, due to the large size of the MSD system, there is much work still to be done. From FY 2018 to FY 2027, the District expects to rehabilitate or replace an additional 450,000 linear feet.

Approximately \$310 million will be spent for the District's Capital Improvement Program (CIP) over the next ten years. Of this, 26% will be spent on rehabilitating medium to large interceptors, 37% on rehabilitating or replacing small collection lines, and 36% on the treatment plant and pump station projects. The total estimated cost to rehabilitate the District's aged collection system and WRF facilities over the next twenty year period is estimated at over \$460 million.

MSD's Pipe Rating Program is used to objectively prioritize rehabilitation projects throughout the regional collection system. This published, award winning program utilizes the District's Geographic Information System (GIS) and database software to collect rating data for each project. The data include SSO & overflow history, customer service requests, proximity to streams/waterways, structural condition, and monitoring/maintenance schedules by MSD staff. A priority rating is then generated for each project, which is used to prioritize the ten-year CIP.

MSD maintains an aggressive Preventative Maintenance Program whereby approximately 1,052,000 lineal feet (or about 200 miles) of sewer lines were cleaned by high pressure water jetting equipment. In addition, over 72,000 linear feet of sewer lines are mechanically treated to remove tree roots and blockages. MSD also maintains its Rights-of-Way to ensure access to the system for cleaning and maintenance activities. During FY 2018 over 42,500 ft. were cleared.

#### **B. Water Reclamation Facility Improvements**

Recently completed or underway facility projects include the following:

- Plant Headworks Project: This is the first recommended project from the Plant Facility Plan. It will provide for new Bar Screens at the Influent Pump Station, New Fine Screens and Grit Removal,

and the re-use of existing abandoned tanks to provide a surge system for better treatment during high-flow storm events. Construction is well underway on the \$12.0 million project, and completion is expected in winter of 2019.

- High Rate Primary Treatment Project: This is the second project recommended by the Plant Facility Plan. This \$17.0 million project will provide high-rate primary clarification, and will help the plant's Rotating Biological Contactor system perform at a higher level and be better equipped to meet future regulations. Design for this project is now complete, and construction is expected to begin in winter of 2019.

## **IV. Performance Measures**

### **A. Collection System, System Services Division**

- The District has an aggressive Preventative Maintenance program of high pressure cleaning and root control. This year over 1,124,000 lineal feet (or 212 miles) of pipeline was treated by MSD in this way; approximately 21% of the 1,027 miles of the system.
- System Services division completed and submitted to NCDNR-DWQ two six-month High Priority Line Inspection Reports. The High Priority Line report documents inspection of aerial lines, siphons and lines in proximity to vulnerable creeks and streams.
- The collection system recorded 25 sanitary sewer overflows (SSO's). All SSO's were remediated according to the District's standard operating procedures for sanitary sewer overflow cleanup and no severe environmental impact occurred.

**Attachments (These documents are in Adobe Acrobat format. To download a free Acrobat Reader [CLICK HERE](#))**

- Customer Service response times
- Pipeline Maintenance totals
- SSO Report - monthly
- Construction totals (In System Services Division)
- SSO's chart for FY18

### **B. Water Reclamation Facility (WRF)**

During the FY18 annual reporting period, high performance measures were again achieved. The WRF continues to provide effective/efficient treatment services to the community averaging wastewater CBOD & TSS removal efficiencies of 95% and 97% respectively (state permit requires a minimum of 85% removal rates for compliance). The volume of flow to the WRF continues to remain well below hydraulic capacity for the plant averaging 20.8 million gallons per day. The WRF remains in compliance for all permitted parameters and receives favorable reviews by NC Department of Environment and Natural Resources and the WNC Regional Air Quality Agency.

MSD maintains a service contract agreement with Pace Analytical, Inc. (NC certified lab). This agreement incorporates the exchange of full laboratory testing services for use of the existing laboratory space. This progressive opportunity continues to yield significant long-term savings to MSD. Also, the WRF successfully participated in surveillance audits regarding ISO14001 certification - coming through with

zero (0) non-conformances. This program, also referred to as an Environmental Management System, continues to provide significant benefits to MSD both in the short & long-term.

#### Performance Measures

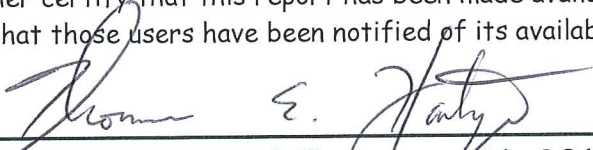
Task	FY16	FY17	FY18
1. Daily (average) flow, treated MGD	21.6	19.5	20.8
2. Maximum daily flow treated, MGD	67.1	53.0	64.8
3. Dry tons of bio-solids processed	6,096	6,523	7,280
4. Cost per million gallons (MG), treated	\$735	\$767	\$718
5. Energy costs per MG, treated	\$96	\$117	\$121
6. Carbonaceous biochemical oxygen demand (CBOD) removal, %	94%	94%	95%
7. Total suspended solids (TSS) removal efficiency, %	97%	97%	97%
8. Number of NPDES permit non-compliance	0	0	1
9. Preventative to corrective maintenance ratio	70:30	70:30	70:30

**Attachments (These documents are in Adobe Acrobat format. To download a free Acrobat Reader [CLICK HERE](#))**

- Plant location map with contours ( This is a large file)
- Schematic of Wastewater Reclamation Facility
- Water Reclamation Facility site
- WRF performance chart
- WRF pollutant removals
- Biosolids production
- Air emissions

#### **V. Certification**

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



Thomas E. Hartye, P.E. August 31, 2018

General Manager, Metropolitan Sewerage District of Buncombe County, NC

If you would like a hard copy or more information...

