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South Central Wastewater Authority Board of Directors Meeting

DATE: September 15, 2016
TIME: 2:00 PM
LOCATION: South Central Wastewater Authority
Board Room, Administration Building
900 Magazine Road
Petersburg, Virginia 23803

AGENDA

1. Call to Order/Roll Call
2. Approval of Minutes: Minutes of the Regular Meeting of the Board on August 18, 2016.
3. Public Comment
4. Executive Director's Report:
 - Local Limit Assessment for Fats, Oil, Grease, and pH
 - City of Petersburg's Expected Budget Impact
 - Status Report: Ongoing Projects/Financials
5. Items from Counsel
6. Closed Session
 - Legal Advice
 - Personnel Action
7. Other Items from Board Members/Staff Not on Agenda:
8. Adjourn

Cc:W. Dupler/George Hayes, Chesterfield
D. Harrison, Petersburg Public Works
C. England, Prince George
W. Henley, Colonial Heights
K. Massengill, Dinwiddie County
A. Anderson, McGuire Woods

1. Call to Order/Roll Call

2. Approval of Minutes: Minutes of the Regular Meeting of the Board on August 18, 2016.

Following are the minutes of the August 18, 2016 South Central Wastewater Authority Board of Directors Meeting.

Absent any corrections or revisions, we recommend approval of the minutes as submitted

BOARD OF DIRECTORS MEETING
South Central Wastewater Authority
August 18, 2016 at 3:00 p.m.
Location: Appomattox River Water Authority
21300 Chesdin Road, Petersburg, Virginia

PRESENT:

Robert B. Wilson, Chairman (Dinwiddie)
Thomas L. Mattis, Secretary/Treasurer (Colonial Heights)
Joseph Casey, (Chesterfield)
Charles England, (Alternate, Prince George)
Daniel Harrison, (Alternate, Petersburg)
Kevin Massengill, (Alternate, Dinwiddie)
George Hayes, (Alternate, Chesterfield)
William Dupler, (Alternate, Chesterfield)

STAFF:

Robert C. Wichser, Executive Director, (ARWA & SCWWA)
James C. Gordon, Asst. Executive Director (ARWA & SCWWA)
Arthur Anderson, (McGuire Woods)
Kathy Summerson, Administrative Assistant (SCWWA)
Cindy Nester, Administrative Assistant (ARWA)

OTHERS:

Brennen Keene (McGuire Woods)
Bill Johnson (Colonial Heights)

ABSENT:

Percy Ashcraft, Vice-Chairman (Prince George)
Dironna Belton, (Petersburg)
William Henley, (Alternate, Colonial Heights)

Mr. Wilson, Chairman, called the meeting to order at 4:35 p.m.

1. Call to Order/Roll Call.

The roll was called.

2. Approval of Minutes: Minutes of the Regular Meeting of the Board on July 21, 2016.

Upon a motion made by Mr. Harrison and seconded by Mr. Casey the following resolution was adopted:

RESOLVED, that the minutes of the Regular Meeting of the Board on July 21, 2016 are hereby approved:

For: 5 Against: 0 Abstain: 0

3. Public Comment

There were no public comments.

4. Executive Director Report

• **Resolution on ARWA/SCWWA Salary Split on Board Approved IT/Instrument Positions.**

This item was approved at ARWA's Board meeting.

Upon a motion made by Mr. England and seconded by Mr. Harrison the following resolution was adopted:

RESOLVED, that SCWWA agrees to pay a portion of the salary and benefits of each Joint Employee, the Instrumentation/IT Manager and the Instrumentation/IT Technical Advisor, as expressed by the respective percentage set forth at 50%:

For: 5 Against: 0 Abstain: 0

• **Status Report: Ongoing Projects/Financials/I&I Report**

Mr. Gordon reported on the Ongoing Projects/Financials/I&I report.

Mr. Gordon stated that we have met with Petersburg to discuss access to the Roper property. Dr. Wichser discussed with Mr. Harrison that this was very important for SCWWA to enhancing the revenue stream. We sent Mr. Harrison a draft Agreement between Waste Management and Petersburg. We would like to have that moved on no later than mid-September. Mr. Harrison stated that he had an appointment with the city attorney next week. Mr. Gordon said he had reached out to Waste Management to let them know what's going on in trying to work out the details of a site use Agreement.

Dr. Wichser stated that we are currently in negotiations with a private firm for supplying total nitrogen credits for years 2021, 2022, 2023 and 2024. He asked, if there were any members here that are interested in supplying SCWWA total nitrogen credits for those four years that SCWWA is presently open to receiving your total nitrogen nutrient credit price bid. This opportunity will potentially close within the next four to five months based on SCWWA success on attaining a nutrient credit Agreement for these years. We will be coming to the Board asking to close this matter with the outside entity unless an SCWWA member comes in with a better price to SCWWA. Mr. Wilson asked where we stood with our permit renewal and Dr. Wichser said we expect that the new VPDES permit

should be in effect by 2018-2019. He stated, we are already committed to buying nutrient credits for those two years. We are working on the next four years where we hope that total nitrogen nutrient credit purchases would be locked in with a multi-year first right of refusal.

5. Items from Counsel

There were no items from Counsel.

6. Closed Session

Mr. Anderson read the Resolution to go into Closed Session (attached).

Upon a motion made by Mr. Mattis and seconded by Mr. Harrison the Board went into Closed Session at 4:45 p.m.

For: 5 Against: 0 Abstain: 0

Mr. Harrison left at 5:35 p.m.

Upon a motion made by Mr. Mattis and seconded by Mr. England the Board came out of Closed Session at 6:06 p.m.

For: 4 Against: 0 Abstain: 0

Mr. Anderson read the Certification regarding the Closed Session and, upon a motion made by Mr. Mattis and seconded by Mr. England, it was approved by a unanimous roll call vote (attached).

7. Other Items from Board Members/Staff Not on Agenda

Upon a motion made by Mr. Mattis and seconded by Mr. Casey the following resolution was adopted:

RESOLVED, that the Chairman and Executive Director of SCWWA are authorized to initiate legal proceedings on behalf of SCWWA against the City of Petersburg to recover late payments and seek future relief:

For: 4 Against: 0 Abstain: 0

There will be a Board meeting on September 15, 2016 that was previously discussed on potentially being cancelled. It will be held at South Central Wastewater Authority on September 15th at 2 PM.

Mr. Massengill presented Mr. Mattis with a Resolution in honor of his services on both the Appomattox River Water Authority and South Central Wastewater Authority Boards. Dr. Wichser and Mr. Gordon presented Mr. Mattis with Certificates of Appreciation and Recognition from both Authorities.

8. Adjourn

Upon a motion made by Mr. Mattis and seconded by Mr. Casey the meeting was adjourned at 6:17 p.m.

The next Board meeting is scheduled for Thursday, September 15, 2016 at 2:00 p.m. at the South Central Wastewater Authority.