Write to [webmaster@msdbc.org](mailto:webmaster@msdbc.org)





## CUSTOMER SERVICE REQUESTS

### Monthly - All Crews

CREW	MONTH	JOBS	AVERAGE RESPONSE TIME	AVERAGE TIME SPENT
<b>DAY 1ST RESPONDER</b>				
	July, 2017	93	32	31
	August, 2017	97	27	38
	September, 2017	104	33	50
	October, 2017	107	25	37
	November, 2017	110	23	35
	December, 2017	95	28	30
	January, 2018	137	26	30
	February, 2018	132	22	41
	March, 2018	125	28	41
	April, 2018	119	28	37
	May, 2018	127	25	32
	June, 2018	118	26	30
		<b>1,364</b>	<b>27</b>	<b>36</b>
<b>NIGHT 1ST RESPONDER</b>				
	July, 2017	16	29	31
	August, 2017	8	16	60
	September, 2017	18	24	40
	October, 2017	20	23	35
	November, 2017	21	11	18
	December, 2017	16	18	33
	January, 2018	30	26	26
	February, 2018	28	32	39
	March, 2018	19	22	23
	April, 2018	21	17	20
	May, 2018	29	21	29
	June, 2018	27	23	28
		<b>253</b>	<b>22</b>	<b>30</b>
<b>ON-CALL CREW *</b>				
	July, 2017	41	47	31
	August, 2017	31	41	57

\* On-Call Crew Hours: 8:00pm-7:30am Monday-Friday, Weekends, and Holidays



## CUSTOMER SERVICE REQUESTS

### Monthly - All Crews

CREW	MONTH	JOB	AVERAGE RESPONSE TIME	AVERAGE TIME SPENT
<b>ON-CALL CREW *</b>				
	September, 2017	29	36	45
	October, 2017	48	51	35
	November, 2017	45	43	39
	December, 2017	70	50	37
	January, 2018	55	48	32
	February, 2018	53	47	43
	March, 2018	55	56	53
	April, 2018	38	38	37
	May, 2018	46	44	39
	June, 2018	32	45	47
		<b>543</b>	<b>46</b>	<b>41</b>
<b>Grand Totals:</b>		<b>2,160</b>	<b>31</b>	<b>36</b>

\* On-Call Crew Hours: 8:00pm-7:30am Monday-Friday, Weekends, and Holidays





## PIPELINE MAINTENANCE TOTALS BY DATE COMPLETED - Monthly

July 01, 2017 to June 30, 2018

	Main Line Wash Footage	Service Line Wash Footage	Rod Line Footage	Cleaned Footage	CCTV Footage	Smoke Footage	SL-RAT Footage
<b>2017</b>							
July	98,213	1,440	4,785	102,998	24,704	5,840	3,104
August	96,254	1,640	11,382	107,636	16,351	5,000	12,283
September	101,162	932	10,615	111,777	21,245	2,975	8,303
October	110,273	1,822	4,063	114,336	30,290	9,189	11,470
November	111,848	1,741	9,682	121,530	27,909	4,106	13,927
December	73,143	1,985	5,846	78,989	21,444	2,500	18,487
<b>2018</b>							
January	54,306	2,847	5,488	59,794	26,202	1,100	15,660
February	65,931	2,730	7,335	73,266	28,138	500	6,068
March	77,539	3,991	1,735	79,274	23,245	500	0
April	84,036	1,637	5,685	89,721	24,904	2,300	0
May	95,785	2,273	728	96,513	26,591	200	8,795
June	83,534	1,232	4,852	88,386	24,731	1,300	9,849
<b>Grand Total:</b>	<b>1,052,024</b>	<b>24,270</b>	<b>72,196</b>	<b>1,124,220</b>	<b>295,754</b>	<b>35,510</b>	<b>107,946</b>
<b>Avg Per Month:</b>	<b>87,669</b>	<b>2,023</b>	<b>6,016</b>	<b>93,685</b>	<b>24,646</b>	<b>2,959</b>	<b>8,996</b>



## SSO Report - Monthly

From 7/1/2017 to 6/30/2018

	SSO Count	AVG Response Time (min.)	AVG SSO Volume (gal.)	AVG Surface Volume (gal.)	Spills >= 1000 Gallons	Spills >= 15,000 Gallons	Total SSO Volume (gal.)	Total Surface Volume (gal.)
July, 2017	2	19	350	325	0	0	700	650
August, 2017	1	19	605	300	0	0	605	300
September, 2017	4	37	3,233	3,051	1	0	12,930	12,205
October, 2017	4	27	484	484	0	0	1,936	1,936
November, 2017	2	0	403	250	0	0	805	500
December, 2017	1	17	315	100	0	0	315	100
January, 2018	1	45	1,306	1,306	1	0	1,306	1,306
February, 2018	4	0	7,198	5,335	3	0	28,791	21,341
March, 2018	2	14	1,698	1,225	1	0	3,396	2,450
May, 2018	4	0	4,545	4,545	4	0	18,180	18,180
<b>Grand Totals:</b>	<b>25</b>	<b>21</b>	<b>2,759</b>	<b>2,359</b>	<b>10</b>	<b>0</b>	<b>68,964</b>	<b>58,968</b>



## CONSTRUCTION TOTALS BY DATE COMPLETED - Monthly

From 7/1/2017 to 6/30/2018

	Dig Ups	Emergency Dig Ups	Dig Up ML Ftg	Dig Up SL Ftg	Manhole Repairs	Taps Installed	Creek Crossings Cleared	ROW Ftg	Service Line Bore Ftg	Service Line Burst Ftg
<b>July 2017</b>	34	3	148	1,187	28	28	0	10,760	25	0
<b>August 2017</b>	41	12	280	1,174	21	31	0	6,251	0	0
<b>September 2017</b>	36	6	169	685	25	18	1	688	80	0
<b>October 2017</b>	29	6	87	1,184	37	32	3	60	82	0
<b>November 2017</b>	38	9	301	773	27	39	0	10,310	25	0
<b>December 2017</b>	22	9	120	879	31	26	1	10	69	0
<b>January 2018</b>	36	11	131	859	21	19	0	541	216	160
<b>February 2018</b>	33	17	400	1,033	17	35	0	240	0	0
<b>March 2018</b>	36	14	75	1,017	26	29	0	600	68	0
<b>April 2018</b>	28	13	67	1,064	27	30	0	1,748	0	0
<b>May 2018</b>	28	10	75	849	29	30	1	0	320	0
<b>June 2018</b>	26	11	700	1,157	34	34	3	11,030	0	0
<b>Grand Total</b>	<b>387</b>	<b>121</b>	<b>2,552</b>	<b>11,861</b>	<b>323</b>	<b>351</b>	<b>9</b>	<b>42,238</b>	<b>885</b>	<b>160</b>