MINUTES APPROVED BY:

Robert B. Wilson
Chairman

CLOSED MEETING RESOLUTION

SOUTH CENTRAL WASTEWATER AUTHORITY

August 18, 2016

I move that we go into a closed meeting for (i) consultation with legal counsel retained by the South Central Wastewater Authority and briefing by staff members regarding specific legal matters pertaining to actual or probable litigation, where such consultation and briefing in open meeting would adversely affect the Authority's negotiating posture, and consultation with legal counsel retained by the Authority regarding specific legal matters requiring the provision of legal advice by such counsel as permitted by Section 2.2-3711A.7. of the Virginia Freedom of Information Act and (ii) discussion and consideration of the assignment, appointment, promotion, performance, demotion, salaries, disciplining, or resignation of specific public officers, appointees, or employees of the Authority, as permitted by Section 2.2-3711A.1. of FOIA:

MOTION: Mattis

SECOND: Harrison

VOTE

England	Aye
Casey	Aye
Wilson	Aye
Mattis	Aye
Harrison	Aye

ABSENT DURING VOTE: None.

ABSENT DURING CLOSED MEETING: Mr. Harrison left during the Closed Meeting due to a prior commitment.

SESSION DATE: August 18, 2016

CERTIFICATION OF CLOSED MEETING

WHEREAS, the Board of the South Central Wastewater Authority (the "Authority") convened a closed meeting on August 18, 2016, pursuant to an affirmative recorded vote and in accordance with the provisions of the Virginia Freedom of Information Act; and

WHEREAS, Section 2.2-3712 of the Code of Virginia requires a certification by this Board that such closed meeting was conducted in conformity with Virginia law;

NOW THEREFORE, BE IT RESOLVED that the Board of the Authority hereby certifies that, to the best of each member's knowledge, (i) only public business matters lawfully exempted from open meeting requirements by the Virginia Freedom of Information Act were discussed in the closed meeting to which this certification resolution applies, and (ii) only such public business matters as were identified in the motion convening the closed meeting were heard, discussed or considered by the Board.

MOTION: Mattis

SECOND: England

VOTE

England	Aye
Casey	Aye
Wilson	Aye
Mattis	Aye

ABSENT DURING VOTE: Mr. Harrison left during the closed meeting due to a prior commitment.

ABSENT DURING CLOSED MEETING: See above.

3. Public Comment

The Guidelines for Public Comment are:

GUIDELINES FOR PUBLIC COMMENT AT SCWWA/ARWA BOARD OF DIRECTORS MEETINGS

If you wish to address the SCWWA/ARWA Board of Directors during the time allocated for public comment, please raise your hand or stand when the Chairman asks for public comments.

Members of the public requesting to speak will be recognized during the specific time designated on the meeting agenda for "Public Comment Period." Each person will be allowed to speak for up to three minutes.

When two or more individuals are present from the same group, it is recommended that the group designate a spokesperson to present its comments to the Board and the designated speaker can ask other members of the group to be recognized by raising their hand or standing. Each spokesperson for a group will be allowed to speak for up to five minutes.

During the Public Comment Period, the Board will attempt to hear all members of the public who wish to speak on a subject, but it must be recognized that on rare occasion presentations may have to be limited because of time constraints. If a previous speaker has articulated your position, it is recommended that you not fully repeat the comments and instead advise the Board of your agreement. The time allocated for speakers at public hearings are the same as for regular Board meeting, although the Board can allow exceptions at its discretion.

Speakers should keep in mind that Board of Directors meetings are formal proceedings and all comments are recorded on tape. For that reason, speakers are requested to speak from the podium and wait to be recognized by the Chairman. In order to give all speakers proper respect and courtesy, the Board requests that speakers follow the following guidelines:

- Wait at your seat until recognized by the Chairman;
- Come forward and state your full name and address. If speaking for a group, state your organizational affiliation;
- Address your comments to the Board as a whole;
- State your position clearly and succinctly and give facts and data to support your position;
- Summarize your key points and provide the Board with a written statement or supporting rationale, when possible;
- If you represent a group, you may ask others at the meeting to be recognized by raising their hand or standing;
- Be respectful and civil in all interactions at Board meetings;
- The Board may ask speakers questions or seek clarification, but recognize that Board meetings are not a forum for public debate; Board Members will not recognize comments made from the audience and ask that members of the audience not interrupt the comments of speakers and remain silent while others are speaking so that other members in the audience can hear the speaker;
- The Board will have the opportunity to address public comments after the Public Comment Period has been closed;
- At the request of the Chairman, the Executive Director may address public comments after the session has been closed as well; and
- As appropriate, staff will research questions by the public and respond through a report back to the Board at the next regular meeting of the full Board. It is suggested that citizens who have questions for the Board or staff submit those questions in advance of the meeting to permit the opportunity for some research before the meeting.

4. Executive Director's Report:

- **Local Limit Assessment for Fats, Oil, Grease, and pH**

Following is a report prepared by Hazen and Sawyer regarding the Local Limit Assessment for Fats, Oil, Grease, and pH. Mary Sadler with Hazen and Sawyer has prepared a presentation regarding this report.

FINAL

Local Limits Assessment for Fats, Oil, Grease, and pH

Prepared for:

South Central Wastewater Authority and Virginia Linen Service

September 2016

Hazen

4807 Hermitage Road
Suite 203
Richmond, VA 23227

Local Limits Assessment for Fats, Oil, Grease, and pH, South Central Wastewater Authority

Executive Summary

Executive Summary

The South Central Wastewater Authority (SCWWA) owns and operates the South Central Wastewater Authority Treatment Plant (SCWATP) located in the City of Petersburg. The SCWATP provides wastewater service to five contributing partners, to include the City of Petersburg (City), the City of Colonial Heights, Chesterfield County, Dinwiddie County, and Prince George County. Each contributing partner owns and operates their respective collection system infrastructure. The SCWWA manages the Industrial Pretreatment Program for participating members and regulates Significant Industrial Users (SIUs) with permit based control mechanisms.

In 2009, the SCWWA revised local limits for total oil and grease from 500 milligrams per liter (mg/L) to a new local limit of 300 mg/L for animal-vegetable based fats, oils, and grease (FOG) and 100 mg/L total petroleum hydrocarbons (TPH). This new limits became effective in January 2014. The reduction of the FOG local limit resulted in one SIU, the Virginia Linen Service (VLS), to experience non-compliance violations for FOG and TPH. VLS is a commercial laundry facility with a hospitality-based market focus. VLS softens City water prior to adding a surfactant (e.g., detergent) to the washing process. VLS discharges to the City of Petersburg's collection system and has been in operation for over 80 years.

VLS, the City of Petersburg, and the SCWWA signed a Consent Special Order in May 2016 to address FOG non-compliance issues. The Consent Special Order required specific action items, which included an independent evaluation of the SCWWA's local limits for FOG and TPH relative to the operation and maintenance of the collection and treatment system. VLS had also expressed interest in evaluating the SCWWA's local limit for pH. Hazen and Sawyer was retained to perform this independent evaluation. As part of this work, Hazen and Sawyer reviewed and summarized the following:

- National research on FOG accumulation and deposition.
- pH impacts on collection system and treatment per a literature review.
- VLS discharge monitoring data from 1996 through May 2016.
- Oil and grease analytical method per EPA 1664.
- Reported operation and maintenance issues in the Petersburg collection system specific to VLS and at the SCWATP as related to FOG and pH.
- Various domestic local limits policy issues related to FOG, TPH, and pH as obtained from a survey of regional and national Publically Owned Treatment Works (POTWs).