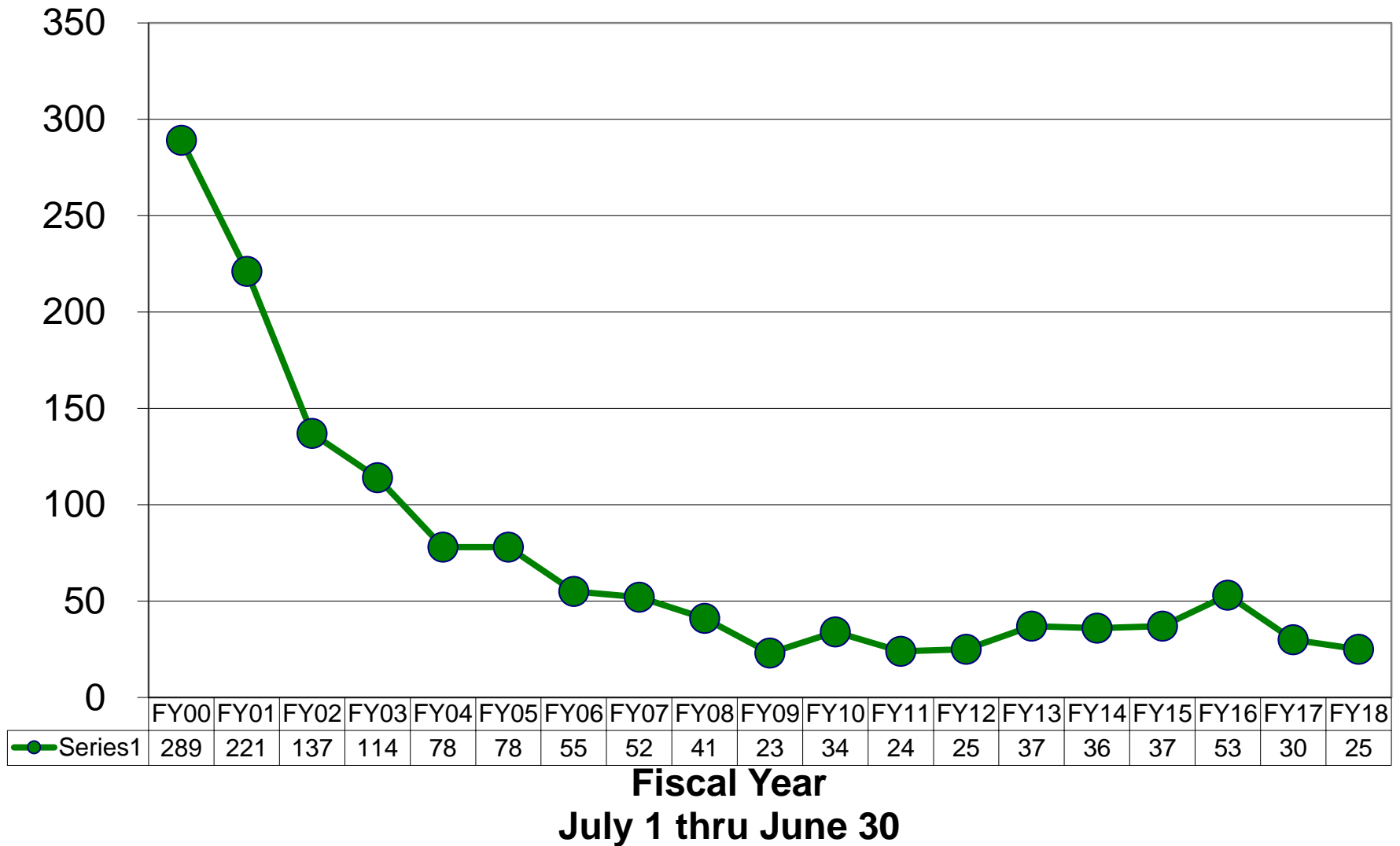


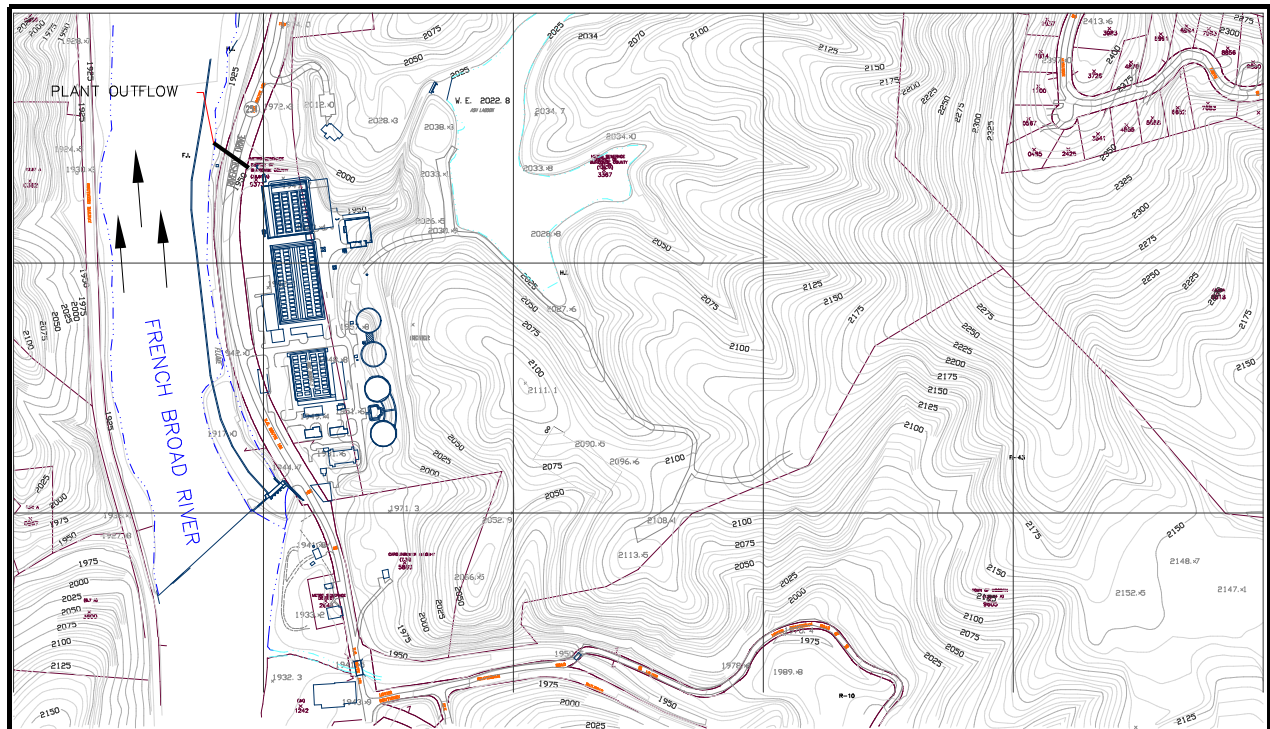
## CONSTRUCTION REHAB TOTALS BY DATE COMPLETED - Monthly

From 7/1/2017 to 6/30/2018

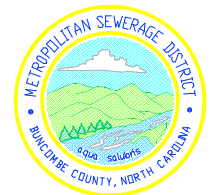
	# IRS Repairs	IRS Ftg	IRS Accept Ftg	Const Ftg	Const Accept Ftg	# D-R	D-R Ftg	#MH	Mainline PB Ftg	Mainline Bore Ftg	Total Rehab Ftg
July 2017	0	0	0	8	8	3	632	11	343	93	1076
August 2017	0	0	0	148	148	3	618	8	399	0	1165
September 2017	0	0	0	151	151	2	741	10	1001	0	1893
October 2017	2	14	314	71	71	1	18	6	0	728	1131
November 2017	0	0	0	8	8	4	1043	13	0	428	1479
December 2017	0	0	0	432	432	2	8	6	1697	0	2137
January 2018	0	0	0	4	194	5	992	7	0	0	1186
February 2018	0	0	0	44	70	2	402	8	0	323	795
March 2018	1	7	0	16	16	3	2418	14	130	492	3056
April 2018	0	0	0	104	247	2	1404	11	286	0	1937
May 2018	1	208	208	414	414	1	133	3	0	860	1615
June 2018	0	0	0	0	0	2	1714	7	0	967	2681
<b>Grand Totals</b>	<b>4</b>	<b>229</b>	<b>522</b>	<b>1400</b>	<b>1759</b>	<b>30</b>	<b>10123</b>	<b>104</b>	<b>3856</b>	<b>3891</b>	<b>20151</b>

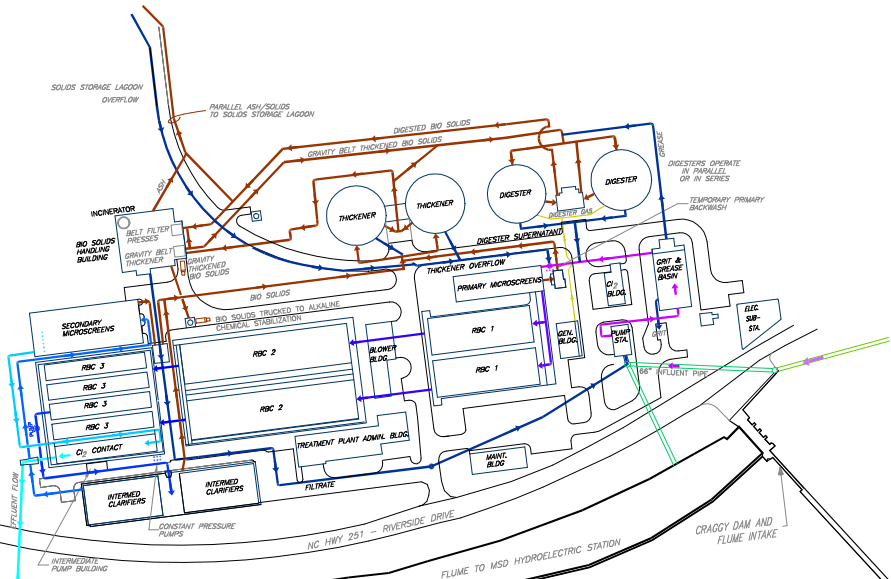
# Sanitary Sewer Overflows





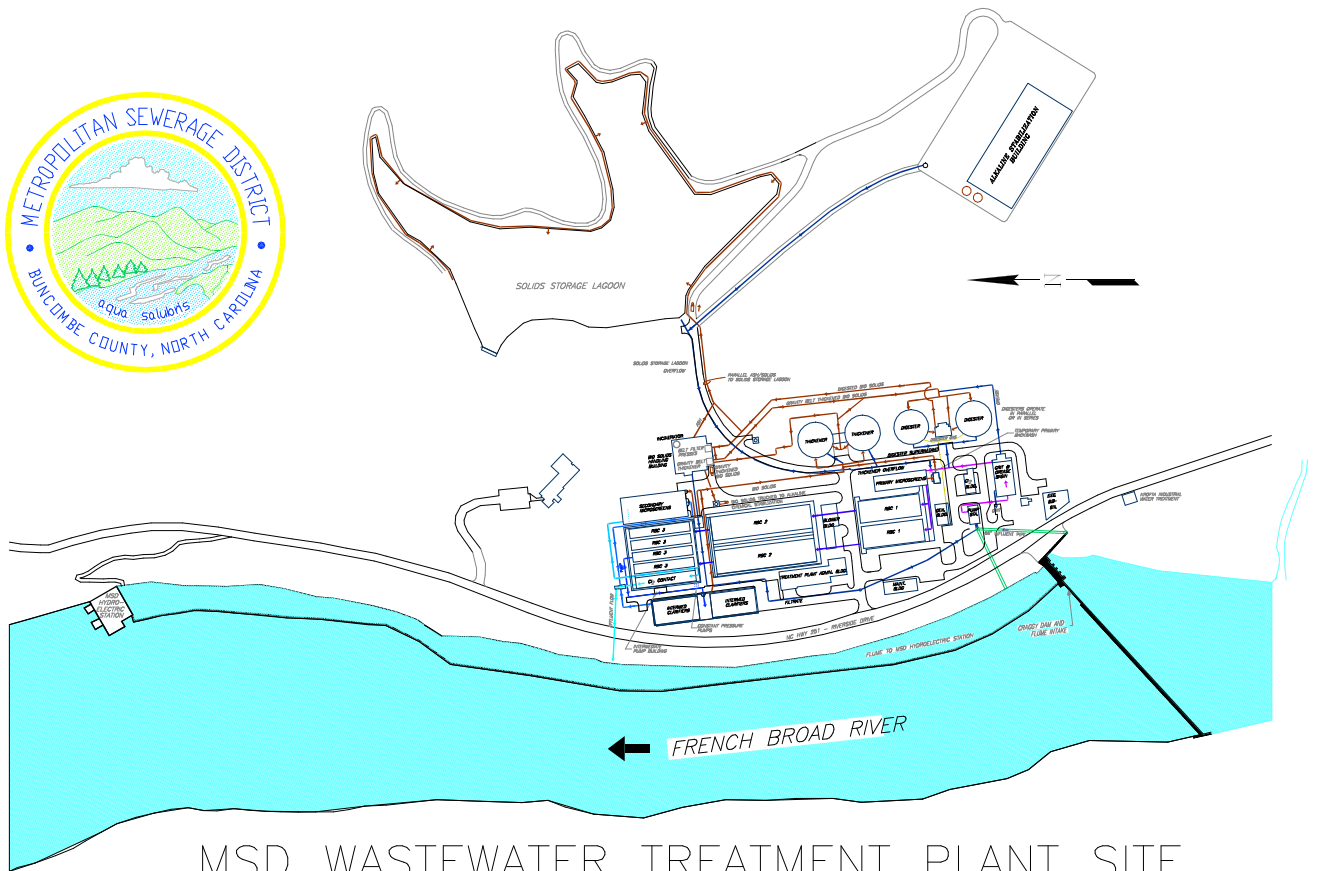
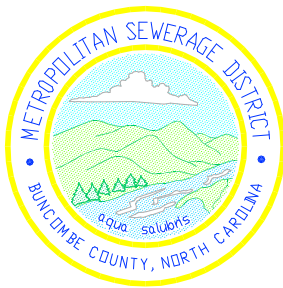
PLANT LOCATION  
NOT TO SCALE