Oil and Grease Characterization

Oils and greases are classified into two main components differentiated by having polar or non-polar characteristics. Polar oils and greases are primarily animal and vegetable-based substances designated as FOG. Typical oil and grease concentrations in domestic influent wastewater range from 50 to 100 mg/L. Non-polar petroleum-based hydrocarbons are classified as TPH. FOG waste products are generated from

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Executive Summary

residential use, commercial kitchens and food service establishments (FSEs), and industries including food processing facilities, meat packing facilities, commercial laundries, car washes, and industries servicing vehicles or mechanical equipment. TPH is also present in wastewater generated from commercial laundries that accept textile product from industrial sources that contain mineral and petroleum based oil and grease.

Oil and Grease Quantification

EPA Method 1664 is the only EPA-approved method to measure oil and grease. EPA Method 1664 uses a phase separation into a solvent. This process uses a combination of acidification and organic solvent extraction using hexane. Once hexane is evaporated, the residue left behind is referred to as total oil and grease. To differentiate total oil and grease from the TPH fraction, an extra step involving silica gel is required. The silica gel adsorbs the polar fraction, thus leaving the non-polar fraction to be measured as TPH. The animal-vegetable FOG fraction is the difference between the total and the TPH fraction. EPA Method 1664 can typically measure oil and grease in the range of 5 to 1,000 mg/L. Alternative procedure methods are permitted by the EPA provided they meet all of the performance specifications per Method 1664.

There are many challenges associated with sampling and analysis of oil and grease. Samples should not be split and analyzed separately, as splitting of samples may lead to loss of material and under-quantification. If multiple samples are collected, each sample should be treated as a unique compliance sample and should not be averaged. All samples should be collected as grab samples since composite samples can result in a biased low measurement because the extractable material may adhere to composite sampler equipment. If a composite measurement is required, individual grab samples may be collected at prescribed time intervals and analyzed separately. The resulting concentrations can then be averaged for the composite sample.

Both VLS and the SCWWA use EPA Method 1664. Analyses of the historical data provided by the SCWWA indicated that VLS violated the 300 mg/L FOG local limit 33 percent of the time in 2015 and 60 percent of the time in 2016 using a partial 2016 data set (through May 2016). Initially, there were some concerns regarding analytical procedures utilized to quantify FOG based on conflicting compliance sample results. There is no immediate resolution to this analytical issue; however, research at North Carolina State University is ongoing related to the development of experimental analytical methods for analyzing oil and grease via a Fourier Transform Infrared-Attenuated Total Reflection (FTIR-ATR) method. Method 1664 is the only standard method available for oil and grease.

FOG Accumulation and Deposition

Peer-reviewed research suggests that FOG deposits in sewer systems consist of high concentrations of free fatty acids (FFAs) and calcium formed via saponification. Saponification is the chemical reaction between any fat and a salt (e.g., calcium hydroxide, sodium chloride, etc.). Once FOG deposits are established, additional growth of deposits will occur on the concrete pipe surface, which consists of further

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adsorption of FFAs, calcium, and debris from wastewater. FFAs are generated from FOG via the cooking process, microbial hydrolysis, or chemical decomposition (e.g., alkaline hydrolysis resulting from high pH wastewater). The presence of one or more FFAs in a wastewater discharge is key for determining the type and structure of a FOG deposit (e.g., stickiness, hardness) in addition to other environmental factors such as temperature, pH, and the amount of salt available for the saponification reaction. Additionally, the literature has documented that the presence of a surfactant (e.g., soap) will inhibit FOG deposit formation.

To understand the impacts of FOG on the collection systems upstream of the SCWATP, Hazen and Sawyer reviewed operation and maintenance (O&M) information specific to FOG and VLS in the collection system as provided by City staff. The East Bank Pump Station receives upstream wastewater flow from residential development, restaurants, industrial sources, a landfill, and VLS. Figure ES-1 provides a partial schematic of the City's collection system. City staff reported above-average oil and grease accumulation and maintenance on the pumps in the East Bank Pump Station compared to other City pump stations. However, it is inconclusive whether the VLS wastewater discharge is contributing solely to the increased maintenance at this pump station, as several upstream FOG-related maintenance activities have occurred per City maintenance records.

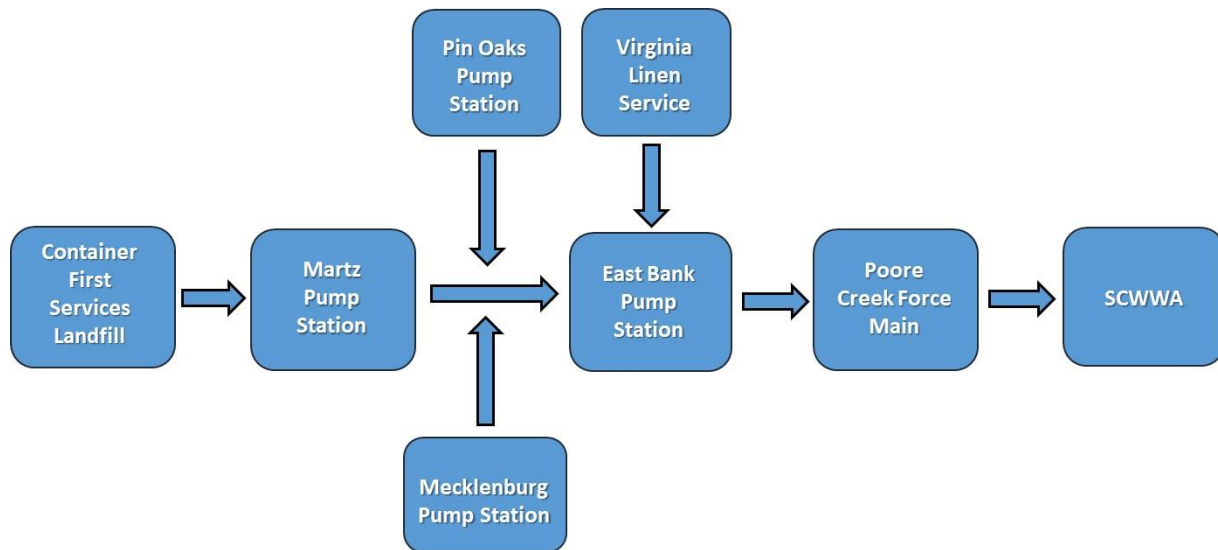


Figure ES-1: Partial Schematic of City of Petersburg Collection System

FOG Impact on Wastewater Treatment

Oil and grease discharged to wastewater treatment facilities can contribute to lower wastewater treatment efficiency, interference with biological activity within the treatment process, and objectionable odors, which can increase equipment maintenance requirements and potentially result in interference with the aquatic integrity in surface waters. FOG is biodegradable, absorbed by the activated sludge floc, and slowly

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metabolized. FOG can increase oxygen demand and stimulate the growth of filamentous organisms in treatment facilities. TPH is resistant to degradation and is more likely to cause pass-through interference in a POTW. There are no recorded instances of FOG or TPH contributing to biological process upsets at the SCWATP. SCWWA staff have noted that FOG removal maintenance in the collection system can result in slug loads of oil and grease at the SCWATP, which can result in increased odor and maintenance requirements at the headworks of the WWTP.

Impact of pH on Wastewater Treatment

The literature suggests that influent pH values greater than 11.0 or less than 6.0 may have a detrimental effect on biochemical oxygen demand (BOD) removal, effluent total suspended solids (TSS) concentration, biomass growth, biomass respiration, and biomass dewaterability in activated sludge systems. To mitigate swings in pH, chemicals may be added to neutralize the acidic or alkaline conditions.

Policy Issues Associated with Local Limits Development

There are a wide range of approaches for establishing local limits for FOG, as 40 CFR 403 does not provide a technical basis for a FOG concentration-based numeric limit. Local FOG limits are based on knowledge of the specific collection and treatment system in addition to a range of management practices that have proven to reduce FOG-related SSOs or pass through interference at a wastewater treatment facility. All local limits approaches are valid and are not precluded by 40 CFR 403. POTWs may implement numeric limits, narrative criteria, or use best management practices (BMPs). The narrative limit should be accompanied by Sewer Use Ordinance (SUO) language that specifically allows user-specific and enforceable local limits and/or language that allows a Control Authority to assign a site-specific limit. Best management practices may reduce the amount of a pollutant at a wastewater treatment facility, which leaves more pollutant loading to be distributed as numeric limits to SIUs that cannot control their discharge using BMPs. Best management practices can include the enforcement of FOG Control Programs or the development of a specific ordinance for FOG control. Some POTWs have developed FOG Control Programs or FOG ordinances to apply specifically to FSEs. The application of surcharge fees is another method for a POTW to recover operation and maintenance costs associated with FOG.

TPH is also not specifically regulated by 40 CFR 403 via provisions for a technically based numeric limit. Many states have not adopted a water quality criterion for TPH and rely on a narrative standard. Many POTWs have adopted numeric criteria for TPH ranging from 50 to 200 mg/L, as TPH is resistant to biological degradation and is more likely to cause pass-through interference in a POTW. There are examples of POTWs that have implemented narrative criteria to manage TPH in the collection and treatment system.

A specific discharge prohibition for pH is required by 40 CFR 403.5(b)(2). Per 40 CFR 403.5(b)(2), a minimum pH limit of 5.0 is specified prior to discharge to a collection system. A minimum pH of 5.0 will not cause corrosive structural damage to a POTW collection and treatment system. The regulations do not specify an upper pH limit. EPA recommends that POTWs develop site-specific upper pH thresholds if

Local Limits Assessment for Fats, Oil, Grease, and pH, South Central Wastewater Authority

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corrosion or WWTP upset is identified (EPA, 2004). EPA suggests an upper limit pH threshold of 12.5 in lieu of specifically identified high pH corrosion. A wastewater discharge with a pH greater than 12.5 has been identified in 40 CFR 261.22(a)(1) as a hazardous waste. EPA recommends setting the upper pH limit with a margin of safety to avoid a discharge being designated as hazardous.

POTW Local Limits Survey

Hazen and Sawyer conducted a local limits survey for total oil and grease, FOG, TPH, and pH for various POTWs in the mid-Atlantic region and elsewhere in the United States. The survey documented the local limit, narrative criteria, best management practices, specific prohibitions, and language related to user-specific permits. A query was conducted of 50 utilities. The survey suggests that a wide range of local limits exist for FOG, TPH, and pH across the country. Of the POTWs surveyed, approximately 17 POTWs have implemented narrative criteria for TPH and 25 POTWs have implemented narrative criteria for FOG. The 25 remaining POTWs have established local limits for FOG ranging between 300 mg/L and 50 mg/L. All of the discharge limits, whether numeric or narrative, were developed on a site-specific basis specific to each POTW. Table ES-1 provides a summary of the local limit survey results with the full survey included as an appendix to the report.

Table ES-1: Summary of POTWs Surveyed with Local Limits for Oil and Grease, TPH, and pH

Numeric Local Limit	Total Oil and Grease	FOG	TPH	pH Range
Selective Prohibition	3	----	----	5.5 – 11.5
600	1	0	----	> 5.0
500	0	0	----	> 5.5
350	1	0	----	5.0 – 12.0
300	0	9	----	5.0 – 11.0
250	1	0	----	6.0 – 9.0
200	2	4	2	6.0 – 11.0
150	0	3	0	5.0 – 10.0
100	4	7	19	5.0 – 12.5
50	0	1	3	5.0 – 9.0
Variable	2	----	----	5.0 – 10.5
Narrative Criteria	----	25	17	6.0 – 12.5
				5.5 – 9.0
				5.5 – 12.0

¹ Sample survey size of 50 POTWs.

**Local Limits Assessment for Fats,
Oil, Grease, and pH,
South Central Wastewater Authority**

Executive Summary

Recommendations

Hazen and Sawyer recommends the following in response to the scope of work in the Consent Special Order:

1. The SCWWA has implemented a numeric local TPH limit of 100 mg/L. This numeric limit is considered the industry standard to be protective of biological treatment and minimize the risk of process upset. It is recommended that the SCWWA maintain the numeric local TPH limit of 100 mg/L. It is not recommended to apply a surcharge for TPH.
2. The SCWWA has established local pH limits with a minimum threshold of 5.5 and upper threshold of 11.5. Due to documented upset issues at the SCWATP directly attributable to pH, it is recommended that the SCWWA maintain the current upper threshold pH local limit of 11.5.
3. It is recommended that the sewer use ordinance language be modified to allow for industrial user-specific pretreatment limits. The language should be non-specific such that any pollutant could be limited if pass-through interference were to occur in the collection or wastewater treatment system. User-specific permit language will allow SCWWA the flexibility to manage the pretreatment program.
4. As an alternative to recommendation #3, the SCWWA could modify local limits to allow an industry to comply with either a total oil and grease limit or a TPH limit.

- **City of Petersburg's Expected Budget Impact**

- **Status Report: Ongoing Projects/Financials/Inflow and Infiltration**

Following are memoranda concerning the Ongoing Projects, Financial Status, and Inflow and Infiltration for the SCWWA. Included with the Financial Status Report is the Year-To-Date Budget Performance Report and updated Cash Flow Projection for the South Central Wastewater Authority.

MEMORANDUM

TO: SOUTH CENTRAL WASTEWATER AUTHORITY BOARD OF DIRECTORS

**FROM: ROBERT C. WICHSER, EXECUTIVE DIRECTOR
JAMES C. GORDON, ASSISTANT EXECUTIVE DIRECTOR**

SUBJECT: STATUS REPORT – ON-GOING PROJECTS

DATE: September 15, 2016

The following projects are underway. This report includes sections on Capital projects and large replacement projects.

Electrical Project Phase 1

- The project is complete and has been closed out.

Electrical Project Phase 2

- Progress meeting was held on August 31, 2016.
- Outages have been scheduled for October.
- A PCO was discussed for miscellaneous changed conditions with a 2 week time extension.
- Original substantial completion date is October 21, 2016. New substantial completion date is scheduled for November 4, 2016.

Wastewater Treatment Plant Improvements Project

- Progress meeting was held on August 31, 2016.
- This project includes replacement of scum troughs in the primary clarifiers, provisions for fabric covers on a section of the primary clarifiers, and launder covers on Final Clarifier No.'s 3 and 4.
- Launder covers started construction on September 6, 2016. One clarifier will be out of service at a time.
- Fabric covers are scheduled for shipment on September 28, 2016. Contractor may request a delay claim due to slow fabric cover delivery.