Treatment Plant Wastewater Flow

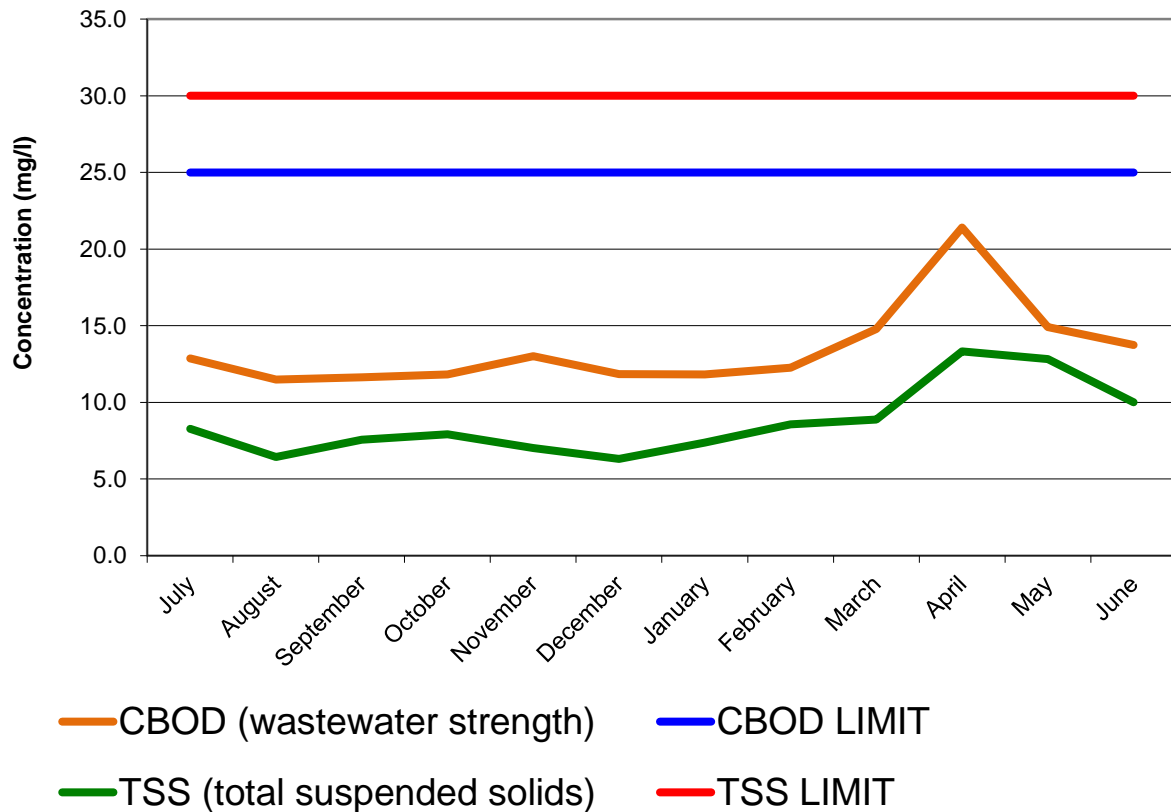




MSD WASTEWATER TREATMENT PLANT SITE  
NOT TO SCALE

Month	CBOD (wastewater strength)	CBOD LIMIT	TSS (total suspended solids)	TSS LIMIT
July	12.9	25	8.3	30
August	11.5	25	6.4	30
September	11.6	25	7.6	30
October	11.8	25	7.9	30
November	13.0	25	7.0	30
December	11.9	25	6.3	30
January	11.8	25	7.4	30
February	12.3	25	8.6	30
March	14.8	25	8.9	30
April	21.4	25	13.3	30
May	14.9	25	12.8	30
June	13.7	25	10.0	30
Average	13.5		8.7	

### Wastewater Reclamation Facility Performance in FY18



Month	INF CBOD	EFF CBOD	% Removal	Req'd % Removal
July	277.5	12.9	95%	85%
August	234.6	11.5	95%	85%
September	255.3	11.6	95%	85%
October	224.4	11.8	95%	85%
November	232.2	13.0	94%	85%
December	279.9	11.9	96%	85%
January	209.5	11.8	94%	85%
February	169.1	12.3	93%	85%
March	221.8	14.8	93%	85%
April	260.2	21.4	92%	85%
May	260.2	14.9	94%	85%
June	194.9	13.7	93%	85%

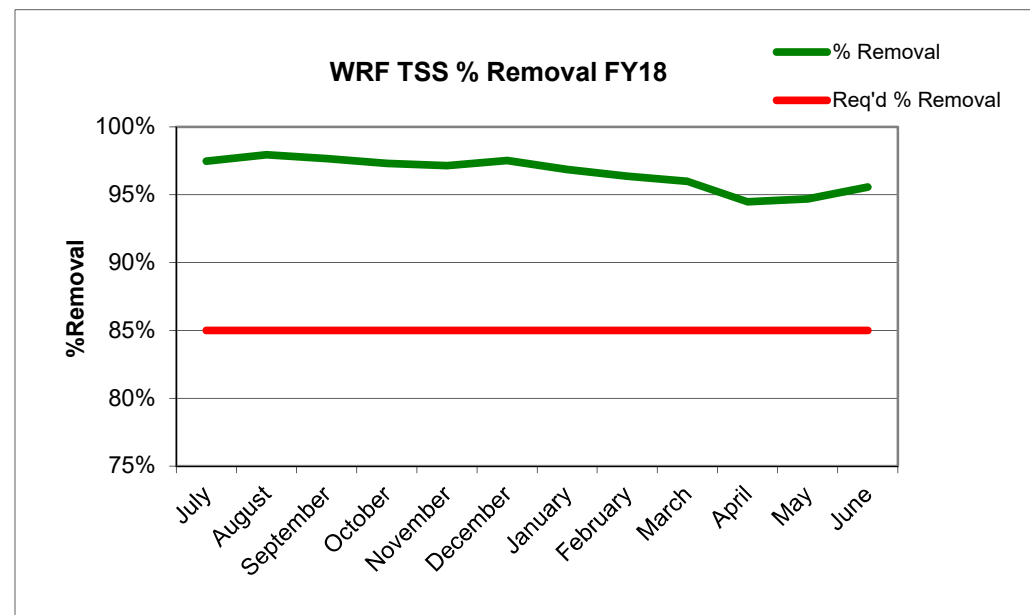
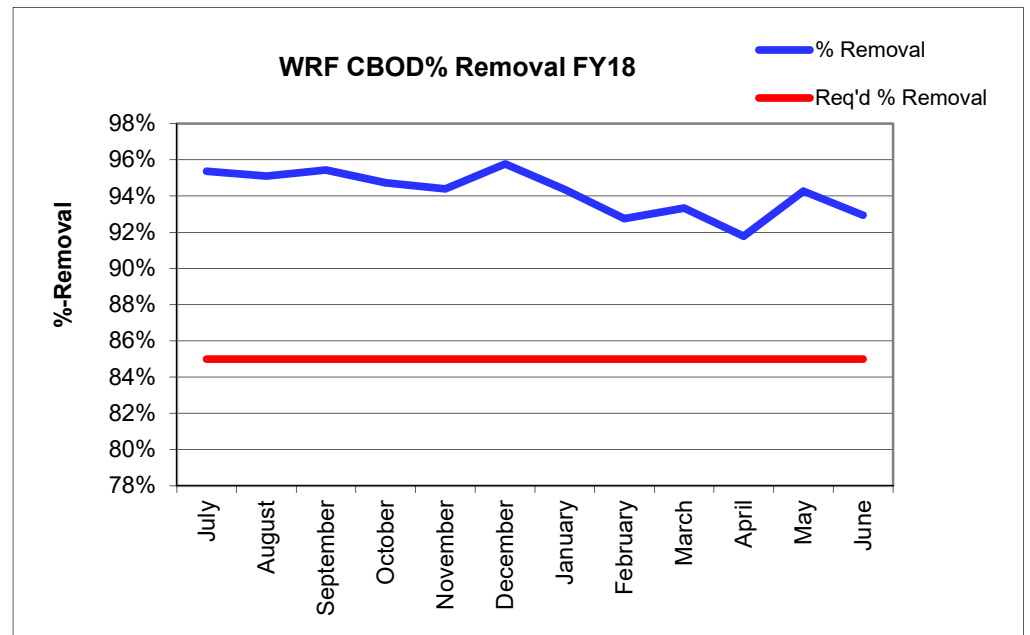
<b>Average</b>	235.0	13.5
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<b>% Removal</b>	94%
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Month	INF TSS	EFF TSS	% Removal	Req'd % Removal
July	326.2	8.3	97%	85%
August	312.2	6.4	98%	85%
September	324.1	7.6	98%	85%
October	294.0	7.9	97%	85%
November	245.4	7.0	97%	85%
December	253.6	6.3	98%	85%
January	233.8	7.4	97%	85%
February	236.2	8.6	96%	85%
March	220.9	8.9	96%	85%
April	241.3	13.3	94%	85%
May	241.3	12.8	95%	85%
June	225.5	10.0	96%	85%