MEMORANDUM

TO: SOUTH CENTRAL WASTEWATER AUTHORITY BOARD OF DIRECTORS

**FROM: ROBERT C. WICHSER, EXECUTIVE DIRECTOR
JAMES C. GORDON, ASST. EXECUTIVE DIRECTOR**

SUBJECT: FINANCIAL STATUS REPORT

DATE: September 15, 2016

Financial Report:

- The Operating YTD Budget Performance for the period ending August 31, 2016 is attached for review.

Operating Fund:

- The South Central Wastewater Authority's checking account balance was \$3,679,777.66 as of August 31, 2016.

Equipment Replacement and Reserve Fund (ERRF):

- The South Central Wastewater Authority's ERRF Checking Account balance was \$2,061,728.73 as of August 31, 2016.

Status Report:

General:

- The next scheduled Board of Directors Meeting is at 2:00 PM on Thursday November 17, 2016 at the South Central Wastewater Authority.
- The plant is currently accepting up to 18 loads of storm water and potentially 4 loads of leachate from Waste Management's Atlantic Landfill in Sussex.

Status of Nutrient Waste-load

- Total Phosphorus (TP)
 - Waste-load allocation Total Phosphorus: 35,024 lbs. on a calendar basis
 - Proportional waste-load through August 2016 = 23,349 lbs.
 - Total actual waste-load through August 2016 was 20,162 lbs. (At this time, the SCWWA is 3,187 lbs. of TP under our expected waste-load allocation for this point in the year)
 - Note: The SCWWA is locked-in to purchasing an additional 17,576 credits for 2016.
- Total Nitrogen (TN)
 - Waste-load allocation Total Nitrogen: 350,239 lbs. on a calendar basis
 - Proportional waste-load through August 2016 = 233,493 lbs.
 - Total actual waste-load through August 2016 was 297,255 lbs. (At this time, the SCWWA is 63,762 lbs. of TN over our expected waste-load allocation for this point in the year.)
 - Note: The SCWWA is locked-in to purchasing an additional 283,352 credits for 2016

Operations:

- Plant effluent met all discharge permit requirements for the month of July. Copies of the discharge monitoring reports (DMR's) for the VPDES permit and the general permit are available if anyone would like to see them.
- Staff is monitoring for the effects of Atlantic leachate on the treatment process during the trial.

Maintenance:

- Staff has safely installed the isolation plate assembly in the weir at the end of 1C and is now preparing to install the plate at the end of 3C.

Instrumentation

- Investigating other manufacturers of inline pH monitoring equipment due to increased repairs associated with current manufacturer.
- The GBT and BFP PLC has been repaired after water damage.

Laboratory

- Staff continue to perform their pretreatment inspections and sampling
- Staff successfully passed their TKN Certification testing.

South Central Wastewater Authority
Year-to-Date Operating Budget Performance
August 2016

	<u>Aug 16</u>	<u>Budget</u>	<u>% of Budget</u>	<u>Jul - Aug 16</u>	<u>YTD Budget</u>	<u>% of Budget</u>	<u>Annual Budget</u>
Ordinary Income/Expense							
Income							
40200 - Septage/Misc Revenue	105,445.49	34,583.33	304.9%	242,712.53	69,166.70	350.91%	415,000.00
40300 - Electricity - Credit	5,177.42	0.00	100.0%	5,177.42	0.00	100.0%	0.00
40700 - O&M Revenue	591,575.00	591,575.00	100.0%	1,183,150.00	1,183,150.00	100.0%	7,098,900.00
40710 - Reserve Policy (Reserve Policy)	56,400.10	56,400.00	100.0%	112,800.20	112,801.00	100.0%	676,801.00
40720 - ER&RF Revenue (ER & RF Revenue)	35,541.26	35,541.25	100.0%	71,082.52	71,082.50	100.0%	426,495.00
47000 - Purchase Discounts	30.80			1,138.68			
Total Income	<u>794,170.07</u>	<u>718,099.58</u>	<u>110.59%</u>	<u>1,616,061.35</u>	<u>1,436,200.20</u>	<u>112.52%</u>	<u>8,617,196.00</u>
Gross Profit	794,170.07	718,099.58	110.59%	1,616,061.35	1,436,200.20	112.52%	8,617,196.00
Expense							
51000 - Salary	140,366.75	152,916.67	91.79%	280,911.32	305,833.30	91.85%	1,835,000.00
52000 - Employee Benefits							
52100 - Employer FICA	10,276.06	11,500.00	89.36%	20,557.17	23,000.00	89.38%	138,000.00
52200 - Virginia Retirement System	9,261.90	13,333.33	69.46%	20,787.67	26,666.70	77.95%	160,000.00
52300 - Hospitalization Insurance	30,398.00	34,708.33	87.58%	66,467.63	69,416.70	95.75%	416,500.00
52400 - Group Life & Disability	1,792.74	1,916.67	93.53%	3,417.19	3,833.30	89.15%	23,000.00
52450 - Supplemental Group Life	99.86	125.00	79.89%	199.72	250.00	79.89%	1,500.00
52500 - Health Insurance Credit	0.00	0.00	0.0%	0.00	1,500.00	0.0%	1,500.00
52700 - Employee Promotions	0.00	0.00	0.0%	0.00	5,500.00	0.0%	5,500.00
Total 52000 - Employee Benefits	<u>51,828.56</u>	<u>61,583.33</u>	<u>84.16%</u>	<u>111,429.38</u>	<u>130,166.70</u>	<u>85.61%</u>	<u>746,000.00</u>
53000 - Contractual Services							
53121 - Auditing Services	2,700.00	5,666.67	47.65%	2,700.00	11,333.33	23.82%	17,000.00
53122 - Accounting Services	5,831.88	3,333.33	174.96%	5,831.88	6,666.67	87.48%	10,000.00
53140 - Consulting Engineers	3,475.00	5,000.00	69.5%	3,500.00	10,000.00	35.0%	60,000.00
53150 - Legal Services	0.00	5,000.00	0.0%	3,950.76	10,000.00	39.51%	60,000.00
53152 - Software Support	13,100.27	3,333.33	393.01%	16,339.78	6,666.70	245.1%	40,000.00
53160 - Medical	70.00	291.67	24.0%	70.00	583.30	12.0%	3,500.00
53162 - Bank Service Charges	0.00	291.67	0.0%	0.00	583.30	0.0%	3,500.00
53170 - Pmt In Lieu Taxes-Real Est Tax	7,943.33	2,791.67	284.54%	7,943.33	5,583.30	142.27%	33,500.00
53190 - Samples and Testing	2,187.83	3,708.33	59.0%	3,875.83	7,416.70	52.26%	44,500.00
53220 - VPDES Permit Fee	0.00	0.00	0.0%	0.00	9,500.00	0.0%	9,500.00
53320 - Maintenance Service Contracts	0.00	1,250.00	0.0%	0.00	2,500.00	0.0%	15,000.00
53600 - Grounds Maintenance	2,650.00	2,083.33	127.2%	5,300.00	4,166.70	127.2%	25,000.00
Total 53000 - Contractual Services	<u>37,958.31</u>	<u>32,750.00</u>	<u>115.9%</u>	<u>49,511.58</u>	<u>75,000.00</u>	<u>66.02%</u>	<u>321,500.00</u>
55000 - Other Charges							
55050 - Advertising	0.00	375.00	0.0%	-171.39	750.00	-22.85%	4,500.00
55110 - Electricity	28,197.15	37,500.00	75.19%	60,644.63	75,000.00	80.86%	450,000.00
55120 - Natural Gas	319.73	1,666.67	19.18%	530.03	3,333.30	15.9%	20,000.00
55130 - Solid Waste	214.16	208.33	102.8%	379.09	416.70	90.97%	2,500.00
55140 - Water	104.15	833.33	12.5%	1,864.46	1,666.70	111.87%	10,000.00
55150 - Stormwater	0.00	458.33	0.0%	472.13	916.70	51.5%	5,500.00
55160 - Sludge Disposal	371.18	30,000.00	1.24%	371.18	60,000.00	0.62%	360,000.00
55210 - Postage and Freight	23.82	208.33	11.43%	153.51	416.70	36.84%	2,500.00
55230 - Telecommunications	969.50	1,250.00	77.56%	1,600.48	2,500.00	64.02%	15,000.00

South Central Wastewater Authority
Year-to-Date Operating Budget Performance
August 2016

	<u>Aug 16</u>	<u>Budget</u>	<u>% of Budget</u>	<u>Jul - Aug 16</u>	<u>YTD Budget</u>	<u>% of Budget</u>	<u>Annual Budget</u>
55308 - General Liability Insurance	0.00	5,833.33	0.0%	17,385.50	11,666.70	149.02%	70,000.00
55410 - Lease/Rent of Equipment	474.04	916.67	51.71%	474.04	1,833.30	25.86%	11,000.00
55530 - Meals and Lodging	-451.10	625.00	-72.18%	-414.81	1,250.00	-33.19%	7,500.00
55540 - Education and Training	6,181.25	1,616.67	382.35%	11,984.79	3,233.30	370.67%	19,400.00
55550 - Safety Supplies	1,411.66	1,583.33	89.16%	3,433.62	3,166.70	108.43%	19,000.00
Total 55000 - Other Charges	37,815.54	83,074.99	45.52%	98,707.26	166,150.10	59.41%	996,900.00
56000 - Materials and Supplies							
56001 - Office Supplies	797.63	1,458.33	54.7%	1,232.48	2,916.70	42.26%	17,500.00
56004 - Laboratory Supplies	1,061.37	4,083.33	25.99%	7,146.50	8,166.70	87.51%	49,000.00
56005 - Process Chemicals	33,384.71	46,666.67	71.54%	47,998.29	93,333.30	51.43%	560,000.00
56007 - Repair and Maintenance Supplies	45,077.08	36,666.67	122.94%	59,121.85	73,333.30	80.62%	440,000.00
56008 - Vehicle and Equipment Fuels	723.51	2,666.67	27.13%	2,452.85	5,333.30	45.99%	32,000.00
56010 - Janitorial Supplies	375.81	666.67	56.37%	600.81	1,333.30	45.06%	8,000.00
56011 - Uniforms	1,979.00	1,875.00	105.55%	3,086.51	3,750.00	82.31%	22,500.00
56012 - Dues and Subscriptions	-20.00	2,750.00	-0.73%	648.08	5,500.00	11.78%	33,000.00
56015 - Small Equipment Purchases	360.72	708.33	50.93%	360.72	1,416.70	25.46%	8,500.00
Total 56000 - Materials and Supplies	83,739.83	97,541.67	85.85%	122,648.09	195,083.30	62.87%	1,170,500.00
57000 - Equipment Replacement							
57010 - Machinery and Equipment	0.00	5,000.00	0.0%	12,998.00	10,000.00	129.98%	60,000.00
57020 - Instrumentation	432.00	2,916.67	14.81%	2,900.38	5,833.30	49.72%	35,000.00
57030 - SCADA	0.00	1,250.00	0.0%	0.00	2,500.00	0.0%	15,000.00
57040 - Computer Software & Hardware	0.00	1,250.00	0.0%	662.53	2,500.00	26.5%	15,000.00
57060 - Construction	160,192.06	192,916.67	83.04%	240,526.96	385,833.30	62.34%	2,315,000.00
Total 57000 - Equipment Replacement	160,624.06	203,333.34	79.0%	257,087.87	406,666.60	63.22%	2,440,000.00
70500 - NutrientCreditPurchases-ExhC	92,727.27	85,000.00	109.09%	95,852.27	170,000.00	56.38%	1,020,000.00
Total Expense	605,060.32	716,200.00	84.48%	1,016,147.77	1,448,900.00	70.13%	8,529,900.00
Net Ordinary Income	189,109.75	1,899.58	9,955.35%	599,913.58	-12,699.80	-4,723.8%	87,296.00
Other Income/Expense							
Other Income							
80000 - Other Income							
80020 - Nutrient Reduction	0.00			1,272.00			
80030 - Interest-Jurisdictions (Interest Changed to Participating Jurisdictions)	16,926.03			16,926.03			
Total 80000 - Other Income	16,926.03			18,198.03			
Total Other Income	16,926.03			18,198.03			
Net Other Income	16,926.03	0.00	100.0%	18,198.03	0.00	100.0%	0.00
Net Income	206,035.78	1,899.58	10,846.39%	618,111.61	-12,699.80	-4,867.1%	87,296.00

NOTE:

- 1) \$649,826 from FY2015/2016 for construction contracts will be spent in lin 57060 - Construction. Budget numbers were not adjusted to reflect this expense this Fiscal Year but revenues were collect for these expenses in FY2015/2016



South Central Wastewater Authority

FY 16/17

YTD Financial Performance and Projections

as of August 31, 2016

Key Figures: Income Statement



	Aug 16	Budget	% of Budget	Jul - Aug 16	YTD Budget	% of Budget	Annual Budget	Forecast
Ordinary Income/Expense								
Income								
40200 · Septage/Misc Revenue	105,445.49	34,583.33	304.9%	242,712.53	69,166.70	350.91%	415,000.00	1,083,812.53
40300 · Electricity - Credit	5,177.42	0.00	100.0%	5,177.42	0.00	100.0%	0.00	5,177.42
40700 · O&M Revenue	591,575.00	591,575.00	100.0%	1,183,150.00	1,183,150.00	100.0%	7,098,900.00	7,098,900.00
40710 · Reserve Policy (Reserve Policy)	56,400.10	56,400.00	100.0%	112,800.20	112,801.00	100.0%	676,801.00	676,801.00
40720 · ER&RF Revenue (ER & RF Revenue)	35,541.26	35,541.25	100.0%	71,082.52	71,082.50	100.0%	426,495.00	426,495.00
47000 · Purchase Discounts	30.80			1,138.68				1,138.68
Total Income	794,170.07	718,099.58	110.59%	1,616,061.35	1,436,200.20	112.52%	8,617,196.00	9,292,324.63
Gross Profit	794,170.07	718,099.58	110.59%	1,616,061.35	1,436,200.20	112.52%	8,617,196.00	9,292,324.63
Expense								
51000 · Salary	140,366.75	152,916.67	91.79%	280,911.32	305,833.30	91.85%	1,835,000.00	1,835,000.00
Total 52000 · Employee Benefits	51,828.56	61,583.33	84.16%	111,429.38	130,166.70	85.61%	746,000.00	746,000.00
Total 53000 · Contractual Services	37,958.31	32,750.00	115.9%	49,511.58	75,000.00	66.02%	321,500.00	321,500.00
Total 55000 · Other Charges	37,815.54	83,074.99	45.52%	98,707.26	166,150.10	59.41%	996,900.00	996,900.00
Total 56000 · Materials and Supplies	83,739.83	97,541.67	85.85%	122,648.09	195,083.30	62.87%	1,170,500.00	1,170,500.00
57000 · Equipment Replacement								
57010 · Machinery and Equipment	0.00	5,000.00	0.0%	12,998.00	10,000.00	129.98%	60,000.00	75,000.00
57020 · Instrumentation	432.00	2,916.67	14.81%	2,900.38	5,833.30	49.72%	35,000.00	35,000.00
57030 · SCADA	0.00	1,250.00	0.0%	0.00	2,500.00	0.0%	15,000.00	15,000.00
57040 · Computer Software & Hardware	0.00	1,250.00	0.0%	662.53	2,500.00	26.5%	15,000.00	15,000.00
57060 · Construction	160,192.06	192,916.67	83.04%	240,526.96	385,833.30	62.34%	2,315,000.00	1,014,826.00
Total 57000 · Equipment Replacement	160,624.06	203,333.34	79.0%	257,087.87	406,666.60	63.22%	2,440,000.00	1,154,826.00
70500 · NutrientCreditPurchases-ExhC	92,727.27	85,000.00	109.09%	95,852.27	170,000.00	56.38%	1,020,000.00	1,020,000.00
Total Expense	605,060.32	716,200.00	84.48%	1,016,147.77	1,448,900.00	70.13%	8,529,900.00	7,244,726.00
Net Ordinary Income	189,109.75	1,899.58	9,955.35%	599,913.58	-12,699.80	-4,723.8%	87,296.00	2,047,598.63