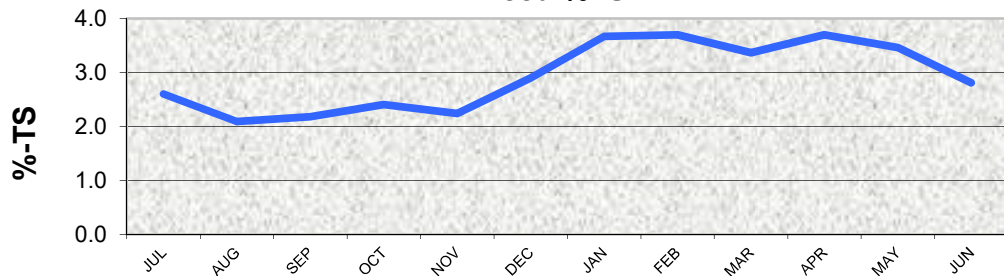
<b>Average</b>	262.9	8.7
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<b>% Removal</b>	97%
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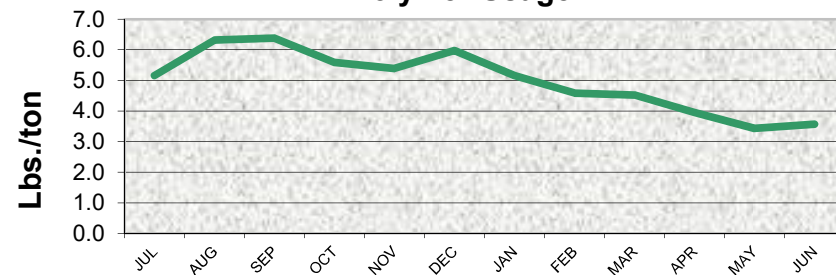


FY18 Biosolids Management	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Yearly Totals	Average per month	Units
Feed Solids	2.6	2.1	2.2	2.4	2.2	2.9	3.7	3.7	3.4	3.7	3.5	2.8		2.9	%-TS
Cake Solids	20.8	19.4	19.6	20.6	19.9	20.2	21.4	22.3	21.7	22.0	21.5	20.1		20.8	%-TS
Polymer - Lbs./ton	5.2	6.3	6.4	5.6	5.4	6.0	5.2	4.6	4.5	3.9	3.4	3.6		5.0	Lbs./Ton
Polymer - Total Lbs.	2,860	3,709	2,860	3,430	2,754	2,365	3,333	2,741	2,585	2,200	2,387	2,076	33,300	2,775	Lbs./Mth
Dry Tons Burned	625	587	559	615	511	552	646	598	626	684	696	581	7,280	607	Dry Tons
Hours Burned	683	660	666	672	603	634	661	602	679	652	674	621	7,807	651	Hours
Burn Rate - lbs/hr	1,830	1,778	1,678	1,830	1,695	1,742	1,955	1,987	1,843	2,098	2,065	1,872		1,864	lbs/hour
Natural Gas - MCF	3.10	3.60	3.40	3.40	3.24	3.00	2.40	1.82	2.30	2.03	2.65	3.49	34.43	2.87	MCF
Dry Tons - Landfill													-		Dry Tons
Wet Tons - Scales													-		Wet Tons

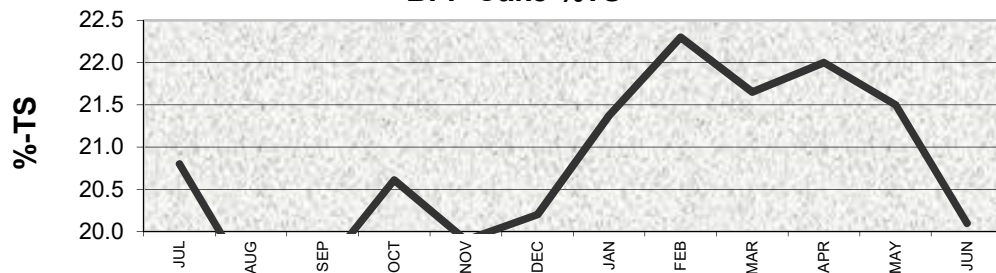
**BFP Feed %TS**



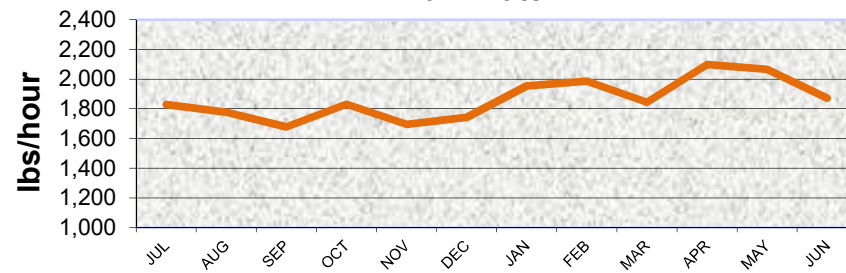
**Polymer Usage**



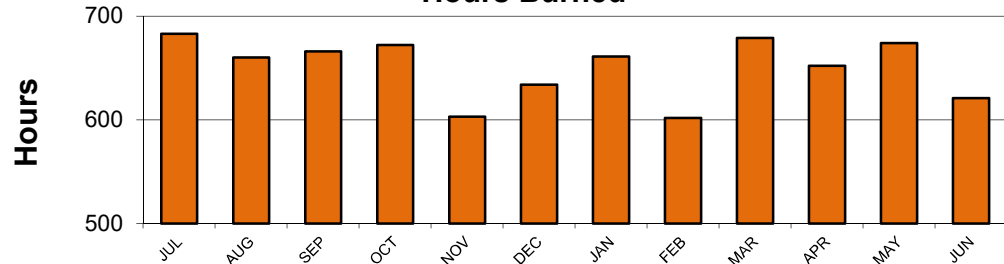
**BFP Cake %TS**



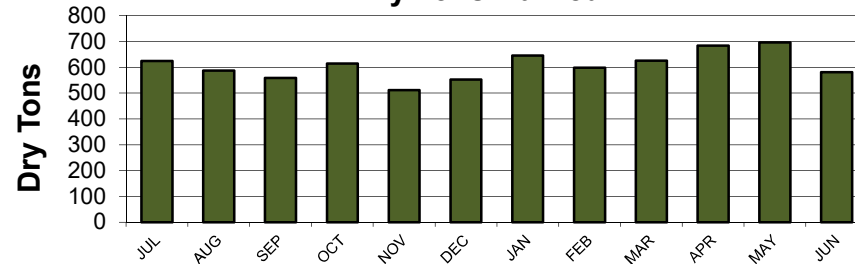
**Burn Rate**



**Hours Burned**



**Dry Tons Burned**



**METROPOLITAN SEWERAGE DISTRICT**

**AIR EMISSIONS for FY18**

B.F.P. SLUDGE METALS DATA	Removal Efficiency	RSC ug/M3	LIMITS Mg/Kg	2017				dispersion factor = 245		2018					
				JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
ARSENIC	99.83%	0.023	298	0.00	0.00	0.00	0.00	0.00	0.00	<3.2	<3.5	<3.7	<3.4	<3.7	<3.9
BERYLLIUM	99.83%			0.00	0.00	0.00	0.00	0.00	0.00	<0.32	<0.35	<0.37	<0.34	<.37	<0.39
CADMIUM	99.89%	0.057	1,142	0.72	1.00	0.75	0.65	0.93	0.54	0.46	0.68	0.81	0.80	0.88	0.82
CHROME	99.85%	0.65	9,551	18	22.3	22.2	33.0	32.3	35.7	48.5	39.4	43	34.1	43.6	36.2
COPPER	99.99%			211	215	218	204	204	190	116	157	174	163	209	228
NICKEL	99.83%	2.0	23,201	25.8	26.4	25.8	27.3	24.8	24.5	30.4	35.5	29.8	34.0	45.3	30.4
LEAD	99.81%	0.015	3,306	24.7	19.8	24.7	31.7	24.8	18.3	10.8	20.2	17.8	20.5	28.3	24.9
ZINC	99.99%			998	1100	1080	970	994	931	582	866	1010	921	1170	1010
MERCURY	25%			0.02	0.02	0.020	0.025	0.025	0.045	<0.028	0.023	0.031	0.033	0.043	0.068
PRESSURE DROP	Venturi & Tray Scrubber			26/40	26/40	26/39	26/39	26/39	26/39	26/39	25/40	25/39	25/40	25/39	26/39
OXYGEN	In Stack Gas			10.9	10.6	10.9	10.6	10.7	10.6	10.1	11.2	10.6	11.0	10.7	10.9
CARBON MONOXIDE	In Stack Gas			2.3	1.5	1.1	1.1	1.1	1.5	0.9	0.7	0.8	0.8	1.4	1.7
INCINERATOR	In Sand Bed			1522	1520	1521	1525	1523	1523	1525	1532	1533	1528	1525	1522
TONS BURNED				625	587	559	615	511	552	646	598	626	684	696	581
HOURS OPERATED				683	660	666	672	603	634	661	602	679	652	674	621
										20.0		7,280		Tons	
										21.4		7,807		Hours	

Daily  
Averages

Annual  
Totals

note - Lead limit is derived from NAAQS of 1.5ug/M3

note - dispersion factor & limits changed per 2009 emission testing & associated dispersion modeling (cooler exhaust gas temperature)

# PUBLIC NOTICE THE MSD SYSTEM PERFORMANCE ANNUAL REPORT IS AVAILABLE

## Metropolitan Sewerage District of Buncombe County

The Metropolitan Sewerage District of Buncombe County notifies the public that a summary of the System Performance Annual Report (SPAR) is now available on our web site; [www.msdbc.org](http://www.msdbc.org)

This informative report summarizes the fiscal year, July 2017 through June 2018, with basic descriptions, achievements, effluent and emissions data, charts and maps. This document is available by request by calling 254-9646. Please ask for the SPAR 2018 Report.