The forecasted revenues for Septage/Misc Revenue is based on an **average of 10 Waste Management storm-water trucks per day.**

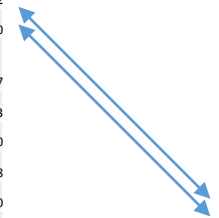
SCWWA's Operates using Accrual Basis for Accounting; Accrual accounting is an accounting method that measures the performance and position of a company by recognizing economic events regardless of when cash transactions occur



Key Figures: Balance Sheet

		Aug 31, 16
ASSETS		
Current Assets		
Checking/Savings		
10000 - Petty Cash		250.00
10200 - Operating Checking Account - WF		
10200a - Reserve Account		1,385,029.35
10200 - Operating Checking Account - WF - Other		1,090,931.22
10201 - Operating Checking Account - WF-Approved Carryover		996,000.00
Total 10200 - Operating Checking Account - WF		3,471,960.57
10400 - ERRF		2,061,728.73
Total Checking/Savings		5,533,939.30
Total Accounts Receivable		1,134,630.68
Total Other Current Assets		400.00
Total Current Assets		6,668,969.98
Total Fixed Assets		18,169,654.24
Other Assets		
12000 - Inventory		538,663.71
18100 - Def Out Res-Post ER Pension Con		136,390.00
Total Other Assets		675,053.71
TOTAL ASSETS		25,513,677.93
LIABILITIES & EQUITY		
Liabilities		
Current Liabilities		
Total Accounts Payable		18,456.83
Total Other Current Liabilities		764,665.86
Total Current Liabilities		783,122.69
Long Term Liabilities		
Total Long Term Liabilities		751,628.00
Total Liabilities		1,534,750.69
Equity		
Total Equity		23,978,927.24
TOTAL LIABILITIES & EQUITY		25,513,677.93

SCWWA's O&M expenses are currently being funded by the Wells Fargo Operating account that includes the approved \$996K (Headwork's Project) carryover from FY 15/16





Key Figures: Cash Flow Projections

SCWWA: O&M Cash Flow Projections for FY 16/17						
	Accts. Receivable	Accts Payable	Thereof Petgs	Petgs Cummulative		Operating Cash-Projections
Beginning Balance	1,134,630.68	609,052.82	1,136,875.24			2,086,931.22
Sep 16	675,685.00	622,857.82	327,864.90	1,464,740.14		1,202,840.68
Oct 16	675,685.00	622,857.82	327,864.90	1,792,605.04		927,802.96
Nov 16	675,685.00	622,857.82	327,864.90	2,120,469.94		652,765.24
Dec 16	675,685.00	622,857.82	327,864.90	2,448,334.84		377,727.52
Jan 17	675,685.00	622,857.82	327,864.90	2,776,199.74		102,689.80
Feb 17	675,685.00	622,857.82	327,864.90	3,104,064.64		-172,347.92
Mar 17	675,685.00	622,857.82	327,864.90	3,431,929.54		-447,385.64
Apr 17	675,685.00	622,857.82	327,864.90	3,759,794.44		-722,423.36
May 17	675,685.00	622,857.82	327,864.90	4,087,659.34		-997,461.08
Jun 17	675,685.00	622,857.82	327,864.90	4,415,524.24		-1,272,498.80
Sep 1, 16 - Jun 30, 17	6,756,850.00	6,228,578.20	3,278,649.00		\$	(1,272,498.80)
Totals	7,891,480.68	6,837,631.02	4,415,524.24			

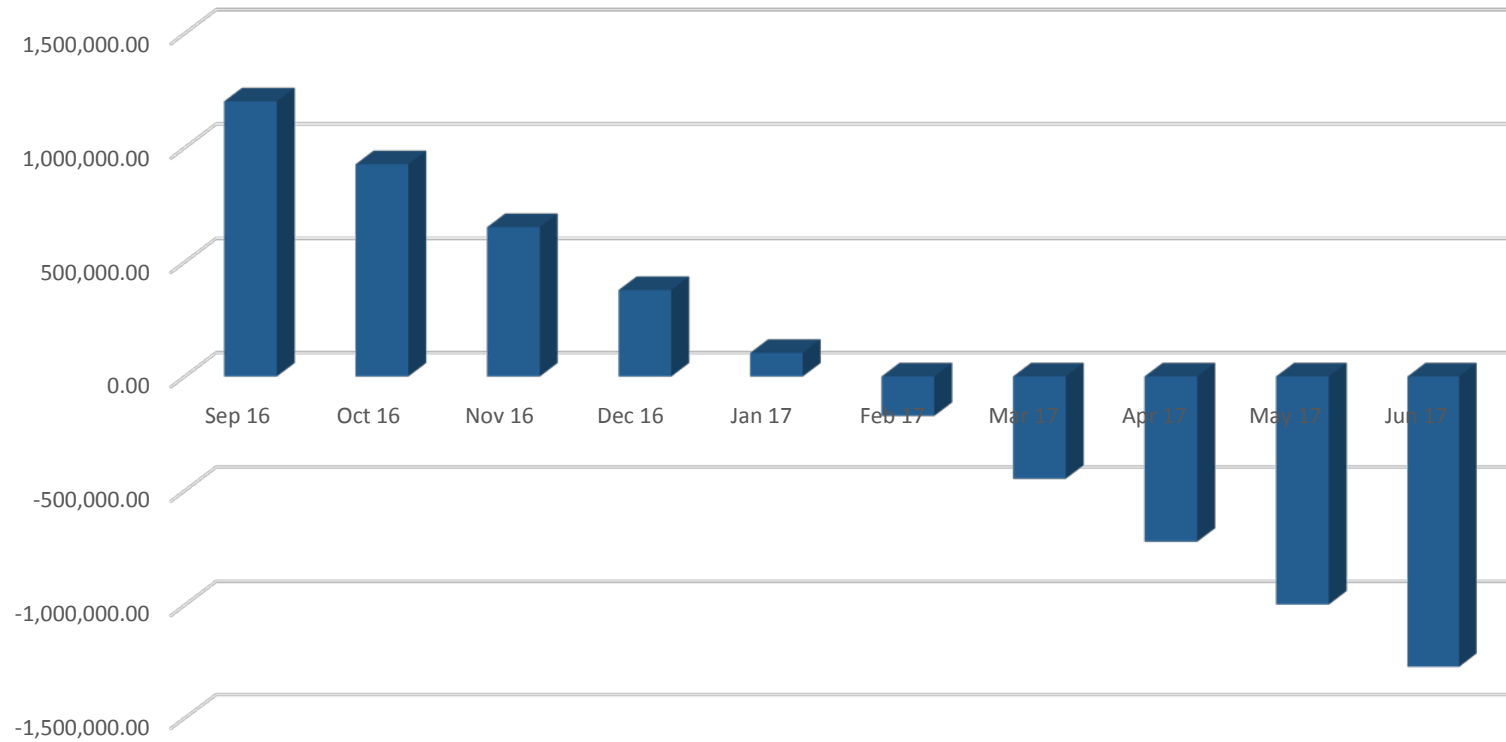
Projections are based on only having access to Operating Cash Flow, no reserves and 10 storm water trucks per day.

Cash flow projections are based on only having access to collected O&M revenue deposits and **does not include tapping the \$1.3M RESERVE ACCOUNT or \$2.0M ERRF ACCOUNT**

Key Figures: Cash Flow Projections



SCWWA Operating Cash-Projections FY 16/17



Potential Reallocation of FY2016/2017 Budget Payments

	Petersburg	Chesterfield	Dinwiddie	Colonial Heights	Prince George	Total
Budget % <u>flow</u> based O&M	55.422%	8.945%	8.081%	20.961%	6.590%	
Budget FY16/17 O&M Monthly \$	\$ 327,864.90	\$ 52,918.37	\$ 47,804.54	\$ 124,002.45	\$ 38,984.74	
Budget FY16/17 ERRF & Reserves Monthly \$	\$ 48,269.20	\$ 9,194.13	\$ 9,194.13	\$ 18,388.27	\$ 6,895.60	
Budget FY16/17 Total Monthly \$ as Approved	\$ 376,134.10	\$ 62,112.50	\$ 56,998.68	\$ 142,390.72	\$ 45,880.34	\$ 683,516.34

NOTE: The below midyear rate adjustment assumes there is no change in the budget and the O&M Charges are redistributed between Chesterfield, Dinwiddie, Colonial Heights, and Prince George based on their Plant Allocation. The charges below for Petersburg show that SCWWA will continue to charge their monthly rate from the original approved FY16/17 budget

	Petersburg	Chesterfield	Dinwiddie	Colonial Heights	Prince George	Total
Adj. % <u>allocation</u> based O&M	55.422%	21.053%	21.053%	42.105%	15.789%	
Budget FY16/17 O&M Monthly \$ for December 2016 - June 2017	\$ 327,864.90	\$ 124,542.11	\$ 124,542.11	\$ 249,084.21	\$ 93,406.58	
Budget FY16/17 ERRF & Reserves Monthly \$	\$ 48,269.20	\$ 9,194.13	\$ 9,194.13	\$ 18,388.27	\$ 6,895.60	
Total Adjusted Monthly \$	\$ 376,134.10	\$ 133,736.24	\$ 133,736.24	\$ 267,472.48	\$ 100,302.18	\$ 635,247.13
Total Monthly Increase	\$ -	\$ 71,623.74	\$ 76,737.56	\$ 125,081.76	\$ 54,421.84	\$ 327,864.90
Total Increase for FY16/17 Budget	\$ -	\$ 501,366.15	\$ 537,162.91	\$ 875,572.31	\$ 380,952.90	\$ 2,295,054.27

NOTE: The below midyear rate adjustment assumes the following changes to the SCWWA Approved FY16/17 Budget: 1) Cease monthly collection of ERRF and Reserve Funds for members with reallocated O&M charges, 2) Decrease collection of construction line charges from \$2,315,000 to \$365,000 in the O&M for members with reallocated O&M charges. These funds are required for improvement related to Permit Compliance, 3) O&M charges reallocated based on Plant Allocation. The charges below for Petersburg show that SCWWA will continue to charge their monthly rate from the original approved FY16/17 budget

	Petersburg	Chesterfield	Dinwiddie	Colonial Heights	Prince George	Total
Adj. % <u>allocation</u> based O&M	55.422%	21.053%	21.053%	42.105%	15.789%	
Budget FY16/17 O&M Monthly \$ for December 2016 - June 2017	\$ 327,864.90	\$ 113,384.21	\$ 113,384.21	\$ 226,768.42	\$ 113,384.21	
Budget FY16/17 ERRF & Reserves Monthly \$	\$ 48,269.20	\$ -	\$ -	\$ -	\$ -	
Total Adjusted Monthly \$	\$ 376,134.10	\$ 113,384.21	\$ 113,384.21	\$ 226,768.42	\$ 85,038.16	\$ 538,575.00
Total Monthly Increase	\$ -	\$ 51,271.71	\$ 56,385.53	\$ 84,377.70	\$ 39,157.82	\$ 231,192.77
Total Increase for FY16/17 Budget	\$ -	\$ 358,901.97	\$ 394,698.74	\$ 590,643.89	\$ 274,104.75	\$ 1,618,349.36

MEMORANDUM

TO: SOUTH CENTRAL WASTEWATER AUTHORITY BOARD OF DIRECTORS

**FROM: ROBERT C. WICHSER, EXECUTIVE DIRECTOR
JAMES C. GORDON, ASSISTANT EXECUTIVE DIRECTOR**

SUBJECT: INFLOW AND INFILTRATION

DATE: September 15, 2016

August 2016 was the driest August since 2010 and may have been the Driest on record. SCWWA saw only 0.64" of precipitation and 0.42" was received on August 2nd. The SCWWA also recorded its lowest average flow for the past 12 months and the lowest minimum, maximum, and average August flows since 2010 as shown below.

Month	Rainfall (inches)	Average Flow (mgd)
August 2015	2.38	9.835
September 2015	3.42	9.365
October 2015	3.43	10.908
November 2015	4.72	11.575
December 2015	5.57	14.116
January 2016	2.66	15.309
February 2016	5.31	20.289
March 2016	1.43	12.667
April 2016	2.55	10.379
May 2016	8.86	15.369
June 2016	4.21	12.560
July 2016	4.21	11.300
August 2016	0.64	9.030

August	2016	2015	2014	2013	2012	2011	2010
Minimum (mgd)	8.130	8.480	8.128	9.761	9.374	9.116	8.655
Maximum (mgd)	10.663	12.365	15.212	23.012	15.979	32.066	12.527
Average (mgd)	9.030	9.835	10.279	11.817	10.236	11.627	9.522
Rainfall (inches)	0.64	2.38	5.86	3.17	3.02	8.84	3.38

5. Items from Counsel

6. Closed Session

- **Legal Advice**
- **Personnel Action**

7. Other Items from Board Members/Staff Not on Agenda:

8. Adjourn